MASONRY RESTORATION &

ROOF REPLACEMENT

AT THE

ARMORY OF MOUNTED COMMANDS

1051 NORTH MAIN STREET

PROVIDENCE, RHODE ISLAND 02904

FOR THE

RHODE ISLAND ARMY NATIONAL GUARD

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ADJUTANT GENERAL

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February 28, 2019
(RE-BID)

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LIST OF DRAWINGS

MASONRY RESTORATION & ROOF REPLACEMENT
AT THE
ARMORY OF MOUNTED COMMANDS
1051 NORTH MAIN STREET
PROVIDENCE, RHODE ISLAND 02904
FOR THE
RHODE ISLAND ARMY NATIONAL GUARD

The drawings for this project represent an integral part of the contract documents, and should not be considered as a separate entity. They, along with the technical specifications, form a complete process of disseminating specific information required to perform the work of this project.

The following schedule indicates the drawings of this project, ordered for convenience only, and do not obligate the Contractor to perform the work in any specific sequence, nor construed as specific work for a specific trade, subcontractor or supplier.

CS ..... - COVER SHEET

A1.0..... - GENERAL NOTES, LEGEND & ABBREVIATIONS

A1.1..... - EXISTING/DEMOLITION/NEW ROOF PLAN (HEAD SHED) & GENERAL NOTES

A3.0..... - EXISTING/NEW EAST AND WEST EXTERIOR ELEVATIONS (HEAD SHED)

A3.1..... - EXISTING/NEW NORTH AND SOUTH EXTERIOR ELEVATIONS (HEAD SHED)

A5.0..... - ROOF DETAILS

A5.1..... - ROOF DETAILS

Drawings are dated: February 28, 2019

DOCUMENT 00100

INSTRUCTIONS TO BIDDERS

AIA Document A701, Instructions to Bidders - 1997 Edition is included, following this page, as an integral part of the Bid Documents. Provisions which are not amended or supplemented remain in full force and effect.

END OF DOCUMENT

DRAFT

AIA® Document A701™ – 1997

Instructions to Bidders

for the following PROJECT:
(Name and location or address)
Masonry Restoration & Roof Replacement at the
Armory of Mounted Commands
Rhode Island Army National Guard (RIARNG)
Providence, Rhode Island 02904

THE OWNER:
The State of Rhode Island, acting by and through the Department of Administration
Division of Purchases, on behalf of the User Agency
One Capitol Hill, Second Floor
Providence, Rhode Island 02908-5855
(401) 574-8100 (telephone)
(401) 574-8387 (facsimile)
www.purchasing.ri.gov

THE ARCHITECT:
(Name, legal status and address)
William Starck Architects, Inc.
126 Cove Street
Fall River, MA 02720
10 Dorrance St., Suite 700
Providence, RI 02903
Telephone Number:
(508) 679-5733 (t)
(401) 519-3647 (t)

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

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the bid form, and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201, or in other Contract Documents are applicable to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 The Bidder by making a Bid represents that:

§ 2.1.1 The Bidder has read and understands the Bidding Documents or Contract Documents, to the extent that such documentation relates to the Work for which the Bid is submitted, and for other portions of the Project, if any, being bid concurrently or presently under construction.

§ 2.1.2 The Bid is made in compliance with the Bidding Documents.

§ 2.1.3 The Bidder has visited the site, become familiar with local conditions under which the Work is to be performed and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents.

§ 2.1.4 The Bid is based upon the materials, equipment and systems required by the Bidding Documents without exception.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 COPIES

§ 3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement or Invitation to Bid in the number and for the deposit sum, if any, stated therein. The deposit will be refunded to Bidders who submit a bona fide Bid and return the Bidding Documents in good condition within ten days after receipt of Bids. The cost of replacement of missing or damaged documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the Bidding Documents and the Bidder's deposit will be refunded.

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§ 3.1.2 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the Advertisement or Invitation to Bid, or in supplementary instructions to bidders.

§ 3.1.3 Bidders shall use complete sets of Bidding Documents in preparing Bids; neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

§ 3.1.4 The Owner and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

§ 3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

§ 3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall at once report to the Architect errors, inconsistencies or ambiguities discovered.

§ 3.2.2 Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Architect at least seven days prior to the date for receipt of Bids.

§ 3.2.3 Interpretations, corrections and changes of the Bidding Documents will be made by Addendum. Interpretations, corrections and changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon them.

§ 3.3 SUBSTITUTIONS

§ 3.3.1 The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.

§ 3.3.2 No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten days prior to the date for receipt of Bids. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the work of other contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.3 If the Architect approves a proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

§ 3.3.4 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 ADDENDA

§ 3.4.1 Addenda will be transmitted to all who are known by the issuing office to have received a complete set of Bidding Documents.

§ 3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

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ARTICLE 4 BIDDING PROCEDURES

§ 4.1 PREPARATION OF BIDS

§ 4.1.1 Bids shall be submitted on the forms included with the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and figures. In case of discrepancy, the amount written in words shall govern.

§ 4.1.4 Interlineations, alterations and erasures must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change."

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall make no additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name of the Bidder and the nature of legal form of the Bidder. The Bidder shall provide evidence of legal authority to perform within the jurisdiction of the Work. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

§ 4.2 BID SECURITY

§ 4.2.1 Each Bid shall be accompanied by a bid security in the form and amount required if so stipulated in the Instructions to Bidders. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. The amount of the bid security shall not be forfeited to the Owner in the event the Owner fails to comply with Section 6.2.

§ 4.2.2 If a surety bond is required, it shall be written on AIA Document A310, Bid Bond, unless otherwise provided in the Bidding Documents, and the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the power of attorney.

§ 4.2.3 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until either (a) the Contract has been executed and bonds, if required, have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn or (c) all Bids have been rejected.

§ 4.3 SUBMISSION OF BIDS

§ 4.3.1 All copies of the Bid, the bid security, if any, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.2 Bids shall be deposited at the designated location prior to the time and date for receipt of Bids. Bids received after the time and date for receipt of Bids will be returned unopened.

§ 4.3.3 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.4 Oral, telephonic, telegraphic, facsimile or other electronically transmitted bids will not be considered.

§ 4.4 MODIFICATION OR WITHDRAWAL OF BID

§ 4.4.1 A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting a Bid.

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§ 4.4.2 Prior to the time and date designated for receipt of Bids, a Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder. Written confirmation over the signature of the Bidder shall be received, and date- and time-stamped by the receiving party on or before the date and time set for receipt of Bids. A change shall be so worded as not to reveal the amount of the original Bid.

§ 4.4.3 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

§ 4.4.4 Bid security, if required, shall be in an amount sufficient for the Bid as resubmitted.

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 OPENING OF BIDS

At the discretion of the Owner, if stipulated in the Advertisement or Invitation to Bid, the properly identified Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids may be made available to Bidders.

§ 5.2 REJECTION OF BIDS

The Owner shall have the right to reject any or all Bids. A Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.

§ 5.3 ACCEPTANCE OF BID (AWARD)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest qualified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's own best interests.

§ 5.3.2 The Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 CONTRACTOR'S QUALIFICATION STATEMENT

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request, a properly executed AIA Document A305, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted as a prerequisite to the issuance of Bidding Documents.

§ 6.2 OWNER'S FINANCIAL CAPABILITY

The Owner shall, at the request of the Bidder to whom award of a Contract is under consideration and no later than seven days prior to the expiration of the time for withdrawal of Bids, furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Unless such reasonable evidence is furnished, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 SUBMITTALS

§ 6.3.1 The Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, after notification of selection for the award of a Contract, furnish to the Owner through the Architect in writing:

- **.1** a designation of the Work to be performed with the Bidder's own forces;
- **.2** names of the manufacturers, products, and the suppliers of principal items or systems of materials and equipment proposed for the Work; and
- **.3** names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

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§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder in writing if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, (1) withdraw the Bid or (2) submit an acceptable substitute person or entity with an adjustment in the Base Bid or Alternate Bid to cover the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 BOND REQUIREMENTS

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Bonds may be secured through the Bidder's usual sources.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 If the Owner requires that bonds be secured from other than the Bidder's usual sources, changes in cost will be adjusted as provided in the Contract Documents.

§ 7.2 TIME OF DELIVERY AND FORM OF BONDS

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to be commenced prior thereto in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond. Both bonds shall be written in the amount of the Contract Sum.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum.

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SECTION 00101

ADDITIONAL INSTRUCTIONS TO BIDDERS

1. Refer to the State Agency Solicitation provided by the State for Additional Instructions to Bidders.

END OF SECTION

DOCUMENT 00400

BID BOND

1. Refer to the State Agency Solicitation provided by the State for Bid Bond requirements.

END OF DOCUMENT

DOCUMENT 00406

CONTRACTOR'S QUALIFICATION STATEMENT

AIA Document A305 - Contractor's Qualification Statement, 1986 Edition shall be an integral part of the Bid Documents, for use in evaluating the qualifications of Contractors.

Due to the extremely sensitive nature of the work of portions of this project, and the special skills required for same, the following information must be submitted with the bid or the proposal will not be considered.

1. The **Armory of Mounted Commands** in Providence, RI is an important historical building because of its association with significant historical events, and for the quality of its architecture. The building was constructed between **1913-14** and **1923-25**, with late 20th century additions. This institutional building is representative of Rhode Island's enormous investment in state institutional facilities during this period.

2. It is important that the successful bidder be experienced in restoration and rehabilitation of older buildings and with the Secretary of the Interior's Standards for Rehabilitation. The Contractor submitting the bid must have been in business under the same name, and doing the same type of work, for a minimum of five (5) years. To demonstrate experience and qualifications, in addition to including the AIA Document A305 (document following), provide the following information with the bid submission:

    a. Provide history of the firm, including number of years it has been in business doing general contracting; a list of representative projects with final cost, year completed and description of work.
    b. Provide resumes for principals and key personnel who will be assigned to the project, including a list of relevant projects with which they were personally involved.
    c. List three (3) or more historic preservation projects on buildings 100 years old or more that were completed by this firm within the last five (5) years. Include the date of completion, the age of the building, the cost of the project, the architect, a detailed description of the work, and a project reference with phone number.
    d. Subcontractors should have similar experience with historic buildings within their area of expertise. Provide firm history, resume of principals, and a list of relevant projects for each subcontractor. The masonry contractor must provide a list of at least three (3) slate roofing conservation projects, which were completed in the last five (5) years. Include a detailed description of the work, date of completion, and a project reference with phone number.

3. The Owner reserves the right and sole discretion to determine equivalent or prior experience and the right to reject any or all bids which fail to demonstrate equivalent prior experience. The Owner will contact project references, and reserves the right to reject bids based on poor performance with similar projects.

4. Qualifications will be evaluated on the basis of similar project experience for:

    a. Completion of at least three (3) similar historically significant projects.
    b. Size and dollar value of completed projects.
    c. Contractor's performance with similar projects.
    d. Contractor's ability to subcontract with qualified firms.
    e. Experience of individuals assigned to the project.

END OF DOCUMENT

DRAFT

AIA® Document A305™ – 1986

Contractor's Qualification Statement

The Undersigned certifies under oath that the information provided herein is true and sufficiently complete so as not to be misleading.

SUBMITTED TO: « »

ADDRESS: « »

SUBMITTED BY: « »

NAME: « »

ADDRESS: « »

PRINCIPAL OFFICE: « »

[« »] Corporation

[« »] Partnership

[« »] Individual

[« »] Joint Venture

[« »] Other « »

NAME OF PROJECT: *(if applicable)* «Blank»

TYPE OF WORK: *(file separate form for each Classification of Work)*

[« »] General Construction

[« »] HVAC

[« »] Electrical

[« »] Plumbing

[« »] Other: *(Specify)* « »

§ 1. ORGANIZATION

§ 1.1 How many years has your organization been in business as a Contractor? « »

§ 1.2 How many years has your organization been in business under its present business name? « »

§ 1.2.1 Under what other or former names has your organization operated?

« »

§ 1.3 If your organization is a corporation, answer the following:

§ 1.3.1 Date of incorporation: « »

§ 1.3.2 State of incorporation: « »

§ 1.3.3 President's name: « »

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

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This form is approved and recommended by the American Institute of Architects (AIA) and The Associated General Contractors of America (AGC) for use in evaluating the qualifications of contractors. No endorsement of the submitting party or verification of the information is made by AIA or AGC.

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§ 1.3.4 Vice-president's name(s)

« »

§ 1.3.5 Secretary's name: « »
§ 1.3.6 Treasurer's name: « »

§ 1.4 If your organization is a partnership, answer the following:
§ 1.4.1 Date of organization: « »
§ 1.4.2 Type of partnership (if applicable): « »
§ 1.4.3 Name(s) of general partner(s)

« »

§ 1.5 If your organization is individually owned, answer the following:
§ 1.5.1 Date of organization: « »
§ 1.5.2 Name of owner:

« »

§ 1.6 If the form of your organization is other than those listed above, describe it and name the principals:

« »

§ 2. LICENSING
§ 2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable.

« »

§ 2.2 List jurisdictions in which your organization's partnership or trade name is filed.

« »

§ 3. EXPERIENCE
§ 3.1 List the categories of work that your organization normally performs with its own forces.

« »

§ 3.2 Claims and Suits. (If the answer to any of the questions below is yes, please attach details.)
§ 3.2.1 Has your organization ever failed to complete any work awarded to it?

« »

§ 3.2.2 Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers?

« »

§ 3.2.3 Has your organization filed any law suits or requested arbitration with regard to construction contracts within the last five years?

« »

§ 3.3 Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? (If the answer is yes, please attach details.)

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« »

§ 3.4 On a separate sheet, list major construction projects your organization has in progress, giving the name of project, owner, architect, contract amount, percent complete and scheduled completion date.

« »

§ 3.4.1 State total worth of work in progress and under contract:

« »

§ 3.5 On a separate sheet, list the major projects your organization has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion and percentage of the cost of the work performed with your own forces.

« »

§ 3.5.1 State average annual amount of construction work performed during the past five years:

« »

§ 3.6 On a separate sheet, list the construction experience and present commitments of the key individuals of your organization.

« »

§ 4. REFERENCES

§ 4.1 Trade References:

« »

§ 4.2 Bank References:

« »

§ 4.3 Surety:

§ 4.3.1 Name of bonding company:

« »

§ 4.3.2 Name and address of agent:

« »

§ 5. FINANCING

§ 5.1 Financial Statement.

§ 5.1.1 Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);

Net Fixed Assets;

Other Assets;

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Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes);

Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

§ 5.1.2 Name and address of firm preparing attached financial statement, and date thereof:

« »

§ 5.1.3 Is the attached financial statement for the identical organization named on page one?

« »

§ 5.1.4 If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

« »

§ 5.2 Will the organization whose financial statement is attached act as guarantor of the contract for construction?

« »

§ 6. SIGNATURE

§ 6.1 Dated at this « » day of « » « »

Name of Organization: « »

By: « »

Title: « »

§ 6.2

« »

M « » being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Subscribed and sworn before me this « » day of « » « »

Notary Public: « »

My Commission Expires: « »

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SECTION 00500

CONTRACTING FORMS AND SUPPLEMENTS

PART 1 GENERAL

1.01 SEE DRAFT DOCUMENTS HEREIN FOR TERMS TO BE INCORPORATED IN CONTRACT AS LISTED BELOW.

1.02 AGREEMENT AND CONDITIONS OF THE CONTRACT

A. The Agreement is based on AIA A101 – 2007. Refer to the following document included herein.

B. The General Conditions are based on AIA A201 – 2007. Refer to the following document included herein.

1.03 FORMS

A. Use the following forms for the specified purposes. See attached:

B. Closeout Forms:

1. Refer to Section 01780, Project Closeout, herein.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

DOCUMENT 00501

AGREEMENT FORM

AIA Document A101, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum - 2007 Edition, and as amended, forms the basis of Contract between the Owner and Contractor, and is included, following this page, as an integral part of the Bid Documents. Provisions which are not so amended or supplemented remain in full force and effect.

END OF DOCUMENT

DRAFT

AIA® Document A101™ – 2007

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

AGREEMENT made as of (Date of issuance of Owner's Purchase Order)
(In words, indicate day, month and year.)

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

The State of Rhode Island, acting by and through the Department of Administration
Division of Purchases, on behalf of the User Agency,
One Capitol Hill, Second Floor
Providence, RI 02908-5855
(401) 574-8100 (tel)
(401) 574-8387 (fax)
www.purchasing.ri.gov

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

« »
« »
« »
« »

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

Masonry Restoration & Roof Replacement at the
Armory of Mounted Commands
Rhode Island Army National Guard (RIARNG)
Providence, Rhode Island 02904

The User Agency:
(Name of user agency, address, telephone and facsimile numbers, and web address)

The Design Agent:
(Name, legal status, address, telephone and facsimile numbers, and web address)

William Starck Architects, Inc.
10 Dorrance St., Suite 700
Providence, RI 02903
Telephone Number:
(508) 679-5733 (t)
(401) 519-3647 (t)

The Owner and Contractor agree as follows.

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

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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

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TABLE OF ARTICLES

1 THE CONTRACT DOCUMENTS

2 THE WORK OF THIS CONTRACT

3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

4 CONTRACT SUM

5 PAYMENTS

6 DISPUTE RESOLUTION

7 TERMINATION OR SUSPENSION

8 MISCELLANEOUS PROVISIONS

9 ENUMERATION OF CONTRACT DOCUMENTS

10 INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

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

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others. No part of the Work shall be performed by Subcontractors without the Owner's prior written consent.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work will be stipulated by the User Agency. The Contractor shall be authorized to commence Work only upon the issuance of the Purchase Order by the Owner and an authorization from the User Agency.

« »

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

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than « » (« ») days from the date of commencement, or as follows:

« »

Portion of Work	Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.

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§ 3.4 The Contractor and the Contractor's surety shall be liable for and shall pay the Owner the sums stipulated herein as liquidated damaged, and not as penalty, for each calendar day of delay until the Work is substantially complete: _____ ($____) Dollars.

§ 3.5 The Owner shall not be liable to the Contractor or any Subcontractor for claims or damages of any nature caused by or arising out of any delays. The sole remedy against the Owner for delays shall be the allowance of additional time for completion of the Work.

ARTICLE 4 CONTRACT SUM

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

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates.)

« »

§ 4.3 Unit prices are specified in the Bid Form.

§ 4.4 Allowances are specified in the Bid Form.

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

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

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

§ 5.1.3 The Owner shall make payment of the certified amount to the Contractor not later than the 30th business day following approval by the Owner

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Design Agent and Owner may require.

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

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

.1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of five percent (5%). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;

.2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of five percent (5%);

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

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

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

.1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Design Agent shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and

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

§ 5.1.8 *Intentionally Omitted*

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

§ 5.2 FINAL PAYMENT

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

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

.2 a final Certificate for Payment has been issued by the Design Agent and approved in writing by the Owner; and

.3 the Contractor has submitted its final waiver of lien and final waivers of lien from all of its Subcontractors and suppliers in a form acceptable to the owner; and

.4 the Contractor has submitted to the Owner all close-out documents, including without limitation, all as-built plans, warranties, manuals, and other materials set forth in the Contract Documents.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 working days after the issuance of the Design Agent's final Certificate for Payment, and written approval by the Owner.

§ 5.3 OWNER'S RIGHTS

§ 5.3.1 The Owner shall have the right to deduct from any payments due to the Contractor the amount of any unpaid obligations owed to the State of Rhode Island by the Contractor, including without limitation, any and all unpaid taxes, and to pay the amount of such deductions to the Controller of the State of Rhode Island

§ 5.3. The Owner shall have the right to deduct from any payments due to the Contractor the amount of any claim against the contractor arising out of this Agreement or on account of any other reason.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

The Purchasing Agent appointed pursuant to the provisions of the "State Purchases Act," R.I. Gen. Laws §§ 37-2-1 et seq., will serve as Initial Decision Maker in accordance with the provisions of the State Purchases Act, State of Rhode Island Procurement Regulations, and Section 15.2 of AIA Document A-201-2007.

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim not resolved by the procedures set forth in §6.1, the method of binding dispute resolution shall be determined in accordance with the "State Purchases Act," R.I. Gen. Laws §§ 37-2-1 et seq., the "Public Works Arbitration Act," R.I. Gen. Laws §§ 37-16-1 et seq., the "Administrative Procedures Act," R.I. Gen. Laws §§ 45-35-1 et seq., and the State of Rhode Island Procurement Regulations.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007. The Contract may also be terminated by the Owner: (i) in the event of the unavailability of appropriated

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funds; (ii) in the absence of a determination of continued need; or (iii) as otherwise provided in the State of Rhode Island Procurement Regulations General Conditions of Purchase or other applicable law.

§ 7.2 The Work may be suspended by the Owner as provided in the State of Rhode Island Procurement Regulations General Conditions of Purchase and/or Article 14 of AIA Document A201–2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

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

§ 8.2 No interest shall be due or payable on account of any payment due or unpaid except in accordance with the provisions of "Prompt Payment by Department of Administration," R.I. Gen. Laws §§ 42-11.1-1 et seq.

§ 8.3 State of Rhode Island Representatives:

§ 8.3.1 The Owner's representative:
(Name, title, address and other information for the preferred methods of contact)

« »
« »
« »
« »
« »
« »

§ 8.3.2 The User Agency's representative:
(Name, title, address and other information for the preferred methods of contact)

« »
« »
« »
« »
« »
« »

§ 8.4 The Contractor's representative:
(Name, title, address and other information for the preferred method of contact)

« »
« »
« »
« »
« »
« »

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

§ 8.6 Other provisions.

§ 8.6.1 The Contractor represents and warrants to the Owner, in addition to any other representations and warranties of the Contractor elsewhere in the Contract Documents:

.1 The Contractor and its Subcontractors are each financially solvent, able to pay their debts as they mature, and possessed of sufficient working capital to perform their obligations under the Contract Documents
.2 The Contractor and its Subcontractors are each able to furnish the materials, equipment and labor

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required to complete the Project as required under the Contract Documents.
.3 The Contractor has visited the site of the Project and familiarized itself with the local and special conditions under which the Work is to be performed, and correlated its observations with the requirements of the Contract Documents.
.4 The Contractor possesses the requisite level of experience and expertise in the business administration, construction, and superintendence of projects of the size, complexity, and nature of the Project and it will perform the Work with the care, skill, and diligence of such a Contractor.

§ 8.6.2 The representation and warranties of the Contractor in the Contract Documents will survive the execution and delivery of this Agreement, any termination of the Agreement, and the final completion of the Work.

§ 8.6.3 Any Change Orders or other Modifications must be approved in writing by the Owner.

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

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

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

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

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
State of Rhode Island Procurement Regulations			

§ 9.1.4 The Specifications:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)
« The Specifications are included in the Solicitation and are available on the Division of Purchases website at www.purchasing.ri.gov. »

§ 9.1.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)
« The Drawings are included in the Solicitation and are available on the Division of Purchases website at www.purchasing.ri.gov. »

§ 9.1.6 The Addenda issued pursuant to the Solicitation are available on the Division of Purchases website at www.purchasing.ri.gov.

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

.1 The Solicitation issued by the Owner, including the Invitation to Bid, the Instructions to Bidders, and the Bid Checklist (with applicable forms)
.2 The Bid Proposal, including the Bid Form and the Bidder Certification Cover Form.
.3 The Purchase Order issued by the Owner.

§ 9.1.8 This agreement and the Contract Documents are subject to, and governed by, the laws of the State of Rhode Island, including all procurement statutes and regulations (available at www.purchasing.ri.gov), and applicable federal and local law, all of which are incorporated into this Agreement by this reference.

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§ 9.1.9 In the event of any conflict between the State of Rhode Island Procurement Regulations and any provision of the Rhode Island General Laws and the Supplementary and other Conditions of the Contract or other Contract Documents, the State of Rhode Island Procurement Regulations and the Rhode Island General Laws will control.

ARTICLE 10 INSURANCE AND BONDS

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

ARTICLE 11 NO LIENS

The Owner is the State of Rhode Island, acting by and through its Department of Administration Division of Purchases, and therefore, pursuant to the provisions of R.I. Gen. Laws § 34-28-31, mechanics liens may not be placed against the project.

ARTICLE 12 BENEFITS OF AGREEMENT

§ 12.1 Third-party Beneficiary. The User Agency is a disclosed third-party beneficiary of this Agreement and shall have all of the rights and benefits to which such a party is entitled hereunder.

§ 12.2 Assignment: This Agreement shall be binding on the Contractor and its successors and assigns; provided, however, that the Contractor may not assign its rights nor delegate its responsibilities under this Agreement without the Owner's prior written consent.

This Agreement is dated as of the day and year first written above; provided, however, that this Agreement shall not become a binding contract until the Owner has issued a Purchase Order pursuant to § 3.1. The person signing for the Contractor below represents that he or she has been duly authorized to execute this agreement on behalf of the Contractor.

THE STATE OF RHODE ISLAND,
acting by and through its
Department of Administration
Division of Purchases

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
« »« »	« »« »
(Printed name and title)	*(Printed name and title)*

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DOCUMENT 00502

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

AIA Document A201, General Conditions of the Contract for Construction - 2007 Edition, is included, following this page, as an integral part of the Bidding and Contract Documents. Provisions which are not amended or supplemented remain in full force and effect.

END OF DOCUMENT

DRAFT

AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:

Masonry Restoration & Roof Replacement at the
Armory of Mounted Commands
Rhode Island Army National Guard (RIARNG)
Providence, Rhode Island 02904

THE OWNER:

The State of Rhode Island, acting by and through the Department of Administration
Division of Purchases, on behalf of the User Agency
One Capitol Hill, Second Floor
Providence, RI 02908-5855
(401) 574-8100 (telephone)
(401) 574-8387 (facsimile)

THE USER AGENCY:

(Name, address, telephone and facsimile numbers, and web address)

« »Rhode Island Army National Guard
« »Construction & Facilities Management Office- RIARNG

THE DESIGN AGENT:

(Name, legal status, address, telephone and facsimile numbers, and web address)

William Starck Architects, Inc.
10 Dorrance St., Suite 700
Providence, RI 02903
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ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement (and the documents enumerated therein), Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Design Agent.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Design Agent or the Design Agent's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Design Agent or the Design Agent's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Design Agent shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Design Agent's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

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

§ 1.1.6 THE SPECIFICATIONS

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

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Design Agent and the Design Agent's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

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§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 In the event of any conflict or discrepancies among the Contract Documents, the provisions of the Contract Documents will be interpreted in the following order of priority:

1. Modifications.
2. The Purchase Order
3. The Agreement.
4. The Solicitation, including any Addenda and the Specifications and Drawings.
5. The Supplementary Conditions (if any).
6. The General Conditions.
7. The Bid Proposal.

§ 1.2.5 In the event of any conflicts or discrepancies between the Contract Documents and the State of Rhode Island Procurement Regulations or any provision of the Rhode Island General Laws, the State of Rhode Island Procurement Regulations and the Rhode Island General Laws will control.

§ 1.2.6 In the event of any inconsistency between the Drawings and Specifications, the better quality or greater quantity of Work shall be provided.

§ 1.2.7 The Owner will be the final decision maker for any and all interpretations.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Design Agent and the Design Agent's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Design Agent's or Design Agent's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Design Agent and the Design Agent's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization.

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Except as otherwise provided in Section 4.2.1, the Design Agent does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 *Intentionally Omitted*

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 The Contractor shall secure and pay for permits and fees, necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 If required for the Work in the discretion of the Owner, the Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of any information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Design Agent's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Design Agent. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have

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express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Design Agent in the Design Agent's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Design Agent any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Design Agent may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Design Agent and the Owner any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Design Agent or Owner may require.

§ 3.2.3.1 Omissions from the Drawings and Specifications of items obviously needed to perform the Work properly, such as attachments, bolts, hangers, and other fastening devices, shall not relieve the Contractor from the obligation to furnish and install such items.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Design Agent issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Design Agent for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.2.4.1 The Contractor shall not make any changes without prior written authorization from the Design Agent and the Owner.

§ 3.2.5 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Design Agent for evaluating and responding to the Contractor's requests for information that are not prepared in accordance with the Contract Documents or where the requested information is available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract

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Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Design Agent and shall not proceed with that portion of the Work without further written instructions from the Design Agent. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Design Agent in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Design Agent and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Design Agent that materials and equipment furnished under the Contract will be of first quality, prime manufacture, and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements, including substitutions not properly authorized, may be considered defective and, unless a longer period is required elsewhere in the Contract Documents, will be repaired and/or replaced, at the option of the Owner, for a period of one (1) years following Final Completion of the Work. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Design Agent, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

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

§ 3.6.2 The State of Rhode Island is exempt from payment of any federal or state excise, transportation, or sale tax. The Rhode Island Department of Administration Division of Purchases will furnish Exemption Certificates upon request.

§ 3.6.3 Pursuant to R.I. Gen. Laws§ 44-1-6. the Owner shall withhold payment from the Contractor if the Contractor does not maintain a regular place of business in Rhode Island in the amount of three (3%) percent of the Contract

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Sum until thirty (30) days after Final Completion and compliance by the Contractor with the requirements of such section.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

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

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

§ 3.7.3 The Contractor shall promptly notify the Design Agent and the Owner if the Contractor becomes aware that the Contract Documents are not in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

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

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

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- **.1** Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- **.2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- **.3** Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference

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between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

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

§ 3.9 SUPERINTENDENT

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

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

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

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, within (20) days after the issuance of the Purchase Order, shall prepare and submit for the Owner's and Design Agent's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals, not less frequently than monthly, as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work. The Contractor shall certify on the initial schedule and all revised schedules that they comply with the Contract Documents.

§ 3.10.2 The Contractor shall prepare a submittal schedule, within (20) days after the issuance of the Purchase Order and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Design Agent's approval. The Design Agent's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Design Agent reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

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

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

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

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

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

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

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

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

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

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

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

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

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

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Design Agent will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Design Agent. The Owner and the Design Agent shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Design Agent have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Design Agent will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

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§ 3.12.11 The Owner shall be entitled to reimbursement from the Contractor for amounts paid to the Design Agent for evaluation of resubmittals subsequent to the first resubmittal which does not conform to the Contract Documents.

§ 3.13 USE OF SITE

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

§ 3.14 CUTTING AND PATCHING

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

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

§ 3.15 CLEANING UP

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

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

§ 3.16 ACCESS TO WORK

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

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

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

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, the State of Rhode Island, and each executive, legislative, judicial, regulatory, or administrative body of the State, or any political subdivision thereof, including without limitation, any department, division, agency, commission, board, office, bureau, authority, school, water, or fire district, or other agency of Rhode Island state or local government that exercises governmental functions, any other governmental authority, and any quasi-public corporation and/or body corporate and politic, their elected or appointed officials, members, employees, and agents, Design Agent, Design Agent's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees and costs of arbitration and/or litigation arising out of or resulting from performance of the Work, and/or the obligations of the Contractor under the Contract Documents, but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed

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to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 DESIGN AGENT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture or engineering, as the Project may require, in the jurisdiction where the Project is located. That person or entity is identified as the Design Agent in the Agreement and is referred to throughout the Contract Documents as if singular in number.

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

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

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Design Agent will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction through the date the Design Agent issues the final Certificate for Payment and continuing until the expiration of the warranty period in § 3.5. The Design Agent will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

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

§ 4.2.2.1 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Design Agent for site visits made necessary by the fault of the Contractor or by defects and deficiencies in the Work.

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

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

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

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

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

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

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

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

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

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

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

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

§ 4.2.14 The Design Agent will review and respond to requests for information about the Contract Documents. The Design Agent's response to such requests will be made in writing within any time limits agreed upon or otherwise

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with reasonable promptness. If appropriate, the Design Agent will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

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

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

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

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Design Agent the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Design Agent may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Design Agent has reasonable objection to any such proposed person or entity or (2) that the Design Agent requires additional time for review.

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

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

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

§ 5.2.5 MANUFACTURERS AND FABRICATORS

§ 5.2.5.1 Not later than 10 days after the date of commencement of the Work, the Contractor shall furnish in writing to the Owner through the Design Agent the names of the manufacturers or fabricators for certain products, equipment, and systems identified in the Specifications and, where applicable, the name of the installing Subcontractor. The Design Agent may reply within 14 days to the Contractor in writing, stating: (i) whether the Owner or the Design Agent has reasonable objection to any such proposed person manufacturer or fabricator: or (ii) whether the Design Agent requires additional time to review.

§ 5.2.5.2 The Contractor shall not contract with a proposed manufacturer, fabricator, or Subcontractor to whom the Owner or Design Agent has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.5.3 If the Owner or Design Agent has reasonable objection to a manufacturer, fabricator, or Subcontractor proposed by the Contractor, the Contractor shall propose another to whom the Owner or Design Agent has no reasonable objection.

§ 5.2.5.4 The Contractor shall not substitute a manufacturer, fabricator, or Subcontractor previously selected if the Owner or Design Agent makes reasonable objection to such substitution.

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§ 5.3 SUBCONTRACTUAL RELATIONS

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

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

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

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

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

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation.

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

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

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

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§ 6.2 MUTUAL RESPONSIBILITY

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

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

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

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

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

§ 6.3 OWNER'S RIGHT TO CLEAN UP

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

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

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

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

§ 7.2 CHANGE ORDERS

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

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

§ 7.2.2 Subsequent to the approval of a Change Order as provided in§ 7.1.2, whether such Change Order changes the Contract Sum or Contract Time or both, no additional claim related to such Change Order will be considered by the Owner. Any change, once incorporated Into a Change Order, is all inclusive, and includes all factors that could have been considered at the time of the Change Order such as Project impact or schedule "ripple" effect.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Design Agent and signed by the Owner and Design Agent, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or

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Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

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

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

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

§ 7.3.4 Intentionally omitted.

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

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

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Design Agent shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Design Agent may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- **.1** Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- **.2** Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- **.3** Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- **.4** Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work;

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Design Agent. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Design Agent will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Design Agent determines, in the Design Agent's professional judgment, to be reasonably justified. The Design Agent's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

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§ 7.3.10 When the Owner and Contractor agree with a determination made by the Design Agent concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Design Agent will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Design Agent has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Design Agent and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in § 3.1 of the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Design Agent in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean working day, excluding weekends and legal holidays.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

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

§ 8.3 DELAYS AND EXTENSIONS OF TIME

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

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

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

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

§ 9.2 SCHEDULE OF VALUES

Within (20) days of the issuance of the Purchase Order, and promptly if revision is necessary from time to time as a result of a Change Order, the Contractor shall submit to the Design Agent and the Owner, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Design Agent and Owner

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may require. This schedule, if and when approved by the Design Agent and the Owner in writing, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least (10) days before the date established for each progress payment, the Contractor shall submit to the Design Agent and the Owner for approval an itemized Application for Payment prepared in accordance with the schedule of values, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Design Agent may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 All Applications for Payment for Change Orders must be accompanied by a Notice of Change in Purchase Order issued by the Owner.

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

§ 9.3.1.3 The form of Application for Payment shall be AIA Document G702, Application and Certification for Payment, supported by AIA Document G702A, Continuation Sheet.

§ 9.3.1.4 Until final payment, the Owner shall pay ninety-five (95%) percent of the amount due the Contract on account of progress payments.

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

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work. The Contractor shall immediately satisfy any lien, claim, or encumbrance against the site where· the Project is located and indemnify the Owner from and against all resulting costs and expenses, including without limitation, attorneys' fees.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Design Agent will, within (7) days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Design Agent determines is properly due, or notify the Contractor and Owner in writing of the Design Agent's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

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

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material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.4.3 The Contractor must submit all product literature, material and color samples with each Application for Payment or as requested in writing by the Owner.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

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

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

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

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

§ 9.6 PROGRESS PAYMENTS

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

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Design Agent will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Design Agent and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact

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Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Design Agent shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

If the Design Agent does not issue a Certificate for Payment, through no fault of the Contractor, within (7) days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within (7) days after the date established in the Contract Documents the amount certified by the Design Agent or awarded by binding dispute resolution, then the Contractor may, upon (7) additional days' written notice to the Owner and Design Agent, make a claim for payment as provided under the provisions of "Prompt Payment by Department of Administration," R.I. Gen. Laws §§ 42-11.1-1 et. seq.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

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

§ 9.8.3 Upon receipt of the Contractor's list, the Design Agent will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Design Agent's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Design Agent. In such case, the Contractor shall then submit a request for another inspection by the Design Agent to determine Substantial Completion. The Design Agent will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Substantial Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Design Agent for any additional inspections.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Design Agent will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if

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any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

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

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

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

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Design Agent will promptly make such inspection and, when the Design Agent finds the Work acceptable under the Contract Documents and the Contract fully performed, the Design Agent will promptly issue a final Certificate for Payment stating that to the best of the Design Agent's knowledge, information and belief, and on the basis of the Design Agent's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Design Agent's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. The Design Agent will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Final Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amount's paid to the Design Agent for any additional inspections.

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

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Design Agent so confirms, the Owner shall, upon application by the Contractor and certification by the Design Agent, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract

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Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Design Agent prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

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

- **.1** liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- **.2** failure of the Work to comply with the requirements of the Contract Documents; or
- **.3** terms of special warranties required by the Contract Documents.
- **.4** Claims permitted under the State of Rhode Island Department of Administration Division of Purchases General Conditions of Purchase.

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

§ 9.11 The Contractor and the Contractor's surety shall be liable for and shall pay the Owner as liquidated damages the sums specified in the Solicitation and Bid Form.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

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

§ 10.2 SAFETY OF PERSONS AND PROPERTY

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

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

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

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

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

§ 10.2.4.1 When use or storage of explosives, or other hazardous materials, substances or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall give the Owner reasonable advance notice.

§ 10.2.4.2 If the Contract Document· require the Contractor to handle materials or substances that under certain circumstances may be designated as hazardous, the Contractor shall handle such materials in an appropriate manner.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under

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Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Design Agent or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

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

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

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

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

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

§ 10.3.3 To the extent permitted by the provisions of R.I. Gen. Laws §§ 9-3 1-1 *et seq.*, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Design Agent, Design Agent's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

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

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to

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perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 Intentionally Omitted

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as is specified in the solicitation and as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- **.1** Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- **.2** Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- **.3** Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- **.4** Claims for damages insured by usual personal injury liability coverage;
- **.5** Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- **.6** Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- **.7** Claims for bodily injury or property damage arising out of completed operations; and
- **.8** Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1. 1.2 The Contractor's liability insurance shall include ail major coverages and be on a comprehensive general liability basis.

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

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

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the User Agency, and their elected and appointed officials, members, employees, and agents, the Design Agent and the Design Agent's consultants as additional insureds for claims caused in whole or in part by the

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Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.1.5 The Contractor ball be responsible for the prompt payment to the Owner of any deductible amounts under any insurance policies required under the Contract Document for claims made pursuant to such policies.

§ 11.2 OWNER'S LIABILITY INSURANCE
Intentionally Omitted.

§ 11.3 PROPERTY INSURANCE
Intentionally omitted.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND
§ 11.4.1 The Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in the Solicitation.

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

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK
§ 12.1 UNCOVERING OF WORK
§ 12.1.1 If a portion of the Work is covered contrary to the Design Agent's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Design Agent, be uncovered for the Design Agent's examination and be replaced at the Contractor's expense without change in the Contract Time.

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

§ 12.2 CORRECTION OF WORK
§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION
The Contractor shall promptly correct Work rejected by the Design Agent or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Design Agent's services and expenses made necessary thereby, shall be at the Contractor's expense.

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

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

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

§ 12.2.2.4 Upon request by the Owner and prior to the expiration of one (1) year from the date of Substantial Completion, the Design Agent will conduct and the Contractor shall attend a meeting with the Owner to review the facility operations and performance.

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

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

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

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the State of Rhode Island.

§ 13.2 SUCCESSORS AND ASSIGNS

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

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to any executive, legislative, regulatory, or administrative body of the state, or any political subdivision thereof, including without limitation, any department, division, agency, commission, board, office, bureau, authority, school, water, or fire district, or other agency of Rhode Island state or local government that exercises governmental functions, any other governmental authority, and any quasi-public corporation and/or body corporate and politic. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

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

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§ 13.4 RIGHTS AND REMEDIES

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

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

§ 13.5 TESTS AND INSPECTIONS

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

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

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Design Agent's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Design Agent.

§ 13.5.5 If the Design Agent is to observe tests, inspections or approvals required by the Contract Documents, the Design Agent will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

No interest shall be due or payable on account of any payment due or unpaid under the Contract Documents except in accordance with the provisions of 'Prompt Payment by Department of Administration.' R.I. Gen. Laws §§ 42-11.1-1 *et seq.*

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any

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other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;

.2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;

.3 Because the Design Agent has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1.

§ 14.1.2 Intentionally omitted.

§ 14.1.3 If one of the reasons described in Section 14.1.1 exists, the Contractor may, upon seven days' written notice to the Owner and Design Agent, terminate the Contract and recover from the Owner payment for Work executed.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Design Agent, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 refuses or fails to supply enough properly skilled workers or proper materials;

.2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;

.3 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Design Agent's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 Intentionally omitted.

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§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- **.1** cease operations as directed by the Owner in the notice;
- **.2** take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- **.3** except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Design Agent. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Design Agent will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.5.3 Claims for increase in the Contract Time shall set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the Work and the number of days' increase -in the Contract Time claimed as a consequence of each such cause of delay. The Contractor ball provide such supporting documentation as the Owner may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.

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§ 15.1.5.4 The Contractor hall not be entitled to a separate increase in the Contract Time for each one of the number of cause of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delay due to the fault of the Contractor.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor waives Claims against the Owner for consequential damages arising out of or relating to this Contract. This waiver includes damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This waiver is applicable, without limitation, to all consequential damages due the Owner's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims shall be referred to the Initial Decision Maker for initial decision. The Purchasing Agent appointed pursuant to the provisions of the "State Purchases Act.' R.I. Gen. Laws § 37-2-1 *et seq*.,will serve as the Initial Decision Maker, in accordance with the provisions of the State Purchases Act, State of Rhode Island Procurement Regulations, and this Section 15.2. An initial decision shall be required as a condition precedent to binding dispute resolution of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Design Agent of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to binding dispute resolution.

§ 15.2.6 Intentionally omitted.

§ 15.2.6.1 *Intentionally omitted*

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 Intentionally omitted.

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§ 15.3 MEDIATION
Intentionally omitted.

§ 15.4 ARBITRATION
Intentionally omitted.

§ 16 COMPLIANCE WITH APPLICABLE LAW

The Contractor and its Subcontractor s shall comply with all applicable federal, state, and local laws.

DRAFT

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SECTION 00503

SPECIAL CONDITIONS

1. **PROJECT SITE**

Armory of Mounted Commands
1051 North Main Street
Providence, RI 02904

2. **TIME FOR COMPLETION**

A. The work shall be completed within ninety (90) calendar days to Substantial Completion, and thirty (30) days thereafter to Final Completion, for a total completion time of **one hundred and twenty (120) calendar days**.

B. It is the Bidders' responsibility to anticipate and include, in their bid, allowances for normal weather conditions as necessary to complete the work. No claim for extra compensation or extension of time will be allowed on account of the contractor's failure to allow for normal seasonal weather conditions.

C. This time period was established using normal material ordering and delivery conditions and holidays for the time of the year that the work is expected to be undertaken.

D. The RI National Guard (the Owner) may at its sole discretion, agree to suspend work if weather conditions prevent the work from progressing in a satisfactory manner.

The contractor shall not be entitled to extra compensation for any reasons if the work is suspended by the State of Rhode Island for the reasons stated above.

3. **COMMUNICATIONS**

A. All notices, demands, requests, instructions, approvals, proposals and claims must be in writing.

A. Any notice to or demand upon the Contractor shall be sufficiently given if delivered at the office of the Contractor stated on the signature page of the Contract (or at such other office as he may from time to time designate in writing to the Authority) or deposited in the United States mail in a sealed, postage-prepaid envelope, or if delivered with charges prepaid to any telegraph company for transmission, in each case addressed to such office.

C. All papers required to be delivered to the Authority or Architect shall, unless otherwise specified in writing to the Contractor, be delivered to the contracting office at the Rhode Island National Guard, Construction and Facilities Management Office, 705 New London Avenue, Cranston, RI 02920 and any notice to or demand upon the Authority or Architect shall be sufficiently given if so delivered, or deposited in the United States mail in a sealed, postage-prepaid envelope, or delivered with charges prepaid to any telegraph company for transmission to said. The Rhode Island National Guard as such address, or to such other representatives of the Authority or to such other address as the Authority may subsequently specify in writing to the Contractor for such purpose.

D. Any such notice shall be deemed to have been given as of the time of actual delivery; or, in the case of mailing, when the same should have been received in due course of post; or, in the case of telegrams, at the time of actual receipt.

4. **MINIMUM RATES OF PAY**

A. Refer to Section 00601 herein.

5. **VISIT TO THE SITE**

A. Each bidder is to visit the site, view the existing areas and acquaint himself with all of the conditions under which the work is to be performed. Failure of the Contractor to acquaint himself with all the conditions involved will not relieve him from fulfilling the Contract in all its details.

6. **PAYMENTS TO CONTRACTOR**

A. "Periodical Estimates for Partial Payment in their final form must be submitted to the Architect for review each month, not later than (10) calendar days prior to the Owner's Payment Schedule, in order to be considered and approved for payment by the Owner at its next regular meeting. Periodical Estimates not submitted to the Architect in accordance with this article will not be reviewed at the subsequent meeting of the Owner but, at the next subsequent meeting of the Owner."

B. *Five percent (5%)* of the Contract amount shall be retained until thirty (30) days after FINAL COMPLETION of the project.

C. The Architect may decline to approve any Periodical Estimate for payment in whole or in part, or he may nullify the whole or any part of a Periodical Estimate previously approved, to protect the Owner from loss because of:

a) Defective work not corrected promptly.
b) Third-party claims filed.
c) Question whether the work can be completed on time or for the outstanding balance of the Contract Sum.
d) Unsatisfactory prosecution of the work by the Contractor.
e) Lack of Lien Releases
f) Not submitting Payroll Affidavits
g) Lack of revised Construction Implementation Schedule

D. Original Lien Releases from the G.C.'s Subcontractors and suppliers shall be submitted with each Payment Application, starting with Payment Application No. 2. Payment Applications <u>will not</u> be processed through the Architect's office otherwise.

Lien Releases Shall Include:
a) Amount of Agreement
b) Amount Paid To Date
c) Balance Owed

7. **CHANGES IN THE WORK**

A. The maximum allowance for overhead and profit combined, included in the total cost to the Owner, shall be based upon the following schedule:

.1 To the Contractor, for Work performed by his own forces, a maximum of 10% of the cost;
.2 To the Subcontractors for Work performed by his own forces or their subcontractors, a maximum of 10% of the cost;
.3 The combined maximum overhead and profit for Contractor and Subcontractors, a maximum of fifteen percent (15%) of the cost.

8. **CONDUCT OF THE WORK**

A. During the progress of the Work, the Contractor shall so conduct his work that as little inconvenience as possible is caused to the occupants. At the close of the work each day, the Contractor shall pick up and stow all equipment and miscellaneous material leaving the site in a neat and safe condition.

9. **WORKING HOURS**

A. Regular working hours are between 7:30 a.m. and 4:00 p.m., Monday through Friday. If the Contractor finds it necessary to work other than regular working hours, he must obtain a written approval in advance from the RIARNG Construction and Facilities Management Office.

B. Days which the State is closed because of holidays will also be a day of non-work for the general contractor.

B. If necessary to complete work on nights or weekends, Contractor shall inform the Owner 72 hours in advance of night or weekend to allow time for supervisory personnel.

10. **PROTECTION OF PEOPLE AND PROPERTY**

A. The Contractor shall be solely responsible for initiating, maintaining and supervising safety, security and protection programs and shall comply with all applicable laws, ordinances, rules and regulations concerning safety of people and the protection of property.

B. The Contractor shall repair or replace, at his own expense, with new any item, surface, or object that is damaged by the Contractor or damaged because of the Contractor's actions during the course of the Work and during any guarantee period.

C. Site and building conditions shall be restored to their condition as they were at the start of the Work. Before commencing work, the Contractor shall report any existing damage to the Architect in writing to assure that the Contractor will not be liable for preexisting damage.

D. The Contractor shall, at his own expense, repair or replace with new any item, surface, or object that is damaged by the Contractor or damaged because of the Contractor's actions during the course of the Work and during any guarantee period.

11. **SIGNS**

A. No signs except for safety signs will be allowed to be displayed on the site or on the building.

12. **INSURANCE**

A. Refer to the State Agency Solicitation provided by the State for Insurance requirements.

13. **DRAWINGS**

A. Structural drawings need not show architectural finishes. Architectural drawings need not show completed structural and/or mechanical or electrical installation or vice versa.

B. Architectural drawings shall have precedence over all other drawings. Architect shall make final decision when precedence is questioned.

C. All work drawn on Plans and not specified, or all work specified and not drawn are part of Contract Work required to be completed and are to be executed as fully as if described in both of these ways. Only work specifically noted in the following manner shall be considered as not being in the contract.

"...by Owner"

"...NIC" (Not In Contract)

D. If, after examination of Contract Drawings and Specifications, or after a visit to the premises, any discrepancies, omissions, ambiguities, or conflicts are found in or about Contract Documents or there is doubt as to their meaning, Architect is to be notified at the earliest possible date prior to the Bid Opening. Where information sought is not clearly indicated or specified, the Architect shall issue an addendum to the Bidders clarifying conditions. The addendum shall become part of the Contract Documents. Neither the Owner nor the Architect shall be responsible for any oral instructions.

E. If there are two ways and/or instruction in drawings and/or specifications, it shall be assumed that the Contractor has based his base bid price on the most expensive way.

F. If duplication is shown on drawings and/or specifications of work by more than one trade, Architect shall determine which trade shall complete the work and rebate shall be provided from the other trades to Owner.

G. Excerpts From Chapter 1 to 6 of Title of the General Laws of Rhode Island 1956

1. The attentions of the General Contractor is hereby directed to excerpts from Chapters 1 to 6 of title 7 of the General Laws of Rhode Island 1956 relative to the conditions precedent, etc. to carrying on business within the State for Foreign Corporations.

2. The certificate and power of attorney mentioned in the General Corporations Law, properly filled out, subscribed and sworn to and accompanied by a certified copy of the charter, articles or association, or other similar organization papers, together with all amendments, must be filed in the Office of the Secretary by all foreign corporations intending to carry on business within this State, or for a foreign corporation to enforce in the courts of this State any Contract made within the State.

3. Detailed information regarding Chapters 1 to 6 of Title 7 of the General Laws of Rhode Island, 1956, relative to the conditions precedent, etc., to carrying on business with the State for Foreign Corporations may be obtained from the Secretary of State, State House, Smith Street, Providence, Rhode Island.

14. **CONTRACTOR'S AGREEMENT**

A. During the performance of this contract, the Contractor agrees to comply with all provisions of Executive Order 11246, as amended, relative to the Equal Employment Opportunity for all persons without regard to race, color, religion, sex or national origin, and the implementing rules and regulations prescribed by the Secretary of Labor.

B. In the event of the Contractor's non-compliance with the non-discrimination clauses of this contract or with any such rules, regulations or orders, this contract may be canceled.

15. **STATE SALES TAX AND USE TAX EXEMPTION**

A. Bidders and their subcontractors and material suppliers shall not include in their Bids, any Rhode Island State Sales and Use Taxes relative to the performance of the Work that is covered by the exemption.

16. **NOTICE OF EQUAL OPPORTUNITY**

A. The Bidder's attention is directed to the fact that it will be required to comply with the State's equal opportunity employment, employment of the handicapped, age discrimination, and provide a certificate of non-segregated facilities in accordance with Appendix A- General Conditions of Purchase of the State of Rhode Island Procurement Regulations.

B. This Contractor shall also comply with the applicable requirements of R.I. Gen Laws Section 37-14.1-1 and 37-14.1-8 relating to Minority Business Enterprise and all rules and regulations promulgated thereunder.

17. **INDEMNIFICATION**

A. The Contractor shall take all responsibility for the Work and take all precautions for preventing injuries to persons and property in or about the Work; shall bear all losses resulting to or on account of the amount or character of the Work. The Contractor shall pay or cause payment to be made for all labor performed or furnished and for all materials used or employed in carrying out this Contract. The Contractor shall assume the defense of, and indemnify and save harmless, the Architect, the Owner, and their officers and agents from all claims relating to labor performed or furnished and materials used or employed for the Work; to inventions, patents and patent rights used in and in doing the Work; unless such patent infringement is due to a product or process specified by the Owner; to injuries to any person or corporation received or sustained by or from the Contractor and any employees, and subcontractors and employees, in doing the work, or in consequence of any improper materials, implements or labor used or employed therein; and to any act, omission or neglect of the Contractor and any employees therein.

18. **PUNCH LIST**

A. At the completion of the Work, and prior to acceptance by the Owner, the Architect and the Contractor shall inspect the project and prepare a written Punch List of their findings. This list is to be submitted to the Owner (RIARNG) to assist it in its own Final Inspection. The Contractor shall notify the Architect in writing when work on the punch list has been completed. Architect shall then complete one (1) Final Punch List Inspection; Contractor shall be invoiced for all follow-up Punch List Inspections, if so required, at the Architect's standard hourly rate of $125/hr.

19. **PAYROLL AFFIDAVITS**

A. "Original" weekly payroll affidavits shall be submitted by the Contractor, to the Owner.

20. **MONTHLY UTILIZATION FORMS**

A. Contractor and subcontractor shall file Standard Form 257 with the Local Authority and the Compliance Agency. They are to accompany periodical estimates whenever such estimates are submitted.

END OF SECTION

DOCUMENT 00504

PERFORMANCE BOND

1. Refer to the State Agency Solicitation provided by the State for Performance Bond requirements.

END OF DOCUMENT

DOCUMENT 00505

PAYMENT BOND

1. Refer to the State Agency Solicitation provided by the State for Payment Bond requirements.

END OF DOCUMENT

SECTION 00601

LABOR REGULATIONS

PART 1 - GENERAL

1.01 WAGE RATES

A. The rate per hour to be paid to mechanics, apprentices, teamsters, chauffeurs, and laborers employed on the Work shall not be less than the rate of wages in the Davis-Bacon "Minimum Wage Rates". This schedule shall continue to be the minimum rate of wages for said employees during the life of this Contract.

B. Keep posted on the site a legible copy of said schedule. Keep on file the wage rates and classifications of labor employed on this Work in order that they may be available for inspection by the Owner, Administrator, or the Architect.

C. Apprentices employed pursuant to this determination of wage rates must be registered and approved by the State Apprenticeship Council wherever rates for journeymen or apprentices are not listed.

D. The State of Rhode Island Department of Labor, Division of Professional Regulation General Decision Modification document current as of the bid posting date for this Project, is an integral part of the Bid Documents for use in fulfilling prevailing wage rate requirements. A copy is available on the web site of the State of Rhode Island Department of Administration, Division of Purchases.

The Division of Purchases Web Site Address:

http://www.purchasing.ri.gov/bidinfo/geninfo/geninfo.aspx

Click on “Prevailing Wage Tables”.

END OF SECTION

SECTION 01012

CONTRACTOR'S USE OF THE PREMISES

PART 1 – GENERAL

1.01 DESCRIPTION:

A. Work Included: This Section applies to situations in which the Contractor or his representatives including, but not necessarily limited to, suppliers, subcontractors, employees, and field engineers, enter upon the Owner's property.

B. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and sections of Division 1 of these specifications.

1.02 QUALITY ASSURANCE:

A. Promptly, upon award of the Contract, notify all pertinent personnel regarding requirements of this Section.

B. Require that all personnel who will enter upon the Owner's property certify their awareness of and familiarity with the requirements of this Section.

C. The Prime Contractor and his subcontractors shall wear an appropriate form of identification, whether it be a photo ID, shirt or jacket with company logo, etc.

D. The Prime Contractor and his subcontractors shall park their personal vehicles in appropriate locations off the Owner's site. One company vehicle of the prime contractor may be parked on the site at any time unless otherwise authorized in writing, by the Owner.

1.03 SUBMITTALS:

A. Maintain an accurate record of the names and identification of all persons entering upon the Owner's property in connection with the work of this Contract, including times of entering and times of leaving, and submit a copy of the record to the Owner daily.

1.04 TRANSPORTATION FACILITIES:

A. Truck and equipment access:

1. To avoid traffic conflict with vehicles of the Owner's employees and customers, and to avoid over-loading of streets and driveways elsewhere on the Owner's property, limit the access of trucks and equipment to the route provided by or directed by the Owner.
2. Provide adequate protection for curbs and sidewalks over which trucks and equipment pass to reach the job site.

B. Contractor's Vehicles:

1. Contractor's vehicles, vehicles belonging to employees of the Contractor, and all other vehicles entering the Owner's property in performance of the work of the Contract, shall use only the access route provided by or directed by the Owner.

2. Do not permit such vehicles to park on any street or other area of the Owner's property except in the areas directed or provided by the Owner.

3. Contractor shall assume sole responsibility for all parking and traffic violation of employees, subcontractors, suppliers, etc.

1.05 SECURITY:

A. Restrict the access of all persons entering upon the Owner's property in connection with the work to an Access Route authorized by the Owner.

1.06 GENERAL:

A. Contain operations at site to areas permitted by:

1. Law
2. Ordinances
3. Owner
4. Contract Documents

B. Do not unreasonably encumber site with materials or equipment.

C. Do not load the building or building components with weight that will endanger the structures.

D. Assume full responsibility for protection and safekeeping of products stored on premises.

E. Move any stored products which interfere with operations of Owner or other Contractor.

F. Obtain and pay for use of additional storage or work areas needed for operations.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION

SECTION 01015

EXISTING CONDITIONS

PART 1- GENERAL

1.01 SUMMARY

A. EXISTING CONDITIONS SURVEY

A. Before submitting a bid, the Contractor shall make a thorough examination of the conditions of the site, checking the requirements of the Plans and Specifications with the existing conditions.

B. No claim for extra compensation or extension of time will be allowed on account of the Contractor's failure to estimate properly the quantities, locations and measurements of all items required to complete the work.

C. The Contractor shall report any discrepancies to the Architect and request and interpretation before submitting a bid.

D. The Development will remain occupied for the duration of the Contract.

END OF SECTION

SECTION 01020

PROJECT ALLOWANCES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Intent: To provide adequate budget and bonding to cover items not precisely determined by the Owner prior to bidding. Allow within the proposed Contract Sum the amounts described below. Project Allowance shall be included in the Bid Price.

B. Entire Project Allowance and/or portions of any Project Allowances may be deleted to lower the Base Bid Price prior to Award of Contract and/or after Award of Contract.

C. Related Work:

1. Documents affecting work of this section including but not necessarily limited to General Conditions, Supplementary Conditions, and sections in Division 1 of these Specifications. Any unused portion of the following "Project Allowances" shall be refunded to the Owner upon final completion of the project.

2. Other provisions concerning Project Allowances may also be stated in other Sections of these specifications.

3. Contractor shall submit original receipts and complete time and materials break-down for all Project Allowance items.

1.02 SPECIFIC PROJECT ALLOWANCES:

A. Brick Masonry Allowance:

1. Allow the sum of Twenty-five Thousand Dollars ($25,000) for replacement of existing exterior brick masonry. Note: These moneys shall be utilized for areas in addition to brick masonry work shown on the drawings and specified in Section 01270, Unit Prices.

B. Masonry Pointing Allowance:

1. Allow the sum of Fifteen Thousand Dollars ($15,000) for additional pointing of exterior masonry. Note: These moneys shall be utilized for areas in addition to masonry pointing work shown on the drawings and specified in Section 01270, Unit Prices.

C. Limestone Repairs Allowance:

1. Allow the sum of Twenty-five Thousand Dollars ($25,000) for additional repairs to the exterior limestone. Note: These moneys shall be utilized for areas in addition to the limestone repair work shown on the drawings and specified in Section 01270, Unit Prices.

D. Limestone Replacement Allowance:

1. Allow the sum of Forty-five Thousand Dollars ($45,000) for additional replacement of the exterior limestone. Note: These moneys shall be utilized for areas in addition to the limestone replacement work shown on the drawings and specified in Section 01270, Unit Prices.

E. Unforeseen Conditions Allowance:

1. Allow the sum of Twenty Thousand Dollars ($20,000) for unforeseen and unanticipated conditions encountered resulting from removal of existing building components.

1.03 GENERAL

A. Adjustment of Costs:

1. Should actual purchase cost be more than specified amount of allowance, the Contract Sum will be adjusted by Change Order, equal to the amount of the difference.

2. Contractor shall include in the Base Bid, the full amount of allowances whether or not any Bid Alternate is implemented.

3. Any allowance amount or unused portion of each allowance amount shall be refunded to the Owner at any time after the Award of Contract and/or throughout the Construction Phase at Owner and Architect discretion.

4. Utilization of each and any project allowance shall be via written authorization of the Owner and/or Architect.

PART 2 – PRODUCTS

Note Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION

SECTION 01070

ARCHITECTURAL ABBREVIATIONS AND SYMBOLS

1.01 Reference to a technical society, institution, association or governmental authority is made in the Specifications in accordance with the following abbreviations:

AAMA	Architectural Aluminum Manufacturers Association
AASHO	American Association of State Highway Officials
AC OR ACOUS	Acoustical
ACI	American Concrete Institute
ADJ	Adjustable
A/E	Architect/Engineer
A.F.F.	Above Finish Floor
AIA	American Institute of Architects
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AL or ALUM	Aluminum
ALS	American Lumber Standards
ALT	Alternate
A.P.	Access Panel
APA	American Plywood Association
APPROX.	Approximate
ARCH	Architectural
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
@	At
ATI	Asphalt Tile Institute
A/V	Audio Visual
AWI	Architectural Woodwork Institute
AWPA	American Wood Preserver's Association
AWPI	American Wood Preserver's Institute
AWS	American Welding Society
B.C.I.	Background Criminal Investigation
BD.	Board
BLK'G.	Blocking
BM.	Beam
BOTT. or BOT.	Bottom
BRK	Brick
BS or BACKSP.	Back Splash
BULL.BD.	Bulletin Board
CAB.	Cabinet
CARP.	Carpet
C.B.	Catch Basin
CEIL'G or CLG.	Ceiling
CHBD.	Chalkboard
CHEM.	Chemical or Chemistry
C.J.	Control Joint
CLOS.	Closet
C.M.U.	Concrete Masonry Units
COL.	Column
COMP.	Computer
CONC.	Concrete
CONC.BLK.	Concrete Block
CONF.	Conference
CONT. or CONTIN.	Continuous

CONTR.	Contractor
COV'RD.	Covered
CR.	Classroom
C.S.	Commercial Standard U.S. Department of Commerce
C.S.I.	Construction Specifications Institute
C.T.	Ceramic Tile
DEPT.	Department
DET.	Detail
D.F.	Drinking Fountain
DIM.	Dimension
DISP.	Dispenser
DR.	Door
D.S.	Drench Shower or Downspout (use applicable)
D.W.	Dish Washer
DWG.	Drawing
EL. or ELEV.	Elevation
ELEC.	Electrical
ELEV.	Elevator
ENT. or ENTR.	Entrance
EP. RES.	Epoxy Resin
EQ.	Equal
EQUIP.	Equipment
EXIST. or	
EXIST'G or E.	Existing
EXP.	Exposed
EXP. JT.	Expansion Joint
EXP. STR.	Exposed Structure
F.A.	Fresh Air
F.B.	Fiber Board
F.D.	Floor Drain
F.E.	Fire Extinguisher
FGJA	Flat Glass Jobbers Association
FIN	Finish(ed)
FL. or FLR.	Floor (ing)
FLG.	Flashing
F.M.	Factory Mutual
F.N.D.	Feminine Napkin Disposal
F.O.	Face Of
F.P.	Fire Proofing
FS	Federal Specification
G.A.	Gypsum Association
GALV.	Galvanized
G.B.	Glazed Block or Grab Bar
G.C.	General Contractor
GEN.	General
GL.	Glass
G.P.D.W.	Gypsum Drywall
G.W.B.	Gypsum Wallboard
GYP.	Gypsum
GYP. BD.	Gypsum Board
H.C.	Handicap
H.M.	Hollow Metal
H.M.U.	Hollow Masonry Unit
HT. or HGT.	Height
HVAC	Heating, Ventilating and Air Conditioning
ICBO	Uniform Building Code
IES	Illuminating Engineering Society
INSUL.	Insulation or Insulated
J. or JAN.	Janitor

KIT.	Kitchen
LAB.	Laboratory
LAD.	Ladder
L.A.R.R.	Liquid Applied Rubber Roofing
L.C.C.	Lead Coated Copper
L.W.S.	Liquid Writing Surface
M.	Man
MAN.	Manual
MAS. or MSRY.	Masonry
MAX.	Maximum
MECH.	Mechanical
MED.	Medium
MFGR. or MANF.	Manufacturer
MIA	Marble Institute of America
MIN.	Minimum
M. or MIR.	Mirror
MLMA	Metal Lath Manufacturers Association
M.O.	Masonry Opening
MOD.	Modular
MS	Military Specification
MSTD	Military Standard
MTD.	Mounted
MTL. or MET.	Metal
NAAMM	National Association for Architectural Metal Manufacturers
NAT.	Natural
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards'
NEC	National Electrical Code of NBFU
NFPA	National Fire Protection Association
N.F.R.	Nonwoven Fiberglass-Reinforced
NHLA	National Hardwood Lumber Association
N.I.C.	Not In Contract
NLMA	National Lumber Manufacturers Association
NO. or #	Number
NTMA	National Terrazzo and Mosaic Association, Inc.
N.T.S.	Not To Scale
NWMA	National Woodwork Manufacturers Association
O.C.	On Center
O. D.	Outside Diameter
OFF.	Office
O.H.	Overhead
O.I.	Owner's Insurance
OPP. HAND.	Opposite Hand
ORIG.	Original
OZ.	Ounce
PASS.	Passage
P.E.P.	Polyester Epoxy Paint
PL.	Plate
P.LAM.	Plastic Laminate
PLYD. or PWD.	Plywood
PNL.	Panel
PORT.	Portable
P.P.	Pitch Pocket
PREP.	Preparation
PROJ.	Project(ion)
PTD. or PT.	Painted
P.T.	Pressure Treated
P.T.D.	Paper Towel Dispenser
P.T.H.	Paper Towel Holder

PTN. or PART.	Partition
R.	Riser
R.B.	Rubber Base
R.D.	Roof Drain
REF.	Reference
REFRIG.	Refrigerator
REFIN.	Refinish
REQ'D or REQ.	Required
REINF.	Reinforced(ing)
RESIS.	Resistant
R.H.	Roof Hatch
R.L. or R.W.L.	Rain Water Leader
RM.	Room
R.T.U.	Roof Top Unit
RUB.	Rubber
R.V.	Roof Vent
R.V.T.	Reinforced Vinyl Tile
S.	Sink
SAN.	Sanitary
S.A.T.	Suspended Acoustical Tile
S.B.C.C.I.	Standard (Southern) Building Code
S.C.	Solid Core
SCHED.	Schedule
SCPI	Structural Clay Products Institutes
S.D.	Standard Detail or Soap Dispenser
SDI	Steel Deck Institute
SECT.	Section
SH. or SHLV.	Shelf - Shelving
SHT.	Sheet
SHWR.	Shower
SIM.	Similar
SMACNA	Sheet Metal and Air Conditioning Contractors National Association Inc.
S.N.D.	Sanitary Napkin Dispenser
SPEC.	Specification
SPR	Simplified Practice Recommendation, U.S. Department of Commerce
SSPC	Steel Structures Painting Council
STL. or ST.	Steel
STN. STL. or S.S.	Stainless Steel
STOR.	Storage
STRUCT.	Structural
SUPP.	Supplementary
SUSP.	Suspended
T. or TOIL.	Toilet
T.B. or TKBD.	Tackboard
TCA	Tile Council of America
TEL.	Telephone
TEMP.	Tempered
THK.	Thickness
TKS.	Thickness
T.M.	Tilt Mirror
T.O.S.	Top of Steel
TYP.	Typical
U.L.	Underwriter's Laboratories, Inc.
ULC	Underwriter's Laboratories of Canada
USA	U.S. of America Standards Association
U.V.	Unit Ventilator
VAR.	Varnish
V.A.T.	Vinyl Asbestos Tile
V.C.B.	Vinyl Cover Base

V.B.	Vinyl Base
VEST.	Vestibule
VERT.	Vertical
W.	Women
W/	With
WD.	Wood
WDW. or WIN.	Window
W.H.	Wall Hung
W.R.	Wall Receptacle
W.W.F.	Welded Wire Fabric

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION

SECTION 01072

DEFINITIONS

PART 1 - GENERAL

1.01 DESCRIPTION:

A. The General Conditions and applicable portions of Division 1 of the Project Manual are a part of this Section.

1.02 DEFINITIONS:

A. Purchaser, State, Owner Agent, Rhode Island Army National Guard means the Owner.

B. A/E shall mean the Architect who has a Contract with the Owner.

C. Contractor shall mean the person or firm under Contract with the Owner to construct the project.

D. “Furnish” and “provide” means to supply, erect, install and connect up complete in readiness for regular operation, particular work referred to, unless otherwise specified.

E. “Supply” means purchase and delivery of material to the site.

F. “Install” means to erect in place the supplied item.

G. The term “Owner-Contractor Agreement” where used therein shall refer to the Owner’s purchase order.

H. The term “Change Order” where used herein shall refer to the Owner’s purchase change order.

I. Award of Contract and Date of Purchase Order refer to the same.

J. “Day”, as used throughout the contract unless otherwise stated, means “calendar day”.

1.03 THE WORK:

A. The work comprises the completed construction and documentation required by the Contract Documents and includes all labor needed to produce such construction, and all materials and equipment incorporated or to be incorporated in such construction, and all manuals, reports, tests, releases, punch lists, operating instructions and the like to provide new work as shown on the Contract Documents.

1.04 DATE OF SUBSTANTIAL COMPLETION:

A. The Date of Substantial Completion of the Work or designated portion thereof, is the date certified by the Architect when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner can occupy or utilize the Work or designated portion thereof, for the use for which it is intended.

1.05 DATE OF FINAL COMPLETION (FULLY COMPLETED):

A. The Date of Final Completion of the Work is the date certified by the A/E when he finds all Work is acceptable and has been performed and completed in accordance with the terms and conditions of the Contract Documents.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION

SECTION 01100

SUMMARY OF THE WORK

PART 1 - GENERAL

1.01 SUMMARY

A. Project Identification:

Masonry Repairs & Roof Replacement at the
Armory of Mounted Commands
1051 North Main Street
Providence, RI 02904

The scope of work generally involves exterior masonry restoration/repairs to existing brick and limestone and roof replacement (low-sloped PVC) at the "Head Shed" of the building.

B. Permits and Fees:

1. Apply for, obtain and pay for permits and fees required.
2. The Building permit will be issued by the State of Rhode Island Building Code Commission.
3. All other applicable permits will also be issued by the State of Rhode Island.
4. Submit copies of all permits to Architect.

C. Codes: Comply with applicable codes and regulations of authorities having jurisdiction. Submit copies of inspection reports, notices and similar communications to Architect.

D. Dimensions: Verify dimensions indicated on drawings with field dimensions, prior to submitting Bid. Do not scale drawings.

E. Existing Conditions: Notify Architect of existing conditions differing from those indicated on the drawings.

F. Mock-Up Wall Sample: Provide an 8' x 8' area mock-up wall sample(s) to establish an acceptable standard of work and serve as a benchmark for evaluating and accepting subsequent work on the building and other stone masonry as may be included in the Scope of Work. This mock-up wall sample(s) will also be used to provide the following samples for review and approval by an Rhode Island Historical Preservation & Heritage Commission (RIHPHC) staff architect; mortar samples, replacement brick samples, cleaning samples, patching and epoxy-gel injection crack repairs for existing limestone. This will also serve as a benchmark for evaluating and accepting subsequent work on the building. The contractor shall also be responsible for coordinating and acquiring the necessary approvals from RIHPHC prior to commencing work.

1.02 RELATED WORK:

A. The General Conditions, Supplementary Conditions and applicable portions of Division 1 of the Project Manual are a part of this section which shall consist of all labor, equipment and materials necessary to complete all work indicated on the drawings, herein specified, or both; and as related to the project or projects defined in the Bidding and Contract requirements.

B. The specification format used herein is in accordance with the master CSI format, and in no way intends to restrict this Contractor from expediting his work as he sees fit, nor is there any intention of segregating the units of work as related to specific trades involving jurisdictional labor problems.

1.03 PROJECT COORDINATION:

A. The Contractor selected to complete work specified herein shall also be responsible for coordinating the work of other trades. All work or portions thereof shall be completed simultaneously.

B. Deleted.

C. The Contractor shall provide all work incidental to and necessary for a complete and proper installation of the specified and intended work of the Project.

D. Prior to removing existing improvements, consult with Owner to determine which improvements will be turned-in to the Owner. If Owner does not wish to keep existing improvements, Contractor shall dispose of item in a legal and approved manner.

E. Provide all core drilling and demolition work necessary to accommodate the specified work and all related work without creating structural or other damage. Patch and repair all wall, floor and ceiling assemblies with approved construction materials to match existing construction materials. Provide fire rated materials between fire separation wall assemblies, minimum two (2)-hour U.L. approved. Visit the site and become familiar with the intended work prior to submitting bid.

F. Visit the site and become familiar with the specified and the intended work prior to submitting bid.

G. Provide all saw cutting, paving, removals and disposal of paving, patching, repairing, seal coating, painting, etc. of concrete and bituminous paving which is required for a complete and proper installation of the entire irrigation systems.

H. Secure and pay for, as necessary for proper execution and completion of the work, and as applicable at time of receipt of bids, the following:

1. All permits
2. Government Fees
3. Licenses
4. Utility Company Charges.

I. Give required notices.

J. Lay out all work and be responsible for all lines, elevations and measurements. Verify the figures shown before laying out the work and be responsible for any error resulting from failure to do so.

K. Notify all trades, subcontractors and suppliers of all designated alternative and be responsible for their coordination.

L. Coordinate the work of all trades. All mechanical and electrical work shall be completed by qualified Contractors licensed in the State in which the work is being performed.

M. The Contractor shall be responsible for carefully coordinating all proposed demolition work and new construction work with the Owner. The Owner must maintain use of the sites during the Construction Phase. The Contractor may be required to complete work in several phases. Plan accordingly and include all related costs in the Base Bid. Consult Owner prior to submitting bid.

1.04 GENERAL RESPONSIBILITIES OF THE CONTRACTOR:

A. The Contractor shall be responsible for all personnel involved in the work, including those of his direct employ, his subcontractors and suppliers of materials and equipment and/or labor. The Technical Specifications have been divided for convenience only, to cover the Scope of Work, and where reference to a particular Contractor is noted, it is for convenience only. **The Owner and A/E recognize only one Contractor as a party to this Contract.**

B. Except as specifically noted, provide and pay for:

1. Labor, materials and equipment
2. Tools, construction equipment and machinery
3. Water, heat and utilities required for construction - unless otherwise directed herein.
4. Other facilities and services necessary for proper execution and completion of work

C. Owner is exempt from sales tax on products permanently incorporated in the work.

D. The Contractor and his subcontractors who are selected to complete the proposed new work shall have a minimum of five (5) consecutive years' experience providing similar work to that specified.

E. Certain portions of the proposed new work may require civil, structural, mechanical, fire sprinkler, and electrical work which may be described with notes only and may not be specifically drawn and/or detailed. The Contractor shall be responsible for engaging the services of a qualified State-Island Licensed Civil, Structural, Electrical, Mechanical, and/or Fire Sprinkler System Engineer to consult and/or design any work the Contractor and his subcontractors feel they are not familiar with. Furthermore, all civil, structural, mechanical, fire sprinkler system, and electrical work shall be completed by Qualified State-Licensed Contractors applicable to each discipline.

F. This Contractor shall complete all work within the specified amount of days described in other sections herein.

G. The Contractor shall be responsible for patching, repairing and restoring to original new condition, <u>all</u> portions of the site and building damaged and or adversely affected in any way during construction. The Owner and the Architect shall review and approve any and all new work and related restoration work prior to the Contractor considering work to be complete.

H. Submit original receipts for <u>all</u> work completed with Allowance moneys. Do not utilize Allowance moneys without the written authorization of the Architect.

I. The Contractor, upon Substantial Completion of this project, shall provide the Owner and Architect with a certified statement stating that all work has been provided in conformance with the Contract Documents, applicable manufacturer(s) written specifications and recommendations.

J. This Scope of Work may be completed during the winter months or may lapse into the winter months. The Contractor shall prepare his bid as if the work will be completed during winter conditions.

K. Provide <u>all</u> temporary fencing, hay bales and other related barriers and protection/prevention materials and equipment required to protect the property of the Owner and others and if applicable, to conform to Wetlands rules and regulations.

L. The Contractor shall provide adequate dust control at each site throughout the duration of the Construction Phase.

M. The Contractor shall install all products in strict conformance with these specifications and/or the manufacturers' written instructions and recommended practices, whichever is most stringent. No exceptions will be allowed.

N. Comply with codes, ordinances, rule, regulations, orders and legal requirements of public authorities which bear on performance of work.

O. Promptly submit written notice to A/E of observed variance of Contract Documents from legal requirements.

1. Appropriate modifications to Contract Documents will adjust necessary changes.

2. Assume responsibility for work known to be contrary to such requirements, without notice.

P. Enforce strict discipline and good order among employees. Do not employ persons not skilled in assigned task.

Q. The Contractor shall provide <u>all</u> as-built reproducible drawings, disk and/or CD compatible with Owner's computer equipment at no additional cost to the Owner. The as-built drawings shall reflect actual systems installation and work completed. No exceptions will be allowed.

R. The Contractor shall be responsible for patching, repairing and restoring to original new condition, <u>all</u> portions of the site and building damaged and or adversely affected in any way during construction. The Owner and the A/E shall review and approve any and all new work and related restoration work prior to the Contractor considering work to be complete. If any portion of the Owner's property is damaged during the course of construction, Contractor shall assume sole responsibility to complete repairs.

1.05 WORK BY OWNER: Not Applicable.

1.06 RESOLUTION OF CONTRACT DOCUMENT CONFLICTS OR CONFUSION:

A. <u>Conflicts or Confusion:</u> Prior to submitting bid, the Contractor shall carefully study and compare the Contract Documents and shall request clarification in all cases of apparent conflict or confusion. **In case of conflict or confusion where the Contractor did not request clarification prior to submitting his bid, the Contractor shall interpret the Contract Documents to require the greater quantity, higher quality, most restrictive, and most expensive of the possible interpretations**.

1.07 PLANNING THE WORK:

A. The Contractor shall plan his schedule to produce the work expeditiously in an orderly manner without interfering with the Owner's operations or the operations of other building tenants (occupants).

B. The Contractor shall substantially complete one phase of construction prior to beginning another phase of construction related work.

C. Coordinate and carefully plan work described herein and as shown and described elsewhere and on the drawings.

D. Owner shall be notified by the contractor at least seventy-two (72) hours prior to <u>all</u> "downtime" of systems involved in construction.

E. The Contractor shall direct all questions and submittals to the office of the Architect, only. The Contractor shall assume all responsibility for work associated with the project if the Architect is not first advised.

F. The Contractor shall visit the site and become familiar with the specified and the intended work prior to submitting his bid. No additional costs will be allowed for work obviously intended to be a part of this Contract. Architect's decision shall be final.

G. Contractor shall be responsible for coordinating and cross-referencing all drawings and portions of the Project Manual. **DO NOT SEPARATE THE DRAWINGS AND PAGES OF THE PROJECT MANUAL.**

1.08 SAFETY PRECAUTIONS:

A. OSHA:

1. These construction documents of construction hereby contemplated are to be governed at all times by applicable provisions of the Federal Law (s), including but not limited to the latest amendments of the following:

   a) Williams; Steiger Occupational Safety & Health Act of 1970, Public Law 91-956;
   b) Part 1510 - Occupational Safety & Health Standards, Chapter XVII of Title 29, Code of Federal Regulations.

2. This project, the Contractor and his subcontractors shall, at all times, be governed by Chapter XIII of Title 29, Code of Federal Regulations, Part 1518 - Safety and Health Regulations for Contraction, (36 FR 75), as amended to date.

B. Asbestos Abatement: Hazardous Materials Abatement is a part of this contract. The Contractor will be responsible for the removal of asbestos or any other hazardous materials that are present on the project site. It is the intent of the Owner to have the Contractor remove and legally dispose all asbestos and any other hazardous materials from the site, in full accordance with the requirements of the Rhode Island Department of Health; Division of Occupational Health/Radiation Control and this agency's issue "Rules and Regulations for Asbestos Control, January, 1986 (R23-24.5 - ASB), or as amended to date.

C. Emergencies:

1. Should a tornado, hurricane, gale or heavy wind warnings be issued, every practicable precaution shall be taken by the Contractor to minimize the danger to persons, to the work and to the adjacent property. Such damage caused to any part of the work shall be rectified or replaced to complete satisfaction of the A/E and at no expense to the Owner. Injury to personnel or damage to adjacent property because of the work shall be the complete responsibility of the Contractor, and he accepts exclusive liability for same.

D. Loading:

1. No part of any structure involved in this Contract shall be loaded during construction with a weight greater than it is calculated to carry with safety. Should any accidents or damage occur through any violation of this requirement, the Contractor shall be held solely responsible under his Contract and bond. When, in the opinion of the A/E, portions of the structure appear to be overloaded, it shall be the Contractor's responsibility to prove otherwise, or the Contractor shall follow the instructions of the A/E in connection with reduction of the loads.

E. Compliance with the Owner's Insurer, hereinafter referred to as OI.

1. If applicable, plans and final installation of Fire Suppression Systems are subject to acceptance by the OI.

2. All proposed uses of plastic construction materials shall be referred to the OI for review and appropriate recommendations.

3. Fire protection equipment shall be installed in conformance with the standards to the National Fire Protection Association (NFPA). Devices listed by Underwriters Laboratories Inc. (UL) or any other recognized testing laboratory shall be used.

4. Electrical installation shall conform to the National Electrical Code (NEC).

5. Combustible stock and processing equipment should not be moved into the buildings until recommended suppression systems are properly installed, tested, and in full service.

6. Fire prevention and protection during the construction period shall include the following:

   a) Use of public fire department, plant fire brigade, and portable extinguishing equipment.

   b) Early contract awards and expediting of fire protection equipment.

   c) Proper supervision of open flames and temporary wiring.

   d) Suitable access to the site with hydrants and water available on the site in early stages of construction.

   e) Supervision of welding or cutting operations, including use of flame-proofed tarpaulins.

   f) Keeping combustible material, including process equipment awaiting installation, to a minimum, and as far away as possible from buildings under construction.

   g) Keeping the construction site clean and orderly.

   h) Detaching Contractor's sheds from buildings under construction, if applicable.

   i) Special precautions such as shoring of masonry walls and temporary tie-bracing of structural steel work to prevent windstorm damage during construction.

1.09 WORK SEQUENCE:

A. The Contractor shall plan his schedule to produce the work expeditiously in an orderly manner without interfering with the Owner's operations.

B. Work Hours: all work shall be conducted between the normal working hours of 7:30 A.M. and 4:00 P.M. local time, and during regular weekdays, unless otherwise adjusted by the Owner. No work shall be performed before or after the normal working hours or during Saturdays, Sundays and Holidays as defined by the Department of Labor. The Owner may waive this requirement in an emergency situation.

PART 2 – PRODUCTS: Not Used.

PART 3 – EXECUTION:

3.01 REQUIREMENTS:

A. Maintain at job site, a minimum of one (1) copy of:

1. Signed Contract Drawings
2. Project Manual
3. Addenda
4. Reviewed Shop Drawings
5. Change Orders
6. Other Modifications to Contract
7. Field Test Records
8. Approved material samples
9. As-built Drawings

B. The Owner or Architect will accept only those Contract Documents that are signed or initialed and dated on each page.

C. Store documents in field construction office(s), apart from documents used for construction.

D. Provide files and racks for storage of documents.

E. File documents in accordance with CSI Master Format.

F. Maintain documents in clean, dry, legible condition.

G. Do not use record document for construction purposes.

H. Make documents available at all times for inspection by A/E and Owner.

I. At Final Completion of the Project, turn over to the Architect, all Project Record Documents. All items such as reviewed shop drawings, Change Orders, test reports, etc. shall be delivered in bound book form and on CD, disk compatible with the Owner's and the Architect's computer systems.

3.02 RECORDING:

A. Label each document "PROJECT RECORD DRAWINGS"

B. Keep record documents current.

C. Do not permanently conceal any work until required information has been recorded and inspected.

D. Contract Drawings: Legibly mark to record actual construction.

1. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.

2. Field change of dimension and detail.

3. Changes made by Change Order or Field Order.
4. Details not on original contract drawings.

E. Specification and Addenda: legibly mark up each section to record:

1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.

2. Changes made by change order or field order.

3. Other matters not originally specified.

F. Shop Drawings: Maintain as record documents; legibly annotate drawings to record changes made after review.

3.03 CUTTING AND PATCHING

A. Execute cutting, fitting or patching or work, required to:

1. Make several parts fit properly.

2. Uncover work to provide for installation of ill-timed work.

3. Remove and replace defective work.

4. Remove and replace work not conforming to requirements of Contract Documents.

5. Install specified work in existing construction.

B. In addition to contract requirements, upon written instruction of the A/E:

1. Uncover work to provide for A/E's observation of covered work, as required by the General Conditions.

2. Remove samples of installed materials for testing; as required by the General Conditions.

3. Remove work to provide for alteration of existing work.

C. Do not endanger any work by cutting or altering work or any of it.

D. Do not cut or alter work of another contractor without written consent of A/E.

E. Prior to cutting which affects the structural integrity and safety of project work or that of another contractor, seek prior written notice to the Architect requesting consent to proceed with cutting. All such cutting shall be certified by a Rhode Island licensed structural engineer at no additional cost to the Owner or Architect. All related costs shall be the sole responsibility of the Contractor.

F. Prior to cutting and patching done on instruction of AE, submit cost estimate.

G. Should conditions of work, or schedule indicate change of materials or methods, submit written recommendation to A/E, including:

1. Conditions indicating change.

2. Recommendations for alternative materials or methods.

3. Submittals as required for substitutions.

H. Submit written notice to A/E, designating time work will be covered, to provide for observation.

I. Payment for costs caused by ill-timed or defective work, or work not conforming to Contract Documents, including costs for additional services of A/E, will be borne solely by the Contractor.

J. Preparation (prior to cutting):

1. Provide shoring, bracing and support as required to maintain structural integrity.

2. Provide protection for other portions of project.

3. Provide protection from elements.

K. Performance: Perform all work of fitting, adjustment, cutting, patching, finishing and restoration to perfectly match the quality as specified throughout these specifications

3.04 CONTRACTOR INSPECTION:

A. Inspect existing conditions of work, including elements subject to movement or damage during cutting and patching.

B. Repair/replacement of defective work will not constitute sufficient cause to extend the contract deadline

END OF SECTION

SECTION 01113

HAZARDOUS-MATERIALS PROCEDURES

PART 1 - GENERAL

1.01 HAZARDOUS MATERIALS DISCOVERY

A. The Owner has determined that there are hazardous materials to be encountered under the work of this Project.

1.02 SECTION INCLUDES

A. The Contractor may be required to provide testing to verify the presence of other potentially hazardous materials using the Allowances.

B. The Prime Contractor shall be responsible for the removal and disposal of all hazardous-containing materials that have been found on the site. It is the intent of the Owner to have the Contractor remove and dispose all hazardous materials in full accordance with the Rhode Island Department of Health; Division of Occupational Health/Radiation Control and this Agency's issue "Rules and Regulation for Hazardous Materials Control", as amended to date.

"Invoices for removal and abatement shall be accompanied by approved shipping documents which describe final disposal location, date or disposal, approved signatures and General Contractor signature of acknowledgment."

1.03 RELATED WORK:

A. Documents affecting work of this section including but not necessarily limited to General Conditions, Supplementary Conditions, and sections in Division 1 of these Specifications.

1.04 RELATED REPORTS

A. Pertinent portions of applicable Survey and Sampling Reports are included herein, following this page. They consist of:

1. Environmental Consulting & Management (ECM) - Asbestos Sampling Report, dated May 8, 2018.

2. Environmental Consulting & Management (ECM) - Asbestos Abatement Plan (pertinent to roof & roof access room only), dated May, 2018.

3. CONTRACTOR NOTE WELL: Quantities and estimated removal costs if applicable, are for reference only. The Contractor shall verify all quantities and assume all costs relative to the complete and proper removal and disposal of hazardous materials abatement.

4. For informational purposes only, the existing roof system compositions compiled by the roof test cores taken by the asbestos inspector, Environmental Consulting Management (ECM) are as follows:

a. The roof assembly of the small, lower roof over the main entrance consists of built-up tar and gravel over concrete deck.
b. The roof assembly of the main, upper roof consists of 60-mil EPDM membrane; rigid isocyanurate insulation; felt paper; mastic; over wood deck.

c. This information was taken from the limited asbestos assessment included herein. Thickness of roof systems were not measured, and it is unknown if the roof system for each level is homogenous. Therefore, Contractor shall assume that two (2) roof systems may exist elsewhere throughout the roofs. No additional compensation will be allowed if systems other than the above-noted are encountered by the Contractor.

1.05 ABATEMENT PROCEDURES (By the Contractor)

A. Obtain the services of a State Certified Abatement Contractor to remove and dispose the hazardous materials in accordance with Federal, State and Local rules and regulations.

B. Retain hazardous materials abatement invoices for submittal with required close-out record documents. Invoices must be accompanied by complete shipping documents showing final disposal location.

C. A Pre-abatement Meeting with the Owner's Representative, the Prime Contractor, and the designated Abatement Contractor shall be held one (1) week prior to removal.

D. Provide other abatement related services not specifically described herein, but needed for a complete and proper job.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

May 8, 2017

RI Army National Guard
Facilities & Maintenance Office
Attn: Ms. Ann Marie Ethier
705 New London Avenue
Cranston, RI 02920

RE: Asbestos Sampling – RI-ANG Armory Mounted Command Building Roof

Dear Ms. Ethier,

Enclosed are the analytical results, observations, and recommendations associated with the limited asbestos assessment performed by Environmental Consulting & Management Inc. (ECM) of the Rhode Island Army National Guard Armory Mounted Command Building Roof located at 1051 North Main Street Providence, RI. The limited asbestos assessment was performed on April 26, 2018 by Mr. Colin Hannagan, a Rhode Island licensed asbestos inspector (AAC-0931).

Asbestos samples were only collected of materials as directed by the building owner.

The table found below indicates sampled materials, location of materials, notes about the materials, the quantity of asbestos containing materials, and the respective testing results. All samples were analyzed utilizing Polarized Light Microscopy as suggested by EPA method 600/R-93/116. The laboratory report can be found withing **Attachment #2**.

WO#18017367 Asbestos Bulk Samples RI-ANG Armory Mounted Command

Sample #	Material	Location	Asbestos %	Quantity
01A	Tar Roofing	Entryway Roof North	None Detected	-
01B	Tar on Copper Flashing	Entryway Roof North	None Detected	-
02A	Roof Core North	Entryway Roof North	None Detected	-
02B	Roof Core South	Entryway Roof South	None Detected	-
03A	Roofing Tar Paper	Entryway Roof South	None Detected	-
04A	Concrete Roof Deck	Entryway Roof South	None Detected	-
05A	Joint Compound	Roof Top Entry Room	None Detected	-
06A	**9x9 Blue Floor Tile**	**Roof Top Entry Room**	**3% Chrysotile**	**70 sq ft**

Sample #	Material	Location	Asbestos %	Quantity
07A	Mastic	Under sample 06A	None Detected	-
08A	Base Coat on Wire Lathe	Roof Top Entry Room	None Detected	-
09A	Perimeter White Caulking	Upper Roof West Center	None Detected	-
09B	Perimeter White Caulking	Upper Roof NW Wall	None Detected	-
10A	Roofing Tar on wall	Upper Roof NW Wall	None Detected	-
11A	**Residual Lexonite**	**Upper Roof NW Wall**	**10% Chrysotile**	**~1700 sq ft**
11B	**Residual Lexonite**	**Upper Roof NE Wall**	**20% Chrysotile**	
12A	Rubber Membrane	Upper Roof South Center	None Detected	-
12B	Rubber Membrane	Upper Roof SW Corner	None Detected	-
13A	ISO Board, Felt	Upper Roof South Center	None Detected	-
	ISO Board, Foam	Upper Roof South Center	None Detected	-
13B	ISO Board, Felt	Upper Roof SW Corner	None Detected	-
	ISO Board, Foam	Upper Roof SW Corner	None Detected	-
14A	Rubber Membrane Sealant	Upper Roof SW Wall	None Detected	-
15A	Mastic on Wood Decking	Upper Roof Center	None Detected	-
16A	Sealant	SW Tower Support	None Detected	-
17A	Vent Pipe Tar	SW Vent Pipe	None Detected	-
18A	Vent Pipe Caulk	SW Vent Pipe	None Detected	-
19A	Skylight Caulking	West Center Skylight	None Detected	-

WO#18017645 Asbestos Bulk Samples RI-ANG Armory Mounted Command

Sample #	Material	Location	Asbestos %	Quantity
001	Window Glazing	Front Door Right Side	None Detected	-
002	Window Glazing	Front Door Left Side	None Detected	-

Conclusion/Limitations:

Asbestos containing blue 9x9 floor tile was discovered in the the roof top entry room.

Furthermore what appears to be residual lexonite that was found along the Limestone Copings. At this time it must be assumed that this material was applied along the roof knee walls and exists beneath the current vertical roof termination. During ECM's inspection it was discovered that on these knee wall vertical roof terminations, plywood was applied to the existing knee wall and the rubber roofing membrane was applied over that. It should also be assumed that this material resides under the 1/2"-1" caulking bead at the transition of the rubber roofing to the limestone copings. Please see the site photos within **Attachment #1**.

Sampling was performed for a specific scope of work. No attempt was made to survey the building in its entirety. Should the planned scope of work change, additional sampling may be required.

If you have any questions or if I can be of further assistance, please call me at 401-400-9787 or Daniel Simas at 401-438-1360.

Sincerely,
Environmental Consulting & Management, Inc.

Colin Hannagan
ECM Environmental Consultant

<u>Attachment #1:</u>
Sampling Locations and Site Photos

NOTE:
REPLACE ALL DETERIORATED WOOD ROOF DECKING (ASSUME 2,000 SQ. FT. OF TOTAL) WITH NEW WOOD DECKING TO MATCH EXISTING. ASSUME 2 ¼" THICK DECKING TO BE UTILIZED.

Asbestos Containing

Non-Asbestos

11B

11A

09B

1A
1B
2A

10A

9A

2B
3A
4A

17A
18A

15B

19A

16A

12B
13B
15A

14A

12A 13A

REMOVE ALL LIMESTONE CO[illegible]RELY RESET IN [illegible]N, TYP. EN[illegible]RIMETER. SEE DETAIL.

POINT ALL EXISTING BRICK MASONRY MORTAR JOINTS, FROM EXISTING [illegible] 3RD FLOOR W[illegible] EXTERIOR [illegible]

EXISTING LOWER ROOF (N.I.C.)

PROVIDE NEW ROOF VENT STACK (RV) - (SEE PLUMBING DRAWINGS). PROV[illegible] IN ROOF [illegible] "A", DR[illegible]

EXISTING ROOF STRUCTURE PITCHES 1"=1'-0" +/-

PROVIDE NEW ROOF EXHAUST CURB/FAN ASSEMBLY - SEE MECHANICAL DRAWINGS. PROVIDE NEW OPENING IN WOOD ROOF DECK & SUPPORT W/ 2-(2) 2x12 WD. HEADERS & GALV. HANGERS, SPANNED BETWEEN ROOF MEMBERS.

PROVIDE NEW ROOF VENT STACK (RV) - (SEE PLUMBING DRAWINGS). PROVIDE NEW OPENING IN ROOF DECK - SEE DETAIL "A", DRAWING A5.5.

PROVIDE NEW VERT. TERMINATION- SEE DET. 'F', DWG. A-5.4, TYP. OPP. SIDE THIS CHIMNEY

EXISTING GUY WIRE

POINT ALL MORTAR JOINTS OF EXISTING BRICK MASONRY CHIMNEY, FROM ROOF LEVEL UPWARD.

PROVIDE NEW PVC ROOFING ASSEMBLY (OVER 4.5" FLAT STOCK INSULATION OVER VAPOR RETARDER)

SEAL EACH INDIVIDUAL CHIMNEY FLUE, INFILLING TOP PORTION OF FLUE W/ NEW R-38 BATT INSUL.; PROVIDE NEW ALUM. CLIP FASTENED TO FLUE @ 6" O.C.; PROVIDE NEW 0.040" PRE-FIN. ALUM. CAP CRIMPED TO CLIP & INSTALL CONTIN. BEAD OF SEALANT @ TOP EXTERIOR OF FLUE & UNDER ALUM. CAP.

PROVIDE NEW ROOF EXHAUST CURB/FAN ASSEMBLY - SEE MECHANICAL DRAWINGS. PROVIDE NEW OPENING IN WOOD ROOF DECK & SUPPORT W/ 2-(2) 2x12 WD. HEADERS & GALV. HANGERS, SPANNED BETWEEN ROOF MEMBERS.

EXISTING TELECOMM. CABLE- (TYP.) PROPERLY ELEVATE TO COMPLETE THE INTENDED WORK

ROOF LEVEL BELOW- PROVIDE NEW PVC ROOFING ASSEMBLY

NEW PVC WALK TREADS (TYP.)

PROVIDE NEW SKYLIGHT ASSEMBLY & CURB @ EXISTING SKYLIGHT LOCATION

EXISTING LOWER ROOF (N.I.C.)

[illegible]MPLETELY REMOVE & [illegible]POSE EXISTING [illegible]E-GLASS/COPPER "DOG HOUSE" ASSEMBLY - PROVIDE NEW ROOF HATCH - FIELD VERIFY SIZE (+/- 36"X48")

EXISTING ANTENNA

PROVIDE NEW TAPERED INSUL. CRICKETS (MIN. 1/2"/FT.) @ SKYLIGHTS, ELEVATOR, ETC. AS SHOWN

PROVIDE NEW PVC ROOFING ASSEMBLY (1/4"/FT. TAPERED INSUL. OVER 3" FLAT STOCK INSULATION OVER VAPOR RETARDER)

PROVIDE NEW 4'X4' ROOF SUMP/DRAIN ASSEMBLY @ EVERY ROOF DRAIN LOCATION

PROVIDE NEW VERT. TERMINATION- SEE DET. 'F', DWG. A5.4, TYP. OPPOSITE SIDE

NEW ELEVATOR VENT LOUVERS - SEE MECH. DRAWINGS

PROVIDE NEW SKYLIGHT ASSEMBLY & CURB @ EXISTING SKYLIGHT LOCATION

PROVIDE NEW PVC ROOFING ASSEMBLY OVER TAPERED INSULATION OVER 4" FLAT STOCK INSULATION OVER VAPOR RETARDER

NEW ALUM. SCUPPER/ DS. ASSEMBLY

PROVIDE NEW PVC SPLICE & NEW PVC EXTENSION @ BROKEN GRAVITY VENT- TOP OF PIPE SHALL BE 24" MIN. ABOVE NEW ROOF SYSTEM- FIELD VERIFY PIPE DIAMETER.

NEW ELEVATOR LOW-WALL PENTHOUSE
REMOVE AND DISPOSE EXISTING ROOF ASSEMBLY, SUCH AS BUT NOT LIMITED TO MEMBRANE, INSULATIONS, WOOD SUBSTRATE, FRAMING (SEE STRUCTURAL DWGS.), AS REQUIRED TO ACCOMMODATE INSTALLATION OF NEW ELEVATOR- REFER TO DRAWING A6.8.

SEAL EACH INDIVIDUAL CHIMNEY FLUE, INFILLING TOP PORTION OF FLUE W/ NEW R-38 BATT INSUL.; PROVIDE NEW ALUM. CLIP FASTENED TO FLUE @ 6" O.C.; PROVIDE NEW 0.040" PRE-FIN. ALUM. CAP CRIMPED TO CLIP & INSTALL CONTIN. BEAD OF SEALANT @ TOP EXTERIOR OF FLUE & UNDER ALUM. CAP.

REMOVE ALL LIMESTONE CO[illegible]URELY RESET IN [illegible]TION, TYP. EN[illegible]PERIMETER. SE[illegible]

PROVIDE NE[illegible]ST CURB/FAN A[illegible] MECHA[illegible] PROVIDE NE[illegible] WOO[illegible] ROOF[illegible]RT W/ [illegible]-(2) 2x1[illegible] & GALV. HANGERS, SPANNED BETWEEN ROOF MEMBERS.

POINT ALL MORTAR JOINTS OF EXISTING BRICK MASONRY CHIMNEY, FROM ROOF LEVEL UPWARD.

PROVIDE NEW ROOF EXHAUST CURB/FAN ASSEMBLY - SEE MECHANICAL DRAWINGS. PROVIDE NEW OPENING IN WOOD ROOF DECK & SUPPORT W/ 2-(2) 2x12 WD. HEADERS & GALV. HANGERS, SPANNED BETWEEN ROOF MEMBERS.

PROVIDE NEW VERT. TERMINATION- SEE DET. 'F', DWG. A-5.4, TYP. OPP. SIDE THIS CHIMNEY

PROVIDE NEW ROOF VENT STACK (RV) - (SEE PLUMBING DRAWINGS). PROVIDE NEW OPENING IN ROOF DECK - SEE DETAIL "A", DRAWING A5.5.

PROVIDE NEW ROOF VENT STACK (RV) - (SEE PLUMBING DRAWINGS). PROVIDE NEW OPENING IN ROOF DECK - SEE DETAIL "A", DRAWING A5.5.

EXISTING ROOF STRUCTURE PITCH 1"=1'-0" +/-

EXISTING GUY WIRE

EXISTING BUILT-UP ROOF STRUCTURE CRICKET (TYP.)

PROVIDE NEW 4'x4' ROOF SUMP/DRAIN ASSEMBLY @ EXISTING ROOF DRAIN LOCATION (TYP. 4 LOCATIONS)

POINT ALL EXISTING BRICK MASONRY MORTAR JOINTS, FROM EXISTING LIMESTONE COPING TO 3RD FLOOR WINDOW HEADS- SEE EXTERIOR ELEVATIONS.

EXISTING LOWER ROOF (N.I.C.)

N
REFERENCE NORTH

1 / A1.11 EXISTING/DEMOLITION/NEW ROOF PLAN (HEAD SHED)
SCALE: 1/8" = 1'-0"

Suspected location of Residual Lexonite
Residual Lexonite

Residual Lexonite
Suspected Area

Attachment #2:
Asbestos Bulk Sample Laboratory Reports

SanAir Technologies Laboratory

The Identification Specialists

Analysis Report
prepared for
Environmental Consulting & Management Inc

Report Date: 5/4/2018

Project Name: RI-ANG Armory Mounted Command

Project #: 180295

SanAir ID#: 18017367

NVLAP TESTING

NVLAP LAB CODE 200870-0

1551 Oakbridge Dr. Suite B | Powhatan, Virginia 23139-8061
888.895.1177 | 804.897.1177 | fax: 804.897.0070 | IAQ@SanAir.com | SanAir.com

SanAir ID Number
18017367
FINAL REPORT
5/4/2018 5:23:21 PM

Name: Environmental Consulting & Management Inc
Address: 50 Kickemuit Ave
Bristol, RI 02809
Phone: 401-438-1360

Project Number: 180295
P.O. Number:
Project Name: RI-ANG Armory Mounted Command
Collected Date: 4/26/2018
Received Date: 4/27/2018 11:05:00 AM

Dear Colin Hannagan,

We at SanAir would like to thank you for the work you recently submitted. The 26 sample(s) were received on Friday, April 27, 2018 via FedEx. The final report(s) is enclosed for the following sample(s): 01A, 01B, 02A, 02B, 03A, 04A, 05A, 06A, 07A, 08A, 09A, 09B, 10A, 11A, 11B, 12A, 12B, 13A, 13B, 14A, 15A, 15B, 16A, 17A, 18A, 19A.

These results only pertain to this job and should not be used in the interpretation of any other job. This report is only complete in its entirety. Refer to the listing below of the pages included in a complete final report.

Sincerely,

Sandra Sobrino

Sandra Sobrino
Asbestos & Materials Laboratory Manager
SanAir Technologies Laboratory

Final Report Includes:
- Cover Letter
- Analysis Pages
- Disclaimers and Additional Information

Sample conditions:
- 26 samples in Good condition.

SanAir Technologies Laboratory

SanAir ID Number
18017367
FINAL REPORT
5/4/2018 5:23:21 PM

Name: Environmental Consulting & Management Inc
Address: 50 Kickemuit Ave
Bristol, RI 02809
Phone: 401-438-1360

Project Number: 180295
P.O. Number:
Project Name: RI-ANG Armory Mounted Command
Collected Date: 4/26/2018
Received Date: 4/27/2018 11:05:00 AM

Analyst: Steiner, Tara

Asbestos Bulk PLM EPA 600/R-93/116

	Stereoscopic	Components		
SanAir ID / Description	Appearance	% Fibrous	% Non Fiberous	Asbestos Fibers
01A / 18017367-001 Tar Roofing	Black Non-Fibrous Homogeneous		100% Other	None Detected
01B / 18017367-002 Tar On Copper Flashing	Black Non-Fibrous Homogeneous		100% Other	None Detected
02A / 18017367-003 Roof Core North	Black Non-Fibrous Heterogeneous	25% Cellulose	75% Other	None Detected
02B / 18017367-004 Roof Core South	Black Non-Fibrous Heterogeneous	25% Cellulose	75% Other	None Detected
03A / 18017367-005 Roofing Tar Paper	Black Fibrous Homogeneous	65% Cellulose	35% Other	None Detected
04A / 18017367-006 Concrete Roof Deck	Tan Non-Fibrous Homogeneous		100% Other	None Detected
05A / 18017367-007 Joint Compound	White Non-Fibrous Homogeneous		100% Other	None Detected
06A / 18017367-008 9X9 Floor Tile	Blue Non-Fibrous Homogeneous	3% Cellulose	94% Other	3% Chrysotile
07A / 18017367-009 Mastic	Black Non-Fibrous Homogeneous		100% Other	None Detected
08A / 18017367-010 Base Coat On Wire Lathe	White Non-Fibrous Homogeneous		100% Other	None Detected

Analyst: Tara C. Steiner Approved Signatory:

Analysis Date: 5/4/2018 Date: 5/4/2018

SanAir Technologies Laboratory

SanAir ID Number
18017367
FINAL REPORT
5/4/2018 5:23:21 PM

Name: Environmental Consulting & Management Inc
Address: 50 Kickemuit Ave
Bristol, RI 02809
Phone: 401-438-1360

Project Number: 180295
P.O. Number:
Project Name: RI-ANG Armory Mounted Command
Collected Date: 4/26/2018
Received Date: 4/27/2018 11:05:00 AM

Analyst: Steiner, Tara

Asbestos Bulk PLM EPA 600/R-93/116

	Stereoscopic	Components		
SanAir ID / Description	Appearance	% Fibrous	% Non Fiberous	Asbestos Fibers
09A / 18017367-011 Perimeter Caulking	White Non-Fibrous Homogeneous		100% Other	None Detected
09B / 18017367-012 Perimeter Caulking	White Non-Fibrous Homogeneous		100% Other	None Detected
10A / 18017367-013 Roofing Tar On Wall	Black Non-Fibrous Homogeneous		100% Other	None Detected
11A / 18017367-014 Residual Lexonite	Black Non-Fibrous Homogeneous		90% Other	10% Chrysotile
11B / 18017367-015 Residual Lexonite	Black Non-Fibrous Homogeneous		80% Other	20% Chrysotile
12A / 18017367-016 Rubber Membrane	Black Non-Fibrous Homogeneous	25% Synthetic	75% Other	None Detected
12B / 18017367-017 Rubber Membrane	Black Non-Fibrous Homogeneous	25% Synthetic	75% Other	None Detected
13A / 18017367-018 ISO Board, Felt	Grey Non-Fibrous Homogeneous	65% Cellulose 15% Glass	20% Other	None Detected
13A / 18017367-018 ISO Board, Foam	Yellow Non-Fibrous Homogeneous		100% Other	None Detected
13B / 18017367-019 ISO Board, Felt	Grey Fibrous Heterogeneous	65% Cellulose 15% Glass	20% Other	None Detected

Analyst: Tara C. Steiner Approved Signatory:

Analysis Date: 5/4/2018 Date: 5/4/2018

SanAir Technologies Laboratory

SanAir ID Number
18017367
FINAL REPORT
5/4/2018 5:23:21 PM

Name: Environmental Consulting & Management Inc
Address: 50 Kickemuit Ave
Bristol, RI 02809
Phone: 401-438-1360

Project Number: 180295
P.O. Number:
Project Name: RI-ANG Armory Mounted Command
Collected Date: 4/26/2018
Received Date: 4/27/2018 11:05:00 AM

Analyst: Steiner, Tara

Asbestos Bulk PLM EPA 600/R-93/116

	Stereoscopic	Components		
SanAir ID / Description	Appearance	% Fibrous	% Non Fiberous	Asbestos Fibers
13B / 18017367-019 ISO Board, Foam	Yellow Non-Fibrous Homogeneous		100% Other	None Detected
14A / 18017367-020 Rubber Membrane Sealant	Black Non-Fibrous Homogeneous		100% Other	None Detected
15A / 18017367-021 Mastic On Wood Decking	Black Non-Fibrous Homogeneous		100% Other	None Detected
15B / 18017367-022 Mastic On Wood Decking	Black Non-Fibrous Homogeneous		100% Other	None Detected
16A / 18017367-023 Sealant	Black Non-Fibrous Homogeneous		100% Other	None Detected
17A / 18017367-024 Vent Pipe Tar	Black Non-Fibrous Homogeneous		100% Other	None Detected
18A / 18017367-025 Vent Pipe Caulk	Grey Non-Fibrous Homogeneous		100% Other	None Detected
19A / 18017367-026 Skylight Caulking	Grey Non-Fibrous Homogeneous		100% Other	None Detected

Analyst: Tara C. Steiner

Approved Signatory:

Analysis Date: 5/4/2018

Date: 5/4/2018

Disclaimer

The final report cannot be reproduced, except in full, without written authorization from SanAir. Fibers smaller than 5 microns cannot be seen with this method due to scope limitations. The accuracy of the results is dependent upon the client's sampling procedure and information provided to the laboratory by the client. SanAir assumes no responsibility for the sampling procedure and will provide evaluation reports based solely on the sample and information provided by the client. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Samples are held for a period of 60 days.

For NY state samples, method EPA 600/M4-82-020 is performed.

Polarized- light microscopy is not consistently reliable in detecting asbestos in floor covering and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

Asbestos Certifications
NVLAP lab code 200870
City of Philadelphia: ALL-460
PA Department of Environmental Protection Number: 68-05397
California License Number: 2915
Colorado License Number: AL-23143
Connecticut License Number: PH-0105
Massachusetts License Number: AA000222
Maine License Number: LB-0075
New York ELAP lab ID: 11983
Rhode Island License Number: AAL-126
Texas Department of State Health Services License Number: 300440
Commonwealth of Virginia 3333000323
Washington State License Number: C989
West Virginia License Number: LT000566
Vermont License: AL166318

Revision Date: 11/30/2017

SanAir Technologies Laboratory

1551 Oakbridge Dr. STE B
Powhatan, VA 23139
804.897.1177 / 888.895.1177
Fax 804.897.0070
sanair.com

Asbestos Chain of Custody

Form 140, Rev 1, 1 20 2017

SanAir ID Number: 18017367

Company: ECM Inc	Project #: 180295	Collect by: Colin Hannagan
Address: 181 Amaral Street	Project Name: RI-ANG Armory Mounted Command	Phone #: 401-400-9787
City, St., Zip: Riverside RI 02915	Date Collected: 4/26/2017	Fax #:
State of Collection: RI Account#: 2667	P.O. Number:	Email: CHannagan@ecmne.com

Bulk

ABB	PLM EPA 600 R-93/116	■
	Positive Stop ☐	
ABEPA	PLM EPA 400 Point Count	☐
ABB1K	PLM EPA 1000 Point Count	☐
ABBEN	PLM EPA NOB**	☐
ABBCH	TEM Chatfield**	☐
ABBTM	TEM EPA NOB**	☐
ABQ	PLM Qualitative	☐

** Available on 24-hr. to 5-day TAT

Air

ABA	PCM NIOSH 7400	☐
ABA-2	OSHA w TWA*	☐
ABTEM	TEM AHERA	☐
ABATN	TEM NIOSH 7402	☐
ABT2	TEM Level II	☐
Other:		☐

New York ELAP

PLM NY	PLM EPA 600/M4-82-020	☐
ABEPA2	NY ELAP 198.1	☐
ABENY	NY ELAP 198.6 PLM NOB	☐
ABBNY	NY ELAP 198.4 TEM NOB	☐

Soil

ABSE	PLM EPA 600/R-93 116 (Qual.)	☐

Vermiculite & Soil

ABSP	PLM CARB 435 (LOD <1%)	☐
ABSP1	PLM CARB 435 (LOD 0.25%)	☐
ABSP2	PLM CARB 435 (LOD 0.1%)	☐

Dust

ABWA	TEM Wipe ASTM D-6480	☐
ABDMV	TEM Microvac ASTM D-5755	☐

Water

ABHE	EPA 100.2	☐

Other

Matrix		
		☐

Turn Around Times				
	3 HR (4 HR TEM) ☐	6 HR (8HR TEM) ☐	12 HR ☐	24 HR ☐
	☐ 2 Days	☐ 3 Days	☐ 4 Days	■ 5 Days

Special Instructions

Sample #	Sample Identification/Location	Volume or Area	Sample Date	Flow Rate*	Start – Stop Time*	
01A	Tar Roofing					
01B	Tar on Copper Flashing					
02A	Roof Core North					
02B	Roof Core South					
03A	Roofing Tar Paper					
04A	Concrete Roof Deck					
05A	Joint Compound					
06A	9x9 Lt Blue Floor Tile					
07A	Mastic					
08A	Base Coat on Wire Lathe					
09A	White Perimeter Caulking					
09B	"					

Relinquished by	Date	Time	Received by	Date	Time
Colin Hannagan	04/26/2018	15:45	[illegible]	APR 27 2018	11:05 am

If no technician is provided, then the primary contact for your account will be selected. Unless scheduled, the turnaround time for all samples received after 3 pm EST Friday will begin at 8 am Monday morning. Weekend or holiday work must be scheduled ahead of time and is charged for rush turnaround time. SanAir covers Standard Overnight FedEx shipping. Shipments billed to SanAir with a faster shipping rate will result in additional charges.

Page 1 of 2

18017367

Form 140, Revision 1, 1/20/2017

Sample #	Sample Identification/Location	Volume or Area	Sample Date	Flow Rate*	Start – Stop Time*	
10A	Roofing Tar on Wall					
11A	Residual Lexonite					
11B	"					
12A	Rubber Membrain					
12B	"					
13A	ISO Board					
13B	"					
14A	Rubber Membrain Sealant					
15A	Mastic on Wood Decking					
15B	"					
16A	Sealant					
17A	Vent Pipe Tar					
18A	Vent Pipe Caulk					
19A	Skylight Caulking					

Special Instructions	

Relinquished by	Date	Time	Received by	Date	Time
Colin Hannagan	4/26/2018	15:45	HL	APR 27 2018	11:05 am

If no technician is provided, then the primary contact for your account will be selected. Unless scheduled, the turnaround time for all samples received after 3 pm EST Friday will begin at 8 am Monday morning. Weekend or holiday work must be scheduled ahead of time and is charged for rush turnaround time. SanAir covers Standard Overnight FedEx shipping. Shipments billed to SanAir with a faster shipping rate will result in additional charges.

Page 2 of 2

SanAir Technologies Laboratory

The Identification Specialists

Analysis Report
prepared for
Environmental Consulting & Management Inc

Report Date: 5/7/2018

Project Name: National Guard Armory

Project #: 180295

SanAir ID#: 18017645

NVLAP TESTING

NVLAP LAB CODE 200870-0

1551 Oakbridge Dr. Suite B | Powhatan, Virginia 23139-8061
888.895.1177 | 804.897.1177 | fax: 804.897.0070 | IAQ@SanAir.com | SanAir.com

SanAir ID Number
18017645
FINAL REPORT
5/7/2018 3:55:22 PM

Name: Environmental Consulting & Management Inc
Address: 50 Kickemuit Ave
Bristol, RI 02809
Phone: 401-438-1360

Project Number: 180295
P.O. Number:
Project Name: National Guard Armory
Collected Date: 4/27/2018
Received Date: 4/30/2018 10:05:00 AM

Dear Jason Sweet,

We at SanAir would like to thank you for the work you recently submitted. The 2 sample(s) were received on Monday, April 30, 2018 via FedEx. The final report(s) is enclosed for the following sample(s): 001, 002.

These results only pertain to this job and should not be used in the interpretation of any other job. This report is only complete in its entirety. Refer to the listing below of the pages included in a complete final report.

Sincerely,

Sandra Sobrino

Sandra Sobrino
Asbestos & Materials Laboratory Manager
SanAir Technologies Laboratory

Final Report Includes:
- Cover Letter
- Analysis Pages
- Disclaimers and Additional Information

Sample conditions:
- 2 samples in Good condition.

SanAir Technologies Laboratory

SanAir ID Number
18017645
FINAL REPORT
5/7/2018 3:55:22 PM

Name: Environmental Consulting & Management Inc
Address: 50 Kickemuit Ave
Bristol, RI 02809
Phone: 401-438-1360

Project Number: 180295
P.O. Number:
Project Name: National Guard Armory
Collected Date: 4/27/2018
Received Date: 4/30/2018 10:05:00 AM

Analyst: Moore, Brandi

Asbestos Bulk PLM EPA 600/R-93/116

	Stereoscopic	Components		
SanAir ID / Description	Appearance	% Fibrous	% Non Fiberous	Asbestos Fibers
001 / 18017645-001 Window Glazing - Windows Above Wood Front Door Right	Grey Non-Fibrous Heterogeneous		100% Other	None Detected
002 / 18017645-002 Window Glazing - Windows Above Wood Front Door Left	Grey Non-Fibrous Heterogeneous		100% Other	None Detected

Analyst: Brandi Moore

Approved Signatory: Sandra Sobrino

Analysis Date: 5/7/2018

Date: 5/7/2018

Disclaimer

The final report cannot be reproduced, except in full, without written authorization from SanAir. Fibers smaller than 5 microns cannot be seen with this method due to scope limitations. The accuracy of the results is dependent upon the client's sampling procedure and information provided to the laboratory by the client. SanAir assumes no responsibility for the sampling procedure and will provide evaluation reports based solely on the sample and information provided by the client. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Samples are held for a period of 60 days.

For NY state samples, method EPA 600/M4-82-020 is performed.

Polarized- light microscopy is not consistently reliable in detecting asbestos in floor covering and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

Asbestos Certifications
NVLAP lab code 200870
City of Philadelphia: ALL-460
PA Department of Environmental Protection Number: 68-05397
California License Number: 2915
Colorado License Number: AL-23143
Connecticut License Number: PH-0105
Massachusetts License Number: AA000222
Maine License Number: LB-0075
New York ELAP lab ID: 11983
Rhode Island License Number: AAL-126
Texas Department of State Health Services License Number: 300440
Commonwealth of Virginia 3333000323
Washington State License Number: C989
West Virginia License Number: LT000566
Vermont License: AL166318

Revision Date: 11/30/2017

SanAir Technologies Laboratory

1551 Oakbridge Dr. STE B
Powhatan, VA 23139
804.897.1177 / 888.895.1177
Fax 804.897.0070
sanair.com

Asbestos Chain of Custody
Form 140, Rev 1, 1/20/2017

SanAir ID Number 18017645

Company: ECM Inc	Project #: 180295	Collect by: J.Sweet
Address: 181 Amaral St	Project Name: National Guard Armory	Phone #: 401-374-4350
City, St., Zip: Riverside, RI 02915	Date Collected: 4/27/18	Fax #:
State of Collection: RI Account#: 2667	P.O. Number:	Email: jsweet@ecmne.com

Bulk

ABB	PLM EPA 600/R-93/116	■
	Positive Stop ☐	
ABEPA	PLM EPA 400 Point Count	☐
ABB1K	PLM EPA 1000 Point Count	☐
ABBEN	PLM EPA NOB**	☐
ABBCH	TEM Chatfield**	☐
ABBTM	TEM EPA NOB**	☐
ABQ	PLM Qualitative	☐

** Available on 24-hr. to 5-day TAT

Water

ABHE	EPA 100.2	☐

Air

ABA	PCM NIOSH 7400	☐
ABA-2	OSHA w/ TWA*	☐
ABTEM	TEM AHERA	☐
ABATN	TEM NIOSH 7402	☐
ABT2	TEM Level II	☐
Other:		☐

New York ELAP

PLM NY	PLM EPA 600/M4-82-020	☐
ABEPA2	NY ELAP 198.1	☐
ABENY	NY ELAP 198.6 PLM NOB	☐
ABBNY	NY ELAP 198.4 TEM NOB	☐

Soil

ABSE	PLM EPA 600/R-93/116 (Qual.)	☐

Vermiculite & Soil

ABSP	PLM CARB 435 (LOD <1%)	☐
ABSP1	PLM CARB 435 (LOD 0.25%)	☐
ABSP2	PLM CARB 435 (LOD 0.1%)	☐

Dust

ABWA	TEM Wipe ASTM D-6480	☐
ABDMV	TEM Microvac ASTM D-5755	☐

Other

Matrix		
		☐

Turn Around Times				
	3 HR (4 HR TEM) ☐	6 HR (8HR TEM) ☐	12 HR ☐	24 HR ☐
	☐ 2 Days	☐ 3 Days	☐ 4 Days	■ 5 Days

Special Instructions

Sample #	Sample Identification/Location	Volume or Area	Sample Date	Flow Rate*	Start – Stop Time*	
001	Window Glazing - Windows Above Wood Front Door Right	Bulk	4/27/18			
002	Window Glazing - Windows Above Wood Font Door Left					

Relinquished by	Date	Time	Received by	Date	Time
[signature]	4/27/18	3:45 pm	[signature]	APR 30 2018	10:05AM

If no technician is provided, then the primary contact for your account will be selected. Unless scheduled, the turnaround time for all samples received after 3 pm EST Friday will begin at 8 am Monday morning. Weekend or holiday work must be scheduled ahead of time and is charged for rush turnaround time. SanAir covers Standard Overnight FedEx shipping. Shipments billed to SanAir with a faster shipping rate will result in additional charges.

Page 1 of 1

Asbestos Abatement Plan
Rhode Island Army National Guard
Armory Mounted Command
ECM #180295

Prepared for:
RI National Guard
Facilities & Maintenance
Ms. Ann Marie Ethier

Prepared by:

ECM Environmental Consulting & Management

May 2018

RHODE ISLAND DEPARTMENT OF HEALTH

NOTARIZED CERTIFICATION OF ASBESTOS AMENDED ABATEMENT PLAN

Facility: **RI Army National Guard – Armory Mounted Command**

Address: **1051 North Main Street**

City/Town: **Providence, RI** Zip: **02904** Amendment Phase No:

Abatement Plan Written By: **Daniel J. Simas** Certification No: **AAC-0567**

Summary of specific waivers/variances being requested: **see Attachment #4(Waiver of Floor Poly)**

Type of Asbestos Abatement (**X**) Removal ( ) Enclosure ( ) Encapsulation
( ) Demolition ( ) Glovebag (**X**) Asphalt Roofing
( ) Other (specify) _____

Is this plan being submitted in response to a Notice of Violation and/or a Notice of Requirement to Submit an Asbestos Abatement Plan? ( ) Yes (**X**) No

If yes, Indicate Notice/Building Evaluation No(s):

Contractor: **To be determined** License No:

Estimated Starting Date: **5/25/2018**

Pre-Abatement Sampling Information

Bulk Samples Collected By: **ECM Inc.** Certification No: **AAC-0931**

Bulk Samples Analyzed By: **SanAir** Certification No: **AAL-0143**

Air Samples Analyzed By: **ECM Inc.** Certification No: **AAL-131**

Clearance Air Sampling Information

Air Samples to be Collected By: **ECM Inc. Personal**

Air Samples to be Analyzed By: **ECM Inc.** Certification No: **AAL-131**

CERTIFICATION

I certify that: this asbestos abatement plan is prepared and submitted under the provisions of Section 23-24.5-6 of the RI Asbestos Control Act and Parts A and C of the RI Rules and Regulations for Asbestos Control; all abatement/management activities performed in conjunction with this plan must be in compliance with the specifications prescribed in this plan (when approved) and the most current revision of all applicable federal and state regulations; and the asbestos abatement/management activities described in this plan must be performed by a RI licensed asbestos abatement contractor.

Certified by: _____ Title: _____
(Signature of Building Owner or Agent)

_____ Date: _____
(Typed/Printed Name of Certifier)

Subscribed and sworn before me this _____ day of _____, 20_____

_____ My Commission Expires: _____
(Notary Public)

AFFIX NOTARY SEAL HERE

FORM ASB-16B (11/2003) REPLACES FORM ASB-16B (3/92) WHICH IS OBSOLETE

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
Department of Health
Office of Occupational & Radiological Health

APPLICATION FOR APPROVAL OF AN ASBESTOS ABATEMENT PLAN

1. Building Owner's Name:
   RI Army National Guard

2. Application Prepared By:
   Daniel J. Simas
   RI certification No: **AAC-0567**
   Telephone No: **401-304-6612**

3. Building Owner's Mailing Address and Telephone Number:

   Street: **645 New London Avenue**

   City/Town: **Cranston**

   Zip: **02920**

   Telephone No.: **401-275-4189**
   (Area Code, No., Ext.)

4. Person to be contacted regarding this application:

   Name: **Ms. Ann Marie Ethier**

   Telephone No: **401-275-4189**
   (Area Code, No., Ext.)

---

5. Location where abatement work will be performed:

   Name (if applicable): **RI Army Nation Guard - Armory Mounted Command**
   Street: **1051 North Main Street**
   City/Town: **Providence** Zip: **02904**

---

6. Is this application being submitted in response to a "Notice of Requirement to Submit an Asbestos Abatement plan"? ( ) Yes (**X**) No

If Yes, what is the due date for submittal of Abatement plan? _____
(Mo.) (Day) (Yr.)

Evaluation Number on the Notice: _____

---

7. Contractor who will be performing abatement work (if selected):

   Name: **To be determined** R.I. License No.:

8. Estimated Starting Date of Abatement Work **05** (Month) **25** (Day) **2018** (Year)

9. Estimated Completion Date of Abatement Work: **04** (Month) **30** (Day) **2019** (Year)

10. Type of Asbestos Abatement: **(Check all that apply)**

(**X**) Removal
( ) Encapsulation
( ) Operations and Maintenance Only
( ) Enclosure
( ) Demolition
(**X**) Asphalt Roofing

11. Type of Building:

( ) School
(**X**) Privately Owned Building
( ) Publicly Owned Building
( ) Residence
( ) Other (Specify) _____

12. Building Access:

( ) Public Access (≥ 25% of Building Area)
(**X**) Limited Public Access (< 25% of Building Area)
( ) No Public Access

13. Bulk Sample Collection and Analysis:

A). Person collecting bulk samples:

Name: **Colin Hannagan** RI Certification No.: **AAC-0931**

B). Sampling Methodology:

(**X**) EPA AHERA Sampling requirements [40 CFR 763.86].

( ) EPA's Asbestos Containing Material in School Buildings: A Guidance Document (EPA-405/2-78-014) or Guidance for Controlling Asbestos Containing Materials – 1985 Edition (EPA-560-5-85-024)

( ) Other (Specify) _____

C). Laboratory performing the analysis of the bulk samples

Name: **SanAir** RI Certification No.: **AAL-0143**

D). Analytical Methodology:

(**X**) EPA Interim Method for the Determination of Asbestos in Bulk Insulation Samples [PLM method only].

( ) Other (Specify) _____

14. Pre-Abatement Air Sample Collection and Analysis:

A). Person collecting pre-abatement air samples:

Name: **ECM Personnel** Affiliation: **ECM Inc.**

B). Laboratory performing analysis of pre-abatement air samples.
Name: **ECM Inc** RI Certification No.: **AAL-131**

C). Methodology used in the collection and analysis of pre-abatement samples:

(**X**) NIOSH Method 7400 [Most Current Revision]

( ) OSHA 29 CFR 1926.1101 – Appendix A & B

( ) Other (Specify)

---

15. A. Indicate how the regulated asbestos containing material (RACM) will be removed from the abatement site. If a hauler or broker will be used to transport the RACM to a disposal site, they must also be identified.

To be determined_____

B. Provide the name and location of the authorized asbestos waste facility to which the removed material will be transferred for disposal (if known).

To be determined_____

---

16. Person designated as compliance monitor for abatement work. **[NOT REQUIRED]**

Name: **ECM Inc. Personnel**

Affiliation: **Environmental Consulting and Management Inc. (ECM Inc.)**

17. In-Process & Clearance Air Sampling: **See Attachment #1**

    A. Describe on an attachment the type, number and location of air samples that will be collected outside the work area during the abatement project.

    B. Describe on an attachment the plan of action to be followed if the Indoor Non-Occupational Air Exposure Standard for Asbestos (0.01 fibers per cubic centimeter) is exceeded outside the work area during the abatement project.

    C. Describe on an attachment the type, number and location of air samples that will be collected as part of the final clearance testing.

    D. Describe on an attachment the plan of action to be followed if the Indoor Non-Occupational Air Exposure Standard for Asbestos (0.01 fiber per cubic centimeter) is exceed during final clearance testing.

---

18. A separate and fully completed Form ASB-16A must be submitted for each area to be abated. List below the entry in Item 1 from each attached ASB-16A.

    Area 1 – Roof Access Room
    Area 2 – Original Structure Roof Top

---

19. I certify that this plan was prepared by me and I am responsible for its content.

    Signature: _____ Date _____
    (Month) (Day) (Year)

    Affiliation: **Environmental Consulting & Management, Inc.**

---

20. ASBESTOS ABATEMENT PLAN APPLICATION FEE:

( ) Operation & Maintenance Only	$ 75
( ) Up to One (1) NESHAP Unit	$ 75
( ) Between One (1) & Ten (10) NESHAP Units	$ 300
( ) Between Ten (10) & Fifty (50) NESHAP Units	$ 600
( ) Over Fifty (50) NESHAP Units	$ 900
( ) Amendment Fee	$ 150

(**X**) RI State Agency Waived Application Fee

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Health

Office of Occupational & Radiological Health

APPLICATION FOR APPROVAL OF AN ASBESTOS ABATEMENT PLAN

SUPPLEMENTAL INFORMATION: AREA DESCRIPTION AND PROPOSED REMEDY

BUILDING LOCATION: **RI Army National Guard – Armory Mounted Command**

INSTRUCTIONS: All items on this form must be addressed. All references to attachments must be clearly identified. All attachments must be marked with the specific item numbers on this form to which they pertain.

---

(1) Area Location/Identification (Room Name/No., Evaluation Number, etc.):

Area 1 – Roof Access Room

---

(2) Attach a description of each type (e.g. pipe, ceiling, etc.) of regulated asbestos containing material (RACM) in this area, including condition, location, quantity and asbestos content. Attach a copy of the laboratory report(s) for all samples. (NOTE: All laboratory reports must include the name of the building(s) and the location(s) of the sample(s).

Refer to Attachment #2

---

(3) Attach a current scale drawing of this area, showing direction of North and East, which has been clearly annotated to show the type, location and quantity of all RACM in this area. This drawing must include a legend which acts as a guide to the scale, symbols and nomenclature used in the drawing. If a master plan or multiple drawings are provided, indicate the specific location(s) and drawing number(s) which depict this area. The location of the decontamination chamber must also be so indicated on the appropriate drawing(s).

Refer to Attached Building Drawing

---

(4) PROPOSED REMEDIES:

A). Attach a description of the interim Operations and Maintenance Plan that will be implemented in accordance with C.1.2 (b).

Refer to Attachment #3

---

(4) PROPOSED REMEDIES (cont.):

B). Will any portion of this area be abated by use of B.8 work procedures?

( ) Yes (X) No

If Yes, indicate below which RACM in this area will be abated by use of the following B.8 work procedures:

B.8.2 & B.8.3	[REMOVAL]	9x9 Floor Tile
B.8.2 & B.8.4	[ENCAPSULATION]	
B.8.2 & B.8.5	[ENCLOSURE]	
B.8.6	[DEMOLITION]	
B.8.7	[GLOVEBAG]	
B.8.8	[ASP. ROOFING]	

C). Are you requesting any waivers to the above selected B.8 procedure for any of the abatement activities in this area?

(**X**) Yes ( ) No **Waiver of floor poly where floor tile is present.**

If yes, attach a detailed description of the waivers requested you are proposing to utilize. All items must be keyed to the specific section(s) of the regulations for which waivers are requested.

D). Are you proposing alternative procedures under B.11 for any of the abatement activities in this area?

( ) Yes (**X**) No

If yes, attach a detailed description of the alternate procedures requested you are proposing to utilize. Alternate procedures must include a justification for not following specific section(s) of the regulations and be as protective of public health.

E). Will any RACM remain in this area after abatement?

( ) Yes ( ) No (**X**) Beyond scope of inspection

If Yes, attach a description of the RACM that will remain and the details of the on-going Operations and Maintenance Plan that will be implemented in accordance with C.1.2(b).

AGENCY USE ONLY

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Health

Office of Occupational & Radiological Health

APPLICATION FOR APPROVAL OF AN ASBESTOS ABATEMENT PLAN

SUPPLEMENTAL INFORMATION: AREA DESCRIPTION AND PROPOSED REMEDY

BUILDING LOCATION: **RI Army National Guard - Warwick Armory Building #1**

INSTRUCTIONS: All items on this form must be addressed. All references to attachments must be clearly identified. All attachments must be marked with the specific item numbers on this form to which they pertain.

---

(5) Area Location/Identification (Room Name/No., Evaluation Number, etc.):

Area 2 – Original Structure Roof Top

---

(6) Attach a description of each type (e.g. pipe, ceiling, etc.) of regulated asbestos containing material (RACM) in this area, including condition, location, quantity and asbestos content. Attach a copy of the laboratory report(s) for all samples. (NOTE: All laboratory reports must include the name of the building(s) and the location(s) of the sample(s).

Refer to Attachment #2

---

(7) Attach a current scale drawing of this area, showing direction of North and East, which has been clearly annotated to show the type, location and quantity of all RACM in this area. This drawing must include a legend which acts as a guide to the scale, symbols and nomenclature used in the drawing. If a master plan or multiple drawings are provided, indicate the specific location(s) and drawing number(s) which depict this area. The location of the decontamination chamber must also be so indicated on the appropriate drawing(s).

Refer to Attached Building Drawing

---

(8) PROPOSED REMEDIES:

F). Attach a description of the interim Operations and Maintenance Plan that will be implemented in accordance with C.1.2 (b).

Refer to Attachment #3

---

(4) PROPOSED REMEDIES (cont.):

G). Will any portion of this area be abated by use of B.8 work procedures?

(**X**) Yes ( ) No

If Yes, indicate below which RACM in this area will be abated by use of the following B.8 work procedures:

B.8.2 & B.8.3	[REMOVAL]	_____
B.8.2 & B.8.4	[ENCAPSULATION]	_____
B.8.2 & B.8.5	[ENCLOSURE]	_____
B.8.6	[DEMOLITION]	_____
B.8.7	[GLOVEBAG]	_____
B.8.8	[ASP. ROOFING]	___Lexonite on Knee Wall __ _

H). Are you requesting any waivers to the above selected B.8 procedure for any of the abatement activities in this area?

( ) Yes (**X**) No

If yes, attach a detailed description of the waivers requested you are proposing to utilize. All items must be keyed to the specific section(s) of the regulations for which waivers are requested.

I). Are you proposing alternative procedures under B.11 for any of the abatement activities in this area?

( ) Yes (**X**) No

If yes, attach a detailed description of the alternate procedures requested you are proposing to utilize. Alternate procedures must include a justification for not following specific section(s) of the regulations and be as protective of public health.

J). Will any RACM remain in this area after abatement?

( ) Yes ( ) No (**X**) Beyond scope of inspection

If Yes, attach a description of the RACM that will remain and the details of the on-going Operations and Maintenance Plan that will be implemented in accordance with C.1.2(b).

AGENCY USE ONLY

ATTACHMENT #1

In Process and Clearance Air Sampling

A. If requested by the building owner, ECM will be on site for part time monitoring and will collect one compliance air sample outside the containment area daily for the duration of asbestos removal operations inside this building. The sample will be collected outside the decontamination unit.

B. Any deviation in proper procedures on the part of the contractor shall be reported to the building owner. This includes inadequate paperwork on site, disagreement and/or any deviation from previously outlined work procedures, or if compliance samples in the work area vicinity exceed 0.01 f/cc. The contractor's work shall then be stopped, without repercussion to the building owner or the project-monitoring firm until any conflicts and/or problems have been resolved.

C. After the interior areas have passed the consultant's visual inspection, he or his authorized representative will collect the following air samples and the corresponding required blanks:

Area 1 - 2 PCM Clearance Air Samples will be collected within each containment under 2000 square feet and one additional PCM will be added per 1000 after.

Area 2 – Clearance air samples will <u>not</u> be required as removal is exterior. A qualified individual will perform a visual inspection to confirm all asbestos containing materials identified within this abatement plan have been removed. It is the responsibility of the asbestos abatement contractor to collect personnel air samples in compliance with OSHA 29 CFR 1926.1101 (f). These samples must be submitted to the RIDOH at the completion of the abatement area.

D. If clearance monitoring after clean-up results in fiber concentrations in excess of the RI rules and regulation clearance air requirements, the project area shall be wet-cleaned, misted with water, and encapsulated with a liquid encapsulant. A period of no less than 24 hours shall elapse before the next set of clearance air samples can be collected. The sampling process shall be repeated until a satisfactory clearance air level is attained.

The asbestos contractor is held responsible for any costs associated with the re-cleaning and re-sampling of an area should clearance air samples exceed 0.01 f/cc.

ATTACHMENT #2

ASB-16A-2

Description of Asbestos Containing Material

<u>Area 1: Roof Access Room</u>

There is approximately 70 sf of 9x9 blue floor tile with non asbestos containing mastic on the roof top access room.

<u>Area 2: Original Structure Roof Top</u>

There is approximately 1700 sf of lexonite assumed to be beneath the plywood backing along the roof's knee walls. Please see the pictures at the end of this document.

It is the contractor's responsibility to verify all quantities.

ATTACHMENT #2 (Cont.)

Laboratory Analysis Reports:

1. Pre-Abatement Air Sample Results
2. Bulk Sample Analysis

Environmental Consulting
& Management Inc.
181 Amaral Street
Riverside, RI 02915
401-438-1360

Certificate of Analysis

Asbestos PCM Air Analysis by NIOSH 7400

Client: RI Army National Guard
Project Location: Armory Mounted Command
Sample Type: Pre Abatement Air Sample

Project Number: 180295
Collected By: Colin H
Date: 5/17/2018
PCM Lot #: 20170116

Sample	Identification	Start	End	Flow (LPM)	Volume (L)	Fibers / Fields	Fiber Density (f/mm²)	Concentration (f/cc)
-	Blank	-	-	-	-	0 / 100	<7	< -
-	Blank	-	-	-	-	0 / 100	<7	< -
01	Roof Access Room	11:54	13:11	15	1155	10 / 100	12.74	0.0042

Anaylyzed By: Colin Hannagan

Date Analyzed: 05/17/18

Reviewed By: Daniel J. Simas

Standards

Clearance Criteria: <0.01 f/cc
OSHA Permissible Exposure Limit (8 hour TWA): 0.1 f/cc
OSHA 30 Minute Excursion Limit: 1.0 f/cc
Limit of Detection fibers/100 fields: 5.5
Limit of Detection fiber density: 7 f/mm
Relative Standard Deviation:0.45

WO#18000274

Lab Certifications: RI AAL-0131

SanAir Technologies Laboratory

The Identification Specialists

Analysis Report
prepared for
Environmental Consulting & Management Inc

Report Date: 5/4/2018

Project Name: RI-ANG Armory Mounted Command

Project #: 180295

SanAir ID#: 18017367

NVLAP TESTING

NVLAP LAB CODE 200870-0

1551 Oakbridge Dr. Suite B | Powhatan, Virginia 23139-8061
888.895.1177 | 804.897.1177 | fax: 804.897.0070 | IAQ@SanAir.com | SanAir.com

SanAir ID Number
18017367
FINAL REPORT
5/4/2018 5:23:21 PM

Name: Environmental Consulting & Management Inc
Address: 50 Kickemuit Ave
Bristol, RI 02809
Phone: 401-438-1360

Project Number: 180295
P.O. Number:
Project Name: RI-ANG Armory Mounted Command
Collected Date: 4/26/2018
Received Date: 4/27/2018 11:05:00 AM

Dear Colin Hannagan,

We at SanAir would like to thank you for the work you recently submitted. The 26 sample(s) were received on Friday, April 27, 2018 via FedEx. The final report(s) is enclosed for the following sample(s): 01A, 01B, 02A, 02B, 03A, 04A, 05A, 06A, 07A, 08A, 09A, 09B, 10A, 11A, 11B, 12A, 12B, 13A, 13B, 14A, 15A, 15B, 16A, 17A, 18A, 19A.

These results only pertain to this job and should not be used in the interpretation of any other job. This report is only complete in its entirety. Refer to the listing below of the pages included in a complete final report.

Sincerely,

Sandra Sobrino

Sandra Sobrino
Asbestos & Materials Laboratory Manager
SanAir Technologies Laboratory

Final Report Includes:
- Cover Letter
- Analysis Pages
- Disclaimers and Additional Information

Sample conditions:
- 26 samples in Good condition.

SanAir Technologies Laboratory

SanAir ID Number
18017367
FINAL REPORT
5/4/2018 5:23:21 PM

Name: Environmental Consulting & Management Inc
Address: 50 Kickemuit Ave
Bristol, RI 02809
Phone: 401-438-1360

Project Number: 180295
P.O. Number:
Project Name: RI-ANG Armory Mounted Command
Collected Date: 4/26/2018
Received Date: 4/27/2018 11:05:00 AM

Analyst: Steiner, Tara

Asbestos Bulk PLM EPA 600/R-93/116

	Stereoscopic	Components		
SanAir ID / Description	Appearance	% Fibrous	% Non Fiberous	Asbestos Fibers
01A / 18017367-001 Tar Roofing	Black Non-Fibrous Homogeneous		100% Other	None Detected
01B / 18017367-002 Tar On Copper Flashing	Black Non-Fibrous Homogeneous		100% Other	None Detected
02A / 18017367-003 Roof Core North	Black Non-Fibrous Heterogeneous	25% Cellulose	75% Other	None Detected
02B / 18017367-004 Roof Core South	Black Non-Fibrous Heterogeneous	25% Cellulose	75% Other	None Detected
03A / 18017367-005 Roofing Tar Paper	Black Fibrous Homogeneous	65% Cellulose	35% Other	None Detected
04A / 18017367-006 Concrete Roof Deck	Tan Non-Fibrous Homogeneous		100% Other	None Detected
05A / 18017367-007 Joint Compound	White Non-Fibrous Homogeneous		100% Other	None Detected
06A / 18017367-008 9X9 Floor Tile	Blue Non-Fibrous Homogeneous	3% Cellulose	94% Other	3% Chrysotile
07A / 18017367-009 Mastic	Black Non-Fibrous Homogeneous		100% Other	None Detected
08A / 18017367-010 Base Coat On Wire Lathe	White Non-Fibrous Homogeneous		100% Other	None Detected

Analyst: Tara C. Steiner Approved Signatory:

Analysis Date: 5/4/2018 Date: 5/4/2018

SanAir Technologies Laboratory

SanAir ID Number
18017367
FINAL REPORT
5/4/2018 5:23:21 PM

Name: Environmental Consulting & Management Inc
Address: 50 Kickemuit Ave
Bristol, RI 02809
Phone: 401-438-1360

Project Number: 180295
P.O. Number:
Project Name: RI-ANG Armory Mounted Command
Collected Date: 4/26/2018
Received Date: 4/27/2018 11:05:00 AM

Analyst: Steiner, Tara

Asbestos Bulk PLM EPA 600/R-93/116

	Stereoscopic	Components		
SanAir ID / Description	Appearance	% Fibrous	% Non Fiberous	Asbestos Fibers
09A / 18017367-011 Perimeter Caulking	White Non-Fibrous Homogeneous		100% Other	None Detected
09B / 18017367-012 Perimeter Caulking	White Non-Fibrous Homogeneous		100% Other	None Detected
10A / 18017367-013 Roofing Tar On Wall	Black Non-Fibrous Homogeneous		100% Other	None Detected
11A / 18017367-014 Residual Lexonite	Black Non-Fibrous Homogeneous		90% Other	10% Chrysotile
11B / 18017367-015 Residual Lexonite	Black Non-Fibrous Homogeneous		80% Other	20% Chrysotile
12A / 18017367-016 Rubber Membrane	Black Non-Fibrous Homogeneous	25% Synthetic	75% Other	None Detected
12B / 18017367-017 Rubber Membrane	Black Non-Fibrous Homogeneous	25% Synthetic	75% Other	None Detected
13A / 18017367-018 ISO Board, Felt	Grey Non-Fibrous Homogeneous	65% Cellulose 15% Glass	20% Other	None Detected
13A / 18017367-018 ISO Board, Foam	Yellow Non-Fibrous Homogeneous		100% Other	None Detected
13B / 18017367-019 ISO Board, Felt	Grey Fibrous Heterogeneous	65% Cellulose 15% Glass	20% Other	None Detected

Analyst: Tara C. Steiner Approved Signatory:

Analysis Date: 5/4/2018 Date: 5/4/2018

SanAir Technologies Laboratory

SanAir ID Number
18017367
FINAL REPORT
5/4/2018 5:23:21 PM

Name: Environmental Consulting & Management Inc
Address: 50 Kickemuit Ave
Bristol, RI 02809
Phone: 401-438-1360

Project Number: 180295
P.O. Number:
Project Name: RI-ANG Armory Mounted Command
Collected Date: 4/26/2018
Received Date: 4/27/2018 11:05:00 AM

Analyst: Steiner, Tara

Asbestos Bulk PLM EPA 600/R-93/116

	Stereoscopic	Components		
SanAir ID / Description	Appearance	% Fibrous	% Non Fiberous	Asbestos Fibers
13B / 18017367-019 ISO Board, Foam	Yellow Non-Fibrous Homogeneous		100% Other	None Detected
14A / 18017367-020 Rubber Membrane Sealant	Black Non-Fibrous Homogeneous		100% Other	None Detected
15A / 18017367-021 Mastic On Wood Decking	Black Non-Fibrous Homogeneous		100% Other	None Detected
15B / 18017367-022 Mastic On Wood Decking	Black Non-Fibrous Homogeneous		100% Other	None Detected
16A / 18017367-023 Sealant	Black Non-Fibrous Homogeneous		100% Other	None Detected
17A / 18017367-024 Vent Pipe Tar	Black Non-Fibrous Homogeneous		100% Other	None Detected
18A / 18017367-025 Vent Pipe Caulk	Grey Non-Fibrous Homogeneous		100% Other	None Detected
19A / 18017367-026 Skylight Caulking	Grey Non-Fibrous Homogeneous		100% Other	None Detected

Analyst: Tara C. Steiner

Approved Signatory:

Analysis Date: 5/4/2018

Date: 5/4/2018

Disclaimer

The final report cannot be reproduced, except in full, without written authorization from SanAir. Fibers smaller than 5 microns cannot be seen with this method due to scope limitations. The accuracy of the results is dependent upon the client's sampling procedure and information provided to the laboratory by the client. SanAir assumes no responsibility for the sampling procedure and will provide evaluation reports based solely on the sample and information provided by the client. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Samples are held for a period of 60 days.

For NY state samples, method EPA 600/M4-82-020 is performed.

Polarized- light microscopy is not consistently reliable in detecting asbestos in floor covering and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

Asbestos Certifications
NVLAP lab code 200870
City of Philadelphia: ALL-460
PA Department of Environmental Protection Number: 68-05397
California License Number: 2915
Colorado License Number: AL-23143
Connecticut License Number: PH-0105
Massachusetts License Number: AA000222
Maine License Number: LB-0075
New York ELAP lab ID: 11983
Rhode Island License Number: AAL-126
Texas Department of State Health Services License Number: 300440
Commonwealth of Virginia 3333000323
Washington State License Number: C989
West Virginia License Number: LT000566
Vermont License: AL166318

Revision Date: 11/30/2017

SanAir Technologies Laboratory

1551 Oakbridge Dr. STE B
Powhatan, VA 23139
804.897.1177 / 888.895.1177
Fax 804.897.0070
sanair.com

Asbestos Chain of Custody

Form 140, Rev 1, 1 20 2017

SanAir ID Number: 18017367

Company: ECM Inc	Project #: 180295	Collect by: Colin Hannagan
Address: 181 Amaral Street	Project Name: RI-ANG Armory Mounted Command	Phone #: 401-400-9787
City, St., Zip: Riverside RI 02915	Date Collected: 4/26/2017	Fax #:
State of Collection: RI Account#: 2667	P.O. Number:	Email: CHannagan@ecmne.com

Bulk

ABB	PLM EPA 600 R-93/116	■
	Positive Stop ☐	
ABEPA	PLM EPA 400 Point Count	☐
ABB1K	PLM EPA 1000 Point Count	☐
ABBEN	PLM EPA NOB**	☐
ABBCH	TEM Chatfield**	☐
ABBTM	TEM EPA NOB**	☐
ABQ	PLM Qualitative	☐

** Available on 24-hr. to 5-day TAT

Air

ABA	PCM NIOSH 7400	☐
ABA-2	OSHA w TWA*	☐
ABTEM	TEM AHERA	☐
ABATN	TEM NIOSH 7402	☐
ABT2	TEM Level II	☐
Other:		☐

New York ELAP

PLM NY	PLM EPA 600/M4-82-020	☐
ABEPA2	NY ELAP 198.1	☐
ABENY	NY ELAP 198.6 PLM NOB	☐
ABBNY	NY ELAP 198.4 TEM NOB	☐

Soil

ABSE	PLM EPA 600/R-93 116 (Qual.)	☐

Vermiculite & Soil

ABSP	PLM CARB 435 (LOD <1%)	☐
ABSP1	PLM CARB 435 (LOD 0.25%)	☐
ABSP2	PLM CARB 435 (LOD 0.1%)	☐

Dust

ABWA	TEM Wipe ASTM D-6480	☐
ABDMV	TEM Microvac ASTM D-5755	☐

Water

ABHE	EPA 100.2	☐

Other

Matrix		
		☐

Turn Around Times				
	3 HR (4 HR TEM) ☐	6 HR (8HR TEM) ☐	12 HR ☐	24 HR ☐
	☐ 2 Days	☐ 3 Days	☐ 4 Days	■ 5 Days

Special Instructions

Sample #	Sample Identification/Location	Volume or Area	Sample Date	Flow Rate*	Start – Stop Time*	
01A	Tar Roofing					
01B	Tar on Copper Flashing					
02A	Roof Core North					
02B	Roof Core South					
03A	Roofing Tar Paper					
04A	Concrete Roof Deck					
05A	Joint Compound					
06A	9x9 Lt Blue Floor Tile					
07A	Mastic					
08A	Base Coat on Wire Lathe					
09A	White Perimeter Caulking					
09B	"					

Relinquished by	Date	Time	Received by	Date	Time
Colin Hannagan	04/26/2018	15:45	[illegible]	APR 27 2018	11:05 am

If no technician is provided, then the primary contact for your account will be selected. Unless scheduled, the turnaround time for all samples received after 3 pm EST Friday will begin at 8 am Monday morning. Weekend or holiday work must be scheduled ahead of time and is charged for rush turnaround time. SanAir covers Standard Overnight FedEx shipping. Shipments billed to SanAir with a faster shipping rate will result in additional charges.

Page 1 of 2

18017367

Form 140, Revision 1, 1/20/2017

Sample #	Sample Identification/Location	Volume or Area	Sample Date	Flow Rate*	Start – Stop Time*	
10A	Roofing Tar on Wall					
11A	Residual Lexonite					
11B	"					
12A	Rubber Membrain					
12B	"					
13A	ISO Board					
13B	"					
14A	Rubber Membrain Sealant					
15A	Mastic on Wood Decking					
15B	"					
16A	Sealant					
17A	Vent Pipe Tar					
18A	Vent Pipe Caulk					
19A	Skylight Caulking					

Special Instructions	

Relinquished by	Date	Time	Received by	Date	Time
Colin Hannagan	4/26/2018	15:45	HL	APR 27 2018	11:05 am

If no technician is provided, then the primary contact for your account will be selected. Unless scheduled, the turnaround time for all samples received after 3 pm EST Friday will begin at 8 am Monday morning. Weekend or holiday work must be scheduled ahead of time and is charged for rush turnaround time. SanAir covers Standard Overnight FedEx shipping. Shipments billed to SanAir with a faster shipping rate will result in additional charges.

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ATTACHMENT #3

Interim Operations & Maintenance Plan

The contractors associated with the Rhode Island National Guard are aware of the presence and location of ACBM within the above stated areas. They have been instructed not to disturb the material due to the potential health hazards if fibers become airborne.

1. Notification

All building occupants, also any contractors entering the building and/or premises to perform work, shall be notified of the presence and location of asbestos-containing material(s) and cautioned regarding disturbance of the material(s). Also, the building occupants must be notified regarding the occurrence of asbestos abatement activities. If an emergency fiber release occurs, the following procedures shall be initiated.

2. Fiber Release Episodes

A. Minor Release Episode

If a minor fiber release episode occurs (release of less than 10 linear feet or 25 square feet of material), trained maintenance staff may perform the cleaning. Access to the area shall be restricted during clean-up. All debris shall be thoroughly wetted using amended water and placed in labeled, double six-mil polyethylene bags. The area shall then be cleaned using HEPA filtered vacuums and/or wet cleaning methods. Damaged material must be cleaned and repaired with non-asbestos-containing material. The area shall then be evaluated to decide if further action is necessary.

B. Major Release Episode

If a major fiber release episode occurs (falling or dislodging of more than 10 linear feet or 25 square feet of ACBM), the cleaning must be carried out and directed by persons accredited to conduct and design response actions. After such an episode, the area shall be immediately restricted and entry to the area prevented. Warning signs shall be posted to caution people other than those qualified to deal with the problem. Air handling units in the area shall be shut down to prevent the spread of fibers beyond the problem area. A response action shall be designed and carried out by qualified personnel.

3. Training

Any employee who, because of their work, may disturb asbestos-containing material shall be trained and certified as a Competent Person as described by the RI Rules and Regulations for Asbestos Control. The program coordinator shall ensure that the procedures described above to protect the building occupants shall be followed for any operations and maintenance activities disturbing or involving ACBM.

ATTACHMENT #4

Scope of Work / Description of Waivers

It is the contractor's responsibility to verify material locations and quantities.

All proper OSHA, federal, state, and local safety regulations shall be followed.

ECM requests a waiver of floor polyethylene sheeting during floor tile abatement.

NOTE:
REPLACE ALL DETERIORATED WOOD ROOF DECKING (ASSUME **2,000 SQ. FT.** OF TOTAL) WITH NEW WOOD DECKING TO MATCH EXISTING. ASSUME 2 ¼" THICK DECKING TO BE UTILIZED.

Asbestos Containing Lexonite on knee wall

11B

11A

REMOVE ALL LIMESTONE CO[illegible]RELY RESET IN [illegible]N, TYP. EN[illegible]RIMETER. SEE DETAIL.

POINT ALL EXISTING BRICK MASONRY MORTAR JOINTS, FROM EXISTING [illegible] 3RD FLOOR W[illegible] EXTERIOR [illegible]

EXISTING LOWER ROOF (N.I.C.)

PROVIDE NEW ROOF VENT STACK (RV) - (SEE PLUMBING DRAWINGS). PROVIDE NEW OPENING IN ROOF DECK - SEE DETAIL "A", DRAWING A5.5.

EXISTING ROOF STRUCTURE PITCHES 1"=1'-0" +/-

PROVIDE NEW ROOF EXHAUST CURB/FAN ASSEMBLY - SEE MECHANICAL DRAWINGS. PROVIDE NEW OPENING IN WOOD ROOF DECK & SUPPORT W/ 2-(2) 2x12 WD. HEADERS & GALV. HANGERS, SPANNED BETWEEN ROOF MEMBERS.

PROVIDE NEW ROOF VENT STACK (RV) - (SEE PLUMBING DRAWINGS). PROVIDE NEW OPENING IN ROOF DECK - SEE DETAIL "A", DRAWING A5.5.

PROVIDE NEW VERT. TERMINATION- SEE DET. 'F', DWG. **A-5.4**, TYP. OPP. SIDE THIS CHIMNEY

EXISTING GUY WIRE

POINT ALL MORTAR JOINTS OF EXISTING BRICK MASONRY CHIMNEY, FROM ROOF LEVEL UPWARD.

PROVIDE NEW PVC ROOFING ASSEMBLY (OVER 4.5" FLAT STOCK INSULATION OVER VAPOR RETARDER)

PROVIDE NEW ROOF EXHAUST CURB/FAN ASSEMBLY - SEE MECHANICAL DRAWINGS. PROVIDE NEW OPENING IN WOOD ROOF DECK & SUPPORT W/ 2-(2) 2x12 WD. HEADERS & GALV. HANGERS, SPANNED BETWEEN ROOF MEMBERS.

SEAL EACH INDIVIDUAL CHIMNEY FLUE, INFILLING TOP PORTION OF FLUE W/ NEW R-38 BATT INSUL.; PROVIDE NEW ALUM. CLIP FASTENED TO FLUE @ 6" O.C.; PROVIDE NEW 0.040" PRE-FIN. ALUM. CAP CRIMPED TO CLIP & INSTALL CONTIN. BEAD OF SEALANT @ TOP EXTERIOR OF FLUE & UNDER ALUM. CAP.

ROOF LEVEL BELOW- PROVIDE NEW PVC ROOFING ASSEMBLY

EXISTING TELECOMM. CABLE- (TYP.) PROPERLY ELEVATE TO COMPLETE THE INTENDED WORK

NEW PVC WALK TREADS (TYP.)

PROVIDE NEW SKYLIGHT ASSEMBLY & CURB @ EXISTING SKYLIGHT LOCATION

EXISTING LOWER ROOF (N.I.C.)

COMPLETELY REMOVE & DISPOSE EXISTING WIRE-GLASS/COPPER "DOG HOUSE" ASSEMBLY - PROVIDE NEW ROOF HATCH - FIELD VERIFY SIZE (+/- 36"X48")

EXISTING ANTENNA

PROVIDE NEW TAPERED INSUL. CRICKETS (MIN. 1/2"/FT.) @ SKYLIGHTS, ELEVATOR, ETC. AS SHOWN

PROVIDE NEW PVC ROOFING ASSEMBLY (1/4"/FT. TAPERED INSUL. OVER 3" FLAT STOCK INSULATION OVER VAPOR RETARDER)

PROVIDE NEW 4'X4' ROOF SUMP/DRAIN ASSEMBLY @ EVERY ROOF DRAIN LOCATION

PROVIDE NEW VERT. TERMINATION- SEE DET. 'F', DWG. **A5.4**, TYP. OPPOSITE SIDE

NEW ELEVATOR VENT LOUVERS - SEE MECH. DRAWINGS

PROVIDE NEW SKYLIGHT ASSEMBLY & CURB @ EXISTING SKYLIGHT LOCATION

PROVIDE NEW PVC ROOFING ASSEMBLY OVER TAPERED INSULATION OVER 4" FLAT STOCK INSULATION OVER VAPOR RETARDER

NEW ALUM. SCUPPER/ DS. ASSEMBLY

PROVIDE NEW PVC SPLICE & NEW PVC EXTENSION @ BROKEN GRAVITY VENT- TOP OF PIPE SHALL BE 24" MIN. ABOVE NEW ROOF SYSTEM- FIELD VERIFY PIPE DIAMETER.

SEAL EACH INDIVIDUAL CHIMNEY FLUE, INFILLING TOP PORTION OF FLUE W/ NEW R-38 BATT INSUL.; PROVIDE NEW ALUM. CLIP FASTENED TO FLUE @ 6" O.C.; PROVIDE NEW 0.040" PRE-FIN. ALUM. CAP CRIMPED TO CLIP & INSTALL CONTIN. BEAD OF SEALANT @ TOP EXTERIOR OF FLUE & UNDER ALUM. CAP.

REMOVE ALL LIMESTONE COPINGS & SECURELY RESET IN SAME LOCATION, TYP. ENTIRE ROOF PERIMETER. SEE DETAIL.

NEW ELEVATOR LOW-WALL PENTHOUSE
REMOVE AND DISPOSE EXISTING ROOF ASSEMBLY, SUCH AS BUT NOT LIMITED TO MEMBRANE, INSULATIONS, WOOD SUBSTRATE, FRAMING (SEE STRUCTURAL DWGS.), AS REQUIRED TO ACCOMMODATE INSTALLATION OF NEW ELEVATOR- REFER TO DRAWING A6.8.

PROVIDE NEW ROOF EXHAUST CURB/FAN ASSEMBLY - SEE MECHANICAL DRAWINGS. PROVIDE NEW OPENING IN WOOD ROOF DECK & SUPPORT W/ 2-(2) 2x12 WD. HEADERS & GALV. HANGERS, SPANNED BETWEEN ROOF MEMBERS.

POINT ALL MORTAR JOINTS OF EXISTING BRICK MASONRY CHIMNEY, FROM ROOF LEVEL UPWARD.

PROVIDE NEW VERT. TERMINATION- SEE DET. 'F', DWG. **A-5.4**, TYP. OPP. SIDE THIS CHIMNEY

PROVIDE NEW ROOF VENT STACK (RV) - (SEE PLUMBING DRAWINGS). PROVIDE NEW OPENING IN ROOF DECK - SEE DETAIL "A", DRAWING A5.5.

EXISTING ROOF STRUCTURE PITCHES 1"=1'-0" +/-

EXISTING GUY WIRE

EXISTING BUILT-UP ROOF STRUCTURE CRICKET (TYP.)

PROVIDE NEW 4'x4' ROOF SUMP/DRAIN ASSEMBLY @ EXISTING ROOF DRAIN LOCATION (TYP. 4 LOCATIONS)

POINT ALL EXISTING BRICK MASONRY MORTAR JOINTS, FROM EXISTING LIMESTONE COPING TO 3RD FLOOR WINDOW HEADS- SEE EXTERIOR ELEVATIONS.

EXISTING LOWER ROOF (N.I.C.)

N

REFERENCE NORTH

1 / A1.11 EXISTING/DEMOLITION/NEW ROOF PLAN (HEAD SHED)

SCALE: 1/8" = 1'-0"

Suspected location of Residual Lexonite
Residual Lexonite

Residual Lexonite
Suspected Area

SECTION 01250

ALTERNATES

PART 1 - GENERAL

1.01 SUMMARY

A. List price for each alternate in the Form of Bid. Include cost of modifications to other work to accommodate alterations. Include related costs such as overhead and profit.

B. Owner will decide which alternates are selected for inclusion in the Contract.

C. Alternates are described briefly in this section. The contract documents define the requirements for alternates.

D. Coordinate alternates with related work to ensure that work affected by each selected alternate is properly accomplished.

E. Alternates will be taken in order.

PART 2 – ALTERNATES

2.01 LIST OF ALTERNATES

A. BID ALTERNATE NO. 1:

Add to the Base Bid Price, the cost associated with all specified work involving the rebuilding of the concrete walkway between the main building entrance exterior stairs. Refer to Key Plan and Bid Alternate Note #1 on drawing A1.1 for identified location and approximate size.

END OF SECTION

SECTION 01270

UNIT PRICES

PART 1 – GENERAL:

1.01 SUMMARY

A. Related Documents: Provisions established in General and Supplementary Conditions of the Contract, Division 1 - General Requirements, and the Drawings are collectively applicable to this Section.

B. Section Includes: Unit Prices.

1.02 GENERAL REQUIREMENTS

A. Perform Work required by Unit Prices in accordance with Contract Documents.

B. Unit Prices cover portions of Work added to or deducted from quantities indicated by Contract Documents.

C. Unit Prices are for work in place, except where indicated otherwise.

D. Acceptance or rejection of Unit Prices, partially or completely, will be declared at time of Contract award.

E. Unit Prices for additions or deletions include:

1. Products.
2. Delivery to site.
3. Supervision and labor.
4. Installation, including associated accessories.
5. Insurance.
6. Applicable taxes.
7. Overhead and profit.
8. Handling, including receiving, unloading, uncrating, storage, and distribution.
9. Protection from damage and from elements.
10. Submittal and processing of product data, shop drawings, samples, and other required submittals.
11. Other expenses required to complete installation.

1.03 SCHEDULE OF UNIT PRICES:

A. Contractor's Unit Price Note: The following Unit Prices are intended to provide the Owner with predetermined prices should changes to the Base Bid Contract be required. The Owner reserves the right to include any Unit Price Item for adding or deleting work. The Contractor agrees to modify his Base Bid by the shown amount.

1. Add to or deduct from the Bid Price, the cost to complete the work associated with the specified *pointing of exterior brick masonry mortar joints* in accordance with the Bidding Documents.

ALLOW: $_____/square ft.

2. Add to or deduct from the Bid Price, the cost to complete the work associated with the specified *exterior brick replacement* in accordance with the Bidding Documents. Note: **100 square feet** of the same shall be included in the Base Bid.

   ALLOW: $_____/square ft.

3. Add to or deduct from the Bid Price, the cost to complete the work associated with the specified *replacement of the non-ornamental limestone parapet caps* in accordance with the Bidding Documents. Note: **64 linear feet** of the same shall be included in the Base Bid.

   ALLOW: $_____/4'-0" Length
   (standard non-ornamental limestone cap)

4. Add to or deduct from the Bid Price, the cost to complete the work associated with the specified *patching/repairs to limestone parapet caps* in accordance with the Bidding Documents. Note: **100 square feet** of the same shall be included in the Base Bid.

   ALLOW: $_____/square ft.

5. Add to or deduct from the Bid Price, the cost to complete the work associated with the specified *epoxy-gel injection crack repairs* in the existing limestone in accordance with the Bidding Documents. Note: **200 linear feet** of the same shall be included in the Base Bid.

   ALLOW: $_____/linear ft.

6. Add to or deduct from the Bid Price, the cost to complete the work associated with the specified *patching/repairs to existing limestone* in accordance with the Bidding Documents. Note: **50 square feet** of the same shall be included in the Base Bid.

   ALLOW: $_____/square ft.

7. Add to or deduct from the Bid Price, the cost to complete the work associated with the specified *replacement of deteriorated roof wood decking* in accordance with the Bidding Documents. Note: **500 square feet** of the same shall be included in the Base Bid.

   ALLOW: $_____/square ft.

PART 2 – PRODUCTS:

Not Used.

PART 3 – EXECUTION:

Not Used.

END OF SECTION

SECTION 01300

SCHEDULING

PART 1 – GENERAL

1.01 SUMMARY

A. Working hours shall be between 7:30 a.m. and 4:00 p.m., Monday through Friday. The contractor will not be allowed to work on holidays observed by the State of Rhode Island. A list of these holidays can be obtained from the State of Rhode Island official website.

1.02 DESCRIPTION:

A. Work Included: To assure adequate planning and execution of the work so that the work is completed within the number of calendar days allowed in the Contract, and to assist the Architect in appraising the reasonableness of the proposed schedule and in evaluating progress of the work, prepare and maintain the schedules and reports described in this section.

B. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

2. Requirements for Progress Schedule: General Conditions.

3. Construction Period: Form of Agreement.

1.03 QUALITY ASSURANCE:

A. Employ a scheduler who is thoroughly trained and experienced in compiling construction schedule date, and in preparing and issuing periodic reports as required below.

B. Perform data preparation, analysis, charting, and updating in accordance with standards approved by the Architect.

C. Reliance upon the approved schedule:

1. The construction schedule as approved by the Architect will be an integral part of the Contract and will establish interim completion dates for the various activities under the Contract.

2. Should any activity not be completed within seven (7) days after the stated scheduled date, the Owner shall have the right to require the Contractor to expedite completion of the activity by whatever means the Owner deems appropriate and necessary, without additional compensation to the Contractor.

3. Should any activity be thirty (30) days or more behind schedule, the Owner shall have the right to perform the activity or have the activity performed by whatever method the Owner deems appropriate.

4. Costs incurred by the Owner and by the Architect in connection with expediting construction activity under this Article shall be reimbursed by the Contractor.

5. It is expressly understood and agreed that failure by the Owner to exercise the option either to order the Contractor to expedite an activity or to expedite the activity by other means shall not be considered to set a precedent for any other activities or waive the Owner's right to do so.

1.04 SUBMITTALS:

A. Submit initial schedules within seven (7) calendar days after date of Award of Contract.

1. A/E will review schedules and, if changes are required by A/E, return reviewed copy within five (5) workdays after receipt.

2. If required, Contractor shall resubmit within five (5) workdays after return of reviewed copy.

B. Submit monthly, updated schedules accurately depicting progress to first day of each month.

C. Comply with pertinent provisions of Section 01300.

1.05 FORM OF SCHEDULE:

A. Prepare in form of horizontal bar chart:

1. Provide separate horizontal bar column for each trade or operation.
2. Order: Chronological order of beginning of each item of work.
3. Identify each column:
   a) By major specification number.
   b) By distinct graphic delineation.
4. Horizontal Time Scale: Identify first workday of each week.
5. Scale and Spacing: To allow space for updating.

B. Minimum sheet size: 11" × 17".

1.06 CONTENT OF SCHEDULE:

A. Provide complete sequence of construction by activity.

1. Decision dates for:
   a) Products specified by allowances.
   b) Selection of finishes.
2. Dates for beginning and completion of each element of construction.

B. Identify work of separate floors, or separate phases, or other logically grouped activities.

C. Show projected percentage of completion for each item of work as of the first day of every other week.

1.07 UPDATING:

A. At least every other week, show all changes occurring since previous submission of updated schedule.

B. Indicate progress of each activity, show completion dates.

C. Include:

1. Major changes in scope.
2. Activities modified since previous updating.
3. Revised projections due to changes.
4. Other identifiable changes.

1.08 DISTRIBUTION:

A. Distribute copies of reviewed schedules to:

1. Job site file.
2. Subcontractor.
3. Other concerned parties.

B. Instruct recipients to report any inability to comply, and provide detailed explanation with suggested remedies.

PART 2 – PRODUCTS:

Not Used.

PART 3 – EXECUTION:

Not Used.

END OF SECTION

SECTION 01330

SUBMITTALS - SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 - GENERAL

1.01 SUMMARY

A. Consult the individual sections of the specifications for the specific submittals required under those sections and for further details and descriptions of the requirements.

1.02. GENERAL PROCEDURES FOR SUBMITTALS

A. Timeliness - The Contractor shall transmit each submittal to the Architect sufficiently in advance of performing related Work or other applicable activities, so that the installation not be delayed by processing times, including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Architect in advance of the Work.

B. Contractor's Review and Approval - Only submittals received from and bearing the stamp of approval of the Contractor will be considered for review by the Architect. Submittals shall be accompanied by a transmittal notice stating name of Project, date of submittal, "To", "From", (Contractor, Subcontractor, Installer, Manufacturer, Supplier), Specification Section, or Drawing No. to which the submittal refers, purpose(first submittal, resubmittal), description, remarks, distribution record, and signature of transmitter.

C. Or-Equals - On the transmittal or on a separate sheet attached to the transmittal, the Contractor shall direct attention to any deviations including minor limitations and variations, from the Contract Documents.

1. The Contractor and all Subcontractors shall submit to the Architect for consideration of any Or-Equal substitution, a written point by point comparison containing the name and full particulars of the proposed product to the product named or described in the Contract Documents.

2. Upon receipt of a written request for approval of an Or-Equal substitution, the Architect shall investigate whether the proposed item shall be considered equal to the item named or described in the Contract Documents. Upon conclusion of the investigation, the Architect shall promptly advise that the item is, or is not, considered acceptable as on Or-Equal substitution. Such written notice must have the concurrence of the Administrator.

4. In no case may an item be furnished on the Work other than the item named or described, unless the Architect considers the item equal to the item so named or described.

5. The equality of items offered as "equal" to items named or described shall be proved to the satisfaction of the Architect at the expense of the Contractor or Subcontractor submitting the substitution.

6. The Architect may require that full size samples of both the specified and proposed products be submitted for review and evaluation. The Contractor or

Subcontractor, as the case may be, shall bear full cost for providing, delivering, and disposal of all such samples.

7. The Contractor or Subcontractor, as the case may be, shall assume full responsibility for the performance of any item submitted as an "Or-Equal" and assume the costs of any changes in any Work which may be due to such substitution.

D. Processing - All costs for printing, preparing, packaging, submitting, resubmitting, and mailing, or delivering submittals required by this contract shall be included in the Contract Sum.

1.03 ARCHITECT'S ACTION

A. The Architect will review the Contractor's submittals and return them with one of the following actions recorded thereon by appropriate markings:

1. **Reviewed**: the Work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents.

2. **Make Correction Noted**: the Work may proceed provided it complies with the Architect's notations or corrections on the submittal and complies with the requirements of the Contract Documents. Acceptance of the Work will depend upon these compliances.

3. **Revise and Resubmit or Rejected**: the Work covered by the submittal (purchasing, fabrication, delivery, or other activity) should not proceed. The submittal should be revised or a new submittal resubmitted without delay, in accordance with the Architect's notations stating the reasons for returning the submittal.

4. **Rejected** - the work covered by the submittal is not in accordance with the Contract Documents and shall not proceed. The contractor shall resubmit without delay.

1.04 SUBMISSION OF SHOP DRAWINGS

A. Shop Drawings shall be complete, give all information necessary or requested in the individual section of the specifications. They shall also show adjoining Work and details of connection thereto.

B. Shop Drawings shall be for whole systems. Partial submissions will not be accepted.

C. The Architect reserves the right to review and approve shop drawings only after approval of related product data and samples.

D. Shop drawings shall be properly identified and contain the name of the project, name of the firm submitting the shop drawings, shop drawing number, date of shop drawings and revisions, Contractor's stamp of approval, and sufficient spaces near the title block for the Architect's stamp.

E. The Contractor shall submit to the Architect one legible, reproducible transparency and two black line prints of each shop drawing. Transparency and prints shall be mailed or delivered in roll form. Each submittal shall be accompanied by a transmittal notice.

F. When the transparency is returned by the Architect with the stamp "Revise and Resubmit" or "Disapproved", the Contractor shall correct the original drawing or

prepare a new drawing and resubmit a transparency and two prints thereof to the Architect for approval. This procedure shall be repeated until the Architect's approval is obtained.

G. When the transparency is returned by the Architect with the stamp "Reviewed" or "Make Corrections Noted", the Contractor shall provide and distribute the prints for all Contractor and Subcontractors use, and in addition submit, within 10 calendar days after approval, 4 prints to the Architect.

H. The Contractor shall maintain one full set of approved shop drawings at the site.

1.05 SUBMISSION OF PRODUCT DATA

A. The Contractor shall submit 7 copies of Product Data to the Architect. All such data shall be specific and identification of material or equipment submitted shall be clearly marked in ink. Data of general nature will not be accepted.

B. Product Data shall be accompanied by a transmittal notice. The Contractor's stamp of approval shall appear on the printed information itself, in a location which will not mar legibility.

C. Product Data returned by the Architect as "Disapproved" shall be resubmitted in 7 copies until the Architects approval is obtained.

D. When the Product Data are acceptable, the Architect will stamp them "Reviewed" or "Make Corrections Noted ", retain 3 copies and return 4 copies to the Contractor. The Contractor shall provide and distribute additional copies as may be required to complete the Work.

E. The Contractor shall maintain one full set of approved, original, Product Data at the site.

1.06 SUBMISSION OF SAMPLES

A. Unless otherwise specified in the individual section, the Contractor shall submit two specimens of each sample.

B. Samples shall be of adequate size to permit proper evaluation of materials. Where variations in color or in other characteristics are to be expected, samples shall show the maximum range of variation. Materials exceeding the variation of approved samples will not be approved on the Work.

C. Samples of items of interior finishes shall be submitted all at once to permit a coordinated selection of colors and finishes.

D. Samples which can be conveniently mailed shall be sent directly to the Architect, accompanied by a transmittal notice. All transmittals shall be stamped with the Contractor's approval stamp of the material submitted.

E. All other samples shall be delivered at the field office of the Project Representative with sample identification tag attached and properly filled in. Transmittal notice of samples so delivered with the Contractor's stamp of approval shall be mailed to the Architect.

F. If a sample is rejected by the Architect, a new sample shall be resubmitted in a manner specified herein above. This procedure shall be repeated until the sample is approved by the Architect.

G. Samples will not be returned unless return is requested at the time of submission. The right is reserved to require submission of samples whether or not particular mention is made in the specifications.

END OF SECTION

SECTION 01350

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide types of submittals listed in individual sections and number of copies required below.

1. Shop drawings, reviewed and annotated by the Contractor - transparency and two blackline prints. Note: at project closeout, provide two (2) complete packages consisting of all project submittals for Owner's use.
2. Product data - 4 copies.
3. Samples - 2, plus extra samples as required to indicate range of color, finish, and texture to be expected.
4. Inspection and test reports - 4 copies.
5. Warranties - 4 copies.
6. Survey data - 4 copies.
7. Closeout submittals - 4 copies.
8. Project photographs - 8 8x10 color prints each month and at beginning and end of construction. Include negatives.

B. Comply with project format for submittals.

C. Comply with submittal procedures established by Architect including Architect's submittal and shop drawing stamp. Provide required resubmittals if original submittals are not approved. Provide distribution of approved copies including modifications after submittals have been approved.

D. Samples and shop drawings shall be prepared specifically for this project. Shop drawings shall include dimensions and details, including adjacent construction and related work. Note special coordination required. Note any deviations from requirements of the Contract Documents.

E. Provide warranties as specified; warranties shall not limit length of time for remedy of damages Owner may have by legal statute. Warranties shall be signed by contractor, supplier or installer responsible for performance of warranty.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01400

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions and workmanship, to produce Work of specified quality. Provide the necessary quality control requirements for a complete and proper job.

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

1.02 TOLERANCES

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

1.03 REFERENCES

A. For products or workmanship specified by association, trade, or other consensus standards, complies with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

1.04 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to perform the following as applicable and to initiate instructions when necessary.

1. Observe site conditions.
2. Conditions of surfaces and installation.
3. Quality of workmanship.

1.05 CONTRACTOR'S QUALITY CONTROL

A. Perform quality control during installation.

1.06 MOCK-UP REQUIREMENTS

A. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals and finishes. Accepted mock-ups shall be a comparison standard for the remaining Work.

B. Where mock-up has been accepted by Architect and no longer needed, remove mock-up and clear area when directed to do so.

1.07 VERIFICATION OF CREDENTIALS AND LICENSES

A. Persons employed on the project site shall have appropriate and current credentials and licenses in their possession, at the project site, for the work they are performing.

B. Owner's Representative will also be reviewing Contractor's Certified Payroll Records for conformance with Prevailing Wage Requirements.

C. A Background Criminal Investigation (B.C.I.) will be required of the Contractor and his subcontractors prior to the scheduled construction start date. The Contractor shall complete this task and shall do so within a ten (10) workday allotment of time, prior to the construction start date.

D. Those persons without the appropriate credentials and licenses, including B.C.I.'s, will be subject to dismissal from the project site.

1.08 REFERENCES

A. Conform to reference standards by date of issue.

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

C. The contractual relationship, duties, and responsibilities of the parties of the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.09 FIELD SAMPLES

A. Install field samples at the site as required by individual specification Sections for approval.

B. Approved samples represent a quality level for the Work.

C. Where field sample is specified in individual Sections to be removed, clear area after field sample has been approved by Architect.

1.10 MOCK-UP

A. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals, and finishes.

B. Where mock-up is specified in individual Sections to be removed, clear area after mock-up has been approved by Architect.

C. Mock-up may be actual part of specified work with the approval of the Owner and/or Architect.

1.11 INSPECTION AND LABORATORY SERVICES

A. Contractor shall appoint and employ the services of an independent firm to perform inspection and testing. Contractor shall pay for all services unless specifically stated otherwise herein.

B. The independent firm shall perform inspections, tests, and other services specified in individual specification sections and as required by the Architect.

C. Reports shall be submitted by the independent firm to the Architect, in duplicate, indicating observations and results of tests and indicating compliance or not-compliance with Contract Documents.

D. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, and assistance as requested.

1. Notify Architect and independent firm 24 hours prior to expected time for operations requiring services.

2. Make arrangement with independent firm and pay for additional samples and tests required for Contractor's use.

E. Contractor shall be solely responsible for retesting required because of non-conformance to specified requirements. Payment for retesting shall be charged to the Contractor by deducting inspection or testing costs from the Contract Sum. The Project Allowance(s) shall not be utilized.

F. Where and when testing is required as an "Industry Standard Procedure" for this type of work, the cost of all testing shall be paid for by the Contractor unless otherwise noted in other sections herein. Architect's decision shall be final.

1.12 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. Observer subject to approval of Architect.

B. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, as applicable, and to initiate instructions when necessary.

C. Individuals shall report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer' written instructions.

D. Submit report in duplicate within seven (7) days of observation to Architect for review.

E. Upon Substantial Completion of the installation, Contractor shall engage the manufacturer of the materials and equipment supplied, to review and inspect all work. Submit written report of evaluation and statement that the systems have been tested and determined to be fully functional and installed in accordance with the Construction Documents.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES

PART 1 – GENERAL

1.01 SUMMARY

A. The Contractor shall be responsible for providing and maintaining all temporary facilities until Substantial Completion. Removal of such prior to Substantial Completion must be with the concurrence of the Architect. The Contractor bears full responsibility for providing any facility removed prior to Substantial Completion if required for the Work.

1.02. FIELD OFFICES

A. The Contractor shall provide a suitable office at the site for use by Contractor personnel.

B. The offices shall be set in a location approved by the Owner, and shall be maintained by the Contractor in a clean and orderly condition.

1.03. TEMPORARY TELEPHONES

A. The Contractor shall provide cellular phone service for the use of the Contractor's authorized personnel and Subcontractors, and communications with Architect.

B. The Contractor shall pay for all calls and charges in connection therewith.

C. The building telephone shall not be used by the Contractor.

1.04 TEMPORARY TOILETS

A. The Contractor shall provide and service an adequate number of toilet booths with chemical type toilets.

B. The toilets shall be erected in a location approved by the Owner and shall be maintained by the Contractor in a clean and orderly condition in compliance with all local and state health requirements.

C. The Contractor may use portions of the Owner’s sanitary system as approved by the Owner and Architect, provided that the Contractor (1) assumes full responsibility for the used portions of the sanitary system, and (2) pays all costs for operation, maintenance, cleaning, and restoration of used portions.

1.05 TEMPORARY STRUCTURES AND MATERIAL HANDLING

A. The Contractor shall provide such storage sheds, temporary buildings, or trailers as required for the performance of the Contract.

B. Materials shall be handled, stored, installed, cleaned, and protected in accordance with the best practice in the industry and, except where otherwise specified in the Contract Documents, in accordance with manufacturer's specifications and directions.

1.06 TEMPORARY STAGING, STAIRS, CHUTES

A. Except as otherwise specified, the Contractor shall furnish, install, maintain in safe condition, and remove all scaffolds, staging, and planking, as required for the use of all trades for proper execution of the Work.

B. The Contractor shall furnish, install, maintain, and remove all temporary ramps, stairs, ladders, and similar items as required for the use of all trades for the proper execution of the Work.

1.07 HOISTING FACILITIES

A. Except as otherwise specified, the Contractor shall provide, operate, and remove material hoists, cranes, and other hoisting as required for the performance of the Work by all trades.

1.08 WATER

A. The Contractor shall provide an adequate supply of cool drinking water with individual drinking cups for personnel on the job.

1.09 TEMPORARY ELECTRICITY

A. The Contractor will be allowed to tie into the existing electric panels (house panels); the Owner will pay the energy-related costs. The Contractor shall make arrangements for, and furnish and install all necessary equipment to provide temporary power for his use on a during construction.

B. Temporary electrical Work shall be performed under the direct supervision of at least one master electrician, who will be present on the project at all times when such work is being performed.

C. All temporary Work shall be provided in conformity with the National Electric Code, State laws, and requirements of the power company.

D. The Contractor shall dismantle and completely remove from the project site, temporary electrical facilities upon Substantial Completion.

1.10 PARKING AND ACCESS TO THE BUILDING

A. The Owner’s parking lot is not to be used by the Contractor or his personnel for the duration of the project.

B. Full access to the buildings must be maintained at all times, for use by building occupants.

1.11 WEATHER PROTECTION

A. "Weather Protection" means the temporary protection of that Work adversely affected by moisture and wind. The Contractor shall furnish and install "Weather Protection" material and be responsible for all costs associated with the same.

B. The Contractor shall assume the entire responsibility for weather protection during construction (until Substantial Completion), and shall be liable for any damage to any Work caused by failure to supply proper weather protection and proper ventilation.

C. It is to be specifically understood that the Contractor shall do no work under any conditions deemed unsuitable by the Architect to the satisfactory execution of the Work. This provision shall not constitute any waiver, release, or lessening of the Contractor's obligation to bring the Work to Substantial Completion within the period of time set forth in the Contract Documents.

END OF SECTION

SECTION 01550

PROJECT MEETINGS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Contractor shall schedule and administer pre-construction meetings, periodic progress meetings, and schedule meetings throughout the progress of the work.

1. Prepare agenda for meetings.
2. Distribute written notice of each meeting.
3. Make physical arrangements for meetings.
4. Preside at meetings.
5. Prepare minutes of meetings unless otherwise directed in writing by the Architect.

B. Representatives of contractors, subcontractors and suppliers attending the meetings shall be qualified and authorized to act on behalf of the entity each represents.

C. A/E will attend meetings to ascertain that work is expedited consistent with Contract Documents and the Construction Schedules.

D. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

2. The Contractor's relations with his subcontractors and materials suppliers, and discussions relative thereto, are the Contractor's responsibility and normally are not part of project meetings content.

1.02 QUALITY ASSURANCE:

A. For those persons designated by the Contractor to attend and participate in project meetings, provide required authority and commit the Contractor to solutions agreed upon in the project meetings.

1.03 SUBMITTALS:

A. Make submittals of shop drawings, samples, substitution requests, and other items in accordance with the provisions of this section.

PART 2 – PRODUCTS:

Not Used.

PART 3 – EXECUTION:

3.01 PRE-CONSTRUCTION MEETING

A. Schedule within ten (10) calendar days after date of Purchase Order.

1. Minutes:
   a.) The Contractor shall compile minutes of each project meeting, and will furnish three copies to the Architect and required copies to the Owner.
   b.) Recipients of copies may make and distribute such other copies as they wish.

B. Locations: On Site. (Location to be determined)

C. Attendance:

1. Owner's Representative
2. A/E and his/her professional consultants
3. Resident Project Representative
4. Contractor's Superintendent
5. Major Subcontractors

D. Suggested Addenda:

1. Distribution and discussion of:
   a) List of major subcontractors and suppliers.
   b) Projected Construction Schedules
2. Critical work sequencing.
3. Major equipment deliveries and priorities.
4. Project Coordination
   a) Designation of responsible personnel.
5. Procedures and processing of:
   a) Field decisions
   b) Proposal requests
   c) Submittals
   d) Change Orders
   e) Applications for Payment
6. Adequacy of distribution of Contract Documents.
7. Procedures for maintaining Record Documents.
8. Use of premises:
   a) Office, work and storage areas.
   b) Owner's requirements.
9. Construction facilities, controls and construction aids.
10. Temporary utilities.
11. Safety and first-aid procedures.
12. Security procedures.
13. Housekeeping procedures.

3.02 PROGRESS MEETINGS:

A. Schedule regular periodic meetings, as required.

B. Hold called meetings as required by progress of work.

C. Location of Meetings: The project field office of the Contractor or other location as determined necessary.

D. Attendance:

1. Owner, Contractor, A/E and his professional consultants as needed or when requested by the Owner.
2. Subcontractors as appropriate to the agenda.
3. Suppliers as appropriate to the agenda.
4. Others.

E. Suggested Agenda:

1. Review, approval of minutes of previous meeting.
2. Review of work progress since previous meeting.
3. Field observations, problems, conflicts.
4. Problems which impede Construction Schedule.
5. Review of off-site fabrication, delivery schedules.
6. Corrective measures and procedures to regain projected schedule.
7. Revisions to Construction Schedule.
8. Plan progress, schedule, during succeeding work period.
9. Coordination of schedules.
10. Review submittal schedules; expedite as required.
11. Maintenance of quality standards.
12. Life/safety issues.

END OF SECTION

SECTION 01600

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide products from one manufacturer for each type or kind as applicable. Provide secondary materials as acceptable to manufacturers of primary materials.

B. Provide products selected or equal approved by Architect. Products submitted for substitution shall be submitted with complete documentation and include construction costs of substitution including related work.

C. Request for substitution must be in writing. Conditions for substitution include:

1. An 'or equal' phrase in the specifications.
2. Specified material cannot be coordinated with other work.
3. Specified material is not acceptable to authorities having jurisdiction.
4. Substantial advantage is offered to the Owner in terms of cost, time, or other valuable consideration.

D. Substitutions shall be submitted subsequent to the opening of bids but prior to award of contract, unless otherwise acceptable. Approval of shop drawings, product data, or samples containing substitutions is not an approval of a substitution unless items are clearly presented as a substitution at the time of submittal.

E. In making request for substitution, Bidder/Contractor represents:

1. He has personally investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.

2. He will provide the same guarantee for substitution as for product or method specified.

3. He will coordinate installation of accepted substitution into work, making such changes as may be required for work to be complete in all respects.

4. He waives all claims for additional costs related to substitution which consequently becomes apparent.

5. Cost data is complete and includes all related costs under his/her Contract, but excludes:
   a) Costs under separate contracts.
   b) Architect/Engineer's redesign.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01630

WARRANTY

PART 1 - GENERAL

1.01 SUMMARY

A. The Contractor shall submit a written warranty covering his work for a period of two (2) years. All warranties shall go into effect on the date of **Substantial** completion.

B. Refer to the General Conditions of the Contract for Construction for additional information.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01660

CLEANING UP

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Work Included: Throughout the construction period, maintain the building and site in a standard of cleanliness as described in this Section.

B. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. In addition to standards described in this Section, comply with requirements for cleaning as described in pertinent other sections of these specifications.

1.02 QUALITY ASSURANCE:

A. Conduct daily inspection, and more often if necessary, to verify that requirements for cleanliness are being met.

B. In addition to the standards described in this section, comply with pertinent requirements of governmental agencies having jurisdiction.

1.03 RESPONSIBILITIES OF THE CONTRACTOR:

A. The General Contractor shall be responsible for the work of this Section, however, each subcontractor engaged upon the work shall bear his/her full responsibility in cleaning up immediately each day upon completion of his work in accordance with the provisions of this Section or other applicable Sections of the Specifications and shall cooperate with the Contractor to that effect.

B. The above shall in no way be construed to relieve the Contractor of his responsibility for leaving all work in a clean and proper condition, satisfactory to the Owner and the A/E.

1.04 REQUIREMENTS OF REGULATORY AGENCIES:

A. Safety Standards: Maintain project in accordance with the following safety and insurance standard: Federal Occupational Safety and Health Act - Latest Edition.

B. Fire Protection: Store volatile waste in approved metal containers, and remove from premises daily.

C. Pollution Control: Conduct clean-up and disposal operations to comply with local ordinances and anti-pollution laws.

1. Burning or burying of rubbish and waste materials on project site is not permitted.
2. Disposal of volatile fluid wastes (such as mineral spirits, oil or paint thinner) in storm sanitary sewer systems or into streams or waterways is not permitted.

PART 2 - PRODUCTS:

2.01 CLEANING MATERIALS:

A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

B. Use cleaning materials only on surfaces recommended by cleaning materials manufacturer.

PART 3 - EXECUTION

3.01 DURING CONSTRUCTION:

A. Oversee cleaning and insure that building and grounds are maintained free from accumulations of waste material and rubbish.

B. Sprinkle dusty debris with water and calcium chloride as needed. Calcium chloride shall be utilized only as directed by the Architect.

C. At reasonable intervals daily, during the progress of work, clean up site and access and dispose of waste materials, rubbish and debris.

D. Do not allow waste material, rubbish and debris to accumulate and become an unsightly or hazardous condition.

E. Remove waste materials, rubbish and debris from the site and legally dispose of at public or private dumping areas off the Owner's property.

F. Vacuum clean interior building areas when ready to receive finish painting and continue vacuum cleaning on an as-needed basis until building is ready for acceptance or occupancy.

G. Lower waste materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

H. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet newly painted surfaces.

3.02 FINAL CLEANING:

A. Use experienced workmen, or professional cleaners for final cleaning.

B. At completion of construction and just prior to acceptance or occupancy, conduct a final inspection of exposed exterior and interior surfaces.

C. Remove grease, dust, dirt, stains, labels, fingerprints and other foreign materials from interior and exterior surfaces.

D. Repair, patch and touch-up marred surfaces to match adjacent surfaces.

E. Broom clean paved surfaces; rake clean other surfaces of grounds, daily.

F. Replace air conditioning filters if units were operated during construction.

G. Clean ducts, blowers and coils if air conditioning units were operated without filters during construction.

H. Maintain cleaning until the building or portion thereof is occupied by the Owner.

END OF SECTION

SECTION 01670

PROTECTION

PART 1 - GENERAL

1.01 SUMMARY

A. Any damage to buildings, roads, public roads, bituminous concrete areas, fences, lawn areas, trees, shrubbery, poles, underground utilities, etc. shall be made good by and at the Contractor's own expense, all to the satisfaction of the Owner. The Contractor shall patch, repair and/or replace all adjacent materials and surfaces damaged after the installation of new work at no expense to the Owner. All repair and replacement work shall match the existing in kind and appearance.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01700

EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. The following are prerequisites to substantial completion. Provide the following:

1. Punch list prepared by Contractor and subcontractors as applicable.
2. Supporting documentation.
3. Warranties.
4. Certifications.

B. Provide the following prerequisites to final acceptance:

1. Final payment request with supporting affidavits.
2. Completed punch list.

C. Provide a marked-up set of drawings including changes which occurred during construction.

D. Provide the following during project closeout:

1. Submission of record documents.
2. Submission of maintenance manuals.
3. Removal of temporary facilities.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01711

DEMOLITION AND REPAIR

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work included: Carefully demolish and remove from the building and site those items specified to be demolished and removed. Provide patching and repairs to all surfaces as indicated and as required for a complete and proper job.

B. Demolition shall not begin within the construction area or any other portions of the job site until all materials needed to complete the affected areas have been delivered to the job site.

C. Scope: The demolition and repair work generally consists of, but is not necessarily limited to that work described and shown on the drawings:

1. The work of this section also consists of, but is not necessarily limited to that work described in Section 01100, Summary of the Work and elsewhere herein.

D. Related Work:

1. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these specifications.
2. Section 01740: Cutting and Patching.

1.02 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

PART 2 - PRODUCTS

2.01 GENERAL

A. Match existing materials unless otherwise specified.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS:

A. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.02 DEMOLITION

A. By careful study of the Contract Documents, determine the location and extent of selective demolition and repairs to be performed.

B. Prepare and follow an organized plan for demolition and removal of items:

1. Shut off, cap, and otherwise protect existing utility lines.

2. Completely remove items scheduled to be so demolished and removed, leaving surfaces clean, solid, and ready to receive new materials specified elsewhere.

3. Where indicated on the drawings, completely remove footings, foundations, and above-ground and under-ground construction of all kinds.

4. Remove rocks larger than 6” diameter, roots, and debris.

5. In all activities, comply with pertinent regulations of governmental agencies having jurisdiction.

C. The Contractor shall be responsible for the removal and disposal of all materials and equipment from the site and building during the project. Unless directed otherwise by the Owner, all demolition materials to be removed from the site shall be disposed of in accordance with applicable laws and regulations.

D. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

E. Demolished material shall be considered to be the property of the Contractor unless Owner otherwise directs Contractor, and shall be completely removed from the job site. The Contractor shall, prior to any removal of rubbish from the site, furnish written evidence satisfactory to the Architect and/or Owner, that he has disposed of all debris from his demolition in an approved dumping location. **Owner shall have first right of refusal of any and all materials and equipment scheduled for removal.**

F. All demolition work shall be carried on in such a manner that the existing building and site and their component parts will not be damaged. Any damage to the building shall be corrected by the Contractor, to the satisfaction of the Owner and Architect, at no additional cost to the Owner.

G. Demolition of any of the material to be removed shall be carefully scheduled so that no portion of the buildings shall remain unprotected from the weather when work is not in progress. The Contractor and/or Subcontractor shall have on hand at all times, temporary covers and other materials to make weather tight areas that may be without protection in the event of a sudden shower, snowfall, freezing weather, etc.

3.02 REPLACEMENTS

A. In the event of demolition of items not so scheduled to be demolished, promptly replace such items to the approval of the Architect and at no additional cost to the Owner.

3.03 CUTTING, PATCHING, REPAIR

A. Patch and repair all surfaces damaged as a result of the work of this Contract. When completed, patches or repairs shall not be visible to the naked eye from a distance of 6 feet.

END OF SECTION

SECTION 01720

PERMITS AND FEES

PART 1 - GENERAL

1.01 SUMMARY

A. The Contractor shall apply for, obtain and pay for all required permits and fees and shall arrange and schedule all inspections required.

B. No work shall begin until all pertinent permits are obtained.

C. The building permit shall be posted in a location that is protected from the weather and clearly visible from the exterior of the building.

D. The Contractor shall submit a copy of the building permit to the Architect and Owner.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01740

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SUMMARY

A. Provide cutting and patching work to properly complete the work of the project, complying with the applicable project requirements for:

1. Structural work.
2. Mechanical/Electrical Systems.
3. Visual requirements, including detailing and tolerances.
4. Operational and safety limitations.
5. Fire-resistance ratings.
6. Inspection, preparation, and performance.
7. Cleaning.

B. Do not cut and patch in a manner that would result in a failure of the work to perform as intended, decrease energy performance, increase maintenance, decrease operational life, or decrease safety performance.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Match existing materials for cutting and patching work with new materials conforming to project requirements.

PART 3 – EXECUTION

3.01 INSPECTION

A. Inspect existing conditions of the Project, including elements subject to damage or to movement during cutting and patching.

B. After uncovering work, inspect the conditions affecting the installation of products, or performance of the work.

C. Report unsatisfactory or questionable conditions to the A/E in writing; do not proceed with the work until the A/E has provided further instructions.

3.02 PREPARATION:

A. Provide adequate temporary support as necessary to assure the structural value or integrity of the affected portion of the work.

B. Provide devices and methods to protect other portions of the project from damage.

C. Provide protection from the elements for that portion of the project which may be exposed by cutting and patching work and maintain excavations free from water.

3.03 PERFORMANCE:

A. Execute cutting and demolition by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.

B. Execute excavating and backfilling by methods which will prevent settlement or damage to other work.

C. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.

D. Restore work which has been cut or removed; install new products to provide completed work in accord with requirements of Contract Documents.

E. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.

F. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes.

1. For continuous surfaces, refinish to nearest intersection.
2. For an assembly, refinish the entire unit.

END OF SECTION

SECTION 01760

SURVEYS AND RECORD DRAWINGS

PART 1 - GENERAL

1.02 RECORD DRAWINGS

A. Record Drawings shall consist of all the Contract Drawings.

B. From the sets of drawings furnished by the Owner, the Contractor shall reserve one set for record purposes. From this set, the Contractor shall detach and furnish, at no charge to the Mechanical and Electrical Subcontractors the drawings of their portion of the Work for the same purpose.

C. The Contractor and the above Subcontractors shall keep their record set on the site at all times and note on it in colored ink or pencil, neatly and accurately, at the end of each working day, the exact location of their work as actually installed. This shall include the location and dimensions of underground and concealed Work and any architectural, mechanical, or electrical variations from the Contract Drawings. All changes, including those issued by Addendum, Change Order, or instructions by the Architect shall be recorded. Record Drawings shall be prepared for the entire project and include all Work.

D. The Architect may periodically inspect the Record Drawings at the site. The proper and current maintenance of the information required on these drawings shall be a condition precedent to approval of the monthly requisitions for periodic payment.

E. At Substantial Completion the Contractor shall submit the complete set of Record Drawings to the Architect. The Architect will review these drawings and return them to the Contractor with necessary comments.

F. Upon receipt of a set of electronic media files of the original contract drawings from the Architect, the Contractor and Subcontractors shall transfer the As-Built information shown on the Record Drawings. This drafting shall be done by an experienced draftsperson and match the original drawings.

G. The Contractor shall, at its own expense, prepare two sets of prints and then submit copies of the prints to the Architect. Each sheet shall be clearly marked "Record Drawing" and bear the date of printing. Submission of accurate Record Drawings and their approval by the Architect shall be a condition precedent to final payment.

END OF SECTION

C. OPERATING INSTRUCTIONS AND MANUALS

1. Subcontractors, installers and suppliers shall furnish to the Contractor two sets of operating and maintenance instructions of all mechanical, electrical and manually operated equipment furnished and installed by them. Mechanical and electrical Subcontractors shall furnish instructions as specified in their respective sections.

2. The Contractor shall collect all of the above instructions, bind them into two complete sets and submit them to the Architect who will deliver them to the Owner.

3. Submission of operating and maintenance instructions shall be a condition precedent to final payment.

D. INSTRUCTION OF OWNER'S PERSONNEL.

1. Where specified in the individual sections of the specifications, the Contractor and Subcontractor shall instruct the Owner's personnel at the site, in the use and maintenance of equipment installed under the Contract.

2. Submission to the Architect of a certificate of compliance to this requirement, signed by the Contractor and the Owner's Representative, shall be a condition precedent to final payment.

1.07 SUBSTANTIAL COMPLETION:

A. When Contractor considers the work is substantially complete, he shall submit to A/E:

1. A written notice that the work, or designated portion thereof is substantially complete.

2. A list of items to be completed or corrected.

B. Within a reasonable time after receipt of such notice, A/E will make an inspection to determine the status of completion.

C. Should A/E determine that the work is not substantially complete:

1. A/E will promptly notify the Contractor in writing, giving reasons thereof.

2. Contractor shall remedy the deficiencies in the work and send a second written notice of substantial completion to the A/E.

3. A/E will re-inspect the work.

D. When A/E concurs that the work is substantially complete he will:

1. Prepare a Certificate of Substantial Completion, accompanied by Contractor’s list of items to be completed or corrected, as verified and amended by the A/E.

1.08 FINAL INSPECTION:

A. When Contractor considers the work is complete, he shall submit written certification that:

1. Contract Documents have been reviewed.

2. Work has been inspected for compliance with Contract Documents.

3. Work has been completed in accordance with Contract Documents.

SECTION 01780

PROJECT CLOSEOUT

PART 1 – GENERAL

1.01 SUMMARY

A. This section supplements the General Conditions.

B. Consult the individual sections of the specifications for specific items required under those sections.

1.02 DESCRIPTION:

A. Work Included: Provide an orderly and efficient transfer of the completed work to the Owner.

B. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

2. Activities relative to contract closeout are described in, but not necessarily limited to the General Conditions.

3. “Substantial Completion” is defined in the General Conditions, and herein.

1.03 QUALITY ASSURANCE:

A. Prior to requesting inspection by the Architect, use adequate means to assure that the work is completed in accordance with the specified requirements and is ready for the requested inspection.

1.04 OCCUPANCY PERMIT (as applicable)

A. The Contractor shall coordinate the efforts of all Subcontractors and obtain the Completion Certificate from the local Building Department, as required by the Building Official. The Contractor shall pay any Building Department fee associated with the Occupancy Permit.

1.05 RECORD DRAWINGS

A. Consult the individual sections of the Specifications for the specific requirements of those sections. In cases of inconsistency the more stringent requirement, as directed by the Architect, shall be required.

B. Prior to final payment and completion the Contractor shall provide all Record Drawings and media (CDs,flash drives, etc.) as required under other sections of the Specifications.

1.06 OPERATING AND MAINTENANCE INSTRUCTIONS

A. Prior to final payment and completion the Contractor shall provide all Maintenance Instructions as required by the Contract Documents.

B. Consult the individual sections of the specifications for the specific requirements for those sections and for further details and descriptions of the requirements.

4. Equipment and systems have been tested in the presence of the Owner's representative and are operational.

5. Work is completed and ready for final inspection.

B. A/E will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.

C. Should A/E consider that the work is incomplete or defective:

1. A/E will promptly notify the Contractor in writing, listing the incomplete or defective work.

2. Contractor shall take immediate steps to remedy the stated deficiencies and send a second written certification to A/E that the work is complete.

3. A/E will re-inspect the Work.

D. When the A/E finds that the work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.

1.09 RE-INSPECTION FEES:

A. Should A/E perform re-inspections due to failure of the work to comply with the claims of status of completion made by the Contractor, and site visits are required in addition to those noted previously under Substantial Completion and Final Inspection:

1. Contractor shall compensate A/E for such additional services. A/E fees shall be charged to the General Contractor at the A/E standard hourly rate of *$175.00/hr*.

2. Processing of Final Payment to the Contractor will not be completed until full payment for additional A/E Services is made by the Contractor to the Architect.

1.10 CONTRACTOR'S CLOSEOUT SUBMITTALS AND PROCEDURES:

A. Provide submittals to Architect that are required by governing or other authorities, including the following closeout documents. Six (6) originally executed copies of all documentation shall be submitted. **Note: these items must be submitted prior to issuance of the Final Application for Payment**.

1. AIA Document G706 - Contractor's Affidavit of Payment of Debts and Claims, latest Edition.
2. AIA Document G706A - Contractor's Affidavit of Release of Liens, latest Edition.
3. AIA Document G707 - Consent of Surety Company to Final Payment, latest Edition.

B. Submit Final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

C. Convey fully corrected and updated set of Project Record Documents to Architect with Final Application for Payment.

D. Evidence of compliance with requirements of governing authorities:

1. Certificate of Occupancy.

E. Final Completion will be considered only when Architect has approved and accepted possession of required closeout documents, and has determined closeout procedures are completed.

F. Operating and Maintenance Data, Instructions to Owner's Personnel.

G. Warranties and Bonds.

H. Keys and Keying Schedule.

I. Spare Parts and Maintenance Materials.

1.11 FINAL ADJUSTMENT OF ACCOUNTS:

A. Submit a final statement of accounting to the Architect.

B. Statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum.

2. Additions and deductions resulting from:
   a) Previous Change Orders.
   b) Allowances.
   c) Unit Prices.
   d) Deductions for uncorrected work.
   e) Penalties and Bonuses.
   f) Deduction for liquidated damages.
   g) Deductions for re-inspection payments.
   h) Other adjustments.

3. Total Contract Sum, as adjusted.

4. Previous payments.

5. Sum remaining due.

C. The Architect will prepare a final Change Order reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

1.12 FINAL APPLICATION FOR PAYMENT:

A. Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the Provisions of the Contract.

B. See *1.09* regarding inspection fees, preceding.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION

SECTION 02100

SITE PREPARATION

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Provide all labor, equipment and materials necessary to complete all site preparation work indicated on the drawings, herein specified, or both.

B. Site preparation operations include, but are not limited to the following:

1. Disposal of waste materials
2. Disposal of excess materials
3. Protecting trees and vegetation
4. Landscaping repairs

C. Existing improvements that interfere with new work shall be carefully removed and then re-installed at completion of new work.

D. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1.02 QUALITY ASSURANCE:

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of this section.

B. Comply with pertinent requirements of governmental agencies having jurisdiction.

1.03 PRODUCT HANDLING:

A. Comply with pertinent provisions of Section 01600.

1.04 JOB CONDITIONS:

A. Protection of Existing Improvements:

1. Provide barricades, coverings, or other types of protection necessary to prevent damage to existing improvements and trees.

2. Restore any improvements damaged by this work to their original conditions, as acceptable to the Owner and Architect

3. Where and when applicable, Contractor shall contact “Dig-Safe” at 1-800-225-4977, at least three business days prior to any excavation. NOTE: If “Dig-Safe” will not perform the work, the Contractor shall engage the services of a State-licensed “below-grade utility locating company” to perform the required work of this section. Do so at no additional cost to the contract.

B. Protection of Existing Trees and Vegetation:

1. Protect existing trees and vegetation including root system, from damage.

2. Do not stockpile construction materials or excavated materials within drip lines of trees to remain.

3. Do not allow excess foot or vehicular traffic or parking of vehicles within drip line of trees to remain.

4. Provide temporary fences, barricades or barriers as required to protect trees and vegetation to remain.

5. Provide protection for roots and branches over 1-1/2 inches in diameter that are cut during construction and clearing operations. Coat the cut faces with an emulsified asphalt, or other acceptable coating especially formulated for horticultural use on cut or damaged Plant tissues. Temporarily cover all exposed roots from drying out, and provide earth cover as soon as possible.

6. Repair or replace trees and vegetation damaged by construction operations in a manner acceptable to the Owner and the A/E.

C. Maintenance of Traffic, Access and Utilities:

1. Throughout the progress of the work, do not interfere with use of or access to adjacent buildings or property.

2. Do not close or otherwise obstruct sidewalks without obtaining advanced permission from the Owner to do so.

3. Maintain accessibility to any fire hydrants any emergency vehicles, personnel, and equipment within the construction area.

PART 2 – PRODUCTS

2.01 LOAM

A. Acceptable loam to be furnished and loam that is stripped from the site shall be a “fine sandy loam” determined by Mechanical analysis and based on the “U.S.D.A. Classification System”. Unacceptable stripped loam shall be disposed of as directed by the Owner. All loam, new and on-site (reused), shall be of uniform composition, without admixture or subsoil. It shall be free of stones greater than one inch, lumps, plants and their roots, debris and other extraneous matter over 1-1/2” in diameter or excess quantities of smaller pieces of the same materials as determined by the Architect. It shall not contain toxic substances harmful to plant growth or humans. It shall be obtained from naturally well drained areas which have never been stripped before and have a history of satisfactory vegetable growth. All loam will be borrow and shall have an acidity range of pH 5.0 to pH 7.0.

2.02 GRASS SEED:

A. Provide fresh, clean, new crop seed for lawns. Provide the composition of the following varieties, mixed in the indicated proportions and tested to the indicated minimum percentages:

1.

% by Weight	Types	% Purity	% Germination
25%	Marion Kentucky Bluegrass	85%	80%

25%	Kentucky Bluegrass	85%	80%
50%	Chewing's Fescue	98%	85%
	or		
	Creeping Red Fescue	98%	85%

2.03 LIME

Lime for all horticultural purposes shall consist of a standard commercial product of ground agricultural limestone intended for agricultural use. It shall be fine ground dolomite such that, when "burned" by standard lime producing methods, it shall yield at least 30% calcium oxide and 5-20% magnesium oxide. At least 40% but not more than 60% shall pass through a 100-mesh screen and all shall be able to pass a 20-mesh screen

2.04 FERTILIZER:

A. Tree fertilizer shall be 8-yr. Feeder Packet (analysis: N-16%, P_2O_5 - 8%, K_2O - 16%). Unique Fertilizers, Inc. or equal as approved by the A/E.

B. Commercial Fertilizer: Shall contain at least 10% available nitrogen of which 30% shall be in a slow-releasing form as is found in certain urea-form products or natural organic forms, or a combination of both. Commercial fertilizer shall also contain at least 6% available phosphoric acid, at least 4% available potassium, and significant quantities of trace elements such as iron, boron, etc.

C. Unless otherwise specified, fertilizer meeting these requirements shall be applied at the rate of 1,000 pounds per acre. If substantially stronger fertilizer is used, application may be in smaller quantities, but in no case may less than 100 pounds of available nitrogen per acre be applied with 30% of that amount in slow-releasing form.

D. On slopes, an additional 400 pounds of fertilizer, having a composition of 0% available nitrogen, 25% available phosphoric acid, and 25% available potassium, shall be applied.

PART 3 - EXECUTION

3.01 SITE CLEARING:

A. Not applicable

3.02 PRUNING:

A. Not applicable

3.03 SEEDING OPERATIONS

A. General:

1. Perform seeding with personnel familiar with planting procedure, and under the supervision of a qualified planting foreman adjudged by the Owner to be capable of performing the Class and Scale of work contemplated.

B. Planting Season:

1. Unless otherwise shown on the Drawings or directed by the Owner, the planting seasons shall be those indicated below. Seeding shall not be completed on frozen ground nor when snow covers the grounds or when the soil is otherwise in an unsatisfactory condition for planting.

a) Seeding: Spring: April 1st to June 1st
Fall: August 15th to October 15th

2. Seeding at other than the above times shall be allowed only with the written permission of the A/E.

3. If the seed bed has been prepared and the time is not appropriate for seeding, the seeding shall be completed during the next seeding season. The Contractor shall notify the A/E at least forty-eight (48) hours in advance of the time he intends to commence seeding.

C. Grassed Areas:

1. Preparation of areas for seeding:

a.) Finely rake loam areas to a finished grade. Remove all sticks, litter, wire, weeds, cable, and stones larger than one-half inch in overall dimensions and dispose of as approved. Where
the soil has become compacted, scarify areas to be seeded to a minimum depth of (6) inches. No seeding of this type will be permitted on areas where the seed bed has not been properly prepared or where the soil is compacted.

b.) Lime: Spread evenly and work into the soil during the preparation of seed bed at the rate of one ton per acre. Incorporate into soil by discing or other approved method. When applied hydraulically, no discing will be necessary.
Mechanically spread or power spray lime at the rate determined by testing on all areas. Distribute lime uniformly and work into the top four inches minimum of the topsoil and uniformly blend by discing or rototilling.

On slopes exceeding twenty-five percent, apply lime at the rate determined by testing with a power sprayer in the slurry with fertilizer, seed, and mulching material, as specified
elsewhere in this item. However, loosen these areas by tiling and fine grading as noted below.

c.) Fertilizer: Incorporate into the planting soil at the rate of 5 lbs. per 1000 sq. ft. Incorporate fertilizer into soil by discing or other approved method of seeding.

d.) Finished Raking: Perform by an approved method to the satisfaction of the Architect. Adjust the grades near curing and walks to fit the proposed grade.

e.) Rolling: Do in two directions, perpendicular to each other. The roller shall be a hand roller weighing not more than 200 lbs. nor less than 150 lbs. Roll in such a manner as to eliminate the necessity of walking on the finished grade. During the rolling, fill all depressions caused by settlement of rolling with additional sod and regrade the surface and roll until it presents a smooth and even finish and is up to the required grade.

f.) After rolling, check the finished grade for depressions, lumps, or any other irregularities. Repair and re-roll all as directed by the Owner's Representative.

g.) Apply pre-emergent weed control to new seeding areas ONLY, according to manufacturer's recommendations.

2. Preparation for overseeding: Spread agriculture limestone and core-aerate to a depth of 2" to 4". Only coring tines and/or open spoon tines shall be employed. A dragnet (chain mesh) or equal shall be mounted behind coring unit to breakup cores and groom grass.

3. Sowing of Seed:

   a.) Sow seed at the minimum rate of five (5) pounds per one thousand (1,000) square feet. Hydroseed at the rate of three (3) pounds per one thousand square feet where directed.

   b.) Do not seed during windy weather.

   c.) Seed in two (2) directions perpendicular to each other. No hydroseeding will be accepted
   unless application method is approved prior to application by the Architect.

   d.) Sow the seed evenly with an approved seeding device at the proportion and rate specified.

   e.) Water the entire area with a fine spray. Be responsible for all watering to establish good growing conditions.

4. Overseeding: Approved seed mixture shall be applied at a rate of 6 lbs./1,000 sq. ft. by means of seeder device capable of penetrating ground to a depth of 1'. Seeder machine shall be equipped with disc-type penetrating action and seeder tubes which plant seeds. Seeder shall be similar to Jacobsen Model 524-100, 548-100 or equal. Distribute seed over area into separate passes, each one perpendicular to the other (north-south, east-west orientation). Each pass shall be in a linear progression, and shall conform to the field direction which permits the longest, straight line application procedure. Hydroseeding will be permitted only with written permission of the Owner. All requests shall be in writing with detailed and itemized procedure to be followed.

5. Mulching: Cover all seeded area with a suitable mulch within seventy-two (72) hours after the application of the seed.

   a.) Hay or Straw:

      1.) Hay or straw may be applied to these areas by blower. Rate of application .62 to .82 pounds per square yard (1-1/2 to 2 tons per acre). Supply sworn weight slips on all deliveries of hay to the Architect.

      2.) In the event that a severe wind condition continually blows the hay mulch from seeded area, Owner's Representative may require that woven paper netting be applied over the mulch. No extra payment will be made for this netting.

   b.) Cellulose Fiber: Cellulose fiber mulch only may be used on these areas if approved by the Architect. Application rates shall be 1,000 pounds per acre on flats, 1,500 pounds per acre on the slopes. Remove fiber mulch that becomes adhered to signs, sign posts, and/or lighting standards.

6. Watering:

   a). Water used shall be furnished by the Contractor unless otherwise coordinated with the Owner. It shall be the Contractor's responsibility to furnish and use all necessary equipment and labor to do the watering. The Contractor shall be responsible for watering all grassed areas (seeded and sodded) when and where necessary and in accordance with applicable weather conditions for a minimum of sixty (60) days or until otherwise accepted by the Owner.

   b). Moisture Requirement:

1.) The quantity of water applied at one time shall be sufficient to penetrate the soil to a minimum depth of six (6) inches and at a rate which will prevent saturation of the soil. During extremely hot weather care must be taken to prevent over watering and water applications shall be spaced at longer intervals unless grass is in danger of drought damage, and as directed by the Owner.

c). Water shall be applied with standard sprayers to distribute in uniform and even quantities. Hose spraying will not be permitted.

7. Other Maintenance:

a). Mowing: Cut the grass when it is from 2-1/2 to 3 inches high. Properly prepare, lime and fertilize, and re-sod all bare or dead spots at no expense to the Owner as many times as necessary to secure a good growth. Maintain the entire area and cut until final acceptance of the sod and seed installation.

b). Protection: Take whatever measures are necessary to protect the seed while it is enveloping up to the time of final acceptance. Include furnishing of warning signs, barriers, temporary fence or any other necessary measures of protection.

Furnish, erect, and maintain all such temporary barriers until final acceptance of the seed areas by the Owner and remove them upon such final acceptance. The barriers shall remain the properly of the Contractor at all times.

c). Fertilization after establishment: Approximately six (6) weeks after the grass is established in seeded areas, apply fertilizer as indicated herein.

3.04 DISPOSAL OF WASTE MATERIALS

A. Burning on Owner's Property:

1. Burning of combustible cleared and grubbed materials is not permitted on the Owner's property.

2. Remove materials in such a manner so as to prevent spillage.

3. Keep pavements and areas adjacent to and leading from the site clean and free of mud, dirt and debris.

3.05 FINAL CLEAN-UP:

A. Promptly remove any soil, peat or similar material which has been brought onto paved areas by hauling operations or otherwise, keeping those areas clean at all times. Upon completion of the planting, remove all temporary construction facilities and unused materials provided for the work from the site or dispose of as directed by the Owner's Representative. Trash and combustible materials shall not be allowed to accumulate. Prepare all planting areas for final inspection.

END OF SECTION

SECTION 03200

CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.01 DESCRIPTION

A. Provide all labor, materials, equipment and services for proper and complete fabrication and installation of concrete reinforcing steel for all cast-in-place concrete work as shown on drawings or specified herein.

B. Include furnishing and fabrication or reinforcing steel for reinforced concrete where shown on the drawings.

C. Attention is called to the fact that cast-in-place concrete and masonry items requiring reinforcement may be shown on the structural, architectural, mechanical, electrical, plumbing and site drawings.

D. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.02 STANDARDS, CODES AND SPECIFICATIONS:

A. Provide concrete reinforcement in accordance with “Building Code Requirements for Reinforced Concrete” (ACI318) and “Manual of Standard Practice for Detailing Reinforced Concrete Structures” (ACI315), latest editions, unless modified hereafter.

1.03 SUBMITTALS:

A. Comply with Section 01300.

PART 2 - PRODUCTS

2.01 REINFORCING MATERIALS:

A. Reinforcing Bars (ReBar): ANSI/ASTM A615, Grade 60, deformed. Grade 40 may be used for stirrups and tie bars.

B. Welded Wire Fabric: ANSI/ASTM A185, welded steel wire fabric.

C. Steel Wire:

1. 70,000 psi yield strength conforming to “Specifications for Cold Drawn Steel Wire for Concrete Reinforcement” (ASTM A-82).

PART 3 - EXECUTION:

3.01 CONCRETE PROTECTION:

A. The reinforcement of footings and other principal structural members in which concrete is deposited against the ground shall have not less than 3” of concrete between it and the

ground surface. If concrete surfaces, after removal of the forms, are to be exposed to the weather or be in contact with the ground, the reinforcement shall be protected with not less than 2-inches of concrete.

B. The concrete protective covering for reinforcement at surfaces not exposed directly to the ground or weather shall be not less than 1 inch for slabs and walls; and not less than 1-1/2" for beams, girders and columns.

C. Concrete protection for reinforcement bars shall, in all cases, be at least equal to the diameter of round bars, and 1-1/2 times the side dimension of square bars and 1/3 the slab thickness for mesh reinforcement.

3.02 FABRICATING AND PLACING TOLERANCES:

A. Where and when applicable, fabricate bars used for concrete reinforcement to the following tolerances:

1. Sheared length: Plus or minus 1".
2. Stirrups, ties, and spirals: Plus or minus 1/2"
3. All other bends: Plus or minus 1".

B. Place bars to the following tolerances:

1. Concrete cover to formed surfaces: Plus or minus 1/4"
2. Minimum spacing between bars: Minus 1/4"
3. Top bars in slabs and beams:
   a) Members 8" deep or less: Plus or minus 1/4"
   b) Members more than 8" but not over 2 ft. deep: Plus or minus 1/2"
   c) Members more than 2 ft. deep: Plus or minus 1"
4. Crosswise of members: Spaced evenly within 2"
5. Lengthwise of members: Plus or minus 2".

C. Move bars as necessary to avoid interference with other reinforcing steel, conduits, or embedded items. If bars are moved more than one bar diameter, or enough to exceed the above tolerances, the resulting arrangement of bars shall be subject to approval.

3.03 PLACING:

A. Support and wire together all reinforcing bars to prevent displacement by construction loads or the placing of concrete beyond the tolerance as noted above. On ground and where necessary supporting concrete blocks may be used. Over formwork, furnish concrete surface will be exposed to view in the finished structure or where rust could impair architectural finishes, plastic coat the portions of all accessories in contact with the formwork.

B. Before being placed in position, clean reinforcement thoroughly of loose mill and rust, scale, dirt, ice, and other coatings that may reduce or destroy bond. Where there is delay in depositing concrete after reinforcement is in place, bars shall be re-inspected and cleaned as necessary.

C. Welded wire fabric shall have lapped splices so made that the overlap measured between outermost cross wires of each fabric sheet is not less than the spacing of the cross wires plus 2 inches. Support as required for reinforcing bars.

3.04 CONSTRUCTION JOINTS:

A. Joints not shown on the drawings shall be so made and located as to least impair the strength of the structure and shall be approved by the A/E. Location of all joints at all exterior elevations shall be determined by the A/E.

B. Continue all reinforcing steel and welded wire fabric across joints. Provide keys and inclined dowel as directed by the A/E. Provide longitudinal keys at least 1-1/2" deep in all joints in walls and between walls and footings.

C. Clean the surface of the concrete thoroughly at all joints and remove all laitance.

D. Obtain bond by one of the following methods:

1. The use of bonding compound "EUCO Weld" by the Euclid Chemical Company or approved equal.

2. The use of an approved chemical retarder which delays but does not prevent setting of the surface mortar. Remove retarded mortar within 24 hours after placing to produce a clean exposed aggregate bonding surface.

3. By roughening the surface of the concrete in an approved manner which will expose the aggregate uniformly and will not leave laitance, loosened particles or aggregate or damaged concrete at the surface.

E. Expansion Joints:

1. Reinforcement of other embedded metal items bonded to the concrete (except dowels in floors bonded on only one side of joint) shall not be permitted to extend continuously through any expansion joints.

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Provide all labor, equipment, materials, and supplies required to furnish and install all cast-in-place concrete as indicated on the drawings, herein specified, or both.

B. Cast-in-place concrete work includes, but is not limited to, footings, foundations, sidewalks and aprons, concrete pads, slabs, and miscellaneous concrete items for all equipment, manholes, light poles, catch basins, duct or pipe encasements, thrust blocks, and other items as detailed or required by all trades for completion of the project. Coordinate with all trades, their requirements and miscellaneous concrete items.

C. Attention is called to the fact that some items of cast-in-place concrete work may be detailed on drawings other than architectural drawings.

D. Contractor shall visit the site and become familiar with the specified and the intended work. Verify and include quantities of work pertaining to this section and other sections herein prior to submitting bid. No allowance for additional costs shall be considered for work obviously intended to be a part of this section.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.03 SUBMITTALS:

A. Deleted

B. Comply with pertinent provisions of Section 01300, herein.

1.04 PRODUCT HANDLING:

A. Comply with pertinent provisions of Section 01600.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Cements:
Conform to “Specifications for Portland Cement” (ASTM C-150), Type I or Type II.

B. Admixtures:
1. Air-entraining admixture - required in all concrete exposed to weather.
   a) Use “Air-Mix” by the Euclid Chemical Company, “MB-VR” by Master Builders, or approved equal admixture in all concrete designated as Air-entrained. Vary the quantity used to produce the specified amount of total air content.
   b) Admixture shall meet the requirements of ASTM C-260. When requested, certification attesting to the percent of effective solids and compliance of this material with ASTM C-260 shall be furnished.

2. Water reducing Admixture:

   a) Use “Eucon WR-75” by the Euclid Chemical Company or “Pozzolith 200N” by Master Builders or equal approved in writing, by the Architect, in all concrete. The admixture shall conform to ASTM C-494, Type A, and not contain any lignosulfonic acids or their salts nor more than 1% chloride ions. Documentary evidence shall be provided attesting that concrete produced with substitute materials will provide the same or better quality than required by this Specification. Contractor and concrete producer shall assume complete responsibility for a substitute admixture if request is approved.

3. Non-Corrosive Accelerator:

   a) Use “Accelguard” by the Euclid Chemical Company or “Darex Set Accelerator” by W.R. Grace & Company, in all slabs placed below 50°F. The admixture shall conform to ASTM C-494, Type C or E, and have long-term test data proving its non-corrosive effect on metal deck and reinforcing steel.

4. Field Service:

   a) The admixture manufacturer, when requested, shall provide at no expense to the Owner, a qualified concrete technician employed by the manufacturer to assist in proportioning concrete for optimum use of the admixture. He shall also be available when requested, to advise on proper addition of the admixture to the concrete and on adjustment of concrete mix proportions to meet job conditions.

5. Testing:

   a) If requested by the Architect, testing and inspection shall be performed by an independent testing agency approved by the A/E and shall be paid for by the General Contractor using a portion of the Testing Cash Allowance.

   b) Testing required because of changes in materials or proportions of the mix requested by the Contractor, as well as any extra testing of concrete or materials occasioned by their failure to meet specification requirements, shall be at the Contractor’s expense.

   c) The use of testing services shall, in no way, relieve the Contractor of his responsibility to furnish materials and construction in full compliance with the plans and specifications.

   d) If requested by the Architect, to facilitate testing services, the Contractor shall:
      1) Secure and deliver to the A/E or his testing agency, without cost, preliminary representative samples of the materials he proposes to use and which are required to be tested.
      2) Submit through the testing agency to the A/E, the concrete mix design he proposes to use with documentation and make written request for approval.
      3) Furnish such casual labor as is necessary to obtain and handle samples at the project or at other sources of material. One set of at least three (3) cylinders will be made from each 20 cubic yards or fraction thereof, of each mix placed.
      4) Advise the testing agency sufficiently in advance of operations to allow for completion of quality tests and for the assignment of personnel.
      5) Provide and maintain of the sole use of the testing agency, adequate facilities for safe storage and proper curing of concrete test cylinders on the project site for the first 24 hours as required by ASTM C-31.

   e) The strength level of the concrete will be considered satisfactory so long as the averages of all sets of the three (3) consecutive strength test results equal or exceed the specified strength, f’ and no individual strength test result falls below the specified strength, $f^c{}_c$’ by more than 500 psi.

f) If the results of the tests indicate that the strength of the concrete is below the specified strength, and in the opinion of the A/E the performance of the structure is jeopardized, the Contractor shall reinforce the defective concrete with additional construction or remove and replace the defective concrete as directed by the A/E at no additional cost to the Owner.

C. Where exact location of openings, inserts, hangers, built-in equipment, etc. is to be determined by equipment or other items furnished or installed under this Contract, it shall be the responsibility of the General Contractor to obtain the required information from all the trades, manufacturers, suppliers, etc. and to coordinate same.

D. Water:

1. Clean, drinkable, free from injurious amounts of oils, acids, alkalis, organic materials or deleterious substances.

E. Aggregates:

1. Fine and coarse aggregates conforming to current ASTM Specification C-33, “Specification for Concrete Aggregates.”

F. Construction Joints:

1. Construct isolation joints in slabs-on-ground at points of contact between slabs on ground and vertical surfaces such as column pedestals, foundation walls, grade beams and elsewhere as indicated.

2. Construct contraction joints in slabs-on-ground to form panels of patterns as shown or as directed by the A/E.

a) Contraction joints must be formed by saw cuts within four (4) hours after slab finishing without dislodging aggregate.

G. Expansion Joint Filler:

1. Self-expanding corkboard conforming to ASTM D-1752 for exterior work.

2. Asphalt impregnated fiberboard conforming to ASTM D-1751 for interior work.

3. Epoxy Joint Filler: “Euco Epoxy #491” by the Euclid Chemical Company or “Sikadur Lo-Mod Mortar” by Sika Chemical Corporation. The compound shall be 100% solids, 3-component, and have a minimum shore D hardness of 50.

H. Curing Compounds:

1. Curing and sealing compound. “Super Floor Coat” or “Super Pliocure” by the Euclid Chemical Company or “Masterseal” by Master Builders. The compound shall conform to Federal Spec. TT-C-800A, 30% solids content minimum.

2.02 RELATED MATERIALS:

A. Moisture Barrier: Provide moisture-vapor barrier cover over prepared slab base material where indicated or required for a complete and proper job. Use only materials which are resistant to decay when tested in accordance with ANSI/ASTM E154, as follows.
1. Water resistant barrier paper consisting of heavy Kraft papers laminated together with glass fiber reinforcement and over-coated with black polyethylene on each side.

B. Sheet Waterproofing: Refer to Section 07130.

C. Waterstop: Provide continuous polyvinyl chloride (PVC) waterstop at concrete joints, equal to Wirestop® to prevent the passage of liquid through the joint. Waterstop shall exceed the Corps of Engineers specification CRD—C572-74 and shall have a minimum tensile strength of 2,000 psi and a minimum elongation of 325%. The PVC shall not contain vinyl extenders.

2.03 PROPORTION OF CONCRETE:

A. Concrete elements have been analyzed and proportioned by ultimate strength design.

B. All concrete shall have a 28-day compressive strength of 4,000 psi unless noted otherwise.

C. Provide 6% $\pm$ 1, air entrainment at exterior exposed slabs, beams, columns, and walls.

D. Proportioning of ingredients in accordance with AC1318, Section 4.3 (Field Experience) or Section 4.4 (Trial Batches).

E. Evaluations of compressive strength of field concrete in accordance with ACI1318, Section 4.8 (Evaluation and Acceptance of Concrete).

F. Slump determined in accordance with ASTM Specification C-143 and shall not exceed 3 inches.

G. Air content of concrete required to be air-entrained in accordance with Table 3.4.1 of ACE Standard 301 unless otherwise specified.

H. Maximum size of coarse aggregates not larger than one-fifth of the narrowest dimension between the sides of the forms, no larger than three-fourths the minimum clear spacing between reinforcing bars.

I. When air temperatures exceed 85°F, and when humidity and/or placing conditions dictate, the A/E may require a change to the specified water-reducing admixture. When air temperatures are below 50°F., the A/E may approve the use of the non-corrosive accelerator.

1. CALCIUM IS <u>NOT</u> PERMITTED.

2.04 MIXING:

A. All concrete shall be ready-mixed concrete, conforming to the “Specifications for Ready-Mixed Concrete”, ASTM-C-94.

B. Cold weather batching in accordance with ACI-306, “Recommended Practice for Winter Concreting”.

C. Hot weather batching in accordance with ACI-305, “Recommended Practice for Hot Weather Concreting”.

2.05 RE-TEMPERING:

A. Mix concrete only in quantities for immediate use. Do not re-temper concrete which begins to lose slump.

B. Do not add water to increase slump.

<u>PART 3- EXECUTION</u>

3.01 PLACING:

A. Preparation: All work shall be done in accordance with ACI-304, “Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete”. Remove all construction debris and extraneous matter from within the forms, if applicable. Remove struts, stays, bracing and blocks, serving temporarily to hold the forms in correct shape and alignment. Place all concrete on clean, damp surfaces. Do not place concrete in water. Maintain all excavations for concrete free of water. Deposit concrete in approximately horizontal layers, not to exceed 18 inches.

1. Cold Weather Requirements:

a) Concrete shall not be mixed or placed when the temperature is below 40°F or when conditions indicate that the temperature will fall below 40°F within 72 hours, unless precautions are taken to protect the concrete.
b) Concrete temperature shall be maintained, when deposited, at not less than 60°F. In cold weather, the reinforcement, forms, and ground which the concrete will contact, must be completely free of frost.
c) The Concrete and formwork must be kept at a temperature of not less than 50°F for not less than 72 hours after placing.

2. Hot Weather Requirements:

a) The maximum placing temperature of the concrete, when deposited, shall be 80°F. If the weather causes the placing temperature to exceed 80°F, the mix shall be cooled by wetting the aggregate or other appropriate method, if approved by the A/E.

B. Conveying:

1. Transport concrete from the mixer to the place of final deposit as rapidly as practicable by methods which will prevent separation or loss of ingredients and in a manner which will assure that the required quality of the concrete is obtained.

2. Provide approved conveying equipment of size and design to ensure a continuous flow of concrete at the delivery end.

C. Depositing:

1. Deposit concrete continuously or in layers of such thickness that no concrete will be deposited on concrete which has hardened sufficiently to cause “cold joints”.

2. Deposit concrete as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. Do not subject concrete to any procedure which will cause segregation.

3. Consolidate each layer of concrete immediately after placing, by use of internal concrete vibrators supplemented by hand spading, rodding, or tamping.

4. Do not vibrate forms or reinforcement.

5. Do not use vibrators to transport concrete inside the forms.

D. Bonding:

1. Prepare the surface of joints as herein before specified.

2. Dampen the hardened concrete of joints between footings and walls or piers, between walls or piers and beams or floors they support, and joints in walls, prior to placing of fresh concrete.

E. Coordinate the installation of joint material and moisture barriers with placement of forms and reinforcing steel.

3.02 REPAIR OF SURFACE DEFECTS

A. Patch all tie holes and all repairable defective areas immediately after form removal.

B. Patch defective areas in accordance with ACI 301-72 (Revised 1975 or latest edition) Chapter 9, Section 9.2, except that the bonding compound, “Euco Weld” by the Euclid Chemical Company shall be used.

C. Tie Holes. After being cleaned and thoroughly dampened, fill the tie holes solid with patching mortar.

D. Proprietary Patching Mortar. For patching areas not required to match adjacent surfaces in color, the factory pre-mixed patching mortar, “Poly-Patch” by the Euclid Chemical Company may be used in lieu of the patching mortar and bonding compound required above. A/E’s approval is required.

3.03 FINISHED ON FORMED SURFACES: (where applicable)

A. Rough Form Finish: For formed concrete surfaces not exposed-to-view in the finish work or by other construction, unless otherwise indicated. This is the concrete surface having texture imparted by form facing material used, with tie holes and defective areas repaired and patched and fins and other projects exceeding 1/2” in height rubbed down or chipped off.

B. Smooth Rubbed Finish: Provide smooth rubbed finish to exposed concrete surfaces, which have received smooth form finish treatment, not later than one day after form removal.

1. Moisten concrete surfaces and rub with carborundum brick or other abrasive until a uniform color and texture is produced. Do no apply cement grout other than that created by the rubbing process.

C. Float Finish: Apply trowel finish to monolithic slab surfaces to receive trowel finish and exterior concrete pavements.

D. Trowel Finish: Apply trowel to monolithic slab surfaces to be exposed-to-view, and slab surfaces to be covered and resilient flooring, paint, or other thin film finish coating system.

1. After floating, begin first trowel finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in appearance, and 10’ straight-edge. Grind smooth surface defects which would telegraph through applied floor covering system.

E. Non-Slip Finish: Apply non-slip finish to exterior concrete platforms, stairs, ramps and elsewhere as indicated.

3.04 TOLERANCES:

A. Finishes with Class A tolerances, true planes within 1/8” in 10 feet, as determined by a 10 foot straightedge placed anywhere on the slab in any direction.

B. Finishes with Class B tolerances, true planes within 1/4” in 10 feet, as determined by a 10-foot straightedge placed anywhere on the slab in any direction.

C. Finishes with Class C tolerances, true planes within 1/4” in 2 feet, as determined by a 2-foot straightedge placed anywhere on the slab in any direction.

3.05 EDGE FORMS & SCREEDS:

A. Set edge forms and intermediate screed strips accurately to produce the designed elevations and contours in the finished surface. Align the concrete surface to the contours of screed strips by the use of strike-off templates or approved compacting-type screeds.

3.06 CURING AND PROTECTION:

A. Cure all concrete for a period of not less than 3 days. During this curing period, no part of the concrete shall be permitted to become dry. Curing shall be applied and maintained to prevent loss of water from concrete for the duration of the curing period.

B. Protect fresh concrete from heavy rains, flowing water, and mechanical injury. Protect all concrete from the sun and drying winds.

C. Perform curing of concrete by moist curing, by moisture-retaining cover curing, by curing compound, and by combinations thereof.

D. All interior concrete slabs to receive carpet, resilient tile or to be left exposed, shall be cured with the specified curing and sealing compound. All exterior slabs shall be cured with the specified clear, acrylic curing and sealing compound. All other interior slabs shall be cured with the specified curing and hardening compound.

3.07 MISCELLANEOUS CONCRETE:

A. Provide all miscellaneous concrete and reinforcing as may be shown on drawings other than the Architectural Drawings.

END OF SECTION

SECTION 03702

CONCRETE FORM & POUR REPAIRS

PART 1 GENERAL

1.01 PROVISIONS INCLUDED

A. The conditions of the Contract and other Section of Division 1, General Requirements, apply to work under this Section.

B. Examine all of the Contract Documents for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section. The exact Scope of Work of this Section cannot be determined without a thorough review of all Specifications and other Contract Documents.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in *every* respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

A. Section Includes: Work of this Section consists of installing all materials furnished under this Section, including all equipment, labor, services, and incidental items required to complete work as shown on Drawings and specified in this Section.

1. Filling of cavities, voids, concrete edge/corner repairs, etc. with a silica fume, polymer-modified Portland cement mortar/concrete.

1.03 RELATED WORK

A. The Contractor shall be responsible for confirming work which may be related to and requires coordination of other sections of the specifications to be performed by others.

1.04 ON-SITE INSPECTION

A. Prior to submitting bid the Bidder shall with prior arrangement with the Authority, visit the sites (See Advertisement for site date) and shall at the time, inspect all existing conditions to ascertain the exact scope and nature of the work that is required under this Contract, how it relates to existing work to remain and all job conditions and restrictions.

B. Bidders are advised to visit the sites and inform themselves as to conditions under which this work will be performed prior to submitting prices. Failure to do so will, in no way relieve the successful bidder from the responsibility of furnishing any materials or performing any work in accordance with the true intent and meaning of the Drawings and Specifications.

C. No claim for extra compensation will be recognized if difficulties are encountered which an examination of the site conditions, Drawings and Specifications prior to executing the Contract would have revealed.

D. The Contractor shall be responsible for ordering and furnishing the correct quantity of material required. Routing and equipment arrangements shown on the Drawings are approximate only and are not warranted to be accurate.

1.05 SAFETY PRECAUTIONS

A. Contractor shall make special note of the fact that people are working in and tenants are living in the buildings of which he will be working and safety for them must be provided at all times.

1.06 QUALITY ASSURANCE

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of five (5) years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.07 DELIVERY, STORAGE AND HANDLING

A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.08 PROJECT CONDITIONS

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45'F (7'C) and rising.

B. Protection: Precautions shall be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.09 SUBMITTALS

A. Submit two copies of manufacturer's literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

1.10 WARRANTY

A. Provide a written warranty from the manufacturer against defects of materials for a period of five (5) years, beginning with date of substantial completion of the project.

PART 2 ·PRODUCTS

2.01 MANUFACTURER

A. Sika MonoTop 611, as manufactured by Sika Corporation, Lyndhurst, New Jersey, is considered to conform to the requirements of this specification and has performed satisfactorily for patching or overlaying for a minimum of three (3) years, or one of the following manufacturers that meet or exceed the requirements of these specifications:

1. BSAF
2. Conproco

2.02 MATERIALS

A. Silica fume polymer-modified Portland cement mortar:

1. The mortar shall be a silica fume-enhanced, polymer-modified composition containing a blend of selected cements, plasticising/water-reducing admixtures and shrinkage compensating agents.
2. The material shall be non-combustible, either before or after cure.
3. The silica fume polymer-modified Portland cement mortar shall be supplied in a factory proportioned unit.
4. The silica fume polymer-modified Portland cement mortar must be placeable from 3 inches in depth and extendable in greater depths.

B. To prepare silica fume polymer-modified Portland cement concrete, the factory proportioned unit maybe extended up to 421b./unit with a minus 1/2 in. or 3/8 in. clean, well-graded , saturated surface dry aggregate, having low absorption and high density. Aggregate shall conform to ASTM C-33. Aggregate must be approved for use by the Architect.

C. Materials for forming, as required for the designated work, shall be approved by the Architect.

2.03 PERFORMANCE CRITERIA

Typical Technical Data (material and curing conditions at 73 F, 50% R.H.)

A. Typical Properties of the mixed polymer-modified Portland cement mortar:

1. Working Time: Approximately 30 minutes
2. Finishing Time: 30-60 minutes
3. Color: concrete gray

B. Typical Properties of the cured polymer-modified Portland cement mortar:

1. Compressive Strength (ASTM C-109 Modified)
   a. 1 day: 3,000 psi
   b. 7 day: 5,500 psi
   c. 28 day: 6,500 psi
2. Splitting Tensile Strength (ASTM C -496) at 28 days: 550 psi.
3. Flexural Strength (Modulus of Rupture)(ASTM C-78) at 28 days: 720 psi
4. Bond Strength (ASTM C-882 Modified) at 28 days: 2200 psi
5. Chloride ion permeability (AASHTO T-277): < 600 coulombs.
6. The polymer-modified Portland cement mortar shall not produce a vapor barrier.

Part 3 – EXECUTION

3.01 SURFACE PREPARATION

A. Areas to be repaired must be clean, sound, and free of contaminants. All loose and deteriorated concrete shall be removed by mechanical means. Mechanically prepare concrete substrate to obtain a minimum surface profile of +/- 3/8 in. (CSP 6 or greater as per ICRI Guidelines) with a new exposed aggregate surface. Area to be patched shall not be less than 3/8 in. in depth.

3.02 MIXING AND APPLICATION

A. Mixing the silica fume polymer-modified Portland cement mortar: Mix manually or mechanically. Manually mix in a wheelbarrow or mortar box. Mechanically mix in appropriate sized mortar mixer or with a jiffy paddle and low speed (400-600 rpm) drill. Pour approximately 4/5 of 1 gallon water into the mixing container. Add Sika MonoTop while continuing to mix. Add additional water up to 1 gallon total. Mix to a uniform consistency for a maximum of three minutes.

B. Mixing of the silica fume polymer-modified Portland cement concrete: Pour all, 1 gal., of water into the mixing container. Add Sika MonoTop while continuing to mix. Add correct amount of the pre-approved coarse aggregate, up to 42 lb/unit maximum, and continue mixing to a uniform consistency. Mixing time should be 3 minutes maximum.

C. Placement Procedure: At the time of application, the substrate should be saturated surface dry with no standing water.

1. Hand-applied mortar and/or concrete must be worked into substrate filling all pores and voids. Force materials against edge of repair, working toward center. After filling, consolidate, then screed. Allow mortar to set to desired stiffness, and then finish with wood or sponge float, for a smooth surface, broom or burlap drag for rough finish. Areas where the depth of the repair area to sound concrete is 3 in. or less shall be repaired with polymer- modified Portland cement mortar. In areas where the depth of the repair is greater than 3 in., the repair shall be made with silica fume polymer-modified Portland cement concrete.

2. Form-applied: Within 30 minutes of mixing pour the mortar/concrete into the prepared form work in a manner to avoid air entrapment. Vibrate, pump or ram mortar/concrete as required to achieve flow and compaction. After the mortar/concrete has achieved its final set, remove any forms and trim or shape exposed mortar/concrete to the desired profile, if required.

D. As per ACI recommendations for Portland cement concrete, curing is required. Only when ambient conditions of moisture, humidity, temperature and wind are sufficiently favorable is curing optional. Moist-cure with wet burlap and polyethylene, a fine mist of water or a water based* compatible curing compound. Moist curing should commence immediately after finishing. If necessary protect newly applied material from rain to prevent from freezing cover with insulating material. Setting time is dependent on temperature and humidity.

*Pretesting of curing compound is recommended.

E. Adhere to all limitations and cautions for the silica fume polymer-modified Portland cement mortar in the manufacturer's technical data sheets and literature.

3.03 CLEANING

A. The uncured silica fume polymer-modified Portland cement mortar can be cleaned from tools with water. The cured polymer-modified Portland cement mortar can only be removed mechanically.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

Note: Tests above were performed with material and curing conditions at 71-75 F and 45-55% relative humidity.

END OF SECTION

SECTION 04106

MORTAR & MASONRY RESTORATION

PART 1 – GENERAL

1.01 DESCRIPTION

A. Provide mortar and masonry restoration as described herein.

B. Mechanically and manually rake existing loose and/or damaged joints min. 3/4" deep, in quantity as indicated on the drawings, and as directed by the Architect during the tooling of joints. Enlarge any voids or holes, except weep holes, and completely fill with mortar. Point up all joints at and adjacent work to provide a neat, uniform appearance.

C. Provide pneumatic raking where applicable and as needed for proper joint restoration.

D. Remove and dispose existing metal accessories in mortar joints unless currently being utilized as a functioning building component.

E. All masonry shall be washed, removing all dirt, rust, mold, mildew, moss, etc.

F. Carefully disconnect and reconnect signage, downspouts, conduit, light fixtures, security systems supports and their operating components, window security grates, etc. for a complete and proper job.

G. The new mortar shall match the existing mortar in color, texture and tooling.

H. The new mortar shall have greater vapor permeability and shall be softer (measured in compressive strength) than the masonry units.

1.02 RELATED WORK:

A. Provide masonry restoration as described in this section and pertinent other sections of the Project Manual. Provide work in quantities described in Construction Notes herein and on the drawings.

B. Staging shall not be removed from locations without first obtaining the approval of the Architect. If Contractor removes staging prior to obtaining Architect's approval and acceptance of masonry restoration work; Contractor shall re-erect staging at Contractor's expense.

C. Remove and provide new brick, re-install new masonry work where indicated on the drawings, where specified herein and as directed by the Architect.

D. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new masonry units to match adjoining units and install in fresh mortar, pointed to eliminate evidence of replacement.

E. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these specifications.

1.03 QUALITY ASSURANCE:

A. The Masonry Subcontractor shall demonstrate that he has a minimum of five years' experience in the construction of mortar restoration for historically significant buildings.

B. The Contractor shall demonstrate his proficiency with power tools before their use is approved. Do so at the job mock-up panel, at grade level. Owner and Architect shall observe.

C. Job Mock-Up (Sample Wall Panel)

1. Prior to beginning restoration work, obtain A/E's acceptance of visual qualities and mortar color selection.

2. **Provide an 8' x 8' area mock-up wall sample(s) to establish an acceptable standard of work and serve as a benchmark for evaluating and accepting subsequent work on the building and other stone masonry as may be included in the Scope of Work. This mock-up wall sample(s) will also be used to provide the following samples for review and approval by an Rhode Island Historical Preservation & Heritage Commission (RIHPHC) staff architect; mortar samples, replacement brick samples, cleaning samples, patching and epoxy-gel injection crack repairs for existing limestone. This will also serve as a benchmark for evaluating and accepting subsequent work on the building. The contractor shall also be responsible for coordinating and acquiring the necessary approvals from RIHPHC prior to commencing work.**

3. The test panel shall also determine the acceptability of power tools. If power tools are to be permitted, the Contractor shall establish a quality control program to account for worker fatigue and similar variables.

D. Provide Architect with list of all projects of similar scope of work and size completed within the last five (5) years.

E. Other specified work herein shall comply with the U.S. Department of the Interior National Park Services, Cultural Resources – Heritage Preservation Services, "Preservation Briefs" Re-pointing Mortar Joints in Historic Masonry Buildings.

1.04 STANDARDS

A. Mortar shall meet the requirements for Type N mortar as set forth in ASTM Designation C270. New mortar color and texture shall match existing in every respect.
B. ASTM A -153
C. ASTM A-82
D. ASTM A-615, GRADE 60
E. ASTM D-226
F. ASTM D-227
G. Other applicable standards as they apply.

1.05 SUBMITTALS:

A. Submit actual sample of mortar color proposed for installation, to the Architect for approval.

1.06 JOB CONDITIONS:

A. Protective Measures:

1. All methods and materials used for proposed work in cold weather shall be subject to the approval of the A/E. Take the precautions required or approved for removing ice and frost from materials, including heating the water and sand, and for protecting new mortar. This protection shall also include the coverage of work with tarpaulins and heating by approved methods.

2. Protect partially completed work against weather, when work is not in progress, by covering with strong, waterproof, non-staining membrane. Extend membrane at least 2' beyond new work, and anchor securely in place.

3. Protect work against freezing as hereinafter specified. Heat materials and provide temporary protection of completed portions of work. Comply with the requirements of the governing code and with the "Construction and Protection Recommendations for Cold Weather Masonry Construction.

4. Behind nylon-reinforced polyethylene protection, work may proceed at all times during working hours when the temperature behind the protection is 35°F and rising, and shall stop when it is 35°F and falling.

5. Where unprotected, work may proceed only when the temperature during working hours is 40°F. In addition, stop work early (2:00 P.M. to 2:30 P.M. when rapidly falling temperatures are predicted. G.C. Note: Wall temperatures between 40 and 95 degrees F will prevent freezing or excessive evaporation of the water in the mortar. Ideally, re-pointing should be done in shade, away from strong sunlight in order to slow the drying process, especially during hot weather. If necessary, provide shade with appropriate modifications to scaffolding.

6. Do not use frozen materials or materials mixed or coated with ice or frost. Remove and replace masonry work damaged by frost or freezing.

7. Provide a thermometer at all places where work is being completed under the above conditions.

8. Do not lower the freezing point of mortar by use of admixtures or antifreeze agents. G.C. Note: Warm the sand and water to help protect the completed work from freezing. In areas of extreme exposure requiring high-strength mortars with lower permeability, air-entrainment of 10 – 16 percent may be utilized.

9. Do not use calcium chloride in mortar or grout.

10. Only synthetic mineral oxides, which are alkali-proof and sun-fast, shall be used to prevent bleaching and fading.

1.07 GENERAL CONTRACTOR'S VISUAL EXAMINATION OF THE MORTAR AND MASONRY

A. Scrape the mortar with a screwdriver, gradually tapping harder with a cold chisel and mason's hammer to determine the hardness and condition of the mortar.

B. Mortar samples shall be chosen carefully, and picked from a variety of locations on the building to find unweathered mortar, if possible. Portions of the buildings may have been re-

pointed in the past while other areas may be subject to conditions causing unusual deterioration. There may be several colors of mortar dating from different construction periods or sand used from different sources during the initial construction. Any of these situations can give false readings to the visual or physical characteristics required for the new mortar. Variations shall be noted which may require developing more than one mix.

C. General Contractor shall provide the following. Notify Architect at least one week prior to commencing.

1. Remove with a chisel and hammer three or four unweathered samples of the mortar to be matched from several locations on the building. (Set the largest sample aside – this will be used later for comparison with the re-pointing mortar). Removing a full representation of samples will allow selection of a "mean" or average mortar sample.

2. Mash the remaining samples with a wooden mallet, or hammer if necessary, until they are separated into their constituent parts. There should be a good handful of the material.
3. Examine the powdered portion – the lime and/or cement matrix of the mortar. Most particularly, note the color. There is a tendency to think of historic mortars as having white binders, but grey Portland cement was available by the last quarter of the 19th century, and traditional limes were also sometime grey. Thus, in some instances, the natural color of the historic binder may be grey, rather than white. The mortar may also have been tinted to create a colored mortar, and this color should be identified at this point.

4. Carefully blow away the powdery material (the lime and/or cement matrix which bound the mortar together).

5. With a low power (10 power) magnifying glass, examine the remaining sand and other materials such as lumps of lime or shell.

6. Note and record the wide range of color as well as the varying sizes of the individual grains of sand, impurities, or other materials.

D. Other Factors To Consider:

1. Color: Regardless of the color of the binder or colored additives, the sand is the primary material that give mortar its color. A variety of colors of sand may be found in a single sample of historic mortar, and the different sizes of the grains of sand or other materials, such as incompletely ground lime or cement, plan an important role in the texture of the re-pointing mortar. Therefore, it may be necessary to obtain sand from several sources and to combine or screen them in order to approximate the range of sand colors and grain sizes in the historic mortar sample.

1.08 MATCHING COLOR AND TEXTURE OF THE REPOINTING MORTAR:

A. New mortar shall match the unweathered interior portions of the historic mortar.

B. Provide a small sample of the proposed mix and allow it to cure at a temperature of approximately 70 degrees F for about a week, break sample and compare surface with the surface of the largest "saved" sample of historic mortar.

C. If a proper color match cannot be achieved through the use of natural sand or colored aggregates like crushed marble or brick dust, it may be necessary to use a modern mortar pigment.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Water: Potable.

B. Mortar Mix: Mortar for masonry units shall be 1 part Portland cement, 1 part lime, and 5 parts sand; all by volume.

C. Portland Cement: ASTM C-150, Type I, Provide appropriate color cement as required to produce the required mortar color to match existing mortar. Cement shall come from one source and be uniform in color. G.C. Notes: For re-pointing, white, non-staining Portland cement may provide a better color match than the more commonly available grey Portland cement. But, it should not be assumed, however, that white Portland cement is appropriate for this building, since the original mortar may have been mixed with grey cement. The cement shall not have more than 0.60 per cent alkali to help avoid efflorescence.

D. Hydrated Lime (Type S): ASTM C-207 (except that it shall have a plasticity of not less than 300 when tested in Emley Plasticimeter within 30 minutes after mixing with water) or "Minute Man Lime" by Lee Lime.

E. Quicklime: ASTM C-5. Thoroughly cool before using in mortar, after slaking with cold water.

F. Sand:

1. ASTM C-144, capable of developing 95 percent of tensile strength of Ottawa sand, and not containing deleterious substances exceeding the following percentages:

   0.25 of one percent coal and lignite;
   One percent of clay lumps; and
   One percent of shale, alkali, coated grains or flaky particles

2. Sand used for re-pointing mortar shall be rounded or natural, free of impurities such as salts and/or clay.

3. Provide ASTM C144 recommended percentage of large to small sand particles for optimum performance.

2.02 MASONRY

A. Provide new masonry where directed by the Architect, in the field, as specified herein, and as needed for a complete and proper installation.

B. New masonry if required, shall match the existing masonry in size, color, and texture.

2.03 MIXING MORTAR

A. General:

1. Use a mechanical mixer of one-sack minimum capacity.

2. Mix mortar at least three minutes after all materials have been added.

3. Mix only as much mortar as can be used in one hour after water has been first mixed into the batch.

B. Re-tempering:

1. DO NOT re-temper mortar.

C. Where fresh masonry joins masonry that is partially set or totally set, the exposed surface of the set masonry shall be cleaned, roughened and lightly wetted so as to obtain the best possible bond with the new work. All loose material shall be removed.

D. Point holes in expose masonry mortar. Cut out defective joints and repoint with fresh mortar.

2.04 REINFORCEMENT – as they apply to this project

A. Corrugated Block Ties: Dur-O-Wall, 16 gauge.

B. Brick Ties: Heckman, hot dipped galvanized.

C. Brick Piers: Dur-O-Wall, wire mesh ties, 16 gauge.

D. Dovetail Triangular Ties: Dur-O-Wall.

E. Dovetail Anchor Slots: Heckman, 16 gauge, galvanized steel.

F. Horizontal Joint Reinforcement: Dur-O-Wall, standard truss type size, 2" less than nominal wall thickness.

G. Anchor Bolts: Heckman.

H. Single Wythe and Multi-Wythe Walls without Cavity: "Extra Heavy Dur-O-Wall without drip.

I. Cavity Walls: "Extra Heavy Dur-O-Wall Trirod" with drip.

PART 3 - EXECUTION

3.01 INSPECTION:

A. Contractor shall examine the areas and conditions under which masonry is to be installed and notify the Architect in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to Architect.

3.02 INSTALLATION - GENERAL:

A. Thickness: Build or re-build masonry construction to the full thickness to match existing.

B. Build or re-build chases and recesses as shown and as required for the work of other trades.

C. Cut masonry units with motor-driven saw designed to cut masonry with clean, sharp, unchipped edges. Cut units as required to provide pattern shown and/or to fit adjoining work neatly. Use full units without cutting wherever possible.

D. Lay all masonry units in bond to match existing.

E. Wetting of Masonry:

1. When being laid, provide masonry suction sufficient to hold the mortar and to absorb water from the mortar and grout.

F. Built-in Work: (if applicable)

1. As the work progresses, build-in items specified under this and other sections of these specifications. Fill in solidly with masonry around built-in items.

2. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and rod grout into core.

3. Fill space between hollow metal frames and masonry solidly with grout.

4. Cement rigid board cavity insulation to the exterior face of concrete masonry.

G. Joints: Maintain equal joint width, except for minor variations required to maintain bond alignment. Drawing dimensions are generally modular. Lay to this module. If not shown, lay walls with joints to match existing.

H. Cavity Space: (if applicable)

1. When applicable, keep cavity clean of mortar droppings during construction. Strike joints facing cavity flush. Use approved mortar troughs during the erection of all cavity to insure a cavity free of mortar. Strike off all excess mortar form the interior of cavity, as the work progresses. Place pebbles in the bottom of the cavity to a depth of six (6) inches.

I. Anchoring Masonry Work:

1. Provide anchoring devices of the type shown and as specified or if not specified, to match existing.

2. Provide anchoring devices of the type shown and as specified. If not shown or specified, provide standard type for facing and back-up involved.

3. Anchor masonry to structural members where masonry abuts or faces such members to comply with the following:

   a. Provide an open space not less than 1/2” in width between masonry and structural member, unless otherwise shown. Keep open space free of mortar or other rigid materials.

   b. Anchor masonry to structural members with metal ties embedded in masonry joints and attached to structure. Provide anchors with flexible tie section, unless otherwise shown.

4. Anchor veneers to concrete back-up with dovetail anchors.

5. Space masonry anchors as shown. If not shown, space not more than 18” o.c. vertically and 24” horizontally. Provide additional anchors within 1’-0” of openings and space not more than 36” around perimeter.

6. Bond the two (2)-tiers together with wall ties or reinforcement.

a. Do not permit kinks, water drips, or deformations in the ties.

b. Build up one (1)-tier of the wall not more than 24” ahead of the other tier.

7. Anchors, Ties and Bolts:

a. Rod Type Anchor Bolts: To secure eave struts and steel angles into masonry units. Use mortar to fill cavities in masonry units (as specified) in at least 2 units, vertically.

b. Expansion and Toggle Bolts: Use as required to attach items securely to masonry units.

J. Control and Expansion Joints:

1. If applicable, provide vertical expansion, control and isolation joints in masonry to match existing. Build-in related masonry accessory items as the masonry work progresses. Rake out mortar in preparation for application of caulking sealants.

K. Install reglets and nailers for flashing and other related work where indicated and/or as required for a complete and proper job.

L. Maintain equal joint width, except for minor variations required to maintain existing alignment.

1. Mechanically, manually and/or pneumatically cut and re-point defective joints.

2. Rake joints min. 3/4” for preparation and application of mortar.

3. Raked joints shall be filled first, compacting the new mortar in several layers. The back of the entire joint shall be filled successively by applying approximately ¼ inch of mortar, packing it well into the back corners. As soon as the mortar has reached thumb-print hardness, another ¼ inch layer of mortar – approximately the same thickness – shall be applied. Several layers shall be provided to fill the joint flush with the outer surface of the masonry. Allow each layer time to harden before the next layer is applied; most of the mortar shrinkage occurs during the hardening process and layering thus minimizes overall shrinkage.

4. When the final layer of mortar is thumb-print hard, the joint shall be tooled to match the historic joint. Provide proper timing of the tooling for uniform color and appearance. Joints shall be solid and watertight.

M. Mortar shall be removed cleanly from the masonry units, leaving square corners at the back of the cut. Before filling, the joints shall be rinsed with a jet of water to remove all loose particles and dust. At the time of filling, the joints shall be damp, but with no standing water present. After tooling, remove excess mortar from the edge of the joint by brushing with a natural bristle or nylon brush. Metal bristle brushes shall not be used.

N. Stopping and Resuming Work:

1. Rake back 4” of unit length. Clean exposed surfaces of set stone, wet units lightly, and remove loose mortar prior to installing fresh mortar.

O. Flashing of Work: (Where existing and applicable)

1. Provide concealed lead-coated copper flashings in work to match existing. Prepare surfaces smooth and free from projections in which might puncture flashing. Place

through-wall flashing on bed of mortar and cover with mortar. Seal flashing penetrations with mastic before covering with mortar. Terminate flashing 1/2” from face of wall, unless otherwise shown. Extend flashing beyond edge of stone, lintels and sills at least 4” and turn up edge on sides to form pan to direct moisture to exterior. Provide weep holes immediately above concealed flashings, spaced 24” o.c. or to match existing, unless otherwise shown.

2. Interlock end joints of deformed metal flashings by overlapping deformations not less than 1-1/2” and seal lap with elastic sealant.

3. Install flashing in as long lengths as possible. Splice all joints by rolling back top layer of fabric 4”. Interlock the pieces and coat all contacting surfaces with an approved plastic cement.

4. Do not block existing weep holes.

3.03 CLEANING:

A. Thoroughly clean all stone surfaces, removing all traces of mortar, grout, and foreign matter.

B. Chemical cleaners, particularly acids, shall not be used on dry masonry. The masonry shall be completely soaked once with water before chemicals are applied. After cleaning, the walls shall be flushed again with plain water to remove all traces of the chemicals.

C. Several precautions shall be taken if a freshly re-pointed masonry wall is to be cleaned. First, the mortar shall be fully hardened at least 30 days before cleaning. Test panels shall be prepared by the General Contractor to evaluate the effects of different cleaning methods.

END OF SECTION

SECTION 04117

EPOXY GEL INJECTION & PATCHING MORTAR

FOR LIMESTONE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Application of structural injection epoxy with lime-based capping mortar, historical restoration mortar (HRM) and epoxy-injection material. Injection of crack with manual equipment. Aesthetic capping mortar. Capping and sealing crack back side of panel if accessible. Furnish all materials, labor, and equipment for a complete and proper job.

1.02 RELATED SECTIONS

A. Section 04106 - Mortar & Masonry Restoration

B. Section 04400 - Limestone

C. Section 07176 – Cleaning & Water-Repellant Coatings for Masonry

1.03 REFERENCE STANDARDS

A. ASTM D 638	Test method for Tensile Properties of Plastics
B. ASTM D 648	Test method for Deflection Temperature of Plastics under Flexural Load.
C. ASTM D 695	Test Method for Compressive Properties of Rigid Plastics
D. ASTM D 790	Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
E. ASTM D 2240	Test Method for Rubber Property - Durometer Hardness

1.04 QUALITY ASSURANCE

A. Manufacturer qualifications: Company regularly engaged in the manufacturing of the products specified in this section.

B. Contractor qualifications: Use adequate numbers of skilled workmen with a minimum of five (5) years of experience who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section and qualified to perform the work specified by reason of manufacturer's contractor certification or experience in the installation and repair of dimensional building stone.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in original factory packaging bearing identification of product, manufacturer, and batch number. Provide Material Safety Data Sheets for each product

B. Store products above 60 degrees F in an area protected from precipitation, construction activity, and direct sunlight.

C. Condition products to a temperature between 60 and 85 degrees F before application.

D. Handle all products in accordance with Material Safety Data Sheets.

1.06 PROJECT CONDITIONS

A. Apply product under ambient conditions between 60 and 85 degrees F. Protect site from precipitation, or apply product only after stone has thoroughly dried. Apply when stone temperature is between 50 and 85 degrees F.

B. Mask or otherwise protect all adjacent work from the injection epoxy.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Cathedral Stone Products, Inc., 7266 Park Circle Drive, Hanover, MD 21076, (410) 782-9150, www.cathedralstone.com, or as approved equal by the Architect and Rhode Island Historical Preservation & Heritage Commission (RIHPHC).

B. Substitutions: Alternates to the acceptable manufacturer will be considered only upon the basis of written request and shall include substantiation of product performance as indicated in Section 01600 herein.

2.02 PRODUCT DESCTIPTION:

A. ***Jahn M30 Micro Injection Adhesive*** *(for hairline cracks up to 3/16" or 5.0 mm) in width):* Premixed cementitious injection grout that contains no corrosive constituents. The adhesive achieves extraordinary flow capacity, high penetration, and strong adhesion. Refer to product literature and technical data for material specifications.

B. ***Jahn M40 Crack and Void Injection Grout*** *(for cracks approximately 3/16" to 3/8" or 5.0 mm to10.0 mm in width):* Premixed cementitious injection grout that does not contain any acrylic, latex, or other synthetic polymer bonding agents or additives. The grout only needs to be mixed with clean water. The grout is vapor permeable, frost and salt resistant, shrink resistant, and is physically compatible with the substrate. Refer to product literature and technical data for material specifications.

C. ***Jahn Restoration Mortars*** *(for spalls):* premixed cementitious repair materials formulated to match the color and texture of the existing masonry, and do not contain any acrylic, latex, or other synthetic polymer additives. Mix the mortar with clean, potable water.

1. *Setting anchors in existing masonry:* Jahn Anchor Setting Mortar (M80).
2. *Mechanical anchors and dowels*: Stainless steel threaded rod (ASTM F593) with a diameter as indicated on Contract Drawings, bent and cut to lengths required to achieve embedments shown on the Contract Drawings.

PART 3 - EXECUTON

3.01 EXAMINATION

A. Inspect all areas to be repaired for possible exposure to precipitation, soundness of stone to be repaired, need for masking of adjacent objects, and the existence of any coating or contamination on the limestone surface or in the limestone's crack.

3.02 PREPARATION

A. Protect all adjacent surroundings from exposure to mixed urethane repair compounds or their components.

B. Ensure that all coatings or contaminates are removed before application of urethane repair compound to a limestone surface or before injection into a crack.

C. Ensure that all limestone (both on the surface and in cracks) is clean, sound, and dust-free.

D. Ports for injection: Use 0.245 diameter standard flexible straws and cut to 3”to 4” length. This diameter fits the standard Pro Tip nozzle for the Injection Gel Cartridge.

E. Crack-chasing blade- If there is a need to open the crack for more volume of adhesive, the use of a 1/8 blade is recommended.

F. Follow manufacturer’s printed instructions for additional preparation requirements.

3.03 APPLICATION

A. Preparation of capping mortar on face of stone

1. Precondition materials to a temperature between 60 and 85 degrees F.

2. Premix part A powder and shake part B latex thoroughly to ensure uniformity, before mixing the components together.

3. Determine the amount of capping compound which can be utilized within the pot-life at the existing temperature.

4. Lightly mist water in crack and around crack area with a spray bottle.
5. Insert 2-inch straw lengths (precut) in the crack every 4 to 6 inches in length. Pinching them into the crack until mortar is applied is recommended.

6. Measure and mix 4-part of "A" component and 1-part of "B" component (by volume in a clean mixing container) or mix to knife-grade consistency for vertical applications. Mix thoroughly for at least thirty (30) seconds. Use spatula when mixing by hand.

7. Ensure that no unmixed product exists on the sides or bottom of the mixing container and mix an additional twenty (20) seconds minimum.

8. Cap the entire crack area and around straws with the HRM mortar. Cover crack area with approximately 1/8 to 1/4 inch on each side of crack opening thus sealing up crack. Leave approximately 1/32 to 1/64 inch overfill of the HRM.

9. After installing HRM, lightly mist the capping material with a spray bottle.

B. Installation of injection epoxy and sealing ports

1. The capping material must be thoroughly cured before epoxy is injected.

2. Place a 3-inch length of tape on the bottom of straw leaving 1-inch overhang. This will capture any release of material out of tip of straw port.

3. Inject clear-gel epoxy into ports thus structurally sealing up cracks. Inject cracks with slow but constant pressure. When epoxy is observed at the next adjacent port, move site of injection to the next adjacent drill port.

4. Continue injection along crack until completed.

5. Pinch and remove straws before the epoxy sets up and tool back the epoxy into the hole if needed.

6. Fill the hole flush with additional mix of HRM mortar.

7. Follow manufacturer's printed instructions for additional application requirements.

3.04 FIELD QUALITY CONTROL

A. Keep samples of cured epoxy for quality control. Log time and dates of use.

3.05 CLEANING

A. Remove uncured epoxy repair compound from tools and equipment with lint-free dry towel or with Xylene or MEK.

B. Remove cured urethane repair compound mechanically.

C. Remove all debris related to the epoxy repair application from the work site in accordance with all applicable regulations for hazardous waste disposal.

SECTION 04400

LIMESTONE

PART 1 - GENERAL

1.01 SUMMARY

A. Provide exterior cut limestone stonework.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.03 RELATED SECTIONS

A. Section 04106 - Mortar & Masonry Restoration

1.04 FIELD VERIFICATION

A. Prior to submitting bid, Contractor shall field verify all quantities, dimensions, profiles, one-piece units, multi-piece units, etc. of all existing limestone, particularly at locations where limestone is specified to be replaced to match existing. Carefully examine the areas in question as to conditions which may adversely affect proper execution of the work. No claims for extra costs will be allowed because of lack of full knowledge of the obvious existing conditions.

1.05 QUALITY ASSURANCE

A. Testing: Independent testing laboratory.

1. Test limestone for compliance with physical property requirements for Limestone Building Stone, Type II, as listed in ASTM C-568. Conduct tests using specimens randomly selected from, and representative of, actual materials proposed for incorporation in the work.
2. The following test reports shall be submitted:
   a. ASTM C 99 Modulus of Rupture
   b. ASTM C 170 Compressive Strength

B. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

C. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship.

D. Single Source Responsibility for Stone: Obtain limestone from a single quarry source with resources to provide materials of specified consistent quality. The fabricator and the quarry shall have sufficient capacity to quarry, cut, and deliver the stonework on schedule. Both fabricator and quarry must be members in good standing of Indiana Limestone Institute.

E. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality and from one manufacturer for each cementitious and admixture component and from one source or producer for each aggregate.

F. Single Source Responsibility for Other Materials: Obtain each type of stone accessory, sealants, and other materials from one manufacturer for each product.

G. Installer Qualifications: Installer shall not less than 10 years' experience and who has successfully completed stonework similar in material, design and extent to that indicated for this project. Submit list of completed projects; include project names, addresses, and names of architects and owners.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Limestone:

1. Building Stone Standard: ASTM C 568.
2. Finish: Honed.
3. Type: Indiana dolomitic limestone- match existing.
4. Joints: Mortar, ASTM C 270, Type N
5. Thickness & Profile: To match existing, plus or minus 1/8 inch. Field verify prior to submitting base bid.
6. Comply with recommendations of the Indiana Limestone Institute of America, Inc. (ILI) as published in the Indiana Limestone Handbook (latest edition).

B. Mortar and Grout:

1. Portland Cement: ASTM C 150, Type I or II.
2. Hydrated Lime: ASTM C 207, Type S.
3. Aggregate: ASTM C 144.
4. Colored Mortar Pigments: Iron oxides and chromium oxides.
5. Latex Additive: Water emulsion type.

C. Anchors and Attachments:

1. Hot-dip galvanized steel dowels to match existing, ASTM A 36, and ASTM A 153 galvanizing.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Dress joints straight and at 90 degree angle; provide 3/8" joints or as indicated.

B. Install into galvanized-steel dowels to match existing dowels to structural support. Provide mortar joints, color as approved. Seal joints with elastomeric sealant; vent and weep cavities.

C. Install to tolerances of plumb, alignment and level of plus or minus 1/8" in 20'.

D. Remove and replace damaged units. Clean using methods recommended by stone supplier.

E. Refer to Section 04106 - Mortar & Masonry Restoration for additional information relative to anchorage, installation, cleaning, waterproofing, etc.

END OF SECTION

SECTION 05500

METAL FABRICATIONS

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Work included: Provide metal fabrication work where shown on the drawings, as specified herein, and as needed for a complete and proper installation. Work generally includes:

1. Fasteners
2. Miscellaneous metal materials and accessories

1.02 QUALITY ASSURANCE:

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Perform shop and/or field welding required in connection with the work of this Section in strict accordance with pertinent recommendations of the American Welding Society.

1.03 SUBMITTALS:

A. Comply with pertinent provisions of Section 01300.

1.04 PRODUCT HANDLING:

A. Comply with pertinent provisions of Section 01600.

PART 2 - PRODUCTS

2.01 MATERIALS (General)

A. In fabricating items which will be exposed to view, limit materials to those which are free from surface blemishes, pitting, rolled trade names, and roughness.

B. Comply with the following standards, as pertinent:

ASTM A36 - Steel plates, shapes and bars
ASTM A283 - Grade C - Steel plates to be bent or cold-formed
ASTM A501 - Steel tubing (hot formed, welded or seamless)
ASTM A306 - Grade 65 or ASTM A36 - Steel bars and bar size shapes
ASTM A108 - Cold finished steel bars
ASTM A336 - Cold rolled carbon steel sheets
ASTM A526 - Galvanized carbon steel sheets
ASTM A525 - (with G90 zinc)
AISI, Type 302, or 304 - 22 ga. with No. 4 finish unless otherwise specified on the drawings or herein.
ASTM A53 - Gray iron castings, Grade A, Sched. 40; black finish unless otherwise noted.
ASTM A47 - Malleable iron castings
ASTM A53 - Steel pipe, Grade A, Sched. 40; black finish unless otherwise noted.

2.02 FASTENERS:

A. General:

1. For use where built into exterior walls, provide zinc-coated fasteners.

2. Provide fasteners of type, grade and class required for the particular use.

3. Use compatible fastening materials. Use only hot-dipped galvanized metal, copper or stainless steel fasteners where used in conjunction with preservative-treated wood.

B. Comply with the following standards as pertinent:

1. Bolts and nuts; provide 4 hexagon-head, regular type complying with ASTM A307, Grade A.

2. Lag Bolts; provide spare-head type, complying with Fed. Spec. FF-B-561.

3. Machine Screws; provide cadmium plated steel type complying with Fed. Spec. FF-S-111.

4. Security Fasteners:
   a) Hex-Pin® button-head, flat-head and expansion security bolts, 316 stainless steel complying with ASTM F593-01.

5. Concrete Inserts:
   a) Threaded or wedge type galvanized ferrous castings of malleable iron complying with ASTM A27.
   b) Provide required bolts, shims and washers; hot-dip galvanized in accordance with ASTM A153.
6. Washers:
   a) Plain Washers; comply with Fed. Spec. FF-W-92, round carbon steel.
   b) Lock Washers; comply with Fed. Spec. FF-W-84, helical spring type carbon steel.

7. Toggle Bolts; provide type, class and style needed complying with Fed. Spec. FF-B-588.

8. Anchorage Devices; provide expansion shield complying with Fed. Spec. FF-S-325

2.03 MISCELLANEOUS MATERIALS AND ACCESSORIES:

A. Concrete: Comply with provisions of Section 03300 for concrete footings.

2.04 OTHER MATERIALS:

A. All other materials as needed for a complete and proper installation.

2.05 SHOP PAINT:

A. Primer: Use “10-99 Tnemec Primer”, “Rustoleum #5769 Primer” or equal.

B. For repair of galvanizing use a high zinc dust content paint complying with MIL-P-21035.

C. Clean surfaces in accordance with Steel Structures Painting Council Sp-3, “Power Tool Cleaning”.

D. After surfaces are properly cleaned, apply the primer to a uniform 1.5 mils. dry thickness.

2.6 FABRICATION:

A. Except as otherwise shown on the drawings or the approved shop drawings, use materials or size, thickness and type required to produce reasonable strength and durability in the work of this section.

B. Fabricate with accurate angles and surfaces which are true to the required lines and levels, grinding exposed welds smooth and flush, forming exposed connections with hairline joints and using concealed fasteners wherever possible.

C. Prior to shop painting or priming, properly clean metal surfaces as required for the applied finish for the proposed use of the item.

D. On surfaces inaccessible after assembly or erection, apply two coats on the specified primer. Change color of second coat to distinguish it from the first.

E. Galvanizing where indicated or specified shall be performed after fabrication. Shapes, plates and bars shall be galvanized in accordance with the requirements of “Standard Specifications for the Zinc (Hot-Galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars and Strips” ASTM Designation A 123-71. Nuts, bolts, and washers shall be galvanized in accordance with the requirements of “Standard Specifications for Zinc Coating (Hot-Dip) on Iron and Steel Hardware” ASTM Designation A 153-71 and A286. All galvanized material shall comply with specifications and marked with stamp indicating ASTM number and weight of zinc coating in ounces per square foot similar to Duncan Stamp. Notarized statement of compliance with list of galvanized items to accompany shipment of galvanized materials and furnished to A/E.

D. Dissimilar Material: Where aluminum surfaces come in contact with metals other than stainless steel, zinc, white bronze of small area or other metals compatible with aluminum, aluminum surfaces shall be kept from direct contact with such parts by painting the dissimilar metal with a coating of zinc chromate paint, a good quality caulking placed between aluminum and dissimilar metal, or a non-absorptive tape or gasket.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.02 COORDINATION:

A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this section.

3.03 INSTALLATION:

A. General:

1. Set work accurately into position, plumb, level, true and rack-free.

2. Anchor firmly into position.

3. Where field welding is required, comply with AWS recommended procedures of manual-shielded metal-arc welding for appearance and quality or weld and for methods to be used in correcting welding work.

4. Grind exposed welds smooth and touch-up shop prime coats.

5. Do not cut, weld or abrade surfaces which have been hot-dip galvanized after fabrication and which are intended for bolted or secreted field conditions.

B. Immediately after erection, clean the field welds, bolted connections, and abraded areas of shop priming. Paint the exposed areas with the same materials used for shop priming.

END OF SECTION

SECTION 06100

ROUGH CARPENTRY

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Work Included: Provide wood, nails, bolts, screws, framing anchors, rough hardware, and other such items needed to perform rough carpentry for the construction shown on the drawings, as specified herein, and as needed for a complete and proper installation.

B. Related Work:

1. Documents affecting work of this section including but not necessarily limited to General Conditions, Supplementary Conditions, and sections in Division 1 of these Specifications.

1.02 QUALITY ASSURANCE:

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

B. Lumber Grading Rules and Wood Species to be in conformance with Voluntary Product Standard PS 20-70. Grading Rules of the following associations apply to materials furnished under this section.

1. Northeastern Lumber Manufacturer's Association, Inc. (NELMA)
2. Southern Pine Inspection Bureau (SPIB)
3. West Coast Lumber Inspection Bureau (WCLIB)
4. Western Wood Products Association (WWPA)
5. Redwood Inspection Service (RIS)
6. Northern Hardwood and Pine Manufacturer's Association (NHPMA)

C. Plywood Grading Rules:

1. Softwood plywood/Construction and Industrial:
Product Standard PS 1-66

D. Grade Marks: Identify all lumber and plywood by official grade marks.

1. Lumber: Grade stamp to contain symbol of grading agency, mill number or name, grade of lumber, species or species grouping or combination designation, rules under which graded, where applicable and condition of seasoning at time of manufacture.

a) S-GRN: Unseasoned
b) S-Dry: Maximum 19% moisture content
c) MC-15 or KD: Maximum of 15% moisture content
d) Dense.

2. Softwood Plywood: Appropriate grade trademark of the American Plywood Association.

a) Type, grade, class, and identification index.
b) Inspection and testing agency mark.

E. Testing: ASTM E 84-70, maximum 25 flame spread rating (exposed wood only).
F. All Lumber: Preservative treated or fire retardant, as directed on the drawings and herein.

G. Requirements of Regulatory Agencies:

1. Fire Hazard Classification: Underwriters' Laboratories, Inc., for treated lumber and plywood.

2. Preservative Treated Lumber and Plywood: American Wood Preserver Bureau, Quality mark.

3. Pressure Treated Material: American Wood Preservers Bureau Standards.

4. Span Tables: National Forest Products Associations.

5. Working Stresses: Softwood Lumber, National Design Specification, National Forest Products Association.

1.03 SUBMITTALS

A. Certification:

1. Preservation Treated Wood: Submit certification for waterborne preservative that moisture content was reduced to 19% maximum, after treatment.

2. Fire-retardant Treatment: Submit certification of treating plant that fire-retardant treatment materials comply with governing ordinances and that treatment will not bleed through finished surfaces.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Immediately upon delivery to job site, place materials in area protected from weather.

B. Store materials a minimum of 6" above ground on framework or blocking and cover with protective waterproof covering providing for adequate air circulation or ventilation.

C. Do not store seasoned materials in wet or damp portions of building.

D. Protect fire-retardant materials against high humidity and moisture during storage and erection.

E. Protect sheet materials from corners breaking and damaging surfaces while unloading.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Provide materials in the quantities needed for the work shown on the drawings, and meeting or exceeding the following standard of quality:

1.) Plywood:
   a) Sheathing: PA Structural I or II, C-C standard sheathing, standard exterior grade sheathing with exterior glue. Use plywood specifically extended for exterior use.
   b) Softwood Plywood: PS 1; use G-D grade with exterior glue. Use plywood specifically intended for exterior use.
   c) Strapping: Shall be 1" × 3" spruce wood furring.

B. Lumber:

1. Lumber: PS 20; graded in accordance with established Grading rules.
   a) Structural Light Framing: Southern Yellow Pine No. 2 grade and better.

b) Non-structural Light Framing: Southern Yellow Pine No. 2 grade and better.
c) Horizontal framing members: Southern Yellow Pine, Table 1, Construction grade.
d) Vertical framing members: Southern Yellow Pine, Table 1, Standard grade.

2. Laminated-veneer lumber (LVL):
   a) Materials shall comply with ICC ES ESR-1387.
   b) Adhesives shall be of the waterproof type conforming to the requirements of ASTM D-2559.
   c) LVL shall be equal to Microllam® as manufactured by Weyerhaeuser in a plant listed in the reports referred to above and under the supervision of an approved third-party inspection agency. It shall be manufactured in a continuous process with all grain parallel with the length of the members. All members are to be free of finger or scarf joints or mechanical connections in full-length members.
   d) LVL shall be identified by a stamp indicating the product type and grade and ICC ES evaluation report number, manufacturer's name, plant number and the independent inspection agency's trademark.

3. Dimensions:
   e) Specified lumber dimensions are nominal.
   f) Actual dimensions conform to industry standards established by the American Lumber Standards Committee and the rules writing agencies.
   g) Tolerances for laminated-veneer lumber:
      1.) Finished Length (as specified): ± 1/4"
      2.) Width/Depth ≤ 3.5" wide / ≤ 14" deep: ± 1/8"
      > 3.5" wide / > 14" deep: ± 3/16"

3. Moisture Content: Unseasoned or 19% maximum at time of permanent closing in of building or structure, for lumber 2" or less nominal thickness.

4. Surfacing: Surface four sides (S4S), unless specified otherwise.

5. Framing Lumber: 2" to 4" thick, 2" to 4" wide, any commercial softwood specified:

   a) Light Framing:
      1) Plates, blocking, bracing, and nailers: Utility Grade.
      2) Bracing, blocking, bulk headings, and general utility purposes: Economy Grade.
      3) Grade: Appearance
      4) Grade: Appearance, 15% maximum moisture content, MC-15 or KD on grade stamp.

6. NOTE: Southern yellow pine of similar quality may be utilized, particularly with preservative treatment.

C. Building Paper: FS UU-B-790A, Type 1, width of 36" or as specified on the drawings.

D. Fire-retardant treated products;

1. Lumber: AWPA C20-70
2. Plywood: AWPA C27-70

E. Preservative-Treated Wood Products:

1. Creosote and creosote preservatives for wood placed in ground or in water.

a) AWPB LP-55, ground contact application creosote or creosote coal tar solution.
b) Pressure treated – water borne preservatives – exposed woods above ground.
   1.) AWPB LP-22
c) Untreated Lumber: All heartwood grades.

2.02 OTHER MATERIALS:

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor, subject to the approval of the A/E.

PART 3 - EXECUTION

3.01 CONDITIONS OF SURFACES:

A. Verify that surfaces to receive rough carpentry materials are prepared to exact grades and dimensions.

B. Erect wood nailing members true to lines and levels. Do not deviate from true alignment more than 1/4 inch.

C. Space framing members at 16 inches on center unless otherwise directed on the drawings or herein.

D. Construct members of continuous pieces of longest possible lengths.

E. Use preservative treated wood in work involved with roofing, door, window blocking, and sills.

F. Provide edge, and roof opening blocking on top of existing deck surface or top of parapet unless otherwise directed on the drawings.

G. Provide vertical wood backing to parapets and metal fascia at roof perimeter and as directed on the Contract Documents.

H. Double-up wall framing members at openings over 100 square inches. Space short members above and below openings in same manner for walls.

3.02 DELIVERIES:

A. Stockpile materials sufficiently in advance of need to assure their availability in a timely manner for this work.

B. Make as many trips to the job site as are intended to delivery materials of this section in a timely manner to ensure orderly progress of the work.

3.03 INSTALLATION:

A. Pressure-treated Wood Products:

1. Provide pressure-treated wood for all framing, blocking, furring, nailing strips built into exterior masonry walls, wood in contact with concrete and in conjunction with gravel stops and roofing when applicable.

2. Re-dry and clean lumber, after treatment, to maximum moisture content of 19% stamped “DRY”.

3. Apply two brush coats of same preservative used in original treatment to all sawed or cut surfaces of treated lumber.

B. Plywood Sheathing:

1. Placement:

a) Place plywood with face grain perpendicular to supports and continuously over at least two supports, except where otherwise shown on the drawings.

b) Center joints accurately over supports, unless otherwise shown on the drawings.

c) Place roof sheathing with end joints staggered. Secure sheets over firm bearing. Maintain minimum 1/16 inch and maximum 1/8 inch spacing between joints of sheets on walls. Place perpendicular to framing members.

2. Protect plywood from moisture by use of waterproof coverings until the plywood, in turn, has been covered with the next succeeding component or finish.

3.04 COMPLIANCE:

A. Do not permit materials not complying with the provisions of this section to be brought onto or to be stored or used at the job sites.

B. Promptly remove non-complying materials from the job site and replace with materials meeting the requirements of this section.

3.05 WORKMANSHIP:

A. Products joints which are tight, true, and well nailed, with members assembled in accordance with the drawings and with pertinent codes and regulations.

B. Selection of Lumber Pieces:

1. Carefully select the members.

2. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing, and will allow making of proper connections.

3. Cut out and discard defects which render a piece unable to serve its intended function.

4. Lumber may be rejected by the A/E, whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, as will as for improper cutting and fitting.

C. Do not shim any framing component.

3.06 GENERAL FRAMING:

A. In addition to framing operations, normal to the fabrication and erection indicated on the drawings, install wood blocking and backing required for the work of other trades.

B. Set horizontal and sloped members with crown up.

C. Do not notch, cut, or bore members for pipes, ducts, or conduits, or for other reasons except as shown on the drawings or as specifically approved, in advance, in writing, by the A/E.

D. Bearings:

1. Make bearings full, unless otherwise indicated on the drawings.

2. Finish bearing surfaces on which structural members are to rest so as to give sure and even support.

3. Where framing members slope, cut or notch and end as required, to give uniform bearing surface.

3.07 BLOCKING:

A. Provide wood blocking as required for a complete and proper job and as required by the roofing manufacturer.

3.08 ALIGNMENT:

A. On framing members to receive a finished surface, align the finish subsurface to vary not more than 1/8” from the plane of surfaces of adjacent furring and framing members.

3.09 FASTENING:

A. Nailing:

1. All nailing shall comply with all requirements of the latest edition of the Rhode Island Building Code.

2. Nail without splitting wood.

3. Prebore as required.

4. Remove split members and replace with members complying with the specified requirements.

B. Bolting:

1. Drill holes 1/16” larger in diameter than the bolts being used.

2. Drill straight and true from one side only.

3. Don’t bear bolt threads on wood, but use washers under head and nut where both bear on wood, and use washers under all nuts.

C. Screws: For lag screws and wood screws, pre-bore holes same diameter as root of threads, enlarging holes to shank diameter for length of shank. Use screws at all replacement plywood substrate at roofs.

D. **Use only galvanized metal, copper or stainless-steel fasteners in conjunction with preservative-treated wood. Use compatible fastening materials.**

3.10 CLEANING UP:

A. Remove all excess material from site.

END OF SECTION

SECTION 07176

CLEANING & WATER-REPELLANT

COATINGS FOR MASONRY

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Work included: Provide two (2) applications of water repellent coating (W.R.C.) on exposed exterior surfaces of all masonry work as specified herein, and as needed for a complete and proper installation.

B. Power wash masonry in accordance with W.R.C. Manufacturer's written instructions prior to providing W.R.C.

C. Coordinate with pertinent portions of Section 04106, Mortar & Masonry Restoration and other sections herein as they apply.

D. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1.02 QUALITY ASSURANCE:

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

B. All masonry cleaners shall be tested on masonry in areas designated by the Architect. Contractor shall assume the most potent mixture will be used. Mixture may be diluted when approved in advance by the Architect.

C. Apply all products specified in this Section of the Project Manual in strict conformance with the Manufacturer's written instructions and recommendations.

D. Conform with all Federal, State and Local codes and laws when applying cleaning and water repellent materials. Contain and dispose waste and excess runoff materials in accordance with Local, State and Federal regulations. Conform with Manufacturer's written safety information and recommendations.

E. Contractor shall take necessary precautions to protect all windows, doors, hardware, light fixtures, roofing materials and other non-masonry items that may be damaged by cleaner.

F. All caulking and sealant materials shall be in place and thoroughly cured prior to cleaning. Comply with Manufacturer's written instructions.

G. Comply with Manufacturer's Surface and Air Temperature Conditions.

H. Comply with Manufacturer's written and recommended application techniques and instructions.

I. Comply with Manufacturer's written Precautionary Measures.

J. Protect all surrounding painted surfaces and foliage.

K. Provide adequate protection to avoid wind drift onto passersby vehicles and adjacent properties. Protect and/or divert pedestrians and auto traffic.

L. Consult and confirm with manufacturer product stability for project application. Provide inconspicuous test area prior to beginning application.

1.03 SUBMITTALS:

A. Comply with pertinent provisions of Section 01300.

1. Manufacturer's specifications and other data needed to provide compliance with the specified requirements.

2. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the work.

B. Submit to the Architect, a complete list of products, product data and proposed locations for use of product prior to cleaning masonry.

1.04 PRODUCT HANDLING:

A. Comply with pertinent provisions of Section 01600.

B. Comply with Manufacturer's written instructions and recommendations.

PART 2 - PRODUCTS

2.01 CLEANING MATERIALS:

1. Light-Duty Restoration Cleaner equal to Sure Klean, as manufactured by Prosoco.

2.02 SEALING MATERIALS:

A. At all masonry surfaces so designated on the drawings and herein, provide (2) coats minimum of the following product or equal approved in advance by the Architect.

1. Brick Masonry Weather Seal equal to Soloxane PD, as manufactured by Prosoco.

PART 3- EXECUTION

3.01 SURFACE CONDITIONS:

A. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

B. Contractor shall visit site and become familiar with the intended work prior to submitting his bid. Notify Architect, prior to submitting bid, of errors, omissions, etc. Otherwise, Contractor shall be responsible for specified work at no additional cost to the Owner.

C. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

D. Power-washing:

1. Apply rinsing pressure and water volume provided by masonry washing equipment generating 400 to 1000 psi with a water flow rate of 6 to 8 gallons per minute delivered through a 15 to 45 degree fan spray tip. Equipment shall be adjustable to reduce water flow rate and rinsing pressure as required for controlled cleaning of more sensitive surfaces. Refer to cleaning solution manufacturer's instructions for specific requirements. In addition to pressure-rinsing Contractor shall rinse and brush surfaces until achieving acceptable results.

3.02 INSTALLATION:

A. Surface Preparation: Use appropriate cleaners where necessary. Be sure that all caulking, sealants, masonry work are in place and fully cured.

B. Comply completely, in strict accordance with the Manufacturer's written specifications, instructions and recommendations.

C. Consult Architect prior to beginning work.

D. Comply with pertinent standards in connection with Handling of Hazardous Materials - Contractor shall comply with and provide all necessary precautions.

E. Surface Preparation: Clean dirt, oil and grease or other contaminants from surface. Use appropriate cleaners (no raw acids) where necessary; power rinse. Do not apply W.R.C. to surfaces that are wet to the touch. Be sure that all caulking, sealants, masonry work are in place and fully cured. NOTE: Any substitute cleaner shall be approved subsequent to the Bid Opening by the Owner and Architect, in conformance with applicable sections herein.

F. Application: Do not dilute or alter material. Apply with low-pressure spray equipment or with brush or roller. Use sprayers with solvent resistant hoses and gaskets to avoid discoloration. Fan type spray tips are recommended.

G. On horizontal surfaces, apply in a single saturating application so the surface remains wet for a few minutes before penetrating. Broom out surface residues, pools and puddles until they completely penetrate. Apply second coat in the same manor.

END OF SECTION

SECTION 07540

PVC SHEET ROOFING SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope:

1. At all roof levels indicated on the drawings as new PVC roofing assembly, remove and dispose entire existing roofing assembly including flashings, membrane, insulation, vapor retarder, etc. to structural deck unless otherwise directed herein or on the drawings. Refer to Summary of the Work for additional information.

2. Provide an adhered nonwoven fiberglass-reinforced (N.F.R.) roofing system with flashings, tapered and flat-stock insulation and other items required by the manufacturer to receive a system warranty.

3. Contractor shall verify all dimensions, details and existing conditions prior to submitting bid.

4. Remove and dispose any obsolete equipment as directed by Owner and/or Architect or as shown on drawings.

B. Related Work: The work includes but is not necessarily limited to the installation of:
1. thermal barrier
2. vapor retarder
3. wood blocking
4. insulation
5. fasteners
6. roof membrane
7. roof membrane flashings
8. walkway pads
9. metal flashings
10. sealants and adhesives
11. roof drains

C. Upon successful completion of work the following warranties shall be obtained:
1. Manufacturer's Warranty (15-year)
2. Roofing Contractor's Warranty (2-year)

1.02 QUALITY ASSURANCE

A. This roofing system shall be applied only by an Applicator authorized by the roofing manufacturer prior to the bid due date.

B. Upon completion of the installation, and the delivery to the manufacturer by the Applicator or a certification that all work has been completed in strict accordance with the Construction Documents and the manufacturer's requirements, an inspection shall be made by a technical representative of the manufacturer to observe the installed roof system.

C. There shall be no deviation made from the Construction Documents or the reviewed shop drawings without prior written approval by the Owner, the Architect and the roofing manufacturer.

D. All work pertaining to the installation of the membrane and flashings shall only be completed by Applicator-personnel trained and authorized by the roofing manufacturer in those procedures.

1.03 CODE REQUIREMENTS

A. The Applicator shall submit evidence that the proposed roof system meets the requirements of the building code and has been tested and approved or listed by the following testing organizations. These requirements are minimum standards and no roofing work shall commence without written documentation of the system's compliance, as required in the "Submittals" section of this specification.

1. Factory Mutual Research Corporation - Norwood, MA

a. F.M. Class 1-90 (minimum)

b. Contractor shall submit a 'Contractor Package' to FM Global for review and approval prior to ordering of any materials.

2. Underwriters Laboratories, Inc. - Northbrook, IL
a. U.L. Class A assembly

1.04 FM GLOBAL REQUIREMENTS

A. Immediately following award of construction (issuance of Purchase Order), the Contractor shall submit an Application for Acceptance of Roofing System (provided to G.C. by Architect) to the Factory Mutual Insurance Company (FM Global), 500 River Ridge Drive, P.O Box 9102, Norwood, MA 02062, ph: (781) 440-8000, www.fmglobal.com.

B. Two (2) weeks minimum prior to the start of construction, the Contractor shall notify FM Global of the anticipated start date and schedule.

C. All shop drawings/submittals for the proposed new roofing system shall be submitted to FM Global for review and approval, prior to ordering of any materials. The proposed new roofing system shop drawings/submittals shall also be submitted to Architect for review, for general conformance with the requirements of the Contract Documents, along with all other product submittals.

D. Upon completion of the new PVC roofing assembly installation, Contractor shall submit three (3) prices for Owner's review, from independent qualified companies specialized to complete wind-uplift ('bubble') testing in accordance with FM Global's (FMG) requirements. Contractor shall be responsible for installing the specified new FM 1-90 roofing system in strict conformance with FMG Roofnav Assembly(ies), the Project Manual and the manufacturer's printed instructions. Contactor will be required to coordinate all associated testing between testing company and FMG. Following the wind-uplift testing, if tests indicate results unsatisfactory to FMG, Contractor shall be solely responsible for any and all remediation work required to achieve passing results, conforming to FMG's standards at no additional cost to the Contract.

E. Refer to Perimeter and Corner Areas (Fastener Enhancement) following.

1.03 SUBMITTALS

A. The Applicator shall submit to the Architect, the following:

1. Copies of specification.

2. Samples of each component to be used in the roof system and manufacturer's current literature for each component.

3. Written approval by the insulation manufacturer and roofing manufacturer for use and performance of the product in the proposed system.

4. Sample copy of roofing manufacturer's warranty.

5. Sample copy of Applicator's warranty.

6. Dimensioned shop drawings which shall include:
   a. Outline of roof and roof size
   b. Profile details of flashing methods for penetrations and terminations.
   c. Technical acceptance from roofing manufacturer.

7. Certifications by manufacturers of roofing and insulating materials that all materials supplied comply with all requirements of the identified ASTM and industry standards or practice.

8. Certification from the Applicator that the system specified meets all identified code and insurance requirements as required by the specification.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.

B. Handle all materials to prevent damage. Place all materials on pallets and fully protected from moisture.

C. Membrane rolls shall be stored lying down on pallets, and fully protected from weather with clean canvas tarpaulins. Unvented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions.

D. All adhesives shall be stored at temperatures above 40° F (5° C).

E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.

F. All materials which are determined to be damaged by the Architect or the roofing manufacturer are to be removed from the job site and replaced at no cost to the Owner.

G. Do not load the building or building components with weight that will endanger the structure.

1.05 JOB CONDITIONS

A. The roofing manufacturer's materials may be installed under certain adverse weather conditions but only after consultation with the roofing manufacturers, as installation time and system integrity may be affected.

B. **Only as much of the new roofing as can be made weathertight each day, including all flashing and detail work, shall be installed.** All seams shall be cleaned and heat-welded before leaving the job site.

C. All work shall be scheduled and executed without exposing the interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all risks.

D. All surfaces to receive new insulation, membrane or flashings shall be dry. Should surface moisture occur, the Applicator shall provide the necessary equipment to dry the surface prior to application.

E. All new and temporary construction, including equipment and accessories, shall be secured in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.

F. Uninterrupted waterstops shall be installed at the end of each day's work and shall be completely removed before proceeding with the next day's work. Waterstops shall not emit dangerous or unsafe fumes and shall not remain in contact with the finished roof as the installation progresses. Contaminated membrane shall be replaced at no cost to the Owner.

G. The Applicator is cautioned that certain membranes of this specified manufacturer are incompatible with asphalt, coal tar, heavy oils and roofing cements. Creosote and preservative materials are also incompatible. Such materials shall not remain in contact with the manufacturers membranes. The Applicator shall consult the roofing manufacturer regarding compatibility, precautions and recommendations.

H. Arrange work sequence to avoid use of newly-constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, the Applicator shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A substantial protection layer consisting of plywood over an approved surface or plywood over insulation board shall be provided for all new and existing roof areas which receive rooftop traffic during construction.

I. Prior to and during application, all dirt, debris and dust shall be removed from surfaces either by vacuuming, sweeping, blowing with compressed air and/or similar methods.

J. The Applicator shall follow all safety regulations as required by OSHA and any other applicable authorities having jurisdiction.

K. All roofing, insulation, flashings and metal work removed during construction shall be immediately taken off the site to a legal dumping area authorized to receive such materials. If applicable, hazardous materials, such as materials containing asbestos, are to be removed and disposed of in strict accordance with applicable Town, State and Federal Requirements.

L. All new roofing waste material (i.e. scrap roof membrane, empty cans of adhesive) shall be immediately removed from the site by the Applicator and properly transported to a legal dumping area authorized to receive such material, in a legal manner.

M. The Applicator shall take precautions that storage and/or application of materials and/or equipment does not overload the roof deck or building structure.

N. Installation of this membrane over coal tar pitch or a resaturated roof requires special consideration to protect the membrane from volatile fumes and/or materials. Consult the roofing manufacturer for precautions prior to bid (if applicable).

O. Flammable adhesives shall not be stored and not be used in the vicinity of open flames, sparks and excessive heat.

P. All rooftop contamination that is anticipated or that is occurring shall be reported to the roofing manufacturer to determine the corrective steps to be taken.

Q. The Applicator shall verify that all roof drain lines are functioning correctly (not clogged or blocked) before starting work. **Applicator shall be responsible for snaking all blocked drain lines, to 10' from the building perimeter at grade level.**

R. Applicator shall immediately stop work if any unusual or concealed condition is discovered and shall immediately notify Owner and Architect of such condition in writing for correction at the Owner's expense.

S. Site cleanup, including both interior and exterior building areas which have been affected by construction, shall be completed to the Owner's satisfaction.

T. All landscaped areas damaged by construction activities shall be repaired by the Contractor at no cost to the Owner.

U. The Applicator shall complete fastener pullout tests in accordance with industry standards to help verify condition of deck/substrate and to confirm expected pullout values.

V. Precautions shall be taken when using adhesives at or near rooftop vents or air intakes. Adhesive odors could enter the building. Coordinate the operation of vents and air intakes in such a manner as to avoid the intake of adhesive odor while ventilating the building.

1.06 BIDDING REQUIREMENTS

A. Pre-Bid Meeting:
A pre-bid meeting will be held with a representative of the Owner and involved trades to discuss all aspects of the project. The prospective Applicator's field representative or roofing foreman for the work and roofing manufacturer representative shall be in attendance. Procedures to avoid rooftop damage by other trades shall be determined.

B. Site Visit:
Bidders shall visit the site prior to submitting bid, and carefully examine the areas in question as to conditions which may affect proper execution of the work. All dimensions and quantities shall be determined or verified by the Contractor. No claims for extra costs will be allowed because of lack of full knowledge of the existing conditions unless agreed to in advance with the Owner or Architect.

1.07 WARRANTIES

A. Manufacturer's System Warranty:
Upon final completion of the work and written acceptance by the roofing manufacturer and Architect, a 15-year System Warranty shall be issued.

B. Applicator/Roofing Contractor Warranty:
Applicator shall provide the Owner with a separate 2-year workmanship warranty. In the

event any work related to roofing, flashing, or metal work is found to be defective or otherwise not in accordance with the Construction Documents within the Applicator Warranty Term, the Applicator shall repair that defect at no cost to the Owner. The Applicator's warranty obligation shall run directly to the Owner, and a copy shall be sent to the roofing manufacturer.

C. Owner shall notify both the roofing manufacturer and the Applicator of any leaks as they occur during the time period when both warranties are in effect.

PART 2 - PRODUCTS

2.01 GENERAL

A. The components of the Adhered Roof System are to be products of the roofing manufacturer as indicated on the detail drawings and specified in the Construction Documents.

B. Components to be used that are other than those supplied or manufactured by the roofing manufacturer shall be submitted by the Applicator to the roofing manufacturer for review and acceptance by the roofing manufacturer. Acceptance of any other product is only for chemical compatibility with the roofing manufacturer products and not for inclusion in the roofing manufacturer warranty. The specifications, installation instructions, limitations, and/or restrictions of the respective manufacturers shall be reviewed by the Architect for acceptability for the intended use with the roofing manufacturer products.

2.02 MANUFACTURER

A. Sika-Sarnafil, or as approved equal by the Architect.
100 Dan Rd, Canton, MA 02021
(781) 828-5400
www.usa.sarnafil.sika.com

B. Acceptable alternate manufacturers are subject to compliance with the requirements specified herein. Manufacturers offering products which may be considered shall be submitted in a manner which properties can be compared item-for-item.

2.03 APPROVED MEMBRANE SYSTEMS

A. "Sarnafil", G410 nonwoven fiberglass-reinforced membrane .060" (60 mils) thick, with an acrylic coating.

B. "Sarnafil", S327 polyester-reinforced membrane with lacquer coating for perimeter and corners.

2.04 MEMBRANE

A. Membrane shall conform to the ASTM D4434 (latest revision) Standard for Polyvinyl Chloride sheet roofing.
Classification: Type II, Grade 1.

B. As manufactured, membrane shall conform to the following physical properties:

Parameters	ASTM Test Method	ASTM Requirement	Minimum Sarnafil Typical Physical Properties
Reinforcing Material	---	---	Fiberglass
Overall Thickness inches (mm) min.	D638	0.045 (1.14)	0.060 (1.50)
Tensile Strength, psi (Mpa) min.	D638	1500 (10.4)	1600 (11.1)
Elongation at Brak (M.D. × C.D.)	D638	250% M.D. 230% C.M.D.	270% M.D. 250% C.M.D.
Seam Strength* (% of Tensile Strength) min.	D638	75	80
Retention of Properties After Heat Aging	D3045	---	---
Tensile Strength (% of original) min.	D638	90	95
Elongation (% of original) min.	D638	90	90
Tearing Resistance lbf (N) min.	D1004	10 (45)	14 (63)
Low Temperature Bend -40° F (-40° C)	D2136	Pass	Pass
Accelerated Weathering Test (Xenon Arc)	D2565	5,000 Hours	10,000 Hours
Cracking (7× magnification)	---	None	None
Discoloration (by observation)	---	Negligible	Negligible
Crazing (7× magnification)	---	None	None

(Physical Properties continued...)

Parameters	ASTM Test Method	ASTM Requirement	Minimum Sarnafil Typical Physical Properties
Linear Dimensional Change	D1204	0.10% max.	0.02%
Weight Change After			

Immersion in Water	D570	± 3.0% max.	2.5%
Static Puncture Resistance 33 lbf (15kg)	D5602	Pass	Pass
Dynamic Puncture Resistance 7.3 ft-lbf (10J)	D5635	Pass	Pass

*Failure occurs through membrane rupture not seam failure.

Initial Solar Reflectance	E903	---	0.83
Emissivity	E408, C1371, Other	---	0.90
Solar Reflective Index (SRI)	E1980	---	104
Recycled Content (5 & 10 ft. sheets only)	8 to 12% Pre-Consumer/Up to 1% Post Consumer		

2.05 MEMBRANE ADHESIVE

A. Sarnacol 2170 Adhesive.

1. Use: solvent-based adhesive for bonding membranes to approved substrates.

2. Application rates for bonding membranes to various substrates:

	Substrate Rate gallons/100ft^2	Membrane Rate gallons/100ft^2	Total Rate gallons/100ft^2	Total Rate liters/meter^2
metal	0.75	0.50	1.25	0.51
smooth plywood	1.00	0.50	1.50	0.61
fiberglass mat facer	1.25	0.50	1.75	0.71
smooth structural concrete	1.25	0.50	1.75	0.71

Notes:

a) Due to an increase in viscosity when outdoor temperatures during installation are below 40° F (5° C), add 0.5 gal/100 ft^2 (0.2 L/m^2) to rate for estimating purposes.

Rates will vary with finish of substrate.

2.06 FLASHING MEMBRANE ADHESIVE

A. The adhesive for bonding Sarnafil flashing membrane to vertical flashings shall be Sarnacol 2170. Substrate must be compatible, clean, dry, and solvent-resistant.

2.07 ACCESSORY PRODUCTS

The following products shall be incorporated in specifications as needed or as detailed on the drawings:

A. Sarnatread V - Walkway
0.25 inch (5 mm) thick molded pad made of recycled material with welding tabs for positive securement to the roof surface. (Sarnapads shall be adhered in place over adhered G410 prior to welding the tabs). Left and right turns, end panels, T-panels, etc. shall be used to provide a continuous rooftop walkway network.

B. G459 Flashing Membrane
Fiberglas-reinforced, asphalt-compatible, 60 mil (1.5 mm) thick membrane used where asphalt contamination is anticipated or when adhering to smooth asphalt flashings. G459 also provides additional chemical resistance against certain contaminates.

C. Edge-Grip Flashing (Deleted)

D. Sarnafelt
Felt mat used as an asphalt barrier and smoothing/leveling layer.

E. Sarnamatic 641 Hot-Air Welder
High-quality, electrically-powered, self-propelled machine used to seal long lengths of Sarnafil membrane seams.

F. Roof drains
Remove and replace existing roof drains with new Smith 10 10-R-C-CID drains or equal. Drain diameter shall be determined by diameter of existing drain openings. All drain bowls shall be insulated. The contractor shall be responsible to provide all drain accessories. All drains shall be cleared to 10ft outside of building.

G. Sarnacorner
Prefabricated inside and outside corners made of Sarnafil membrane.

H. Sarnareglet
Heavy aluminum flashing termination with stiffening ribs and sealant support shelf used at walls and tall curbs when counterflashings are unavailable. Sarnareglet inside and outside corners are used to install a continuous termination.

I. Sarnabar
Heavy 14 gauge galvanized U-shaped steel bar with rolled edges and slotted holes punched 1 inch (25 mm) o.c. used for membrane securement at bases of walls and curbs and as a perimeter clamping bar on certain adhered roof assemblies.

J. Sarnatherm
A rigid isocyanurate foam insulation board used as a substrate for the G410 and to increase the thermal resistance of the roof assembly.

K. Sarnacord
An extruded bead of flexible PVC that is welded against the side of the Sarnabar when Sarnabar is used at the base of wall and curbs.

L. Sarnaplate
Used with various Sarnafasteners to attach insulation boards to roof deck. Sarnaplate is a 3 inch (75 mm) square or round, 26 gauge stamping of SAE 1010 steel with an AZ 55 Galvalume coating. Consult Product Data Sheet for additional information.

M. Sarnaplate-HD/CD
Used with Sarnafastener-HD or Sarnafastener-CD10 to attach insulation boards to wood or concrete roof decks. Sarnaplate-HD/CD is a 3 inch (75 mm) round stamping of SAE 1010 steel with an AZ 55 Galvalume coating. Consult Product Data Sheet for additional information.

N. Sarnafastener #12
A #12 corrosion-resistant fastener used with Sarnaplates to attach insulation boards to steel or wood roof decks. Sarnafastener #12 has a modified buttress thread, a shank diameter of approximately 0.168 inch (4 mm) and a thread diameter of approximately 0.214 inch (5 mm).

The driving head has a diameter of approximately 0.435 inch (11 mm) with a #3 Phillips recess for positive engagement. Consult Product Data Sheet for additional information.

O. Sarnafastener-MAXLoad
A specially designed, heavy-duty, corrosion-resistant fastener used to clamp Sarnafil S327 roof membrane to roof decks. Sarnafastener-MAXLoad has a shank diameter of approximately 0.26 inch (6.6 mm) and a thread diameter of approximately 0.33 inch (8.4 mm). The driving head has a diameter of approximately 0.66 inch (16.8 mm) with a #3 Phillips recess for positive engagement and simplicity of application.

P. Sarnadisc-MAXLoad
A large diameter high strength plate used with the Sarnafastener–MAXLoad to attach the Sarnafil S327 roof membrane to 22-24 gauge steel and 1/2 to 5/8 (12.7 to 15.9 mm) wood roof decks. Sarnadisc-MAXLoad is an 20 gauge (0.9 mm), 3.5 inch (88 mm), round corrosion resistant steel plate.

Q. Perimeter and Corner Areas (Fastener Enhancement)
Over the properly installed and prepared substrate surface, two S327 half-width rolls are to be installed either parallel or perpendicular to the entire perimeter edge according to FM guidelines. Sarnafasteners and Sarnadiscs are installed along the edge of the membrane on the fastening line at a spacing of 6” o.c. Sarnadisc MAXLoad are held-back 1-1/4 inch (31.8 mm) from the outer edge of the membrane. The adjacent half-roll is positioned to overlap the fastened edge of the first half-roll 7 inches (177.8 mm) for Sarnadisc-MAXLoad in accordance with the overlap lines marked on its edge. Fasteners shall clamp the S327 membrane tightly to the substrate. In corner areas where perimeter half-rolls intersect, add rows of Sarnafasteners and Sarnadiscs over the top the half-rolls and weld a (S327) coverstrip for watertightness. Minimum deck penetration shall be 1”.

1. Membrane overlaps shall be shingled with the flow of water where possible.

2. Sarnafil full-width rolls shall be fastened perpendicular to the direction of the steel deck flutes, wood plank, pre-cast or cementitious wood fiber panel where possible.

3. **Tack welding of S327 full or half-width rolls for purposes of temporary restraint during installation is not permitted and may result in voiding of Sika Sarnafil warranty**. Consult Sika Sarnafil’s Technical Department for further information.

R. Sarnastack
Prefabricated membrane vent pipe flashing made of Sarnafil membrane.

S. Sarnastop
1 inch (25 mm) metal bar installed over the G410 membrane and made watertight with a welded coverstrip, used at all changes in slope.

2.08 MISCELLANEOUS ACCESSORIES

A. Aluminum Tape
A 2 inch (50 mm) wide pressure-sensitive aluminum tape used as a separation layer between small areas of asphalt contamination and the membrane and as a bond-breaker under the coverstrip at Sarnaclad joints.

B. Sealing Tape Strip
Compressible foam with pressure-sensitive adhesive on one side. Used with metal flashings as a preventive measure against air and wind-blown moisture entry.

C. Multi-Purpose Tape
A high performance sealant tape used with metal flashings as a preventive measure against air and wind-blown moisture entry.

D. Sarnamatic 641mc or 661
220 volt, self-propelled, hot-air welding machine used to seal Sarnafil membrane seams.

E. Sarnasolv
A high quality solvent cleaner used for the general cleaning of residual asphalt, scuff marks, etc., from the membrane surface. Sarnasolv is also used daily to clean seam areas prior to hot-air welding in tear off or dirty conditions or if the membrane is not welded the same day it is unrolled. Consult Product Data Sheet for additional information.

F. Perimeter Warning Tape
Designed for use on PVC membranes as a reflective, highly visible pressure sensitive tape used to draw attention to roof perimeters and potential hazardous areas.

The tape is available in 2 inch wide rolls by 30 feet long and comes on a release liner for easy application. Perimeter Warning Tape exceeds reflectivity 3 requirements and Federal spec. L-S-300, Class 1.

2.09 SEALANTS AND PITCH POCKET FILLERS

A. Sarnafil Sikaflex-1a Sealant (for termination details).

B. Sarnafiller Adhesive (two-component urethane adhesive for pitch pocket toppings).

C. Depending on substrates, the following sealants are options for temporary overnight tie-ins:
1. Sarnafiller Adhesive.
2. Multiple layers of roofing cement and felt.
3. Spray-applied, water-resistant urethane foam.
4. Mechanical attachment with rigid bars and compressed sealant.

2.10 RELATED MATERIALS

A. Conform to Section 06100, Rough Carpentry when information is not described below. Conform to the most stringent requirements.

B. Wood Nailers

1. Treated wood nailers shall be installed at the perimeter of the entire roof and around such other roof projections and penetrations as specified on project drawings. Thickness of nailers shall match the insulation thickness in order for a smooth transition.
   a.) Wood nailers shall be treated for rot resistance (wolmanized or osmose treated), #2 quality or better lumber. Creosote or asphaltic-treated wood is not acceptable.
   b.) Wood nailers shall conform to Factory Mutual's Loss Prevention Data Sheet 1-49.
   c.) All wood shall have a maximum moisture content of 19% by weight on a dry weight basis.
   d.) Refer to pertinent sections of these specifications.

C. Plywood

1. When bonding directly to plywood, a minimum 1/2 inch (12 mm) CDX (C side out), smooth surfaced exterior grade plywood with exterior grade glue shall be used. Rough-

surfaced plywood or high fastener heads will require the use of Sarnafelt behind the flashing membrane.

2. Plywood shall have a maximum moisture content of 19% by weight on a dry weight basis unless kiln-dried after treatment, wolmanized plywood is not acceptable due to moisture content.

3. Refer to Section 06100, Rough Carpentry of these specifications for other pertinent information that may not be included in this Section.

2.10 FIRE-RETARDANT ROOF BOARD:

A. "Dens-Deck"

1. Composition: Glass mat-faced gypsum with non-asphaltic, highly filled proprietary heat-cured coating on one side.

2. Size: Nominal 4' x 8' x 5/8" Edges: Square.

3. Fire Resistance:
   a.) Flame spread 0, smoke developed 0, when tested in accordance with ASTM E-84. Noncombustible when tested in accordance with ASTM E 136.
   b.) Dens-Deck Prime Fireguard Roof Board: UL-classified Type DD.

4. Standards and Code Compliance: Dens-Deck Roof Boards: UL 790 Class A listing as a barrier board overlayment and UL 1256 as a thermal barrier underlayment over steel decks, and other decks.

2.11 VAPOR RETARDER:

A. "Sarnavap Self-Adhered": 32 mil (0.8mm) vapor retarder composed of a self-adhesive SBS modified-bitumen membrane and a woven polyethylene composite facer.

2.12 INSULATION

A. Where specified or required, Sarnatherm roof insulation shall be installed over the new vapor retarder substrate and shall obtain the desired thermal value. The existing roof assembly must be dry.

1. Insulation boards used in this adhered system shall be a Factory Mutual Class 1-90, approved.

2. Insulation shall meet all identified code/insurance requirements.

3. Insulation panels directly under the adhered G410 shall not exceed length × width dimensions of 4 ft. × 4 ft. (1.2 m × 1.2 m).

4. Insulation shall be accepted by the roofing manufacturer.

5. Base Insulation: Shall be Sarnatherm isocyanurate faced with recycled materials and a fiberglass-reinforcement, with a minimum total thickness as indicated on the drawings. The edges shall be square.

6. Tapered Insulation: Shall be Sarnatherm isocyanurate faced with recycled materials and a fiberglass-reinforcement. The taper panel shall have a minimum taper of 1/4 inch

per ft. the edges shall be square. Note: This insulation shall be installed at the roof edges as shown on the drawings and shall be in addition to the base layer of insulation.

B. Insulations shall have an minimum average “R” value of 25.0.

C. Insulation(s) thickness shall be a minimum thickness of 1.5 inches (25 mm) at the drains or as designed by insulation manufacturer.

D. Insulation manufacturer certification:

1. The insulation manufacturer shall provide to the Applicator and roofing manufacturer, documentation regarding the use of the product with specific reference to the:
   a) Name and location of the project.
   b) Confirmation of expected performance for duration of the Warranty.
   c) Application instructions for installation if insulation boards, including method and rate of attachment.

E. Deliver the insulation with the manufacturer’s original packaging and labels intact.

Keep dry at all times. If stored outside, raise the insulation above ground or roof level on pallets and cover with a tarpaulin or other waterproof material. **Plastic wrapping installed at the factory is not to be used as outside storage covers.**

F. The Contractor shall be responsible for providing a proper substrate.

G. The Contractor shall verify that:

1. Roof drains and/or scuppers have been installed per approved shop drawings.

2. Roof curbs, nailers, equipment supports, vents and other roof penetrations are properly prepared and attached to substrate.

3. Concrete surfaces shall be properly primed, finished and free of fins, edges, or voids.

2.13 INSULATION ATTACHMENT

A. Adhesives

1. Adhesives shall meet identified code and/or insurance requirements.

2. Adhesives shall be supplied or approved by insulation board manufacturer.

3. Adhesives shall be Factory Mutual approved and meet FM standard 4470 for wind-uplift resistance.

4. Adhesives shall be accepted by the roofing manufacturer.

5. Insulation shall be installed over acceptable base sheet vapor retarder.

2.14 WALKWAYS

A. Walkways shall consist of the following:

1. Sarnatread V Walkway.

2.15 SEALANTS AND PITCH POCKET FILLERS

A. The Contractor shall confirm with the roofing manufacturer all caulking/sealants that are accepted based on chemical compatibility and adhesion to the roofing manufacturer membrane.

1. Sikaflex-1a (for termination details).

2. Sarnafiller (two-component urethane adhesive for pitch pocket toppings).

B. The following sealants are accepted for temporary overnight tie-ins:

1. Sarnafiller.

2. Spray-applied, water-resistant urethane foam.

3. Multiple layers of roofing cement and felt.

NOTE: Mechanical attachment with rigid bars may be necessary to secure the edges of the membrane into and under the sealant.

2.16 MISCELLANEOUS FASTENERS AND ANCHORS

A. All fasteners, anchors, nails, straps, bars, etc. shall be of post-galvanized zinc or cadmium-plated steel, aluminum or stainless steel. Mixing metal types and methods of contact shall be in such a manner as to avoid galvanic corrosion. Fasteners for attachment of metal to masonry shall be expansion type fasteners with stainless steel pins. All concrete fasteners and anchors shall have a minimum embedment of 1.25 inch (32 mm) and shall be approved for such use by the fastener manufacturer. All wood fasteners and anchors shall have a minimum embedment of 1 inch (25 mm) and shall be approved for such use by the fastener manufacturer.

PART 3 - EXECUTION

3.01 GENERAL

A. The roofing contractor shall coordinate the installation so that each area is made watertight at the end of each work period.

3.02 DECK PREPARATION

A. The roof deck and existing roof construction shall be structurally sound to provide support for the new roof system. The Applicator shall load materials on the rooftop in such a manner to eliminate risk of deck overload due to concentrated weight. The deck shall be secured to the building according to local building code and in such a manner as to resist all anticipated wind loads in that location where applicable and where recommended by the manufacturer. Provide fastener pullout tests in accordance with the roofing manufacturer instructions.

1. General Criteria:

a) All existing roofing, base flashing, deteriorated cementitious wood fiber decking (if encountered), wood blocking or deteriorated metal flashings shall be removed.

Remove only that amount of roofing and flashing which can be made watertight with new materials during a one day period or onset of inclement weather.

2. Wood Deck:

   a) All rotted and deteriorated wood shall be completely removed and replaced. Deck attachment shall conform to Factory Mutual and Local Code Requirements.

3. Steel Deck: (if encountered)

   a) All rusted or deteriorated decking shall be brought to the attention of the Owner's Representative to determine method of treatment or replacement. Lightly rusted metal shall be treated with rust-inhibiting paint. Sections which have rusted through shall be completely removed and replaced. Deck attachment shall conform to FM Data Sheet I-28 and local code requirements.

4. Poured Structural/Precast Concrete Deck: (if encountered)

   a). The surface shall be smooth, level, and free of moisture or frost. Sharp ridges, other projections and accumulations of bitumen above the surface shall be removed to ensure a smooth surface before roofing. **All joints shall be grouted.** Any differentials in height shall be feathered with concrete for a smooth transition. Any deteriorated decking shall be repaired.

3.03 SUBSTRATE PREPARATION

A. A dry, clean and smooth substrate shall be provided to receive the Sarnafil adhered roof system.

B. The Applicator shall inspect the substrate for defects such as excessive surface roughness, contamination, structural inadequacy, or any other condition that will adversely affect the quality of work.

C. The substrate shall be clean, smooth, dry, free of flaws, sharp edges, loose and foreign material, oil and grease. Roofing shall not start until all defects have been corrected.

D. All roof surfaces shall be free of ice, water and snow.

E. New roofing materials shall be applied over compatible and accepted substrates only.

3.04 INSTALLATION OF FIRE-RETARDANT ROOF BOARD:

A. Delivery, Storage and Handling:

1. Delivery: Deliver materials to the job site in manufacturer's original packaging, containers and bundles with manufacturer's brand name and identification intact and legible.

2. Storage and handling: Dens-Deck (DD) roof board shall be kept dry before, during and after application. Outside storage shall be off ground and protected by a breathable waterproof covering. If DD becomes wet, it shall be dried before installation. DD shall be roofed same day as laid.

3. Accumulation of water due to leaks or condensation in or on Dens-Deck roof board shall be avoided during construction and after construction. Avoid overuse of non-vented,

direct-fire heaters during winter months. Avoid application of DD during rain, heavy fogs and other conditions that may deposit moisture on the surface.

4. Consult membrane manufacturer for specific installation instructions and standards for good roofing practices.

5. Panels shall be kept dry before, during and after installation. Apply only as much Dens-Deck as can be covered by a roof membrane system in the same day.

6. Accumulation of water due to leaks or condensation in or on Dens-Deck roof board shall be avoided during construction and after construction. Avoid overuse of non-vented, direct-fired heaters during winter months. Avoid application of Dens-Deck during rains, heavy fogs and other conditions that may deposit moisture on the surface.

7. The need for a separator sheet between the Dens-Deck roof board and the roofing membrane shall be determined by the roof membrane manufacturer. Cost shall be the G.C.'s responsibility.

8. When applying solvent-based adhesives or primers, allow sufficient time for the solvent to flash off to avoid damage to roofing components.

9. Maximum flute span is 2L" for G" Dens-Deck; 5" for H" Dens-Deck; and 8" for L" Dens-Deck Fireguard Type X.

10. Consult membrane manufacturer for specific system installation needs – Provide for all needs for a complete and proper job.

B. Miscellaneous Materials:

1. FMRC-approved plates and fasteners: Provide size and type in accordance with FMRC requirements and roof membrane manufacturer's written recommendations.

2. Adhesives: As recommended in writing, by the roof system manufacturer.

C. Dens Deck Roof Board installation over wood deck (or metal deck, if encountered):

1. The existing roof deck shall be cleaned of all debris and dirt.

2. Each Dens Deck roof board shall be secured with fasteners at a minimum of 12" on center and 6" from ends, conforming with Underwriter Laboratories Inc.'s specifications, conforming to a Class A roofing assembly and meeting all Factory Mutual 1-90 wind-uplift requirements. Refer also to Fastener Enhancements in Article 2.07, Accessory Products, of this section.

3. Provide maximum lengths possible to minimize number of joints. Locate edge joints parallel to and on deck ribs. Stagger end joints of adjacent lengths of Dens-Deck roof board. Butt ends and edges.

4. Refer also to 2.07, Accessory Products, herein for Perimeter and Corner Areas (Fastener Enhancement).

D. Dens-Deck Roof Board Installation Over Existing Cementitous Wood Fiber Planking (Tectum), if encountered:

1. Contractor shall confirm that the existing substrate is ready to receive new Olybond 500 adhesive fastener.

2. The existing roof deck shall be cleaned of all dirt and debris.

3. The patented PaceCart dispensing machine shall be inspected to assure that it is operating correctly.

4. The Olybond 500 adhesive fastener shall be applied in a 12” on-center serpentine pattern (approximate coverage rate is 1 gallon per square) and must be allowed to rise ¾” to 1” before setting the roof board into the adhesive.

5. The roof board must be walked into place until the adhesive cures (7 to 10 minutes).

6. Provide maximum lengths possible to minimize number of joints as acceptable with the adhesive manufacturer. Locate edge joints parallel to and on deck ribs. Stagger end joints of adjacent lengths of Dens-Deck roof board; butt ends and edges.

3.05 VAPOR RETARDER/AIR BARRIER INSTALLATION

A. Steel, Wood or Concrete Deck (New Construction or Re-Roofing with Removal of Existing Roofing): Install Sarnavap Self-Adhered over a clean and dry substrate. In concrete applications allow concrete to cure for at least seven days. Do not install when it is raining, snowing, or on wet/humid surfaces. Install in temperatures 32°F (0°C) and above. The use of Sarnavap Self-Adhered Primer is required on the following substrates: wood, concrete, lightweight concrete, gypsum boards and decks, and DensDeck boards. On metal decks use a metal plate (6 x 42 in. – 15 x 106 cm) to support the membrane end lap between metal flutes ensuring a complete end lap seal.

1. Sarnavap Self-Adhered Primer must be shaken well before use. Apply to clean and dry surfaces. Install in temperatures 32°F (0°C) and above. Application rate will vary depending on substrate with an average coverage for porous surfaces of 0.74 to 1.22 gal./sq. (0.3 to 0.5 L/m^2) and 0.25 to 0.61 gal./sq. (0.1 to 0.25 L/m^2) for non-porous surfaces.
   a) Apply with a brush, roller or spray.
   b) Allow primer to dry completely.
   c) Install Sarnavap Self-Adhered vapor barrier.

2. Begin application at the bottom of the slope. Unroll Sarnavap Self-Adhered onto the substrate without adhering for alignment. Overlap each preceding sheet by 3 in. (75 mm) lengthwise following the reference line and by 6 in. (150 mm) at each end. Stagger end laps by at least 12 in. (300 mm). Do not immediately remove the silicone release sheet.

3. Once aligned, peel back a portion of the silicone release sheet and press the membrane onto the substrate for initial adherence. Hold Sarnavap Self-Adhered tight and peel back the release sheet by pulling diagonally.

4. Use a 75 lb. (34 kg) roller to press Sarnavap Self-Adhered down into the substrate including the laps. Finish by aligning the edge of the roller with the lower end of the side laps and rolling up the membrane. Do not cut the membrane to remove air bubbles trapped under the laps. Squeeze out air bubbles by pushing the roller to the edge of the laps.

3.06 WOOD NAILERS

A. Install continuous treated wood nailers at the perimeter of the entire roof and around roof projections and penetrations as specified on project drawings.

B. Nailers shall be anchored to resist a minimum force of 300 pounds per lineal foot in any direction. A 1/2 inch (12 mm) space shall be provided between nailer lengths. Individual nailer lengths shall not be less than 3 feet (approx. 1 meter) long. Nailer fastener spacing shall be at 12 inches (0.3 m) on center, 16 inches (0.4 m) if necessary to match the structural framing. Fasteners shall be staggered 1/3 the nailer width and installed within 6 inches (0.15 m) of each end. Nailer attachment shall meet this requirement and that of the current Factory Mutual Loss Prevention Data Sheet 1-49.

C. Thickness shall be as required to match substrate or insulation height to allow a smooth transition.

D. Any existing woodwork which is to remain shall be firmly anchored in place (shall resist a minimum force of 300 pounds per lineal foot in any direction) and free of rot. Only woodwork designated to be reused in detail drawings or as directed by the Architect shall be left in place and other woodwork shall be removed.

3.07 INSULATION INSTALLATION

A. General Criteria:

1. Insulation shall be installed according to insulation manufacturer's instructions.

2. Insulation shall be neatly cut to fit around penetrations and projections.

3. Install tapered insulation in accordance with insulation manufacturer's shop drawings.

4. Install tapered insulation around drains creating a drain sump.

5. Do not install more insulation board than can be covered with roofing membrane by the end of the day or the onset of inclement weather.

6. Insulation shall be a maximum of 4 ft. × 4 ft. (1.2 mm × 1.2 mm) in size.

7. Insulation Board Adhesive, Sarnacol AD Adhesive (formerly 2163):

   a) A low odor, VOC-compliant, one-step, low-rise urethane foam used to attach insulation to approved compatible substrates. Adhesive is applied with a gravity-fed applicator or by hand with a dual component caulk gun. Additional adhesive may be required for rougher surfaces. Consult Product Data Sheets for additional information. Application rate is as follows:
   Coverage - Approximately 600 square feet (55.7 square m) per case. Rates are based on an application pattern of 4 ribbons, 1/4 to 1/2 inch (6 to 13 mm) beads, 12 inches (30 cm) on center per 4 x 4 feet (121.9 x 121.9 cm) insulation board. Coverage rates may vary over irregular surfaces.

   Notes:
   1) Not recommended for use with insulation boards larger than 4x4 feet (1.2x1.2m).
   2) Place insulation board into the adhesive shortly after it has reached its maximum rise [typically within 30 to 45 seconds at 60 to 80 degree F (16 to 27 degree C)] and walk into place.
   3) Minimum product temperature before entering the dispenser should be 70 degree F (21 degrees C).
   4) Store between 60 degree F (16 degree C) and 80 degree F (27 degree C).
   5) Adhesive shall not be used during inclement weather.
   6) Adhesive shall not be applied to wet or damp surfaces.

7) A minimum of 1 Sarnabar placed 4 feet (1.2 m) from the roof edge and fastened 12 inches (305 mm) on center to the structural deck with acceptable fasteners is required after installation of the Sarnafil roof membrane. The Sarnabar is to have a cover strip hot-air welded over it.

8. Sarnacol OM Adhesive Attachment (alternate insulation board adhesive):

a) Apply using PaceCart equipment over properly installed and prepared substrates in bands 12 in. (13 mm) o.c. Allow to rise approximately 1/2 – 3/4 in. (13 – 19 mm). Lay insulation boards in adhesive and walk into place to ensure full embedment. CAUTION: Walking insulation boards in immediately after placement into adhesive may cause slippage/movement until adhesive starts to set up. On roof slopes greater than 1/2 inch (13 mm) in 12 inches (305 mm), begin adhering insulation at low point and work upward to avoid slippage. One person shall be designated to walk in, trim/slit and apply weight to al insulation boards to ensure adequate securement. Only areas that can be made completely watertight in the same day's operations shall be coated.

b) Installation Guidelines:

1) Not recommended for use with insulation boards larger than 4x4 ft. (1.2x1.2 m).
2) Place insulation board into the adhesive shortly after it has reached its maximum rise (typically within 2 minutes) and walk into place.
3) Job site conditions may affect performance. Adhesive shall not be used if surface and/or ambient temperatures are below 45°F (7°C) during application or subsequent curing time.
4) Minimum product temperature before entering the dispenser should be 72°F (22°C).
5) Store between 45°F (7°C) and 95°F (35°C).
6) Protect from freezing, any product that does freeze must be removed from the job site and disposed of per State and Federal regulations.
7) Adhesive shall not be used during inclement weather.
8) Adhesive shall not be applied to wet or damp surfaces.

c) A Sarnabar fastened 12 inches (0.3 m) on center to the structural deck with approved fasteners is required. The Sarnabar shall be installed 4 feet (1.2 m) in from the edge of the roof around the entire perimeter of the roof area, clamping the assembly together. The Sarnabar shall have a coverstrip hot air welded over the bar.

3.08 INSTALLATION OF SARNAFIL MEMBRANE

A. The surface of the insulation or substrate shall be inspected prior to installation of the Sarnafil roof membrane. The substrate shall be clean, dry and smooth with no excessive surface roughness, contaminated surfaces or unsound surfaces such as broken, delaminated, or damaged insulation boards.

1. Sarnacol 2170 Adhesive:
   a) Over the properly installed and prepared substrate surface, Sarnacol 2170 adhesive shall be applied using solvent-resistant 3/4 inch 19 mm) nap paint rollers. The adhesive shall be applied to the substrate at a rate according to Section 2-5. The adhesive shall be applied in a smooth, even coating with no holidays, globs, puddles or similar irregularities. Only an area which can be completely covered in the same day's operations shall be coated with adhesive. The adhesive shall be allowed to dry completely prior to installing the membrane.

b) Notes:
   1) Drying time increases with cooler temperatures. Also, the Applicator is cautioned against work on days of high humidity because of extremely slow evaporation of the solvent. The Contractor shall check with the roofing manufacturer technical representative prior to roof operations on such days.
   2) The Applicator shall count the amount of pails of adhesive used per area per day to verify conformance to the specified adhesive rate.

c) When the adhesive on the substrate is dry, the roof membrane shall be unrolled. Adjacent sheets shall be overlapped 3 inches (75 mm). Once in place, one-half of the sheet's length shall be turned back and the underside shall be coated with Sarnacol 2170 adhesive at a rate of 1.2 gallon per 100 ft^2 (0.2 liters/m^2). When the adhesive has dried sufficiently to produce previously coated substrate being careful to avoid wrinkles. **Do <u>not</u> allow adhesive on the underside of the membrane to dry completely.** The amount of membrane shall be determined by ambient temperature, humidity, and manpower. The bonded sheet shall be pressed firmly in place with a weighted foam-covered lawn roller by frequent rolling in 2 directions. The remaining unbonded half of the sheet shall be folded back and the procedure repeated.

d) No adhesive shall be applied in seam areas. All membrane shall be applied in the same manner.

3.09 HOT-AIR WELDING OF LAP AREAS

A. General:

1. All seams shall be hot air welded. Seam overlaps shall be a minimum of 3 inches (75 mm) wide when automatic machine welding, and 4 inches (100 mm) wide when hand welding.

2. Welding equipment shall be provided by the roofing manufacturer. All mechanics intending to use the equipment shall have successfully completed a training course provided by a roofing manufacturer technical representative prior to welding.

3. All membrane to be welded shall be clean and dry. No adhesive shall be in the seam.

B. Hand Welding

1. Hand welded seams shall be completed in three stages. Hot-air welding equipment shall be allowed to warm up for at least one minute prior to welding.

   a) The seam shall be tack-welded every 3 feet (0.9 m) to hold the membrane in place.
   b) The back edge of the seam shall be welded with a narrow but continuous weld to prevent loss of hot air during the final welding.
   c) The nozzle shall be inserted into the seam at a 45 degree angle. Once the proper welding temperature has been reached and membrane begins to "flow", the hand roller is positioned perpendicular to the nozzle and pressed lightly. For straight seams, the 1-1/2" (40 mm) wide nozzle shall be used. For corners and compound connections, the 3/4 inch (20 mm) wide nozzle shall be used.

C. Machine Welding:

1. Machine-welded seams shall be achieved by the use of the roofing manufacturer's automatic welding equipment. The roofing manufacturer's instructions shall be followed and local codes for electric supply, grounding and over current protection observed.

The automatic welding machines require 218 to 230 volts at 30 amps. Horse power or a dedicated portable generator is recommended. No other equipment shall be operated off the generator.

D. Quality Control of Welded Seams

1. The Applicator shall check all welded seams for continuity using a rounded screwdriver. Visible evidence that welding is proceeding correctly is smoke during the welding operation, shiny membrane surfaces, and an uninterrupted flow of dark gray material from the underside of top membrane. On-site evaluation of welded seams shall be made daily by the Applicator to locations as directed by the Architect or roofing manufacturer representative. One inch (25 mm) wide cross-section samples of welded seams shall be taken at least three times a day. Correct welds display failure from shearing of the membrane prior to separation of weld. Each test cut shall be patched by the Applicator at no extra cost to Owner.

3.10 WALKWAY INSTALLATION

A. Sarnatread V:

1. Mark lines on the G410 to determine location and direction(s) of walkway network. The G410 membrane surface shall be clean. Apply 1 gallon/100 lineal ft. (12.4 liters/100 lineal meters) of Sarnacol 2170 adhesive to the back of the Sarnatread V and allow to dry. Do not apply adhesive to the back of the welding tabs. Apply 1.5 gallons/100 lineal ft. (18.6 liters/100 m) of adhesive to the G410 membrane at a width of 24 inches (0.6 m). Turn the Sarnatread V over and place in a position into the wet/tacky adhesive. Walk on the Sarnatread V to press the surfaces together. Heat-weld the Sarnatread V welding tabs to the G410 membrane.

3.11 MEMBRANE FLASHINGS

A. All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without prior written approval of the Architect and roofing manufacturer. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the Applicator's expense. Flashings shall be adhered to compatible dry, smooth, and solvent-resistant surfaces.

1. Sarnacol 2170 Adhesive for Flashings:

a.) Over the properly installed and prepared flashing substrate, Sarnacol 2170 adhesive shall be applied using solvent-resistant 3/4 inch (19 mm) nap paint rollers. The adhesive shall be applied at a rate according to Section 2.05. The adhesive shall be applied in smooth, even coatings with no holidays, globs or similar irregularities. Only an area which can be completely covered in the same day's operations shall be coated with adhesive. The surface with adhesive coating shall be allowed to dry completely prior to installing the membrane.

b.) Note:

1) Drying time increases with cooler temperatures. Also, the Applicator is cautioned against work on days of high humidity because of extremely slow evaporation of the solvent. The Applicator shall check with the roofing manufacturer technical representative prior to roof operations on such days.

c) When the surface is dry, the Sarnafil flashing membrane is cut to a workable length and the underside shall be evenly coated with Sarnacol 2170 adhesive at a

rate of 1/2 gallons per 100 square feet (0.51 liters/m^2). When the adhesive has dried sufficiently to produce strings when touched with a dry finger, the coated membrane shall be rolled onto the previously coated substrate being careful to avoid wrinkles. **Do <u>not</u> allow adhesive on the underside of the membrane to completely dry.** The amount of membrane that can be coated with adhesive will be determined by ambient temperature, humidity, and the efficiency of the crew. Adjacent sheets shall be overlapped 3 inches (75 mm). Sarnafil flashings shall extend 4 inches (100 mm) onto the roofing membrane. The bonded sheet shall be pressed firmly in place with a hand roller.

d) No adhesive shall be applied in seam areas that are to be welded. All panels of membrane shall be applied in the same manner, overlapping the edges of the panels as required by welding techniques.

2. Install Sarnastop fastened 12 inches (0.3 m) on center with acceptable fasteners into the structural deck at the base of parapets, walls and curbs. Sarnastop shall also be installed at the base of all tapered edge strips and at transitions, peaks, and valleys according to Sarnafil's details.

3. Roofing manufacturer's requirements and recommendations and the specifications shall be followed. All material submittals shall have been accepted by the roofing manufacturer prior to installation.

4. All flashings shall extend a minimum of 12 inches (0.2 m) above roofing level unless otherwise accepted in writing by the Architect and roofing manufacturer technical representative.

5. All flashing membranes shall be adhered to solvent-resistant substrates. All interior and exterior corners and miters shall be cut and hot-air welded into place. No bitumen shall be in contact with the roofing membrane.

6. All flashing membranes shall be mechanically fastened along to the top edge through discs or predrilled galvanized metal strip washers spaced at a maximum of 12 inches (0.3 m) on center.

7. Roofing manufacturer flashings shall be terminated according to roofing manufacturer recommended details.

3.12 EDGE-GRIP METAL PERIMETER EDGE FLASHING

A. (Deleted)

3.13 METAL FLASHINGS

A. Conform to applicable portions of Section 07620, herein which are not described below. Comply with the most stringent and more costly.

B. Metal details, fabrication practices and installation methods shall conform to the applicable requirements of the following:

1. Factory Mutual Loss Prevention Data Sheet 1-49 (latest issue).
2. Sheet Metal and Air Conditioning Contractors National Association Inc. (SMACNA -- latest issue).

C. Metal, other than that provided by the roofing manufacturer shall be covered under the Applicator's warranty.

D. Complete all metal work in conjunction with roofing and flashings so that a watertight condition exists daily.

E. Metal shall be installed to provide adequate resistance to bending and allow for normal thermal expansion and contraction.

F. Metal joints shall be watertight.

G. Metal flashings shall be securely fastened into solid wood blocking. Fasteners shall penetrate the wood nailer a minimum of 1 inch.

H. Airtight and continuous metal hook strips are required behind metal fascias. Hook strips are to be fastened 12 inches on center into the wood nailer or masonry wall.

I. Counter-flashings shall overlap base flashings at least 4 inches.

3.14 TEMPORARY CUT-OFF

A. All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the work progresses. All temporary waterstops shall be constructed to provide a 100% watertight seal. The stagger of the insulation joints shall be made even by installing partial panels of insulation. The new membrane shall be carried into the waterstop. The waterstop shall be sealed to the deck and/or substrate so that water will not be allowed to travel under the new or existing roofing. The edge of the membrane shall be sealed in a continuous heavy application of sealant as described elsewhere herein. When work resumes, the contaminated membrane shall be cut out. All sealant, contaminated membrane, insulation fillers, etc. shall be removed from the work area and properly disposed of off site. None of these materials shall be used in the new work.

B. If inclement weather occurs while a temporary waterstop is in place, the Applicator shall provide the labor necessary to monitor the situation to maintain a watertight condition.

C. If any water is allowed to enter under the newly-completed roofing, the affected area shall be removed and replaced at the Applicator's expense.

3.15 COMPLETION

A. Prior to demobilization from the site, the work shall be reviewed by the Architect and the Applicator. All defects shall be noted and noncompliance with the specifications or the recommendations of the roofing contractor shall be itemized in a punch list. These items must be corrected immediately by the Applicator to the satisfaction of the Owner and roofing manufacturer prior to demobilization.

B. All warranties, as referenced elsewhere herein shall have been submitted for approval and shall have been accepted at time of contract award.

3.16 SALVAGE

A. The Owner reserves the right to salvage any or all existing materials. Anything not salvaged by the Owner becomes the Contractor's responsibility to dispose of properly at no additional cost to the Owner.

END OF SECTION

SECTION 07620

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work included: Provide new metal flashing and sheet metal where it currently exists and where not specifically described in other Sections of these Specifications but required to prevent penetration of water through the exterior shell of the building as intended to be provided as a part of the re-roofing work.

B. Contractor is strongly advised to field verify existing roof conditions and become familiar with the scope of work during bidding procedures. Contractor shall notify the Architect, prior to submitting bid, of obvious errors or omissions that may exist on the drawings or herein.

C. New roofing and new roof accessories shall be installed in compliance with these Contract Documents and in compliance with the manufacturer's current roofing specifications and details, whichever is more stringent.

D. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.02 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. In addition to complying with pertinent codes and regulations, comply with pertinent recommendations contained in current edition of "Architectural Sheet Metal Manual" published by the Sheet Metal and Air Conditioning Contractors National Association (SMACNA).

C. Standard commercial items may be used for flashing, trim, reglets, and similar purposes provided such items meet or exceed the quality standards specified.

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

1.04 PRODUCT REQUIREMENTS

A. Comply with pertinent provisions of Section 01600.

PART 2 - PRODUCTS

2.01 MATERIALS AND GAUGES

A. Applications:

1. Exterior wall flashing and expansion joints.
2. Sheet metal accessories.

B. Where sheet metal is required and no material or gauge is indicated on the Drawings, provide the highest quality and gauge commensurate with the referenced standards.

2.02 ALUMINUM (when and where specified)

A. Aluminum Sheet ASTM B209, 5005 alloy, H34 temper; 040 inch thick; mill finish shop pre-coated with thermal setting polyester enamel of color as selected by Architect.

B. Extruded Aluminum: 6063-T52, clear anodized, 0.080 inches for primary legs of extrusion

2.03 LEAD-COATED COPPER (L.C.C.)

A. Where lead-coated copper is specified on the drawings and/or where required to be replaced in the field, copper shall be coated on both sides with lead weighing 6 to 7-1/2 pounds per 100 square feet for each side. Lead-coated sheet shall conform to ASTM Specification B101, Type I, Class A.

B. Lead coating shall be applied by hot dip process. Weights of lead-coated copper specified shall be weights of sheet copper exclusive of lead coating. All lead-coated copper shall have finish not rougher than Leadtex 15. Weight of all lead-coated copper shall be 20 oz. per sq. ft. unless otherwise noted elsewhere herein and/or on the drawings.

C. Deleted.

2.04 STAINLESS STEEL

A. If applicable, provide stainless steel items in accordance with Section 05500, Metal Fabrications.

2.05 NAILS, RIVETS, AND FASTENERS

A. Use compatible fastening materials. Use only hot-dipped galvanized metal, copper or stainless steel fasteners where used in conjunction with preservative treated wood.

B. Unless otherwise specified on the drawings or herein, nails used for fastening copper shall be copper or hardware bronze of stronghold type, or equal, with large flat head. The shall be not smaller than No. 12 stubs gauge (0.109 inch) and of sufficient length to penetrate mounting surfaces not less than 7/8”.

C. Screws and bolts used for fastening copper shall be copper, bronze, or brass.

D. Use only soft iron rivets having rust-resistive coating, galvanized nails, and cadmium plated screws and washers in connection with galvanized iron and steel.

E. Use compatible fastening materials. Use only hot-dipped galvanized metal, copper or stainless steel fasteners where used in conjunction with preservative treated wood.

2.06 FLUX

A. Flux shall be muriatic acid killed with zinc. Acid shall be thoroughly washed off after soldering is completed.

2.07 SOLDER

A. Solder shall conform to ASTM Specifications B32 or Federal Specifications QQ-S-571.

B. Thoroughly clean and tin the joint materials prior to soldering.

C. Perform soldering slowly, with a well heated copper, in order to heat the seams thoroughly and to completely fill them with solder.

D. Perform soldering with a heavy soldering copper of blunt design, properly tinned for use.

E. Make exposed soldering on finished surfaces neat, full flowing and smooth.

F. After soldering, thoroughly wash acid flux with a soda solution.

2.08 SEALANTS

A. Conform to Section 07920, Sealants and Caulking.

2.09 EXPANSION JOINT COVERS, INSULATED (if applicable)

A. Expand-O-Flash INS, Style NCF-INS; 16 ounce per sq. ft. copper flanges; manufactured by Schuller, International, Inc.

2.10 PITCH POCKET ASSEMBLIES

A. Two-piece, 20-ounce per sq. ft. lead coated copper base and cap:

1. Fabricate as indicated, with minimum 8 inch base flange on base unit.

2.11 VENT STACK COUNTER FLASHING SLEEVES

A. Two-piece, 20-ounce per sq. ft. lead coated copper sleeves:

1. Sleeve collar, full height of vent stack, with minimum 8 inch base flange.

2. “Doughnut” shaped cap, with minimum 1 inch outside sleeve overlap, and 1 inch, interior downward return.

B. Fabricate in conformance with SMACNA Manual Plate 66, Figure B, and with the above.

2.12 MASONRY WALL COUNTER FLASHINGS

A. Fabrication similar to metal trim, and as indicated on drawing detail.

2.13 GALVANIZED IRON

A. Provide sheet metal or sheet iron of a standard brand of open-hearth copper-bearing steel, copper molybdenum iron, or pure iron sheets.

B. Zinc coating:

1. Where galvanizing is required, provide zinc coating by hot-dip galvanize to all surfaces.

2. Weight:
   a) Provide not less than 1-1/4 oz per sq. ft., nor more than 1-1/2 oz per sq. ft., to surfaces required to be galvanized.

3. Comply with ASTM A93.

2.14 OTHER MATERIALS

A. Custom Roof Curbs:

1. Provide roof curbing as manufactured by Custom Curb Inc., 3005 South Hickory Street, Chattanooga, Tennessee 37407, at all roof openings described or shown on the drawings.

2. Provide model CRC-3, box section design, (14) gauge galvanized steel construction, continuous mitered and welded corner seams, integral base plate, pressure-treated nailer and shall be insulated with 1-1/2" thick rigid fiberglass board insulation.

3. Weld, bolt or screw all curbing to roof substructure. Install in accordance with manufacturer written instructions.

4. Size: Field verify. Match existing dimensions of dimensions to suit new requirements.

B. Provide other materials not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the A/E.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

B. Verify that vents through roof are solidly set, and nailing strips located to details included in the SMACNA Manual.

C. Verify that roofing termination and base flashings are in place, sealed and secured.

3.02 INSTALLATION OF METAL TRIM, VENT COUNTER FLASHINGS, AND PITCH POCKETS.

A. Conform to drawing details included in SMACNA Manual.

B. Secure metal trim in place using concealed fasteners. Use exposed fasteners only where permitted by Architect.

C. Match existing flashings and counter flashings - Remove and dispose existing where directed or where existing at masonry areas to be restored.

D. Fit metal trim tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

E. Seal metal joints watertight.

F. Cap flashing, lap base flashing minimum of 4" with bottom edge folded to provide spring action to hold bottom tightly against base.

G. Lock Strips: Continuous.

H. Turn exposed edges back 1/2".

3.03 INSTALLATION OF EXPANSION JOINT COVERS

A. Install in accordance with Manufacturer's specifications.

B. Provide bituminous interface where contact between copper flanges and other metals may occur.

3.04 WORKMANSHIP

A. General:

1. Form sheet metal accurately and to the dimensions and shapes required, finishing molded and broken surfaces with true, sharp and strait lines and angles and, where intercepting other members, coping to an accurate fit and soldering securely.

B. Form, fabricate and install sheet metal so as to adequately provide for expansion and contraction in the finished work.

C. Weatherproofing:

1. Finish watertight and weathertight where so required.

2. Make lock seam work flat and true to line, sweating full of solder.

3. Make lock seams and lap seams, when soldered, at least 1/2” wide.

4. Where lap seams are not soldered, lap according to pitch, but in no case less than 3”.

5. Make flat and lap seams in the direction of flow.

D. Joints:

1. Join parts w/ rivets or sheet metal screws where necessary for strength and stiffness.

2. Provide suitable watertight expansion joints for runs more than 40’-0”, except where closer spacing is indicated on the Drawings or required for a complete and proper installation.

E. Nailing:

1. Whenever possible, secure metal by means of clips or cleats, without nailing through the exterior metal.

2. In general, space nails, rivets, and screws not more than 8” apart and, where exposed to the weather, use lead washers.

3. For nailing into wood, use barbed roofing nails 1-1/2” long by 11 gauge.

4. For nailing into concrete, use drilled plug holes and plugs.

3.05 TESTS

A. Upon request of the Architect, demonstrate by hose or standing water that the flashing and sheet metal are completely watertight. Do so at no additional cost to the Owner.

END OF SECTION

SECTION 07800

ROOF HATCH

PART - GENERAL

1.01 DESCRIPTION:

A. Provide new roof hatch assemblies, complete with curb and new painted wood trim finish at interior. Scrape, sand, wash, patch, repair, fully restore, prime and paint entire well leading to roof hatch.

B. Related Work Specified Elsewhere:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

C. Site Visit:

1. Bidders shall visit the site and carefully examine the areas in question as to conditions which may affect proper execution of the work. All dimensions and quantities shall be determined or verified by the Contractor. No claims for extra costs will be allowed because of lack of full knowledge of the existing conditions unless agreed in advance with the Owner or Architect.

1.02 SUBMITTALS:

A. Manufacturer's literature.

B. Shop Drawings: Show connection details to roof structure, etc.

C. Conform to pertinent portions of Section 01300, herein.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING:

A. Deliver to site in original manufacturer's packaging.

B. Store in area protected from weather and damage.

C. Conform to pertinent portions of Section 01600, herein.

1.04 DESIGN CRITERIA:

A. Thermal Expansion:

1. System shall provide for expansion and contraction within the system components caused by a cycling temperature range of 100 deg. F without causing any detrimental effects to the system or components.

B. Structural Criteria:

1. The roof hatch assembly shall be designed and constructed in accordance with the Massachusetts State Building Code and other applicable codes, whichever is most stringent.

C. Moisture Control/Water Resistance:

1. The roof hatch assembly shall have integral condensation gutters that collect all condensation and/or infiltrated water.

D. Independent Test Certification:

1. Roof hatch assembly shall be certified by an independent test lab to meet the following minimum criteria:
   a.) No uncontrolled leakage at 15 PSF when tested per ASTM E331-86.
   b.) Maximum air infiltration of .06 CFM at 6.24 PSF when tested per ASTM E283-84.
   c.) Frames to have minimum condensation resistance factor (CRF) of 54 when measured per AAMA 1503.1-1980.
   d.) Maximum deflection of L/175 at 60 PSF when tested in accordance with ASTM E330-86 permanent set to be less than L/500.

E. All testing costs shall be included in the Base Bid amount.

PART 2 – PRODUCTS

2.01 MANUFACTURER:

A. Bilco or equal approved by the Architect.

2.02 MATERIALS:

A. Roof Hatch:

1. Bilco-type; “L-50” single leaf, 36” x 48”, mill finish aluminum.
2. Roof hatch shall provide a minimum 1-hour U.L. approved fire rating.
3. Roof hatch shall be lockable from interior.
4. See drawings for details and locations.
5. Quantity: One (1)- located at main entry to roof.
6. Bilco – Type “LU-1” Ladder Safety Post.
7. Field verify all dimensions and conditions prior to ordering

B. Sealants and joint fillers shall be one part low modulus silicone that is compatible with adjacent materials and/or as specified elsewhere herein, whichever is recommended and accepted by the roof hatch manufacturer. Verify prior to submitting bid.

C. Fasteners:

a. Fasteners used for the attachment of exterior parts shall be of 300 series stainless steel.
b. Fasteners used for all anchors shall be cadmium plated or galvanized steel.
c. Fasteners used to connect framing members may be of 300 series stainless steel or 2024 aluminum.

D. Coordinate the installation with the work of all other trades.

2.03 FABRICATION:

A. The roof hatch assembly shall be shipped to the jobsite, factory-fitted and assembled.

B. All welding shall be by the heliarc process.

C. The roof hatch assembly shall have properly located weep holes provided for drainage of condensation to the exterior.

PART 3 - EXECUTION

3.01 SURFACE CONDITION:

A. Inspection:

1. **Bidders shall visit the site and examine the existing roof hatch and opening as to conditions which may affect proper execution of the work. All dimensions and quantities shall be determined or verified by the Contractor prior to submitting his bid.** No claims for extra costs will be allowed because of lack of full knowledge of the existing conditions.

2. Submit shop drawing catalog cuts to Architect for review prior to ordering new equipment.

3. Prior to all work of this Section, inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.

4. Verify that roof hatch assembly is installed in accordance with the manufacturer's recommendations.

5. Field verify and coordinate all dimensions and existing conditions.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 PREPARATION:

A. Surface contact between aluminum and dissimilar materials shall receive a protective coating or isolator to prevent electrolytic action.

3.03 ERECTION:

A. The roof hatch assembly shall be installed by an experienced installer familiar with the manufacturer's systems and installation procedures.

3.04 CLEAN-UP:

A. Clean all excess roofing material from roof hatch.

END OF SECTION

SECTION 07820

METAL-FRAMED SKYLIGHTS

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Work Included: Provide metal-framed hipped end skylights where specified herein and on the drawings.

B. Provide structural design, engineering, and fabrication of the entire skylight system. Include extruded aluminum framing, integral closures, trim, and perimeter flashing.

C. Provide fasteners, anchors and related reinforcement as required to resist design loads.

D. Provide glass and glazing materials including gaskets, sealants, setting blocks, backer rods, and related materials.

E. Provide installation of the entire metal-framed skylight system.

1.02 RELATED WORK:

A. Documents affecting work of this section including but not necessarily limited to General Conditions, Supplementary Conditions, and sections in Division 1 of these Specifications.

B. Review and become familiar with Section 01100, Summary of the Work.

1.03 QUALITY ASSURANCE:

A. The G.C. shall be responsible for providing all work described herein. Carefully coordinate all work with the specified skylight manufacturer.

B. Work of this section, including certified design by a Rhode Island-licensed structural engineer, fabrication, finishing, preparation at the job site, erection and glazing of the skylight shall be the responsibility of the skylight manufacturer. The manufacturer shall be regularly engaged in the construction of skylights and be able to demonstrate that he has successfully performed on comparable projects over the previous five years.

C. Use adequate numbers of skilled workmen who are authorized by the skylight manufacturer, thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

D. Site Visit:

1. Bidders shall visit the site and carefully examine the areas in question as to conditions which may affect proper execution of the work. All dimensions and quantities shall be determined or verified by the Contractor. No claims for extra costs will be allowed because of lack of full knowledge of the existing conditions unless agreed in advance with the Owner or Architect.

E. Professional Engineer Qualifications: A professional engineer who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of skylights that are similar to those indicated for this Project in material, design, and extent.

F. Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.

G. Pre-installation Conference: When required, conduct conference at Project site to comply with requirements in Division 1 Section “Project Meetings.” Review methods and procedures related to metal-framed skylights including, but not limited to, the following:

1. Inspect and discuss condition of substrate and other preparatory work performed by other trades.
2. Review structural load limitations.
3. Review skylight curb structural requirements.
4. Review and finalize construction schedule and verify availability of materials, Installer’s personnel, equipment, and facilities needed to make progress and avoid delays.
5. Review required testing procedures.
6. Review weather and forecasted weather conditions and procedures for unfavorable conditions.
7. Review protection of adjacent roof areas.
8. Review preparation and other requirements for installing structural silicone sealant.

1.04 DESIGN CRITERIA:

A. General: Provide metal-framed skylights capable of withstanding loads and thermal and structural movements indicated without failure. Failure includes the following:
1. Deflection exceeding specified limits.
2. Thermal stresses transferred to the building structure.
3. Skylight framing members transferring stresses, including those caused by thermal and structural movement, to glazing.
4. Noise or vibration created by thermal and structural movement and wind.
5. Weakening of fasteners, attachments, and other components.

B. Deflection Limits: As follows:
1. Deflection of the entire length of framing members in direction normal to glazing plane is limited to 1/175 of clear span or 3/4”, whichever is less.
2. No glass breakage; maximum 25% reduction in glass bite.

C. Lateral Support: Compression flanges 75% of flexural members requiring lateral be laterally braced by cross members with minimum depths equal to flexural member depth and by anchors to the building structure. Glazing material does not provide lateral support.

D. Structural Loads: Provide metal-framed skylights, including anchorage, capable of withstanding the effects of the following design loads when supporting full dead loads:
1. Roof Loads
   a. Concentrated Load: 250 lb applied to framing members at location that produces the most severe stress or deflection.
   b. Snow Loads: 40lb As indicated.
   c. Roof Loads: As indicated.
2. Seismic Loads: As indicated.

E. Structural Performance: Provide metal-framed skylights, including anchorage, capable of withstanding test pressure indicated without material and deflection failures and permanent deformation of structural members exceeding 0.2 percent of span when tested according to ASTM E 330 or per Rhode Island Code, whichever is more stringent. Complete skylight system shall withstand positive and negative wind pressure loading complying with Rhode Island State and Local Codes. No permanent damage to anchors and fasteners allowed.
   1. Design pressure with a safety factor of 1.5 is to be applied
F. Thermal Movement: Provide metal-framed skylights that allow for thermal movements resulting from the following maximum change (range) in ambient temperatures by preventing buckling, stress on glass, edge seal failure, excess stress on skylight structure, anchors and fasteners, reduction in performance or other detrimental effects.
   1. Ambient air temperature range from –10 degrees F. to +160 degrees F
G. Air Infiltration: Provide metal-framed skylights with maximum air leakage of 0.06 cfm/sq. ft. (0.03 L/s per sq. m) of surface when tested according to ASTM E 283 at a minimum static-air-pressure differential of 6.24lb/sq. ft. (300 Pa).
H. Water Penetration: Provide metal-framed skylights that do not evidence water penetration when tested according to ASTM E 331 at a minimum differential static pressure of 20 percent of positive design wind pressure, but not less than 15 lb/sq. ft. (718 Pa). No uncontrolled water infiltration is allowable.
I. Condensation Resistance: Provide aluminum-framed systems that when tested with fixed glazing, have a frame condensation-resistance factor (CRF) of not less than 54 when tested according to AAMA 1503 when clear over clear insulated glass is used.
J. Glazing: System shall be designated for exterior glazing, in accordance with Section 08800, Glazing herein.
K. Anchors: Capable of transmitting design loads and thermal expansion loads assigned to a single anchor; with a safety factor of 2.5.
L. Fasteners: Compatible with material being fastened. Conceal interior and exterior fasteners in finished work, in so far as practical.

1.05 OTHER PERFORMANCE CRITERIA:

A. Skylight framing system including glazing material shall be designed by the metal framed skylight manufacturer to support design loads as prescribed by the Rhode Island State Building Code and/or other more stringent codes were and when applicable. Design in accordance with applicable Negative Wind Loads, Positive Wind Loads, Snow Loads, Concentrated Loads, etc. Design drawings and specifications shall bear the stamp and signatures of a Rhode Island licensed Structural Engineer as provided by the Skylight Manufacturer.

B. Verify with the skylight manufacturer, that the existing building structure is adequately constructed to accommodate the new metal framed skylight assembly. Provide all wood blocking and finish work as needed for a complete and proper installation.

1.06 SUBMITTALS:

A. Shop Drawings: Submit detailed shop drawings as required for skylight construction and installation. Indicate material types, gauges and finishes, fabrication details and installation details. Show glazing types, methods of attachment and expansion provisions.

B. Product Data: Indicate materials, finishes and installation procedures recommended by manufacturer. Indicate compliance with specified design criteria. Include specific glazing details. Include construction details, dimensions and profiles of components for metal-framed skylights.

C. Glass manufacturer's approval: Indicate on shop drawings for by letter prior to shop drawing submittal that an authorized representative of selected glass manufacturer has reviewed and approved details including glass bite, support, clearances and glazing methods.

D. Sealant Compatibility and Adhesion Test Reports: From sealant manufacturer indicating that materials forming joint substrates and joint sealant backings have been tested for compatibility and adhesion with sealants; include sealant manufacturer's interpretation of test results for sealant performance and recommendations for primers and substrate preparation needed for adhesion.

E. Submit four (4) sets of shop drawing showing planes, elevations, and sections as required to fully describe the skylight construction prior to starting fabrication.

F. Submit structural calculations as provided by a qualified Structural Engineer and approved by the skylight manufacturer for the Architect's review only. Comply with the Aluminum Association's Specifications for Aluminum Structures (SAS-30). Structural Engineer shall be a Rhode Island licensed professional engineer qualified in the design of self-supporting metal framed skylighting systems. Contractor shall bear the cost of <u>all</u> engineering work herein.

G. Submit samples of each type of finish (color charts or range samples) and glazing materials for the Architect's approval prior to fabrication. Samples of glass material shall consist of (2) pieces - 12" square. Samples of aluminum finish shall consist of two (2) pieces 12" long. Mill finished sampler to be provided on piece of 2"x3" aluminum sheet

H. Submit a Test Report from an Independent Testing Laboratory that proves that skylight system meets the design and performance criteria specified herein. Include cost of testing in the Base Bid.

I. Submit manufacturer's written certification that the existing structure and proposed Contract Documents have been reviewed and inspected and meet or exceed codes and manufacturer's other requirements for installation of the skylight system.

J. Submit manufacturer's written certification that the skylight is warranted as specified herein.

1.07 JOB CONDITIONS:

A. Allowable erection tolerances:

1. Maximum variation from designated positions: 1/8" in 10'-0", not exceeding 1/4" in 40'-0" any direction.
2. Maximum offset in alignment between two consecutive members in line, end to end: 1/16".
3. Maximum offset between framing members at corners of glazing pocket: 1/32".

B. Existing Construction: Where metal-framed skylights are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.08 DELIVERY, STORAGE AND HANDLING:

A. Deliver and store components in manufacturer's protective packaging. Store in a dry space, off floor. Handle materials to prevent damage to prefinished surfaces.

1.09 SUBSTITUTIONS:

A. Substitutions will be considered when all of the following conditions have been met:

1. Evidence that substitute skylight assembly is equal to that specified herein.

2. Complete detailed drawings are submitted for review by the Architect.

3. Structural calculations, prepared and sealed (stamped) by a licensed engineer in the state of Rhode Island, showing sizes of framing members and loads applied to the support structure, based on the design loads of this specification are submitted for review.

4. Prospective manufacturers must furnish evidence of their ability to perform, including a list of projects of similar design and complexity completed within the last five years.

5. Prospective skylight systems must be manufactured by a firm with a minimum of ten (10) years' experience in the fabrication and installation of custom aluminum framed skylights.

1.10 WARRANTY:

A. Skylight manufacturer shall warrant that the framing system will be free of defects in materials and workmanship for a period of five (5) years from date of Substantial Completion.
1. Structural failures.
2. Failure of systems to meet performance requirements.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Water leakage; defined as uncontrolled water appearing on normally exposed interior surfaces of skylights from sources other than condensation, resulting from defects in skylight materials or workmanship. (Water controlled by flashing and gutters and drained back to the exterior and that cannot damage adjacent materials or finishes is not water leakage). Water leakage resulting from improper installations not part of this warranty.

B. Anodized finishes shall be warranted for film integrity for a period of one (1) year from date of application.

C. Glazing materials shall be warranted against defective materials, delamination, seal failure and defects in manufacturer per the glazing manufacturer's standard warranties, but not less than five (5) years.

D. Skylight manufacturer/installer shall guarantee that the installation will remain weather tight for a period of five (5) years from the date of substantial completion.

PART 2 - PRODUCTS:

2.01 FRAMING SYSTEM:

A. Acceptable Product: Manufacturers: Subject to compliance with requirements, provide Wasco Pinnacle 350 or Approved Equal.

B. Framing Components:

1. Framing Members: Extruded aluminum alloy 6063-T5 or T6, ASTM B 221 with minimum effective thickness of 0.109 inches.
2. Exterior Pressure Caps: Extruded aluminum alloy 6063-T5 or T6, ASTM B 221 with minimum effective thickness of 0.090 inches.

3. Concealed Flashing: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding flashing; compatible with adjacent materials.

4. Exposed Flashing and Closures: Aluminum sheet alloy and temper of 1100-H14, thickness as required for proper performance.
    i. Minimum Thickness: 0.032 inch Apron Flashing.
    ii. Minimum Thickness: 0.062 inch Closures.
5. Finish on Exposed Aluminum: Color shall be selected by Owner and/or Architect from manufacturer's standard color chart. Contractor shall submit manufacturer's color chart with shop drawings.

6. Perimeter Sealant: Single-component, non-sag, non-skinning, high performance, non-priming, gun-grade elastomeric polyurethane sealant furnished by skylight manufacturer.
    i. Sealant complies with ASTM C920, Type S, Grade NS, Class 25, Use T, NT, M, A, G, and O. Canadian Specification CAN/CGSB-19.13-M87, Classification MCG-2-25-A-N.
    ii. Sealant conforms to USDA approval standards.
    iii. Color: Gray or Dark Bronze.
7. Fasteners and Anchors: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories; compatible with adjacent materials.

8. Aluminum Retaining Cap Fasteners and Framing Members Fasteners: ASTM A 193/A 193M, Series 300 stainless-steel screws; type as recommended by manufacturer.
9. Connections to Supporting Structure: Series 300 Stainless Steel or ASTM A 307, hot dipped galvanized steel fasteners by installer.
10. Locate weep holes to positively drain condensation to exterior of skylight.

11. Bituminous Paint: Cold-applied asphalt mastic paint complying with SSPC-Paint 12, except containing no asbestos, and formulated for 30-mil thickness per coat.

2.02 GLAZING

A. Insulating Glass: 1-1/8 inch consisting of 1/4 inch clear tempered exterior lite, 1/2 inch sealed air space and 3/8 inch clear laminated safety glass interior lite.
*Glass must meet the requirements of the AAMA for the project.

B. Insulating Glass for Vertical Glazed End: 1 inch consisting of 1/4 inch clear tempered exterior lite, 1/2 inch sealed air space and 1/4 inch clear tempered interior lite.

C. Glazing Gaskets: Manufacturer's proprietary pressure-glazing gaskets of elastomer type and hardness selected by the skylight manufacturer to comply with requirements. Glazing gaskets to be extruded thermoplastic elastomer by the skylight manufacturer.

D. Spacers, Edge Blocks, and Setting Blocks: Manufacturer's standard permanent non-migrating type of elastomer type and hardness selected to comply with requirements. Spacers, Edge Blocks, and Setting Blocks to be extruded thermoplastic elastomer by the skylight manufacturer.

E. Glazing Weatherseal Sealant: Neutral-curing silicone sealant recommended by skylight and sealant manufacturers for this use and furnished by skylight manufacturer.

1. Sealant is capable of withstanding 50 percent movement in both extension and compression (total of 100 percent movement) when tested for adhesion and cohesion under maximum cyclic movement according to ASTM C 719.
2. Sealant complies with ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and, as applicable to substrates including other sealants with which it comes in contact, O.
3. Color: Black.

F. Flashing Sealant: Single-component, non-sag, high performance, non-priming, gun-grade elastomeric polyurethane sealant furnished by skylight manufacturer.

1. Sealant complies with ASTM C920, Type S, Grade NS, Class 25, Use T, NT, M, A, G, and O. Canadian Specification CAN/CGSB-19.13-M87, Classification MCG-2-25-A-N.
2. Sealant conforms to USDA approval standards.
3. Color: Gray or Dark Bronze.

2.03 FABRICATION:

A. Factory-fabricate skylights to greatest extent practical.

B. Employ concealed fasteners where possible.

C. Fabricate components that, when assembled, will have accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion.

D. Fabricate components to drain water passing joints and to drain condensation and moisture occurring or migrating within skylight system to the exterior.

E. Fabricate components to accommodate expansion, contraction, and field adjustment, and to provide for minimum clearance and shimming at skylight perimeter.

F. Fabricate components to ensure that glazing is thermally and physically isolated from framing members.

G. Form shapes with sharp profiles, straight and free of defects or deformations, before finishing.

H. Fit and assemble components to greatest extent practicable before finishing.

I. Fit and secure joints by heliarc welding in accord with American Welding Society standards for aluminum.

J. Reinforce members as required to retain fastener threads.

K. Attach retainer bars with gasketed stainless steel fasteners spaced at a maximum of 12 inches on center.

L. Weld components before finishing and in concealed locations to greatest extent practicable to minimize distortion.

M. Before shipping, shop assemble, mark, and disassemble components that cannot be permanently shop assembled.

N. Provide continuous aluminum curb with weatherproof splice joints and locked and sealed or fully welded corners. Locate weep holes in the curb at each rafter connection to drain condensation.

O. Prepare framing to receive anchor and connection devices and fasteners.

P. Field Glazing: Locate and size extruded elastomeric setting blocks and spacers in accordance with the glazing manufacturer's recommendations. At no point shall the glazing come in contact with the skylight frame or fasteners.

2.04 ALUMINUM FINISHES:

A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
B. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
C. High-Performance Organic Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    1. Fluoropolymer Two-Coat System: Manufacturer's standard two-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 605.2.
        a. Color and Gloss: As selected by Architect from manufacturer's standard range.

PART 3 – EXECUTION

3.01 PREPARATION:

A. Verify that in-place structure, anchors and attachments are adequate and properly prepared to specified tolerances prior to installing skylight. Do not proceed with skylight installation until defects are corrected.

B. Isolate dissimilar materials to prevent galvanic action.

C. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

D. Where aluminum will contact pressure-treated wood, separate dissimilar materials by methods recommended by manufacturer.

3.02 INSTALLATION:

A. General: Comply with manufacturer's written instructions for protecting, handling, and installing skylight components.
    1. Fit frame joints to produce hairline joints free of burrs and distortion.
    2. Rigidly secure non-movement joints.
    3. Accommodate thermal and mechanical movements.
B. The Skylight installer shall notify the general contractor of obvious deficiencies or dimensional errors in the support system and/or adjacent construction. No installation work shall be performed until the deficiencies are corrected or written authorization is given to proceed with the as-built construction.

C. All materials shall be delivered, stored, and covered to protect factory finishes from weather damage and construction dirt until installed.

D. Glazing materials shall be packaged to prevent breakage.

E. Erect skylights using factory authorized mechanics skilled in the erection of this work.

F. Rigidly secure skylights to prepared openings, to proper lines and elevations within specified tolerances.

G. Glaze units in accord with approved shop drawings and glass manufacturer's product data. Locate and size extruded elastomeric setting blocks and spacers in accordance with the glazing manufacturer's recommendations. At no point shall the glazing come in contact with the skylight frame or fasteners

H. Skylight materials shall be installed in strict accordance with manufacturer's erection drawings and field instructions.

I. Erection Tolerances: Set skylights plumb, and true to line, without warp or rack of frames or panels and anchor securely in place in accordance with shop drawings. Adjust framing to comply with the manufacturer allowable tolerances

J. Contact areas between aluminum and dissimilar materials shall be isolated with a protective coating or plastic strip to prevent electrolytic corrosion.

K. Installer shall remove all labels, part number markings, and excess sealants from skylight components during installation.

L. Finished installations shall be weathertight, clean, free of staining and without damage to components or finishes.

M. Install framing components to drain water passing joints and to drain condensation and moisture occurring or migrating within skylight system to the exterior.

N. Coordinate installation of flashings at skylight perimeters to maintain continuity of water barriers.

O. Set continuous curbs and flashings in a full sealant bed, unless otherwise indicated. Comply with requirements in Division 7 Section "Joint Sealants."

P. Install secondary-sealant weatherseal according to sealant manufacturer's written instructions to provide weatherproof joints. Install joint fillers behind sealant as recommended by sealant manufacturer.

3.03 CLEANING

A. Clean skylights inside and outside, immediately after installation and after sealants have cured, according to manufacturer's written recommendations.
   1. Remove temporary protective coverings and strippable coatings from pre-finished metal surfaces. Remove labels and markings from all components.

B. Remove excess sealant according to sealant manufacturer's written recommendations.

C. Final cleaning and physical protection of all installed materials shall be performed by the general contractor.

END OF SECTION

SECTION 07920

SEALANTS AND CAULKING

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Work Included: Throughout the work seal and caulk joints where shown on the drawings and elsewhere as required to provide a positive barrier against passage of moisture and passage of air.

B. All necessary packing and back-up material shall be provided at existing locations and as required for a complete and proper installation. Manufacturer's printed recommendations for the preparation of surfaces and handling, mixing and installation of caulking and sealing compounds shall be strictly followed.

C. Related Work:

1. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.02 QUALITY ASSURANCE:

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

1.03 SUBMITTALS:

A. Comply with pertinent provisions of Section 01300.

B. Product Data: After the Contractor has received the Owner's Notice to Proceed, submit:

1. Materials list of items proposed to be provided under this Section.

2. Manufacturer's specifications and other data needed to provide compliance with the specified requirements.

3. Manufacturer's recommended installation procedures which, when approved by the A/E, will become the basis for accepting or rejecting actual installation procedures used on the work.

4. Color samples.

C. Samples: Accompanying the submittal described above, submit samples of each sealant, each backing material, each primer, and each bond breaker proposed to be used.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING:

A. Comply with pertinent provisions of Section 01600.

B. Do not retain or use at the job site, material which has exceeded the shelf life recommended by its manufacturer.

PART 2 - PRODUCTS

2.01 SEALANTS:

A. Except as otherwise specifically approved by the A/E, use only the types of sealants described herein.

B. For all joints at aluminum and aluminum-to-masonry: Sealing Compound; Tremco Spectrum 1-(1) part, moisture-curing silicone joint sealant.

C. For all joints at metal-to-glass: Sealing Compound; Tremco Spectrum 2- High-performance, neutral-cure, general-purpose silicone sealant.

D. For all joints at exterior masonry: Tremco Dymonic 100 1-part urethane sealant.

E. Caulking compound of the 1-part acrylic-type Tremco Tremflex 834 shall be used for sealing all joints on the building interior where “caulking” is indicated and required.

F. For other services, provide products especially formulated for the proposed use and approved in advance by the A/E.

G. Colors:

1. Colors for each sealant installation will be selected by the A/E from standard colors normally available from the specified manufacturers.

2. Should such standard color not be available from the approved manufacturer except at additional charge, provide such colors at no additional cost to the Owner.

H. In concealed installations and in partially or fully exposed installations where so approved by the A/E, use standard gray or black sealant.

2.02 PRIMERS:

A. Use only those primers which are non-staining, have been tested for durability on the surfaces to be sealed, and are specifically recommended for this installation by the manufacturer of the sealant used.

B. In general, use Tremco Primer “A” for porous surfaces, Primer B for non-porous surfaces. Provide in strict conformance with manufacturer’s written instructions.

2.03 BACK-UP MATERIALS:

A. Use only those back-up materials which are specifically recommended for this installation by the manufacturer of the sealant used, which are nonabsorbent, and which are non-staining.

B. Backing: Joints shall be backed with a close-cell butyl or neoprene rod; with a minimum shore “A” of 70 unless otherwise noted elsewhere. A solid base shall be provided below the joint backing utilizing sand, multiple layers of joint backing, etc., in order to support the sealant. It is important that the backdrop material be of a type to which the sealant does not adhere in a working joint.

C. Acceptable Types Include:

1. Closed-cell resilient urethane or polyvinyl-chloride foam;
2. Closed-cell polyethylene foam;
3. Closed-cell sponge of vinyl or rubber;
4. Polycholooprene tubes or beads;
5. Polyisobutylene extrusions; and
6. Oil-less dry jute.

D. Do not block weep holes

2.04 BOND PREVENTATIVE MATERIALS:

A. Use only one of the following as best suited for the application, and as recommended by the manufacturer or the sealant used:

1. Polyethylene tape, pressure-sensitive adhesive, with the adhesive required only to hold tape to the construction materials as indicated.

2. Aluminum foil complying with MIL-A-148E.

3. Wax paper complying with Fed. Spec. UU-P-270.

2.05 MASKING TAPE:

A. For masking around joints, provide masking tape complying with Fed. Spec. UU-T-106c.

2.06 OTHER MATERIALS:

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the A/E.

PART 3- EXECUTION

3.01 SURFACE CONDITIONS:

A. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.02 PREPARATION:

A. Concrete and Masonry Surfaces:

1. Install only on surfaces which are dry, sound, and well brushed, wiping free from dust.

2. At open joints, remove dust by mechanically blown compressed air, if so required.

3. Use solvent to remove oil and grease, wiping the surfaces with clean rags.

4. Where surfaces have been treated, remove the surface treatment by sandblasting, wire brushing or grinding.
5. Remove laitance and mortar from joint cavities.

6. Where backstop is required, insert the approved backup material into the joint cavity to the depth needed.

7. Joints and spaces filled with sealant greater in depth than the width of the joint shall be filled so that the depth of the joint shall be equal to the width of the joint. The depth of the joint shall not be less than 3/8". Packing for the joints shall be of the materials specified. Packing shall provide a firm back-up for the sealant via the manufacturer's written instructions.

8. Joints and spaces caulked with Tremco Dymonic sealant shall not be more than 3/8" wide by 3/8" deep. Minimum size of joints caulked shall be recommended by the manufacturer. Joints more than 3/8" in depth shall be packed as specified.

9. Color: As selected by the A/E.

10. Priming: As recommended by the sealant manufacturer.

B. Steel Surfaces in Contact with Sealant:

1. Sandblast as required or prepare surfaces in accordance with manufacturer written instruction to achieve acceptable surface for bond.

2. If sandblasting is not practical, or would damage adjacent finish, scrape the metal or wire brush to remove mill scale.

3. Use solvent to remove oil and grease, wiping the surfaces with clean rags.

4. Remove protective coatings on steel by sandblasting or by using a solvent which leaves no residue.

C. Aluminum Surfaces in Contact with Sealant:

1. Remove temporary protective coatings, dirt, oil, and grease.

2. When masking tape is used for protective cover, remove the tape just prior to applying the sealant.

3. Use only such solvents to remove protective coatings as are recommended for that purpose by the manufacturer of the aluminum work, and which are non-staining.

3.03 INSTALLATION OF BACK-UP MATERIAL:

A. Use only the back-up material recommended by the manufacturer of the sealant used, and approved by the A/E for the particular installation, compressing the back-up material 25% to 50% to achieve a positive and secure fit.

B. When using back-up tube or rod stock, avoid lengthwise stretching of the material. Do not twist or braid hose or rod back-up stock.

3.04 BOND-BREAKER INSTALLATION:

A. Provide an approved bond-breaker where recommended by the manufacturer of the sealant, and where directed by the A/E, adhering strictly to the installation recommendations as approved by the A/E.

3.05 INSTALLATION OF SEALANTS:

A. Prior to start of installation in each joint, verify the joint type according to details on the drawings, or as otherwise directed by the A/E, and verify that the required proportion of width of joint to depth of joint has been secured.

B. Equipment:

1. Apply sealant under pressure with power-actuated or hand gun, or by other appropriate means.

2. Use guns with nozzle of proper size and providing sufficient pressure to completely fill the joints as designed.

C. Thoroughly and completely mask joints where the appearance of sealant on adjacent surfaces would be objectionable.

D. Install the sealant in strict accordance with the manufacturer's recommendations as approved by the A/E, thoroughly filling joints to the recommended depth.

E. Tool joints to the profile shown on the drawings, or as otherwise required if such profiles are not shown on the drawings.

F. Cleaning Up:

1. Remove masking tape immediately after joints have been tooled.

2. Clean adjacent surfaces free from sealant as the installation progresses, using solvent or cleaning agent recommended by the manufacturer of the sealant used.

END OF SECTION

SECTION 09900

PAINTING

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Unless otherwise directed, paint all exposed surfaces indicated on the drawings and herein.

B. Related Work:

1. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1.02 QUALITY ASSURANCE:

A. Include on Label of Containers:

1. Manufacturer's name;
2. Type of paint;
3. Manufacturer's stock number;
4. Color;
5. Instructions for reducing, where applicable;
6. Label analysis;
7. Federal Specification number

B. Sampling of Materials:

1. When requested by the A/E, obtain test samples from materials stored at project site or source of supply.

2. Select samples at random from sealed containers.

C. Fungus Control: Organic coating shall show no fungus growth when tested as specified in Federal Test Method Standard 141, Method 6271.1.

D. Field Quality Control:

1. Request review of first finished room, space, or item of each color scheme required by A/E for color, texture, and workmanship.

2. Use first acceptable room, space, or item as project standard for each color scheme.

3. For spray application, paint surface not smaller than 100 sq. ft. as project standard.

E. Paint Coordination:

1. Provide finish coats, which are compatible with the prime coats actually used.

2. Review other sections of these specifications as required verifying the prime coats to be used and assuring compatibility of the total coating system for the various substrata.
3. Upon request, furnish information of the characteristics of the specific finish materials to assure that compatible prime coats are used.

4. Provide barrier coats over noncompatible primers, or remove the primer and re-prime as required.

5. Prior to ordering paint materials, notify the Architect in writing of anticipated problems in using the specified coating systems over prime-coatings supplied under other sections.

1.03 SUBMITTALS:

A. Color samples;

B. Manufacturer's literature and recommendations, including flame spread ratings, fuel contribution and smoke density factors, including each wood specimen to be used.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING:

A. Deliver sealed containers with labels legible and intact.

B. Store only acceptable project materials on project site.

C. Store in a suitable location.

D. Restrict storage to paint materials and related equipment.

E. Comply with health and fire regulations.

F. Comply with pertinent other provisions of Section 01640.

1.05 JOB CONDITIONS:

A. Comply with manufacturer's recommendations as to environmental conditions under which coatings and coating systems can be applied.

B. Do not apply finish in areas where dust is being generated.

C. Cover or otherwise protect finished work of other trades and surfaces not being painted concurrently or not to be painted.

D. Do not apply solvent-thinned paints when the temperature of surfaces to be painted and the surrounding air temperatures are below 45°F, unless otherwise permitted by the manufacturer's printed instructions as approved by the A/E.

E. Weather Conditions:

1. Do not apply paint when the relative humidity exceeds 85%; or to damp or wet surfaces, unless otherwise permitted by the manufacturer's printed instructions as approved by the A/E.

F. This Contractor shall move appliances and such, to paint behind same. Re-install when painting is completed.

1.06 EXTRA STOCK:

A. Upon completion of the work of this section, deliver to the Owner, as extra stock equaling 5 gallons of each color, type, and gloss of paint used in the work, tightly sealing each container, and clearly labeling with contents and location where used.

B. Each container shall be clearly marked as to the type of paint or stain, color name (and number), manufacturer's name, and where used. Said containers shall be clean of excessive paint and have airtight covers.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

A. Except as otherwise specified, materials shall be the products of the following manufacturer:

1. Glidden Coatings
2. Pratt & Lambert
3. Sherwin Williams

B. Materials selected for coating systems for each type surface shall be the product of a single manufacturer, unless otherwise indicated by the A/E.

C. Where products are proposed other than those specified by name and number in the painting schedule, provide submittals and a new painting schedule compiled in the same format used for the painting schedule in this section.

D. Undercoats and Thinners:

1. Provide undercoat paint produced by the same manufacturer as the finish coat.

2. Use only the thinners recommended by the paint manufacturer, and use only to the recommended limits.

3. Insofar as practicable, use undercoat, finish coat, and thinner materials as parts of a unified system of paint finish.

2.02 MATERIALS:

A. Paint shall be first quality of types and brands herein specified. The term "paint" as used herein includes enamels, primers, epoxy, fillers, transparent coatings, paint emulsions, stains, varnishes, sealers, and other coatings, organic or inorganic, whether used as prime, intermediate finish coats. Paint shall be well ground and shall be of such composition that it can be easily broken up with a paddle to smooth consistency.

B. Linseed oil, shellac, turpentine and other materials shall be of the highest quality as approved by the A/E.

C. Tints and all other additives or thinners shall be used only as recommended by the manufacturer of the paint as approved.

2.03 COLORS:

A. Colors of paints, including stain shades, shall be from manufacturer's standard colors. Architect shall select all colors.

2.04 MIXING AND TINTING:

A. Deliver paints and enamels ready-mixed to job site.

B. Accomplish job mixing and job tinting only when acceptable to the A/E.

C. Mix only in mixing pails placed in suitably sized non-ferrous or oxide-resistant metal pans.

D. Use tinting colors recommended by manufacturer for the specific type of finish.

E. Fungicidal agent shall be incorporated into the paint by the manufacturer.

2.05 TECHNICAL DATA FOR FABULON PRODUCT: (If specified on the drawings)

A. Type ----------	Oil Modified Polyurethane
B. Color ----------	Amber/Clear
C. Luster ----------	Super Gloss
D. Dry Time ----------	Dust-free, 2 to 3 hours Re-coat, 4 to 6 hours Ready to use, 18 to 24 hours
E. Coverage ---------- feet.	1 U.S. gallon - approximately 400 to 600 square
F. Application ---------- applicator	Brush, conventional spray or lamb's wool
G. Clean-up ----------	Mineral spirits
H. Non-volatiles ----------	45% by weight

PART 3 - EXECUTION

3.01 INSPECTION:

A. Examine surfaces scheduled to receive paint and finishes for conditions that will adversely affect execution, permanence, or quality of work and which cannot be put into an acceptable condition through preparatory work as include in Article 3.02 - PREPARATION OF SURFACES.

B. Do not proceed with surface preparation or coating application until conditions are suitable for timely and proper completion of this section.

3.02 PREPARATION OF SURFACES:

A. General:

1. Perform preparation and cleaning procedures in strict accordance with the paint manufacturer's recommendations as approved by the A/E and these Specifications.

2. Remove removable items, which are in place and are not scheduled to receive paint finish, or provide surface-applied protection prior to surface preparation and painting operations.

3. Following completion of painting in each space or area, reinstall the removed items by using workers who are skilled in the necessary trades.

4. Clean each surface to be painted prior to applying paint or surface treatment. ALL SURFACES TO BE PAINTED SHALL BE HAND WASHED WITH NON-SAPONIFYING SOLUTION SUCH AS TSP UNTIL ALL TRACES OF DIRT, OIL, OR GREASE HAVE BEEN REMOVED.

5. Before finishing doors and frames, Contractor shall remove all hardware. Re-install in accordance with door schedule and pertinent drawings.

B. Wood Surfaces:

1. Clean soiled surfaced with alcohol wash.

2. Except where rough exterior surface is specified, sand to smooth and even surface, and then vacuum off.

3. Apply specified product to all knots, pitch and resinous sapwood before priming coat is applied.

4. Fill nail holes, cracks, open joints, and other defects with oil based putty after priming coat has dried. Color to match finish color.

5. If a stain is used, prepare a small test area for product compatibility. Test for color acceptance. Stains shall be allowed to dry 24 hours before re-coating. Provide a light sanding with very fine sandpaper before application of finish.

C. Gypsum Wallboard and Plaster:

1. Fill narrow, shallow cracks and small holes with spackling compound and/or plaster.

2. Allow to dry; sand smooth.

3. Do not raise nap of paper on wallboard.

D. Concrete and Masonry Surfaces:

1. Fill cracks and irregularities with Portland cement grout to provide uniform surface texture.

2. Etch with 5% solution (by weight) of muriatic acid.

3. Fill concrete masonry unit surfaces with block filler.

E. Ferrous Metal Surfaces:

1. Prepare surface in accordance with recommendations and directions of manufacturer with rust-inhibitive primer.

2. Featheredges of sound paint by grinding, if necessary.

F. Galvanized Metal:

1. Clean surface with mineral spirits to remove oily residue.

2. Dry with clean cloth.

G. Synthetic Cementitious Finish:

1. Thoroughly wash and rinse surfaces. Dull glossy areas, sand and dust, remove loose paint, etc. Complete all preparation work in strict accordance with the manufacturer's written instructions.

H. Preparation of wood surfaces:

1. Remove wax, polish, dirt, grease, etc. by washing with detergent solution or wax removers. Rinse with clean water. Dry completely.

2. Sand with 120 - 130 fine sand paper, with the wood grain, remove all dust.

3. Whether new work (bare wood), or old work (previous finish), surface must be clean, smooth, wax-free, dust-free, and dry. Always sand old finish with fine sandpaper, sanding with the grain, remove all sanding dust before applying new finish.

3.03 MATERIALS PREPARATION:

A. General:

1. Mix and prepare paint materials in strict accordance with the manufacturer's recommendations as approved by the A/E.

2. When materials are not in use, store in tightly covered containers.

3. Maintain containers used in storage, mixing, and application of paint, in a clean condition, free from foreign materials residue and extreme temperatures.

B. Stirring:

1. Stir materials before application, producing a mixture of uniform density.

2. Do not stir into the material any film, which may form on the surface, but remove the film and, if necessary, strain the material before using.

3.04 PAINT APPLICATION:

A. General:

1. Touch-up shop-applied prime coats which have been damaged, and touch-up bare areas prior to start of finish coats application.

2. Slightly vary the color of succeeding coats.

a.) Do not apply additional coats until the completed coat has been inspected and approved.
b.) Only the inspected and approved coats of paint will be considered in determining the number of coats applied.

B. Do not apply initial coating until moisture content of surface is within limitations recommended by paint manufacturer - Test with moisture meter.

C. Apply paint, stain and varnish with suitable brushes, rollers or spraying equipment.

1. Rate of application shall not exceed that as recommended by paint manufacturer for the surface involved, less 10 percent.

2. Keep brushes, rollers, and spraying equipment clean, dry, free of contaminates and suitable for the finish required.

3. Comply with recommendations of product manufacturer for drying time between succeeding coats.

4. Sand and dust between each coat to remove defects visible from a distance of 5 feet.

5. Finish coats shall be smooth, free of brush marks, streaks, laps, or pile-up of paints, and skipped or missed areas.

6. Removable panels and hinged panels: Paint the back sides to match the exposed sides.

7. Paint both sides and all 4 edges of all doors.

8. Contractor shall be responsible for following manufacturer's written instructions and warnings for all products specified or substitutes herein.

D. Deleted.

E. Leave all parts of moldings and ornamental work clean and true to detail with no undue amount of paint in corners and depressions.

F. Make edges of paint adjoining other materials or colors clean and sharp with no overlapping.

G. Apply primer on all work before glazing.

H. Refinish whole wall where portion of finish has been damaged or is not acceptable.

I. Back prime all interior and exterior trim.

J. Runs on face are not permitted.

K. Wet Areas:

1. Add an approved fungicide to paints.

2. For oil base paints, use 1% phenolmercuric or 4% tetrachlorophenol.

3. For water emulsion and glue size surfaces, use 4% sodium tetrachlorophenate.

L. For completed work, match the approved samples as to texture, color, and coverage. Remove, refinish, or repaint work not in compliance with the specified requirements.

M. Miscellaneous Surfaces and Procedures:

1. Exposed Mechanical Items:
   a) Paint electric panels, access doors, conduits, pipes, ducts, grills, registers, vents, and items of similar nature to match the adjacent wall and ceiling surfaces or as directed by the Architect.
   b) Wash metal with solvent, prime, and apply two coats of the specified paint in accordance with the applicable paint schedule item, herein.

3.05 PAINT DRYING:

A. Allow sufficient drying time between coats, modifying the period as recommended by the materials manufacturer to suit adverse weather conditions.

B. Consider oil-base and oleo-resinous solvent-type paint as dry for recoating when the paint feels firm, does not deform or feel sticky under moderate pressure of the thumb, and when the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

3.06 APPLICATION EQUIPMENT:

A. For application of the approved paint, use only such equipment as is recommended for application of the particular paint by the manufacturer of the particular paint, and as approved by the A/E.

B. Prior to use of application equipment, verify that the proposed equipment is actually compatible with he materials to be applied, and that the integrity of the finish will not be jeopardized by the use of the proposed equipment.

C. Brush Applications:

1. Brush out and work the base coats onto the surface in an even film.

2. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, and other surface imperfections will not be acceptable.

D. Spray Application:

1. Except as specifically otherwise approved by the A/E, confine spray application to metal framework and similar surfaces where hand brush work would be inferior.

2. Where spray application is used, apply each coat to provide the hiding equivalent of brush coats.

3. Do not double back with spray equipment to build up film thickness of two coats in one pass.

E. Roller Application:

1. Rollers may be used on large wall and ceiling surfaces. Keep walls free of roller marks.

3.07 CLEANING:

A. Touch up and restore finish where damaged.

B. Remove spilled, splashed, or splattered paint from all surfaces.

C. Do not mar surface finish of item being cleaned.

D. Leave storage space clean and in condition required for equivalent spaces in project

E. Cleaning up process shall proceed with progress of work.

3.08 PAINTING SCHEDULE:

A. Surfaces not to be painted:

1. Pre-finished wall, suspended acoustical tile ceiling system, and floor coverings, unless otherwise indicated.

2. Items with factory-applied final finish unless otherwise noted.

3. Concealed ducts, pipes, and conduits unless otherwise noted.

4. Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, lead-coated copper, bronze, and similar finished materials will not require painting under this section except as may be so specified.

5. Do not paint over required labels or equipment identification performance rating, name, or nomenclature plates.

B. Areas shall be painted as indicated, as directed, and as approved. The kinds of painting materials and number of coats required on various surfaces shall be as indicated in the following schedule. **Certain portions of the Paint Schedule below may not apply to this project.**

NUMBER OF COATS INDICATED HEREINAFTER ARE MINIMUM. COMPLETE COVERAGE IS REQUIRED. PROVIDE ADDITIONAL COATS TO AREAS WHICH DO NOT SHOW COMPLETE COVERAGE WITH SPECIFIED COATS. IF APPLICABLE, REFER TO ROOM FINISH AND COLOR SCHEDULE ON DRAWINGS FOR LOCATIONS OF THE FOLLOWING PRODUCTS:

1. New Exterior Gypsum Board:
   1st coat: Pratt & Lambert, Suprime "3" Primer
   (2) coats: Pratt & Lambert, Pro-Hide Exterior Latex Semi-Gloss

2. New Plaster and Gypsum Board Ceilings:
   1st coat: Pratt & Lambert, #3001 Latex Primer
   2nd coat: Aristex-Texture Finish (MATCH EXISTING CEILING TEXTURE)
   3rd coat: Pratt & Lambert, #Z1250, Skylight Latex Flat, Soft White

3. New Interior Plaster and Gypsum Board: (where applicable)
   1st coat: Pratt & Lambert, #Z3001 Latex Primer
   (2) coats: Pratt & Lambert, #Z9391, Pro-Hide Plus Latex.

4. New Interior Wood/Trim:
   (3) coats: Pratt & Lambert, #Z9691, Pro-Hide Plus Latex Satin Enamel.

5. Interior Spot Priming: (at stains)
   Apply coats as required, Pratt & Lambert, Q-Dee, #E12, primer sealer stain killer.

   NOTE: All surfaces shall be spot primed as necessary so as to prevent stains from "bleeding" through new paint finish.

6. Interior Stain: (wood trim, doors as noted, window sills, etc.)
   Pratt & Lambert, Tonetic Architectural Wood Stain, color shall be selected by the A/E.

7. Exterior Stain: (wood door as noted, etc.)
   Minwax Wood Finish Penetrating Stain, or approved equal.
   Color to match existing and to be approved by the Architect & Owner.

8. Polyurethane: (wood door as noted, etc.)
   Minwax Exterior Polyurethane, or approved equal.
   Finish to be approved by the Architect & Owner.

9. Exterior Wood/Trim:
   (2) coats: Sherwin Williams SuperPaint Exterior Latex Satin, A89 Series
   (NOTE: If Tannin Bleeding occurs, apply A-100 Exterior Oil Wood Primer, Y24W20 prior to the (2)-coat stain application).
   Color shall be selected by the Architect.

10. Exterior Metal
   (2) coats: Sherwin Williams Sher-Cryl HPA, B66-300 Series
   (NOTE: Apply Kem Kromik Metal Primer at all rusted or peeling locations prior to the (2)-coat paint application).
   Color shall be selected by the Architect.

   NOTE: If rust is showing on metal, first coat shall be a rust inhibitive primer after proper preparation has been made.

11. Interior Painted Metal Doors and Frames:
   1st coat: 61 Enamel Undercoating
   2nd coat: Cella-tone Alkyd Satin Enamel
   3rd coat: Cella-tone Alkyd Satin Enamel

   NOTES: If rust is showing on metal, first coat shall be a rust inhibitive primer after proper preparation has been made. Spray paint radiator covers

12. Interior Masonry Units:
   1st coat: Pro-Hide Plus Latex Block Filler
   2nd coat: Accalade Velvety Latex Enamel
   3rd coat: Accolade Velvety Latex Enamel

13. Exposed Interior Ducts, etc.:
   1st coat: 61 Enamel Undercoater
   2nd coat: Finish and system to match wall or ceiling finish.
   3rd coat: Finish and system to match wall or ceiling finish

14. In Janitors Closets, Utility Closets, etc. Interior Dry Wall, Plaster, Plasterboard, Masonite, Pressboard, Boiler Covering, Pipe Covering, etc. – Unless otherwise directed on the drawings:
   1st coat: Interior Acrylic Primer 23000
   2nd and
   3rd coat: Accalade Velvety Latex Enamel

15. Exposed Piping:
   Color code pipes as follows:

Heating supply and return	Orange	
Domestic hot water.....	Dark Blue	Effecto Enamel
Domestic cold water.....	Violet	OSHA
Domestic water circulation.....	Dark Blue	Safety Color
Fire Protection.....	Red	
Gas.....	Gray	
Compressed Air.....	Yellow	

16. Exposed Fire Sprinkler Protection System Piping, Hangers, Hanger Rods, Fittings, Etc.:

   1st Cleaner Manufacturer: Sherwin Williams “ProClean” or “TSP”. Spray-on, thoroughly wipe clean with damp sponge or cloth. In heavily soiled location, rinse with water after wiping. Comply completely with other recommendations of the manufacturer.

2nd Apply (1)-coat Sherwin Williams "Kem Kromik" Universal Metal Primer.
Color: Off-White – BSO WZ1

3rd Apply (2)-coats Sherwin Williams "DTM" Acrylic Coating: Semi-gloss:
Color shall be selected by the Architect.

NOTE: Comply fully with the painting procedures specified on the drawings.

17. Interior Drywall or Plaster Walls P.E.P. (epoxy-polyester finish); Total Dry Film Thickness 13 mils (when applicable):
1st coat: Vinyl Acrylic Primer 2300 (verify with manufacturer)
2nd and
3rd coats: Palgard Epoxy Coating

NOTE: All glazed coating (epoxy polyester) shall be applied in strict accordance with manufacturer's printed instructions. Apply filler coat by spray or roller application. Apply two finish coats by spray method.

18. Interior Masonry Units (epoxy-polyester finish):
Total dry film thickness shall be 24 mils.
1st coat: Palgard Epoxy Coating
2nd and
3rd coats: Palgard Epoxy Coating

19. Interior Concrete Walls:
3 coats: Accalade Velvety Latex Enamel

20. Interior Poured Concrete Floors & Steps:

(3) - coats: Alkyd Gloss Floor Enamel

NOTE: Thin above first coat with one (1) pint appropriate thinner to the gallon.
Etch concrete area with 10% solution of muriatic acid (30 days after construction).
Hose with clean water after effervesces and allow to dry before coating.

21. Exterior Zone Marking/Tactile Warning Location: If applicable, include numbers at parking spaces, "NO PARKING" designated areas, hatching at handicap parking, speed bumps, curb cuts, wheel stops and bituminous curbing and other exterior site areas scheduled for paint.

One Coat: Traffic Paint

NOTE: At "Tactile Warning" provide fine sand mixture.

22. Interior Masonry Units and Concrete (cementitious coating):

1st coat: (2 lb./sq. yd.) Eastern Concrete Sealer
2nd and
3rd coats: (1 lb./sq. yd.) Eastern Concrete Sealer.

NOTE: All cementitious coatings shall be applied in strict accordance with manufacturer's printed instructions.

23. Existing Exterior Concrete & C.M.U. surfaces where concrete stain is specified in Section 00010, herein.

    Sherwin Williams, H & C Shield Plus Silicone Acrylic Concrete Stain.

3.09 OTHER SURFACES:

A. Surfaces for which the type of paint has not been specified shall be painted as specified for surfaces having similar conditions of exposure.

END OF SECTION