



OFFICE OF THE PURCHASING AGENT

TOWN OF ARLINGTON
730 Massachusetts Avenue
Arlington, MA 02476

Telephone (781) 316-3003
Fax (781) 316-3019

DATE: July 21, 2015

TO ALL BIDDERS

BID NO. 15-29

SUBJECT: 23 Maple Street Historic Exterior Restoration

ADDENDUM NO. 1

TO WHOM IT MAY CONCERN:

With reference to the bid request relative to the above subject, please note the following:

BID DATE HAS BEEN EXTENDED TO: WEDNESDAY, JULY 29, 2015 11:00 AM

**SEE ATTACHED REVISED TABLE OF CONTENTS, INVITATION TO BID,
INSTRUCTION TO BIDDERS, FORM FOR GENERAL BID, SPECIFICATIONS &
DRAWINGS.**

**ALL OTHER SECTIONS OF ORIGINAL BID DOCUMENT REMAIN PART OF
THE BID DOCUMENTS.**

BIDDER MUST ACKNOWLEDGE ADDENDUM WITH SUBMISSION

All other terms, conditions and specifications remain unchanged.

Very truly yours,

Town of Arlington

Domenic R. Lanzillotti
Purchasing Officer

23 MAPLE STREET HISTORIC EXTERIOR RESTORATION
Arlington, Massachusetts

July 7, 2015

PROJECT MANUAL

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Document 00100
INVITATION FOR BIDS

THE TOWN OF ARLINGTON, ACTING THROUGH THE TOWN MANAGER, WILL BE RECEIVING BIDS AT THE OFFICE OF THE TOWN MANAGER, SECOND FLOOR OF THE ANNEX OF ROBBINS MEMORIAL TOWN HALL, 730 MASSACHUSETTS AVENUE, ARLINGTON, MASSACHUSETTS 02476 IN ACCORDANCE WITH BID DOCUMENTS PREPARED BY COURTSTREET ARCHITECTS, INC., 285 PARKER STREET, NEWTON CENTRE, MASSACHUSETTS 02459. INVITES SEALED BIDS FOR THE 23 MAPLE STREET HISTORIC EXTERIOR RESTORATION, ARLINGTON, MASSACHUSETTS

Approximate value of Construction: \$150,000.00
Bid Number: 15-29

Bidding procedures and award of Contract and Subcontracts are subject to the provisions of M.G.L. Chapter 149, Sections 44A to 44J inclusive; applicable sections of M.G.L. Chapter 30; and Chapter 674 of the Acts of 1981

Attention is called to the fact that not less than the minimum wage rates as hereinafter set forth shall be paid on this Project. Attention is also called to the requirements relating to worker's compensation and conditions of employment.

A. Contractor Certification for General Bidders

DCAM: HISTORIC BUILDING

Each bidder must submit with its bid a copy of the Certificate of Eligibility from the Division of Capital Asset Management showing that it is eligible to bid on the project. Each bidder also must submit an Update Statement with its bid.

Bidders must be certified by the Commonwealth of Massachusetts, Division of Capital Asset Management in category of "General Building Construction".

B. Availability of Bidding and Contract documents:

Copies of the Bidding and Contract Documents, may be obtained after 8:00 AM local time, July 7, 2015, during the working hours of the Purchasing Agent, Town Hall Annex, weekdays: Monday to Wednesday 8:00 AM to 4:00 PM, Thursday 8:00 AM to 7:00 PM, Friday 8:00 AM to Noon at:

Robbins Memorial Town Hall Annex
730 Massachusetts Avenue
Arlington, MA 02476

Bid documents are available for viewing & downloading on the Town website: www.arlingtonma.gov/purchasing

C. Pre-Bid conference

There will be a pre-bid site visit on Wednesday July 15, 2015 @ 2:00 PM at 23 Maple Street. Contractors are encouraged to attend.

D. Bid Proposals

All General Bid shall be accompanied by a bid deposit in an amount not less than five percent (5%) of the value of the bid. Bid deposits, payable to the Town of Arlington shall be in the form of either a BID BOND, or a CERTIFIED or TREASURER'S CHECK issued by a responsible bank or trust company. Cash and company checks are not acceptable.

The Town of Arlington is exempt from sales and federal excise tax; bidders should not include taxes in figuring or in references to any bid.

SEALED BIDS FOR THE GENERAL CONTRACT listed above will be received by the Office of the Purchasing Agent, Town of Arlington, Robbins Memorial Town Hall Annex, 730 Massachusetts Avenue, Arlington, MA until 11:00 AM. local time, Thursday, July 23, 2015.

A one hundred percent (100%) Performance Bond and a one hundred percent (100%) Labor and Materials Payment Bond will be required from the successful bidder.

Wages are subject to minimum wage rates pursuant to M.G.L. Chapter 149, Sections 26 to 27D inclusive.

E. Contract Award

Upon receipt of bids, the Awarding Authority must determine, from information submitted on the Update Statement, whether the apparent low bidder is responsible and can be awarded the Contract.

The Awarding Authority reserves the right to waive any informalities or to reject any or all bids if it be in the public interest so to do.

No bidder may withdraw bid for at least thirty (30) business days after the date set for receipt of General Bids.

Work shall begin within seven (7) calendar days from receipt by Contractor of Notice to Proceed. Work shall be substantially completed in 120 days from receipt by Contractor of Notice to Proceed.

End of Document

Document 00200

INSTRUCTIONS TO BIDDERS

ARTICLE 1 - REFERENCE TO GENERAL LAWS

- 1.1 Wherever in the Contract Documents reference is made to General Laws of Massachusetts, (MGL), it shall be construed to include all amendments thereto effective as of the date of issue of ADVERTISEMENT TO BID on the proposed work.

ARTICLE 2 - PREFERENCE IN CONTRACT AWARD

- 2.1 The attention of bidders is called to MGL Chapter 149, Section 179A, which requires persons contracting to do public work to give preference in awarding contracts to persons who are citizens of the United States and to partnerships all of whose members are such citizens.

ARTICLE 3 - ADDENDA AND INTERPRETATION

- 3.1 All questions by prospective bidders as to the interpretation of the Contract Documents shall be submitted in writing to the Purchasing Officer and should be in its possession at least five working days before the date set for the receipt of general bids. Said office will then mail any necessary addenda to bidders who have taken out plans at the address given by them before said date, interpretations of all questions so raised which in its opinion require interpretation. Oral interpretations given to prospective bidders will have no standing. It shall be the sole responsibility of bidders to ascertain the existence of any and all addenda issued by the Awarding Authority whether or not the addenda is presented or mailed to or received by the bidder.

ARTICLE 4 - EXAMINATION OF SITE AND DOCUMENTS

- 4.1 All bidders shall visit the site and examine all contract documents before submitting bids. All bidders shall inspect and be thoroughly familiar with same and conditions under which work will be carried out. Neither the Owner nor the Architect will be responsible for errors, omissions or changes for extra work arising from the General or Subcontractors' failure to familiarize themselves with contract documents or existing conditions. By submitting a bid, the bidder agrees and warrants that he has examined the site and the contract documents, and that he is familiar with the conditions and requirements of both and where they require, in any part of the work, a given result to be produced, and that the contract documents are adequate and that he shall produce the required result.

ARTICLE 5 - GENERAL BIDDER'S PRE QUALIFICATION

- 5.1 General bids must be accompanied by a Certificate of Eligibility issued by the Division of Capital Asset Management (formerly Division of Capital Planning and Operations - DCPO) showing that the Bidder has been approved to bid on projects

of the size and type of the named project, and by a Contractor Update Statement (Form CQ3).

- 5.2 It is the bidder's responsibility to obtain the necessary forms from the Division of Capital Asset Management and make application in sufficient time for the Division of Capital Asset Management to evaluate the application and issue a Certificate of Eligibility.
- 5.3 The Contractor Update Statement is not a public record as defined in MGL Chapter 4, Section 7 and will not be open to public inspection.

ARTICLE 6 - PREPARATION AND SUBMISSION OF BIDS

6.1 General bids shall be for the complete work as specified and shall include the names of Filed Sub-bidders and the amounts of their sub-bids. The General Contractor shall be selected on the basis of such general bids. Sub-bids for each trade designated on the FORM FOR GENERAL BID shall be for the complete work of the trade as specified and filed with the Awarding Authority as provided in the ADVERTISEMENT FOR BID.

6.2.1 Each sub-bid for trades designated in Item 2 of the FORM FOR GENERAL BID shall be submitted upon the FORM FOR SUB-BID provided by the Awarding Authority. All blank spaces shall be filled in, in ink or typewritten, in words or figures. Use figures alone only where no space is provided for words. The sub-bid shall be signed by the sub-bidder. The FORM FOR SUB-BID, including the required bid deposit, shall be enclosed in a sealed envelope with the following plainly marked on the outside:

"SUB-BID FOR
{Title of Filed Sub-Bid and Specification Section Numbers}

PROJECT: 23 MAPLE STREET HISTORIC EXTERIOR RESTORATION

6.2.2 If the bid is mailed, the sub-bidder shall enclose its sealed bid in an outer envelope, addressed as follows:

"FROM
(Bidder's Name and Business Address)

PROJECT: 23 MAPLE STREET HISTORIC EXTERIOR RESTORATION

TRADE:
(Trade for which bid is submitted)

TO: Office of the Purchasing Agent
Robbins Memorial Town Hall Annex
730 Massachusetts Avenue, Arlington, MA 02476

6.3.1 Each general bid shall be submitted on the FORM FOR GENERAL BID furnished by the Authority. All blank spaces shall be filled in, in ink or typewritten, in words or figures. Use figures alone only where no space is provided for words. The general bid shall be signed by the general bidder. The FORM FOR GENERAL

23 MAPLE STREET HISTORIC EXTERIOR RESTORATION
ARLINGTON, MASSACHUSETTS

July 7, 2015

BID, including the required bid deposit, shall be enclosed in a sealed envelope with the following plainly marked on the outside:

“GENERAL BID FOR
23 MAPLE STREET HISTORIC EXTERIOR RESTORATION”

- 6.3.2 If the bid is mailed, the bidder shall enclose its sealed bid in an outer envelope, addressed as follows:

FROM“
(Bidder's Name and Business Address)

PROJECT: 23 MAPLE STREET HISTORIC EXTERIOR RESTORATION

TO: Office of the Purchasing Agent
Robbins Memorial Town Hall Annex
730 Massachusetts Avenue,
Arlington, MA 02476

- 6.4 All bidders are cautioned to allow ample time for transmittal of bids. Bids received after the specified time will not be accepted or recognized. The time of receipt will determine the acceptability of mailed bids, regardless of postmark.
- 6.5 No oral, written or telegraphic amendments to the bid will be received or recognized. A bidder wishing to amend a bid after transmittal to the Awarding Authority may do so only by amending the bid document itself prior to the time for opening bids.
- 6.6 Any bid may be withdrawn by the bidder or his representative duly authorized in writing prior to the time scheduled for the opening of such bids or authorized postponement thereof. No bid may be withdrawn for thirty (30) days, Saturdays, Sundays and legal holidays excluded, after opening of bids.
- 6.7 Bids will be opened and read publicly at the time and place scheduled for the opening of such bids or the authorized postponement thereof. Bidders or their authorized representatives are invited to be present. Bidding results will not be given out over the telephone; results will be made available by written request to the Awarding Authority.

ARTICLE 7 - ALTERNATES

NOT USED

ARTICLE 8 - SALES TAX

- 8.1 The Town of Arlington is a municipality exempt from certain taxes. It is therefore required that the Contractor and all Subcontractors purchasing taxable goods or services make known to suppliers the tax-exempt status of the Owner, in order that such taxes will not be applied to the goods under Contract. The Awarding Authority will provide the necessary evidence and certificates of its tax-exempt status to the General Contractor at the Pre-construction Conference.

ARTICLE 9 - BID DEPOSIT REQUIREMENTS AND PROCEDURES

- 9.1 The following matters respecting bid deposits are governed by MGL Section 44B of Chapter 149. Every general bid and every sub-bid not accompanied by the prescribed bid deposit will be rejected.
- 9.2.1 Each general bid and each sub-bid for a trade designated below must be accompanied by a deposit in the form of a bid bond, or cash or a certified check on, or a treasurer's or cashier's check issue by, a responsible bank or trust company, payable to the [name]. A bid bond shall be (a) with a surety company qualified to do business in the Commonwealth of Massachusetts and satisfactory to the Awarding Authority, and (b) conditioned upon the faithful performance by the principal of the agreements contained in the bid. The amount of such bid deposit shall be five percent (5%) of the amount of the bid.
- 9.3 All bid deposits of general bidders, except those of the three (3) lowest responsible and eligible general bidders, shall be return within ten (10) days, Saturdays, Sundays and legal holidays excluded after the opening of the general bids. The bid deposits of the three (3) lowest responsible and eligible general bidders shall be returned upon the execution and delivery of the contract, or, if no award made, upon the expiration of thirty (30) calendar days after the date of opening General Bids; except that, any selected general bidder fails to perform its agreement to execute contract and furnish a performance bond and also a labor and materials or payment bond as stated in its bid in accordance with MGL Section 44E of Chapter 149, its deposit shall become and be the property of the Awarding Authority as liquidated damages, provided that the amount of the bid deposit which becomes the property of the Awarding Authority shall not, in any event, exceed the difference between its bid price and the bid price of the next lowest responsible and eligible 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, its bid deposit shall be returned to him/her named in the general bids.
- 9.4 All bid deposits of sub-bidders, except those of the three (3) lowest responsible and eligible sub-bidders, shall be return within ten (10) days, Saturdays, Sundays and legal holidays excluded after the opening of the general bids. The bid deposits of the three (3) lowest responsible and eligible filed sub-bidders shall be returned upon the execution of the General Contract, except that, if a selected sub-bidder fails to perform its agreement to execute a sub-contract with the general bidder selected as the General Contractor, contingent upon the execution of the general contract, and, if requested to do so in the general bid by such general bidder, to furnish a performance and payment bond as stated in his sub-bid in accordance with MGL Section 44F(2) of Chapter 149, the bid deposit of such sub-bidder shall become and be the property of the Awarding Authority as liquidated damages, provided that the amount of the bid deposit which becomes the property of the Awarding Authority shall not, in any event, exceed the difference between its sub-bid price and the sub-bid price of the next lowest responsible and eligible sub-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, its bid deposit shall be returned to him/her named in the general bids.

- 9.5 In addition to the provisions for the return of bid deposits in the foregoing Paragraphs 9.3 and 9.4 upon receipt of a bid bond in an amount not less than the amount of the required bid deposit, the Awarding Authority shall return any bid deposit of a bidder forthwith after public opening of bids. The bid bond shall be in an amount and in the form provided in Paragraph 9.2.

ARTICLE 10 - REJECTION OF BIDS

- 10.1 The Awarding Authority reserves the right to reject any or all General Bids, if it be in the public interest to do so. The Awarding Authority reserves the right to reject any sub-bid on any trade, if it determines that such sub-bid does not represent the sub-bid of a person competent to perform the work as specified, or that less than three (3) such sub-bids were received and that the prices are reasonable for acceptance without further competition.
- 10.2 Sub-bids which are restricted to use by one General Contractor and are deemed to be unrealistic in that the proposed price is substantially less or more than the actual cost to complete all the work specified in that Section of the Specifications will be considered as not responsive to the Invitation to Bid and shall be rejected (Massachusetts Department of Labor and Industries Ruling N°.136 and N°.169.)
- 10.3 Within five (5) days, Saturdays, Sundays and legal holidays excluded, after opening of sub-bids, the Awarding Authority will reject every sub-bid which is not accompanied by the required bid deposit or which otherwise does not conform to the statutory requirements, 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, provided, however, that the failure of the Awarding Authority to reject such a sub-bid within such period shall not validate such a sub-bid nor preclude the Awarding Authority from subsequently rejecting it.
- 10.4 Every general bid which is not accompanied by the required bid deposit, or which otherwise does not conform to the statutory requirements, 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.
- 10.5 No general bid or sub-bid shall be rejected because of the failure to submit prices for, or information relating to, any item or items for which no specific space is provided in the bid form furnished by the Awarding Authority, but this sentence shall not be applicable to any failure to furnish prices or information required by MGL Chapter 149 Section 44E (in the case of general bids) or MGL Section 44F (in the case of sub-bids) of Chapter 149 Chapter 149. No general bid shall be rejected (1) because the sum of the prices for all work of the General Contractor and sub-bids does not equal the general bid price set forth on the bid form for that purpose or (2) because of error in setting forth the name, the sub-bid price of a sub-bidder, or the total sub-bids as long as the sub-bidder or sub-bidders

designated are clearly identifiable, or (3) because the plans and specifications do not accompany the bid or are not submitted with the bid.

- 10.6 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.

ARTICLE 11 - METHOD OF AWARD

- 11.1 The general contract will be awarded to the lowest responsible and eligible bidder on the basis of the proposed base contract price and accepted alternates. Attention is directed to the provisions of MGL Chapter 149 Section 44A; defining the terms "responsible" and "eligible"
- 11.2 Award of the general contract will be made within thirty (30) days, Saturdays, Sundays and legal holidays excluded. after the opening of the general bids.
- 11.3 The successful bidder will be notified in writing, by mail or otherwise, that his bid has been accepted and that he has been awarded the contract.
- 11.4 If the bidder selected as the General Contractor fails to perform his agreement to execute the contract in accordance with the terms of his general bid and furnish a performance bond and also a labor and materials or payment bond as stated in his general bid, an award will be made to the next lowest responsible and eligible general bidder, subject to the provisions of the aforesaid MGL Chapter 149, Sections 44A-44H. The thirty (30) day time limit will not apply to a second or subsequent award made after the expiration of the time limit with the consent of said next lowest responsible and eligible bidder and made because the original award made within the time limit was invalid, or because the general bidder fails to execute the general contract or to provide a performance bond and labor and materials or payment bond.

ARTICLE 12 - EXECUTION OF CONTRACTS

- 12.1 All bidders' attention is called to the agreements and certifications made by general bidders and sub-bidders in the required FORM FOR GENERAL BID and FORM FOR SUB-BID, respectively.
- 12.2 Bonds required of the General Contractor must be delivered to the Awarding Authority not later than the time of execution of the contract. An attorney-in-fact who executes the required bond on behalf of the surety must affix thereto a certified and current copy of his power of attorney.
- 12.3 A performance and payment bond furnished by the Sub-Contractor. at the request of a General Contractor set forth in the general bid form, shall be for the benefit of the General Contractor; shall secure the performance of the subcontract by the Sub-Contractor; and shall indemnify and hold harmless the General Contractor and the surety or sureties under the labor and materials or payment bond furnished by such General Contractor to the Awarding Authority against (1) any and all loss and

expense arising out of any and all claims in connection with the performance of said subcontract which would be required to be paid under the labor and materials or payment bond furnished by the General Contractor to the Awarding Authority and (2) attorney's fees in the event that the Sub-Contractor, after notice, fails to assume the defense of and defend such claims.

- 12.4 The contract between the General Contractor and each Sub-Contractor shall be in the form contained in the Contract Documents following these Instructions, as required by MGL Chapter 149, Section 44F(4)(c).

ARTICLE 13 - COMMENCEMENT OF WORK AND TIME OF COMPLETION

- 13.1 It is agreed that time is of the essence of this Contract. The selected General Bidder must agree to commence and prosecute the Work under this Contract in conformance with the conditions of the Contract Documents and to substantially complete 90 days from receipt by Contractor of Notice to Proceed.

ARTICLE 14 - LIQUIDATED DAMAGES

- 14.1 Due to the expenses incurred by the Awarding Authority for the continued use of the existing library, the Awarding Authority may assess Liquidated Damages in the amount of Two Hundred Dollars per day (\$200/day), if the project is not completed within the Contract Time of 90 days. Any authorized extension of time will delay the commencement of Liquidated damages. The Contract Time may be extended due to suspensions, delays, interruptions or failures caused by the Owner as provided for by MGL Chapter 30, Sections 39O and 39P, and for changes in the scope of the Contract due to differing subsurface or latent physical conditions as provided for by MGL Chapter 30, Section 39N.

End of Document

Document 00410
FORM FOR GENERAL BID

BID OF: _____
(Name of General Bidder)

PROJECT: 23 MAPLE STREET HISTORIC EXTERIOR RESTORATION
TO: Town of Arlington
c/o Office of the Purchasing Agent
Town Hall Annex
730 Massachusetts Ave.,
Arlington, MA 02476

A. The undersigned Bidder hereby offers and agrees to provide all labor, services, products, and materials required in the performance of Work to complete the following named project:

23 MAPLE STREET HISTORIC EXTERIOR RESTORATION,
Arlington, MA.

to the satisfaction of the Awarding Authority and the Architect and in accordance with the accompanying Bidding and Contract Documents, dated: July 7, 2015, as prepared by:

Court Street Architects
285 Parker Street, Newton Centre, MA 02459

for the Contract price specified below, subject to additions and deductions according to the terms of the Contract Documents.

B. Bid Sum: The proposed total contract price is: (Base Bid - NOT INCLUDING ALTERNATES)
..... Dollars

(total contract price amount in words, which governs)

(\$)

(total contract price amount in numbers)

C. Addenda: The Bidder acknowledges receipt of addenda numbered as follows, and has taken them into consideration in the preparation of this Bid:

(.....) (.....) (.....) (.....) (.....) (.....) (.....)

(indicate addendum numbers received)

D. Alternates: The undersigned Bidder submits the following alternate prices, as described in the Bidding Documents, which are to be added to or deducted from the above stated Bid Proposal, as may be selected by the Awarding Authority for inclusion into this Contract. (In the event that an alternate does not affect the Contract Price, the Bidder shall remark "No Change".) NOT APPLICABLE

Add Alternates

For Alternate No. 1:

\$.....

E. Subdivision of Bid: The subdivision of the proposed contract price is as follows:

Item 1. The work of the General Contractor, being all work other than that covered by Item 2.

..... Dollars

(Item 1 price amount in words)

(\$)

(Item 1 price amount in numbers)

Item 2: The work of the Sub-Bidders Indicated by Class of Work and Name of Filed Sub-Bidder.

<u>Trade and Sub-Bidder Name</u>	<u>Amount</u>	<u>Bond Required</u>
.....	\$	YES / NO
.....	\$	YES / NO
.....		

Failure to edit any or all spaces in the Bonds Required column will be construed as an entry of the word "NO".

F. Filed Sub-Bidders: The undersigned agrees that each of the above named sub bidders will be used for the work indicated at the amount stated, unless substitution is made. The undersigned further agrees to pay the premium for the performance and payment bonds furnished by sub-bidders as requested herein and that all of the cost of such premiums is included in the amount set forth in Item 1 of this bid.

The undersigned agrees that if he or she is selected as General Contractor, it will promptly confer with the Awarding Authority on the question of sub-bidders; and that the Awarding Authority may substitute for any sub-bid listed above a sub-bid duly filed with the Awarding Authority by another sub-bidder for the sub-trade against whose standing and ability the under signed makes no objection; and that the undersigned will use all the finally selected sub-bidders at the amounts named in their respective sub-bids and be in every way as responsible for them and their work as if that had been originally named in this general bid, the total contract priced being adjusted to conform thereto.

G. Unit prices: Should certain additional work be required, or should the quantities of certain classes of Filed-sub-bid work be increased or decreased from those upon which the Filed-

Sub Bid is based, only by order or approval of the Architect and Awarding Authority, the undersigned agrees that the following supplemental unit prices shall be the basis of payment to him or credit to the Awarding Authority for such work, or increase or decrease in the work. Unit prices given shall represent the exact net amount per unit to be paid the Filed-Sub-Bid Subcontractor (in the case of additions or increases) or credited to the Awarding Authority in the case of decreases, No additional adjustment will be allowed for overhead, profit, insurance, compensation insurance or other direct or indirect expenses of the work of the Filed-Sub-Bid Subcontractor or Sub-subcontractor. Refer to Sections listed in parenthesis below for description and measurement of unit price items. The Awarding Authority shall have the right to reject any or all proposed unit prices at any time prior to signing the Agreement, in which case the cost of extra work shall be as determined by one of the other methods set forth in the General Conditions. The given unit price amounts for the work listed in the Schedule of Unit Prices" shall be the same amount for increases or decreases for such units of work.

H. Schedule of Unit Prices

Item	Spec. Section	Unit of Measure	FSB Unit Bid Cost	Quantity	Bid Price
1. Replacement of clapboard siding	06200	Square feet of wall surface.	\$.....	50 sf	\$.....

Contract on the following maximum mark-up percentages (Paragraph I).

I. Overhead and Profit: The undersigned Bidder agrees to the maximum mark-up percentages for overhead, profit and taxes, computed on the total of labor and materials only, for additional work authorized by the Awarding Authority during the performance of the Work.

1. For the General Contractor, allow a maximum of fifteen percent (15%) on Work of his/her own employees and agents; further additional overhead and profit costs will not be allowed, for non-filed subcontractors, vendors and employees of the Contractor.
2. For the General Contractor, allow a maximum of Five percent (5%) on total payments made to Filed Sub-Contractors.
3. For Filed Sub-Contractors, allow a maximum of Ten percent (10%) on their own work and a maximum of Five percent (5%) on payments made to their Filed Sub-Sub-Contractors.
4. For Filed Sub-Sub-Contractors, allow a maximum of Five percent (5%) on their own work.

J. Bid Security: Accompanying this proposal is a bid surety in the form of: (Bid bond) (Certified check) (Treasurer's check) (Cashier's check), payable to *Town of Arlington* in the amount of

..... Dollars

(Bond amount in words, which governs)

(\$)

(Bond amount in numbers)

- K. **Examined Conditions:** The undersigned Bidder hereby declares that he or she has visited the site and the conditions present and has carefully examined the Contract Documents, together with all Addenda issued, received and acknowledged below, and has familiarized himself or herself with the legal requirements (federal, state, and local laws, ordinances, rules and regulations) and other conditions which may affect the cost, progress or performance of Work, and has made independent investigations, deemed necessary by the Bidder.
- L. **Contract:** The undersigned agrees that, if he or she is selected as the Contractor, he/she 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 this general bid and furnish a Performance Bond and also a Labor and Material or Payment Bond, each of a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and satisfactory to the Awarding Authority and each in the sum of the contract price, the premiums for which are to be paid by the Contractor and are included in the contract price.
- M. **Furnish Labor:** The undersigned hereby certifies that he/she is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work and he/she will comply fully with all laws and regulations applicable to awards made subject to Massachusetts General Laws (M.G.L.) Chapter 149, Section 44A.
- N. **Withdraw bids:** The Bidder agrees that this Bid shall be good and may not be withdrawn for a period of 30 calendar days after the scheduled closing time for receipt of bids.
- O. **Non-collusion:** The undersigned Bidder certifies under the penalty of perjury, that he/she, and his/hers employees and agents of the Bidder, are the only persons interested in this proposal, that this proposal is made without any connection with any other person making any bid for the same work; that no person acting for, or employed by, the Awarding Authority is directly or indirectly interested in this proposal, or in any contract which be made under it, or in expected profits to arise therefrom; and without directly or indirectly influencing or attempting to influence any other person or corporation to bid or to refrain from bidding or to influence the amount of the bid of any other person or corporation; and that this proposal is made in good faith without collusion or connection with any other person bidding for the same work; and that this proposal is made with distinct reference and relation to the plans and specifications prepared for this contract and herein mentioned. The undersigned further declares that in regard to the conditions affecting the work to be done and the labor and materials needed, this proposal is based solely on their own investigation and research and not in reliance upon any representation of any employee, officer or agent of the Awarding Authority.
- P. **Certification:** Attach copy of Division of Capital Planning and Operations (DCPO) Certificate of Eligibility Form CQ7 and Contractor Update Statement Form CQ3, as required by Massachusetts General Law, Chapter 149, Section 44D.

- Q. Affidavit of eligibility to perform work in the Commonwealth of Massachusetts: The undersigned certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of Section 29F of Chapter 29, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated hereunder.
- R. Authority Rights: The Bidder understands the Awarding Authority right to reject any and all bids.

Should the Invitation to Bid, Instructions to Bidders, Form for General Bid, Conditions of the Contract, Plans or Specifications require submission of special data to accompany the bid, the Awarding Authority reserves the right to rule the bidder's failure to submit such data an informality and to receive said data subsequently, within a reasonable time as set by the Awarding Authority.

Date of Bid:
(Name of Bidder - Company Name)

BY
(SIGNATURE of person signing Bid & Title)

.....
(PRINTED Name of person signing Bid & Title)

.....
(Business Mailing Address)

.....
(City/Town, State and Zip Code)

Corporate Seal
(Business Telephone Number)

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

End of Document

SECTION 01010 - SUMMARY OF WORK

1.0 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including SUPPLEMENTAL STATUTORY CONDITIONS and CONSOLIDATED GENERAL CONDITIONS and other Division-1 Specification Sections, apply to this Section.

1.1 PROJECT DESCRIPTION

- A. 23 MAPLE STREET HISTORIC EXTERIOR RESTORATION Arlington,
Massachusetts

The project, including restoring porches removal of existing chimney to below roof level, new rubber roofing, and painting.

1.2 WORK SEQUENCE

- A. The Work will be conducted in construction sequencing to provide the least possible interference and disruption to the activities of 23 Maple Street, Arlington, MA.
 - 1. Safe pedestrian and vehicular access to 23 Maple St. and adjacent parking shall be maintained at all times.
 - 2. Construction staging, parking and activities shall be restricted to designated areas as determined by the Owner.
 - 3. Strict coordination with 23 Maple St. staff will be insisted upon. All functioning operations of the building will be ongoing throughout the construction period and the Contractor is expected to coordinate his activities with the Owner's activities in insure that paint fumes, dust, etc. do not become problematic to the inhabitants of the building.
 - 4. Work shall not conflict with Owners normal operations.

1.3 CONTRACTOR USE OF PREMISES

- A. General: Limit use of the premises to construction activities in areas indicated; allow for public access to the building throughout construction.
- B. Use of the Existing Site: Repair damage caused by construction operations. Take all precautions necessary to protect the existing building and landscaping during the construction period.
- C. The building will be fully occupied with full time residents throughout the construction process. Smoking, fowl language, and unnecessary noise must be avoided.

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1.4 OWNER OCCUPANCY

A. Full Owner Occupancy: The Owner will occupy the site and existing building during the entire period. Perform the Work so as not to interfere with the Owner's operations.

1. A Certificate of Substantial Completion will be executed for the Work.

1.5 LEAD BASED PAINT

The workers shall assume that the existing surfaces were originally painted with paint containing lead. All necessary precautions for the general public and workman shall be maintained throughout the painting process.

The Commonwealth of Massachusetts Department of Public Health Regulations 105 CMR 460.000 defines a dangerous level of lead "when present in a dried film including but not limited to paint, glaze, stain or varnish on walls, woodwork, or other surfaces or articles, or in plaster, putty or other substance to be the following:

- (1) a positive reaction with a 6% to 8% sodium sulfide solution indicative of more than 0.5% lead by dry weight; or
- (2) more than 1.2 milligrams lead per square centimeter of surface as measured on site by a mobile x-ray fluorescence analyzer or comparable equipment."

CONCLUSIONS AND RECOMMENDATIONS FOR LEAD BASED PAINT

Building renovation projects which disturb building substrates that contain lead are regulated by the U. S. Department of Labor, Occupational Health and Safety Administration (OSHA), Lead in Construction Standard 29 CFR 1926.62 and the Massachusetts Department of Labor and Workforce Deleading Regulations 454 CMR 22.00.

The OSHA Lead in Construction Standard requires that an assessment of an employees exposure to lead be made on all construction work where an employee may be occupationally exposed to lead. This assessment may consist of collection and analysis of personal air samples for lead, representative of a full work shift (8 hours), including at least one sample for each shift or for the shift with the highest exposure level for each job classification in each work area. Alternatively, personal air sampling measurements made within the preceding twelve months, which were performed by the same employer and applicable to the same employee tasks may be used to assess employee exposure.

For projects where an initial exposure assessment has not been performed, or historical air monitoring data is not available, the employer must treat employees performing certain operations (i.e., manual demolition of structures, manual scraping, manual sanding) as if they were exposed to lead above the Permissible Exposure Limit (PEL), of $50 \mu \text{g}/\text{m}^3$ averaged over an 8-hour period. This means providing respiratory protection, protective work clothing and

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equipment, change areas, hand washing, biological monitoring and training as required by the standard.

The results of the initial exposure assessment determine the employer requirements to be followed in order to protect the employees. For initial determinations that indicate no employee is exposed at or above the action level ($30 \mu\text{g}/\text{m}^3$), further exposure determination is not required.

When an initial determination reveals employee exposures to be at or above the action level ($30 \text{mg}/\text{m}^3$) but at or below the PEL ($50 \text{mg}/\text{m}^3$), the employer shall continue to perform monitoring at least every 6 months. Monitoring shall continue until at least two consecutive measurements, taken at least seven days apart, are below the action level at which time the employer may discontinue monitoring for that employee. The OSHA standard also requires that biological monitoring of employees exposed to lead above the action level be performed. Biological monitoring shall include blood lead and zinc protoporphyrin (ZPP) level determination. A medical surveillance and a written training program are also required for all employees exposed above the action level.

For exposures determined to be above the PEL ($50 \mu\text{g}/\text{m}^3$) in addition to the above requirements, the employer shall establish and implement a written compliance program to reduce exposures to the PEL or below. Included in the written compliance program are engineering, work practice and administrative controls to be employed to reduce employee exposure to the lowest feasible levels.

According to the Massachusetts Department of Labor and Industries Regulations, 454 CMR 22.00, on all work areas where renovation or rehabilitation is performed in a manner that disturbs paint, plaster or other materials containing dangerous levels of lead, the employer shall comply with the following safe work practices:

- (1) No person under the age of 18 years shall be permitted to work on renovation and/or rehabilitation projects.
- (2) Whenever there is an exposure to lead dust, a respirator and personal protective clothing such as those listed in 454 CMR 22.08(2)(d) shall be worn.
- (3) The employer shall not permit employees to eat, drink, smoke, chew (gum or tobacco), or apply cosmetics in any work area.
- (4) When tools and/or equipment are removed from the work area, they shall be cleaned with a solution of tri-sodium phosphate or vacuumed with a HEPA vacuum. All work areas shall be cleaned at the end of the job with a HEPA vacuum.
- (5) Adequate precautions shall be implemented to insure that the outside environment is protected, according to applicable EPA and DEP regulations.

- (6) To prevent contamination of adjacent areas, the employer shall seal off the work areas, in accordance with 454 CMR 22.08(2)(b)(i).
- (7) The preparation, transportation and disposal of waste material containing lead shall follow the work practice requirements set forth in 454 CMR 22.08(2)(f).

Some of the waste generated in a renovation project impacting building components painted with lead based paint may be classified as hazardous. If the waste is determined to be hazardous, the waste must be treated, stored, transported and disposed of in accordance to the hazardous waste regulations. In order to determine disposal requirements of waste generated from the renovations, a Toxicity Characteristic Leaching Procedure (TCLP) analysis is required to be performed on the waste. TCLP is a laboratory analytical method which imitates the leaching action in a landfill. A waste is considered toxic if the TCLP analysis results in the extraction of lead above 5 parts per million, or 5 milligrams per liter in solution. Solid waste which has been determined not to be hazardous can be disposed of in a state approved landfill as conventional waste. Hazardous waste must be disposed of at an EPA approved hazardous waste disposal facility. The generator of the waste shall ensure that the facility meets all legal requirements.

END OF SECTION

SECTION 01027 - APPLICATIONS FOR PAYMENT

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.
 - 1. Coordinate the Schedule of Values and Applications for Payment with the Contractor's Construction Schedule, List of Subcontracts, and Submittal Schedule.
- B. The Contractor's Construction Schedule and Submittal Schedule are included in Section "Submittals".
- C. Payment procedures shall comply with the applicable procedures as required by Chapter 30 of the General Laws of the Commonwealth of Massachusetts are most recently amended.

1.2 SCHEDULE OF VALUES

- A. Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.
 - 1. Submit the Schedule of Values to the Architect at the earliest feasible date, but in no case later than 7 days before the date scheduled for submittal of the initial Application for Payment.
- B. Format and Content: Use the Project Manual Table of Contents as a guide to establish the format for the Schedule of Values.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of the Architect.
 - c. Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed:
 - a. Contractor's construction schedule.
 - b. Related Specification Section.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that have affected value.

- g. Dollar value.
 - h. Percentage of Contract Sum to the nearest one-hundredth percent, adjusted to total 100 percent.
3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principal subcontract amounts down into several line items.
 4. Round amounts off to the nearest whole dollar; the total shall equal the Contract Sum.
 5. For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
 6. Unit Cost Allowances: Show line item value of unit cost allowances as a product of unit cost times measured quantity as estimated from the best indication in the Contract Documents.
 7. Margins of Cost: Show line items for indirect costs, and margins on actual costs, only to the extent that such items will be listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete including its total cost and proportionate share of general overhead and profit margin.
 - a. At the Contractor's option, temporary facilities and other major cost items that are not direct cost of actual work-in- place may be shown as separate line items in the Schedule of Values or distributed as general overhead expense.
 8. Schedule Updating: Update and resubmit the Schedule of Values when Change Orders or Construction Change Directives result in a change in the Contract Sum and at each application for payment.

1.3 APPLICATIONS FOR PAYMENT:

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.
 1. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment shall be established by the Town of Arlington, MA. The period of construction Work covered by each Application for Payment is the period ending 7 days prior to the date for each progress payment and starting the day following the end of the preceding period.
- C. Payment Application Forms: Use AIA Document G 702 and Continuation Sheets G 703 as the form for Application for Payment.

- D. Application Preparation: Complete every entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Owner. Incomplete applications will be returned without action.
1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions have been made.
 2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.
- E. Transmittal: Submit 4 executed copies of each Application for Payment to the Architect by means ensuring receipt within 24 hours; one copy shall be complete, including waivers of lien and similar attachments, when required.
1. Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to the Architect.
- F. Waivers of Mechanics Lien:
1. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of Work covered by the application who could lawfully be entitled to a lien.
 2. Waiver Forms: Submit waivers of lien on forms, and executed in a manner, acceptable to Owner.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment include the following:
1. List of subcontractors.
 2. List of principal suppliers and fabricators.
 3. Schedule of Values.
 4. Contractor's Construction Schedule (preliminary if not final).
 5. Schedule of principal products.
 6. Schedule of unit prices.
 7. Submittal Schedule (preliminary if not final).
 8. List of Contractor's staff assignments.
 9. List of Contractor's principal consultants.
 10. Copies of building permits
 11. Copies of authorizations and licenses from governing authorities for performance of the Work.
 12. Initial progress report.
 13. Report of pre-construction meeting.
 14. Certificates of insurance and insurance policies.
- H. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment; this application shall reflect any Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

- I. Administrative actions and submittals that shall proceed or coincide with this application include:
 1. Occupancy permits and similar approvals.
 2. Warranties (guarantees) and maintenance agreements.
 3. Maintenance instructions.
 4. Final cleaning.
 5. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion.

- J. Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment include the following:
 1. Completion of Project closeout requirements.
 2. Completion of items specified for completion after Substantial Completion.
 3. Assurance that unsettled claims will be settled.
 4. Assurance that Work not complete and accepted will be completed without undue delay.
 5. Transmittal of required Project construction records to Owner.
 6. Proof that taxes, fees and similar obligations have been paid.
 7. Removal of temporary facilities and services.
 8. Removal of surplus materials, rubbish and similar elements.

END OF SECTION

SECTION 01035 - MODIFICATION PROCEDURES

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections: The following sections contain requirements that relate to this section:
 - 1. Division 1 Section "Submittals" for requirements for the Contractor's Construction Schedule.
 - 2. Division 1 Section "Application for Payment" for administrative procedures governing applications for payment.
 - 3. Division 1 Section "Product Substitutions" for administrative procedures for handling requests for substitutions made after award of the Contract.

1.2 MINOR CHANGES IN THE WORK

- A. Supplemental instructions authorizing minor changes in the Work, not involving an adjustment to the Contract Sum or Contract Time, will be issued by the Architect on AIA form G710, Architect's Supplemental Instructions.

1.3 CHANGE ORDER PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time will be issued by the Architect, with a detailed description of the proposed change and supplemental or revised Drawings and Specifications, if necessary.
 - 1. Proposal requests issued by the Architect are for information only. Do not consider them an instruction either to stop work in progress, or to execute the proposed change.
 - 2. Unless otherwise indicated in the proposal request, within 15 days of receipt of the proposal request, submit to the Architect for the Owner's review an estimate of cost necessary to execute the proposed change.
 - a. Include a list of quantities of products to be purchased and unit costs, along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.

- b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include a statement indicating the effect the proposed change in the Work will have on the Contract Time.
- B. Contractor-Initiated Change Order Proposal Requests: When latent or other unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the Architect.
 - 1. Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
 - 2. Include a list of quantities of products to be purchased and unit costs along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Comply with requirements in Section "Product Substitutions" if the proposed change in the Work requires the substitution of one product or system for a product or system specified.
- C. Proposal Request Form: Use AIA Document G 709 for Change Order Proposal Requests.
- D. Proposal Request Form: Use forms provided by the Owner for Change Order Proposals; sample copies are included at the end of this Section

1.4 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: When the Owner and Contractor are not in total agreement on the terms of a Change Order Proposal Request, the Architect may issue a Construction Change Directive on AIA Form G714, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. The Construction Change Directive will contain a complete description of the change in the Work and designate the method to be followed to determine change in the Contract Sum or Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.5 CHANGE ORDER PROCEDURES

- A. Upon the Owner's approval of a Change Order Proposal Request, the Architect will issue a Change Order for signatures of the Owner and Contractor on AIA Form G701, as provided in the Conditions of the Contract.

END OF SECTION

SECTION 01200 - PROJECT MEETINGS

1.0 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including SUPPLEMENTAL STATUARY CONDITIONS and CONSOLIDATED GENERAL CONDITIONS and other Division-1 Specification Sections, apply to this Section.

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for project meetings including but not limited to:
 - 1. Pre-Construction Conference.
 - 2. Progress Meetings.
- B. Construction schedules are specified in another Division-1 Section.

1.2 PRE-CONSTRUCTION CONFERENCE

- A. Schedule a pre-construction conference and organizational meeting at the Project site or other convenient location no later than 15 days after execution of the Agreement and prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.
- B. Attendees: The Owner, Architect, the Owner, and the Contractor and its superintendent, major subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.
- C. Agenda: Discuss items of significance that could affect progress including such topics as:
 - 1. Tentative construction schedule.
 - 2. Critical Work sequencing.
 - 3. Designation of responsible personnel.
 - 4. Procedures for processing field decisions and Change Orders.
 - 5. Procedures for processing Applications for Payment.
 - 6. Distribution of Contract Documents.
 - 7. Submittal of Shop Drawings, Product Data and Samples.
 - 8. Use of the premises.
 - 9. Office, Work and storage areas.
 - 10. Equipment deliveries and priorities.
 - 11. Safety procedures.
 - 12. First aid.
 - 13. Security.
 - 14. Housekeeping.
 - 15. Working hours.

1.3 PROGRESS MEETINGS

- A. Conduct progress meetings at the Project site at weekly intervals. Notify the Owner and Architect of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request.
- B. Attendees: In addition to representatives of the Owner and Architect, each subcontractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at these meetings by persons familiar with the Project and authorized to conclude matters relating to progress.
- C. Architect shall record and prepare notes for each progress meeting, identifying issues to be resolved. Notes will be distributed at the following meeting.
- D. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the Project.
 - 1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 2. Review the present and future needs of each entity present, including such items as:
 - a. Interface requirements.
 - b. Time.
 - c. Sequences.
 - d. Deliveries.
 - e. Off-site fabrication problems.
 - f. Access.
 - g. Site utilization.
 - h. Temporary facilities and services.
 - i. Hours of Work.
 - j. Hazards and risks.
 - k. Housekeeping.
 - l. Quality and Work standards.
 - m. Change Orders.
 - n. Documentation of information for payment requests.
- E. Revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

END OF SECTION

SECTION 01300 - SUBMITTALS

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including;
 - 1. Contractor's construction schedule.
 - 3. Shop Drawings.
 - 4. Product Data.
 - 5. Samples.

- B. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
 - 1. Permits.
 - 2. Applications for payment.
 - 3. Performance and payment bonds.
 - 4. Insurance certificates.
 - 5. List of Subcontractors.

- C. The Schedule of Values submittal is included in Section "Applications for Payment."

1.2 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - 3. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.

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- a. Allow ten days for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Architect will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
 - b. If an intermediate submittal is necessary, process the same as the initial submittal.
 - c. Allow two weeks for reprocessing each submittal.
 - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.
- B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
1. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 2. Include the following information on the label for processing and recording action taken.
 - a. Project name.
 - b. Date.
 - c. Name and address of Contractor.
 - d. Name and address of subcontractor.
 - e. Name and address of supplier.
 - f. Name of manufacturer.
- C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Architect using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.
1. On the transmittal Record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

1.3 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar- chart type Contractor's construction schedule. Submit within 15 days of the date established for "Commencement of the Work".

1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values".
 2. Within each time bar indicate estimated completion percentage in 10 percent increments. As Work progresses, place a contrasting mark in each bar to indicate Actual Completion.
 3. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
 4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the Work.
 5. Coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests and other schedules.
 6. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Architect's procedures necessary for certification of Substantial Completion.
- B. Work Stages: Indicate important stages of construction for each major portion of the Work, including testing and installation.
- C. Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the Work. Indicate where each element in an area must be sequenced or integrated with other activities.
- D. Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- E. On the Construction Schedule provide dates indicating the beginning and end of each phase of construction. Provide dates for tenant relocation.
- F. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

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1.6 SHOP DRAWINGS

- A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.

- B. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include the following information:
 - 1. Dimensions.
 - 2. Identification of products and materials included.
 - 3. Compliance with specified standards.
 - 4. Notation of coordination requirements.
 - 5. Notation of dimensions established by field measurement.
 - 6. Sheet Size: Except for templates, patterns and similar full- size Drawings, submit Shop Drawings on sheets at least 8-1/2" x 11" but no larger than 24" x 36".
 - 7. Initial Submittal: Submit one correctable translucent reproducible print and one blue- or black-line print for the Architect's review; the reproducible print will be returned.
 - 8. Final Submittal: Submit 8 sets of drawings. 2 prints will be retained; the remainder will be returned.
 - a. One of the prints returned shall be marked-up and maintained as a "Record Document".
 - 9. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

- C. Coordination drawings are a special type of Shop Drawing that show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or function as intended.
 - 1. Preparation of coordination Drawings is specified in section "Project Coordination" and may include components previously shown in detail on Shop Drawings or Product Data.
 - 2. Submit coordination Drawings for integration of different construction elements. Show sequences and relationships of separate components to avoid conflicts in use of space.

1.7 PRODUCT DATA

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- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."
 1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with recognized trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurement.
 - f. Notation of coordination requirements.
 2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
 3. Preliminary Submittal: Submit a preliminary single-copy of Product Data where selection of options is required.
 4. Submittals: Submit 6 copies of each required submittal; submit 2 copies where required for maintenance manuals. The Architect will retain one, and will return the others marked with action taken and corrections or modifications required.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
 - a. Do not proceed with installation until an applicable copy of Product Data applicable is in the installer's possession.
 - b. Do not permit use of unmarked copies of Product Data in connection with construction.

1.8 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial

sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.

1. Mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. Prepare Samples to match the Architect's Sample. Include the following:
 - a. Generic description of the Sample.
 - b. Sample source.
 - c. Product name or name of manufacturer.
 - d. Compliance with recognized standards.
 - e. Availability and delivery time.

2. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
 - a. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3), that show approximate limits of the variations.
 - b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.
 - c. Refer to other Sections for Samples to be returned to the Contractor for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.

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3. Preliminary submittals: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.
 - a. Preliminary submittals will be reviewed and returned with the Architect's mark indicating selection and other action.
 4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 3 sets; one will be returned marked with the action taken.
 5. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of construction.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 - b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
- B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.
1. Field Samples specified in individual Sections are special types of Samples. Field Samples are full-size examples erected on site to illustrate finishes, coatings, or finish materials and to establish the standard by which the Work will be judged.
 - a. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

1.9 ARCHITECT'S ACTION

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Architect will review each submittal, mark to indicate action taken, and return promptly.
1. Compliance with specified characteristics is the Contractor's responsibility.
- B. Action Stamp: The Architect will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
1. Final Unrestricted Release: Where submittals are marked "Approved," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.

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2. Final-But-Restricted Release: When submittals are marked "Approved as Noted," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.

3. Returned for Resubmittal: When submittal is marked "Not Approved, Revise and Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
 - a. Do not permit submittals marked "Not Approved, Revise and Resubmit" to be used at the Project site, or elsewhere where Work is in progress.
4. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Action Not Required".

END OF SECTION

SECTION 01700 - PROJECT CLOSEOUT

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
 - 1. Inspection procedures.
 - 2. Project record document submittal.
 - 3. Operating and maintenance manual submittal.
 - 4. Submittal of warranties.
 - 5. Final cleaning.

- B. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions-2 through -16.

1.2 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
 - 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
 - 2. Advise Owner of pending insurance change-over requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 - 4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
 - 5. Submit record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar final record information.
 - 6. Deliver tools, spare parts, extra stock, and similar items.
 - 7. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

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- B. Inspection Procedures: On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
 - 1. The Architect will repeat inspection when requested and assured that the Work has been substantially completed.
 - 2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.3 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
 - 1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 - 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 - 3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Architect.
 - 4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the Work.
 - 5. Submit consent of surety to final payment.
 - 6. Submit a final liquidated damages settlement statement.
 - 7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Reinspection Procedure: The Architect will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect.
 - 1. Upon completion of reinspection, the Architect will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
 - 2. If necessary, reinspection will be repeated.

1.6 FINAL CLEANING

- A. General: General cleaning during construction is required by the General Conditions and included in Section "Temporary Facilities".
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
 - 1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
 - a. Remove labels that are not permanent labels.
 - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
 - d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 - e. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
- C. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
 - 1. Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION

SECTION 01740 - WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers standard warranties on products and special warranties.
 - 1. Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials.
 - 2. General closeout requirements are included in Section "Project Closeout."
 - 3. Specific requirements for warranties for the Work and products and installations that are specified to be warranted, are included in the individual Sections of Divisions-2 through -16.
 - 4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.

- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.2 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 - 1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
- E. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

1.3 SUBMITTALS

- A. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.
 - 1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within fifteen days of completion of that designated portion of the Work.
- B. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Architect for approval prior to final execution.
 - 1. Refer to individual Sections of Divisions-2 through -16 for specific content requirements, and particular requirements for submittal of special warranties.
- C. Form of Submittal: At Final Completion compile two copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

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- D. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.
1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address and telephone number of the installer.
 2. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS, the Project title or name, and the name of the Contractor.
 3. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

END OF SECTION

SECTION 02070 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Provide all labor, materials and equipment necessary to perform all removal and salvage work of existing materials on the building as indicated in the Contract Documents. This work shall include but not be limited to the following: Remove all flat roofing, slate roofing aluminum siding , panning and trim, metal handrails, masonry as indicated, porch columns and trim and porch and ramp flooring.
- B. The Contractor shall prepare schedules for operating and sequence procedures, traffic control installations and shall provide temporary protective structures and barricades for the, removal and salvage for reuse work.

1.3 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Schedule indicating proposed sequence of operations for selective demolition work to Owner's Representative for review prior to start of work. Include coordination for shutoff, capping, and continuation of utility services as required, together with details for dust and noise control protection.
 - 1. Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.
 - 2. Coordinate with Owner's continuing occupation of portions of existing building.

1.4 JOB CONDITIONS

- A. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.
 - 1. Conditions existing at time of inspection for bidding purposes will be maintained by Owner insofar as practicable. However, minor variations within structure may occur by Owner's removal and salvage operations prior to start of

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selective demolition work.

- B. Partial Demolition and Removal: Items indicated to be removed and salvageable or reused such as slate roofing, shall be carefully removed to avoid damage and stored on site as directed.
 - 1. Storage or sale of removed items on site will not be permitted.
- C. Protections: Provide temporary barricades and other forms of protection to protect Owner's personnel and general public from injury due to selective demolition work.
 - 1. Provide protective measures as required to provide free and safe passage of building occupants, staff and visitors to the building.
 - 2. Provide protective measures as required to provide safe access to and from all entrances to the building the building. Coordinate work with Owner.
 - 3. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished and adjacent facilities or work to remain.
 - 4. Remove protections at completion of work.
 - 5. Maintain required code egresses from building while porch work is ongoing.
- D. Damages: Promptly repair damages caused to adjacent facilities by demolition work.
- E. Traffic: Conduct selective demolition operations and debris removal to ensure minimum interference with adjacent occupied or used facilities.
 - 1. Do not close, block, or otherwise obstruct streets, walks, parking spaces, or other occupied or used facilities without permission from the owner.
- F. Flame Cutting: Do not use cutting torches for removal work on the building.
- G. Environmental Controls: Use temporary enclosures, and other methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection. Note: Exterior paint is assumed to contain lead and proper regulated procedures must be followed for removal of same..

PART 2 - PRODUCTS

2.1 MATERIALS

- A. The patching, repairing, removing and relocation of existing items, and all new materials required for the renovation work shall conform to the requirements of similar materials and workmanship specified under the respective Sections of the Specifications

- B. The renovation of existing mechanical and electrical work and removal items shall be performed in a planned sequence as approved by the Architect. Refer to the Mechanical and Electrical Divisions of the Specifications.

PART 3 - EXECUTION

3.1 PREPARATION

- A. General: Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of areas to be demolished and adjacent facilities to remain.
 - 1. Cease operations and notify Owner's Representative immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.
 - 2. Cover and protect equipment and fixtures from soilage or damage when demolition work is performed in areas where such items have not been removed.
 - 3. Erect and maintain dust-proof partitions and closures as required to prevent spread of dust or fumes to occupied portions of the building.
 - 4. Locate, identify, stub off, and disconnect utility services that are not indicated to remain.

3.2 DEMOLITION

- A. General: Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.
 - 1. Provide services for effective air pollution controls as required by local authorities having jurisdiction.
- B. All materials indicated on the Drawings to be removed shall be taken down in a workmanlike manner so as not to damage the existing materials noted to remain.

3.3 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove from building site debris, rubbish, and other materials resulting from demolition operations. Transport and legally dispose off site.
 - 1. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.

3.5 GENERAL INTENT

- A. It is not the intent herein to describe all the items and work to be removed required under this Section. The Contractor shall assure himself that all of the work to be removed, not otherwise specified herein or shown on the Drawings, shall be removed under this Section at no additional cost to the Owner.

3.6 CLEANUP AND REPAIR

- A. Keep work area free from accumulated debris by frequently removing material and debris.
- B. General: Upon completion of demolition work, remove tools, equipment, and demolished materials from site. Remove protections and leave interior areas broom clean.
 - 1. Repair demolition performed in excess of that required. Return elements of construction and surfaces to remain to condition existing prior to start operations. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION

Section 06100
ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Furnish and install the following:
 - 1. Wood framing at areas of repaired construction and at front and side porches and to supplement existing framing.
 - 2. Wood blocking, rough framing and other items as required.
 - 3. Blocking-in openings in roof sheathing, and overhangs.
 - 4. Various wood blockings, edgings, nailers, curbs, cants, grounds, furring, sheathing, framing members including wood preservative, as required for receipt of various finishes and surfacing materials, required to complete the work and not described herein above.
 - 5. Rough installation hardware, including bolts, screws, spikes, nails, clips, and connection assemblies, as needed for installation of the rough carpentry work.
- B. Install the following furnished under the designated Sections:
 - 1. Roofing furnished under Section, 07317, 07517, and 07600
- C. Coordinate work of this Section with the work of the various trades responsible for applying finish materials and other items to rough carpentry work. Furnish and install furring, blocking, and shims, and other usual items of normal rough carpentry work as required by the various trades for the proper completion of the project.
 - 1. The applicable requirements specified in Part 1 - GENERAL and Part 3 - EXECUTION of the individual specification sections furnishing materials to be installed under this Section, shall be included in and made a part of this Section.
- D. No attempt is made in this Section to list all elements of rough carpentry required on this project or to describe how each element will be installed. It is the responsibility of the Contractor to determine for itself the scope and nature of the work required for a complete installation from the information provided herein and in the Drawings.

E.

1.2 RELATED SECTIONS

- A. Section 06200 - FINISH CARPENTRY
- B. Section 07317 - SLATE ROOFING
- C. Section 07534 - EPDM ROOFING
- D. Section 07600 - SHEET METAL FLASHING AND TRIM:
- E. Section 09910 - PAINTS; Section 10810 - TOILET ACCESSORIES: Providing anchorage devices and mounting templates for toilet accessories.

1.3 REFERENCES

- A. Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Section 01420 - REFERENCES. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
 - 1. EWA - applicable grades and specifications.
 - 2. EWA PRB-108 Performance Standards and Policies for Structural-Use Panels..
 - 3. ASTM D 3201 - Test Method for Hygroscopic Properties of Fire-Retardant Wood.
 - 4. AWWA Standards and references for preservative treated wood including Standards C1, C9, C15, and P5
 - 5. AWWA Standard C-20 - Structural Lumber Fire Retardant Treatment by Pressure Processes.
 - 6. AWWA C-27 - Plywood, Fire Retardant Treatment by Pressure Processes.
 - 7. AWWA M4 - Care Of Preservative Treated Wood Products.
 - 8. MIL L-1914OE - Lumber and Plywood, Fire Retardant Treated.
 - 9. SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
 - 10. SPIB Grading Rules, current edition.
 - 11. UL - Building Materials Directory
 - 12. US. Department of Commerce Voluntary Product Standard PS1 for Construction and Industrial

13. US. Department of Commerce Voluntary Product Standard PS2 for Wood-Based Structural-Use Panels.
14. US. Department of Commerce Voluntary Product Standard PS-20 - American Softwood Lumber Standard.
15. U.S. Department of Commerce Simplified Practice Recommendation R16, for sizes and use classifications of lumber
16. American Lumber Standards Committee, National Lumber Grades Authority for Canadian Lumber, and applicable grading rules and standards of the various lumber associations whose species are being used for grades specified.

1.4 SUBMITTALS

- A. Submit the following under provisions of Section 01330 - SUBMITTAL PROCEDURES:

NA.

1.5 QUALITY ASSURANCE

- A. All lumber shall:
1. Be new, dressed four sides (S4S), clear and free from warping and other defects.
 2. Have a moisture content not exceeding 19 percent when delivered to the project.
 3. Be in accordance with the grading rules of the lumber manufacturer's association under whose jurisdiction the lumber is produced and bear the mark of grade and mill identification.
- B. Plywood: Conform to the requirements of Product Standard PS-1, and bear applicable EWA grade trademarks.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Store all materials in an elevated dry location, protected by waterproof coverings.

1.7 SEQUENCING AND SCHEDULING

- A. Coordinate work of this Section with the work of the various trades responsible for applying finish materials and other items to rough carpentry work, and ensure that the work performed hereunder is acceptable to such trades for the installation of their work.

PART 2 - PRODUCTS

2.2 BOARD AND SHEET MATERIALS

- A. Framing Lumber for studs, beams, joists, rafters, and headers: No. 2 Spruce/Pine/Fir (SPF), or No. 2 Southern Pine, Grade-stamped S-Dry or other surface dried wood species, Number 2 grade or better having a minimum bending stress Fb of 775 PSI (890 PSI repetitive) and modulus of elasticity E not less than 1100 KSI.
- B. Lumber for blocking, nailers and curbs as indicated or required: HemFir, Douglas Fir, Eastern Spruce, Eastern Hemlock, or Southern Pine, surfaced dried stud or utility grade. Wood members shall be of sizes indicated on the Drawings or of the same size as the members being braced.
- C. Timber:
 - 1. Exposed wood members 4 inches and thinner shall be Southern Yellow Pine #1 grade material.
 - 2. Exposed wood members 5 inches and greater shall be Southern Yellow Pine #2 DENSE SR grade material
- D. Furring: Nominal 1 by 3 inches or 1 by 4 inches Douglas Fir, Eastern Spruce, Eastern Hemlock, or Southern Pine, surfaced dried construction grade.
- E. Plywood and sheet products:
 - 1. For roof sheathing: EWA RATED SHEATHING, STRUCTURAL 1, exposure durability classified, EXPOSURE 1, 3/4 inch (19.1 mm) thick having a minimum span rating 48/24, touch-sanded.
 - a. At conditions where sheathing is continuation of existing, provide laminated thickness required to match existing sheathing.
 - 2. For unspecified interior concealed from view locations: EWA graded CD PLUGGED INT, Group 2 species, thickness as indicated on the Drawings.
- F. Cinch plates shall have a corrosion resistant coating of 1.25 oz. pot yield Commercial Class Hot Dipped Galvanized for equivalent corrosion protection.

2.3 WOOD TREATMENTS

- A. Treated wood products shall be produced by a single treatment plant, fully licensed by the chemical manufacturers, and conforming to the requirements specified herein.

1. Dye wood or otherwise color code all treated wood at treatment plant to clearly distinguish the different treatments in the field.
 2. Kiln dry all treated lumber and plywood to the following maximum moisture content after treatment.
 - a. Lumber: 19 percent.
 - b. Plywood 15 percent.
 - c. Discard pieces with defects which might impair quality of work.
 3. Quality marks: Each piece of lumber and plywood shall be permanently affixed with a quality mark, containing the following information:
 - a. Identification of the inspection agency.
 - b. Standard to which material was treated.
 - c. Identification of the treating plant.
- B. Pressure preservative treated wood. Designated as "PT"
1. Chemical Manufacturer: Subject to compliance with the requirements specified herein, Licensed products which may be incorporated in the work include:
 - a. Chemical Specialties, Inc., product "SupraTimber".
 - b. Hickson Corporation, product, "Wolmanized Pressure Treated Wood".
 - c. Hoover Treated Wood Products, Inc., product "CCA Outside Wood".
 2. Treatment: Chromated Copper Arsenate (CCA) Type C in accordance with AWWA Standard P5, free of sodium and sulphates. Registered by the United States Environmental Protection Agency as a pesticide containing inorganic arsenic.
 3. Minimum preservative retention:
 - a. All pressure preservative treated lumber and plywood must have an ALSC-recognized agency Quality Mark signifying a chemical retention level of 0.25 pounds per cubic foot of oxide chemical, rated for "Above Ground Use".

2.4 ACCESSORIES

- A. Adhesive for lamination and fabrication of wood and plywood items: Exterior grade, phenolic resin glue.
- B. Adhesive for subfloors and underlayment: High strength, waterproof and non-freezing adhesive complying with AFG-01 "Frozen Lumber Test" and ASTM 3498, equal to W.W. Henry Company, Huntington Park, CA., product "217 - Subfloor & Construction Adhesive".

- C. Nails (interior and exterior): Galvanized common nails, of size and type to suit application and as required by state and local building codes.
- D. Screws:
 - 1. Screws for interior applications: Flat head electroplated-galvanized wood screws of the appropriate sizes.
 - 2. Screws for exterior applications: Flat head hard aluminum, or stainless steel, wood screws, of the appropriate sizes.
- E. Anchor bolts, expansion bolts and lag screws: Hot-dipped galvanized steel, of the following types:
 - 1. For lumber having actual thickness of 1 1/2 inches or greater to masonry and concrete: Anchor bolts or expansion bolts, as most applicable for the specific receiving surface material, 3/8inch minimum diameter, spaced as shown on drawings, and staggered as far as practicable. Countersink all bolt heads, and provide head washers of matching material.
 - 2. For lumber having actual thickness of greater than 7/8inch but less than 1 1/2 inches to masonry and concrete: Anchor bolts or expansion bolts, as most applicable for the specific receiving surface material, at least 1/4inch diameter of the most appropriate lengths for the specific application, spaced as shown, and staggered as far as practicable. Countersink all bolt heads, and provide head washers of matching material.
 - 3. For lumber having actual thickness of 7/8-inch and less: Anchor bolts or expansion bolts, at least 1/4-inch in diameter; or screws, of the most appropriate sizes; in lengths most suitable for the specific application, countersunk, spaced, and staggered.
- F. Protection paper: Canadian red-rosen paper or kraft paper.
- G. Air infiltration barrier: Vapor permeable, water-resistant, spun bonded polyethylene fabric, 6 mils thick
 - 1. Dupont product "Tyvek Housewrap".
 - 2. Owens-Corning Fiberglas Corp., Toledo OH., product "PinkWrap".
 - 3. Reemay, Inc., product "Typar Housewrap".
- H. Building paper: ASTM D 226, Non-perforated, No. 15 asphalt-saturated building felt.

PART 3 - EXECUTION

3.1 PREPARATION

- A. All materials shall be inspected before use, with all checked, split and otherwise deficient stock rejected, or used only for miscellaneous blocking, furring or other incidental use. The Contractor shall be responsible for replacing all lumber which, due to warpage, twist, splitting, or checking, results in unsatisfactory work. Such replacement shall be required at any time, whether before or after application of finish material under other Sections.
- B. Verify exact locations of toilet accessories, door stops and similar items with Architect prior to installation of blocking for accessories.

3.2 INSTALLATION - GENERAL

- A. Closely coordinate the installation of the rough carpentry work with the work of other trades responsible for the installation of interfacing or overlaying materials, so as not to delay the work of the related trades.
- B. Erect all rough carpentry work plumb, level, and true with tight, close fitting joints, securely attached and braced to surrounding construction, all in a first class workmanlike manner. Counterbore for bolt heads, nuts, and washers where required to avoid interference with other materials. Bear complete responsibility for structural integrity, connections, and anchorage of all rough carpentry work.
- C. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in true alignment until completion of erection and installation of permanent bracing.
- D. Use as long lengths as practicable for wood nailers, blockings, and curbs, to minimize number of joints, and attach the members with the types, and spacing, of fasteners specified herein.
- E. Install blocking, grounds and furring, as required for proper attachment of the work of other trades, in accordance with the requirements provided by the respective related trades.
 - 1. Spacing for furring and strapping shall not exceed 16 inches on center.
- F. Field cuts of inorganic arsenical pressure-treated lumber: Apply solution of copper naphthenate containing a minimum of 2 percent metallic copper in solution, in accordance with AWWA standard M4. Brush liberally all cuts and holes.

- G. Install concealed from view plywood with specified fasteners spaced not more than 10 inches on centers.

3.3 FRAMING

- A. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in true alignment until completion of erection and installation of permanent bracing.
- B. Place horizontal members flat, crown side up.
- C. Construct framing and curb members full length without splices.
- D. Double members at openings over 24 inches wide. Space jack studs over and under opening to stud spacing.
- E. Construct double joint headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joints.

3.4 INSTALLATION - ROOF NAILERS, BLOCKING, 7 MISC. FRAMING

- A. General: Provide anchorage for nailers as required for roof and edging to obtain FM Class A/I90 rating, coordinate requirements with Section 07534 - EPDM ROOFING.
 - 1. Secure nailers and blocking to metal deck with electro-galvanized screws at not greater than 12 inch on center spacing, extending a minimum of 3/4-inch below deck.
 - 2. Secure nailers and blocking to wood substrates with electro-galvanized screws at not greater than 12 inch on center spacing, extending a minimum of 1-1/2 inch into board substrates and 3/4 inches into sheet materials.
- B. When building up layers of nailers and blocking, fully secure each layer to at least the one below, alternating location of fasteners, spacing at 12 inches on center. Provide fasteners in lengths to penetrate through more than one substrate layer of blocking. Stagger locations of butt ends of boards, such that no two joints are "lined up".
- C. Ensure finished height of nailers is same as top surface of roof insulation within 1/4-inch, plus or minus.
 - 1. 2 by 4's. Provide a nominal space of 3-1/2 inches behind panels to permit

3.5 TOLERANCES

- A. Framing members: Maximum deviation more than 1/4 inch in 10 feet from true or plumb position.

- B. Door frames: Maximum diagonal distortion 1/16 inch measured with straight edge, corner to corner.

End of Section

Section 06200
FINISH CARPENTRY

PART 1 - GENERAL Delete all references to interior finishes

1.1 SECTION INCLUDES

- A. Furnish and install:
 - 1. Exterior trim, including wood trim, casings and stools.
 - 2. ~~Wood~~ handrails, balustrades and newels, brackets, columns and bases, as indicated.
- B. Backprime exterior wood trim, and all wood which comes in contact with cementitious and masonry materials.
- C. Epoxy wood filler fill for rotten wood at window sills and misc. areas.
- D. No attempt is made in this Section to list all elements of finish carpentry required on this project or to describe how each element will be installed. It is the responsibility of the Contractor to determine for itself the scope and nature of the work required for a complete installation from the information provided herein and in the Drawings.

1.2 RELATED SECTIONS

- A. Section 06100 - ROUGH CARPENTRY: Wood blocking, framing, curbs, nailers, and backer boards.
- B. Section 07900 - JOINT SEALERS: Sealant and backing materials, for joints between casework, countertops and abutting surfaces.
- C. Section 09900 - PAINTS: Field applied primer (excluding backpriming) and finish coatings.

1.3 REFERENCES

- A. Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Section 01420 - REFERENCES. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
 - 1. AWI Quality Standards, Seventh edition, for the following sections.
 - a. AWI Section 100: Lumber.
 - b. AWI Section 200: Panel Products.
 - c. AWI Section 300: Standing and Running Trim (Interior and Exterior).

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- d. AWI Section 600: Closet and Storage Shelving.
 - e. AWI Section 900: Door Frames – Exterior.
 - f. AWI Section 1000: Exterior Windows.
 - g. AWI Section 1700: Installation.
2. EWA - applicable grades and specifications.
 3. FS MM-L-736 - Lumber; Hardwood
 4. PS-1 - Construction and Industrial Plywood.
 5. PS-20 - American Softwood Lumber Standard.
 6. SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
 7. SPIB Grading Rules, current edition.
 8. U.S. Department of Commerce Simplified Practice Recommendation R16, for sizes and use classifications of lumber
 9. American Lumber Standards Committee, National Lumber Grades Authority for Canadian Lumber, and applicable grading rules and standards of the various lumber associations whose species are being used for grades specified.

1.4 SUBMITTALS

- A. Submit the following under provisions of Section 01330 - SUBMITTAL PROCEDURES:
 1. Literature: Manufacturer's product data sheets, specifications, performance data, installation instructions for hardware, adhesives and accessories furnished hereunder.
 2. Shop drawings:
 - a. Large scale design details, minimum 1-1/2 inch to one foot scale, showing profiles, jointing and fastening methods; and complete installation details.
 - b. Provide full scale drawings of wood trim elements showing all profiles and dimensions.
 - c. Provide shop drawings bearing dimensions of actual measurements taken at the project.
 3. Samples: Provide samples as requested by Architect for selection of colors and finishes.

1.5 QUALITY ASSURANCE

- A. Install work in accordance with the latest specified AWI quality standards, except that standing and running trim joints shall be field mitered and fitted.

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- B. Discard lengths of material which are unsound, warped, bowed, twisted, improperly treated, not adequately seasoned or too small to fabricate work with minimum of joints or optimum jointing arrangements, or which are of defective manufacture with respect to surfaces, sizes or patterns.

1.6 DELIVERY STORAGE AND HANDLING

- A. Do not deliver interior finish carpentry materials to the project until all concrete, masonry, plaster, and other wet work has been completed and dry.
- B. Ship and handle all materials and fabricated items in a manner which will prevent damage thereto, and store all materials and fabricated items at a dry, elevated, ventilated, and protected interior location maintaining 60 degrees Fahrenheit and a maximum relative humidity of 55 percent.

1.7 SEQUENCING AND SCHEDULING

- A. Coordinate the work of this Section with the respective trades responsible for installing interfacing work, and ensure that the work performed hereunder is acceptable to such trades for the installation of their work.

PART 2 – PRODUCTS

2.2 WOOD MATERIALS, GENERAL

- A. Quality Standards: All materials and workmanship scheduled to receive transparent finishes shall meet AWI Premium grade quality standards. All other materials and workmanship shall meet AWI Custom grade quality standards.
- B. Moisture content:
 - ~~1. Wood for interior use shall have a moisture content between 5 and 10 percent, when delivered to the project.~~
 - 2. Wood for exterior use shall have a moisture content between 9 to 15 percent, when delivered to the project.
- C. Filler:
 - 1. Provide epoxy wood repair for sills and trim that are rotten or broken. Pieces containing more that 20 percent area needing repair should be replaced with new wood.

2.3 BOARD AND PANEL MATERIALS

- A. Interior woodwork furnished under this Section to receive paint (opaque finish): Clear straight-grained Poplar, Sugar Pine, Ponderosa Pine, or Idaho

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White Pine, CSelect or better matching profiles indicated on the Drawings as approved by the Architect.

- B. Interior molded trim and woodwork furnished under this Section, scheduled to receive transparent finish: Red Oak, AWI Grade I matching profiles indicated on the Drawings as approved by the Architect.
- C. Exterior finish lumber: Pine graded B & better per WWPA grading rules, except where otherwise indicated on the Drawings or herein.
- D. Wood thresholds: Solid red oak, plain sawn.
- E. Plywood and panel products:
 - 1. Shelving to receive paint: 3/4 inch thick Birch veneer plywood (AA) with 3/8 inch hardwood edge banding at all edges.
- F. Provide other finish carpentry products, not specifically described, but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.
 - 1. Latex Wood Primer", N°. B42W41

2.4 FABRICATION - WOOD HANDRAILS

- A. Fabricate as detailed on the drawings. Construct end returns and all joint conditions where railing changes direction, with mitered corners, pressure glued with concealed splines or dowelled. Ease all edges.

PART 3 - EXECUTION

3.2 EXAMINATION

- A. Verify adequacy of blocking, backing and support framing for all finish carpentry work.
- B. Beginning of installation means acceptance of site conditions.

3.3 PREPARATION

- A. Back prime with specified primer all exterior wood trim prior to installation.
- B. Prime all wood surfaces of items or assemblies to be in contact with cementitious and masonry materials, prior to installation.

3.4 INSTALLATION - GENERAL

- A. Dress and sand woodwork until free from machine and tool marks, abrasions, raised grain, or other defects that will show through the finish on surfaces exposed to view. Wherever possible, carry out sanding on a shop

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belt sander, not in the field. Sandpaper field joints and leave in perfect condition for finishing.

- B. Make all joints tight, and form to conceal shrinkage. Glue all miters having a dimension of 4 inches or more from heel to point. Joints shall be glued tight and so formed as to conceal shrinkage. Cope trim at returns and miter at corners to produce tight-fitting joints with full surface contact throughout length of joint.
- C. Make a minimum of splices and joints in running trim, and where such splices and joints occur, fasten securely, with all exposed surfaces having smooth, continuous planes. Stagger joints in adjacent or relate members. Use scarf joints for end-to-end joints.
- D. Scribe and cut work to fit adjoining work closely. Refinish cut surfaces in prefinished items.
- E. All nails in interior finished work shall be blind nailed wherever possible. Nail trim with finish nails only, set using appropriate nailpunch and fill with matching wood filler. Sand smooth wood filler. Do not fasten trim with screws or bolts unless otherwise directed, or is to be subsequently covered with smaller trim.
- F. Woodwork shall be properly framed, closely fitted and accurately set to the required lines and levels and shall be rigidly secured in place. Shim as required using concealed shims to achieve specified tolerances.
- G. Cover exposed edges of plywood shelving with 3/8 inch hardwood edging. Width of edging to match thickness of shelving.

3.5 INSTALLATION - WOOD HANDRAILS

- A. Secure brackets to wall with flat head countersunk toggle or molly bolts secured into continuous steel plate concealed in wall construction, with heads matching finish of bracket.
 - 1. Provide brackets for 2'-6" centers with minimum 2 brackets for any single length of run.
- B. Maximum variation for wood work from true position of 1/8 inch in 8 feet for plumb and level and with a maximum of 1/16 inch offsets in adjoining surfaces intended to be flush.
- C. Maximum variation for doors and frames: Maximum diagonal distortion 1/16 inch measured with straight edge, corner to corner.

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3.6 CLEANING

- A. Daily clean work areas by sweeping and disposing of scraps and sawdust.
- B. Upon completion of the work of this Section in any given area, remove tools, equipment and all rubbish and debris from the work area; leave area in broom-clean condition.
- C. Remove protective material from pre-finished surfaces.

3.7 PROTECTION

- A. During the operation of finish carpentry, protect the work of other trades against undue soilage and damage by the exercise of reasonable care and precautions. Repair or replace any work so damaged and soiled.

End of Section

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DELETE THIS SECTION

Section 07534

ETHYLENE PROPYLENE DIENE MONOMER (EPDM) ROOFING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Furnish and install the following:
 - 1. EPDM roofing as indicated on the drawings.
- B. Provide existing roof manufacturer's final inspection for re-certification of roof to maintain the existing warranty intact and in full force shall be included in the base bid; additional inspections, or work incurred as a result of the final inspection shall be without additional cost to the Owner.

1.2 RELATED SECTIONS

- A. Section 06100 - ROUGH CARPENTRY: Pressure treated blocking, curbing and nailers.
- B. Section 07620 - SHEET METAL FLASHING AND TRIM: Metal flashing.
- C. Section 07900 - JOINT SEALERS: Sealants other than those specified in this Section 07534.

1.3 REFERENCES

- A. Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Section 01420 - REFERENCES. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
 - 1. FM Roof Assembly Classifications and Loss Prevention requirements I-28 and I-29S
 - 2. UL Fire Resistance Directory.
 - 3. All applicable federal, state and municipal codes, laws and regulations for fire-resistance roof ratings.
- B. The following reference materials are hereby made a part of this Section by reference thereto:
 - 1. NRCA Roofing and Waterproofing Manual, latest printing.

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~~1.4 SUBMITTALS~~

- ~~A. Submit the following under provisions of Section 01330 - SUBMITTAL PROCEDURES:

 1. Literature: Manufacturer's product data sheets, specifications, performance data, physical properties and installation instructions for each item furnished hereunder.
 2. Manufacturer's specimen warranties: Provide sample copies of manufacturers' actual warranties for all materials to be furnished under this Section, clearly defining all terms, conditions, and time periods for the coverage thereof.
 3. Review statement: Written statement, signed by the roofing applicator, stating that the Contract Drawings have been reviewed by an agent of the roofing system manufacturer; accompanied by a pre-installation written statement from the manufacturer that the modifications to the roof system are proper, compatible, and adequate for the application shown.
 - a. The roofing applicator will notify the Architect and Owner in writing if the existing conditions when exposed are in conflict with the Contract Documents or the warranty requirements.
 4. Project roofing superintendent's resume and project experience list for similar installations.
 5. Shop drawings:
 - a. Large scale design details, minimum of 1-1/2 inch per foot scale, showing penetrations. Details shall show dimensions of actual measurements taken at the project and reflect actual conditions; manufacturer's standard preprinted details will not be accepted as substitute for shop drawings.
 6. Verification samples :
 - a. Provide 8-1/2 by 11 inch samples of membrane flashing materials.
 - b. Provide 12 inch long samples of each metal flashing type.
 - c. Furnish additional samples are requested by the Architect.

B. Submit the following under provisions of Section 01780 - CLOSEOUT SUBMITTALS:

 1. Manufacturer's field quality control reports of field inspections, including, revised "as-built" shop drawings and manufacturer's final punch list.~~

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2. Manufacturer's warranties: Re-certify coverage of existing materials and installation provide coverage for all new work as applicable..

1.5 QUALIFICATIONS

- A. Roofing manufacturer, with a minimum of 10 years documented experience demonstrating previously successful work of the type specified herein.
- B. Roofing applicator, with a minimum of 5 years documented experience demonstrating previously successful work of the type specified herein, and approved by product manufacturer.
- C. Roofing applicator's foreman with a minimum of 5 years documented experience of the type specified herein, and trained by product manufacturer.

1.6 QUALITY ASSURANCE

- A. The manufacturer's authorized representative shall provide a final inspection at the completion of the project to insure, that the project has been completed in accordance with the manufacturer's requirements. Upon approval and acceptance of the project, then a manufacturer's warranty re-certification/certification shall be written, executed and furnished to the Owner.
- B. Submit Manufacturer's field quality control reports of field inspections, including, revised "as-built" shop drawings and manufacturer's final punch list.
- C. All roofing shall be as described in this Section and shall be provided and approved by the roof system manufacturer. Any materials not manufacturer or provided by manufacturer shall have written approval from the manufacturer stating the materials are acceptable and are compatible with the other materials and systems required.
- D. UL listing: Provide labeled materials which have been tested and listed by UL in "Building Materials Directory" for application indicated, with "Class A" rated materials/system for roof slopes shown.
- E. Fire performance characteristics: Provide insulation materials which are identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, per methods indicated below, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction:

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F. The roof system manufacturer's Technical Specifications shall be considered a part of this specification and should be used as a reference for specific application procedures and recommendations. Where a conflict does exist between the manufacturer's written specifications and those procedures specified in this Section, the more stringent requirements meeting the Manufacturer's minimum requirements for the provided warranty shall apply.

1. Roofing Filed-Sub-contractor shall provide at no additional cost to this contract, all additional labor and materials to conform to manufacturer's required installation procedures which are necessary to provide a total roofing system which is in full compliance with manufacturer's warranty requirements, including additional materials, installation procedures, manufacturer's inspections, sample testing and other requirements.

1.7 REGULATORY REQUIREMENTS

- A. Modifications to roofing system shall meet Underwriters Laboratories, Inc. Fire Hazard Classification "Class A" roof.
- B. Refer to applicable building codes for roofing system installation requirements and limitations. When a conflict exists, the more restrictive document will govern.

1.8 PRE-INSTALLATION CONFERENCE

- A. At least two weeks prior to commencing the work of this Section, conduct a pre-installation conference at the Project site. Coordinate time of meeting to occur prior to installation of work under the related sections named below.
 1. Required attendees: Owner, Architect, Contractor, Roofing Applicator's Project Superintendent, roof manufacturer's technical representative and representatives of other related trades as directed by the Architect or Contractor, and representatives for installers of related work specified under the following Sections:
 - a. Section 06100 – Rough Carpentry
 - b. .
 2. Agenda:
 - a. Scheduling of roofing operations.
 - b. Review of staging and material storage locations.
 - c. Coordination of work by other trades.

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- d. Protection of existing roofing.
- e. Establish weather and working temperature conditions to which Architect and Contractor must agree.
- f. Emergency rain protection procedure.
- g. Discuss process for manufacturer's inspection and acceptance of completed roofing and flashings.

1.9 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original, unopened containers or packages with labels and package seals intact and legible.
- B. Store all materials in accordance with the manufacturer's recommendations. Store rolled goods on clean, raised platforms. Store other materials in dry areas, protected from water and direct sunlight.
- C. Do not expose stored curable roofing materials and accessories, including uncured flashing, adhesives, sealant and pourable sealer, to a constant temperature in excess of 80 degrees Fahrenheit.
- D. Provide continuous protection of stored materials against deterioration for duration of project.
- E. Distribute any materials stored on roof levels for immediate use to prevent concentrated loads that would impose excessive strain on deck or structural members. Protect roof stored materials to prevent displacement by the wind and protect from exposure to inclement weather and sun.
- F. Damaged material: Remove any damaged or contaminated materials from job site immediately, including materials in broken packages, or show other evidence of damage, unless Architect specifically authorizes correction thereof and usage on project.

1.10 ENVIRONMENTAL REQUIREMENTS

- A. Modify roofing in dry weather; do not perform work in inclement weather or when precipitation is predicted with greater than 20 percent possibility.
- B. Apply roofing when ambient temperature is above 40 degrees Fahrenheit.

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1.11 SEQUENCING AND SCHEDULING

- A. Coordinate the work of this Section with the respective trades responsible for installing interfacing work, and ensure that the work performed hereunder is acceptable to such trades for the installation of their work.
- B. Notify manufacturer's representative 48 hours in advance for deck acceptance. Plan the lay-up roofing membrane with respect to deck slope. Avoid situations where excessive drainage could pass into completed roofing.
- C. The Roofing applicator shall maintain communication with roofing manufacturer's representative to inform of progress and to schedule period sample testing.

1.12 WARRANTY

- A. Deliver to the Owner upon completion of the work of this Section, an unconditional warranty, on the work of this Section and the existing roof to remain agreeing to promptly repair the roofing as necessary to prevent penetration of water through it.
 - 1. Warranty shall cover product quality, performance, and workmanship for a period of 15 years.
 - 2. Warranty shall cover total roofing system including membrane, insulation, adhesives, sealant, fasteners, membrane flashings, and other materials furnished and installed under this Section.
 - 3. Warranty shall provide coverage for uplift created by maximum wind speed of 72 miles per hour (measured 10 meters above grade).
 - 4. Warranty shall provide coverage for maximum peak gust wind speed of 72 miles per hour.

PART 2 - PRODUCTS

2.2 MANUFACTURERS

- A. Manufacturers: Subject to compliance with the requirements specified herein, manufacturers offering products which may be incorporated in the work include, the following, or approved equal:
 - 1. Carlisle Syntec Systems, Carlisle PA.
 - 2. Firestone Building Products Co., Carmel IN.
 - 3. Mule-Hide Products Co., Inc., Beloit WI.

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4. Versico Inc., Akron OH.

2.3 ROOFING MATERIALS

- A. EPDM membrane: Ethylene propylene diene monomers formed into uniform, flexible sheets, complying with ASTM D 4637 and ANSI/RAM IPR-1, with a nominal thickness of 60 mils.
- B. Cant strips, tapered edge strips and flashing accessories: Types recommended by manufacturer of EPDM material, provided at locations indicated and at locations recommended by manufacturer, including adhesive tapes, flashing cements, and sealant.
- C. Flashing material: Manufacturer's standard system compatible with flexible sheet membrane.
- D. Membrane adhesive: As recommended by EPDM membrane manufacturer for particular substrate and project conditions, formulated to withstand min. 60 psf uplift force.

2.4 ACCESSORIES

- A. Bonding adhesive shall be as recommended by manufacturer. Adhesive shall be compatible with all materials to which the elastomeric membrane is to be bonded.
- B. Water cutoff mastic shall be as recommended by membrane manufacturer.
- C. Night sealer shall be as recommended by membrane manufacturer.
- D. Prefabricated elastomeric accessories (pipe seals, inside and outside comers, etc.) shall be as manufactured and recommended by membrane manufacturer.
- E. Walkway pads: Manufacturer's standard 3/8 inch thick black molded rubber walkway pad with factory rounded corners, nominally sized 30 by 30 inches.
- F. Nailing Strips and Fasteners: Nailing strips shall be extruded rubber and fasteners shall be non corrodible.
- G. Screws: Steel fastener with fluorocarbon coating. Minimum thread diameter 0.22 inches and minimum shank diameter of 0.172 inches.

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- H. Miscellaneous materials: Best grade or quality approved by the roofing manufacturer for the specific application.

PART 3 - EXECUTION

3.2 EXAMINATION

- A. Inspect all surfaces and verify that they are in proper condition to receive the work of this Section.
- B. Verify curbs and penetrations are in place prior to roofing, so that the roof system can be installed as continuously as possible.
- C. Any condition requiring correction or completion shall be corrected or completed prior to the installation of the roofing system. Notify Contractor of unacceptable conditions.
- D. Do not proceed until defects are corrected.
- E. Beginning of installation means acceptance of existing substrate and site conditions.

3.3 PREPARATION

- A. During the operation of work of this Section, protect the work of other trades against undue soilage and damage by the exercise of reasonable care and precautions. Repair or replace any work so damaged and soiled.

3.4 EMERGENCY MATERIALS AND PROCEDURES

- A. Maintain continuous temporary protection prior to and during installation of new roofing system. Do not leave unfinished roof areas uncovered overnight or during inclement weather.
 - 1. Provide temporary protective sheeting over uncovered deck surfaces.
 - 2. Turn sheeting up and over parapets and curbing. Retain sheeting in position with weights or temporary fasteners.
 - 3. Provide for surface drainage from sheeting to existing drainage facilities.
 - 4. Do not permit traffic over unprotected or repaired deck surface.
- B. Maintain on site equipment and materials necessary to apply emergency temporary coverage in the event of sudden storms or inclement weather.

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- C. Roofing subcontractor is fully responsible for all damage due to water penetration occurring during the Work of this Section.

3.5 INSTALLATION - GENERAL

- A. The entire work of this Section shall be performed in accordance with the best standards of practice relating to trades involved.
- B. Follow local, state and federal regulations, safety standards and codes. When a conflict exists, the more restrictive document shall govern.
- C. Follow insurance underwriter's requirements acceptable for use with specified products or systems.
- D. Review all special conditions, such as at projections, at connections to sheet metal gravel stops, flashings, etc. with the Roofing Manufacturer, submit the Roofing Manufacturer's recommendations and details to the Architect for approval.
- E. Special Cautions:
 1. Do not use oil-based or plastic roof cement.
 2. Do not subject elastomeric materials to contact with petroleum, grease, oil, solvents, vegetable or mineral oil, nor animal fat. Prevent contact with hot pipes, and ducts.
 3. Cements and bonding adhesive contain petroleum distillates and are extremely volatile and flammable. Avoid breathing vapors and do not use near fire or flame.
 4. Ensure that splicing and bonding surfaces are dry during installation.

3.6 MEMBRANE ADHERED INSTALLATION

- A. Provide additional membrane securement at roof top penetrations, at interior wall and penthouse perimeters, and at any angle change which exceeds 2 inches in on horizontal foot.
 1. Install continuous reinforcement strips 3 inches to 6 inches from inside and outside corners where additional membrane securement is required and where recommended by roofing manufacturer. Secure reinforcement strips with 2 -inch diameter aluminum or stainless steel seam fastening plates; space fastening plates not greater than 12 inches on center.
 2. Install reinforcement strips either horizontally into deck or vertically into curbs as recommended by roofing manufacturer.

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3. Cement EPDM flashing over installed fastening plates and reinforcement strips as recommended by roofing manufacturer, and in no case provide flashing of less than 6 inches in width, and at ends of flashing, provide a minimum 2 inch splice from edge of plate/strip.
- B. Extend membrane up cant strips and a minimum of 8 inches onto vertical surfaces.
- C. Seal membrane around roof penetrations.
- D. Walkway protection: Install additional membrane at locations shown and where required for access to roof-mounted equipment.
 1. Clean roofing membrane and fully adhere walkway pads as recommended by manufacturer's instructions.
- E. Provide daily night seal at loose edges to prevent water flow beneath finished roofing.
 1. Mix sealer components as instructed by manufacturer. Apply at rate of 1 gallon/100 linear foot, 12 inch. back from sheet edges on exposed substrate.
 2. Embed membrane in sealer and apply continuous pressure with 2-1/2 inch tubing filled with sand. Pull sheet free before continuing permanent installation.

3.7 INSTALLATION - ELASTOMERIC FLASHINGS

- A. Elastomeric Flashings. Provide elastomeric sheet flashings at elastomeric sheet roofing work, as indicated.
 1. Use longest practical lengths and widths of elastomeric sheet flashing material to eliminate or minimize joints. Complete splices between flashings and main-roof sheet before bonding flashings to vertical surfaces. Splices shall be sealed 3 inches beyond fasteners that attach membrane to horizontal nailer in same manner as splices within roofing membrane. Flashings shall be bonded 100 percent to subsurfaces, except at coves where movement is anticipated.
 - a. Install flexible tube at coves where movement is anticipated.
 2. Apply bonding adhesive to flashing and surface to which it is being bonded. When bonding adhesive has dried to the point where it does not string or stick to a dry finger touch, roll flashing into adhesive. Do not bridge flashing at changes of direction.

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3. Nail top of flashing 12 inches on center under sheet metal copings, counter flashing, and other sheet metal work.
4. Expansion Joints: Treat expansion joints as indicated in expansion joint manufacturer's standard details and published instructions for specific conditions.
5. Sheet metal copings, fascias, gravel stops, and flashings will be furnished and installed under Section 07610 - SHEET METAL FLASHING AND TRIM.

3.8 CLEANING

- A. Remove elastomeric adhesive markings from finished surfaces.
- B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their instructions.
- C. Repair or replace defaced, or disfigured finishes caused by the work of this Section.

3.9 PROTECTION

- A. Provide special protection or avoid traffic on completed work. Restore to original condition, or replace, work and roofing materials damaged.

End of Section

Section 07620
SHEET METAL FLASHING, TRIM, & GUTTERS & DOWNSPOUTS

DELETE THIS SECTION IN ITS ENTIRETY

1.1
GENERAL PROVISIONS

SECTION INCLUDES

- A. Furnish and install the following:
 - 1. Copper gutters and rain leaders.
 - 2. Copper flashings and running sheet metal work, for all non-specified locations in conjunction with the roofs.
 - 3. Sealant in conjunction with sheet metal work specified herein.

1.2 RELATED SECTIONS

- A. Section 06100 - ROUGH CARPENTRY: Wood blocking, nailers.
- B. Section 07900 - JOINT SEALERS: Sealant and backing material not specified herein.
- C. Flashing sleeves and collars for mechanical and electrical items protruding through roofing: By respective trade sections furnishing same.

1.3 REFERENCES

- A. Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Section 01420 - REFERENCES. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
 - 1. ASTM B 370 - Copper Sheet and Strip for Building Construction.
 - 2. ASTM B 486 - Paste Solder.
 - 3. ASTM D 226 - Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- B. The following reference materials are hereby made a part of this Section by reference thereto:
 - ~~1. GDA - Copper in Architecture Handbook.~~
 - ~~2. Revere Copper Products, Inc., Rome NY. - Copper and Common Sense, seventh edition.~~
 - 3. SMACNA - Architectural Sheet Metal Manual, referred to herein as "Sheet Metal Manual".
 - 4. NRCA - Roofing and Waterproofing Manual.

Note: Change all references to copper flashings and sheet metal to Aluminum.
There will be no copper on this project.

1.4 SUBMITTALS

- A. Submit the following under provisions of Section 01330 - SUBMITTAL PROCEDURES:
1. Literature: Manufacturer's data sheets for each metal type and accessories furnished hereunder, include material specifications, performance data, physical properties and finishes.
 2. Certification: Provide certifications that materials and systems comply with the specified requirements for the use indicated.
 3. Shop drawings:
 - a. Fully dimensioned large scale design details showing material profiles, splices, flashing terminations and other jointing details, fastening methods and installation details. Indicate material type, sizes, and weights or gages. Indicate extent of adjacent work specified under other Sections of the Specifications.
 - b. Fully detail methods of relieving stresses due to thermal movement, including sealing of expansion seams.
 - c. All details bearing dimensions of actual measurements taken at the project.
 - d. 6-inch (150-mm) or 12-inch (300-mm) long samples of fabricated products exposed as finished work. Provide complete with specified finish.

1.5 QUALITY ASSURANCE

- A. Company specializing in fabrication and installation of sheet metal flashing work with minimum 5 years documented experience.
- B. Flashing and sheet metal applicator, with a minimum of 5 years documented experience demonstrating previously successful work of the type specified herein, and approved by product manufacturer.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Store preformed material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials during storage which may cause discoloration, staining, or damage.

1.7 SEQUENCING AND SCHEDULING

- A. Coordinate the installation of flashings and sheet metal work with the various trades responsible for installing interfacing materials, and install the work at appropriate times so as not to delay the progress of related work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Copper (Flashing and gutters and rain leaders): CDA numbered alloy 110, cold-rolled sheet Natural "red" copper conforming to ASTM B 370, having a minimum weigh of 16 ounces per square foot.

- B. Copper: ASTM B 370; minimum temper H00 (cold-rolled) except where temper 060 is required for forming;
- C. Hung Gutters and Downspouts: 8" K style, 16 oz. per sq. ft. (0.0216-inch thick) (0.55-mm) except as otherwise indicated.
- D. Downspouts, 4" corrugated round, 16 oz. per sq. ft. (0.0216-inch thick) (0.55-mm) except as otherwise indicated.
- E. Gutter Cover Guards: 20-gage bronze mesh or fabricated units, with selvaged edges and noncorrosive fasteners. Select materials for compatibility with gutters and downspouts.
- F. Bronze wire ball downspout strainer meeting the Copper Development Association Inc details.

2.1 ACCESSORIES

- A. Underlayment: Asphalt saturated building felt, non-perforated, 30 pounds per square as recommended for use in waterproofing and in construction of built-up roofs.
- B. Solder: ASTM B 32; Provide 50-50 tin/lead or lead free alternative of similar or greater strength solder, Killed acid flux.
- C. Flux: Muriatic acid neutralized with zinc or approved brand of soldering flux.
- D. Fasteners: Same metal as flashing/sheet metal or other non-corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.
- E. Bituminous Coating: SSPC-Paint 12, Cold-Applied Asphalt Mastic (Extra Thick Film), nominally free of sulfur, compounded for 15-mil dry film thickness per coat.
- F. Joint Sealant: One-part, copper compatible elastomeric polyurethane, polysulfide, butyl or silicone rubber sealant as tested by sealant manufacturer for copper substrates. Refer to Division 07.
- G. Metal Accessories: Provide cleats, straps, hangers, anchoring devices, and similar accessory units as required for installation of work, noncorrosive, size and gage required for performance.

2.2 RIVETS:

- A. Pop Rivets: 1/8-inch (3-mm) to 3/16-inch (4.5-mm) diameter, with solid brass mandrels.
- B. Provide solid copper rivet (tinner 's rivets) where structural integrity of seam is required.
- C. Joint Sealer: Low modulus single component gun-grade polyurethane sealant, non-sagging, conforming to FS TT-S-000227E, Type II, Class A, and ASTM C 920, Type S, Class 12-1/2, Grade NS, use NT, M, A and O with a minimum movement capability of ± 25 percent, equal to the following:
 - 1. Mameco International, Inc., product "Vulkem 116".
 - 2. Sika Corp., Lyndhurst NJ; product, "Sikaflex".

3. Sonneborn Building Products Inc., Minneapolis MN.; product, "Sonolastic NP1".
4. Tremco, Beachwood OH.; product, "Dymonic".
5. Pecora Corporation, Harleysville PA.; product "Dynatrol I".

- D. Plastic cement as recommended by roofing manufacturer and eave protection manufacturer.
- E. Solder: Conforming to ASTM B 32 with non-acid flux, solder: 50 percent tin/50 percent lead solder.

2.3 FLASHING FABRICATION – GENERAL

- A. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown and with applicable requirements of Copper Development Association Inc. (CDA) "Copper in Architecture" handbook and other recognized industry practices. Fabricate for waterproof and weather-resistant performance, with expansion provisions for running work, sufficient to permanently prevent leakage, damage, or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed copper work without excessive oil-canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
- B. Fabricate to allow for adjustments in field for proper anchoring and joining.
- C. Form sections true to shape, accurate in size, square, free from distortion and defects.
- D. Cleats, Spacers, Straps, and Hanger Brackets: Fabricate of same material as gutters and downspouts, interlockable with sheet in accordance with CDA recommendations.
- E. Fabricate corners from one piece with minimum 18-inch (450-mm) long returns; solder corners for rigidity.
- F. Seams: Fabricate nonmoving seams with 1-inch (25-mm) lapped riveted and soldered seams. Tin edges to be seamed, lap seams, rivet seams, and solder.
- G. Expansion Provisions: Follow CDA Copper in Architecture Handbook guidance and provisions to accommodate expansion and contraction of gutter systems.
- H. Form flashings as required, or to profiles indicated on the Drawings, to protect materials from physical damage and shed water.
- I. Form sections square and accurate to profile, in maximum possible lengths, free from distortion or defects detrimental to appearance or performance. To the greatest extent applicable, fabricate sheet metal components in shop, and thoroughly clean all joints on both sides of the sheet metal work.
- J. Fabricate cleats and starter strips of same material as sheet.
- K. Form pieces in longest practical lengths, with flat lock seams. Hem exposed edges on underside 1/4 inch, miter and seam corners.
- L. Fabricate corners from one piece with minimum 18 inch long legs, solder for rigidity, seal with sealant.

2.4 FABRICATION – COPPER GUTTERS AND DOWNSPOUTS

- A. Installation Requirements: Fabricator is responsible for installing system, including anchorage to substrate and necessary modifications to meet specified and drawn requirements and maintain visual design concepts in accordance with Contract Documents and following installation methods as stipulated in the "Copper in Architecture" handbook published by the Copper Development Association (CDA).
1. Drawings are diagrammatic and are intended to establish basic dimension of units, sight lines, and profiles of units.
 2. Make modifications only to meet field conditions and to ensure fitting of system components.
 3. Obtain Architect's approval of modifications.
 4. Provide concealed fastening wherever possible.
 5. Attachment considerations: Account for site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening and fracturing connection between units and building structure or between components themselves.
 6. Obtain Architect's approval for connections to building elements at locations other than indicated in Drawings.
 7. Accommodate building structure deflections in system connections to structure.
- B. PERFORMANCE REQUIREMENTS:
1. System shall accommodate movement of components without buckling, failure of joint seals, undue stress on fasteners, or other detrimental effects when subjected to seasonal temperature changes and live loads.
 2. Design system capable of withstanding building code requirements for negative wind pressure.

3. PART 3 - EXECUTION

3.1 EXAMINATION

- A. Beginning of work shall constitute acceptance of the conditions of the surfaces to which this work is to be applied.

3.2 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.
- B. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
- C. Cleat and seam all joints. Apply plastic cement compound between metal flashings and felt flashings, asphalt shingle roofing or asphalt roll roofing.
- D. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- E. Seal all metal joints watertight.

- F. During the installation of work of this Section, protect the work of other trades against undue soilage and damage by the exercise of reasonable care and precautions. Repair or replace any work so damaged and soiled.

3.3 FLASHING INSTALLATION - GENERAL

- A. Except as otherwise shown on the reviewed shop drawings or specified herein, the workmanship of sheet metal work, method for forming joints anchoring, cleating, provisions for thermal movement, etc., shall conform to the standard details and recommendations of the sheet metal producer and those of producer organizations and research institutions and associations concerning the sheet metal used, in addition to the standards and details set forth in the referenced materials specified this Section.
- B. Face nailing will not be permitted, concealed cleating or other concealed method must be used to attach sheet metal work to structure.
- C. Ensure that fastenings do not exceed 8 inches on centers. Use flat head fasteners throughout, and seal all fastener heads after installation thereof.
- D. Fill all slip joints and overlapping surfaces in the assembly with specified sealant material, removing all excess sealant material from the prefinished surfaces immediately, to prevent staining the finish.

3.4 INSTALLATION - COPPER GUTTER AND DOWNSPOUTS

- A. Install gutter and downspout following fabricator's recommendations.
 - 1. Prevent contact between copper and dissimilar materials.
- B. Install gutter with two screw-shank fasteners at maximum 30 inch on-center spacing. Provide expansion joints at all gutter runs exceeding 40 feet and on all sides of hip roofs.
- C. Mount downspouts securely in place.

End of Section

SECTION 07901 – ROOF SEALANTS AND CAULKING

PART 1 - GENERAL

DELETE THIS SECTION IN ITS ENTIRETY

1.01 SECTION INCLUDES

- A. Incidental caulking as related to sheet metal work required for a complete and thorough job.
- B. The drawings indicate and show limits of construction for this project. The specifications specify materials and work requirements for this project. Both are complementary to each other and both shall be followed to complete the work.

1.02 RELATED WORK

- A. Section 07601 – Roof Flashing and Sheet Metal

1.03 SUBMITTALS

- A. Submit the following under provisions of Section 01300:
 - 1. Manufacturer's descriptive literature and data sheets on each type of caulking and sealant material proposed.
 - 2. Manufacturer's descriptive literature and data sheets for primer, foam backer rod, bond breaker tape and other sealant joint accessories.

1.04 REFERENCES

- A. Except as modified by the requirements of other governing codes, the sealant and its installation shall conform to the provisions and recommendations of the following codes and standards:
 - 1. Federal Specification TT-S-00230C (COM-NBS) Type II Class A.
 - 2. Federal Specification TT-S-001543A (COM-NBS) Class A.
 - 3. ASTM C-920-86, Type S, Grade NS, Class 25, Use NT, M, G, A and O.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Roof removal and roofing system installation shall not take place during inclement weather or when the air temperature or wind chill temperature is below 40° F.
- B. Material safety data sheets of all specified products of this section shall be kept on site daily for project duration.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Sealant shall be manufactured by TREMCO Corp., Cleveland, Ohio, or approved equal product.

2.02 MATERIALS

- A. Sealant shall be SPECTREM 1, a low modulus, high performance, one-part moisture curing silicone joint sealant at metal to metal intersections, or approved equal product.
- B. Sealant shall be Dymonic, a one part moisture curing modified urethane sealant at metal to masonry intersections (reglet joint) and masonry to masonry joints; or approved equal product.
- C. Backer rod for reglet joints shall be closed cell polyethylene foam as recommended by the sealant manufacturer.
- D. Bond breaker tape shall be as recommended by sealant manufacturer.
- E. Masking materials for the protection of surrounding work during installation of sealants and other caulking.

~~PART 3 - EXECUTION~~

~~3.01 PREPARATION~~

- ~~A. All caulking and sealant installation must be done by skilled mechanics in accordance with the manufacturer's written instructions so as to produce weathertight and watertight joints.~~
- ~~B. Do not apply caulking when the ambient air temperature or the temperature of surface to be caulked or sealed is below 50°F or above 100°F. Do not apply caulking or sealant during rain or snow.~~
- ~~C. Bond Breaker Tape: Install bond breaker tape to the back of the sealant joints neatly, such that sealant will adhere only to sides of the joint when installed.~~
- ~~D. Mask off the edges of joints to prevent staining unless it can be demonstrated that the quality of workmanship is high enough so that this protection is not needed.~~
- ~~E. All joints to receive caulking or sealant shall be dry and free of loose particles, oil or grease, or other material that would prevent or interfere with full adhesion of the caulk or sealant.~~
- ~~F. Rout out cracks to provide reasonably uniform profiles with depth slightly larger than the width in order to accommodate a sealant joint.~~

~~3.02 INSTALLATION~~

- ~~A. Force sealant tightly into the joint, forcing out all air pockets and filling the void completely. Nozzle size shall be of the proper size to the particular joint.~~
- ~~B. Sealant shall be dry-tooled immediately after application to provide a smooth, uniform surface of the recommended profile.~~
- ~~C. Backer rod shall be installed at all regleft joints and elsewhere as indicated on the drawings.~~
- ~~D. Install backer rod carefully with approximately 30% compression avoiding tearing, twisting, or stretching. Splices shall be butted tightly.~~
- ~~E. Install backer rod to provide a depth-to-width ratio for the sealant joint of 1/2.~~

~~3.03 CLEAN-UP~~

- A. All surfaces stained, soiled or discolored during caulking or sealing shall be cleaned or restored.
- B. Smears and excess caulking and sealant shall be removed with a cleaning agent as recommended by the sealant manufacturer.

END OF SECTION

Section 09910
PAINTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Summary: This Section consists of painting work where shown on the Drawings, as specified herein, and as required for a complete and proper installation of the work. Painting work includes, but is not limited to the surface preparation (stripping of all existing paint) and application of coated finishes, and subsequent touch-up, of exterior items and surfaces as indicated on the Contract Drawings and as scheduled herein.
1. No attempt is made in this Section to list all surfaces, fixtures and equipment requiring painting on this project. It is the responsibility of the Subcontractor to determine for itself the scope and nature of the Work required for a complete installation from the information provided herein and in the Drawings.
- B. Surfaces and Materials: In general, without limiting the generality thereof, the following surfaces, fixtures and equipment require a painted finish:
1. New and existing exterior wood trim and decking. Siding where effected by the work shall be painted to match existing from end to end, and side to side.

1.2 RELATED SECTIONS

- A. Section 06200 - FINISH CARPENTRY: Wood trim items, setting and filling of nails, sanding of wood trim.

1.3 REFERENCES

- A. Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Section 01420 - REFERENCES.
1. ANSI/ASTM D 16 - Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products.
 2. ASTM D 2016 - Test Method for Moisture Content of Wood.
 3. All applicable federal, state and municipal codes, laws and regulations for flammability and smoke generation of interior finishes.

1.4 DEFINITIONS

- A. "Paint" includes coating systems materials, primers, emulsions, enamels, stains, sealers and fillers, and other applied materials specified herein, whether used as prime, intermediate or finish coats.

1.5 SUBMITTALS

- A. Submit the following under provisions of Section 01330 - SUBMITTAL PROCEDURES:
 - 1. Literature: Manufacturer's product data sheets, specifications, performance data, physical properties, material compositions, and application instructions for all finishing products to be applied hereunder.
 - a. Include certification of data indicating Volatile Organic Compound (VOC) content of all paint materials.
 - 2. Samples:
 - a. Manufacturer's color selector for custom mixed colors for Architect's color scheduling.
 - b. Opaque coatings: Two 9 x 12 inch finished samples on hardboard of each color scheduled in each finish for review and approval. Identify boards with finish type, color mix number and scheduled substrate surfaces or materials.
 - c. Transparent finishes and stains: Two 9 x 12 inch finished samples on same species of solid wood and plywood to be furnished under Section 06200 - FINISH CARPENTRY, of each color scheduled in each finish for review and approval. Identify boards with finish type, color mix number and scheduled substrate surfaces or materials.
- B. Submit the following under provisions of Section 01780 - CLOSEOUT SUBMITTALS:
 - 1. Color chips: After final approval of all colors and tints by the Architect, submit to the Owner, color chips of all coatings used, with manufacturer's name and mix designation of the coating for the purpose of future re-ordering of coatings. Color chips shall be at least six (6) square inches in size, for each color and tint.

1.6 QUALITY ASSURANCE

- A. Applicator: Company specializing in commercial painting and finishing with 3 years minimum documented experience.

- B. Single source responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

1.7 FIELD SAMPLES

- A. Provide field samples under provisions of Section 01450 - QUALITY CONTROL for purpose of verifying selected colors.
- B. Paint on-site sample areas, minimum 16 square feet, illustrating selected color, and tint.
- C. Locate samples where directed. The Contractor shall provide in the base Contract, a total amount maximum amount of ten samples.
- D. Accepted samples may not remain as part of the work.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site in sealed and labeled containers; container labeling shall include manufacturer's name, type of paint, color mix designation, expected coverage, surface preparation instructions, instructions for mixing and reducing, drying time, and clean-up recommendations.
- B. Store materials, conforming with applicable codes and fire regulations, in designated spaces. Keep storage area secure when direct access is not required or when not performing work under this Section. Take precautionary measures to prevent fire hazards and spontaneous combustion, maintain a dry-chemical type fire extinguisher in all areas where materials of this Section are being stored or used.
- C. Store paint materials in a well ventilated area at minimum ambient temperature of 45 degrees Fahrenheit and a maximum of 90 degrees Fahrenheit.
- D. Do not use the sanitary system for mixing or disposal of refuse material. Carry water to mixing rooms and dump waste material in a suitable refuse receptacle. Remove oily rags and waste each day.

1.9 PROJECT CONDITIONS

- A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 45 degrees Fahrenheit for 24 hours before, during and 48 hours after application of finishes, unless required otherwise by manufacturer's instructions.

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- B. Do not apply exterior coatings during rain or snow, or when relative humidity is above 50 percent unless required otherwise by manufacturer's instructions.
- C. Apply paints and finishes above minimum temperature conditions in strict accordance with manufacturer's instructions.
- D. Provide sufficient lighting to maintain 80 foot-candles measured mid-height at substrate surface.

1.10 SEQUENCING AND SCHEDULING

- A. The applicator of work specified herein is responsible to ensure that all paints, enamels, and coatings, proposed to be applied hereunder, are compatible with coatings used for shop-primed items and items which have been prime-coated under the work of other trades.
- B. Immediately notify the Architect in writing of conditions which may require a change in the specifications of this Section before proceeding with the work. Failure to do so, in a timely fashion, so as not to interfere with the schedule of work of this Contract, shall be construed as acceptance of the coatings specified. Perform all corrective measures, at no cost to the Owner, for any defects in the work, resulting from the use of such materials.
- C. Painting work should be scheduled so as to minimize touch-ups. Interior painting is to be without flashmarks. Should flashmarks occur due to touch-ups, the Contractor shall be required to redo the entire surrounding wall surface.
- D. Do not order materials until all required schedules have been properly submitted, reviewed by the Contractor and Approved by Architect.

1.11 EXTRA MATERIALS

- A. Provide a minimum of one, one gallon container of trim paints and one full gallon container of all other paints and finishes, to the Owner of each color and finish scheduled herein.
 - 1. Label each container with paint mix number, and identify locations where color and tint was used.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the requirements specified herein, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:
1. Paints and general finishes:
 - a. Benjamin Moore & Company, Montvale, NJ.
 - b. California Paints, Cambridge MA,
 - c. ICI – Devco Paints, Louisville, KY
 - d. Pittsburgh Paints / PPG Industries, Inc., Pittsburgh PA.
 - e. Pratt & Lambert Inc., Buffalo, NY.
 - f. Sherwin Williams, Cleveland OH.
 2. Caulking
 - a. Pecora Corporation, Harleysville PA.; product “AC-20+”.
 - b. Sonneborn Building Products Inc., Minneapolis MN.; product, “Sonolac”.
 - c. Tremco, Beachwood OH.; product, “Trimflex 834”.
 3. Stripper: Provide any commercial grade stripper, bellow are examples.
 - a. KutZit Remover
 - b. Strip Ease

2.2 MATERIALS

- A. Coatings: Ready mixed, except for field catalyzed coatings with good flow and brushing properties; capable of drying or curing free of streaks or sags. Color pigments shall be processed to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating. Provide best quality grade, where manufacturer makes more than one grade of any material specified.
- B. Joint sealant for fill of minor cracks in plaster prior to painting: One component acrylic latex caulking compound, conforming to FS 19-TP-21M and ASTM C 834, paintable within 24 hours after application, with a minimum movement capability of ± 12.5 percent, equal to one of the following:
1. Pecora, product “AC-20+”.
 2. Sonneborn Building Products Inc., product, “Sonolac”.

3. Tremco, product, "Trimflex 834".

2.3 ACCESSORIES

- A. Accessory materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated, but are required to achieve the finishes specified of commercial quality.

PART 3 - EXECUTION

3.2 EXAMINATION

- A. Inspect all surfaces and verify that they are in proper condition to receive the work of this Section. Notify Contractor of any condition that may potentially affect proper application of coatings.
- B. Measure moisture content of surfaces, do not apply finishes unless moisture content of surfaces are below the following maximums:
 1. Exterior wood: 18 percent.
- C. Beginning Work of this Section means acceptance of existing substrate surfaces and site conditions.

3.3 PREPARATION

- A. Furnish and lay suitable drop cloths in all areas where coating work is being done to protect floors and all other surfaces from damage during the work. Protect adjoining surfaces with painters mask tape.
- B. Prior to preparing surfaces or finishing, remove all finish hardware for painting doors and frames, except hinges and locks on exterior door; remove electrical plates, light fixture trim and fittings. Re-install hardware and other removed items after painted surfaces are thoroughly dry.
- C. Mix coatings thoroughly, unless otherwise directed by the manufacturer of the specific coating used, to ensure uniformity of color and mass. Strain previously opened coatings to remove skins, lumps, and other foreign matter prior to painting.
- D. Thin or reduce materials only as recommended by the specific material manufacturer, and only with the approval of the Architect.
- E. Impervious surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to thoroughly dry.
- F. New exterior wood scheduled to receive paint finish.

1. Smooth minor defects by sanding. Remove all foreign matter with commercial paint remover and fine sandpaper.
 2. Treat wood with a dip or heavy flood coat of Water Repellant Wood Preservative, allow to dry. Touch up knots, pitch streaks, and sappy sections with commercial stain sealer.
 3. Fill up nail holes and cracks with wood putty or plastic wood after primer of first coat of finish is dry, and sand smooth.
- G. Existing exterior wood trim scheduled to receive paint finish.
1. For trim where paint base is in good condition, Scrape surfaces to remove loose, peeling and chipped paint. Sand only to ease edges and roughen existing paint surfaces.
 2. For trim where old paint has built-up and has cracked and peeled, such as siding and window and door casings, strip paint completely with commercial paint remover and fill and sand. Thoroughly neutralize paint remover as recommended by manufacturer. Allow wood to dry (15 percent moisture content maximum) and sand affected surfaces smooth.
 3. Wash all with a solution of tri-sodium phosphate (TSP), and rinse surfaces well.
 4. Remove all remaining foreign matter, use commercial paint remover, if deemed necessary. Thoroughly neutralize paint remover as recommended by manufacturer. Allow wood to dry (15 percent moisture content maximum) and sand affected surfaces smooth.
 5. Touch up knots, pitch streaks, and sappy sections with two coats commercial exterior stain sealer, "Kilz" or equal.
 6. Fill up nail holes, wood defects, chips in layers of paint, and cracks with exterior wood putty or plastic wood after primer of first coat of finish is dry, and sand smooth.

3.4 APPLICATION

- A. Apply all materials in strict accordance with the approved manufacturer's printed instruction, and in accordance with the best trade practices. Each coat shall be reviewed and approved by the Architect before succeeding coats are applied.
- B. Do not apply successive coating until the preceding coat is thoroughly dry, and in no case in less than 24 hours after the preceding coat.
- C. Apply each coat to a uniform finish; Apply primer and first coat of slightly lighter in color tint than the scheduled color of the final coat.

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- D. Sand lightly between coats to achieve required finish and remove sanding dust prior to applying succeeding coat.
- E. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- F. Prime back surfaces of all interior and exterior woodwork scheduled for painted finish with primer.
- G. Prime back surfaces of interior woodwork scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with mineral spirits.

3.5 CLEANING

- A. Upon completion of the work in each area, remove all coating splatters from glass, prefinished surfaces, bright metals, and from other surfaces that have not been painted or finished hereunder. Do not use abrasive paper or abrasive cleaner on any prefinished surface or bright metal. Remove all materials and debris; leave work area in a clean condition.

3.6 PROTECTION AND TOUCH-UP

- A. During painting work, protect the work of other trades against undue soilage and damage by the exercise of reasonable care and precautions. Properly clean, repair or replace any work so damaged and soiled.
- B. Protect all painted and finished surfaces against damage until the date of final acceptance of the work. The Architect will conduct a final review of all work performed hereunder. Re-coat or touch-up, all scratches and other blemishes on surfaces, and as directed by the Architect, any areas found which do not comply with the requirements of this Section, and bear all costs therefor.
- C. Any re-coating or touch-up work, required after the work of this Section has been reviewed and accepted by the Architect, will be paid for by the Contractor.

3.7 PAINTING SCHEDULE - GENERAL FINISHES AND COLORS

- A. General: Number of coats scheduled herein below is minimum required, refer to Article entitled "APPLICATION" regarding coverage.
- B. The Architect will furnish a schedule of colors for each area and surface. Tinting and matching shall be to the satisfaction of the Architect. No limit is placed on the number of colors that may be required, or the number of colors in any one room, area, or surface. Premium paints of deep-hued, bright, pigment intensive, accent and primary colors may be scheduled for

up to 25 percent of all exterior surfaces without additional cost to the Owner.

- C. Colors of priming coats (and body coats where specified) shall be lighter in tint than those of finish coat.
- D. Colorants shall be pure, non-fading pigments, mildew-proof, ultra-violet resistant, finely ground in approved medium; and be limeproof, when used in coatings to be applied on masonry, concrete, plaster, and gypsum board surfaces.

3.8 EXTERIOR PAINTING SCHEDULE

- A. Exterior WOOD TRIM, windows and doors, fascias and soffits, new, primed and previously painted:
 - 1. One coat alkyd enamel primer at bare wood. (Touch up primed and previously painted surfaces)
 - a. California: "Trouble-Shooter Universal Wood Primer", N°. 21700
 - b. ICI / Dulux: Ultra Hide 2110-1200 Alkyd Primecoat.
 - c. Moore: "Moorwhite Primer" N°. 100
 - d. Pittsburgh: "Sun-Proof Universal Exterior Oil-Based Primer", 1-70 Series
 - e. Pratt & Lambert: "Pro Hide Exterior Alkyd Primer" N°. C299
 - f. Sherwin-Williams: "A-100 Ext. Alkyd Exterior Wood Primer", Y24 W200
 - 2. Two coats latex semi-gloss paint:
 - a. California: "100 % Acrylic Latex House and Trim Paint", N°. 471
 - b. ICI / Dulux: Decrashield N°. 2406xxxx Semi-Gloss Finish..
 - c. Moore: "MoorGlo Latex House & Trim Paint" N°. 96
 - d. Pittsburgh: "Sun-Proof Acrylic Latex House & Trim Semi-Gloss", 78 Series
 - e. Pratt & Lambert: "Pro Hide Gold Latex Semi-Gloss House Paint", N°. Z 8600
 - f. Sherwin-Williams: "Metalatex Semi-Gloss Coating" B42 Series
- B. Exterior clapboard siding:
 - 1. One coat alkyd enamel primer at bare wood. (Touch up primed and previously painted surfaces)

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- a. California: "Trouble-Shooter Universal Wood Primer", N°. 21700
 - b. ICI / Dulux: Ultra Hide 2110-1200 Alkyd Primecoat.
 - c. Moore: "Moorwhite Primer" N°. 100
 - d. Pittsburgh: "Sun-Proof Universal Exterior Oil-Based Primer", 1-70 Series
 - e. Pratt & Lambert: "Pro Hide Exterior Alkyd Primer" N°. C299
 - f. Sherwin-Williams: "A-100 Ext. Alkyd Exterior Wood Primer", Y24 W200
2. Two coats latex flat paint:
- a. California: "100 % Acrylic Latex House and Trim Paint", N°. 471
 - b. ICI / Dulux: Decrashield N°. 2406xxxx Flat Finish..
 - c. Moore: "Latex House & Trim Paint" N°. 96
 - d. Pittsburgh: "Sun-Proof Acrylic Latex House & Trim flat", 78 Series
 - e. Pratt & Lambert: "Pro Hide Gold Latex Flat House Paint", N°. Z 8600
 - f. Sherwin-Williams: "Metalatex Flat Coating" B42 Series
- C.

End of Section