VICTORIA MANSION
PORTLAND, MAINE

TOWER CONSERVATION

TECHNICAL SPECIFICATIONS

ARCHITECTS

EINHORN YAFFEE PRESCOTT, ARCHITECTURE & ENGINEERING, P.C.
24 SCHOOL STREET
BOSTON, MASSACHUSETTS 02108

STONE CONSERVATOR

BUILDING AND MONUMENT CONSERVATION
83 SCHOOL STREET
ARLINGTON, MA 02476

BID DOCUMENTS

December 12, 2003

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END OF SECTION

LIST OF DRAWINGS

ADVERTISEMENT
VICTORIA MANSION TOWER CONSERVATION
NOTICE TO CONTRACTORS

Invitation for Bids for Tower Conservation at Victoria Mansion.

Victoria Mansion, hereinafter referred to as the Awarding Authority, hereby invites sealed bids for the above-entitled project in accordance with plans and specifications prepared by Einhorn Yaffee Prescott, Architecture & Engineering, P.C. Bids shall be on a form supplied by the Architect, shall be clearly identified as a general bid and signed by the bidder. All bids for this project are subject to all applicable provisions of law and the terms and provisions of the contract documents entitled:

VICTORIA MANSION TOWER CONSERVATION
PORTLAND, MAINE

NATIONAL REGISTER PROPERTY. Victoria Mansion is listed on the National Register of Historic Places, and the property is located in a city historic district. In addition, the Maine Historic Preservation Commission (MHPC) holds an easement on the entire property. The plans and specifications for this project have undergone Section 106 review by the MHPC, and comply with the Secretary of the Interior's Standards for Preservation.

SCOPE OF WORK: Conservation of the brownstone tower at Victoria Mansion. The work includes repair, preservation and replacement of deteriorated brownstone masonry, repair of backup brick masonry, temporary shoring of the existing tower to accommodate replacement of structural lintels and piers, interior plaster conservation to accommodate shoring work, structural reinforcement of existing masonry, and repointing of brick and brownstone masonry.

Work must also be coordinated with wood window conservation work. The wood window work will be performed by sub-contractors chosen by the Owner.

TIME AND PLACE FOR FILING BIDS: 1:00 p.m., Thursday, January 15, 2004, at Victoria Mansion, 109 Danforth Street, Portland, ME.

All GENERAL BIDS shall be filed in duplicate with the Awarding Authority at the above address before 1:00 p.m. January 15, 2004 at which times and place respective bids will be opened forthwith and read aloud. The Awarding Authority reserves the right to waive any informalities in or to reject any and all bids if it be in the public interest to do so. General bids will be valid only when accompanied by references for five (5) masonry restoration projects of similar complexity and scope on historic buildings.

PLANS AND SPECIFICATIONS will be available on December 12, 2003 at Victoria Mansion, 109 Danforth Street, Portland, ME, to all interested parties who present a $100.00 company check or certified check payable to Victoria Mansion for each set. Plans and specifications will be mailed, if requested, upon receipt of a separate non-refundable check for $25.00 payable to Victoria Mansion. Plans and specifications must be returned in good condition within 30 days of the bid opening in order for the bidder to have the $100.00 check returned. Bidders are hereby notified that bid deposits must be 5% of his/her bid, and shall be in the form of a bid

bond, or certified check, treasurer's check, or cashier's check made payable to Victoria Mansion. A Labor and Material Payment Bond and a Performance Bond from the successful bidder, each in the amount of 100% of the contract price, will be required.

The successful bidder must agree to commence work within ten (10) days after the execution of the contract and to meet the completion dates of the projects schedules.

END OF SECTION

SECTION 00200

INSTRUCTIONS TO BIDDERS

A. BID REQUIREMENTS

1. Sealed bids for the project at Victoria Mansion, Portland, Maine, will be received at the time and place as stated in the Advertisement for Bids.

2. The general bid proposal contained herein, shall be properly filled out and signed in longhand by the bidder, accompanied by cash, a certified check, or a treasurer's or cashier's check issued by a responsible bank or trust company, or a bid bond signed and sealed by both the bonding company and the bidder's firm, in the amount of Five Percent (5%) of the value of the bid, made payable to Victoria Mansion must be placed in an envelope, sealed and marked "PROPOSAL FOR VICTORIA MANSION TOWER CONSERVATION, PORTLAND, MAINE" and delivered to the Awarding Authority as stated in the Advertisement for Bids.

3. Every bid submitted for a contract shall be accompanied by a bid deposit in the form of a bid bond, or cash, or a certified check on, or a treasurer's or cashier's check issued by, a responsible bank or trust company, payable to Victoria Mansion in the name of which the contract for the work is to be executed. A bid bond shall be (a) in a form satisfactory to the Awarding Authority, (b) with a surety company qualified to do business in the State of Maine and satisfactory to the Awarding Authority and (c) conditioned upon the faithful performance by the principal of the agreements contained in the bid.

   The amount of such deposit shall be five percent of the value of the bid.

4. The "value of the bid" for Bid Deposit purposes shall be the General Bid.

5. All bid deposits of general bidders shall be returned upon the execution and delivery of the general contract or, if no award is made, within sixty (60) days of the bid opening; except that, if any general bidder who fails to perform his/her agreement to execute a contract and furnish a performance bond and also a labor and materials or payment bond, his/her bid deposit shall become and be the property of Victoria Mansion, as liquidated damages; provided that the amount of the bid deposit which becomes the property of Victoria Mansion shall not, in any event, exceed the difference between his/her bid price and the bid price of the next lowest bidder; and provided further that, in case of death, disability, bona fide clerical or mechanical error of a substantial nature, or other similar unforeseen circumstances affecting the general bidder, his/her bid deposit shall be returned to him/her.

6. In addition to the provisions for the return of bid deposits upon receipt of a bid bond in an amount not less than the amount of the required bid deposit, an Awarding Authority shall return any bid deposit of a bidder forthwith after public opening of the bids. The bid bond shall be in an amount and in the form provided in subsection (2).

7. No claims for immunity or exceptions predicated upon misunderstanding or failure to correctly interpret the above paragraphs will be allowed.

8. Drawings, specifications and bid documents will be available as stipulated in the "Advertisement for Bids."

B. AWARDING AUTHORITY

1. The Awarding Authority is Victoria Mansion, Portland, Maine.

C. QUESTIONS

1. All questions as to the interpretation of the Drawings and Specifications made before the bids are submitted shall be addressed in writing to the Architect at least four (4) days, Saturdays, Sundays, and legal holidays excluded, before receipt of General Bids.

2. Written answers (addenda) to such questions will be sent by the Architect to every bidder who is on record as having taken a set of Drawings and Specifications.

3. Neither the Architect nor the Awarding Authority will be responsible for ANY ORAL INSTRUCTIONS.

D. ADDENDA

1. Any addenda issued during the bidding period may refer to questions of interpretation, or correction of the original Drawings and Specifications. Addenda shall be issued at least two (2) days prior to the date set for the receipt of bids.

2. Any addenda issued during the time of bidding shall be covered in the Form for General Bid, and in closing a Contract, they shall become a part thereof.

E. ACCEPTANCE OF BIDS

1. The Awarding Authority reserves the right to reject any or all General Bids if it be in the public interest to do so. Every General Bid which is not accompanied by a bid deposit, or which is on a form not completely filled in, or which is incomplete, conditional or obscure, or which contains any addition not called for, shall be invalid, and the Awarding Authority shall reject every such bid.

F. WITHDRAWAL OF BIDS

1. No Bidder shall withdraw his/her bid for a period of sixty (60) days, Saturdays, Sundays, and legal holidays excluded, after the date set for the opening of General Bids. No Bidder may withdraw his/her bid except as provided for by law.

G. TIME FOR CONSTRUCTION

1. The Contractor shall start the work under this Contract on written notice from and on the date set by the Architect and continue to completion with all practical dispatch and regularity so that the entire project shall be substantially completed in 290 (two hundred ninety) calendar days from the award of the Contract.

H. MAINE SALES TAX

1. All bidders are advised that this project is exempt from Maine Sales Tax. It shall be the successful bidder's responsibility to obtain the statutory sales tax exemption certificates.

2. Victoria Mansion Tax Exempt No. shall be provided for use by the successful bidder upon request.

I. TIME FOR REQUISITION

1. On or about the tenth day of each month, the General Contractor shall submit a monthly requisition using AIA form A701 covering work up to the first of the month to the Awarding Authority through the Architect and Victoria Mansion. Payments will be made in accordance with the Contract requirements, including governing laws.

J. CONTRACTOR DESIGNATION

1. General Bidder being experienced in historic masonry work is hereby designated as the prime Preservation Contractor for this project. This contractor shall coordinate the work of all trades.

K. VISITATION TO THE PROJECT

1. Bidders are required to examine the work area before submitting a bid. By submitting a bid, the Bidder covenants and agrees that he/she has carefully examined the drawings, specifications, associated bid documents, and addenda and/or bulletins, if any, and visited the site, that he/she relies on no hearsay, and that from his/her own investigation he/she has satisfied him/herself as to the nature and location of the work, the general and local conditions, and all matters which may in any way affect the work or its performance, and that as a result of such examination and investigation, he/she fully understands the

intent and purpose of the documents and conditions of bidding and that he/she will not make any claim for, and waives any right to, damages because of any misinterpretations or misunderstanding of the bid documents and the conditions of bidding. A pre-bid conference will be held for the purpose of site visits by bidders. Additional visits may be scheduled by calling Mr. Robert Wolterstorff, Director of Victoria Mansion, at (207) 772-4841.

L. EXECUTION OF CONTRACT

1. The form of Contract which the successful Bidder will be required to execute is included in the Project Manual.

2. Within seven working days after notice of award and receipt of Contract forms from the Architect, the bidder to whom the contract is awarded shall sign and deliver them to the Architect along with the Corporate Vote, and Certificate of Insurance required by the Contract Documents.

M. ADDITIONAL BIDDING INSTRUCTIONS

1. Unit Prices/Bid Price Words and Figures: Any unit price bid that contains a unit price which is unduly high or low may be rejected as unbalanced. In the event of a discrepancy between the Arabic numerals and the written words, if the intent of the bidder is not clear as finally determined by the awarding authority, the written word shall prevail.

NOTE: For further definition of work included, reference is made to Section 01010, paragraph 1.02 and Alternates, Section 01030.

END OF SECTION

FORM FOR GENERAL BID

TO THE AWARDING AUTHORITY

A. The undersigned proposes to furnish all labor and materials required for tower restoration at Victoria Mansion, Portland, Maine in accordance with the Contract Documents prepared by Einhorn Yaffee Prescott, Architecture & Engineering, P.C. for the contract price specified below, subject to additions and deductions according to the terms of the specifications.

B. This bid includes addenda numbers_____ and

_____.

C. The proposed contract price is _____

_____dollars ($_____)

D. ALTERNATES:

	ADD	DEDUCT
1. Replace all stones currently indicated for dutchmen (code purple) with new stones. **Note: This does NOT apply to the vermiculated quoins.**	$ _____	$ _____
2. Removal of plaster and lath ceiling at the Belfry to access the existing roof rafters for installation of tie-downs.	$ _____	$ _____
3. Installation of snowmelt system at belfry roof and along north and west edge of tower at main roof.	$ _____	$ _____
4. Full Face Dutchman in lieu of Conservation at Stone #219B.	$ _____	$ _____
5. Full Face Dutchman in lieu of Conservation at Stone #223A.	$ _____	$ _____
6. Full Face Dutchman in lieu of Conservation at Stone #264A.	$ _____	$ _____

E. SCHEDULE OF UNIT PRICES:

ITEM	ADD	DEDUCT
1. Fabrication and installation of full-face dutchman at vermiculated quoin – "Side A" Cost per dutchman.	$_____	$_____
2. Fabrication and installation of full-face dutchman at vermiculated quoin – "Side B" Cost per dutchman.	$_____	$_____
3. Fabrication and installation of additional ashlar units. Cost per sq. ft.	$_____	$_____
4. Fabrication and installation of additional flat stones at 3-inch depth. Cost per sq. ft.	$_____	$_____
5. Fabrication and installation of 3-arch lintels at belfry. Cost per installed lintel.	$_____	$_____

F. The subdivision of the proposed contract price is as follows:

ITEM 1. General Bid: All the work of the Preservation Contractor other than that covered in Item 2.

_____dollars ($_____).

ITEM 2. Sub-contracts as follows:

Name of Subcontractor	Trade / Scope of Work	Amount
Architectural Conservation Services	Plaster Conservation	

G. The undersigned agrees that each of the above-named sub-contractors will be used for the work indicated at the amount stated, unless a substitution is made.

H. The undersigned agrees that, if he is selected as general contractor, he will within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the Awarding Authority, execute a contract in accordance with the terms of the general bid.

The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work.

The undersigned further certifies under the penalties of perjury that his bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this sub-section, the word "person" shall mean any natural person, joint-venture, partnership, corporation or other business or legal entity.

The undersigned further certifies under the pains and penalties of perjury that he/she, has complied with all laws of the State of Maine relating to taxes.

DATE:_____

_____
(Name of General Bidder)

By_____

_____
(Title)

SEAL

_____
(Business Address)

_____
(City and State) (Zip Code)

Note: If the bidder is a corporation, indicate state of incorporation under signature, and affix corporate seal; if a partnership, give full names and residential addresses of all partners; and if an individual, give residential address if different from business address.

END OF FORM FOR GENERAL BID

1997 Edition -Electronic Format

AIA Document A101-1997

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a STIPULATED SUM

AGREEMENT made as of the day of in the year of
(In words, indicate day, month and year)

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

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

The Project is:
(Name and location)

The Architect is:
(Name, address and other information)

THIS DOCUMENT HAS IMPORTANT LEGAL CONSEQUENCES. CONSULTATION WITH AN ATTORNEY IS ENCOURAGED WITH RESPECT TO ITS COMPLETION OR MODIFICATION. AUTHENTICATION OF THIS ELECTRONICALLY DRAFTED AIA DOCUMENT MAY BE MADE BY USING AIA DOCUMENT D401.

AIA Document A201-1997, 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.

This document has been approved and endorsed by The Associated General Contractors of America.

The Owner and Contractor agree as follows.

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; these 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 Modifications, appears in Article 8.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.
(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

If, prior to the commencement of the Work, the Owner requires time to file mortgages, mechanic's liens and other security interests, the Owner's time requirement shall be as follows:

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:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. Unless stated elsewhere in the Contract Documents, insert any requirements for earlier Substantial Completion of certain portions of the Work.)

, subject to adjustments of this Contract Time as provided in the Contract Documents.
(Insert provisions, if any, for liquidated damages relating to failure to complete on time or for bonus payments for early completion of the Work.)

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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. If decisions on other alternates are to be made by the Owner subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires)

4.3 Unit prices, if any, are as follows:

ARTICLE 5 PAYMENTS

5.1 PROGRESS PAYMENTS

5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, 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, or as follows:

5.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment to the Contractor not later than the day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than days after the Architect receives the Application for Payment.

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 Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

5.1.5 Applications for Payment shall indicate 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 percent (%). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Subparagraph 7.3.8 of AIA Document A201-1997.

.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 percent (%);

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

.4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Paragraph 9.5 of AIA Document A201-1997.

5.1.7 The progress payment amount determined in accordance with Subparagraph 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 Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Subparagraph 9.8.5 of AIA Document A201-1997 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)

.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 Subparagraph 9.10.3 of AIA Document A201-1997.

5.1.8 Reduction or limitation of retainage, if any, shall be as follows:
(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Clauses 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

5.1.9 Except with the Owner's prior 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 Subparagraph 12.2.2 of AIA Document A201-1997, and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a final Certificate for Payment has been issued by the Architect.

5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

ARTICLE 6 TERMINATION OR SUSPENSION

6.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201-1997.

6.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201-1997.

ARTICLE 7 MISCELLANEOUS PROVISIONS

7.1 Where reference is made in this Agreement to a provision of AIA Document A201-1997 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

7.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

Usury laws and requirements under the Federal Truth in Lending Act, similar state and local consumer credit laws and other regulations at the Owner's and Contractor's principal places of business, the location of the Project and elsewhere may affect the validity of this provision. Legal advice should be obtained with respect to deletions or modifications, and also regarding requirements such as written disclosures or waivers.)

7.3 The Owner's representative is:
(Name, address and other information)

7.4 The Contractor's representative is:
(Name, address and other information)

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

7.6 Other provisions:

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ARTICLE 8 ENUMERATION OF CONTRACT DOCUMENTS

8.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated as follows:

8.1.1 The Agreement is this executed 1997 edition of the Standard Form of Agreement Between Owner and Contractor, AIA Document A101-1997.

8.1.2 The General Conditions are the 1997 edition of the General Conditions of the Contract for Construction, AIA Document A201-1997.

8.1.3 The Supplementary and other Conditions of the Contract are those contained in the Project Manual dated , and are as follows:

Document	Title	Pages

8.1.4 The Specifications are those contained in the Project Manual dated as in Subparagraph 8.1.3, and are as follows:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

The American Institute of Architects
1735 New York Avenue, N.W.
Washington, D.C. 20006-5292

Section	Title	Pages

8.1.5 The Drawings are as follows, and are dated unless a different date is shown below:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

Number	Title	Date

8.1.6 The Addenda, if any, are as follows:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 8.

8.1.7 Other documents, if any, forming part of the Contract Documents are as follows:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201-1997 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

This Agreement is entered into as of the day and year first written above and is executed in at least three original copies, of which one is to be delivered to the Contractor, one to the Architect for use in the administration of the Contract, and the remainder to the Owner.

OWNER *(Signature)*

(Printed name and title)

CONTRACTOR *(Signature)*

(Printed name and title)

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AIA DOCUMENT A101-1997
OWNER-CONTRACTOR AGREEMENT

The American Institute of Architects
1735 New York Avenue, N.W.
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1997 Edition - Electronic Format

AIA Document A201 - 1997

General Conditions of the Contract for Construction

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AIA DOCUMENT A201 - 1997
GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

The American Institute of Architects
1735 New York Avenue, N.W.
Washington, D.C. 20006-5292

ARTICLE 1 GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the Agreement between Owner and Contractor (hereinafter the Agreement), 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 Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include other documents such as bidding requirements (advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or portions of Addenda relating to bidding requirements).

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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 Architect and Contractor, (2) between the Owner and a Subcontractor or Sub-subcontractor, (3) between the Owner and Architect or (4) between any persons or entities other than the Owner and Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect'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 or 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

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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 THE PROJECT MANUAL

The Project Manual is a volume assembled for the Work which may include the bidding requirements, sample forms, Conditions of the Contract and Specifications.

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.

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

1.3 CAPITALIZATION

1.3.1 Terms capitalized in these General Conditions include those which are (1) specifically defined, (2) the titles of numbered articles and identified references to Paragraphs, Subparagraphs and Clauses in the document or (3) the titles of other documents published by the American Institute of Architects.

1.4 INTERPRETATION

1.4.1 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 EXECUTION OF CONTRACT DOCUMENTS

1.5.1 The Contract Documents shall be signed by the Owner and Contractor. If either the Owner or Contractor or both do not sign all the Contract Documents, the Architect shall identify such unsigned Documents upon request.

1.5.2 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.

1.6 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

1.6.1 The Drawings, Specifications and other documents, including those in electronic form, prepared by the Architect and the Architect's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor may retain one record set. Neither the Contractor nor any Subcontractor, Sub-subcontractor or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications and other documents prepared by the Architect or the Architect's consultants, and unless otherwise indicated the Architect and the Architect's consultants shall be deemed the authors of

them and will retain all common law, statutory and other reserved rights, in addition to the copyrights. All copies of Instruments of Service, except the Contractor's record set, shall be returned or suitably accounted for to the Architect, on request, upon completion of the Work. The Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants. The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under this authorization shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants. 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 Architect's or Architect's consultants' copyrights or other reserved rights.

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

2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.2.1 The Owner shall, at the written request of the Contractor, prior to commencement of the Work and thereafter, furnish to the Contractor reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Furnishing of such evidence shall be a condition precedent to commencement or continuation of the Work. After such evidence has been furnished, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

2.2.2 Except for permits and fees, including those required under Subparagraph 3.7.1, which are the responsibility of the Contractor under the Contract Documents, the Owner shall secure and pay for 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 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 information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

2.2.4 Information or services required of the Owner by the Contract Documents shall be furnished by the Owner with reasonable promptness. Any other information or services relevant to the Contractor's performance of the Work under the Owner's control shall be

furnished by the Owner after receipt from the Contractor of a written request for such information or services.

2.2.5 Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, such copies of Drawings and Project Manuals as are reasonably necessary for execution of the Work.

2.3 OWNER'S RIGHT TO STOP THE WORK

2.3.1 If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents as required by Paragraph 12.2 or persistently 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 Subparagraph 6.1.3.

2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

2.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-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 after such seven-day period give the Contractor a second written notice to correct such deficiencies within a three-day period. If the Contractor within such three-day period after receipt of such second notice fails to commence and continue to correct any deficiencies, 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 Architect'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 Architect. 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 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 Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.1 Since the Contract Documents are complementary, before starting each portion of the Work, the Contractor shall carefully study and compare the various Drawings and other Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Subparagraph 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 construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, any errors, inconsistencies or omissions discovered by the Contractor

shall be reported promptly to the Architect as a request for information in such form as the Architect may require.

3.2.2 Any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Architect, but 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. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any nonconformity discovered by or made known to the Contractor shall be reported promptly to the Architect.

3.2.3 If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Architect in response to the Contractor's notices or requests for information pursuant to Subparagraphs 3.2.1 and 3.2.2, the Contractor shall make Claims as provided in Subparagraphs 4.3.6 and 4.3.7. If the Contractor fails to perform the obligations of Subparagraphs 3.2.1 and 3.2.2, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. The Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents or for differences between field measurements or conditions and the Contract Documents unless the Contractor recognized such error, inconsistency, omission or difference and knowingly failed to report it to the Architect.

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 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 Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. 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 resulting loss or damage.

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 The Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order.

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

3.5 WARRANTY

3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

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3.6 TAXES

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

3.7 PERMITS, FEES AND NOTICES

3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received or negotiations concluded.

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

3.7.3 It is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Architect and Owner in writing, and necessary changes shall be accomplished by appropriate Modification.

3.7.4 If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Architect and Owner, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

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;

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.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;

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

3.8.3 Materials and equipment under an allowance shall be selected by the Owner in sufficient time to avoid delay in the Work.

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. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect'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 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.

3.10.2 The Contractor shall prepare and keep current, for the Architect's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Architect reasonable time to review submittals.

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

3.11 DOCUMENTS AND SAMPLES AT THE SITE

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

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 which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

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

3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents 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. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Architect without action.

3.12.6 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has 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 Architect.

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 Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect 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 Architect'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 Architect on previous submittals. In the absence of such written notice the Architect's approval of a resubmission shall not apply to such revisions.

3.12.10 The Contractor shall not be required to provide professional services which 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 Architect 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 Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the

services, certifications or approvals performed by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Subparagraph 3.12.10, the Architect 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 or design criteria required by the Contract Documents.

3.13 USE OF SITE

3.13.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits 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.

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 from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor.

3.16 ACCESS TO WORK

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

3.17 ROYALTIES, PATENTS AND COPYRIGHTS

3.17.1 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 Architect 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 Architect. 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 Architect.

3.18 INDEMNIFICATION

3.18.1 To the fullest extent permitted by law and to the extent claims, damages, losses or expenses are not covered by Project Management Protective Liability insurance purchased by the Contractor in accordance with Paragraph 11.3, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect'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, 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), 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 to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Paragraph 3.18.

3.18.2 In claims against any person or entity indemnified under this Paragraph 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 Subparagraph 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.

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ARTICLE 4 ADMINISTRATION OF THE CONTRACT

4.1 ARCHITECT

4.1.1 The Architect is the person lawfully licensed to practice architecture or an entity lawfully practicing architecture identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Architect" means the Architect or the Architect's authorized representative.

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

4.1.3 If the employment of the Architect is terminated, the Owner shall employ a new Architect against whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the former Architect.

4.2 ARCHITECT'S ADMINISTRATION OF THE CONTRACT

4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents, and will be an Owner's representative (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the one-year period for correction of Work described in Paragraph 12.2. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

4.2.2 The Architect, as a representative of the Owner, will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will neither have control over or charge of, nor be responsible 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 Subparagraph 3.3.1.

4.2.3 The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor,

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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 Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

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

4.2.6 The Architect will have authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Subparagraphs 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect 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 Architect 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 Architect 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 Architect's action will be taken with such reasonable promptness as to cause no delay in the Work or in the activities of the Owner, Contractor or separate contractors, while allowing sufficient time in the Architect'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 Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Paragraphs 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Paragraph 7.4.

4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion, will 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, and will issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.

4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect'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 Architect will interpret and decide matters concerning performance under and requirements of, the Contract Documents on written request of either the Owner or

Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If no agreement is made concerning the time within which interpretations required of the Architect shall be furnished in compliance with this Paragraph 4.2, then delay shall not be recognized on account of failure by the Architect to furnish such interpretations until 15 days after written request is made for them.

4.2.12 Interpretations and decisions of the Architect 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 initial decisions, the Architect 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 so rendered in good faith.

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

4.3 CLAIMS AND DISPUTES

4.3.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time 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. Claims must be initiated by written notice. The responsibility to substantiate Claims shall rest with the party making the Claim.

4.3.2 Time Limits on Claims. 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. Claims must be initiated by written notice to the Architect and the other party.

4.3.3 Continuing Contract Performance. Pending final resolution of a Claim except as otherwise agreed in writing or as provided in Subparagraph 9.7.1 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.

4.3.4 Claims for Concealed or Unknown Conditions. If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which 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, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if 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 Architect 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 Architect shall so notify the Owner and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within 21 days after the Architect has given notice of the decision. If the conditions encountered are materially different, the Contract Sum and Contract Time shall be equitably adjusted, but if the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Architect for initial determination, subject to further proceedings pursuant to Paragraph 4.4.

4.3.5 Claims for Additional Cost. If the Contractor wishes to make 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 Paragraph 10.6.

4.3.6 If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Architect, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Architect, (4) failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, Claim shall be filed in accordance with this Paragraph 4.3.

4.3.7 Claims for Additional Time

4.3.7.1 If the Contractor wishes to make 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.

4.3.7.2 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.

4.3.8 Injury or Damage to Person or Property. If either party to the Contract 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.

4.3.9 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

4.3.10 Claims for Consequential Damages. The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 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 mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Subparagraph 4.3.10 shall be deemed to preclude an award of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.

4.4 RESOLUTION OF CLAIMS AND DISPUTES

4.4.1 Decision of Architect. Claims, including those alleging an error or omission by the Architect but excluding those arising under Paragraphs 10.3 through 10.5, shall be referred initially to the Architect for decision. An initial decision by the Architect shall be required as a condition precedent to mediation, arbitration or litigation of all Claims between the Contractor

and Owner arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Architect with no decision having been rendered by the Architect. The Architect will not decide disputes between the Contractor and persons or entities other than the Owner.

4.4.2 The Architect will review Claims and within ten days of the receipt of the 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 Architect is unable to resolve the Claim if the Architect lacks sufficient information to evaluate the merits of the Claim or if the Architect concludes that, in the Architect's sole discretion, it would be inappropriate for the Architect to resolve the Claim.

4.4.3 In evaluating Claims, the Architect 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 Architect in rendering a decision. The Architect may request the Owner to authorize retention of such persons at the Owner's expense.

4.4.4 If the Architect 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 provide a response on the requested supporting data, advise the Architect when the response or supporting data will be furnished or advise the Architect that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Architect will either reject or approve the Claim in whole or in part.

4.4.5 The Architect will approve or reject Claims by written decision, which shall state the reasons therefor and which shall notify the parties of any change in the Contract Sum or Contract Time or both. The approval or rejection of a Claim by the Architect shall be final and binding on the parties but subject to mediation and arbitration.

4.4.6 When a written decision of the Architect states that (1) the decision is final but subject to mediation and arbitration and (2) a demand for arbitration of a Claim covered by such decision must be made within 30 days after the date on which the party making the demand receives the final written decision, then failure to demand arbitration within said 30 days' period shall result in the Architect's decision becoming final and binding upon the Owner and Contractor. If the Architect renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence, but shall not supersede arbitration proceedings unless the decision is acceptable to all parties concerned.

4.4.7 Upon receipt of a Claim against the Contractor or at any time thereafter, the Architect or 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 Architect or the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

4.4.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines prior to resolution of the Claim by the Architect, by mediation or by arbitration.

4.5 MEDIATION

4.5.1 Any Claim arising out of or related to the Contract, except Claims relating to aesthetic effect and except those waived as provided for in Subparagraphs 4.3.10, 9.10.4 and 9.10.5 shall, after initial decision by the Architect or 30 days after submission of the Claim to the Architect, be subject to mediation as a condition precedent to arbitration or the institution of legal or equitable proceedings by either party.

4.5.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect. Request for mediation shall be filed in writing with the other party to the Contract and with the American Arbitration Association. The request may be made concurrently with the filing of a demand for arbitration but, in such event, mediation shall proceed in advance of arbitration or legal or equitable proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

4.5.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

4.6 ARBITRATION

4.6.1 Any Claim arising out of or related to the Contract, except Claims relating to aesthetic effect and except those waived as provided for in Subparagraphs 4.3.10, 9.10.4 and 9.10.5, shall, after decision by the Architect or 30 days after submission of the Claim to the Architect, be subject to arbitration. Prior to arbitration, the parties shall endeavor to resolve disputes by mediation in accordance with the provisions of Paragraph 4.5.

4.6.2 Claims not resolved by mediation shall be decided by arbitration which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association currently in effect. The demand for arbitration shall be filed in writing with the other party to the Contract and with the American Arbitration Association, and a copy shall be filed with the Architect.

4.6.3 A demand for arbitration shall be made within the time limits specified in Subparagraphs 4.4.6 and 4.6.1 as applicable, and in other cases within a reasonable time after the Claim has arisen, and in no event shall it be made after the date when institution of legal or equitable proceedings based on such Claim would be barred by the applicable statute of limitations as determined pursuant to Paragraph 13.7.

4.6.4 Limitation on Consolidation or Joinder. No arbitration arising out of or relating to the Contract shall include, by consolidation or joinder or in any other manner, the Architect, the Architect's employees or consultants, except by written consent containing specific reference to the Agreement and signed by the Architect, Owner, Contractor and any other person or entity sought to be joined. No arbitration shall include, by consolidation or joinder or in any other manner, parties other than the Owner, Contractor, a separate contractor as described in Article 6 and other persons substantially involved in a common question of fact or law whose presence is required if complete relief is to be accorded in arbitration. No person or entity other than the Owner, Contractor or a separate contractor as described in Article 6 shall be included as an original third party or additional third party to an arbitration whose interest or responsibility is insubstantial. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of a Claim not described therein or with a person or entity not named or described therein. The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

4.6.5 Claims and Timely Assertion of Claims. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

4.6.6 Judgment on Final Award. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

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 Architect 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 Architect will promptly reply to the Contractor in writing stating whether or not the Owner or the Architect, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Architect to reply promptly shall constitute notice of no reasonable objection.

5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect 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 Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect 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 change a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitute.

5.3 SUBCONTRACTUAL RELATIONS

5.3.1 By appropriate agreement, written where legally required for validity, 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 Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect 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 which 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 Paragraph 14.2 and only for those subcontract agreements which 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.

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. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Paragraph 4.3.

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 when directed to do so. 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 Other 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 which 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.

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 Architect 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 Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate contractor because of delays, improperly timed activities or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work or defective construction of a separate contractor.

6.2.4 The Contractor shall promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractors as provided in Subparagraph 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 Subparagraph 3.14.

6.3 OWNER'S RIGHT TO CLEAN UP

6.3.1 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 Architect 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 Architect; a Construction Change Directive requires agreement by the Owner and Architect 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 Architect 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 Architect and signed by the Owner, Contractor and Architect, stating their agreement upon all of the following:

.1 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 Methods used in determining adjustments to the Contract Sum may include those listed in Subparagraph 7.3.3.

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or 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 Subparagraph 7.3.6.

7.3.4 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect 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.

7.3.5 A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor 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.

7.3.6 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by the Architect 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, a reasonable allowance for overhead and profit. In such case, and also under Clause 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Subparagraph 7.3.6 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; and

.5 additional costs of supervision and field office personnel directly attributable to the change.

7.3.7 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. 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.

7.3.8 Pending final determination of the total cost of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in Applications for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs. For any portion of such cost that remains in dispute, the Architect will make an interim determination for purposes of monthly certification for payment for those costs. That 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 4.

7.3.9 When the Owner and Contractor agree with the determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order.

7.4 MINOR CHANGES IN THE WORK

7.4.1 The Architect will have 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 shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

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 the Agreement.

8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Paragraph 9.8.

8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

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 knowingly, 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. Unless the date of commencement is established by the Contract Documents or a notice to proceed given by the Owner, the Contractor shall notify the Owner in writing not less than five days or other agreed period before commencing the Work to permit the timely filing of mortgages, mechanic's liens and other security interests.

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 Architect, 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, or by delay authorized by the Owner pending mediation and arbitration, or by other causes which the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Paragraph 4.3.

8.3.3 This Paragraph 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

9.1.1 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

9.2.1 Before the first Application for Payment, the Contractor shall submit to the Architect a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

9.3 APPLICATIONS FOR PAYMENT

9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment for operations completed in accordance with the schedule of values. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for in the Contract Documents.

9.3.1.1 As provided in Subparagraph 7.3.8, such applications may include requests for payment on account of changes in the Work which have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

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

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

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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 shall, to the best of the Contractor's knowledge, information and belief, 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.

9.4 CERTIFICATES FOR PAYMENT

9.4.1 The Architect will, within seven 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 Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Subparagraph 9.5.1.

9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Architect's knowledge, information and belief, 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 Architect. 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 Architect 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 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.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Subparagraph 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Subparagraph 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect 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 Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Subparagraph 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 another 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 persistent 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.

9.6 PROGRESS PAYMENTS

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

9.6.2 The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such 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 Architect 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 Architect and Owner on account of portions of the Work done by such Subcontractor.

9.6.4 Neither the Owner nor Architect 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 Payment to material suppliers shall be treated in a manner similar to that provided in Subparagraphs 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

9.7.1 If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by arbitration, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop

the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

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 Architect 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 Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect'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 Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion which 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 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 Clause 11.4.1.5 and authorized by public authorities having jurisdiction over the Work. 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 Architect as provided under Subparagraph 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 Architect.

9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect 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 written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect'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 Architect's final Certificate for Payment will constitute a further representation that conditions listed in Subparagraph 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (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 Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, 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 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 Architect 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.

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.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 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 give notices and comply with applicable laws, ordinances, rules, 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.

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 Clauses 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 Clauses 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect 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 Paragraph 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 Architect.

10.2.7 The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

10.3 HAZARDOUS MATERIALS

10.3.1 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 Architect in writing.

10.3.2 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 verify that it has been rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect 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 Architect 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 Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect 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. 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, which adjustments shall be accomplished as provided in Article 7.

10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect'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 Subparagraph 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) and provided that such damage, loss or expense is not due to the sole negligence of a party seeking indemnity.

10.4 The Owner shall not be responsible under Paragraph 10.3 for materials and substances brought to the site by the Contractor unless such materials or substances were required by the Contract Documents.

10.5 If, without negligence on the part of the Contractor, the Contractor is held liable for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

10.6 EMERGENCIES

10.6.1 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 Paragraph 4.3 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 will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's 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 which 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 Paragraph 3.18.

11.1.2 The insurance required by Subparagraph 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 date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment.

11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These certificates and the insurance policies required by this Paragraph 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. If any of the foregoing insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Subparagraph 9.10.2. 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 in accordance with the Contractor's information and belief.

11.2 OWNER'S LIABILITY INSURANCE

11.2.1 The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

11.3 PROJECT MANAGEMENT PROTECTIVE LIABILITY INSURANCE

11.3.1 Optionally, the Owner may require the Contractor to purchase and maintain Project Management Protective Liability insurance from the Contractor's usual sources as primary coverage for the Owner's, Contractor's and Architect's vicarious liability for construction operations under the Contract. Unless otherwise required by the Contract Documents, the Owner shall reimburse the Contractor by increasing the Contract Sum to pay the cost of purchasing and maintaining such optional insurance coverage, and the Contractor shall not be responsible for purchasing any other liability insurance on behalf of the Owner. The minimum limits of liability purchased with such coverage shall be equal to the aggregate of the limits required for Contractor's Liability Insurance under Clauses 11.1.1.2 through 11.1.1.5.

11.3.2 To the extent damages are covered by Project Management Protective Liability insurance, the Owner, Contractor and Architect waive all rights against each other for damages, except such rights as they may have to the proceeds of such insurance. The policy shall provide for such waivers of subrogation by endorsement or otherwise.

11.3.3 The Owner shall not require the Contractor to include the Owner, Architect or other persons or entities as additional insureds on the Contractor's Liability Insurance coverage under Paragraph 11.1.

11.4 PROPERTY INSURANCE

11.4.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Paragraph 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Paragraph 11.4 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

11.4.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

11.4.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance which will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

11.4.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

11.4.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

11.4.1.5 Partial occupancy or use in accordance with Paragraph 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

11.4.2 **Boiler and Machinery Insurance.** The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the

Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

11.4.3 Loss of Use Insurance. The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

11.4.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

11.4.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Subparagraph 11.4.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

11.4.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Paragraph 11.4. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

11.4.7 Waivers of Subrogation. The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Paragraph 11.4 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

11.4.8 A loss insured under Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Subparagraph 11.4.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

11.4.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The

cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or in accordance with an arbitration award in which case the procedure shall be as provided in Paragraph 4.6. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

11.4.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved as provided in Paragraphs 4.5 and 4.6. The Owner as fiduciary shall, in the case of arbitration, make settlement with insurers in accordance with directions of the arbitrators. If distribution of insurance proceeds by arbitration is required, the arbitrators will direct such distribution.

11.5 PERFORMANCE BOND AND PAYMENT BOND

11.5.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

11.5.2 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 permit a copy to be made.

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 Architect's request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Architect, be uncovered for the Architect'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 which the Architect has not specifically requested to examine prior to its being covered, the Architect 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, 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

12.2.1.1 The Contractor shall promptly correct Work rejected by the Architect 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 and compensation for the Architect'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 Paragraph 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 Subparagraph 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 Architect, the Owner may correct it in accordance with Paragraph 2.4.

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 performance 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 Paragraph 12.2.

12.2.3 The Contractor shall remove from the site portions of the Work which 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 which is not in accordance with the requirements of the Contract Documents.

12.2.5 Nothing contained in this Paragraph 12.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the one-year period for correction of Work as described in Subparagraph 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

12.3.1 If the Owner prefers to accept Work which 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

13.1.1 The Contract shall be governed by the law of the place where the Project is located.

13.2 SUCCESSORS AND ASSIGNS

13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Subparagraph 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 an institutional lender providing construction financing for the Project. In such event, the lender

shall assume the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

13.3 WRITTEN NOTICE

13.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or 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 to the last business address known to the party giving notice.

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, Architect 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 thereunder, 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 required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction shall be made at an appropriate time. 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 Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections or approvals which do not become requirements until after bids are received or negotiations concluded.

13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Subparagraph 13.5.1, the Architect 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 Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Subparagraph 13.5.3, shall be at the Owner's expense.

13.5.3 If such procedures for testing, inspection or approval under Subparagraphs 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 Architect'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 Architect.

13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect 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

13.6.1 Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

13.7 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

13.7.1 As between the Owner and Contractor:

.1 **Before Substantial Completion.** As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than such date of Substantial Completion;

.2 **Between Substantial Completion and Final Certificate for Payment.** As to acts or failures to act occurring subsequent to the relevant date of Substantial Completion and prior to issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of issuance of the final Certificate for Payment; and

.3 **After Final Certificate for Payment.** As to acts or failures to act occurring after the relevant date of issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to any Warranty provided under Paragraph 3.5, the date of any correction of the Work or failure to correct the Work by the Contractor under Paragraph 12.2, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs last.

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 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 which requires all Work to be stopped;

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

.3 because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Subparagraph 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or

.4 the Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Subparagraph 2.2.1.

14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Paragraph 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

The American Institute of Architects
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Washington, D.C. 20006-5292

14.1.3 If one of the reasons described in Subparagraph 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead, profit and damages.

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 persistently 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 Architect, terminate the Contract and recover from the Owner as provided in Subparagraph 14.1.3.

14.2 TERMINATION BY THE OWNER FOR CAUSE

14.2.1 The Owner may terminate the Contract if the Contractor:

.1 persistently or repeatedly 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 persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; 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 Architect 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 take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 accept assignment of subcontracts pursuant to Paragraph 5.4; and

.3 finish the Work by whatever reasonable method the Owner may deem expedient. Upon 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 Subparagraph 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 Architect'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 Architect, 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 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Subparagraph 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent:

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

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, along with reasonable overhead and profit on the Work not executed.

SECTION 00420

SUPPLEMENTARY GENERAL CONDITIONS

PART 1 - GENERAL

1.01 LOCATION: Victoria Mansion
109 Danforth Street
Portland, Maine

1.02 OWNER: Victoria Mansion
c/o Robert Wolterstorff, Director
109 Danforth Street
Portland, Maine

1.03 ARCHITECT:

A. The word "Architect" as used herein refers to Einhorn Yaffee Prescott, Architecture & Engineering, P.C., 24 School Street, Boston, MA 02108.

1.04 PROJECT MANAGER:

A. The words "Project Manager" as used herein refers to Einhorn Yaffee Prescott, Architecture & Engineering, P.C., 24 School Street, Boston, MA 02108.

1.05 CONTRACTOR:

A. The word "Contractor" as used herein refers to the individual partnership, firm or corporation whose proposal for the work contemplated in the accompanying plans and specifications is accepted. The Contractor shall finance his own operations, shall operate at all times as an independent Contractor and never as an agent of the Owner.

1.06 SUBCONTRACTOR:

A. The word "Subcontractor" as used herein refers to the individual, partnership, firm or corporation to whom portions of the work and/or materials included in this Contract are awarded by the General Contractor with the approval of the Architect. The Architect retains the right to disapprove the use of any subcontractor whom he considers to be unqualified to perform the specified work in a timely and professional manner in accordance with all drawings and specifications.

1.07 GENERAL CONDITIONS OF THE A.I.A.: FORM TO UPDATE INVOICES

A. The General Conditions of the Contract for the Construction, Document A201-1997 and Standard Form of Agreement between Owner and Contractor, Document A101-1997 of the American Institute of Architects as modified by the Owner are hereby made a part of this Specification. Where differences occur between this Specification and the A.I.A. Documents noted above, this Specification shall govern.

B. All References in the AIA Documents noted above, to arbitration, shall be deleted in their entirety.

1.08 INSURANCE & INDEMNIFICATION:

A. The insurance required for this Project shall be written for no less than the following, or greater if required by law:

1. Worker's Compensation:

a. State: Statutory

b. Applicable Federal (i.e., Longshoremen's): Statutory

c. Employee's liability: $100,000.00 per accident
$500,000.00 Disease, Policy Limit
$100,000.00 Disease, Each Employee

d. Benefits stipulated by Labor contracts where applicable.

2. Comprehensive General Liability (including Premises - Operations; Independent Contractor's Protective; Products and Completed Operations; Broad Form Property Damage):

a. Bodily Injury: $300,000 Each Occurrence
$500,000 Per Accident

b. Property Damage: $300,000 Each Accident
$500,000 Aggregate

c. Property Damage Liability Insurance shall provide X, C and U coverage.

d. Broad Form Property Damage Coverage shall include completed operations.

3. Contractual Liability (Hold Harmless Coverage):
   a. Bodily Injury: $1,000,000 Each Occurrence
      $1,000,000 Aggregate

   b. Property Damage: $1,000,000 Each Occurrence
      $1,000,000 Annual Aggregate

4. Personal Injury, with Employment Exclusion deleted:
   $1,000,000 Aggregate

5. Business Auto Liability (including owned, non-owned and hired vehicles):
   a. Bodily Injury: $1,000,000 Each Occurrence
      $500,000 Each Person

   b. Property Damage: $500,000 Each Occurrence

6. Umbrella liability Insurance policy covering the excess over the limits specified for all liability insurance required hereunder with the minimum limits of $5,000,000 for each occurrence and $5,000,000 aggregate per policy year.

B. Each policy of liability insurance issued shall designate the Owner, Architects, Contractor, each Subcontractor and their Subcontractors, if any, as additional named insureds.

C. If this insurance is written on the Comprehensive General Liability policy form, the Certificates shall be AIA Document G705, Certificate of Insurance. If insurance is written on a Commercial General Liability policy form, ACORD form 25 will be acceptable.

D. The Contractor shall furnish one copy each of Certificates of Insurance herein for each copy of the Agreement which shall specifically set forth evidence of all coverage required. If this insurance is written on the Comprehensive General Liability policy Form, the Certificates shall be AIA Document G705, Certificate of Insurance. If this insurance is written on a Commercial General Liability policy form, ACORD form 25S will be acceptable. The Contractor shall furnish to the Owner copies of any endorsements that are subsequently issued amending coverage or limits.

E. Contractor agrees that all of its employees to be used in the performance of the Agreement on Owner's premises are covered under the Contractor's Workmen's Compensation Insurance.

F. The Certificate of Coverage for "all risk" insurance shall not protect the Contractor against loss of items owner or leased, such as sheds, tools, scaffolds,

other construction equipment and the like, nor will it cover portions of work stored off site, or in transit.

G. The form of policy for this coverage shall be "Completed Value."

H. The Contractor shall provide insurance coverage for portions of the Work stored off-site after written approval of the Owner at the value established in the approval, and also for portions of the Work in transit.

I. The Contractor and any Subcontractors hereunder agrees in the performance of the work to comply with (1) all applicable fire safety requirements of the National Board of Fire Underwriters' and the National Fire Protection Association, (2) that it will adhere to all Federal, State and Local Laws pertaining to fire protection and (3) abide and be governed by the rules and regulation pertaining to property protection as prescribed by the Owner.

1.09 DRAWINGS:

A. The Architect's office will furnish to the Contractor, cost as noted in the Advertisement for Bid form, one copy of all drawings and specifications necessary for the execution of this work. Any additional copies required by the Contractor will be furnished to him, and he shall pay the actual cost of printing and postage.

1.10 LABOR & MATERIALS:

A. All labor in connection with this work, including trucking, handling, installation, etc., shall be done by skilled craftsmen, normally employed by the various construction trades.

B. The Contractor shall provide, at his sole cost, all labor, transportation, materials, apparatus, utilities and utensils necessary and reasonably implied on the drawings and/or in this specification as belonging to the work.

1. Exterior scaffolding to be provided by Owner.

C. All materials and workmanship shall be of the best of their several kinds. Unless otherwise specified, all materials shall be new and the Contractor, if required, shall furnish satisfactory evidence of their quality.

1.11 COMPLETION OF WORK:

A. On substantial completion of the work, representatives of the Contractor and the Architect shall inspect the premises.

Any items still incomplete or not consistent with the plans and specifications will be incorporated in a punch list, and the list given to the Contractor who will complete items on the punch list within fifteen (15) days of receipt of the punch list.

If the Contractor fails to complete all items of the punch list within fifteen (15) days, the Architect, or the Owner, may, without further notice to the Contractor, have the remaining work completed by any means, and the Architect or Owner will deduct all expenditures from the final payment due the Contractor and Subcontractor shall be liable for any excess costs incurred.

B. Final completion is defined as the completion of all work described in the Contract Documents including punch list items and the acceptance of this work by the Architect and the Owner. Final completion date is defined as the date when all work outlined in the Contract Documents including punch list items is accepted by the Architect and the Owner. All guarantees and warranties shall commence on the final completion date.

C. The punch list shall in no way relieve the Contractor or Subcontractor of his responsibility to do all the work specified or shown on the plans.

1.12 GUARANTEE:

A. The Contractor guarantees and warrants to the Owner that all work performed under the Contract will be free from defects in material and workmanship. The Contractor shall correct any work that fails to conform to the requirements of the Contract Documents where such failure to conform appears during the progress of the work, and shall remedy any defects due to faulty materials, equipment or workmanship which appear within a period of two (2) years from the Date of Final Acceptance. Also, see individual sections for warranty period requirements. The Contractor's warranty, in writing, will be supplied to Owner before final payment is made.

B. The Contractor shall include all guarantee and warranty costs, including inspection and re-inspection fees, if required, in his base bid.

1.13 SPECIFICATIONS & PLANS:

A. Titles to Divisions and paragraphs in these specifications are introduced for convenience, and shall not be taken as an exact, correct or complete segregation of materials and labor.

B. No responsibility is assumed by the Architect or the Owner for omissions or duplications by the Contractor or his Subcontractors due to real or alleged error in arrangement of matter in this specification.

C. Latest revisions of Federal, State and ASTM Specifications shall be used where only the specification number without date or revision number is given in these specifications.

D. Attention is directed to the fact that typographical errors may appear in the text of the Specifications. Should any such errors be found, they shall not serve to alter the sense of the passage concerned, nor shall they be permitted to provide a basis for any extra claim by the Contractor by reason thereof.

E. Any such errors found which lead to ambiguity of intent, shall be referred to the Architect for clarification prior to submitting and Proposal for Work. The submitting of a proposal shall be construed as indicating that no such ambiguities exist.

F. The Specifications and Drawings are intended mutually to explain each other and anything which is shown on the drawings and not mentioned or referred to in the specifications or which is referred to in the specifications and not shown on the drawings shall be considered as being shown and mentioned or referred to in both of these documents. Such work shall be done and performed accordingly at no additional cost to the Owner.

G. If any errors or contradictions between the drawings and the specifications are found to exist in the appearance or in fact, the more stringent, in the sole judgment of the Architect, shall apply. Such work shall be done and performed accordingly at no additional cost to the Owner.

1.14 CHANGES IN THE WORK:

A. A Change Order is a written order to the Contractor, signed by the Owner, authorizing a change in the Work, the Contract Price or the final completion date.

B. The Architect, without invalidating the Contract Documents, may issue orders making changes by altering, adding to, or deducting from the Work. A change in the Work may also necessitate an adjustment in the Contract Price or the final completion date. No change in the Work shall proceed and no claim for additional monies for such change or for any extra work, so-called, will be valid unless such work is done pursuant to a written order from the Architect to the Contractor signed by an Owner's Representative. Advance approval is not necessary for extra work required to protect life or property under emergency conditions. The Architect shall determine in each case whether the Work done without written approval was of an emergency nature and whether it is to be reimbursed and a Change Order issued.

C. No extra work shall be undertaken or subcontracted for or materials ordered unless first approved in writing by the Owner and Architect. By submitting a bid, the bidder agrees that he has examined the site, and the specification and the drawings are adequate, and the required results can be produced under the drawings and specifications. No claim for extra work shall be allowed because of alleged impossibilities in the production of the results specified or because of inadequate or improper plans and specifications, and wherever a result is required, the successful bidder shall furnish any and all extras and make changes needed to produce, to the satisfaction of the Architect the required results.

D. Where additional work is required by the Owner, and this work does not alter, in the opinion of the Architect, the scope of the contract work, the Owner shall elect to pay for all this work in the following manner:

1. The cost for work for any change order may be by one of the following agreed upon means; a lump sum agreed to by the Owner, a unit quantity and unit price adjustment or actual costs and a percentage fee for overhead and profit. Such percentage fee shall not exceed ten (10%) percent of actual costs for work performed by a Contractor alone.

   For work performed by a Subcontractor, the cost to the Owner shall be determined by a lump sum agreed to by all parties or the actual costs to the Subcontractor, plus a percentage fee not to exceed ten (10%) percent for the Subcontractor's overhead and profit, plus a fee not to exceed ten (10%) percent for the Contractor's overhead and profit.

2. If deductions are ordered, a credit shall be computed on the same basis as increases for extra work.

1.15 PAYMENTS:

A. On or before the last day of each calendar month, the Contractor shall submit to the Architect an itemized application for payment showing value of all work completed and material or equipment for inclusion in the work delivered to site during previous month.

1. Application for Payment: Contractor shall submit to the Architect, the Contractor's Application for Payment, which shall state the amount to which each subcontractor, supplier of materials and workmen is then entitled and which shall incorporate the following documents:

   a. An Affidavit in the form of Application for Payment.

   b. Contractor's Affidavit of Payments of Debts and Claims.

c. Satisfactory bills of sale for all materials and equipment, etc., for which payment is requested and which have not yet been incorporated in the work; said bills of sale to evidence ownership of such material in the Owner.

2. Application for payment shall not be accepted unless all information requested by the Architect is provided.

B. Any amount paid to the Contractor by the Owner pursuant to such application for payment shall be made to the Contractor for each purpose, in the first instance, and before any other use of such amount by the Contractor, of enabling the Contractor to pay any subcontractor, supplier of materials or workmen who has not theretofore been paid the amount to which he is entitled to as shown in said application, and the Contractor shall forthwith upon receipt of such amount from the Owner shall make all such payments.

The Contractor agrees that he shall, with respect to the entire amount so paid to him, be a Trustee, for the benefit of the Owner, each unpaid subcontractor, supplier of materials and/or workman, subject to all the obligations customarily imposed upon Trustees by the law of that State in which the work is to be performed and in addition to such obligations, the Contractor, as Trustee, shall make such payment to such subcontractors, supplier of materials and workmen, shall furnish to the Owner such releases or waivers of lien and such indication of title as the Owner may reasonably require.

C. Failure of the Architect in any particular instance to require full compliance with the provisions of the first paragraph of this Article shall not constitute a waiver of Contractor's obligations to comply in full in any other instance, and Contractor's acceptance of any payment for which application has not been made in the manner described above, shall constitute (1) a warranty and representation by Contractor that all workmen have been paid for the work so done by them which is covered by such payments and that all subcontractors and suppliers of materials have been paid, or shall forthwith be paid, out of the proceeds of such payment to the Contractor, and (2) a binding agreement by the Contractor to hold and apply such payment subject to and upon all of the terms and conditions set forth in the next preceding paragraph of this Article.

D. Owner reserves the right, to be exercised in Owner's sole and absolute discretion, to make the whole or any part of any payment required hereunder directly to any subcontractor or material man entitled to payment for any work done or materials or equipment supplied for the completion of the contract or to make payments jointly to Contractor and any subcontractor or material man, and any payment so made by Owner shall be credited toward any amount payable by Owner to Contractor.

E. Contractor shall have one separate item for the group of general conditions, overhead and profit shall prorate this on monthly and final requisitions in an equitable fashion. He shall show only true subcontracted costs, and in the event of dispute shall show signed subcontracts and invoices to Architect.

F. Upon receipt of each complete and properly filled out application for payment, the Architect will verify quantities of labor, material and equipment and the amount therefore and shall certify for payment that portion of total amount of application that he finds to be due.

1. The properly filled in certificate for payments will be approved and submitted to the Owner by the Architect within five (5) days of receipt by him of same.

2. Contractor shall be responsible for the submission of complete information, including waivers of lien, on the forms provided. Neither Architect nor Owner shall be responsible for delay in payments due to the Contractor's failure to comply with the Contract Documents.

G. Within thirty (30) days after the approval by the Architect of the Contractor's application for payment, the Owner shall make payment to the Contractor of such sum as together with previous amount paid to him shall equal 95% of the amount of said applications approved for payments. The monies retained by the Owner hereunder shall not be due the Contractor until final completion of the Project.

1. Payment by the Owner shall not constitute acceptance of the work nor waivers or rights or redress against the Contractors for any failure to comply with Contract Documents.

2. Payments may be withheld by the Owner on account of (1) defective Work not remedied, or (2) claims or liens filed, or (3) unsatisfactory prosecution of the Work by the Contractor.

H. On completion of the work, representatives of the Contractor and the Architect will inspect the premises. Any items still incomplete or not consistent with the plans and specifications will be incorporated in a punch list, and the list given to the Contractor who will complete items on the punch list within 10 days of receipt of the punch list.

1. The punch list shall in no way relieve the Contractor of his responsibility to do all work specified or shown on the plans.

2. If the Contractor fails to complete all items of the punch list within 10 days of receipt of the punch list. The Architect or the Owner will, without further notice to the Contractor, have the remaining work completed by any means, and the Engineer or Owner will deduct all expenditures from the final payment due the Contractor and Contractor and Subcontractor shall be liable for any excess costs incurred.

3. Final payment date, under terms of the Contract, will be 45 days after completion of all punch list items, and shall apply to subcontractors as well as the General Contractor. The General Contractor and all subcontractors must furnish the Owner with a Full and Final Discharge of Lien prior to release of final payment.

I. Final Payment: Final payment shall be made to the Contractor only after occurrence of the events described below.

1. Acceptance of the Work by the Architect and the Owner as fully performed under the Contract Documents.

2. Submission by the Contractor to the Owner or the Architect of:

a. the consent of surety, if any; and

b. written assignment to the Owner by all Subcontractors and suppliers of material and equipment of all warranties and guarantees including manufacturer's in the form approved by the Owner; and

c. three (3) copies of any Maintenance Manuals issued by any Manufacturer and/or Supplier, if any; and

d. the Project Record reproducible drawings if required by the Contract Documents; and

e. written Full and Final Discharge of all liens and/or requests to file mechanics', materials, suppliers' and like liens against the Project, signed by each subcontractor and material man who performed labor or furnished materials in connection with the Work. If any subcontractor or material or equipment supplier refuses to furnish a release or waiver, the Contractor shall furnish a bond satisfactory to the Owner to indemnify him against any such possible lien; and

f. if required by the Owner, other data establishing payment or satisfaction of such obligations.

3. All Contractor's bills for additional work and any adjustments in contract price must be submitted for approval of the Architect before the above-mentioned 45 day period begins.

4. Final payment shall not be processed until all required guarantee forms, in the form approved by the Owner, are fully executed by the Contractor and supplied to the Owner.

5. No payment hereunder, nor occupancy of the facility or any part thereof shall be construed as an acceptance of any Work or a waiver of any rights of the Owner in the Contract Documents or at law.

1.16 MISCELLANEOUS PROVISIONS:

A. The Contractor shall be responsible for the proper care and protection of all portions of the construction and all materials delivered and work performed by the Contractor until the completion and acceptance of the construction as a whole, and the project shall be delivered at the completion in an acceptable condition.

B. The Contractor hereby agrees, for the consideration herein provided, not to record in any Registry of Deeds of City or Town Hall, this agreement or any notice of the existence of this agreement, or its intention to claim a lien upon said premises. If the said Contractor shall violate the terms of this paragraph, said breach shall entitle the said Owner to cancel this agreement, and all monies which may be due to or owing to the said Contractor may be retained by said Owner as liquidated damages for said breach, or at their election the Owner may terminate the employment of the Contractor and proceed with the completion of the work as provided for in Article 14 in the A.I.A. General Conditions. If this paragraph shall be declared void or unlawful by a proper tribunal, then it is expressly agreed that no other part of this contract shall in any way be waived or affected thereby and Owner shall have the right to make further payments.

C. The Contractor agrees that he is as fully responsible to the Owner for the acts and omissions of his subcontractors and of persons directly or indirectly employed by them as he is for the acts and omissions of persons directly employed by him.

D. Neither the Contractor or any subcontractor shall supply, sell or permit the use of intoxicating liquors or illegal drugs upon or about the Work or the site.

E. Substitutions: Should the Contractor desire to substitute another material or process for any specified by name or shown on the drawings, he shall apply, in writing, for such permission and state the credit or extra involved.

Data or samples shall be furnished if required. No such substitution shall be made unless approved in writing by the Architect. The Architect shall be the sole judge of the equality or acceptability of each proposed substitution, and his decision on such matters shall be final. Contract completion dates or work schedules shall not be extended or altered due to the failure of the Contractor to supply the properly specified and approved materials and equipment in a timely manner.

F. Manufacturer's Directions: All manufactured articles, material, and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer unless specified to the contrary.

G. Occupational Safety & Health Act: The Contractor agrees to defend, indemnify and hold the Owner harmless for all loss, claims, fines, demands, costs, injuries, penalties or damages resulting from failure to comply by the Contractor or Subcontractors with standards as set out in the Williams-Steiger Occupational Safety and Health Act of 1970 which are within his control or that of his subcontractors.

H. Contractor shall take all necessary precautions for the safety of, and shall provide and continuously maintain the necessary protection to prevent damage, injury or loss to:

1. All workmen, Owner's employees, the public and all other persons who may be affected thereby, and

2. All the Work, all materials or equipment to be incorporated therein, whether in storage on or off the site, and

3. Any other property at the site or adjacent thereto including but not limited to, trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

I. The Contractor shall notify Owners of adjacent property and utilities when prosecution of the Work may affect them.

J. All damage, injury or loss to any property referred to in this paragraph, caused either through omission or commission, directly or indirectly, in whole or in part, by the Contractor, and Subcontractor or anyone directly or indirectly employed by an of them or anyone for whose acts any of them may be liable, shall be remedied by Contractor and Contractor shall bear the entire responsibility for same, except damage or loss attributable to the fault of Drawings or Specifications or to the sole negligence of the Owner or the

Architect or anyone employed by either of them or anyone for whose acts either of them may be liable.

K. Work must be totally completed before Contractor leaves project.

L. If deemed necessary, weekly job-site meetings will be held and chaired by the Architect. Attendees shall include, the Contractor, Owner or his authorized representative, Architect, and others as pertinent to the agenda. The Architect shall be responsible for administering the meetings including recording, and distribution of meeting minutes.

M. Written notice shall be considered as served when delivered in person or sent by certified or registered mail, addressed to the Owner.

1.17 TERMINATION BY THE OWNER & CONTRACTOR:

A. If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provision of the Contract, the Owner may, after seven (7) days' written notice to the Contractor and without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment then and thereafter due the Contractor or, at his opinion, may terminate the Contract and take possession of the Work and the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever method he may deem expedient, and if the unpaid balance of the Contract Sum exceeds the expense of finishing the Work, such excess shall be paid to the Contractor, but if such expense exceeds such unpaid balance, the Contractor shall pay the difference to the Owner.

B. The Owner reserves the right, without cause, to terminate the Contract at any time. In the event the Owner so elects, the Owner shall pay the Contractor the cost of all Work done to the date of termination, not previously paid the Contractor and a fee of ten (10%) percent of the cost of the Work performed up to said termination date. Payments to the Contractor in the event of termination as provided for above herein shall be in lieu of any and all other payments due the Contractor.

1.18 NON-DISCLOSURE OF CONFIDENTIAL INFORMATION:

A. The Contractor agrees not to disclose to others any confidential information, or to make use of it, except on the Owner's behalf, either during or after performance of the Work whether or not such information is produced by the Contractor's own efforts. The Contractor also agrees not to disclose to others any information with respect to development, ways of doing business, etc., which in themselves are generally known but whose use by the Owner is not generally known. The term confidential information, as used herein, includes

confidential information of the Owner or confidential information entrusted to the Owner by others and includes matters not generally known outside the Owner's organization such as manufacturing procedures, expansion plans, developments relating to existing and future products, services marketed or used by the Owner and data relating to the general business operations of the Owner concerning sales, costs, profits, organization, customer lists, pricing methods, etc. The Contractor shall impose the same obligations of Non-Disclosure on all other employed, or retained, to perform any work for the Contractor in connection with the Work contemplated under the Contract.

1.19 SEVERABILITY:

A. The invalidity in whole or in part of any article, section, subsection, sentence, clause, phrase or word, or other provision of this Specification and any exhibits attached or documents attached hereto, shall not affect the remaining portions thereof.

END OF SECTION

SECTION 01010

SUMMARY OF THE WORK

PART 1 – GENERAL

1.00 NATIONAL REGISTER PROPERTY

A. Victoria Mansion is listed on the National Register of Historic Places, and the property is located in a city historic district. In addition, the Maine Historic Preservation Commission (MHPC) holds an easement on the entire property. The plans and specifications for this project have undergone review by the National Park Service and the MHPC, and comply with the Secretary of the Interior's Standards for Preservation.

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the General and Supplementary Conditions and Division 1 - Specification Sections are hereby mad a part of this section.

1. Title of Work
2. Type of Contract
3. Work of the Contract
4. Related Work Under Other Sections
5. Coordination
6. Use of Premises
7. Owner Occupancy

1.02 PROJECT/WORK IDENTIFICATION

A. The name of the project: Victoria Mansion Tower Conservation, 109 Danforth Street, Portland, Maine. The Work of this Contract has been identified in the Contract Documents by Einhorn Yaffee Prescott, Architecture & Engineering, P.C., dated December 12, 2003.

1. The contract will be competitively bid with Base Bid and Alternates.

1.03 SUMMARY OF THE WORK

A. The work can be described as follows:

1. Conservation of the brownstone tower at Victoria Mansion. The work includes repair, preservation and replacement of deteriorated brownstone masonry, repair of backup brick masonry, temporary shoring of the existing tower to accommodate replacement of structural lintels and piers, interior plaster conservation to accommodate shoring work, structural reinforcement of existing masonry, and repointing of brick and brownstone masonry.

B. Work by others:

1. Preservation work must also be coordinated with wood window conservation work. The wood window work will be performed by sub-contractors chosen by the Owner.

1.04 COORDINATION

A. The Preservation Contractor shall coordinate the work, including the various demolition, shoring, masonry, and flashing work described in the Specifications to assure efficient and orderly sequence of installation of construction elements.

1.05 CONTRACTOR USE OF PREMISES

A. Contractor shall limit use of premises for the specified work, for storage, and for access, to allow:

1. Owner occupancy and safe access by the public and staff.

B. Coordinate use of premises under direction of Owner.

C. Assume full responsibility for protection and safekeeping of materials under this Contract.

D. Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

E. Victoria Mansion operations will continue on a regular schedule throughout the duration of the Preservation Contract.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01025

UNIT PRICES

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDE

A. Schedule of monetary amounts of Unit Prices in Contract Sum for purchase of designated products.

B. Costs in Contract sum other than in Unit Price.

C. Procedures for administration of Unit Prices.

D. Measurement and payment.

1.02 DEFINITION AND EXPLANATIONS

A. Certain requirements of the Work related to each allowance are shown and specified in the Contract Documents. The allowance has been established for the materials or systems by unit cost or lump sum cost, shipped to the site and as described in General Conditions 3.8.

1.03 SCHEDULE OF UNIT PRICES

A. Furnish unit prices to provide all labor, materials, work, installation and administration for the following above and beyond that which is required by the Contract Documents.

ITEM	ADD	DEDUCT
1. Fabrication and installation of full-face dutchman at vermiculated quoin – "Side A" Cost per dutchman.	$_____	$_____
2. Fabrication and installation of full-face dutchman at vermiculated quoin – "Side B" Cost per dutchman.	$_____	$_____
3. Fabrication and installation of additional ashlar units. Cost per sq. ft.	$_____	$_____

4. Fabrication and installation of additional flat stones at 3-inch depth.
   Cost per sq. ft. $_____ $_____

5. Fabrication and installation of 3-arch lintels at belfry.
   Cost per installed lintel. $_____ $_____

1.04 COSTS INCLUDED IN UNIT PRICES

A. Cost of product to Contractor or Subcontractor, less applicable trade discounts.

B. Delivery to site.

C. Applicable taxes. N/A

D. Applicable permits and fees.

E. Products handling at site, including unloading, crating and storage.

F. Protection of products from elements and from damage.

G. Labor for installation and finishing.

H. Contractor overhead and profit.

I. Other expenses required to complete installation. No further surcharges are to be added to any unit price item of work that may be ordered done.

1.05 ADJUSTMENT OF COSTS

A. When the quantity of items under the Unit Price is determined, the Contract Sum will be adjusted accordingly by Change Order.

B. At contract closeout, reflect all approved changes in contract amounts in the final statement of accounting.

1.06 EXCESS MATERIALS

A. Submit invoices or delivery slips to indicated the actual quantities of materials shipped to the site for use in fulfillment of each unit price.

B. Where economically feasible, and so requested by the Owner, return unused materials to the manufacturer or supplier for credit to the Owner, after installation has been completed and accepted.

C. Where economically not feasible to return for credit, and so requested by the Owner, prepare unused materials for the Owner's storage, and deliver to the Owners' storage space as directed.

1.07 ARCHITECT/ENGINEER RESPONSIBILITIES

A. Consult with Contractor in consideration of products and suppliers.

B. Determine quantities and transmit full information to Contractor.

1.08 CONTRACTOR RESPONSIBILITIES

A. Designate in the construction progress schedule the delivery dates for products specified under each unit price.

B. Designate on the Bid Form the amount for each unit price.

C. At the earliest feasible date after the award of the Contract, advise the Architect/Engineer of the schedule date when the final section and purchase of each product of system described by each allowance must be completed in order to avoid delays in the performance of the work.

D. On notification of quantities execute purchase agreement with designated supplier.

E. Arrange for process Shop Drawings, product data, and samples.

F. Arrange for delivery. Promptly inspect products upon delivery for completeness, damage and defects. Submit claims for transportation damage.

G. Install, adjust and finish products as required in the respective specification sections.

H. Provide warranties for products and installation.

1.09 CORRELATION WITH CONTRACTOR SUBMITTALS

A. Schedule Shop Drawings, product data, samples, and delivery dates, in Progress Schedule for products selected under unit prices.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION

SECTION 01030

ALTERNATES

PART 1 – GENERAL

1.1 REQUIREMENTS INCLUDE

A. Identification and description of Alternate Work.

1.2 DESCRIPTION OF REQUIREMENTS

A. "Alternates" are defined as alternate products, materials, equipment, systems, methods, units of work or major elements of the construction, which may, at Owner's option and under terms established by Instructions to Bidders and in the Contract or Agreement, be selected for the Work in lieu of corresponding requirements of contract documents. Alternates may or may not change scope and general character of the Work substantially. Requirements of this Section may be related to, but must not be confused with, requirements of Contract Documents related to "allowances," "unit prices," "change orders," "substitutions," and similar provisions.

B. Refer to the Contract or "Owner-Contractor Agreement," and subsequent modification thereof, if any, for determination of which of several scheduled "Alternates" herein approved have been accepted, and therefore are in full force and effect as though included originally in the contract documents for the based bid.

C. Coordinate related work and modify surrounding work as required to complete the Work, including changes under each alternate, when acceptance is designed in Owner-Contractor Agreement.

D. Immediately following award of Contract, prepare and distribute to each entity to be involved in performance of the Work, a modification of status of each alternate. Indicate which alternates have been:

1. Accepted.

2. Rejected.

3. Deferred for consideration at a later date as indicated. Include full description of negotiated modifications to alternates if any.

PART 2 – PRODUCTS

2.1 GENERAL REQUIREMENTS OF ALTERNATES

A. The description for each alternate is recognized to be abbreviated and incomplete. Each change in execution must be complete for the scope of the Work affected. Refer to the Specification Selections and Drawings, for specific requirements of the Work, regardless of whether references are so noted in description of each alternate. Coordinate related work and modify surrounding work as required to properly integrate with the Work of each alternate. It is recognized that descriptions of alternates are primarily scope definitions, and do not necessarily detail full range of materials and processes needed to complete the work as required.

2.2 DESCRIPTION OF ALTERNATES

ALTERNATES:	ADD	DEDUCT
1. Replace all stones currently indicated for dutchmen (code purple) with new stones. **Note: This does NOT apply to the vermiculated quoins.**	$ _____	$ _____
2. Removal of plaster and lath ceiling at the Belfry to access the existing roof rafters for installation of tie-downs.	$ _____	$ _____
3. Installation of snowmelt system at belfry roof and along north and west edge of tower at main roof.	$ _____	$ _____
4. Full Face Dutchman in lieu of Conservation at Stone #219B.	$ _____	$ _____
5. Full Face Dutchman in lieu of Conservation at Stone #223A.	$ _____	$ _____
6. Full Face Dutchman in lieu of Conservation at Stone #264A.	$ _____	$ _____

END OF SECTION

SECTION 01070

DEFINITIONS

PART 1 – GENERAL

1.1 DEFINITIONS

A substantial amount of specification language constitutes definitions for terms found in other contract documents, including the drawings, which must be recognized as diagrammatic in nature and not completely descriptive of requirements indicated thereon. Certain terms used in the contract documents are defined in this article. Definitions and explanations of this section are not necessarily either complete or exclusive, but are general for the work to the extent not stated more explicitly in another provision of the contract documents.

A. General Requirements: The provisions or requirements of Division 1 sections. General Requirements apply to entire work of Contract and, where so indicated, to other elements of work which are included in the project.

B. Indicated: The term "indicated" is a cross-reference to details, notes or schedules on the drawings, to other paragraphs or schedules in the specifications, and to similar means of recording requirements in the contract documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used in lieu of "indicated", it is for the purpose of helping the reader locate cross-reference, and no limitation of location is intended except as specifically noted.

C. Directed, Requested, etc: Where not otherwise explained, terms such as "directed", "requested", "selected", "approved", "required", "accepted", and "permitted" mean "directed by Architect/Engineer", "requested by Architect/Engineer", etc. However, no such implied meaning will be interpreted to extend Architect's/Engineer's responsibility into Contractor's area of construction supervision.

D. Approve: Where used in conjunction with the Architect's/Engineer's response to submittals, requests, applications, inquiries, reports and claims by Contractor, the meaning of the term "approved" will be held to limitations of Architect's/Engineer's responsibilities and duties as specified in General and Supplementary Conditions. In no case will "approval" by the Architect/Engineer by interpreted as a release of Contractor from responsibilities to fulfill requirements of the contract documents.

E. Project Site: The space available to Contractor for performance of the work, either exclusively or in conjunction with others performing other work as part of the project. The extent of project site is shown on the drawings, and may or may not be identical with description of the land upon which projects is to be built.

F. Furnish: Except as otherwise defined in greater detail, the term "install" is used to describe operations at project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

G. Install: Except as otherwise defined in greater detail, the term "install" is used to describe operations at project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations, as applicable for each instance.

H. Provide: Except as otherwise defined in greater detail, the term "provide" means furnish and install at said party's expense, complete and ready for intended use, as applicable in each instance. All items specified shall be "provided" unless specifically noted otherwise.

1.2 FORMAT

The format of principal portions of these specifications can be described as follows: although other portions may not fully comply and no particular significance will be attached to such compliance or noncompliance.

A. Sections and Divisions: For convenience, a basic unit of specification text is a "section", each unit of which is named and numbered. These are organized into related families of sections, and various families of sections are organized into "divisions", which are recognized as the present industry consensus to uniform organization and sequencing of specifications. The section title is not intended to limit meaning or context of the section, or to be fully descriptive of requirements specified therein, nor to be an integral part of text.

Each section of specifications has been subdivided into 3 (or fewer) "parts" for uniformity and convenience (Part 1 - General, Part 2 - Products, and Part 3 - Execution). These do not limit the meaning of and are not an integral part of text which specifies requirements.

B. Imperative Language: Except as otherwise indicated, requirements expressed imperatively are to be performed by Contractor. For clarity of reading at certain locations, contrasting subjective language is used to describe responsibilities which must be fulfilled indirectly by Contractor, or, when so noted, by others. These specifications are generally written in imperative and streamlined form. The words "shall be" shall be included by inference where a colon (:) is used within sentences or phrases.

C. Section Numbering: Uses to facilitate cross-references in contract documents. Sections are placed in Project in numeric sequence; however, numbering sequence is not complete, and listing of sections at beginning of Project Manual must be consulted to determine numbers and names of specification sections in the contract documents.

D. Page Numbering: Numbered independently for each section; recorded in listing of selections (Index or Table of Contents) in Project Manual. Section

number is shown with a page number at bottom of each page, to facilitate location of text in Project Manual. In all cases the final page of each section is identified by END OF SECTION.

E. Article and Paragraph Designation: Provided on each page to aid in the rapid comprehension of each section and for the purpose of facilitating subsequent references to specific text, for addenda, purchasing, subcontracting, modifications, change orders, and similar references.

F. Project Identification: The Project name is recorded at the top of each page to minimize possible misuse of specifications, or confusion with other project specifications.

G. Overlapping and Conflicting Requirements: Where compliance with two or more industry standards or sets of requirements is specified, and overlapping of those different standards or requirements establish different of conflicting minimum levels of quality, most stringent requirements (which is generally recognized to be also most costly) is intended and will be enforced, unless specifically detailed language written into the contract documents (not by way of reference to an industry standard) clearly indicates that a less stringent requirement is to be fulfilled. Refer to apparently equal but different requirements, and uncertainties as to which level of quality is more stringent, to Architect/Engineer before proceeding.

H. Trades: Except as otherwise indicated, the use of titles such as "carpentry" in specification text, implies neither that the work must be performed by an accredited on unionized tradesman of the corresponding generic name (such as "carpenter"), nor that specified requirements apply exclusively to work by tradesmen of that corresponding generic name.

I. Abbreviations: The language of specifications and other contract documents is of the abbreviated type in certain instances, and implies words and meanings which will be appropriately interpreted. Actual word abbreviations of a self-explanatory nature have been included in the text. Specific abbreviations have been established principally for lengthy technical terminology and primarily in conjunction with coordination of specification requirements with notations on drawings and in schedules.

1.3 INDUSTRY STANDARDS

A. Applicable standards of construction industry have same force and effect and are made a part of contract documents by reference as if copied directly into contract documents, or as if published copies were bound herewith.

B. Reference standards (referenced directly in contract documents or by governing regulations) have precedence over non-referenced standards which are recognized in industry for applicability to work.

C. Non-referenced standards recognized in the construction industry are hereby defined, except as otherwise limited in contract documents, to have direct

applicability to the work, and will be so enforced for performance of the work.

D. Publication Dates: Except as otherwise indicated, where compliance with an industry standard is required, comply with the latest edition and revisions thereof, if any, in effect as of date of execution of the contract.

E. Copies of Standards: Provide where needed for proper performance of the work; obtain directly from publication sources.

F. Abbreviation and Names: Where acronyms or abbreviations are used in specifications or other contract documents they are defined to mean the industry recognized name of trade associations, standards generating organization, governing authority or other entity applicable to context of text provision. Refer to "Encyclopedia of Associations," published by Gale Research Company, available in large libraries.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01090

REFERENCE STANDARDS

PART 1 – GENERAL

1.1 REQUIREMENTS INCLUDED

A. Applicability of Reference Standards.

B. Provision of Reference Standards at site.

C. Acronyms used in Contract Documents for Reference Standards. Source of Reference Standards.

1.2 QUALITY ASSURANCE

A. For products or workmanship specified by association, trade, or Federal Standards, comply with the requirements of the standard, except where more rigid requirements are specified or are required by applicable codes.

B. The date of the standard that in effect as of the Bid date, or date of Owner-Contractor Agreement when there are no bids, excepts when specific date is specified.

C. When required by individual Specifications section, obtain copy of standard. Maintain copy at jobsite during submittals, planning, and progress of the specific Work, until Substantial Completion.

1.3 SCHEDULE OF REFERENCES

AAI	The Aluminum Association, Inc. 900 19th Street, NW Washington, DC 20006	AGC	Associate General Contractors of America 1957 E Street, NW Washington, DC 20006
AIA	American Institute of Architects 1735 New York Avenue, NW Washington, DC 20006	AIC	American Institute for Conservation of Historic & Artistic Works 1717 K Street NW, Suite 200 Washington, DC 20006

AISC	American Institute of Steel Construction, Inc. One East Wacker Drive Suite 3100 Chicago, IL 60601-2001	AISI	American Iron and Steel Institute 1140 Connecticut Avenue Suite 705 Washington, DC 20036
ANSI	American National Standards Institute 1430 Broadway New York, NY 10018	APA	The Engineered Wood Association 7011 South 19th Street Tacoma, WA 98466
ASTM	American Society for Testing Materials 100 Barr Harbor Drive West Conshohocken, PA 19428	AWI	Architectural Woodwork Institute 1952 Isaac Newton Square West Reston, VA 20190
AWPA	American Wood Preservers Association 801 Alabama Avenue Second Floor Selma, AL 36701	CCS	Copper & Common Sense Revere Copper Products, Inc. One Revere Park Rome, NY 13440
CDA	Copper Development Association 57th Floor, Chrysler Building 405 Lexington Avenue New York, NY 10174	CSA	Canadian Standards Association 5060 Spectrum Way Mississauga, Ontario L4W 5N6 CANADA
CSI	The Construction Specifications Institute 99 Canal Center Plaza Suite 300 Alexandria, VA 22314	DOI	U.S. Department of the Interior The Secretary of the Interior's Standards for the Treatment of Historic Properties National Park Service Cultural Resource Stewardship and Partnerships Heritage Preservation Services 1849 C Street, NW Washington, DC 20240
FM	Factory Mutual System 1151 Boston-Providence Turnpike Norwood, MA 02062	IEEE	Institute of Electrical and Electronics Engineers 345 East 47th Street New York, NY 10017

ILI	Indiana Limestone Institute of America, Inc. 400 Stone City Bank Building Bedford, IN 47421	IMIAC	International Masonry Industry All-Weather Council International Masonry Institute 815 15th Street, NW Washington, DC 20005
MIA	Masonry Institute of America 386 Beech Ave., Suite #4 Torrance, CA 90501	NBGQA	National Building Granite Quarries Association, Inc. 1220 L Street, NW Suite 100-167 Washington, DC 20005
NEMA	National Electrical Manufacturers' Association 2101 L Street, NW Washington, DC 20037	NFPA	National Fire Protection Association 1 Batterymarch Park Quincy, MA 02169-7471
NIOSH	National Institute for Occupational Safety and Health Hubert H. Humphrey Bldg. 200 Independence Ave., SW Room 715H Washington, DC 20201	NRCA	National Roofing Contractors Association Roofing and Waterproofing Manual 10255 W. Higgins Rd, Suite 600 Rosemont, IL 60018
OSHA	Occupational Safety & Health Administration Portland District Office 100 Middle St., Suite 410 West Portland, ME 04101	PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077
SMACNA	Sheet Metal and Air Conditioning Contractors' National Assoc. 4201 Lafayette Center Drive Chantilly, VA 20151-1209	SSPC	The Society for Protective Coatings 40 24th Street 6th Floor Pittsburgh, PA 15222-4656
TMS	The Masonry Society 3970 Broadway Suite 201-D Boulder, CO 80304-1135	UL	Underwriters Laboratories, Inc. 333 Pfingsten Road Northbrook, IL 60062-2096

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01120

ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDE

A. Procedural requirements to follow approved preservation schedule.

B. Conservation of the tower at Victoria Mansion as specified.

C. The building will be in full operation during demolition, repair and conservation work.

PART 2 – PRODUCTS

2.01 PRODUCTS FOR PATCHING AND EXTENDING WORK

A. New Materials: As specified in Individual Sections.

B. Match existing materials and Work for new, patching, and replacement Work.

C. Determine type and quality of existing products by inspection and any necessary testing, and workmanship by use of existing as a standard. Presence of a product, finish, or type of work, required that patching, extending, or matching shall be performed as necessary to make the Work complete and consistent with the contiguous construction.

PART 3 – EXECUTION

3.01 INSPECTION

A. Verify that demolition and/or preparation is complete, and areas are ready for installation of new Work.

B. Beginning of conservation Work means acceptance of existing conditions.

3.02 PREPARATION

A. Remove material deemed unsuitable by the Architect, such as spalled or cracked masonry, rusted fasteners, and deteriorated backup brick and other items not marked for salvage; replace materials as specified for finished Work.

1. Salvage intact units of existing exterior brownstone where indicated.

B. Identify debris and abandoned items within work area and within concealed spaces for review by Architect.

1. Remove and dispose of items deemed to have no historic or cultural value by the Architect.

2. Retain and protect items deemed to have historic or cultural value by the Architect.

C. Provide temporary protection of existing finishes as described in Section 01500, Paragraph 1.05 (entire).

3.03 INSTALLATION

A. Coordinate demolition, repair and conservation work to expedite completion sequentially and to accommodate the continued Owner occupancy.

B. Project shall be complete in all respects.

C. Remove, cut, and patch work in a manner to minimalize damage and to provide means of restoring products and finishes to original condition.

D. Refinish visible exterior surfaces to the specified condition for each material, with a neat transition to existing adjacent finishes as noted.

E. Install products and finishes as specified in individual Sections.

3.04 TRANSITIONS

A. Where new work abuts or aligns with existing, make a smooth and even transition. Patched Work shall match existing adjacent work in texture, color and appearance. Work to conform with specifications for individual materials and surfaces.

B. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division. Make recommendation to Architect for review prior to performing the work.

3.05 REPAIR OF DAMAGED SURFACES

A. Patch or replace portions of existing surfaces which are damaged due to demolition work on ongoing construction. Work to conform with specifications for individual materials and surfaces.

B. Repair substrate prior to installation of finish work.

3.06 CLEAN-UP

A. All glass surfaces shall be cleaned at both interior and exterior windows.

END OF SECTION

SECTION 01200

PROJECT MEETINGS

PART 1 - GENERAL

1.01 - SECTION INCLUDES:

A. Pre-Construction Conference.

B. Project Meetings.

1.02 - PRE-CONSTRUCTION CONFERENCE:

A. A meeting shall be held on the project site one week before the projected starting date for work. The Prime Contractor, all subcontractors, the Architect, the Owner's representatives, the superintendent and foremen to be assigned to the project, and the Owner shall attend together, with any other parties the above participants deem necessary or choose to invite to the meeting.

B. All procedures and items which affect the progress, scheduling, quality, etc., of the work shall be discussed, and any problems or questions shall be resolved.

C. The Architect shall maintain a record of the meeting, including the items discussed and agreements reached, and shall distribute a copy of this record to all attendees. A copy of this record shall also be incorporated in the Contract record file.

1.03 - PROJECT MEETINGS:

A. The Architect shall visit the site weekly for the purpose of meeting with the Contractor's superintendent and the Project Manager to discuss the progress of the project. This meeting is intended to serve the purpose of clarifying details as to their intent as well as discuss requisitions and scheduling.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 SECTION INCLUDES:

A. Shop Drawings and Samples.

B. Construction Schedule.

1.02 SHOP DRAWINGS & SAMPLES:

A. Article 3.12 of the General Conditions of the Contract for Construction is herein referenced as a part of this Specification. The requirements for submission of all shop drawings, product data and samples are set forth.

B. Four (4) copies of all samples, shop drawings, and Product Data are required for submission to the Architect unless otherwise noted; two of which will be returned to the Contractor. One copy of all approved shop drawings or samples shall be kept in the Contractor's field office or by his job site supervisor.

C. Shop drawings shall be drawn no smaller than 1-1/2" = 1"-0" and larger if necessary to show detail shop drawings shall be prepared by the material manufacturer or supplier, reviewed and corrected by the Contractor, and then submitted to the Architect for approval. Work shall not commence until they are approved by the Architect.

D. The shop drawings produced by the stone fabricator shall utilize the unit piece numbers on the contract drawings.

E. The Contractor shall review, approve and submit to the Architect the manufacturer's and technical data for all materials to be used on the project.

F. The Contractor shall review, approve and submit to the Architect within five (5) days of award of the Contract, samples of all materials to be used. Samples of other materials shall be supplied if specified elsewhere in this Specification or if utilized in this project. Refer to individual Specification Sections.

G. Except as noted in paragraph E above, all samples shall be as specified and of the types and thickness specified in the respective Divisions. Fasteners shall be submitted in the lengths and sizes specified complete with all discs, plates, washers, nuts and similar items to be used in the actual installation.

H. Work on the project shall not commence and materials shall not be ordered until all necessary submittals are reviewed and approved in writing by the Architect.

1.03 CONSTRUCTION SCHEDULE:

A. The Owner wants the project completed within a maximum time allowed after the award of the contract. Work shall be terminated at perimeter and such temporary work as is required shall be done to keep the new areas tight and protected from the weather.

B. A pre-construction meeting shall be held with the Owner or his authorized representative, Contractor and Architect within one (1) week of award of contract to discuss various aspects of the project.

C. Immediately after award of contract, Contractor shall submit to the Architect a sequence schedule showing the proposed sequence of construction with proposed completion dates for various sections to be done.

D. The program to be followed to execute the work on time and of proper quality shall be subject at all times to the approval of the Architect and shall be varied as directed by him. Architect shall maintain an observer on the job full or part time until completion.

E. Contractor shall maintain production of the work as required by his completion schedule submitted before the start of the project and as modified by the Architect.

F. Contractor will be required to employ a sufficient work force to assure completion of the entire renovation within the time allowed.

G. The Architect's representative shall approve the Contractor's plan before any work has begun. If the Architect's representative considers that too large an area is being opened to the weather or that work should proceed in another area, then the Contractor shall abide by the Architect's decision.

1.04 SCHEDULE OF VALUES:

A. Prior to the first request for payment, the General Contractor shall submit to the Architect a Schedule of Values of the various portions of the work in sufficient detail to reflect various major components of each trade, including quantities when requested aggregating the total contract sum, and divided so as to facilitate payments for work under each Section. The schedule shall be prepared in such form as specified or as the Architect may approve, and it shall include data to substantiate its accuracy. Each item in the Schedule of Values shall include its proper share of overhead and profit. This schedule,

including breakdown and values, requires the approval of the Architect and shall be used only as a basis for the Contractor's request for payment.

END OF SECTION

SECTION 01400

QUALITY CONTROL

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Quality Assurance and control of installation.

B. References.

C. Field Samples.

D. Mock-ups.

E. Inspection and testing laboratory services.

F. Manufacturers' field services and reports.

1.2 QUALITY ASSURANCE AND CONTROL OF INSTALLATION

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

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

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

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

E. Perform work by persons qualified to produce workmanship of specified quality.

F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.3 REFERENCES

A. Conform to reference standard by date of issue current on date of Contract Documents where no date is specified with standard.

B. Obtain copies of standards when required by Contract Documents.

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

D. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.4 FIELD SAMPLES

A. Install field samples at the site as required by individual specification Sections for review. Locations to be determined by Architect.

B. Acceptable samples represent a quality level for the Work.

C. Where field sample is specified in individual Sections it shall remain as a clear area for quality standard after it has been accepted by Architect.

1.5 MOCK-UPS

A. Mock-ups are a special form of samples, which are too large or otherwise inconvenient for handling in a specified manner for transmittal of sample submittals.

B. Where mock-ups and similar samples are indicated in individual work sections recognized as special type of sample, comply with the requirements for "samples" to greatest extent possible, and process transmittal forms to provide a record of activity.

C. Tests, when specified, will be performed under provisions identified in this section.

D. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals, and finishes.

E. Where mock-up is specified in individual Section to be removed, clear area after mock-up has been accepted by Architect.

1.6 INSPECTION AND TESTING LABORATORY SERVICES

A. Owner will appoint, employ, and pay for services of an independent firm to perform inspection and testing.

B. The independent firm will perform inspections, tests, and other services specified in individual specification Sections and as requested by the Architect.

C. Reports will be submitted by the independent firm to the Architect and to the Owner, indicating observations and result of tests, and indicating compliance or non-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 48 hours prior to expected time for operations requiring services.

2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.

E. Retesting required because of non-conformance to specified requirement shall be performed by the same independent firm on instructions by the Architect. Payment for retesting services will be charged to the Contractor by deducting inspection or testing charges from the Contract Sum/Price.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 TEMPORARY UTILITIES

A. Electricity: The Owner's existing 110 volt convenience outlets are available for the Contractors' use. Cooperate with the Project Manager to identify circuits for construction activities. Verify grounding requirements. Verify that the capacity of the circuit will sustain the anticipated tool loads. Do not overload single outlets with multiple outlet taps. Use multiple circuits or local overcurrent devices.

B. Provide artificial lighting for construction operations when natural or ambient light is not adequate for work. Light values shall be adequate for the task in progress. Maintain required illumination levels during critical procedures and installations. Provide supplemental light at hazards.

1. Existing and permanent lighting may be used during construction. Maintain lighting and make routine repairs. Prior to Substantial completion, replace lamps with those of specified configuration, voltage and color characteristics.

1.02 TELEPHONE SERVICE

A. Arrange for telephone service for normal business operations. The Project Manager will designate a building line for emergency calls.

1.03 WATER

A. Provide for water service required for construction operations. Extend branch piping with outlets located so that water is available by use of hoses. Pay all costs for installation, maintenance, removal, and for the temporary water piping and accessories. Maintain hoses for the duration of the Work.

1.04 SANITARY FACILITIES

A. Provide one portable toilet for contractor's personnel use during construction operations. Provide tissue, towels and soap. Maintain in sanitary and working condition.

1.05 PROTECTION OF EXISTING FACILITIES

A. Fire Protection: Alterations or renovations of fire protection systems shall comply with the provisions of NFPA 914 – Code for Fire Protection of Historical Structures, and shall be approved by the authority having jurisdiction.

B. Existing Conditions: Prior to the pre-construction conference, photograph existing conditions at the site and project area. Note any pre-existing damage to areas adjacent to Project Area, and areas which must be traversed to access the Work. Review existing conditions as well as proposed methods of temporary protection at pre-construction conference.

C. Review of Protection Techniques: All proposed protection techniques shall be submitted to the Architect for review. Proceed only according to approved methods. If protection requirements are not clear, confer with the Architect and proceed as directed.

D. Provide barriers required to prevent public access to construction areas, to provide for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction operations. Where barriers or enclosures face Owner occupied areas, do not disrupt the daily operations at Victoria Mansion, the Carriage House, the existing driveway or adjacent sidewalks.

1. Maintain egress routes from Owner's operations. Where barriers are required along exit routes, construct to match fire rating of nearest fire separation assembly. If rating is not clear, conform to the requirements of a one-hour assembly: one layer of 5/8" type-X gypsum board attached to each side of wood or metal studs extending from the floor, tight to the bottom of the floor structure above. Tape joints and seal perimeter.

a. When attaching partitions, use protective pads at finishes or surfaces designated to remain. Locate fasteners so as not to make contact with or damage existing surfaces. Do not use powder driven fasteners at window openings.

E. Provide temporary, weather-tight closures where reasonably required to ensure adequate workmanship and protection from weather. Construct closures to maintain conditions for work, and to prevent entry of unauthorized persons.

F. Protect existing surfaces and finishes designated to remain. Provide covers, pads, and draping to resist Work related abuse. Tape or seal edges to exclude fugitive dust and grit. Restrain cover materials which may scrub or

abrade finishes. Restore finishes which have been damaged or made unsightly.

1. Protect historic granite driveway from heavy vehicles, abrasion, settling or other damage.

2. Provide removable, weathertight protection at all tower windows. Make allowance for removal and reinstallation of protection at individual windows to accommodate window restoration work (by others).

3. Protect exterior surfaces of all brownstone Quoins both within and adjacent to the work area with removable rigid coverings. Make allowance for removal and reinstallation of protection at individual Quoins to accommodate conservation work (by others).

4. Protect all interior plaster finishes at the tower with coverings that do not make contact with the existing plaster finishes.

5. Protect all interior woodwork finishes at the tower with coverings that do not damage the existing wood finishes.

G. Provide barricades and covered walkways required for public rights-of-way and for public access to the existing building. Where a public roadway/walkway adjoins project site in a manner which involves possibility that materials might be hoisted from roadway, across walkway and onto site, erect a substantial and structurally adequate protective bridge for passage of persons along walkway. Provide heavy scaffolding, waterproof heavy wood-plank type overhead deck, protective plywood enclosure walls, hand rails, barricades, warning sighs, lights, safe and well-drained walkways, passage. Maintain facility in a manner acceptable to Project Manager. Coordinate bridge with entrance gates and other facilities and obstructions.

H. Provide protection for landscape, grounds and plantings within and adjacent to Project Area.

1. Protect walkways and curbs where vehicles are expected to cross or park. Use planking or sheet materials to evenly distribute loads from wheels and stabilizers. Take measures to prevent staining or chipping. Restore paving where damaged or made unsightly by construction activities.

2. Control water and site drainage. When altering discharge of drainage patterns, provide positive means of directing water to prevent nuisance as well as hazardous conditions.

3. Do not permit effluent produced as a result of construction activities to drain onto plantings, landscape features or into storm drains. The collection of hazardous materials and by-products of the Work is stipulated in the Supplementary Conditions.

4. Protect trees, shrubs and plantings according to the likely hazard. In general, box tree trunks with framing lumber and plywood. Construct a "roof" or "tent" over trees or plantings to prevent damage from above. Provide canvas or poly covers to protect from over-spray. Prop-up or tie back branches which may interfere with construction activities.

5. Avoid using lawns for parking, material storage, stockpiling debris, or discharging waste liquids. Restore lawn areas damaged by construction activities:

   a. Replace contaminated soils.
   b. Re-grade to original contour.
   c. Seed or sod to match adjacent undamaged area.
   d. Heal in plantings removed during construction as soon as feasible.

I. Protect installed Work from damage caused by construction operations. Limit traffic on finished surfaces. Carefully follow manufacturers' instructions and specified directives for curing periods, and post installation environmental conditions.

1. Where Work occurs in multiple phases or locations, provide means of protecting unfinished and newly finished Work from construction and pedestrian abuse. Protect pedestrians and construction personnel from local hazards due to raw edges and unfinished work.

1.06 SECURITY

A. Project Security shall be reviewed at the pre-construction conference.

B. Comply with the Owner's basic security requirements:

1. Contractors' forces shall remain within the limits of the designated Project Area. Unauthorized exploration outside of the limits of the Project Area may be interpreted as trespass by Victoria Mansion and the local Police Department.

2. The Superintendent or other specifically designated individual shall be responsible for distributing and collecting keys as required, to limited access areas each day. Maintain a log of key distribution.

3. Advise contractors' forces on-site of appropriate standards of conduct. Persistent use of profanity or comments directed at individuals outside the work force may be interpreted as harassment or disorderly conduct by Victoria Mansion and the local Police Department.

4. Provide a roster of all contractors' personnel on site to the Project Manager.

C. At pre-construction conference, the Project Manager will cooperate in identifying areas available for material and tool storage. These areas will be incorporated into the Project Area, and secured by the Contractor.

D. Provide effective means of securing or disabling ladders, scaffold, staging or hoists where they may provide unauthorized access to Victoria Mansion.

E. Maintain perimeter security. When it becomes necessary to prop open gates or doors which are normally locked, provide continuous supervision of area until doors or gates can be closed.

1.07 HOISTS AND ELEVATORS

A. Provide adequate lifting facilities for materials. Do not allow employees to ride hoists or material elevators which comply with requirements for materials only. Except as otherwise indicated, selection of type, size, and number of facilities for temporary use at project site is Contractor's option.

1.08 CONSTRUCTION AIDS

A. Provide construction aids and equipment required by personnel and to facilitate execution of the Work. scaffolds, staging, ladders, ramps, runways, platforms, railings, cranes, chutes and other such facilities and equipment are the responsibility of the General Contractor.

B. All scaffolding shall be covered with plywood up to 12'-0" above grade.

1.09 CLEANING DURING CONSTRUCTION

A. The General Conditions require that the Project Area be kept clean. Control accumulation of waste materials and rubbish. Remove combustible debris and food waste daily. Provide carting service to regularly dispose of construction refuse in a lawful manner. Where hazardous materials are removed, submit copies of landfill receipts. Do not use the Building's dumpsters.

B. Clean interior areas prior to start of each phase of work. Maintain areas free of dust and other contaminants during finishing operations.

C. Make provisions to keep streets and drives in the area of construction free of accumulation of mud, clay, gravel, and any other materials which vehicles or equipment may track or scatter onto these surfaces.

D. No burning, burying or disposal or rubbish or debris at the job site will be permitted.

1.10 PROJECT IDENTIFICATION

A. Provide a 4 x 4 foot Project identification sign of wood frame and MDO-EXT-APA grade plywood construction, painted with exhibit lettering by professional sign painter, to Architect's design and colors.

B. Erect on site at location established by Project Manager.

C. Erect no other signs unless required for safety or by law.

1.11 FIELD OFFICES AND SHEDS

A. Construction trailer and field office may be located where shown on the site plan. No areas within the existing building will be provided.

1. Provide desks, file cabinets, drawing racks, plan tables, and storage facilities for project record documents and samples.

2. Do not use office for materials storage.

B. Storage sheds for tools, materials, and equipment shall be weather-tight, with heat and ventilation for Products requiring controlled conditions. Sheds shall have adequate space for organized storage and access, and lighting for inspection of stored materials.

1.12 ACCESS ROADS

A. The Project Manager shall designate existing roads for access to the Project Area and on-site storage. At the pre-construction conference discuss vehicular access requirements. Repair damage caused by contractors' equipment. Post signs or other warning devices where hazards may be created by poor visibility or new traffic patterns.

1.13 PARKING

A. Parking for employees of all contractors shall be limited to on street public parking. Parking will not be allowed on any other portion of the Owner's premises.

1.14 SMOKING POLICY

A. The Owner has instituted a "No Smoking Policy", within the existing building. Please cooperate with the Owner and do not allow construction workers to smoke if in the building or any other areas as designated by the Owner at the pre-construction conference.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01600

MATERIAL & EQUIPMENT

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Storage.

B. Substitutions.

C. Weather & Temperature Requirements.

D. Special Installation & Storage Requirements.

E. Availability of Materials, Tools & Supplies.

F. Debris Removal & Material Handling.

G. Equipment & Machinery.

1.02 STORAGE OF MATERIALS

A. Contractor shall follow the recommended storage procedure of the manufacturer of the materials being used.

B. All moisture sensitive materials shall be stored in weatherproof trailers or shall be stored at least 4" above the ground on stable pallets or skids and shall at all times be completely covered and secured. Tarpaulins or a similar "breathable" material shall be used to cover materials. Rubber or plastic materials shall not be acceptable. Factory applied "shrink packs" or plastic wrappings shall not be acceptable.

C. Materials stored on the ground shall be thoroughly secured against moisture and wind. Materials and their coverings shall be tied and/or weighted to prevent uncovering or blowing of material by the wind. Contractor shall be responsible for damages caused by blowing and improperly stored material and equipment.

D. Materials shall be handled with care and shall not be installed if they have been damaged in any way due to handling, storage or manufacturing defects.

E. All materials are to be stored at a minimum temperature of 60°F for a period of not less than 24 hours before application except to implement emergency repairs and shall be properly stored with tight fitting covers when not in use.

F. Contractor shall promptly mark and remove from the site any damaged or improperly stored materials when so requested by the Architect.

G. Materials which become congealed, thick, non uniform or otherwise unsuitable for proper application shall be removed from the project site and replaced with new, properly stored and tested materials.

H. Provisions for placement of the Contractor equipment must be planned by the Contractor and submitted to the Owner and the Architect for approval.

1.03 SUBSTITUTIONS

A. Contractor shall not substitute alternative materials or methods without a formal request, review and the written approval of the Architect.

B. When the phrase "or equal", "or approved equal", or "or equal approved by the Architect" occurs in the Contract Documents, the determination of the equality of a given method or material is in the sole judgment of the Architect. Materials other than those specified or named shall not be ordered, delivered to the site, stored or used in any construction or applications without the written approval of the Architect. The Contractor agrees that the Architect's decision shall be final.

C. Contractor shall, prior to submitting a bid for this project, verify the availability of all specified materials so that project schedules can be smoothly followed.

1. If the Contractor finds that any materials shall not be available he shall notify the Architect of this fact prior to the submission of his bid.

2. No extensions of the Contract Completion Date or payment of additional monies shall be allowed due to delays caused by non-availability of specified materials when such delays could have been anticipated and avoided by the Contractor.

1.04 WEATHER & TEMPERATURE REQUIREMENTS

A. Work shall not commence or proceed, with the exception of the completion of necessary temporary measures to make the building weather tight, when the ambient air temperature is below 32°F.

B. Work shall not commence or proceed, with the exception of the completion of necessary temporary measures to make the building weather tight, when the wind chill factor is below 32°F.

C. No work may proceed, without the permission of the Architect when the ambient air temperature is below 40°F.

D. Work shall not commence or proceed, with the exception of the completion of necessary temporary measures to make the building weather tight, when precipitation of any kind, or winds in excess of 20 miles per hour are present or when, in the sole judgment of the Architect or his authorized representatives, conditions are unfavorable or detrimental to the proper installation of the specified materials.

E. Work shall not commence or proceed, with the exception of the completion of necessary temporary measures to make the building weather tight, when water, ice or frost is present on or within the materials or surfaces to which materials are to be applied.

1.05 SPECIAL INSTALLATION & STORAGE REQUIREMENTS

A. When conditions as outlined in Section 1.04.C exist, or when required by the Architect, the Contractor shall take the following measures to continue his operations.

1. All adhesives, sealants and caulking shall be stored at a minimum temperature of 60°F for a minimum period of 24 hours prior to their application.

2. Materials in use which become congealed, thick, non-uniform, or otherwise unsuitable for proper application shall be removed from the work area and replaced with new, properly stored heated materials.

1.06 AVAILABILITY OF MATERIALS, TOOLS & SUPPLIES

A. Contractor shall maintain a sufficient quantity of materials on the project site to assure that interruption of work on the project shall not occur.

B. Contractor shall maintain a sufficient quantity of tools on the project site of the types necessary to assure that interruption of the project shall not occur. Contractor shall also maintain an adequate supply of bits, drills, blades and similar accessory items.

C. Contractor shall use tools and equipment designed for their intended use. Contractor shall be responsible for damage to the facility and its components caused by mis-use of tools and equipment.

1.07 DEBRIS REMOVAL & MATERIAL HANDLING

A. Contractor shall remove all debris from the project site daily and shall legally dispose of all debris generated by the Project.

The Contractor, if so requested, shall furnish documentation of the disposal method used satisfactory to the Architect and legal authorities.

B. All debris which is removed from the site shall be properly secured and totally covered before it is transported.

C. Contractor shall pay all taxes, dumping and hauling fees.

1.08 EQUIPMENT & MACHINERY

A. All hoisting, demolition and hauling equipment and machinery required for the proper and expeditious prosecution and progress of the work shall be furnished, installed, operated and maintained in safe condition by the General Contractor for the use of all Subcontractors' material and/or equipment delivered to the designated hoisting area except that which is specifically required to be provided by the Subcontractors themselves and is so stated in each appropriately related Section of the Specifications. All costs for hoisting operating services shall be borne by the General Contractor unless specifically excepted in the Contract Documents.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Contract Completion Date.

B. Cleaning.

1.02 CONTRACT COMPLETION DATE

A. All work, including cleaning and punch list items shall be totally completed no later than December 1, 2004.

B. Contractor shall not remove crews or equipment until the project is totally completed, including punch list items, without the written permission of the Architect.

C. If the Contractor feels that he cannot properly complete the work during the given time constraints, then he shall make provisions for and submit his plans and requirements for working a double shift and/or weekends in order to complete the project by the date given in the Contract Documents.

1.03 CLEANING

A. In addition to the requirements of Article 3.15 of the General Conditions of the Contract for Construction, which are a part of this Specification, the Contractor shall do all work necessary to maintain the premises in a clean and orderly condition and upon completion, remove all excess materials, equipment and rubbish created by the project.

B. During progress of job, Contractor shall at intervals not exceeding three days, remove all rubbish created by his operations.

C. On completion of work, the Contractor shall remove all debris from the construction area whether put there by him or not.

END OF SECTION

SECTION 02040

TEMPORARY SHORING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings, general provisions of the Contract, including the General and Supplementary Conditions and Division-1 Specification Sections are hereby made a part of this Section.

1.02 WORK INCLUDED

A. Work of this Section includes all labor, materials, equipment and services necessary to as shown on the drawings and specified herein including, but not limited to, the following:

1. To temporarily shore the belvedere window openings during the replacement of the brownstone mullions.
2. To temporarily shore masonry above areas where brownstone removals occur.

1.03 RELATED WORK UNDER OTHER SECTIONS

A. Section 04905 – Stone Removal and Re-Installation

B. Section 04902 – Masonry Preservation

1.04 SUBMITTALS

A. Shop Drawings: Prepare shop drawings for aluminum channel sections.

B. Technical Data: Provide technical sheets for bolts and non-shrink grout.

1.05 COORDINATION:

A. Masonry: Coordinate work of this section with interfacing masonry conservation work for proper sequencing. Ensure best possible protection of adjacent materials and finishes.

B. Interior Plaster: Coordinate work of this section with interfacing interior plaster wall removal and conservation work for proper sequencing. Ensure best possible protection of adjacent interior materials and finishes.

1. Interior plaster removal and conservation work to be performed by Architectural Conservation Services.

1.06 CODES & STANDARDS:

A. Except as modified by the requirements of other governing codes and by this specification, conform to the provisions and recommendations of the following codes and standards:

1. Aluminum: Aluminum Association Standards
2. American Society of Steel Construction

1.07 PRODUCT HANDLING

A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.

PART 2 – PRODUCTS

2.01 MISCELLANEOUS MATERIALS:

A. Shoring Channels: Aluminum 6016-T6

B. Bolts: Galvanized threaded rod per ASTM A153

C. Wood Shores: Any species suitable for structural use, graded as per the American Wood Council.

D. Non-Shrink Grout: Nonmetallic, shrink resistant, per ASTM C1107

PART 3 – EXECUTION

3.01 GENERAL

A. Examine all areas and conditions where the shoring lintels are to be installed and notify the Architect of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

B. Drilling of masonry for bolt installation shall be performed with non-percussive tools.

C. Suggested sequence of work for shoring above belvedere window openings:

1. Drill holes for bolts using predrilled channels as templates.
2. Carefully lift exterior channel into place and insert bolts.
3. Carefully lift interior channel into place to assure bolt alignment; remove interior channel.
4. Grout bolts in place and allow to set; tighten nuts at exterior channel.
5. Carefully lift and place interior channel; tighten nuts.
6. Upon complete of brownstone mullion replacement, with the original load path reinstated, remove channels; cut off bolts; patch masonry as required.

D. Where stone replacement or re-installation is to occur, temporary wood shores should be installed to support any stones above the removal location until the replacement/repaired stone is to be reset.

END OF SECTION

SECTION 04005

FABRICATION OF NEW BROWNSTONE UNITS

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

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

1.02 WORK INCLUDED

A Work of this Section includes the furnishing of fully fabricated brownstone components required for the completion of all natural stone work indicated by the contract drawings and specifications. Work included in this section:

1. Fabrication of new, replacement brownstone units from Portland Connecticut Brownstone.
2. Fabrication of carved and profiled dutchmen units.
3. Field measuring of all existing stones to be replaced.
4. Field measuring of all existing conditions where new stone is to be installed.
5. Preparation of shop drawings and shop tickets.

1.03 RELATED WORK

A. Unit Prices – Section 01025

B. Alternates – Section 01030

C. Brownstone Conservation – Section 04550

D. Masonry Preservation – Section 04902

E. Stone Removal and Re-Installation – Section 04905

F. Flashing and Sheet Metal – Section 07600

G. Sealants – Section 07900

1.04 QUALITY ASSURANCE

A. Objectives and definitions:

1. Due to the lack of currently published sandstone trade terms and definitions, the definition of trade terms used in these specifications shall be those published by the National Building Granite Association, Inc and the Indian Limestone Institute of America, Inc. where they apply to sandstone

B. The architect reserves the right to approve the fabricator(s) for brownstone replacement units.

C. Stonework shall be executed by mechanics; skilled and thoroughly trained and familiar with the methods required. Skilled stonefitters and cutters shall be employed at the site to do the necessary field cutting and tooling and carving for stone duchmen.

1.05 SUBMITTALS

A. Shop Drawings: The stone fabricator shall prepare and submit to the architect for approval complete cutting and setting drawings for all of the cut stonework. Drawings shall show in detail the sizes, sections and dimensions of stone, the arrangement of joints, anchoring and other necessary details. All jointing as shown by the architect on the contract drawings shall be followed, unless modifications are agreed upon in writing or indicated on the approved shop drawings. The dimensions on the shop drawings shall represent field conditions and field measurements. The shop drawings produced by the fabricator shall utilize the unit piece numbers on the contract drawings.

B. For each stone, or each type of unit, confirm direction of sandstone beds. i.e. face bedded, natural bedded or end bedded.

C. Indicate on shop drawings, locations and type of holes or inserts to be used for lifting or setting.

D. Brownstone samples: Prior to fabricating any brownstone units, the contractor shall submit (3) 12" x 12" samples showing the complete range of color, texture and aggregate size intended for this project. Project Architect will mark approved color, range, texture and aggregate size on submittals to indicate acceptable range of stone for this project. Stone not meeting the criteria established on the approved samples will not be accepted for installation on the building.

E. Finish Samples: In addition to the (3) stone samples listed above, the contractor shall provide the following samples:

1. Submit 2 full sized replacement ashlar stones with honed finish to match existing stone.

2. Submit 1 full sized sample of each type of corner, trim or surround stone required for this project.
3. Submit 1 full sized sample of each type of carved unit required for this project including a finished vermiculated quoin dutchman.

Approved units may be incorporated into the final construction.

F. Field repairs to stone: Submit one field repair executed at the fabrication plant and one field repair executed at the job site for approval prior to executing any repairs on fabricated stone.

G. Calculations: Submit structural calculations for proposed stone anchors, signed and sealed by a structural engineer licensed in the state of Maine.

1.06 DEFECTIVE WORK

A. Any piece of stone showing flaws or imperfections upon receipt at the storage yard or building site shall be referred to the design professional for determination as to responsibility and decision as to whether it shall be rejected, recut or redressed for use.

1.07 ALLOWABLE REPAIRS TO DAMAGED BROWNSTONE UNITS:

A. Repair of stone is an acceptable practice. Some chipping is expected; repair of chips is not required if in the opinion of the architect it does not detract from the appearance or integrity of the work. Large chipping, spalling or inherent flaws with in the stone may be repaired at the fabrication plant or at the job site using the stone dutchman technique specified for repair of building stone. Repairs with patching compounds, grout injection or proprietary mortars will not be permitted.

1.08 CUTTING

A. All stone shall be cut accurately to shape and dimensions and full to the square, with jointing and bedding as shown on approved shop drawings. All exposed faces shall be dressed true. Beds and joints shall be at right angles to the face, and joints shall have a uniform thickness of 3/8" unless otherwise shown or noted on drawings.

B. Reglets for flashing, etc. shall be cut in the stone where indicated on the shop drawings.

C. Molded work shall be carefully executed from full size details obtained from field measurements taken by contractor.

1.09 CARVING

A. All carving shall be done by skilled carvers in a correct and artistic manner in strict accordance with the spirit and intent of the original building ornament. Carving for full faced vermiculated quoin dutchmen and quoin replacement units shall have the same variation in the placement of the vermiculation that is present in the existing quoins.

1.10 SANDSTONE BEDDING PLANES

A. All brownstone units shall be bedded as follows:

1. Ashlar units: Face bedded.
2. Window surrounds and trim stones: Natural bed.
3. Quoins and other carved units: Natural bed.
4. Any exception to the above must be submitted by the contractor and approved by the project architect.

1.11 LIFTING HOLES

A. Lifting holes or lifting inserts on the top surfaces of exposed faces shall not be permitted.

1.12 FIELD MEASUREMENTS

A. The Contractor and/or fabricator shall be responsible for all field measurements and the preparation of setting drawings fully defining the conditions for the installation of all stones. The contractor shall review, approve and countersign the setting drawings prior to their submission to the architect.

PART 2 – MATERIALS

2.01 MATERIALS GENERAL

A. All sandstone/brownstone shall be obtained from blocks of new or salvaged Portland, Connecticut brownstone. New stone shall be supplied by:
Portland Brownstone Quarries
Portland, CT.
(203) 250-1502 office; (860) 342-2920 quarry.
Attn: Mike Meehan

B. Salvaged Portland Connecticut Brownstone shall match freshly quarried brownstone in all essential properties including color, texture, grain, bedding orientation, size of aggregate and frequency of rifts.

PART 3.00 – FABRICATION

3.01 DIMENSIONAL TOLERANCES

A. Panel thickness: +/- ¼"

B. Variation from rectangular: 1/16" out of square, non-cumulative.

3.02 FLATNESS TOLERANCES

A. 4" dimension in any direction on the surface shall determine variation from true plane, or flat surfaces. Such variation on polished, honed, or fine rubbed surfaces shall not exceed 1/3 joint width. On surfaces having other finishes, the maximum variation from true plane shall not exceed the tolerances listed below or ½ of the specified joint width, whichever is greater.

1. Polished, honed or fine rubbed finishes.....1/16"
2. Sawn, 4 cut, 6 cut and 8 cut finishes .....1/8"

3.03 BEDS AND JOINTS

A. Pieces shall be bedded and jointed as shown on the approved shop drawings, and bed and joint surfaces shall be cut as follows:

1. Bed and joint surfaces shall be sawn through the full thickness of the unit.
2. Bed and joint surfaces shall be within +/- 3% of 90 degrees to the face of the piece unless otherwise specified.

3.04 BACKS OF PIECES

A. The backs of pieces shall be sawn to approximately true plane.

3.05 FINISHES

A. All finishes are to match original finishes on units which are being replaced. The degree of honing on new ashlar units is to match the honing on the unweathered stones in the entrance portico of the Victoria Mansion.

PART 4.00 – SHIPPING AND HANDLING

4.01 PACKING AND LOADING

A. Finished units shall be carefully packed and loaded for shipment using all reasonable and customary precautions against damage in transit. No material which may cause staining or discoloration shall be used for blocking or packing.

4.02 SITE STORAGE

A. Upon receipt of stone at the jobsite, the stone shall be stacked on timber or platforms at lest 3-inches above the ground, and extreme care shall be taken to prevent staining during storage. If storage is to be for a prolonged period of time, polyethylene or other suitable plastic film shall be placed between any wooden and finished surfaces and shall be used also as a protective covering.

END OF SECTION

BROWNSTONE CONSERVATION

SECTION 04550

PART 1 – GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the Contract and General Conditions and all Sections within Division 1 General Requirements, which are hereby made a part of this Section of the Specifications.

B. Attention is directed to the existing masonry conditions, geometry and dimensions of the site. The conservator/contractor shall become thoroughly familiar with the existing conditions in order to assess the scope of conservation work required. Submittal of a bid to perform the work of this section acknowledges a through understanding of existing conditions, dimensions and recommended treatments.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Unit Prices – Section 01025

B. Alternates – Section 01030

C. Fabrication of New Brownstone Units – Section 04005

D. Stone Removal and Re-Installation – Section 04905

E. Masonry Preservation – Section 04902

F. Flashing and Sheet Metal – Section 07600

G. Sealants – Section 07900

1.3 SUMMARY AND DESCRIPTION OF WORK

A. All work of this section to be performed by owner.

B. Conservation of vermiculated quoins.

C. Consult stone schedule for scope and location of treatments on each face of each quoin.

D. Provide labor, materials and equipment necessary to complete the work of this section, including but not limited to the following:

1. Review conditions of each quoin prior to starting work and submit treatment plan that confirms, and where appropriate, due to changed conditions, modifies treatments in contract documents.
2. Document work prior to treatment, during treatment and after treatment with a combination of archival quality photography, written reports and graphic representation on elevation drawings.
3. Maintain daily treatment log and submit log to project architect on a periodic basis.
4. Stabilize loose and friable areas of stone with reversible materials such as acrylic B-72, high strength tissue paper, cellulose paste.
5. Fill voids between raised carved surfaces and background with specified grout(s).
6. Inject cracks, seams and fissures with specified grout(s).
7. Build bridges and/or mortar caps from specified materials on the upward side of vermiculated quoins to eliminate water traps and improve drainage away from the stone.
8. Repair areas of loss with specified composite repair mortars.
9. Re-adhere small fragments of stone.
10. During work on adjacent masonry performed by others under this contract protect stones scheduled for conservation treatment from damage by other trades.
11. Apply specified hydro-phobic materials.
12. Submit final treatment documentation including archival photography, digital and conventional photography, written treatment reports and graphic representations on elevation drawings.

1.4 TERMS AND GOALS

A. Protection: The goal of protection is to prevent damage to the areas being conserved from work on adjacent sections of the masonry. An additional goal of protection is to safeguard against changes in temperature, humidity, sunlight or rainfall etc that could have a negative impact on conservation treatments.

B. Stabilization of loose material: The goal of stabilization is to secure all loose, semi-detached or friable areas against further loss during other conservation treatments. Stabilization materials shall be fully reversible and shall not damage substrate or alter the color or texture of the stone.

C. Grouting: The goal of grouting is to introduce compatible materials into narrow cracks and fissures in order to prevent or slow down the ingress of water into the cracks. Grouts must be compatible with the stone in composition and appearance.

D. Fills: The goal of filling voids on the surface of the stone is to eliminate or reduce areas such as the top surfaces of the vermiculated detail that collect and hold

water. Voids or areas of loss that do not trap or retain water or do not weaken adjacent areas may be left untreated. Fill materials should be compatible with the properties of the brownstone as well as its aged and weathered appearance.

E. Elimination of water traps: The goal of fills or bridges on the upward side of the projecting vermiculated detail is to eliminate locations where water can collect and to shed water away from the vulnerable surfaces of the stone. Fills or bridges in these locations should not be visible from the ground and should blend aesthetically with the adjacent stone when viewed from above.

F. Composite Mortar Repairs (Patching): Areas of loss too large to be treated with the approved fill material (greater than 1" x 1" x 1" deep) but too small to be treated with stone dutchmen will be repaired with the specified patching material. Patching material to match the existing brownstone as closely as possible in terms of color, texture and physical properties such as hardness, permeability and water vapor transmission.

G. Stone Consolidation: The purpose of stone consolidation treatments is to consolidate friable stone surfaces in order to effect other conservation treatments such as pinning, grouting and re-adhesion.

H. Hydo-phobic Surface Treatment: The purpose of the application of a hydro-phobic material to the decorative stones scheduled for conservation treatments is to reduce water absorption after the completion of other conservation treatments such as pinning, grouting and re-adhesion.

I. Documentation: The goals of documentation are to record conditions and treatments before, during and after implementation. Documentation to be combination of archival quality photography, conventional photography, written description and graphic representation on the elevation drawings.

1.5 QUALITY ASSURANCE

A. Stone Conservation Contractor: Work shall be performed by firm(s) employing masons, conservators and conservation technicians that have no less than five years of experience with comparable stone conservation projects. The Contractor shall submit references for five successfully completed projects of similar scope. The contractor shall also submit references for each of the proposed individuals who will be working on the project. References for individuals to include project names, addresses, year completed and scope of work that was performed by the individual on the project(s) of similar scope and significance to the work proposed on the Victoria Mansion.

B. The contractor shall maintain a steady crew for the duration of the project. Lead conservator is to be present on the job everyday that work under this section is performed.

C. All work shall comply with the United States Secretary of the Interior Standards for Preservation and Guidelines for Preserving Historic Buildings and the AIC Code of Ethics and Guidelines for Practice.

1.6 SUBMITTALS – GENERAL

A. Product Data: Submit manufacturer's technical data for each product indicated including recommendations for their application and use. Include test reports and certifications substantiating that products comply with requirements. Submit material safety data sheets. Keep a binder with copies of material safety data sheets for all approved products at the jobsite at all times.

B. Work Plan/Treatment Plan: Submit written program for each phase of the stone conservation treatments that includes a project schedule and sequence of work. Detail methods and approach for the treatment of each face of each quoin. Where submitted treatments differ from those in the contract documents, explain reasons for changes. Be prepared to documents prior use and effectiveness for all proposed changes in materials and treatments. Obtain written approval of treatment plan prior to starting work in this section.

C. Documentation: Provide pre-treatment, treatment and post-treatment archival quality black and white photographs as well as color slides for each face of each unit of stone treated under this section. Label each photograph with the appropriate stone number taken from the contract drawings. Contractor to also keep a book of color photographs or digital prints at the jobsite that record day to day activities. Photographs to be turned over to client at the completion of the project. Contractor to keep a daily log of treatments, weather including temperature and names of staff on site each day.

D. Shop Drawings: Locate each type of stone conservation treatment on an elevation drawing. Obtain written approval of treatments prior to starting work in this section.

E. Alternate Methods: If after the contact is awarded, alternate methods and materials to those indicated are proposed for any phase of the stone conservation treatments, the contractor shall provide a written description, including evidence of successful use on other comparable projects along with standard submittals outlined above. Written approval from the project conservator is required prior to substituting any materials or methods.

F. Record Samples: Provide physical samples of each type of product to be used that may be kept by the client as record samples. Samples include but are not limited to: Dry and cured mortar mixes, mortar components, shims, anchors, pins, grouts, adhesives and replacement stone.

1.7 MOCK UPS

A. Demonstrate each of the specified treatments in the presence of the project conservator. Vary procedure during mock –ups to conform to conditions in area being treated. Mock-ups to include but not be limited to: All protection steps, all grouting applications, elimination of water traps, stone dutchmen, composite mortar repairs, stabilization of friable materials, and application of hydro-phobic treatments. Obtain written approval of mock-ups prior to starting work in this section.

1.8 SHOP DRAWINGS

B. Submit drawings indicating where each proposed treatment will take place. Submit record drawings confirming where each treatment has taken place. Note changes from initial drawing submittal.

1.9 JOB CONDITIONS

A. Take whatever precautions are necessary to protect the Quoins from damage.

B. Prevent mortar, cleaning materials, dunnage, straps, patching materials, pads etc. from staining or abrading the stone.

1.10 ENVIRONMENTAL CONDITIONS

A. No cleaning, pointing, patching, lime fills or structural repairs shall take place when the air temperature or stone temperature is 45 degree Fahrenheit or below.

B. Stone consolidation and the application of hydro-phobic materials to take place within the temperature and humidity ranges specified by the manufacturer.

PART 2 – PRODUCTS

2.1 MATERIALS GENERAL

A. Comply with referenced standards and other requirements indicated applicable to each type of material required.

2.2 FILL MATERIALS

A. Hydraulic Lime: Naturally Hydraulic Lime mixed with fine brown sand and tinted with inorganic pigments so that cured fill matches the appearance of the existing weathered brownstone. Base mix to be 1 part Hydraulic lime to 3 parts fine sand. Vary lime to aggregate ratios and water content as required for individual conditions.

1. St Astier naturally Hydraulic Limes from deGruchy Masonry 266 Rockhill Road Quakertown, Pa 18951 (866) 626-2434 or approved equal.

B. Bulked Acrylic (Paraloid) B-72 (Ethyl methacrylate copolymer) dissolved in acetone. Percentage of acrylic solids to be between 5% and 10% by volume. Mix dissolved resin with fine and coarse brown sands and/or crushed brownstone to obtain workable mixture that resembles the appearance of the aged and weathered brownstone when cured.

C. Polymer modified cementitious fills for building mortar caps and bridges over the top surface of delaminated areas.

1. Custom System 45 by Edison Coatings, Inc. 3 Northwest Drive, Plainville, CT 06062 (860) 747-2220.

D. Pigments: Chemically pure mineral oxides, alkali proof and light fast as manufactured by Solomon Grind – Chem Services, Inc of Springfield, IL., Lander-Sigal or approved equal.

2.3 GROUT MATERIALS

A. Lime Grouts for Cracks, Seams and Fissures greater than 1/8" in Width.

1. High Calcium Lime (Fat Lime) Codex Hydrate from Mississippi Lime Co. (573) 883-4034 or approved equal. Please note: Hydrated bag lime or Dolimitic limes will not work in this application.

2. Mix Design for High Calcium Lime Grout: Aged fat lime putty mixed with fine brown sand and tinted with inorganic pigments so that cured fill matches the appearance of the existing weathered brownstone. Base mix to be 1 part aged lime putty to 3 parts fine sand. Vary lime to aggregate ratios and water content as required for individual conditions.

B. Hydraulic Lime: Naturally Hydraulic Lime (NHL2- Feebly Hydraulic) mixed with fine brown sand and tinted with inorganic pigments so that cured fill matches the appearance of the existing weathered brownstone. Base mix to be 1 part Hydraulic lime to 3 parts fine sand. Vary lime to aggregate ratios and water content as required for individual conditions.

1. St Astier Natural Hydraulic Limefrom deGruchy Masonry 266 Rockhill Road Quakertown, Pa 18951 (866) 626-2434 or approved equal.

C. Acrylic (Paraloid) B-72 (Ethyl methacrylate copolymer) dissolved in acetone. Percentage of acrylic solids to vary from 2.5% to 10 % by volume. Initial applications to start at 2.5% solutions and to increase in increments to 10%. B-72

to be used as a grout material in locations where it will not be exposed on the surface of the stone. Inject using hypodermic needles and syringes.

D. Polymer modified cementitious grouts: Jahn M-30 for cracks and fissures up to 3/16 inch in average width, Jahn M-40 for cracks 3/16 inch up 9/16 inch in average width. Grouts to be tinted to match the appearance of the aged and weathered brownstone. Jahn products available from Cathedral Stone Products, Inc 7266 Park Circle, Hanover, Maryland 21076 (800) 684-0901.

E. Epoxy Injection Grouts: Moisture Insensitive Sikadur 35, Hi- Mod LV low viscosity and Sikadur 52 Super low Viscosity Injection Resin by Sika Products 14 Summit Place Suite 201, Branford, CT 06405 (203) 488-7706 or (800) 933-Sika or approved equal.

F. Pigments: Chemically pure mineral oxides, alkali proof and light fast as manufactured by Solomon Grind – Chem Services, Inc of Springfield, IL., Lander-Sigal or approved equal.

2.4 ADHESIVES

A. For Non-Structural Repairs: Bulked Acrylic (Paraloid) B-72 (Ethyl methacrylate copolymer) dissolved in acetone. Percentage of acrylic solids to be between 25% and 50% by volume. Available in tube form in the proper percentages for use as an adhesive from conservation supply houses.

B. For structural repairs, attachment of pins: Moisture Insensitive Sikadur 31 Hi-Mod Gel Structural Epoxy Paste by Sika Products 14 Summit Place Suite 201, Branford, CT 06405 (203) 488-7706 or (800) 933-Sika or approved equal.

C. For Structural Reattachment of Stone: Akemi 2000 series and 5000 series by Akemi North America.

2.5 STABILIZATION OF FRIABLE AREAS

A. Acrylic (Paraloid) B-72 (Ethyl methacrylate copolymer) dissolved in acetone. Percentage of acrylic solids to vary from 2% to 10% by volume. Initial applications to start at 2% solutions and to increase in increments to 5% and then if required to 10%.

B. Water soluble cellulose paste: Wall paper paste or other water soluble adhesive pastes that do not contain synthetic resins. Available from home restoration supply stores.

C. High Strength Tissue paper: Japanese tissue paper or lens cleaning paper.

2.6 REPLACEMENT STONE AND STONE FOR DUTCHMEN REPAIRS

A. All replacement stone and stone used for dutchmen repairs shall be matching Portland, CT Brownstone as quarried by Portland Brownstone Quarries. Contact Mike Meehan (860) 342-2920.

2.7 PINS, ANCHORS AND THREADED RODS

A. Stainless steel threaded rods, smooth bar or flat of various sizes - Grade 316.

2.8 HYDRO-PHOBIC TREATMENT

A. Natural Stone Treatment as manufactured by: PROSOCO, Inc. New England Representative: Ralph Morgan (781) 294-1315.

2.9 BRIDGE MATERIALS FOR THE ELIMINATION OF WATER TRAPS

A. Hydraulic Lime: Naturally Hydraulic Lime (NHL2- Feebly Hydraulic) mixed with fine brown sand and tinted with inorganic pigments so that cured fill matches the appearance of the existing weathered brownstone. Base mix to be 1 part Hydraulic lime to 3 parts fine sand. Vary lime to aggregate ratios and water content as required for individual conditions.

1. St Astier Natural Hydraulic Limefrom deGruchy Masonry 266 Rockhill Road Quakertown, Pa 18951 (866) 626-2434 or approved equal.

B. Acrylic (Paraloid) B-72 (Ethyl methacrylate copolymer) dissolved in acetone. Percentage of acrylic solids to vary from 2.5% to 10 % by volume. Initial applications to start at 2.5% solutions and to increase in increments to 10%. B-72 to be used as a grout material in locations where it will not be exposed on the surface of the stone. Inject using hypodermic needles and syringes.

C. Polymer modified cementitious grouts:

1) Jahn M-40 for indentations 3/16 inch up to 9/16 inch in average depth. Grouts to be tinted to match the appearance of the aged and weathered brownstone. Jahn products available from Cathedral Stone Products, Inc 7266 Park Circle, Hanover, Maryland 21076 (800) 684-0901.
2) Custom System 45 by Edison Coatings, Inc. 3 Northwest Drive, Plainville, CT 06062 (860) 747-2220

PART 3 – EXECUTION

3.1 GENERAL

A. Comply with manufacturer's recommendations for safe and effective usage of all products.

3.2 STABILIZATION OF FRIABLE AREAS

A. To secure loose or friable materials in place prior to completing other treatments:

1. Wet surface with solvent or, if stabilization of surfaces that have separated or delaminated is required, flush void with solvent.
2. Apply 2% solution of B-72 in acetone with paintbrush or syringe.
3. When material has saturated stone apply tissue paper that has been pre-wetted with 2% solution of B-72 is required to secure or protect loose material.
4. Apply additional tissue paper and B-72 as required to secure or protect loose material.
5. Where protection and securing of loose material but not strengthening of friable stone are required, use cellulose paste such as the type used for adhering wall paper in conjunction with high strength tissue paper.
6. Temporary stabilization measures shall be completely removed using water or the appropriate solvent (depending on the materials) when the area has been permanently stabilized or the removal of the stabilization materials is required to complete other treatments.

3.3 FILLS AND ELIMINATION OF WATER TRAPS

A. Lime Putty and Hydraulic Lime Fills: For use on the outer portions of cracks and fissures that have been partially filled with epoxy or acrylic resins.

1. Verify that previously applied resins have cured by probing with a needle probe.
2. Wet the surface of the stone.
3. Apply high calcium lime fill material tinted to match the weathered stone.
4. Tool to achieve maximum water shedding.
5. Moist cure lime fills for 24 hours. Scrape out and reapply with altered mix if fill exhibits excessive shrinkage.

B. Bulked Acrylic (Paraloid) B-72 (Ethyl methacrylate copolymer): For use as a fill material where maximum adhesion of the fill is required.

1. Clean surface with solvent.
2. Mix dissolved acrylic resin with red/brown sand and/or crushed brownstone to form a thick paste.
3. Apply mixture in layers.
4. Tool to achieve maximum water shedding.

5. Express sand or crushed brownstone on tacky surface to match adjacent area of weathered stone.

C. Polymer modified cementitious fills: Jahn M40 Tinted to match weathered stone. For use on voids ranging from 3/16" to 9/16" where high pressure injection is not required or would be detrimental.

1. Wash surface with water and remove all dust.
2. Mix Jahn M40 as per manufacturer's directions.
3. If injecting M40 –wet crack with water and immediately inject grout.
4. If applying to a surface void- wet stone first.
5. Remove overflow with clean sponge and water-repeat water rinsing as required.
6. If cured M40 does not match the appearance of the adjacent stone, recess M40 to a depth 2.5 times the crack width and apply tinted lime grout or bulked B-72 with colored sand as required.

D. To eliminate water traps carry above fill materials over top surface of vermiculation. When material has cured to a plastic state compress and trim or tool to provide surface that sheds water over the edge of the projecting detail.

1. Materials used for the elimination to be the same as or compatible with materials used to fill adjacent crack or void.

3.4 GROUTING

A. B-72: For use where non-structural adhesion is required.

1. Using a hypodermic needle, inject solvent into crack or fissures.
2. After solvent has evaporated inject Acrylic B-72 2%-5 % by volume in solvent.
3. Wipe surface clean and remove any excess with solvent.
4. Hold acrylic back ½ inch from face of seam with clay.
5. Remove clay and grout seam face with high calcium lime grout tinted to match cleaned stone or bulked and tinted B-72 as required to achieve durable water shedding seam.

B. Epoxy Injection Grouting: Where structural adhesion is required.

1. Stabilize area prior to drilling port holes.
2. Drill port holes if required.
3. Flush holes and crack with solvent.
4. Inject Sikadur 35 or Sikadur 52 under low pressure using large hypodermic needles or other injection devices.
5. Use clean clay or other non-staining filler to hold epoxy grout ½' away from face of stone and to provide a dam for the flow of the material.

6. Immediately remove any grout that comes to the surface with solvent.
7. Grout seam face with high calcium lime grout tinted to match weathered stone or bulked acrylic resin.

C. Polymer Modified Cementitious Grouts: Jahn M-30 for cracks and fissures up to 3/16 inch in average width, Jahn M-40 for cracks 3/16 inch up 9/16 inch in average width.

1. Stabilize area prior to drilling port holes.
2. Drill port holes if required.
3. Flush crack or wet surface with water.
4. Follow manufacture's instructions for mixing and application.
5. Use clay or sealant dams as required.
6. Clean overflow with water and sponge immediately- do not allow to dry on surface.

3.5 PINNING AND ADHERING

A. For structural repairs.

1. Indicate all pins, strap anchors, dowels etc. on shop drawing submittals.
2. Use only approved non-ferrous anchors and approved adhesives.
3. Dry set units to be pinned to establish proper mating of surfaces.
4. For blind pins, drill holes in surfaces to be mated and dry set units with pins in place to determine that surfaces are still properly mated.
5. Apply approved adhesive to holes on one side of the repair and insert pins. Mate surfaces without placing any adhesive on other mating surface or pinholes.
6. Allow adhesive in pinhole to set with the surfaces clamped in place in order to register pins.
7. Remove clamps and apply moisture resistant adhesive to other pinhole and spot apply to mating surfaces.
8. Apply approved grout to mating surfaces and reclamp surfaces pushing grout out of seams.
9. Wipe excess grout from face and allow adhesive to set.
10. Re-grout seams where there are voids. Brush dry grout from face of stone and wash face with clean water once the grout has cured.

3.6 COMPOSITE MORTAR REPAIRS

A. For small areas of loss on non-projecting surfaces.

1. Apply patching compounds only to stones where indicated on contract drawings or in approved treatment plan.
2. Follow manufacture's instructions for mixing and use but use minimal keying to avoid excess removal or original stone.

3. Patches to match the color and appearance of the weathered brownstone when cured.

3.7 STONE DUTCHMEN

A. For large areas of loss or losses on projecting surfaces.

1. Indicate areas to receive dutchman and methods of anchoring Dutchman on shop drawing submittals.
2. Match replacement stone to existing stone in each area. Match existing stone in terms of color, texture, grain size, shell inclusion, bedding plane orientation and finish.
3. Carefully cut away deteriorated stone or composite mortar repair.
4. Dry set dutchman blank and pins in void to ensure tight seams and proper fit.
5. Finish cutting, shaping, carving of dutchman prior to setting.
6. Set stone following specifications in section 3.5 for structural pinning of stone.
7. Do not use adhesive on seams of stone dutchmen- only in pin locations.
8. Grout seams using tinted high calcium lime or polymer modified cementitious grout as per section 3.4

3.8 HYDRO-PHOBIC TREATMENT

A. For areas selected for treatment in the conservation treatment plan.

1. Apply Hydro-phobic materials as per manufacturer's specifications.
2. Protect all glass and metal elements from contact with water repellent.
3. Apply water repellent to at totally dry surface.
4. Saturate surface and allow material to be absorbed in stone. Brush out or soak up puddles or excess material.
5. Wait five minutes and reapply in a second saturating application.
6. Protect stone for 4-6 hours after application.

END OF SECTION

SECTION 04552

MASONRY PRESERVATION SCHEDULE

PART 1 – GENERAL

1.1 Related Documents

A. Drawings and general provisions of the Contract, including General and Supplementary conditions apply to this section.

PART 2 – PRODUCTS

Not Applicable

PART 3 – EXECUTION

Not Applicable

PART 4 – MASONRY PRESERVATION SCHEDULE

1.1 Abbreviations used in the Preservation Schedule

A. Elevation (A) refers to the wide face of an existing stone.
B. Elevation (B) refers to the narrow face of an existing stone.
C. Treatment "R": Replace.
D. Treatment "NT": No Treatment.
E. Treatment "FP": Face Pin.
F. Treatment "H": Hone.
G. Treatment "D": Dutchman.
H. Treatment "C": Grout Fissures or Seams.
I. Treatment "T": Light Tooling.

1.2 Masonry Preservation Schedule

A. See following pages 2 through 16.

Unit Num.	Unit Type	Elevation	Treatment	Comments
151	ashlar	south (A) west (B)	R	Replace
152	ashlar	south	R	Replace
153	ashlar	south	NT	Remove and reinstall
154	ashlar	south	NT	Remove and reinstall
155	ashlar	south (A) east (B)	FP	Face Pin East Face
156	belt molding	south (B) west (A)	R	Replace
157	belt molding	south	R	Replace
158	belt molding	south	R	Replace
159	belt molding	south	R	Replace
160	belt molding	south	R	Replace
161	belt molding	south (B) east (A)	R	Replace
162	belt molding	south (B) east (A)	R	Replace
163	ashlar	south (A) west (B)	R	Replace
164	ashlar	south	NT	Remove and reinstall
165	ashlar	south	R	Replace
166	ashlar	south	NT	Remove and reinstall
167	ashlar	south (A) east (B)	H	Remove, hone and reinstall
168	ashlar	south (B) west (A)	FP	Remove. Pin west face, reinstall
169	ashlar	south	NT	Remove and reinstall
170	multi-arched window lintel	south	R	Replace
171	ashlar	south	R	Replace
172	ashlar	south (B) east (A)	FP	Remove, pin east face, reinstall

Unit Num.	Unit Type	Elevation	Treatment	Comments
173	belt molding	south (A) west (B)	R	Replace
174	abacus	south	R	Replace
175	abacus	south	R	Replace
176	abacus	south	R	Replace
177	abacus	south	R	Replace
178	belt molding	south (A) east (B)	R	Replace
179	ashlar	south (B) west (A)	R	Replace
180	ashlar	south	R	Replace
181	capital	south	R	Replace
182	capital	south	R	Replace
183	capital	south	R	Replace
184	capital	south	R	Replace
185	ashlar	south	R	Replace
186	ashlar	south (B) east (A)	R	Replace
187	ashlar	south (A) west(B)	D	Full face dutchman –south face
188	window jamb	south	R	Replace
189	window mullion	south	R	Replace
190	window mullion	south	R	Replace
191	ashlar	south	R	Replace
192	ashlar	south (A) east (B)	H	Remove, hone both faces, reinstall
193	ashlar	south (A) west (B)	H	Full face dutchman west face
194	ashlar	south	H	Remove, hone, reinstall
195	ashlar	south	NT	Remove and reinstall
196	ashlar	south (B) east (A)	D	Full Dutchman east face

Unit Num.	Unit Type	Elevation	Treatment	Comments
197	ashlar	south (A) west (B)	D	Full Dutchman south face
198	ashlar	south (A) east (B)	D	Full Dutchman south face
199	ashlar	south (B) west (A)	R	Replace
200	ashlar	south	R	Replace
201	ashlar	south	NT	Remove and reinstall
202	ashlar	south (B) east (A)	H	Remove, hone both faces, reinstall
203	belt molding	south (A) west (B)	R	Replace
204	window sill	south	R	Replace
205	belt molding	south (A) east (B)	NT	Remove and reinstall
206	vermiculated quoin	south (A) west (B)	C	A: Dutchman lower right Grouting at fissures B: Grouting at fissures
207	sill bracket	south	R	Replace
208	ashlar	south	R	Replace
209	sill bracket	south	R	Replace
210	ashlar	south	R	Replace
211	sill bracket	south	R	Replace
212	ashlar	south	R	Replace
213	sill bracket	south	R	Replace
214	vermiculated quoin	south (A) east (B)	R	Replace Quoin
215	vermiculated quoin	south (B) west (A)	C	A: Grout seam at upper margin B: Grout seam at upper margin
216	ashlar	south	R	Replace
217	ashlar	south	R	Replace
218	ashlar	south	R	Replace

Unit Num.	Unit Type	Elevation	Treatment	Comments
219	vermiculated quoin	south (B) east (A)	C	A: No Treatment B: Grouting at connection of vermiculation and mortar caps. Alternate: Full face carved dutchman
220	vermiculated quoin	south (A) west (B)	NT	No Treatment
221	ashlar	south	R	Replace
222	ashlar	south	R	Replace
223	vermiculated quoin	south (A) east (B)	C	A: Stabilize loose material, grout at vermiculation and mortar caps. Alt: Full face carved dutchman B: Covered with flashing – No Treatment
224	vermiculated quoin	south (B) west (A)	C	A: Grout seams at margin B: Grout seams at margin
225	ashlar	south	R	Replace
226	ashlar	south	R	Replace
227	ashlar	south	R	Replace
228	vermiculated quoin	south (A) west (B)	C	A: Grout seams on margin B: No Treatment
229	ashlar	south	R	Replace
230	ashlar	south	R	Replace
231	vermiculated quoin	south	C	A: Grout seams on upper and lower margins B: Grout seams on upper and lower margins
232	ashlar	south	R	Replace
233	ashlar	south	R	Same as #232
234	ashlar	south	R	Replace
235	ashlar	south	R	Replace
236	vermiculated quoin	south (A) west (B)	C	A: Grout seams at upper and lower margin. B: Grout seams at margin
237	ashlar	south	R	Replace
238	bull's-eye window surround	south	R	Replace
239	bull's-eye window surround	south	R	Replace
240	ashlar	south	R	Replace

Unit Num.	Unit Type	Elevation	Treatment	Comments
241	vermiculated quoin	south (B) west (A)	C	A: Stabilize loose material, dutchman lower left 16"L x 10"H x 3.5"D, grout vermiculation B: No treatment
242	ashlar	south	R	Replace
243		south		Part of #244
244	bull's-eye window surround	south	R	Replace
245		south		Part of #244
246	ashlar	south	R	Replace
247	vermiculated quoin	south (A) west (B)	C	A: Stabilize loose material, grout vermiculation, B: Stabilize loose material, grout vermiculation,
248	ashlar	south	R	Replace
249	ashlar	south	R	Replace
250	ashlar	south	R	Replace
251	vermiculated quoin	south (A) west (B)	C	A: Stabilize loose material, light tooling at margins, grout and pin vermiculation B: No treatment
252	ashlar	south	FP	Face Pin
252.5	ashlar	south	R	Replace
253	window pediment	south	R	Replace
254	ashlar	south	R	Replace
254.5	ashlar	south	R	Replace
255	vermiculated quoin	south (A) west (B)	C	A: Stabilize loose material, grout fissures at upper and lower margins, grout vermiculation B: Stabilize loose material, Grout vermiculation
256	window entablature	south	R	Replace
257	ashlar	south	R	Replace
258	vermiculated quoin	south (B) west (A)	C	A: Full face dutchman B: No treatment
259	ashlar	south	R	Replace
260	capital	south	R	Replace
261	window lintel	south	R	Replace

Unit Num.	Unit Type	Elevation	Treatment	Comments
262	capital	south	R	Replace
263	ashlar	south	R	Replace
264	vermiculated quoin	south (A) west (B)	C	A: Stabilize loose material, grout vermiculation Alt side: A Full face dutchman B: Full face dutchman (alternate: replace quoin)
265	pilaster	south	R	Replace
265.1	window jamb	south	R	Replace
265.2	ashlar	south	R	Replace
265.3	ashlar	south	R	Replace
265.4	ashlar	south	R	Replace
265.5	ashlar	south	R	Replace
266	pilaster	south	R	Replace
266.1	window jamb	south	R	Replace
266.2	ashlar	south	R	Replace
266.3	ashlar	south	R	Replace
266.4	ashlar	south	R	Replace
266.5	ashlar	south	R	Replace
266.6	ashlar	south	R	Replace
267	ashlar	south	R	Replace
268	vermiculated quoin	south (B) west (A)	C	A: Full face dutchman B: Stabilize loose material, Grout vermiculation
269	ashlar	south	FP	Face Pin
270	ashlar	south	R	Replace
271	vermiculated quoin	south (A) west (B)	C	A: Grout seams at margin B: Full face dutchman
272	ashlar	south	R	Replace
273	vermiculated quoin	south (B) west (A)	C	A: Full face dutchman B: Stabilize loose material, grout seams at margin, grout vermiculation
274	ashlar	south	R	Replace
275	ashlar	south	R	Replace

Unit Num.	Unit Type	Elevation	Treatment	Comments
276	vermiculated quoin	south (A) west (B)	C	A: Stabilize loose material, dutchman at upper margin, grout vermiculation B: Full face dutchman
277	ashlar	south	R	Replace
278	vermiculated quoin	south (B) west (A)	C	A: NT B: Dutchman at upper margin
279	ashlar	south	NT	Remove and reinstall
280	window sill	south	R	Replace
281	ashlar	south	R	Replace
282	ashlar	south	NT	Remove and reinstall
283	ashlar	south		flashing
761	ashlar	east	R	Replace
762	ashlar	east	NT	Remove and reinstall
763	ashlar	east	NT	Remove and reinstall
764	ashlar	east	H	Remove, hone and reinstall
765	ashlar	east (B) north (A)	H	Remove, hone and reinstall
766	belt molding	east	R	Replace
767	belt molding	east	R	Replace
768	belt molding	east	R	Replace
769	belt molding	east (A) north (B)	R	Replace
770	ashlar	east	R	Replace
771	ashlar	east	NT	Remove and reinstall
772	ashlar	east	NT	Remove and reinstall
773	ashlar	east (B) north (A)	FP	A: Face Pin B: NT
774	belt molding	east	R	Replace
775	multi-arched window lintel	east	D	Multiple dutchman at arches (alternate: replace whole stone and move joints)

Unit Num.	Unit Type	Elevation	Treatment	Comments
776	ashlar	east (A) north (B)	NT	Remove and reinstall
777	abacus	east	R	Replace
778	abacus	east	NT	Remove and reinstall
779	abacus	east	NT	Remove and reinstall
780	abacus	east	R	Replace
781	belt molding	east	NT	Remove and reinstall
782	belt molding	east (B) north (A)	R	Replace
783	capital	east	FP	Face pin
784	capital	east	NT	Remove and reinstall
785	capital	east	NT	Remove and reinstall
786	capital	east	NT	Remove and reinstall
787	ashlar	east (A) north (B)	NT	Remove and reinstall
788	ashlar	east	R	Replace
789	window jamb	east	R	Replace
790	window mullion	east	R	Replace
791	window mullion	east	R	Replace
792	window jamb	east	R	Replace
793	ashlar	east	NT	Remove and reinstall
794	ashlar	east (B) north (A)	R	Replace
795	ashlar	east (A) north (B)	NT	Remove and reinstall
796	ashlar	east	NT	Remove and reinstall
797	ashlar	east	NT	Remove and reinstall
798	ashlar	east (A) north (B)	NT	Remove and reinstall
799	ashlar	east (A) north (B)	H	Remove, hone and reinstall
800	belt molding	east	R	Replace

Unit Num.	Unit Type	Elevation	Treatment	Comments
801	window sill	east	NT	Remove and reinstall
802	belt molding	east	R	Replace
803	belt molding	east (B) north (A)	NT	Remove and reinstall
804	sill bracket	east	T	Remove, light tooling, reinstall
805	sill bracket	east	T	Remove, light tooling, reinstall
806	sill bracket	east	T	Remove, light tooling, reinstall
807	sill bracket	east	T	Remove, light tooling, reinstall
808	ashlar	east	R	Replace
809	ashlar	east	R	Replace
810	ashlar	east	R	Replace
811	ashlar	east	R	Replace
812	ashlar	east	R	Replace
813	vermiculated quoin	east (B) north (A)	C	A: Stabilize loose material, grout vermiculation B: Stabilize loose material, grout existing dutchman seam, grout vermiculation
814	ashlar	east	R	Replace
815	ashlar	east	R	Replace
816	vermiculated quoin	east (A) north (B)	C	A: Grout seams B: NT (leave in place)
817	ashlar	east		flashing
818	ashlar	east		flashing
819	ashlar	east		flashing
820	ashlar	east (A) north (B)		flashing
1135	ashlar	north	R	Replace
1136	ashlar	north	R	Replace
1137	ashlar	north	NT	Remove and reinstall
1138	ashlar	north (A) west (B)	D	Dutchman west face

Unit Num.	Unit Type	Elevation	Treatment	Comments
1139	belt molding	north	R	Replace
1140	belt molding	north	R	Replace
1141	belt molding	north	R	Replace
1142	belt molding	north	R	Replace
1143	belt molding	north	R	Replace
1144	belt molding	north (A) west (B)	R	Replace
1145	ashlar	north	R	Replace
1146	ashlar	north	R	Replace
1147	ashlar	north (A) west (B)	D	Full dutchman north face
1148	ashlar	north	NT	Remove and reinstall
1149	multi-arched window lintel	north	D	Dutchman at arches (alternate: remove and replace)
1150	ashlar	north	NT	Remove and reinstall
1151	ashlar	north (A) west (B)	R	Replace
1152	abacus	north	R	Replace
1153	abacus	north	R	Replace
1154	abacus	north	R	Replace
1155	abacus	north	R	Replace
1156	belt molding	north (A) west (B)	R	Replace
1157	ashlar	north	R	Replace
1158	capital	north	R	Replace
1159	capital	north	R	Replace
1160	capital	north	R	Replace
1161	capital	north	R	Replace
1162	ashlar	north	R	Replace
1163	ashlar	north (B) west (A)	R	Replace

Unit Num.	Unit Type	Elevation	Treatment	Comments
1164	window jamb	north	R	Replace
1165	window mullion	north	R	Replace
1166	window mullion	north	R	Replace
1167	window jamb	north	R	Replace
1168	ashlar	north (A) west (B)	D	Full dutchman north face
1169	ashlar	north	R	Replace
1170	ashlar	north	NT	Remove and reinstall
1171	ashlar	north (B) west (A)	D	Full dutchman west face
1172	ashlar	north (A) west (B)	D	Full dutchman north face
1173	ashlar	north	R	Replace
1174	ashlar	north	H	Remove, hone and reinstall
1175	ashlar	north (B) west (A)	D	Full dutchman west face
1176	window sill	north	D	Dutchman at west lower edge approx 3"h x 18"L x 9"D – Pin delaminated stone with 3 pins.
1177	belt molding	north (A) west (B)	R	Replace
1178	sill bracket	north	NT	Remove and reinstall
1179	sill bracket	north	NT	Remove and reinstall
1180	sill bracket	north	NT	Remove and reinstall
1181	sill bracket	north	NT	Remove and reinstall
1182	ashlar	north	R	Replace
1183	ashlar	north	R	Replace
1184	ashlar	north	R	Replace
1185	vermiculated quoin	north (A) west (B)	C	A: Stabilize loose material, grout dutchman seam, grout vermiculation B: Full dutchman
1186	ashlar	north	R	Replace
1187	ashlar	north	R	Replace

Unit Num.	Unit Type	Elevation	Treatment	Comments
1188	ashlar	north	R	Replace
1189	vermiculated quoin	north (B) west (A)	C	A: Tool upper margin B: Stabilize loose material, grout seams at upper margin, grout vermiculation
1190	ashlar	north	flashing	flashing
1191	ashlar	north	flashing	flashing
1192	quoin	north (A) west (B)	flashing	A: Covered in flashing B: NT
1496	ashlar	west	R	Replace
1497	ashlar	west	NT	Remove and reinstall
1498	ashlar	west	R	Replace
1499	ashlar	west	R	Replace
1500	belt molding	west	R	Replace
1501	belt molding	west	R	Replace
1502	belt molding	west	R	Replace
1503	ashlar	west	NT	Remove and reinstall
1504	ashlar	west	NT	Remove and reinstall
1505	ashlar	west	NT	Remove and reinstall
1506	multi-arched window lintel	west	D	Dutchman at arches (alternate: remove and replace)
1507	belt molding	west	R	Replace
1508	abacus	west	R	Replace
1509	abacus	west	R	Replace
1510	abacus	west	R	Replace
1511	abacus	west	R	Replace
1512	belt molding	west	R	Replace
1513	capital	west	R	Replace
1514	capital	west	R	Replace
1515	capital	west	R	Replace

Unit Num.	Unit Type	Elevation	Treatment	Comments
1516	capital	west	R	Replace
1517	ashlar	west	R	Replace
1518	window jamb	west	R	Replace
1519	window mullion	west	R	Replace
1520	window mullion	west	R	Replace
1521	window jamb	west	R	Replace
1522	ashlar	west	FP	Remove, face pin, reinstall
1523	ashlar	west	NT	Remove and reinstall
1524	ashlar	west	R	Replace
1525	belt molding	west	R	Replace
1526	window sill	west	C	Dutchman at edge – 3"h x 18"L x 9"D plus 6 face pins at delaminated stone
1527	belt molding	west	R	Replace
1528	sill bracket	west	R	Replace
1529	sill bracket	west	R	Replace
1530	sill bracket	west	R	Replace
1531	sill bracket	west	R	Replace
1532	ashlar	west	H	Remove, hone, reinstall
1533	ashlar	west	H	Remove, hone, reinstall
1534	ashlar	west	R	Replace
1535	ashlar	west	R	Replace
1536	ashlar	west	H	Remove, hone, reinstall
1537	ashlar	west	H	Remove, hone, reinstall
1538	ashlar	west	NT	Remove and reinstall
1539	ashlar	west	NT	Remove and reinstall
1540	ashlar	west	NT	Remove and reinstall
1541	ashlar	west	R	Replace
1542	ashlar	west (A) north (B)	R	Replace

Unit Num.	Unit Type	Elevation	Treatment	Comments
1543	ashlar	west	R	Replace
1544	ashlar	west	R	Replace
1545	ashlar	west	R	Replace
1546	ashlar	west	R	Replace
1547	ashlar	west	R	Replace
1548	ashlar	west	R	Replace
1549	ashlar	west	R	Replace
1550	ashlar	west		Part of #1549
1551	ashlar	west		Part of #1552
1552	ashlar	west	R	Replace
1553	ashlar	west	R	Replace
1554	bull's-eye window surround	west	R	Replace
1555	bull's-eye window surround	west	R	Replace
1556	bull's-eye window surround	west	R	Replace
1557	ashlar	west	R	Replace
1558	ashlar	west	R	Replace
1559	ashlar	west	R	Replace
1560	ashlar	west		Part of #1556
1561	ashlar	west		Part of #1556
1562	ashlar	west	R	Replace
1563	ashlar	west	R	Replace
1564	ashlar	west	R	Replace
1565	ashlar	west	R	Replace
1566	ashlar	west	R	Replace
1567	ashlar	west	R	Replace
1568	ashlar	west	R	Replace
1569	ashlar	west	R	Replace

Unit Num.	Unit Type	Elevation	Treatment	Comments
1570	ashlar	west	R	Replace
1571	ashlar	west	R	Replace
1572	ashlar	west	R	Replace
1573	ashlar	west	R	Replace
1574	ashlar	west	H	Remove, hone, reinstall
1575	ashlar	west	H	Remove, hone, reinstall
1576	arched window lintel	west	R	Replace
1577	arched window lintel	west	R	Replace
1578	window jamb	west	NT	Remove and reinstall - clean
1579	window jamb	west	NT	Remove and reinstall - clean
1580	window sill	west	R	Replace
1581	sill bracket	west	NT	Remove and reinstall - clean
1582	sill bracket	west	NT	Remove and reinstall - clean
1583	ashlar	west	R	Replace
1584	ashlar	west	H	Remove, hone, reinstall
1585	ashlar	west	R	Replace
1586	ashlar	west	H	Remove, hone, reinstall
1587	ashlar	west	H	Remove, hone, reinstall
1588	ashlar	west	R	Replace
1589	ashlar	west	R	Replace
1590	ashlar	west	R	Replace
1591	ashlar	west	R	Replace
1592	ashlar	west	R	Replace
1593	ashlar	west	R	Replace
1594	ashlar	west	R	Replace
1595	ashlar	west	R	Replace
1596	ashlar	west	R	Replace
1597	ashlar	west		flashing
1598	ashlar	west		flashing

existing wall, as directed by Architect, to demonstrate quality of materials and workmanship.

a. The Contractor shall install a mock-up of each of type of preservation work after award of the Contract and prior to the commencing of all work.

b. No work shall commence on the installation of the mock-up until all appropriate material samples have been approved.

c. The location of the mock-up shall be selected by the Architect and shall include conditions to be anticipated during the repair work.

d. After approval of the completed mock-up it shall be an integral part of the finished work.

e. Mock-up shall include provisions for containing dust created during masonry preservation processes. Include method for collecting and disposing of run-off from rinsing operations. See requirements under Paragraph 1.09, below.

C. Source of Materials: Obtain materials for masonry preservation from a single source for each type of material required (grout materials, cement, sand, etc.) to ensure match of quality, color, and texture.

1.06 SUBMITTALS

A. Preservation Program:

1. Submit written program for each phase of preservation process, including sequencing, coordination between trades, and schedule for each phase of the work. Describe in detail materials, methods and equipment to be used for each phase of preservation work.

2. Shop Drawings:

Submit for approval shop drawings showing the location, size and anchoring detail of each stone dutchman.

B. Dust Control Program

1. Prior to commencing masonry preservation work, Contractor shall submit written program for control of stone dust, water runoff, etc. during tooling, honing and stone replacement operations.

Program shall include protection at windows, air intakes and other building openings to minimize disruption of occupant's continuous use

at all interior spaces. If necessary, all windows, air intake vents, and air conditioning vents must be covered or temporary ductwork provided, to prevent stone dust from entering air intake system.

2. Environmental Regulations: Describe testing, handling, treatment, containment, collection, transport, disposal, and discharge of hazardous waste. Submit applicable local environmental regulations.

3. Protection: Describe methods for protecting surrounding areas, building occupants, pedestrians, vehicles, and adjacent building surfaces from contact with falling stone chips, dust, and rinse water during the course of the work.

4. Test of Protection: Test protection program in the presence of the project architect prior to starting any work. Make modifications to the protection program and retest until all leaks and defects have been corrected.

C. Product Data: Submit manufacturers' technical data for each product indicated including recommendations for their application and use. Include test reports and certifications substantiating that products comply with requirements. Submit Material Safety Data Sheets for each product used.

D. Samples: Submit, for verification purposes, prior to mock-up erection, three samples each of the following:

1. Each type of tooling and honing, on brownstone samples.

2. Each type of cementitious patching material, applied to a 12 inch by 12 inch plywood panel, showing range of color and proposed texture. Repeat a sample of the selected color in a masonry unit as directed by the project architect.

3. Each type of mortar for grouting Dutchmen.

4. Each type of anchor.

5. Each type of adhesive.

E. Calculations: Submit structural calculations for proposed stone anchors at dutchmen, signed and sealed by a structural engineer licensed in the state of Maine.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to site in manufacturer's original and unopened containers and packaging, bearing labels as to type and names of products and manufacturers.

PART 2 – PRODUCTS

2.01 GROUT FOR DUTCHMEN SEAMS

A. Materials: Jahn M-40 or approved equal tinted to match the brownstone.

2.02 CEMENTITIOUS PATCHING MATERIALS

A. Premixed cementitious patching material formulated to match the color and texture of the existing masonry that does not contain any acrylic, latex, or other synthetic polymer additives. The mortar need only be mixed with water at the site. The mortar must be vapor permeable, frost and salt resistant, shrink resistant, and be physically compatible with the substrate, including, but not limited to porosity, tensile, and compressive strength.

1. Factory-Mixed Patching Mortar: Jahn M-70 Restoration Mortar or approved equal.

2.03 STONE FOR DUTCHMEN REPAIR

A. New or salvaged Portland Connecticut Brownstone to match existing.

1. New stone to be quarried by Portland Brownstone Quarries – Twin Oaks Enterprises, Inc. Contact Mike Meehan (860) 342-2920.

2. Salvaged Portland Connecticut Brownstone to meet the same requirements in terms of color, texture, aggregate size, graining and bedding direction as freshly quarried stone.

3. Sound portions of existing units that are scheduled for replacement may be reused for dutchman stock provided that they match the color, texture bed direction etc of the original adjacent material.

2.04 ANCHOR MATERIALS

A. Adhesive Anchors shall consist of a threaded anchor rod, a cylindrical wire mesh screen tube, and an injectible adhesive material. Injection adhesive system shall be HIT HY20 as manufactured by Hilti, Inc. Tulsa OK. or approved equal.

B. Anchor rods, clips and corner reinforcing rods shall be stainless steel Type 316 of dimensions specified, meeting the requirements of ASTM F-593 (condition CW).

C. Helical dry-set anchors shall be stainless steel Type 304, manufactured by Helifix or approved equal.

D. Stainless steel threaded rods for face pinning: Type 316 of dimensions specified, meeting the requirements of ASTM F-593 (condition CW).

E. Epoxy for Face Pinning and Epoxy Grouting: Akemi 2000, Akemi 2010Akemi 2030 and Akemi 5000 and Akemi 5010 available from Akemi North America 877 462-5364 and/or Stone Boss, Woodside, NY

F. For Tinting Exposed Epoxy: Akemi Colouring Pastes.

G. Non-shrink grout for setting reinforcing anchors in existing masonry: Conforming to ASTM C 827, ASTM C 1107, and CRD-C 621 specifications for non-shrink grout, such as Five Star Grout, manufactured by Five Star Products, Inc., Fairfield, CT.

H. Rafter tie-down anchors shall be 18 gage galvanized Grade 36 steel. Attach to rafters and plates using ten (10) 8d nails. Use H2.5 Seismic and Hurricane Ties, as manufactured by Simpson Strong-Tie, Pleasanton, CA, or approved equivalent.

2.05 CHEMICALS FOR SELECTIVE BROWNSTONE CLEANING

A. ProSoCo 2010 All surface cleaner or approved equal.

B. ProSoCo Heavy Duty Restoration Cleaner or approved equal.

2.06 MORTARS FOR REPOINTING BACK UP BRICK MASONRY AND RESETTING LOOSE BRICKS

A. Moderately Hydraulic Lime (NHL 3.5): ASTM C141 as manufactured by St. Astier.

B. Aggregate for Mortar: ASTM C 144.

C. Mortar mix for repointing back up brick masonry 1:3 NHL 3.5 to sand.

PART 3 – EXECUTION

3.01 GENERAL

A. Protect persons, motor vehicles, surrounding surfaces of building, building site, and surrounding buildings from damage or injury resulting from masonry preservation work.

B. Erect temporary protection covers over pedestrian walkways and at points of entrance and exit for persons and vehicles which must remain in operation during course of masonry preservation work.

4. Drill new 3/8" diameter horizontal holes into the new stone and into the existing masonry back-up. The drilled holes shall be blown clean of drill dust with an air gun.

5. Tape around hole to prevent spillage of adhesive onto face of masonry. Using tape, or clay, hold adhesive back from the face of the stone at least 1 inch. Grout face of seam with specified grout tinted to match the adjacent stone.

6. Install the Hilti HY 100 Fastener System per the Manufacturer's specifications.

7. The stainless steel threaded rod shall be cleaned and degreased as necessary to remove all contaminants that may hinder the adhesive bond.

8. All surfaces that are in contact with adhesive must be free of dirt or dust, paint, glaze, grease, oil, rust, or other contaminant. Surface may be dry or damp (no free water). The adhesive shall come in contact with clean sound surfaces.

3.04 COMPOSITE MORTAR REPAIRS (PATCHING) **(This is a unit price item only to be utilized at the discretion of the project architect)**

A. Preparation.

1. All patches shall match profile of existing adjacent masonry.

2. At areas to receive patches, remove all loose mortar, patches, and damaged unsound masonry. Cut away an additional 1/2" of the substrate to ensure the surface to be patched is solid and stable. "Sound" masonry with hammer to verify its integrity. Remove all sealant residue. Cut pocket into masonry with hand tools only, unless otherwise directed by the Architect, so that it flares wider as it deepens. The flaring shall not exceed 1/2" wider at back than face. In all cases do not leave thin slivers of masonry at surface. Roughen surface to provide key for patch material.

B. Mixing of Repair Mortars:

1. Do not mix more material than can be used within 30 minutes. Discard any material that has been mixed for 30 minutes or more.

2. Mixing ratios:

a. Brownstone: Jahn M70; Approximately 5 1/2 parts dry material to 1 part water.

b. Grout for Dutchmen Seams: Jahn M40 premixed

3. Mix water and dry ingredients well. Adjust amount of water depending on the weather and the porosity of the substrate in accordance with the Manufacturer's printed instructions.

C. Application:

1. Apply mortar mix using a trowel in a series of lifts with no waiting period or scratch coat necessary between layers, up to a total maximum thickness of 3". For patches thicker than 3", apply mortar in two layers, allowing the first layer to cure for a while before applying the second layer. If a cement skin forms, scrape approximately 1/16" of mortar off, dampen the first layer before applying the second layer. Use light pressure during the applications. Work mortar firmly into the surface of the masonry, including corners.

2. Build up patching material so that it is slightly above adjacent masonry surface. Allow 15-30 minutes to set slightly, then scrape off excess material using a straight edge. Do not press down or "float" the patch. Where patches occur at panel edges or corners. form mortar to match the profile of the surrounding masonry. In all cases, finish patch so that it is as indistinguishable as possible from the adjacent masonry.

3. Lightly mist the patch with water to wet the entire surface of the finished patch approximately 30 minutes to one hour after completion on hot sunny days and approximately 2 hours on cool or cloudy days. Time will vary with temperature and humidity. Mist at least once a day, but as often as possible on the two days following the patch installation.

4. Unacceptable patches are those with hairline cracks or that show separation from stone at edges, and those that do not match adjoining stone in color or texture. Remove patches and refill to provide patches free of these defects.

5. Keep adjacent masonry surfaces clean and free of mortar.

3.05 CORNER REINFORCEMENT

A. Corner Reinforcement Installation – Replacement Quoins:

1. Drill new ½" holes horizontally into the existing brick masonry back-up, approximately at middle of masonry thickness. The drilled holes shall be blown clean of drill dust with an air gun.

2. Mix non-shrink grout as per manufacturers instructions.

3. Inject non-shrink grout into the hole using a cartridge gun or syringe system. Inject material until grout begins to flow out of hole.

4. Insert the ¼" diameter stainless steel threaded rod and rotate slowly into the hole. Support rod in place until grout sets so that the rod is centered in the hole.

B. Corner Reinforcement Installation – Existing Quoins to Remain:

1. Drill 6.5 mm (approximately ¼") diameter entry holes horizontally into mortar joint between stone units and into the brick back-up masonry; locate the hole so as to engage the middle of the back-up brick beyond the quoin.

2. Drive the stainless steel 8 mm (approximately 5/16") helical anchor, by Helifix or approved equivalent, into the hole and recess it by means of a setting tool and rotary hammer drill.

3. Patch the entry hole with a mortar approved by the project architect.

3.06 CLEANING

A. Protect all windows, woodwork and adjacent surfaces from contact with chemicals.

B. Clean brownstone in areas indicated on contract drawings using specified cleaning agents. Apply chemicals to pre-wetted surfaces in concentrations established during approved cleaning mock-ups.

C. Allow chemicals to dwell on surfaces for the amount of time established during approved cleaning mock-ups.

D. Rinse surfaces thoroughly to remove cleaning chemicals. Rinse masonry surfaces using clean potable water dispensed under low pressure from a power washer fitted with a 45 degree fan tip. Hold wand at a downward angle at least 2 feet from stone surface. Powerwashing marks of any sort will not be accepted.

E. Repeat chemical cleaning if required to remove dirt and soling.

3.07 WASHDOWN AFTER TOOLING

A. All tooled and hones surfaces shall be washed down to remove white stone residue from surface of brownstone. Honing and tooling shall not be considered accepted until surfaces have been evaluated after final washdown.

B. Wash masonry surfaces using clean potable water dispensed under low pressure from a power washer fitted with a 45 degree fan tip. Hold wand at a downward

angle at least 2 feet from stone surface. Powerwashing marks of any sort will not be accepted.

3.08 REPAIRS TO BACK UP MASONRY

A. After removal of brownstone units review condition of back up masonry with project architect.

B. Remove and reset bricks in areas when bricks have become loose or dislodged.

C. Repoint bricks in areas where mortar is missing or deteriorated.

END OF SECTION

SECTION 04905

STONE REMOVAL AND RE-INSTALLATION

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

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

1.02 WORK INCLUDED

A. The Work of this Section includes all labor, materials, equipment and services necessary to complete the stone installation work as shown on the drawings and specified herein, including but not necessarily limited to the following:

1. Removal of brownstone units where indicated on the contract drawings and installation of new, and existing refurbished, brownstone units.
2. All necessary protection and precautions to protect adjacent surfaces, building occupants, and pedestrians and interior finishes.
3. Protection of vermiculated quoins during removal and installation of adjacent stones.
4. Removal of all old pointing, setting and parging mortars from existing units that are scheduled to be reinstalled.
5. Pointing of mortar joints after setting mortar has been raked out.

1.03 RELATED WORK

A. Unit Prices – Section 01025

B. Alternates – Section 01030

C. Fabrication of New Brownstone Units – Section 04005

D. Brownstone Conservation – Section 04550

E. Masonry Preservation – Section 04902

F. Flashing and Sheet Metal – Section 07600

G. Sealants – Section 07900

1.04 QUALITY ASSURANCE

A. Masonry Preservation Specialist:

1. Work of this Section must be performed by an experienced stone preservation firm that has completed work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance, having not less than 5 years comparable experience.
2. Field Supervision: Masonry preservation specialist firm shall maintain an experienced full-time supervisor on the Project site during all times that stone preservation work is in progress.

B. Field-Constructed Mock-Ups: Work of this Section must comply with previously completed mock-ups. Contractor shall prepare the following sample panels on the building where directed by the Architect. Obtain Architect's acceptance of visual qualities before proceeding with the work. Retain all mock-ups in undisturbed condition, suitably marked, during construction as standards for judging completed work.

1. Prepare sample panels of representative stone setting. Erect mock-up panels into an existing wall, as directed by Architect, to demonstrate quality of materials and workmanship.

   a. The Contractor shall install a mock-up of each of the various setting conditions after award of the Contract and prior to the commencing of all work.
   b. No work shall commence on the installation of the mock-ups until all appropriate stone samples have been approved.
   c. The location of the mock-ups shall be selected by the Architect and shall include conditions to be anticipated during the full scope of the project.
   d. After approval the completed mock-ups shall be an integral part of the finished work.

C. Source of Materials: Obtain materials for masonry preservation from a single source for each type of material required (cement, sand, pigment etc.) to ensure match of quality, color, pattern, and texture.

1.05 SUBMITTALS

A. Preservation Program:

1. Submit written program for each phase of stone removal and setting. Describe in detail materials, methods and equipment to be used for each phase of work, including hoisting, rigging and storage.

2. Protection: Include a description of methods for protecting surrounding areas, building occupants, pedestrians, vehicles, and adjacent building surfaces during stone setting and cast stone installation procedures.
3. Protection of interior finishes: Specify exactly how interior plaster finishes will be protected and how water, dust and moisture will be kept from entering the interior of the building.

B. Product Data: Submit manufacturers' technical data for each product indicated including recommendations for their application and use. Include test reports and certifications substantiating that products comply with requirements.

C. Samples: Submit, for verification purposes, prior to mock-up erection, 3 samples each of the following:

1. Each type of anchor.
2. Each type of adhesive.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to site in manufacturer's original and unopened containers and packaging, bearing labels as to type and names of products and manufacturers.

B. Protect masonry preservation materials during storage and construction from wetting by rain, snow or ground water, and from staining or intermixture with earth or other types of materials.

C. Store aggregates, covered and in a dry location, where grading and other required characteristics can be maintained and contamination avoided.

D. Protect grout and other materials from deterioration by moisture and temperature. Store in a dry location or in waterproof containers. Keep containers tightly closed and away from open flames. Protect liquid components from freezing. Comply with manufacturer's recommendations for minimum and maximum temperature requirements for storage.

E. Store materials on site only as needed for work to be performed during the week. Maintain storage off-site for long term storage of materials.

1.07 PROJECT CONDITIONS

A. Hot-Weather Requirements: Protect preservation work when temperature and humidity conditions produce excessive evaporation of water from mortar and patching materials. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 90°F (32°C) and above.

B. Protect sills, ledges and projections from mortar droppings.

C. Remove and replace masonry elements in a sequence that will not impair the strength or stability of the remaining structure. Provide temporary shoring as required.

1.08 SAFETY PRECAUTIONS

A. Dust Control Program. Prior to commencing masonry preservation work, Contractor shall submit for review a program for control of stone dust, water runoff, etc. during stone replacement operations. Program shall include protection at windows, air intakes and other building openings to minimize disruption of occupant's continuous use at all interior spaces. If necessary, all windows, air intake vents, and air conditioning vents must be covered or temporary ductwork provided, to prevent stone dust from entering air intake system.

B. Contractor shall indicate all necessary precautions to prevent building occupants, pedestrians, etc. from coming in contact with harmful materials or dust from masonry preservation operations.

C. Protect all surfaces outside scope of contract from damage during course of work.

D. Flammable materials shall be kept away from fire or flame. Provide portable extinguishers at job site for emergency use. Remove used container, rags, and packaging from site each day.

E. All containers at job site shall be properly labeled indicating contents.

F. Maintain at job site Material Safety Data Sheets for all materials used.

G. Portable emergency eye wash equipment and first aid kit shall be kept on site.

H. Comply with applicable federal, state, and local environmental regulations regarding testing, handling, treatment, containment, collection, transport, disposal, and discharge of hazardous waste.

PART 2 – PRODUCTS

2.01 MORTAR FOR SETTING STONE

A. Mortar Materials:

1. Moderately Hydraulic Lime (NHL 3.5): ASTM C141 as manufactured by St. Astier and as sold by:

   deGruchy Masonry Restoration
   266 Rockhill Road
   Quakertown, PA 18951
   215-536-4482
   Contact: Andrew deGruchy

2. Aggregate for Setting Mortar: ASTM C 144
3. Aggregate for Pointing Mortar: Match aggregates found in sieve analysis performed on original mortars by Owner.
4. Water: Clean, free of oils, acids, alkalis and organic matter.
5. Pigments: Chemically pure mineral oxides, alkali proof and light fast as manufactured by Solomon Grind – Chem Services, Inc of Springfield, IL., Lander-Sigal or approved equal.
6. No calcium chloride or admixtures containing calcium chloride shall be used in the mortar.

B. Mortar Mixes:

1. General:
   a. Measurement and Mixing: Measure cementitious and aggregate material in a dry condition by volume or equivalent weight. Do not measure by shovel, use known measure. Mix materials in a clean mechanical batch mixer.
   b. Mixing Mortar: Thoroughly mix 2/3 the amount of water, one third the amount of sand and all of the lime followed by the remaining amount of sand and additional water. Mortar should be mixed for at least 10 minutes.

2. Do not use admixtures of any kind in mortar, unless otherwise indicated.

3. Mortar Proportions:
   a. Mortar for Setting Masonry: 1 part Naturally Hydraulic Lime (NHL 3.5) and 3 parts aggregate.
   b. Mortar for Pointing: 1 part Naturally Hydraulic Lime (NHL 3.5) and 3 parts aggregate to match aggregates found in sieve analysis performed on original mortars by Owner.
   c. Pigment as required to match the color of the original brownstone pointing mortar.

2.02 ANCHOR MATERIALS

A. Adhesive Anchors shall consist of a threaded anchor rod, a cylindrical wire mesh screen tube, and an injectible adhesive material. Injection adhesive system shall be HIT HY20 as manufactured by Hilti, Inc. Tulsa OK. or approved equal.

B. Anchor rods and clips shall be stainless steel Type 316 of dimensions specified, meeting the requirements of ASTM F-593 (condition CW).

PART 3 – EXECUTION

3.01 GENERAL

A. Protect persons, motor vehicles, surrounding surfaces of building, building site, and surrounding buildings from damage or injury resulting from masonry preservation work.

B. Erect temporary protection covers over pedestrian walkways and at points of entrance and exit for persons and vehicles which must remain in operation during course of masonry preservation work.

C. Dispose of run-off from rinsing operations by legal means and in manner which prevents damage to adjacent building materials, pedestrians, and water penetration into building interiors. Test protection in the presence of the project architect prior to starting work. Correct any flaws that emerge during the tests prior to starting any work.

D. Seal, pack, mask or repair all openings and joints to minimize water damage or dust infiltration into building.

E. Dry brush, scrape or blow off all large accumulation of dirt and foreign material from sills, ledges, brackets, cornices, etc.

3.02 INSPECTION

A. Prior to the installation of the new brownstone units, the Contractor shall verify all locations where stone is scheduled for removal. The contractor shall notify Architect in writing if conditions in the field differ from those indicated on the Contract Documents.

B. Examine masonry installation areas and conditions and notify the Architect of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

C. Remove mortar, loose particles, old patches and debris from existing surrounding masonry in preparation for replacement. Clean with stiff brushes or by flushing with water and compressed air.

3.03 BROWNSTONE REMOVAL AND REPLACEMENT

A. Carefully remove by hand at locations indicated, or as directed by the Architect, any masonry units which are scheduled for removal. Cut out full units from joint-to-joint and in manner to permit installation of full size replacement units, or the re-installation of refurbished original units. Remove stone without damaging surrounding masonry or interior finishes. Maintain adjoining construction in an undamaged condition.

B. Stone Installation:

1. General: All masonry shall be erected level, plumb, square and true within the allowable tolerances. The units are to be positioned in such a manner that no dimensional error is allowed to occur. Horizontal and vertical joints shall be correctly aligned and uniform joint width shall be maintained. Plastic shims that are placed at the bed joints to assure proper joint size, must be left projecting past the face for easy removal after grouting but prior to pointing.
2. Install Anchors in the locations indicated on the approved setting drawings.
3. Drill new horizontal holes into the new stone unit and into the existing masonry back-up to the specified depth. The drilled holes shall be blown clean of drill dust with an air gun.
4. Tape around hole to prevent spillage of adhesive onto face of masonry.
5. Install the Hilti HIT HY20 Fastener System into the masonry back-up, per the Manufacturer's specifications. The stainless steel threaded rod shall be cleaned and degreased as necessary to remove all contaminants which may hinder the adhesive bond, prior to installation. Comply with manufacturer's requirements for adhesive curing time.
6. All surfaces that are in contact with adhesive must be free of dirt or dust, paint, glaze, grease, oil, rust, or other contaminant. Surface may be dry or damp (no free water). The adhesive shall come in contact with clean sound surfaces.
7. Fill drilled hole in new stone unit with grout and align with threaded rod in back-up. Spread unit with a full bed of mortar at back, top, and bottom of unit and install in the position to which it is assigned in accordance with the approved setting drawings.

3.04 POINTING OF MORTAR JOINTS

A. Rake out mortar used for setting stones before it sets and point joints with tinted mortar to match the existing historic mortar.

B. Rake out setting mortar to 2.5 times the joint width or 1.25 inches – whichever is greater. For butter joints (joints 1/8" and less) – rake out mortar to a minimum of .75 inches.

C. Use tinted mortar mix for full depth of pointing

3.05 MORTAR APPLICATION

A. First layer to create a uniform depth for later applications that is thoroughly compacted into cavities: apply mortar to a maximum thickness of 3/8"

B. After joints have been filled to a uniform depth, apply remaining mortar in successive ¼" thick layers: fully compact each layer and allow to dry to thumbprint hardness before applying next layer.

C. When final layer is thumbprint hard, tool to match approved sample joint.

D. Avoid feather-edging of mortar joint.

E. Immediately after repointing, remove excess mortar by light brushing with a natural bristle brush. Do not leave encrusted matter.

F. Fine mist mortar joint as required to keep mortar damp during curing. Keep mortar joint damp and protected for at least 72 hours after pointing to permit proper hardening of mortar.

3.06 CLEANING AFTER POINTING

A. The face of all stonework shall be thoroughly cleaned after completion of the pointing and other work liable to soil the stone. The stonework shall be gone over and any mortar splashes or smears shall be carefully removed from the surface with scrapers.

B. The cleaning shall be done with clean water applied vigorously with fiber brushes. After cleaning with brushes the stone shall be thoroughly rinsed with clear water. Proprietary cleaning compounds containing caustic agents, intended for removing mortar smears shall not be used without the written approval of the Architect. The goal is to remove all smears before they set so that caustic agents are not required.

END OF SECTION

SECTION 06310

WOOD TREATMENT AND PAINTING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings, general provisions of the Contract, including the General and Supplementary Conditions and Division-1 Specification Sections are hereby made a part of this Section.

B. Cornice, Reflected Ceiling Plan and Cornice Elevations.

1.02 WORK INCLUDED

A. **All work of this section to be performed by Owner.**

B. Work of this Section includes all labor, materials, equipment and services necessary to as shown on the drawings and specified herein including, and limited to, the following:

1. Preservation Consultant to provide inspection, specifications, work oversight, documentation and completion report.
2. Preservation Woodworker to apply wood conservation and maintenance treatments
3. Scope of work includes conservation of all exterior woodwork at the tower, including window sash, frames, sills and brick mold; cornice brackets, fascia and soffit.

1.03 RELATED WORK UNDER OTHER SECTIONS

A. Section 04550 – Brownstone Conservation
B. Section 04902 – Masonry Preservation
C. Section 04905 – Stone Removal and Re-Installation

1.04 SUBMITTALS

A. Sanded Paint Sample: The Preservation Consultant and Preservation Woodworker shall work together to collect special materials, develop work-sample demonstration, and make special sanded paint samples for owner approval. It is expected this will take three to five rounds of testing and development.

B. Technical Data: Preservation Consultant to provide detailed specifications for wood conservation and preservation. To be done after Consultant's inspection of woodwork that is revealed during masonry work.

C. Completion Report: Preservation Consultant to write a completion report to include work documentation and text descriptions of the work with 35 mm color photos and digital photos.

1.05 COORDINATION:

A. Masonry: Coordinate work of this section with interfacing masonry conservation work for proper sequencing. Ensure best possible protection of adjacent materials and finishes.

B. Interior Plaster: Coordinate work of this section with interfacing interior plaster wall removal and conservation work for proper sequencing. Ensure best possible protection of adjacent interior materials and finishes.

1. Interior plaster removal and conservation work to be performed by Architectural Conservation Services.

1.06 STANDARDS and REFERENCES:

A. Except as modified by the requirements of other governing codes and by this specification, conform to the provisions and recommendations of the following standards and references:

1. Secretary of the Interior's Standards for the Treatment of Historic Properties
2. Leeke, John C., "Sanded Paint," Old-House Journal, May 1991, (detailed description of materials and methods developed at Victoria Mansion). (See attachments)
3. Leeke, John C., "Wood Window Sills," Window Rehabilitation Guide for Historic Buildings, Charles E. Fisher III, editor, Historic Preservation Education Foundation, Washington, D.C., 1997 (See attachments)
4. Leeke, John C., "Save Your Wood Windows," Practical Restoration Reports, 2000
5. Welsh, Frank S., "Restoration of the Exterior Sanded Paint at Monticello," Assoc. for Preservation Technology Bulletin, 1983.
6. Logan, Judy, "Tannic Acid Treatment," Canadian Conservation Institute, CCI Notes 9/5, Feb. 1989. (See attachments)

B. Two approaches to the care of exterior woodwork at Victoria Mansion have been developed over the past 15 years and are now formally established:

Preserve Original Materials: The conservation and preservation of materials dating from the original construction through the mid-20th century is of high importance. Only approved methods, materials and techniques are used. Any new methods, materials and techniques must be reviewed by the preservation consultant and the director before they are used. Generally new methods and materials are used only after long-term testing and development on later woodwork. The principle objective is to save historic material.

Maintain Practical Function: Materials installed during the late-20th century restorations (after c. 1970) may be replaced when that is economic, but the

architectural character and appearance must be replicated. The principal objective is for installed components and systems to have a long life and to be maintainable over the long term (30-50 years) at lowest cost.

Both of these approaches will be used in this work since there is an inextricable mix of original and later components in the tower cornice and windows.

C. Standard treatments in both approaches have been developed over the past 14 years to respond to specific types of deterioration.

1. Weather Checks and End Checks. Checks are cleaned out, treated with borate preservative, treated with penetrating epoxy consolidant, and filled with epoxy paste filler. (See "Wood Window Sills" article above.)
2. Missing Wood Components. All decayed wood is removed, surfaces treated with borate preservative, voids infilled with wood matching species, and grain orientation.
3. Spot Paint Deterioration. Loose paint is removed, bare wood treated with water-repellent, primed and two top coats.
4. Overall Paint Failure. Any remaining paint is removed to bare wood (saving and recording samples of historic paint in place), bare wood treated with water-repellent, primed, one top coat and two top coats of sanded paint. (See "Sanded Paint" article above)

It is recognized that these treatments may not be as reversible as demanded by current conservation philosophy. At Victoria Mansion a balance has been struck between the shorter maintenance cycles of more reversible treatments and the longer maintenance cycles of less reversible treatments. It is particularly important to achieve a longer maintenance cycle on tower woodwork due to the high cost of access. This not only reduces the cost of maintenance, but also results in the preservation of more historic fabric.

1.07 PRODUCT HANDLING

A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.

PART 2 – PRODUCTS

2.01 MISCELLANEOUS MATERIALS:

A. Use materials to be specified by the Preservation Consultant.

PART 3 – EXECUTION

3.01 GENERAL

A. Examine all areas and conditions of the cornice and windows and advise the Architect and Preservation Consultant of conditions detrimental to the proper

and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

B. Use methods to be specified by the Preservation Consultant.

C. Suggested sequence of work for Preservation Woodworker on cornice and windows:

1. Meetings: Attend one project coordination meeting. Meet every week that woodworks are underway with project architect and woodworks consultant.
2. Remove Sash: Remove and label sash, store them in the basement, fill openings with temporary panels to re-establish the weather envelop. The panels are to be made of plywood that can be removed and replaced as needed by the masons, and include a plastic covered opening to allow light to enter.
3. Remove Brick Moldings: Remove and label window brick moldings, store them in the basement. Coordinate closely with mason's operations.
4. Sanded Paint: Work with the Preservation Consultant to collect special materials, develop work-sample demonstration, and make special sanded paint samples for owner approval. It is expected this will take three to five rounds of testing and development.
5. Cornice Paint: Remove all later paint from consoles. Prep all paint surfaces for coatings. Apply primer and one top coat of exterior paint after cornice conservation and maintenance. Apply two top coats of sanded paint.
6. Cornice Conservation: Apply conservation treatments to original and early materials, to include tannic acid treatment of rusting nail heads, filling of console end-checks, filling missing pieces of consoles. To be done after paint removal and before paint prep.
7. Cornice Maintenance: Apply standard maintenance treatments to later woodwork including soffit, fascia and crown.
8. Conserve Windows: Apply conservation treatments to all original or early window components.
9. Maintain Windows: Apply maintenance treatments to later sash and other later window components. This work may be done in the woodworker's own shop, and so includes time for transport.
10. Reinstall Sash: Remove temporary plywood panels and store in basement. Reinstall sash to provide original function and operation. To be done after all masonry operations are complete and before scaffold removal.

D. Suggested sequence of work for Preservation Consultant:

1. Meetings: Attend two project coordination meetings. Meet every week that woodworks are underway with the project architect and preservation woodworker.
2. Inspect: Inspect hidden window frames as they are revealed when masons remove surrounding brownstone. Confirm relative age of components to determine which are original fabric. Develop and specify conservation treatments for original wood components, and maintenance treatments for later components.
3. Specifications: Write detailed specifications for wood conservation and preservation. To be done after inspection.

4. Oversight: Oversee woodworks operations to assure implementation follows the specifications. Work with the project architect to assure the work meets the project's objectives and goals.
5. Sanded Paint: Supervise preparation of sanded paint operations to include collection of special materials, work-sample development and demonstration and owner approvals of special sanded paint samples.
6. Historic Samples: Identify, mark and record samples of original paint to be preserved in place with no treatments. Collect small samples of paint and woodwork to be accessioned for future analysis and research.
7. Documentation: Document the methods and materials actually used with written notes, 35 mm color photos and digital photos.
8. Completion Report: Write a completion report to include work documentation and text descriptions of the work with 35 mm color photos and digital photos.

END OF SECTION

SECTION 07600

FLASHING AND SHEET METAL

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings, general provisions of the Contract, including the General and Supplementary Conditions and Division-1 Specification Sections are hereby made a part of this Section.

1.02 WORK INCLUDED

A. Work of this Section includes all labor, materials, equipment and services necessary to complete the metal flashing and sheet metal work as shown on the drawings and specified herein including, but not limited to, the following:

1. The removal and new installation of all necessary counter flashings wherever the tower at Victoria Mansion abuts the main roof and porch roof.

1.03 RELATED WORK UNDER OTHER SECTIONS

A. Section 04550 – Brownstone Conservation
B. Section 04902 – Masonry Preservation
C. Section 04905 – Stone Removal and Re-Installation
D. Section 07900 – Sealants

1.04 SUBMITTALS

A. Samples: Flashing, Sheet Metal, and Accessories: Submit two (2) 8" square samples of specified sheet materials to be exposed as finished surfaces.

B. Shop Drawings: Prepare shop drawings of parts and details associated with this Section. Details shall be drawn full size.

C. Mock-ups: Prepare mock-ups of all sheet metal joinery profiles and details from approved shop drawings. Mock-ups shall be approved by the Architect prior to the fabrication and installation of the work of this Section.

1.05 COORDINATION

A. Coordinate work of this section with interfacing masonry conservation work for proper sequencing of each installation. Ensure best possible weather resistance and durability of the work and protection of materials and finishes.

1.06 CODES & STANDARDS

A. Except as modified by the requirements of other governing codes and by this specification, conform to the provisions and recommendations of the following codes and standards:

1. All copper work shall be in accordance with the latest published literature of Revere Copper Company. (Copper & Common Sense).

2. Metal installation shall be in accordance with the Architectural Sheet Manual published by the Sheet metal and Air Conditioning Contractor National Association, Inc. (SMACNA).

3. Reference: NRCA Roofing and Waterproofing Manual.

4. CDA Details: Except as otherwise shown or specified, comply with applicable recommendations and details of the "Contemporary Copper in Architecture" sheet copper handbook by the Copper Development Associates.

1.07 PRODUCT HANDLING

A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.

B. Replacements: In the event of damage, immediately make all repairs and replacements necessary.

PART 2 – PRODUCTS

2.01 MISCELLANEOUS MATERIALS:

A. To prevent corrosion, the indicated fastener materials shall be used with the following sheet metals:

Sheet metal	Nails	Screws	Rivets
Aluminum	Aluminum or Zinc	Aluminum or Zinc	Aluminum or Zinc
Copper	Copper	Bronze	Copper
Lead Coated Copper	Copper	Bronze	Bronze
Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel

B. For attaching sheet metal to masonry, use lead wedges.

C. Solder for copper shall be composed of 50% lead and 50% tin.

D. Flux shall be non-acid type proprietary flux manufactured specifically for use with sheet copper.

E. Metal Accessories: Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, non corrosive, size and gage required for performance.

2.02 SHEET METAL MATERIALS

A. Items to be fabricated from 20 oz. copper.

2.03 DISSIMILAR METALS PROTECTION

A. Where possible, contact between dissimilar metal surfaces shall be avoided. Where contact occurs, notify the Architect who shall advise the Contractor how best to isolate the surfaces, as follows:

1. Painting with

a. Bituminous paint complying with FS-TT-C494, Type II, 12 mils dry film thickness.

b. Zinc chromate primer, alkyd, complying with FS-TT-P-645.

2. Taping or gasketing with a non-absorptive material.

3. Caulking the joint between the 2 metals using sealant specified herein.

B. Ferrous metals in contact with copper shall be given a coating of zinc chromate primer, or bituminous paint, as specified herein.

PART 3 – EXECUTION

3.01 GENERAL

A. All personnel concerned with the field installation of sheet metal repair work must be qualified sheet metal journeymen who may be assisted by sheet metal apprentices qualifying for their journeyman status.

B. Examine all areas and conditions where the flashings are to be worked and notify the Architect of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

C. Soldering and Seaming

1. Soldering: Edges of sheet copper shall be pre-tinned a min. of 1-1/2" prior to soldering by dipping in a molten bath of pure tin or solder. Rosin shall be used as the flux. Copper edges shall be tinned prior to soldering for a width of 1-1/2" on both sides. Seams shall be well fluxed with rosin prior to soldering. Soldering shall be done slowly with well-heated coppers so as to thoroughly heat the seams and completely sweat the solder through the full width of the seam.

a. Do not use muriatic acid to prepare seams for soldering.

2. Seams: Seams shall conform to the following requirements:

a. Loose-lock seams shall finish not less than 2-inches wide.

3.03 WORKMANSHIP

A. Workmanship for sheet metal shall be as follows:

1. Surfaces to be covered with sheet metal shall be free from defects of every description and clean of dirt and other foreign matter before sheet metal repair work is started.

2. Sheet metal work exposed to the weather shall be permanently watertight and weather tight, with suitable provisions made for free expansion and contraction without causing leaks.

3. No fasteners shall be exposed on the face of the finished work except as approved by the Architect or except as directed herein.

4. Separations: Provide for separation of metal from non compatible metal or corrosive substrates by coating concealed surfaces at locations of contact with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.

3.04 INSTALLATION REQUIREMENTS

A. General: Except as otherwise indicated, comply with manufacturer's installation and repair instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual". Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints and seams which will be permanently watertight and weatherproof.

3.05 CLEANING AND PROTECTION

A. Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finishes.

1. All metal work when finished shall be thoroughly cleaned of all flux, scraps and dirt. On large areas, this shall be done as each section of the work is finished. Excess flux shall be neutralized by washing with a 5% to 10% solution of washing soda. After cleaning, the metal shall be washed off with clear water.

END OF SECTION

SECTION 07900

SEALANTS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings, general provisions of the Contract, including the General and Supplementary General Conditions, and Division 1 Specification Sections are hereby made a part of this section.

1.02 WORK INCLUDED

A. Furnish and install the following items required to complete the work of this Section, as shown on the Drawings and specified herein:

1. Provide exterior sealants at copper counterflashing.
2. Following the completion of window restoration work (by others), caulk the perimeter of all exterior windows.

1.03 RELATED WORK UNDER OTHER SECTIONS

A. Section 04550 – Brownstone Conservation
B. Section 04902 – Masonry Preservation
C. Section 04905 – Stone Removal and Re-Installation
D. Section 07600 – Flashing and Sheet Metal

1.04 SAMPLES

A. Submit the following samples in accordance with provisions of the Section 01300.

1. Submit data sheets and samples of all materials for approval by the Architect. Sealant subcontractor must furnish a certificate of compliance for the material used, and that the material has been tested and meets or exceeds requirements of said Specifications.

1.05 GUARANTEES

A. Attention is directed to provisions of the General Conditions regarding guarantees and warranties for work under this Contract.

B. Manufacturer shall provide his standard guarantees for work under this Section. However, such guarantees shall be in addition to and not in lieu of all other liabilities which the manufacturer and contractor may have by law or by other provisions of the Contract Documents.

PART 2 - MATERIALS

2.01 CAULKING MATERIALS:

A. General:

1. Types: Use self-leveling sealants for horizontal joints and non-sag sealants for all other areas except as shown or specified.

2. Color: For concealed from view joints provide manufacturer's standard color which has the best overall performance qualities for the application shown. For exposed to view joints the Architect will select colors from the manufacturer's standard colors unless special colors are shown or specified.

B. Sealant Type 1: (All exterior sealants unless otherwise noted.) Two component chemically curing polyurethane and multi-component polytremdyne meeting Fed. Spec. TT-S-00227E, Class A, Type II, manufactured by any one of the following, or equal:

1. "Sonolastic NP-2" - Sonneborn
2. "Sikaflex - 2cNS" - Sika Corp.
3. "Vulkem 227" - Mameco International
4. "Dymeric" - Tremco Mfg. Co.

5. NOTE: Custom colors as selected by the Architect shall be required for joints occurring in stone, copings, expansion joints and at door trims exterior..

C. Primer for all caulking shall be as recommended by sealant manufacturer.

D. Except as otherwise indicated, joint backing shall be compressible closed-cell polyethylene foam 1/3 greater in diameter than the width of the joint or other material acceptable to sealant manufacturer and Architect.

E. Color to be selected by the Architect.

F. Joint Fillers:

1. Closed Cell Polyethylene: Not less than 3 psi for 25% compression resistance, highly resistant to petroleum oils and solvents, one of the following:

a. "Sonofoam (CC) - Sonneborn
b. "Ethafoam" - The Dow Chemical Co.
c. "Tremco Joint Backing" - Tremco Mfg. Co.

2. NOTE: Select shape and size of joint filler in consultation with the manufacturer for proper performance in the specific condition of use in each case.

G. Miscellaneous Materials:

1. Primers and Surface Conditions: It is the intent of this specification that all porous substrates shall be primed for maximum adhesion. Use a primer as recommended by the manufacturer on all porous substrates, unless the installer is

able to acquire a letter from the manufacturer stating that the conditions of the performance guarantee can be met without the use of primers. The recommended primer must be checked for possible yellowing, discoloration and dirt pick-up, when applied over the face of porous substrates. If yellowing, discoloration or dirt pick-up occurs, after exposure, the installer shall take adequate precautions to prevent primer from being applied over the face of porous substrates by masking, etc.

2. Bond Breaker Tape: Pressure sensitive polyethylene tape.

H. Additional Material Requirements:

1. Materials used in fulfilling the requirements of this Section shall be one of the manufacturers and the type specified for each category and shall be applied under temperatures required for each type specified in accordance with the manufacturer's written recommendations.

2. Each container must bear an unbroken seal and label of the manufacturer upon delivery at the site. Materials not conforming to this requirement will be rejected by the Architect and shall be removed from the site and replaced with approved materials, at no additional cost to the Owner.

PART 3 – INSTALLATION

3.01 EXTERIOR AND INTERIOR CAULKING:

A. Preliminary Work

1. Job Precautions:

a. Samples of all adjoining materials such as brownstone, stucco, brick masonry and plaster, which may contain form release materials, coatings, or curing compounds, etc., shall be obtained by the subcontractor and submitted to the sealant manufacturer for adhesion testing. These samples must be made with the identical procedures and materials to be used in the manufacture of materials furnished on the specific job.

b. If actual field joints are later contaminated to a greater or different degree by form release agents, it shall be the responsibility of the subcontractor who has used such form release agents to remove them.

2. Field Samples:

a. Primer Discoloration: If discoloration is indicated and considered a factor, special precautions must be taken to guard against primer being applied over any surface to remain exposed.

b. Soundness of Substrates: It shall be the responsibility of the Contractor to provide sound, strong substrates of the dimensions shown on the Drawings.

c. Color Selection: To be made on the job site by the architects.

B. Installation

1. Initial work shall be done under the supervision of a representative of the sealant manufacturer and job procedure methods and results are to be established.

2. All subsequent work to be performed under exact procedures established herein.

3. Thoroughly clean all joints free from loose mortar, paint and other materials which might prevent proper adhesion.

4. After cleaning apply primer, if required by the sealant manufacturer, to all joint surfaces, taking care not to stain adjacent surfaces.

5. Install joint back-up material in all joints. Joint back-up material shall be placed in joints, taking care to maintain a constant uniform depth 1/8" greater than the sealant depth tolerance hereinafter specified. DO NOT STRETCH BACK-UP MATERIAL INTO JOINTS. Back-up material shall be continuous, no voids permitted.

6. Do not apply sealant at temperatures below 40 degrees F. without prior approval of the Architect. Sealant to be stored and pre-heated in an insulated job box during winter conditions.

7. Apply sealants in joint using a hand caulking gun or power gun with a gun nozzle of proper size and sufficient pressure to completely fill joints. The depth of sealant shall not exceed 1/2", nor be less than 3/8", regardless of the width of joints.

8. Sealant shall be tooled with a dry or water wet tool only. DO NOT USE DETERGENTS OR SOAPY WATER FOR TOOLING OPERATIONS. Sealant joints shall be given a slight concave surface. Remove masking tape immediately after tooling and/or before sealant has taken initial set.

9. The sealant subcontractor shall bear full responsibility for any decline in performance level of subsequent work, as compared to initial sample installations installed under supervision of the manufacturer's representative.

C. Guarantee

1. The sealant subcontractor shall provide a written guarantee on an approved form, guaranteeing all sealant work against defective material or workmanship for a period of 5 years.

2. Guarantee shall further state that all sealants shall be guaranteed against:

a. Adhesive or cohesive failure, when joint spacings are within the limits called for on manufacturer's data sheets.

b. Any staining of adjacent surfaces by:

1. Sealant
2. Primer (yellowing etc.)

3. Included in the guarantee shall be a provision and agreement to repair or replace, at the approved Contractor's expense, all sealant defects as listed above which develop during the guarantee period.

3.02 CLEANING

A. Adjacent materials which have been soiled by the work of this Section shall be cleaned immediately, excess materials removed and work left in a neat, clean condition.

END OF SECTION

SECTION 09212

PLASTER CONSERVATION

PART 1 – GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings, general provisions of the Contract, including the General and Supplementary Conditions and Division-1 Specification Sections are hereby made a part of this Section.

1.02 WORK INCLUDED:

A. All work of this section to be performed by:

Mr. Andy Ladygo
Architectural Conservation Services
Post Office Box 506
Manchester by the Sea, MA 01944

B. Work of this Section includes all labor, materials, equipment and services necessary to as shown on the drawings and specified herein including, and limited to, the following:

1. Preservation Consultant to provide inspection, specifications, work oversight, documentation and completion report.
2. Preservation Technician to apply plaster stabilization and conservation treatments.
3. Scope of work includes stabilization of interior plaster at tower, removal of plaster panel at belvedere level to accommodate masonry shoring, plaster repairs and conservation treatments, reinstallation and conservation of belvedere-level plaster panel at completion of masonry restoration work.

1.03 RELATED WORK UNDER OTHER SECTIONS:

A. Section 01500 – Construction Facilities and Temporary Controls

B. Section 04550 – Brownstone Conservation

C. Section 04902 – Masonry Preservation

D. Section 04905 – Stone Removal and Re-Installation

E. Section 06310 – Wood Treatment and Painting

1.04 SUBMITTALS:

A. Technical Data: Preservation Consultant to provide detailed specifications for plaster conservation and preservation. To be done after Consultant's inspection of plaster prior to masonry work.

B. Temporary Protection: Preservation Consultant to provide a coordinated submittal with the General Contractor for the protection of all interior plaster finishes within the tower.

C. Completion Report: Preservation Consultant to write a completion report to include work documentation and text descriptions of the work with both 35 mm color photos and color digital photos.

1.05 COORDINATION:

A. Masonry: Coordinate work of this section with interfacing masonry conservation work for proper sequencing. Ensure best possible protection of adjacent materials and finishes.

B. Exterior Woodwork: Coordinate work of this section with interfacing woodwork conservation at window openings. Ensure best possible protection of adjacent interior materials and finishes.

1. Exterior woodwork conservation to be performed by Owner.

1.06 STANDARDS and REFERENCES:

A. Except as modified by the requirements of other governing codes and by this specification, conform to the provisions and recommendations of the following standards and references:

1. Secretary of the Interior's Standards for the Treatment of Historic Properties.

1.07 PRODUCT HANDLING:

A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.

PART 2 – PRODUCTS

2.01 MISCELLANEOUS MATERIALS:

A. Use materials to be specified by the Preservation Consultant.

PART 3 – EXECUTION

3.01 GENERAL:

A. Examine all areas and conditions of interior plasterwork and advise the Architect and Preservation Consultant of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

B. Use methods to be specified by the Preservation Consultant.

C. Suggested sequence of work for Plaster Conservation at the tower:

1. Belvedere Ceiling: Prior to concentrated activity at the Belvedere level it is imperative that the existing ceiling be stabilized to prevent possible further loss. Three objectives must be met. First, the condition of the base coat plaster and remaining keys must be established and consolidation undertaken where necessary. This requires access to the cavity behind the plaster and some existing exposed lath will be removed to provide access. These will be eventually re-installed to accept new plaster required to enclose the attic space and complete the interior envelope.

   a. Alternate #3: Remove the Belvedere ceiling and store for future re-installation.

2. Secondly, the re-adhesion of the historic plaster to the lathing will be completed to again establish a cohesive ceiling element. Re-adhesion will be through the use of acrylic adhesives designed to be injected between the loose plaster base coat and wood lath.
3. Finally, when the masonry project has been completed, the plaster loss at this ceiling must be filled using a lime, sand, hair plaster matching the original in composition and surface appearance.

D. Suggested sequence of work for removal of plaster panels to accommodate shoring:

1. To provide access for shoring the masonry work one panel of decorated wall plaster must be removed and ultimately re-established. The section to be removed measures approximately 14" high by 9'-0". The panel will be divided into two separate units to facilitate handling and storage. It should be possible to avoid disturbing the swags and tassels painted near the top of the wall and confine the intrusion to the repetitive drapery pattern below.
2. The areas to be removed will require a facing be applied to maintain continuity of the plaster surface. This requires that the poorly bound distemper paints be cleaned and consolidated prior to facing. Cleaning will be done using dry abrasive systems to remove dust and soot accumulations. Consolidation will be done using a 12% solution of B-72 to securely bind the painted decoration. A facing of tissue will be applied followed by a muslin facing bound with hide glue.

3. The panels will be cut through following horizontal lath lines using small diamond bladed saws to minimize kerf. Upon removal the panels will be secured to plywood splints for transport and storage.
4. With the black of the plaster system exposed an assessment of its condition will be made and consolidation and/or re-adhesion implemented.
5. A system for re-installation can only be developed once the removal has taken place. Actual conditions behind the plaster system will dictate the appropriate procedure.

END OF SECTION

SECTION 16855

HEAT TRACE CABLE

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

A. Attention is directed to the Contract and General Conditions and all Sections within Division 1 - General Requirements which are hereby made a part of this Section of the Specifications.

1.02 RELATED WORK

A. Alternates – Section 01030

B. Flashing and Sheet Metal – Section 07600

1.03 SCOPE

A. Work of this section is included as Alternate #3.

B. Furnish and Install a complete UL Listed, CSA Certified, or FM Approved system of heating cables, components, and controls listed specifically for keeping roof eaves, gutters and downspouts from being clogged by ice and snow.

C. Provide freeze protection coverage for the areas shown on Drawing E-101.

1.04 SUBMITTALS

A. Product Data: Provide manufacturer's technical data on features, performance, electrical characteristics, ratings, etc.

B. Shop Drawings:

1. Provide installation details including mounting, splicing, terminating, etc.

2. Provide cable lengths, circuit requirements, and number of control devices.

3. Provide wiring diagrams including recommended location of control devices, splices, tees, and feed points.

1.05 COORDINATION

A. Coordinate installation with roofing trades for a sequenced installation.

1.06 EXTRA MATERIALS

A. Provide one (1) extra thermostat.

PART 2 – PRODUCTS

2.01 The self-regulating heating cable shall consist of two (2) AWG nickel-copper bus wires embedded in parallel in a self-regulating polymer core that varies its power output to respond to temperature all along its length, allowing the heating cable to be crossed over itself without overheating and to be cut to length in the field. The heating cable outer jacket shall be an abrasion-resistant fluoropolymer. The cable shall have a minimum impact resistance of 10 ft-lbs at 0°C installation temperature per IEEE 515-1997, and a crush resistance of 2000 lbs. per UL 1588-1993. The cable and components shall be qualified to withstand continuous submersion in water for 2000 hours per IEEE 515.1-1995, Section 4.3.1.

2.02 The heating cable shall operate on line voltages of 208/240 volts without the use of transformers.

2.03 Cable shall have a nominal power output of 2 w/ft.

2.04 The heating cable shall be IceStop GM-1XT or GM-2XT cable as manufactured by Raychem Corporation, Thermon Manufacturing Corporation, Chromalox Industrial, or equal.

2.05 Attachment accessories shall be applied complete with attachment clips for all roof surfaces and valleys as well as downspout hangers.

2.06 Per the National Electric Code, Article 426, the system shall be protected by a 30mA trip ground-fault circuit breaker.

2.07 All heating cable components shall be UL Listed, CSA Certified, or FM Approved for use as part of the system to provide roof and gutter de-icing. Component enclosures shall be rated NEMA 4X to prevent water ingress and corrosion.

2.08 The system shall be controlled by an ambient sensing thermostat set at 40°F through an appropriate contractor.

2.09 The system shall provide for failure annunciation such that if trace is not active below the temperature setpoint for energization the building management system can accept a dry contact alarm point for alarm.

2.10 The system shall have a complete 10-year warranty.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Heating cable shall provide freeze protection for the areas shown on Drawing E101.

B. The heating cable shall be laid in gutters; shall be suspended in downspouts either as a loop or single length and held in place by a downspout hanger; and shall be attached to the roof using the appropriate roof clip.

C. The heating cable shall be protected from damage and installed according to the manufacturer's instructions.

3.02 TESTS

A. After installation, the dielectric jacket's insulation resistance from the conductors to shield shall be greater than 100 megohms.

END OF SECTION