REQUEST FOR PROPOSAL

2024 HISTORIC PRESERVATION OF THE GENEVA LODGE
CITY PROJECT NO. 24-F01

RFP POSTED	**January 30, 2024**
MANDATORY SITE WALK	**February 7, 2024 at 9am**
QUESTIONS DUE	**February 15, 2024**
PROPOSAL CLOSING	**March 4, 2024 at 5PM**
INTENT TO AWARD	**March 15, 2024**

CITY OF LITTLETON, COLORADO
DEPARTMENT OF PUBLIC WORKS

KEITH REESTER
PUBLIC WORKS DIRECTOR

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REQUEST FOR PROPOSAL
PURCHASING DEPARTMENT
CITY OF LITTLETON, COLORADO

HISTORIC PRESERVATION OF THE GENEVA LODGE

The City of Littleton is requesting proposal for the historic preservation of the Geneva Lodge. Proposals will be received until 5PM on March 4 to Rocky Mountain E-Purchasing System. Proposals are to be submitted electronically only.

Description: The requested services are listed in the description of work below. The project has obtained a certificate of appropriateness ("COA") through the Historic Preservation Board, COA22-0006 and any work must be done in conformance with the approved COA (attached as Exhibits "B & C"). Further, this project is paid for in part by a History Colorado State Historic Grant and must follow all guidelines of this grant (attached as Exhibit "D-E"). This agreement will terminate July 27th, 2025 to be compliant with the grant requirements. This project is paid for in part by a History Colorado State Historic Grant and must follow all guidelines of this grant.

Required Documents:

- A cover letter with the name address, phone number of the proposer that has the authorized signature of the company.
- Executed Exhibit F
- Personal listing showing who will be assigned to the project team.
- A narrative that defines the methods and means by which the proposing firm will perform the work outlined.
- Project timeline outlining major tasks, phases, timeframes, and milestones.
- Completed Exhibit A
- A least three (3) references for similar work that has been completed. This must include name, address, phone number, and contract value.
- Delivery of Performance, Labor and Material Payment bond upon execution of contract
- Certificate of Insurance in required amounts upon execution of contract
- Bid bond (5%)

INSTRUCTIONS

1. INSTRUCTIONS:

   An official notice will be published to Rocky Mountain E-Purchasing System ("RMEPS") stating the time and date for the submission of sealed proposals for designated projects or proposed work. This notice will contain a description of the proposed work, instructions to the proposers regarding proposal forms, proposal guaranty, plans, specifications, and the reservation of the right of the owner to reject any or all proposals.

2. PROJECT SHOWING:

There will be a mandatory project showing on February 7, 2024, at 9am. Prospective proposers required to sign in and to meet the city representative at that time. The showing will be at the Geneva Lodge which is located at 2305 West Berry, Littleton, CO, 80132.

3. QUESTIONS:

Any questions concerning the proposal documents or plans must be submitted electronically to RMEPS by February 15 at 2pm MST. An electronic list of responses and plan or specification addenda will be posted online via RMEPS.

4. CONTENTS OF PROPOSAL FORM:

The owner will furnish to the proposal forms which will state the location and description of the projects; approximate estimates for the various quantities of work to be performed and materials to be furnished; the amount of proposal guaranty, the time in which the work must be completed and any special provisions. All attachments to the proposal forms shall be considered a part thereof and must not be altered.

5. DESCRIPTION OF WORK. All proposed work shall be in conformance with COA22-006 and is further outlined below:
   A. Preservation Activities
      1. Rehabilitate Wood Siding and Trim
         a. Repair siding and trim with epoxy, Dutchman or in-kind replacement as necessary
         b. Prep, prime and paint
      2. Rehabilitate Masonry
         a. Repoint brick masonry
         b. Replace missing and severely deteriorated bricks
         c. Rotate bricks where face loss has occurred
         d. Remove paint from chimney and clean and repoint brick chimneys
         e. Remove and replace porch tile
      3. Rehabilitate Wood Doors
         a. Repair original wood components with epoxy
         b. Replace missing and severely deteriorated wood components
         c. Install weather-stripping
         d. Replace broken and missing hardware
         e. Prep, prime and paint wood components
      4. Rehabilitate Wood Windows
         a. Repair original wood components with epoxy
         b. Replace missing and severely deteriorated wood components
         c. Replace glazing putty
         d. Install weather-stripping
         e. Replace broken and missing hardware
         f. Prep, prime and paint wood components
      5. Replace Non-historic Windows

        a. Replace existing non-historic wood windows with appropriate historic windows and joinery
    6. Rehabilitate Roof and Site Drainage
        a. Regrade site at locations of slope toward building and ponding water
        b. Rehabilitate rafter tails to protect from further deterioration due to roof drainage
        c. Replace damaged areas of site concrete
        d. Replace broken and leaking gutters and downspouts

B. Architectural and Engineering Services
    1. Assist with some deliverables
    2. Attend meetings
    3. Provide construction administration

C. Archaeological Monitoring
    1. Monitor all work related to ground disturbance
    2. Create monitoring report
    3. Complete Office of Archaeology and Historic Preservation forms as necessary

Attached are Exhibit B and C showing photos and construction documents.

6. INTERPRETATION OF APPROXIMATE ESTIMATE:

Proposers are cautioned that the estimate of quantities attached to proposal is only an approximate and is prepared for the comparison of proposals. The basis of payment will be actual quantities of work performed and accepted. If, upon the completion of the project, the actual quantities show either increase or decrease from the quantities shown in the approximate estimate, the unit price contained in the proposal will prevail. The basis of measurement of quantities for payment for each item in the proposal is described in the technical specifications and special provisions.

7. TIME OF COMPLETION:

The proposer shall complete the contract in no later than July 27, 2025. In the event of failure to complete the work within the time specified, liquidated damages will be assessed as stated in the General Provisions (Section 4.8) of the contract.

8. PLANS AND SPECIFICATIONS:

Plans, specifications, and proposal forms may be obtained online from RMEPS. Discrepancies or conflicts between the plans and specifications, the contract documents, regulations, or codes shall be brought to the attention of the project manager, via RMEPS in the questions section before the date of proposal closing.

9. EXAMINATION OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND SITE OF WORK:

The contractor is required to carefully examine the site of the proposed work, the proposal,

plans, specifications, and all contract documents. The contractor shall satisfy itself as to the character, quality, and quantities of work to be performed, materials to be furnished, and as to the requirements of these specifications, special provisions, and contract documents. The submission of a proposal shall be conclusive evidence that the contractor has made such an examination. Any information shown on the plans as to the soil or material borings or tests of existing materials is for convenience of the contractor. The information is not guaranteed, and no claims for extra work or damages will be considered if it is found during construction that the actual soil or material condition vary from those indicated by the borings.

Each contractor must inform themselves of the conditions relating to the execution of the work, and it is assumed that the contractor will inspect the site and make themselves thoroughly familiar with all the contract documents. Failure to do so will not relieve the successful contractor of their obligation to enter into a contract and complete the contemplated work in strict accordance with the contract documents. It shall be the contractor's obligation to verify for themself and to their complete satisfaction all information concerning site and subsurface conditions.

Information derived from plans or from drawings showing location of utilities and structures will not in any way relieve the contractor from any risk, or from properly examining the site and making such additional investigations as they may elect, or from properly fulfilling all other terms of the contract documents.

Each contractor shall inform themself of, and the contractor awarded a contract shall comply with, federal, state and local laws, statutes, and the ordinances relative to the execution of the work. These requirements include but are not limited to applicable regulations concerning minimum wage rates, nondiscrimination in the employment of labor, protection of public and employee safety and health, environmental protection, the protection of natural resources, fire protection, burning and nonburning requirements, permits, fees, and similar subjects.

10. INTERPRETATIONS AND ADDENDA:

All questions about the meaning or intent of the proposal documents are to be submitted by electronic correspondence on RMEPS. Interpretation or clarifications considered necessary in response to such questions will be issued only by addenda. Questions or comments regarding this project must be received by the date and time identified in the request for proposal. Responses to questions will be posted on RMEPS as addenda. Questions received after the date and time identified will not be answered. Only responses to questions answered by formal addendum on RMEPS will be binding. Oral and other interpretations or clarifications will be without legal effect. Addenda may also be issued to modify the proposal documents as deemed advisable or necessary by city or engineer.

Contractors are solely responsible for obtaining addenda. The city will not be bound by or responsible for any explanations or interpretations of the contract documents other than those given through an addendum. Acknowledgment of all addenda is required to submit

a responsive proposal.

11. PREPARATION OF PROPOSAL:

The contractor must submit their proposal on the forms furnished by the owner. All applicable blank spaces (including proposed contract time, unit costs and extended costs) on the "contractor's proposal" (Exhibit A) must be filled in completely. The contractor must also state the total price for the entire project written in both words and numerals for which he proposes to do each item of the work contemplated or furnish each item of the materials required. In case of conflict between words and numerals, the words, unless obviously incorrect, will govern, provided however that in case of conflict between unit costs and extended costs or total proposal, whether in words or in numerals, unit costs will govern.

12. PROPOSAL PRICING:

Proposals must be priced on a unit price basis for each bid schedule. The contractor is solely responsible for determining any and all direct and incidental costs associated with performing the work in accordance with the contract documents. Proposals must include separate prices for each, and any alternatives allowed for in the specifications. The price of the proposal will be increased or decreased accordingly if city selects any or all proposed alternatives. Contractors are required to bid on all bid items, alternates, and unit prices shown on the bid form unless otherwise indicated. Failure to do so may result in proposal disqualification.

13. RECEIPT OF PROPOSALS:

The City of Littleton will only accept and consider proposals electronically submitted via the RMEPS. The required proposal documents must be received in the RMEPS submission portal on or before the proposal due date and time. Hardcopy proposals and proposals submitted by any other means will not be accepted. The City of Littleton does not have access to or control the vendor side of RMEPS. Please contact RMEPS at 1-800-835-4603 for technical assistance.

14. EVALUATION PROCESS

All proposals will be evaluated by an evaluation committee assembled by the project manager. Proposals will be evaluated based on the criteria set forth in the RFP. The committee may award based on the proposals received or may short list proposers and enter into interviews. The award will be based on the best value which may not be the best price.

15. EVALUATION CRITERIA

Criteria	Weight
Experience	10%
Timeline	10%

References	10%
Understanding of Project	20%
Methodology	20%
Cost	30%

16. FAILURE TO EXECUTE CONTRACT:

Failure to comply with any of the requirements of the proposal to execute the contract within 10 days after receiving, as specified, or to furnish surety as required, shall be just cause for the annulment of the award. In the event of such annulment of the award, the amount of proposal guaranty shall become the property of the owner, not as a penalty but as liquidated damages. Award may then be made to the next best qualified contractor, or the work readvertised, or handled as the owner may elect.

17. BID SECURITY:

Each proposal must be accompanied by a bid bond or a certified check payable to the City of Littleton in the amount of not less than five percent (5%) of the total amount bid. Electronic submittals of bonds shall be included, and is the preferred method, with the proposal submitted on RMEPS. If a certified check is submitted, it must be drawn on a bank that is a member of the Federal Reserve System and said certified check must be received and verified by the City of Littleton's finance department prior to the proposal closing to be considered a valid proposal. Should the successful proposer fail or refuse to execute and deliver the contract and performance, labor and material payment bonds required within ten (10) days after mailing of the contract documents, the proposer shall forfeit the security deposited with the proposal to the owner as liquidated damages for such failure or refusal to execute the contract.

The successful proposer will be required to furnish the city a performance, labor and material payment bond for one hundred percent (100%) of the contract amount.

18. RETURN OF BID SECURITY:

Upon evaluation of the proposals, the owner will return the bid securities accompanying the proposals to all contractors, except to that contractor who receives a Notice of Award. The award of contract will be made, or proposals rejected within sixty (60) days after opening of proposals, excepting that as mutually agreed between the owner and the contractor, this time limit may be waived. The bid securities of the successful contractor will be returned after the contract and performance, labor and material payment bond have been executed and adequate Certificates of Insurance have been submitted.

19. WITHDRAWAL OF PROPOSALS:

Any Contractor, upon their authorized representative's written request, will be given permission to withdraw their proposal without prejudice to themself, at any time before the bid closing date.

20. PUBLIC OPENING OF PROPOSALS:

Proposals will no longer be publicly opened in person until further notice. Pricing and Contractor's information will be posted to RMEPS after the closing date. CORA requests may be submitted to obtain proposals.

21. COMPETENCY OF CONTRACTORS:

The owner, prior to bid letting, may require the contractor to present satisfactory evidence that they have had sufficient experience and that they are fully prepared with the necessary capital, materials, machinery and skilled workmen to carry out the contract. When so requested, contractors shall furnish a statement covering experience on similar work, references, a list of machinery, plant, other equipment available for proposed work, and a statement on financial resources. The owner reserves the right to make such investigation of information submitted as is deemed necessary and to disqualify any contractor if deemed unqualified in the best interest of the owner.

If required, the submitted financial statement shall show the financial condition of the contractor as of December 31 of the year preceding the date for the call for proposals, or as of the end of the fiscal operating year and be qualified by sufficient supplementary information so as to show the approximate financial condition at the time of submitting the statement. If no material change has occurred, the Contractor shall certify on the statement that his financial condition has remained substantially unchanged since the date of the annual statement.

22. DISQUALIFICATION OF CONTRACTORS:

The owner reserves the unqualified right, in its sole and absolute discretion, to reject all proposals and to cancel the project. Further, the owner reserves the unqualified right, it its sole and absolute discretion, to reject any or all non-responsive proposals or to accept a proposal, if any, which in its sole and absolute judgment are not responsive to the proposal documents and will under all circumstances best serve the owner's interests.

Any one or more of the following causes may be considered as sufficient for the disqualification of a contractor and the rejection of his proposal or proposals:

(a) More than one proposal for the same work from an individual, firm, partnership, or corporation under the same or different names.
(b) Evidence of collusion among contractors. Participants in such collusion may receive no recognition as contractors for any future work.
(c) Unbalanced proposals in which the prices for some items are out of proportion to the prices for other items.
(d) Failure to submit a unit price for each item of work for which a proposal price is required by the proposal.
(e) Lack of competency as revealed by the financial statement, experience, plant, and equipment statement submitted.

(f) Lack of responsibility as shown by past work judged from the standpoint of workmanship and progress.
(g) Uncompleted work which, in the judgment of the owner might hinder or prevent the prompt completion of additional work if awarded.
(h) For being in arrears on existing contracts, in litigation with the owner, or having defaulted on a previous contract.

23. MATERIAL GUARANTY:

Before any contract is awarded, contractors may be required to furnish a complete statement of the origin, composition and manufacture of all or any materials to be used in the construction of the work, together with samples, which samples may be subjected to the tests provided for in the specifications to determine their quality and fitness for the work.

24. INTENT TO AWARD CONTRACT:

Intent to Award Contract will be made by the owner, upon the recommendation of the evaluation committee, to the contractor meeting the requirements of the owner and will be made within 60 days after the opening of the proposal. The owner will notify the successful contractor by posting the intent to award on RMEPS, that they have been awarded the contract.

25. REQUIREMENTS OF PERFORMANCE BOND AND PAYMENT BOND:

The contractor to whom the contract is awarded at the time of the execution of the contract must deposit with the owner a performance bond and payment bond (or a combination performance, labor and material payment bond) in sum equal to 100 percent of the amount of the contract awarded, guaranteeing faithful performance of the contract, and the payment of all labor, materials, rentals, etc. The surety shall be acceptable to the owner. The form of the bond shall be the form provided by the city, executed by a company licensed to do business in the State of Colorado and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular No. 570.

26. EXECUTION OF CONTRACT:

The individual, firm, partnership or corporation to whom or to which the contract has been awarded, shall sign the necessary agreements entering into a contract with the owner and return them to the office of the owner within 10 days after the contract is sent. The city hereby states that the amount of money appropriated for the proper execution of this contract is equal to or in excess of the contract amount.

27. SUBJECT TO LEGISLATIVE APPROVAL AND COMPLIANCE WITH LAW.

The Proposer hereby acknowledges and agrees that pursuant to Section 10-9-8.1 of the Unified Land Use Code, approval of the proposed scope of work is contingent upon approval by the Historic Preservation Board of the City of Littleton, CO (“HPB”) and

compliance with all applicable provisions of the city charter and city code. On September 9, 2022, the city applied and received approval for the listed scope of work under COA22-0006. If the scope of work is revised outside of the approved COA, HPB will be required to approve an amended COA. The city shall not incur any liability whatsoever if the proposed scope of work is not approved by HPB or if the proposed scope is revised, resulting in a reduced contract price.

The Proposer further acknowledges and agrees that if the value of this Contract is over Five-Hundred Thousand and 00/100 Dollars ($500,000.00), execution is contingent upon approval by the City Council of the City of Littleton, CO and compliance with all applicable provisions of the city charter and city code with regard to the procurement of services contemplated herein. The city shall not incur any liability whatsoever if this Contract is not approved by city council.

28. TAXES:

Any and all City of Littleton sales taxes, which may become due and payable as a result of materials purchased for this contract, shall not be included in the amount of the bid.

29. COLORADO OPEN RECORDS ACT:

Any information submitted with the proposal shall become public information, subject to release, under the Colorado Open Records Act. Littleton shall be held harmless from any claims arising from the release of information within the proposal. It is the responsibility of the proposing firm to ensure that no confidential or proprietary information is included in the proposal that the proposing firm would not wish to be released.

PERFORMANCE, LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS that _____, as Principal (the "Principal") and _____, a corporation organized under the laws of the State of _____, and authorized to transact business in the State of Colorado, as "Surety," jointly and severally, including their heirs, personal representatives, successors and assigns, are held and firmly bound unto the City of Littleton as Obligee, hereinafter called Owner, for the use and benefit of claimants as herein below defined, in the amount of _____ Dollars ($_____), as adjusted by approved change orders and supplement agreements, for the payment and interest as provided by law for the performance of the Construction Contract between the Principal and the Owner, dated _____, 2024, for the following project: _____ in accordance with drawings and specifications; which contract is made a part hereof, and is hereinafter referred to as the Contract, and incorporated by this reference.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal, at all times, shall promptly and faithfully perform said Contract, and shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contact, any authorized modifications thereof during the original term of the Contract, any extensions thereof that may be granted by the Owner, and during the term of any guarantee or warranty required under the Contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense when the Owner may incur in making good any default, then the Principal and Surety shall have no obligation under this Bond, otherwise it shall remain in full force and effect.

The Surety, for value received, agrees that no extension of time, change in, addition to, or other alteration or modification of the terms of the Contract or work to be performed there under or any other forebearance on the part of either the Owner or the Principal to the other shall in any way release or impact the Surety's liability or obligation on this Bond, and the Surety hereby waives notice of any extension of time, change in, addition to, or other alteration or forbearance.

Whenever the Owner terminates the Contract in accordance with the terms thereof, the Surety shall, within fifteen (15) calendar days after written notice of such termination, notify the Owner in writing of its election to complete the Contract in accordance with its terms and conditions, or notify the Owner that the Surety elects not to complete the Contract. If the Surety fails to provide the written notice within the fifteen (15) calendar day period, then it will have deemed to have not elected to complete the Contract. Should the Surety elect to complete the Contract, then it shall, within fifteen (15) additional calendar days, following written notice of such election, obtain a bid or proposals for submission to Owner for completing the Contract in accordance with its terms and conditions. Upon determination by Owner and Surety of the lowest and best Bidder, arrange for a contract between such Bidder and Owner, and make available as work progresses (even though there should be a default or a succession of defaults under the

contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract price; but not exceeding, including other costs, attorneys fees of the Owner and damages for which the Surety shall be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract In the event of termination, the Surety may not engage the Principal to complete the Contract, without prior written consent of the Owner, which consent may be withheld in the Owner's sole discretion. If the Surety elects to complete the Contract, then it shall be entitled to receive the balance of the Contract price, less i) any amounts paid by the Owner to the Principal; ii) costs incurred by the Owner in correcting the defective work; iii) any additional legal, design professional or other costs incurred by the Owner resulting from Principal's default; and iv) any liquidated damages caused by the delayed performance or nonperformance of the Principal. Any progress payments, less retainage, due but not paid at the date of termination shall be paid to the Surety so long as the Surety has agreed to indemnify the Owner for the amount thereof and no other claims have been made to such funds by subcontractors or suppliers in accordance with the Contract or any applicable law. In the event that the Surety elects not to complete the Contract, the Owner may then have work completed by such means and in such manner, as it may deem advisable. The Surety, in such event, shall at all times make available, as work progresses under the Contract between the Owner and new contractor, sufficient funds to pay the cost of completion of the Contract pursuant to the its terms together with the other amounts set forth above, but in no event shall the Surety be responsible for the payment of any sums to the Owner until the Owner has paid in full its total obligation under the terms of the original Contract, plus change orders or supplemental agreements, less deductions and claims chargeable by law or by the Contract, if any, and less the retainage which will be disbursed as provided by the Contract and any applicable law.

Any proceeding, whether legal or equitable, under this bond, except for claims for payment of labor and material, or copyright or patent infringement, must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

Further, the above named Principal and Surety hereby jointly and severally agree with the Owner that the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such Contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, repairs or machinery, equipment and tools, consumed or used in connection with the construction of such work, whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

, The above named Principal and Surety hereby jointly and severally agree with the Owner that every claimant, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed or materials were furnished by such, claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. Provided, further, that no final settlement between the Owner and the Principal shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied. The Owner shall not be liable for the payment of any costs, attorney fees, or other expenses of any such suit.

After the expiration of one (l) year, or such other shorter period as provided by law following the

date on which all of the Contractor's warranties for work on said Contract have expired, it being understood however, that if any limitation embodied in this bond is prohibited by any law controlling the Construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

SIGNED AND SEALED this _____ day of _____ A.D. 20_____

In the presence of: _____
(Contractor) (Seal)

_____ _____
(Witness) (Title)

_____
(Surety) (Seal)

_____ _____
(Witness) (Title)

(Accompany this bond with Attorney in-fact's authority from the Surety to execute the bond, certified to include the date of the bond.)

APPROVED FOR THE OWNER:

By: _____TITLE: _____

NOTICE OF AWARD

[Type Project Name and Number and press f11 to proceed.]

Date: _____

TO: **[Type Contractor Name and press f11 to proceed.]**
[Type Contractor Address and press f11 to proceed.]
_____

The City of Littleton, having duly considered the proposal submitted on [Type Date of Submission, and press f11 to proceed.] for the work covered by the proposal and contract documents for the **[Type Project Name and Number, and press f11 to proceed.]** and it appearing that your proposal is fair, equitable, and to the best interest of the owner, said proposal is hereby accepted at the prices contained therein.

In accordance with the terms of the contract documents, you are required to execute the Contract and Performance, Labor and Material Payment Bond in one (1) counterpart within ten (10) calendar days from and including the date of this notice. In addition, you are requested to furnish at the same time Certificates of Insurance evidencing compliance with the requirements for insurance stated in the contract documents.

The proposal guaranty submitted with your proposal will be returned upon execution of the contract, furnishing of the required performance bond and Certificates of Insurance within the time limit specified. In the event that you should fail to execute the contract agreement and Performance, Labor and Material Payment Bond, and provide the proper Certificates of Insurance within the time limit specified, said bid security will be retained by the owner as liquidated damages and not as penalty for the delay and extra work caused thereby.

By:_____ TITLE: _____

SAMPLE

NOTICE TO PROCEED

[Type Project Name and Number and press f11 to proceed.]

Date: _____

TO: **[Type Contractor Name and press f11 to proceed.]**
[Type Contractor Address and press f11 to proceed.]

You are hereby authorized to proceed on this date, [Type Date of Notice to Proceed, and press f11 to proceed.] with the work covered in the contract documents titled **[Type Project Name and Number, and press f11 to proceed.]**. Work must commence within [Type Number of Days in which construction must commence and press f11 to proceed.] days of acceptance of this Notice to Proceed.

OWNER, CITY OF LITTLETON

By:_____ TITLE: _____

ACCEPTANCE OF NOTICE TO PROCEED
By: _____
this _____ day of _____, 2024.
Title:_____

SAMPLE

CONTRACTOR'S RECEIPT FOR FINAL PAYMENT

[Type Project Name and Number and press f11 to proceed.]

Date: _____

TO: **[Type Contractor Name and press f11 to proceed.]**
[Type Contractor Address and press f11 to proceed.]

The undersigned has accepted the City of Littleton's Check No. _____ dated _____, 20 ____ in the amount of _____ Dollars ($_____), as final payment of all sums due for work done under the Contract Documents titled **[Type Project Name and Number, and press f11 to proceed.]**, as amended, and as complete performance by the Contractor of all obligations to be performed by it pursuant thereto. The Contractor acknowledges and agree that no future claims for additional payments shall be made.

CONTRACTOR

By:_____ TITLE: _____

SAMPLE

FINAL ACCEPTANCE AND WARRANTY INITIATION

[Type Project Name and Number and press f11 to proceed.]

Date: _____

TO: **[Type Contractor Name and press f11 to proceed.]**
[Type Contractor Address and press f11 to proceed.]

You are hereby notified that on the ___ day _____, 20___, the City of Littleton has accepted the construction work completed by _____, for the construction work covered under the contracts documents titled **[Type Project Name and Number, and press f11 to proceed.].**

You are also notified that the warranty terms and conditions as set forth in the contract documents are initiated as of the date of this acceptance.

Final payment receipt form is attached within the contract documents for your convenience. Should this form not be returned within ten (10) calendar days, properly signed and approved, it will be assumed that lack of such performance constitutes informal giving of a receipt and satisfaction by the contractor for final settlement of all amounts due.

CITY OF LITTLETON

By:_____ TITLE: _____

SAMPLE

NOTICE OF END OF BASIC WARRANTY PERIOD

[Type Project Name and Number, and press f11 to proceed.]

Date: _____

TO: _____

_____

_____

You are hereby notified that on the ____ day of _____ , 20____, the City of Littleton has ended the basic warranty period for the construction work completed by _____ for the construction work covered under the contract documents titled **[Type Project Name and Number, and press f11 to proceed.].** The basic warranty two (2) years from the date of Final Acceptance and Warranty Initiation.

You are also notified that the contract provisions concerning additional warranties on remedied work; patented devices, materials, and processes which may have been used in this construction; or other expressed warranties are not relinquished by the owner as a result of the issuance of this notice.

CITY OF LITTLETON

By: _____ TITLE: _____

SAMPLE

CONSTRUCTION CONTRACT

THIS **CONSTRUCTION CONTRACT** ("Contract") is made and entered into this ___day of _____, 20___, by and between the City of Littleton, a municipal corporation within the State of Colorado (the "City" or "City"), and [Type the legal name of the **contractor**, and press f11 to proceed.], a Colorado [Type the type of business entity for the contractor (e.g. corporation, partnership, limited partnership, limited liability company, sole proprietorship, etc., and press f11 to proceed.] (the "Contractor"). The contractor and the city are collectively referred to as the "Parties."

RECITALS AND REPRESENTATIONS

WHEREAS Pursuant to the City of Littleton's Request for Proposal, the contractor submitted a response to perform the project and the city, after examination of the contractor's submittal, has determined that the contractor has the requisite background, pricing, bond, and expertise to provide work on the requested project under the terms and conditions set forth herein;

WHEREAS the city has elected to accept the proposal of the contractor according to the terms of the Request for Proposal named above.

NOW, THEREFORE, in consideration of the mutual covenants herein set forth, the parties agree as follows:

1.1 **Contract Documents and Exhibits**. The term "contract documents" consist of this contract together with the following:

1. Exhibit A – Request for Proposal
2. Exhibit B - Contractor's Response
3. Exhibit C - Notice of Award
4. Exhibit D - General Conditions
5. Exhibit E - Drawings and Specifications;
6. Exhibit F - Special Conditions

All exhibits referred to in this contract are attached hereto and are, by reference, incorporated herein for all purposes. In the event any matter, term, provision, or condition that is the subject of this contract requires clarification or is in dispute, or is the subject of a difference of opinion, the purpose and intent of the contract shall be first ascertained by reference to the contract documents in their entirety. In the event of any dispute or differences between the respective documents that constitute the contract documents, then the contractor shall secure the written instructions from the city before proceeding with the performance of the services affected by such conflicts, omissions or discrepancies.

SAMPLE

1.2 **Project.** The Contractor shall commence and complete the Project in accordance with the Contract Documents and shall execute the entire scope of Work set forth in the Contract Documents, as defined herein. Contractor agrees to perform and complete the Project in a proper and workmanlike manner, consistent with the highest standards of professional and construction practices and in full compliance with, and as required by or pursuant to, this contract, and with the greatest economy, efficiency, and expedition consistent therewith, with only new, undamaged and first quality equipment, materials and supplies. Contractor shall, at its own expense, furnish all labor, materials, tools, supplies, machinery, utilities, permits, licenses, and other equipment that may be necessary for the completion of the project, as outlined in the contract documents. No work shall commence until a Notice to Proceed has been executed, and if requested by the city, until after approval by the city council in accordance with the city's procurement policy.

1.3 **Commencement and Completion of the Project**. Contractor understands and agrees that all work required under this contract shall be fully completed, as set forth in the contract documents, within [Type term of Project and press f11 to proceed.] calendar days of the date of the Notice to Proceed. Contractor acknowledges and understands that it is an essential term of this contract that contractor maintain a rate of progress in the work that will result in completion of the project in accordance with the contract documents, and to that end, contractor agrees to proceed with all due diligence to complete the Work in a timely manner in accordance with the contract Documents.

Contract Price. The City accepts the Contractor's proposal for the estimated quantities and costs as set forth in the Contractor's Proposal, attached hereto as Exhibit B, in the total amount of **$[Type Value of the Contract and press f11 to proceed.]**. The city shall make payment(s) to contractor in the manner and at such times as set forth in the general conditions of such amounts as are required by the contract documents. The city has appropriated sufficient funds for the competition of this work.

1.4 **Payments to Constitute Current Expenditures.**

1.4.1 Notwithstanding any other term, provision, or condition herein, all financial obligations of the City, if any, after the current year, are contingent on funds for that purpose being appropriated, budgeted and otherwise made available by the City Council for the City of Littleton. The City's obligations under the Contract shall not constitute a multiple-fiscal year direct or indirect debt or other financial obligation of the City within the meaning of Article X, Section 20 of the Colorado Constitution.

1.4.2 Further, pursuant to 103.6(2) of Article 91, Title 24, C.R.S., no Change Order, Supplemental Agreement, or other form of order or directive by the City which requires additional compensable work to be performed, and which work causes the aggregate amount payable under this Contract to exceed the amount appropriated for the original contract, shall be executed, or shall work be performed by the contractor, unless the City provides written assurances to the Contractor that lawful appropriations to cover the costs of such additional work have been made or unless such work is covered under a remedy-granting provision of this contract. For purposes of this paragraph, "remedy-granting provision" shall be defined as set forth in 24-91-103.6(4), C.R.S.

SAMPLE

1.5 **Confidentiality.** Notwithstanding any provision in the Contract Documents to the contrary, the City is obligated to comply with the Colorado Open Records Act (C.R.S. §§24-72-101 *et seq.*), which may require the City to disclose all or a portion of communications relating to the Contract, or terms of same, or of any transaction under the Contract, and other related matters. The Contractor has been advised to familiarize itself with the Colorado Open Records Act. In no event shall the City be liable to the Contractor for the disclosure of all or a portion of communications, or relating documents, or electronic imaging, including all documents and exhibits that may be included as part of this Agreement.

1.6 **Insurance.**

1.6.1 The Contractor shall not commence work under any Work Order until it has obtained all insurance required herein and such insurance has been approved by City. The Contractor shall not allow any subcontractor to commence work on any Work Order until all similar insurance required of the subcontractor has been obtained and approved. For the duration of the Contract, the Contractor must maintain the insurance coverage required in this section.

1.6.2 The Contractor agrees to procure and maintain, at its own cost, the following policy or policies of insurance. The Contractor shall not be relieved of any liability, claims, demands, or other obligations assumed pursuant to the contract documents by reason of its failure to procure or maintain insurance, or by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.

1.6.3 Contractor shall procure and maintain and shall cause each Subcontractor of the Contractor to procure and maintain (or shall insure the activity of Contractor's Subcontractors in Contractor's own policy with respect to), the minimum insurance coverages listed below. Such coverages shall be procured and maintained with forms and insurers acceptable to the City. All coverages shall be continuously maintained from the date of commencement of the Work Order. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage.

i. Workers' Compensation insurance to cover obligations imposed by the Workers' Compensation Act of Colorado and any other applicable laws for any employee engaged in the performance of Work under a Work Order and Employers' Liability insurance with minimum limits of FIVE HUNDRED THOUSAND DOLLARS ($500,000) each accident, FIVE HUNDRED THOUSAND DOLLARS ($500,000) disease - policy limit, and FIVE HUNDRED THOUSAND DOLLARS ($500,000) disease - each employee.

ii. Comprehensive General Liability insurance with minimum combined single limits of ONE MILLION DOLLARS ($1,000,000) each occurrence and TWO MILLION DOLLARS ($2,000,000) aggregate. The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily

SAMPLE

injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, independent contractors, products, and completed operations. The policy shall include coverage for explosion, collapse, and underground hazards. The policy shall contain a severability of interests provision.

iii. Comprehensive Automobile Liability insurance with minimum combined single limits for bodily injury and property damage of not less than ONE MILLION DOLLARS ($1,000,000) each occurrence and ONE MILLION DOLLARS ($1,000,000) aggregate with respect to each of Contractor's owned, hired and/or non-owned vehicles assigned to or used in performance of the services. The policy shall contain a severability of interests provision.

iv. Builder's Risk insurance with minimum limits of not less than the insurable value of the work to be performed under any Work Order at completion less the value of the materials and equipment insured under installation floater insurance. The policy shall be written in completed value form and shall protect the Contractor and the City against risks of damage to buildings, structures, and materials and equipment not otherwise covered under Installation Floater insurance, from the perils of fire and lightning, the perils included in the standard coverage endorsement, and the perils of vandalism and malicious mischief. Equipment such as pumps, engine-generators, compressors, motors, switch-gear, transformers, panelboards, control equipment, and other similar equipment shall be insured under Installation Floater insurance when the aggregate value of the equipment exceeds $10,000. The policy shall provide for losses to be payable to the Contractor and the City as their interests may appear. The policy shall contain a provision that in the event of payment for any loss under the coverage provided, the insurance company shall have no rights of recovery against the Contractor or the City.

v. Installation Floater with minimum limits of not less than the insurable value of the work to be performed under any Work Order at completion, less the value of the materials and equipment insured under Builder's Risk insurance. The value shall include the aggregate value of any City-furnished equipment and materials to be erected or installed by the Contractor not otherwise insured under Builder's Risk insurance. The policy shall protect the Contractor and the City from all insurable risks of physical loss or damage to materials and equipment not otherwise covered under Builder's Risk insurance, while in warehouses or storage areas, during installation, during testing, and after the work under this contract is completed. The policy shall be of the "all risks" type, with coverages designed for the circumstances which may occur in the particular work to be performed under this contract. The policy shall provide for losses to be payable to the Contractor and the City as their interests may appear. The policy shall contain a provision that in the event of payment for any loss under the coverage provided, the insurance company shall have no rights of recovery against the Contractor or the City.

SAMPLE

1.6.4 The policies required above, except for the Workers' Compensation insurance and Employers' Liability insurance, shall be endorsed to include the City, and its officers and employees, as additional insureds. Every policy required above shall be primary insurance, and any insurance carried by the City, its officers, or its employees, shall be excess and not contributory insurance to that provided by Contractor. The additional insured endorsement for the Comprehensive General Liability insurance required above shall not contain any exclusion for bodily injury or property damage arising from completed operations. The Contractor shall be solely responsible for any deductible losses under each of the policies required above.

1.6.5 Certificates of insurance shall be completed by the Contractor's insurance agent as evidence that policies providing the required coverages, conditions, and minimum limits are in full force and effect, and shall be subject to review and approval by the City. Each certificate shall identify the specific Work Order. If the words "endeavor to" appear in the portion of the certificate addressing cancellation, those words shall be stricken from the certificate by the agent(s) completing the certificate. The City reserves the right to request and receive a certified copy of any policy and any endorsement thereto.

1.6.6 The coverages afforded under the policies shall not be cancelled, terminated or materially changed until at least 30 days prior written notice has been given to the City. Failure on the part of the Contractor to procure or maintain policies providing the required coverages, conditions, and minimum limits shall constitute a material breach of contract upon which the City may immediately terminate the contract, or at its discretion may procure or renew any such policy or any extended reporting period thereto and may pay any and all premiums in connection therewith, and all monies so paid by the City shall be repaid by Contractor to the City upon demand, or the City may offset the cost of the premiums against any monies due to Contractor from the City.

1.6.7 The parties hereto understand and agree that the City is relying on, and does not waive or intend to waive by any provision of this contract, the monetary limitations (presently $387,000 per person and $1,093,000 per occurrence) or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101 et seq., as from time to time amended, or otherwise available to the City, its officers, or its employees.

1.7 **Taxes.** The City of Littleton is not subject to taxation. The Contractor shall not invoice the City for any state, federal or local taxes whatsoever. Upon written notification by the City, the Contractor shall reimburse the City in a timely manner for any taxes erroneously paid by the City.

1.8 **Waiver of Breach.** A waiver by any party to the Agreement or the breach of any term or provision of the Agreement shall not operate or be construed as a waiver of any subsequent breach by either party.

SAMPLE

1.9 **No Third-Party Beneficiaries.** It is expressly understood and agreed that enforcement of the terms and conditions of this Contract, and all rights of action relating to such enforcement, shall be strictly reserved to the City and the Contractor and nothing contained in this Contract shall give or allow any such claim or right of action to any other third party on this Contract. It is the express intention of the City and the Contractor that any person other than the City or the Contractor receiving services or benefits under this Contract shall be deemed to be an incidental beneficiary only.

1.10 **Independent Contractor.** The Contractor shall perform the Work as an independent contractor and shall not be deemed by virtue of this Contract to have entered into any partnership, joint venture, employer/employee or other relationship with the City other than as a contracting party and independent contractor.

1.11 **Non-Discrimination.** In connection with the performance of the Work, the Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure applicants are employed, and employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

1.12 **Indemnification.** The Contractor agrees to investigate, defend, indemnify and hold harmless the City, its officers, employees, insurers, and self-insurance pool, from and against all liability, claims and demands on account of any losses, injuries, and damages, including but not limited to, alleged personal injury claims, and/or death claims, or property damage claims, or errors and omissions, which arise solely out of the Contractor's and/or any of its agents' officers or employees performance of the Contractor's obligations under this Contract. The City of Littleton is prohibited by Article XI, Section 1, Colorado Constitution, from indemnifying any individual or entity. Therefore, the City does not indemnify the Contractor, successors, or assigns under this Agreement. Notwithstanding the foregoing, nothing herein is intended to constitute a covenant, promise, or agreement to indemnify and hold harmless the City from any liability or damages directly caused by or attributable to the City's own negligence, nor is anything herein intended to be nor may be construed as a waiver of the immunities, protections, or limitations on damages provided to the City by the Colorado Governmental Immunity Act, C.R.S. §§24-10-101 et seq., as it may from time to time be amended.

1.13 **Governing Law and Venue.** The Contract shall be governed by the laws of the State of Colorado. Venue for any action arising under the Agreement or for the enforcement of the Agreement shall be in the appropriate court for Arapahoe County, Colorado.

1.14 **Additional Documents or Action**. The Parties agree to execute any additional documents and to take any additional action that is necessary to carry out this Contract.

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1.15 **Binding Effect.** This Contract shall inure to the benefit of, and be binding upon, the parties, their respective legal representatives, successors, heirs, and assigns; provided, however, that nothing in this paragraph shall be construed to permit the assignment of this Contract except as otherwise expressly authorized herein.

1.16 **Integration, Amendment, and Severability.** This Contract represents the entire agreement between the parties and there are no oral or collateral agreements or understandings. This Contract may be amended only by an instrument in writing signed by the parties or as otherwise provided herein. If any other provision of this Contract is held invalid or unenforceable, no other provision shall be affected by such holding, and all of the remaining provisions of this Contract shall continue in full force and effect.

1.17 **Binding Authority.** Contractor represents and affirms that the signature page hereof accurately states the full legal name of Contractor (whether as a corporation, partnership, limited liability company, sole proprietorship, or other), contains all requisite signature(s) on behalf of Contractor, has been properly acknowledged by attestation, notary acknowledgment, or both, and in all other respects is effective to bind Contractor, in accordance with all applicable statutes, regulations, resolutions, rules, bylaws, agreements, or similar sources of authority or limitation. This Contract may be executed in counterpart(s), each of which shall be deemed to be an original, and all of which, taken together, shall constitute one instrument.

1.18 **Subject to Legislative Approval and Compliance with Law.**

The Contractor hereby acknowledges and agrees that pursuant to Section 10-9-8.1 of the Unified Land Use Code, any revision to the approved scope of work under COA22-0006 is contingent upon approval by the Historic Preservation Board of the City of Littleton, CO ("HPB") and compliance with all applicable provisions of the city charter and city code. The city shall not incur any liability whatsoever if the revised scope of work is not approved by HPB or if the proposed scope is revised, resulting in a reduced contract price.

The Parties hereby acknowledge and agree that if the value of this Contract is over **Five-Hundred Thousand and 00/100 Dollars** ($500,000.00), execution is contingent upon approval by the City Council of the City of Littleton, CO and compliance with all applicable provisions of the city charter and city code with regard to the procurement of services contemplated herein. The city shall not incur any liability whatsoever if this Contract is not approved by city council.

DATED this ____ day of _____, 2024.

SAMPLE

CITY OF LITTLETON

GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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SECTION 1
SCOPE OF WORK

1.1.**PLANS AND SPECIFICATIONS**:

1.1.1. The Contractor shall perform all items of Work covered and stipulated in the Specifications, Proposal, Contract, General Conditions and Special Provisions, together with any authorized alterations, Extra Work and Supplemental Agreements, all in accordance with the Plans. The Contractor shall furnish, unless otherwise provided in the Specifications and/or Special Provisions, all materials, implements, machinery, equipment, tools, supplies, transportation and labor necessary to perform and complete the Work.

1.1.2. The Contractor shall be responsible for taking all steps reasonably necessary to ascertain the nature and location of the Work, and the general and local conditions which can affect the Work or the cost of the work. Failure by the Contractor to do so will not relieve it from responsibility for successfully performing Work without additional expense to Owner. The Owner will not be responsible for any understanding or representations concerning conditions unless such understanding or representations are expressly stated in the Contract.

1.2.**SPECIAL WORK**: Should any construction or conditions which are not thoroughly stipulated or set forth by the Specifications be anticipated on any proposed Project, Special Provisions for such Work may be prepared and attached hereto as Exhibit ____, and shall be considered as part of the Specifications, the same as though contained fully therein. Should any Special Provisions conflict with the Specifications, the Special Provisions will govern.

1.3.**CHANGES AND INCREASED OR DECREASED QUANTITIES OF WORK**:

1.3.1. Without invalidating the Contract, the Project Manager and/or Owner reserves and shall have the right, without notice to any Sureties, by written Change Order, to make any changes, from time to time, to the character and quantity of the Work, including but not limited to, the Drawings, Specifications, Plans or Addenda, as may be considered necessary or desirable to complete fully and acceptably the proposed Contract in a satisfactory manner. Such Change Order shall set forth with specificity the changed Work to be done and shall set forth any changes or extensions to the time of completion.

1.3.2. *Increase in Cost and Required Approvals.*

i. Such Change Orders shall not, without a written Supplemental Agreement, increase the total cost of the Work, based on the original estimate of quantities and unit prices contained in the Proposal, by more than 10% (ten percent) without the approval of the City Manager or authorized designee. Such Change Orders shall not increase the total cost of any major item, based on the original estimate or quantities and the unit price in the Pricing Sheet by more than 25%. (A major item shall be construed to be any item, the total cost of which is equal to or greater than 10% of the total Work, computed on the basis of the Proposal quantity and the Contract unit price). Contractor shall be entitled to the cost of said increased units

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at the original price within the Original Proposal, but not to an adjustment of unit price.

ii. In the event said Change Order increases the total cost of the Contract based upon the unit price bid by more than ten percent (10%), an equitable adjustment will be made and the Contract modified accordingly by a written Supplemental Agreement, to be approved by the City Manager or authorized designee, subject to subsection 1.3.2(iii) herein; provided, however, that except for claims based on errors in the Contract, no claim for change hereunder will be allowed for cost incurred more than twenty (20) days before the Contractor gives written notice as herein required; and in the case of errors in the Contract for which the Owner is responsible, the adjustment will be increased costs, reasonably incurred by the Contractor in attempting to comply with such errors in the Contract.

iii. Any Change Order, Supplemental Agreement, or Amendment that increases the total cost of the Contract, based on the original estimate or quantities and the unit price within the proposal by more than five-hundred thousand and 00/100 dollars ($500,000.00) shall require the approval of the Littleton City Council.

iv. In case a satisfactory adjustment in price cannot be reached for any item requiring a written Supplemental Agreement, the City reserves the right to terminate the Contract as to said item as it applies to the terms in question and make such arrangements as may be deemed necessary to complete the Work. Should any of the changes, not requiring Supplemental Agreements, be made as provided herein, the Contractor shall perform the Work as altered, increased or de-creased at the Contract unit price or prices.

v. The Contractor shall require Subcontractors to certify to the best of their knowledge and belief that the cost and pricing data submitted are accurate, complete, and current as of the date of execution, which date shall be as close as possible to the date of agreement on the negotiated price of the Change Order.

vi. The Contractor shall not start Work on any alteration requiring a Supplemental Agreement until the Agreement setting forth the adjusted prices has been executed by the Owner and the Contractor, subject to all requirements of Title 1, Chapter 15 of the Littleton City Code and the city's procurement policy. All changes or approvals for increasing the Work as required and authorized herein, shall be in written form and approved and signed by the City prior to the Work being done. All such writings and approvals shall be specific as to the nature of the Work and the quantities involved. Any Work performed without prior written approval of the City shall not be binding on the Owner.

1.3.3. *Field Order for Minor Changes.* The Project Manager may at any time, by issuing a Field Order, order minor changes in the Work not involving an increase or decrease in the Contract amount and not involving a change in the time for completion. If the Contractor believes that any order for minor changes in the Work involves changes in the Contract amount or time for completion, he shall not proceed with the minor changes so ordered and shall within seven days of the receipt of such order notify the Project Manager in writing of his estimate of the changes in the Contract amount and time for completion he believes to be appropriate. Such estimate shall thereafter be treated as a Change Order Request.

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1.3.4. *Equitable Adjustment.*

i. If the Contractor intends to assert a claim for an equitable adjustment under this Section, the Contractor shall, within 30 days after receipt of a written Change Order or the furnishing of a written notice of requested changes by the Project Manager, submit to the Project Manager a written statement setting forth the general nature and monetary extent of such claim. No claim by the Contractor for an equitable adjustment hereunder will be allowed unless asserted as described above.

ii. In the event the Contractor and the City are unable to agree upon the Contractor's entitlement to an equitable adjustment or upon the amount thereof, or in the event that it is in the best interest of the City to have the Work proceed pending negotiation of amount of an equitable adjustment, the City may direct the Contractor to perform the Work in accordance with the Change Order, direction, instruction, interpretation, or determination, with any Work price adjustments and progress payments for the Work to be determined on a Force Account basis in accordance with Section 7.6.1. The Contractor shall continue diligently to perform the Work in accordance with the City's order, direction, instruction, interpretation, or determination during negotiations with respect to the Contractor's entitlement to an equitable adjustment hereunder or to the amount of any Work price adjustment hereunder or to the amount or any Work price adjustment or time extension. The Contractor and the City may agree on certain aspects of an equitable adjustment and take those aspects out of operation of Force Account provisions.

1.3.5. *Payments for Change Orders.*

i. Payment will not be made under the provisions of this Section for such Work or materials which are so required to be done or furnished in or about or for the performance of the Work and which are not mentioned, specified or indicated or otherwise provided for in the Work so far as such Work or materials may be, in the opinion of the Project Manager, susceptible of classification under or reasonably inferred to be included in the Proposal.

ii. In the event the Contractor is ordered to perform Work under this Section for which payments are not determined hereunder, which in the opinion of the Owner it is impracticable to have performed by the Contractor's own employees, the Contractor will, subject to the written approval of the Owner, be paid the actual cost to him of such Work and, in addition thereto, an amount of ten (10) percent of the actual costs to cover the Contractor’s superintendence, administration and other overhead expenses. The terms and conditions of any subcontract which the Contractor may propose to enter into in connection with Work under the provisions of this Section, shall be subject to the written approval of the Owner before such subcontract is made.

iii. In cases other than those described above, the Owner and the Contractor (on his own behalf and on behalf or his Subcontractors) shall endeavor to negotiate a reasonable price and line adjustment in a Change Order on terms appropriate to the changed Work. The Contractor will be required to submit a sufficiently detailed price proposal supported with sufficient documentation so that the Owner can

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determine that (1) the proposal reflects all impacts on the Work from Work additions, deletions and modifications shown in the change order being priced, and (2) the proposed prices are set out in such a way that their reasonableness can be evaluated against prices based on adequate price competition, unit prices, established catalog or market prices of commercial items sold in substantial quantities to the general public, prices set by law or regulation, recognized published price lists and indices, independently developed cost estimate and other appropriate price comparisons; and (3) cost-increase provisions relating to Work changes are complied with, including but not limited to City Manager or City Council approvals. If any prices or other aspects are conditional, such as on firm orders being made by a certain date or the occurrence or non-occurrence of an event, the Contractor shall identify these aspects in his proposal, under this section. A negotiated Change Order shall set out prices, scheduling requirements, time extensions and all costs of any nature arising out of the issuance of a Change Order except for those cost and time aspects explicitly reserved on the face of the Change Order.

1.3.6. *Claims for Concealed or Unknown Conditions*. If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents; or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than seven (7) days after first observance of the conditions. Site conditions which an experienced and prudent contractor could have anticipated by visiting the site, familiarizing himself with the local conditions under which the work is to be performed and correlating his observations with the requirements of the Contract Documents shall not be considered as claims for concealed or unknown conditions, nor shall the locations of utilities which differ from locations provided by the utility companies. The Project Manager will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or the required time for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Project Manager determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Project Manager shall so notify the Owner and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within twenty-one (21) days after the Project Manager has given notice of the decision. If the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be subject to further proceedings pursuant to Section 1.3.4 and Section 1.3.9. Such sections shall apply to claims by either party, notwithstanding language in said sections that they apply only to claims brought by the Contractor.

1.3.7. *Inspection, Recordkeeping.* For any Change Orders or Supplemental Agreements, the Contractor shall maintain and the City, or its representative, shall have the right to examine

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books, records, documents and other evidence and accounting principles and practices sufficient to reflect properly all direct and indirect costs of whatever nature claimed to have been incurred and anticipated to be incurred for the performance of the Contract changes. At the request of the City, the Contractor shall submit any documents reasonably necessary to permit adequate evaluation of the cost or pricing data submitted including, but not limited to, computations, projections, price competition, catalog and market prices etc. If inadequate or incomplete documentation is submitted, then the City may refuse to complete negotiation until such a time that satisfactory documentation is submitted. The requirements of section are in addition to other audit, inspection and record keeping provisions elsewhere in the Contract Documents.7

1.3.8. Changes involving aggregate increases and decreases in excess of $100,000.00 shall be subject to the following:

a. A change, defined for the purposes of this subsection 1.3.8, involves aggregate increases and decreases in excess of $100,000.00 if the total value of Work affected, without regard to any increases or decreases, exceeds this amount. For example, a Change Order adding Work in the amount of $75,000.00 and deleting Work in the amount of $50,000.00 will be considered to involve aggregate increases and decreases of $125,000.00.

b. The Contractor shall submit in support of all items not based upon unit prices or lump sum prices contained in the Contract or upon the established prices at which commercial items are sold in substantial quantities to the public, statements by his vendors that the prices charged the Contractor are not greater than the prices charged by the respective vendors to their most favored customers for the same items in similar quantities.

c. Price reductions for defective cost or pricing data--price adjustments: If any price, including profit and fee, negotiated in connection with any price adjustment was increased by any significant sums because:

(1) The Contractor furnished cost or pricing data which were not complete, accurate, and current as certified in the contractor's certificate of current cost or pricing data; or

(2) Adjustments or any subcontract provisions therein required, furnished costs or pricing data which were not complete, accurate, and current as certified in the Subcontractor's certificate of current cost or pricing data; or

(3) The Subcontractor or his prospective subcontractor furnished cost or pricing data which were required to be complete, accurate, and current and to be submitted to support a subcontract cost estimate furnished by the Contractor but which were not complete, accurate and current; or

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(4) The Contractor or a Subcontractor or his prospective subcontractor furnished any data, which were not complete, accurate, and current as submitted;

Then the price shall be reduced accordingly and the Contract shall be modified in writing accordingly to reflect such reduction. Any reduction in the Contract price due to defective subcontract data of prospective subcontractor, when the subcontract was not subsequently awarded to such subcontractor, will be limited to the amount (plus applicable overhead and profit markup) by which the actual subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor, provided the actual subcontract price was not affected by defective cost or pricing data; or

The Contractor shall require Subcontractors to certify to the best of their knowledge and belief that the cost and pricing data submitted are accurate, complete, and current as of the date of execution, which date shall be as close as possible to the date of agreement on the negotiated price of the Contract Change Order.

1.3.9. In case a satisfactory adjustment in price cannot be reached for any item requiring a Supplemental Agreement, the Owner reserves the right to terminate the Contract as to said item as it applies to the terms in question and make such arrangements as may be deemed necessary to complete the Work. Should any of the changes, not requiring Supplemental Agreements, be made as provided herein, the Contractor shall perform the Work as altered, increased or decreased at the Contract unit price or prices.

1.4. **OMITTED ITEMS**: The Project Manager may, in writing, order omitted from the Work any item other than Major Items, which are found by the Project Manager or Owner to be unnecessary to the Project and such omission shall not be a waiver of any condition of the Contract nor invalidate any of the provisions thereof. Major Items may be omitted by Supplemental Agreements. The Contractor will be paid for all Work done toward the completion of the item prior to such omission as provided in Section 7.5.

1.5. **EXTRA WORK**:

1.5.1. When additional Work is necessary for the proper completion of the Project for which no quantities or prices were given in the Proposal or Contract, the same shall be called “Extra Work” and shall be performed by the Contractor when so directed in writing by the Project Manager. Extra Work shall be performed by the Contractor in accordance with these Specifications in a skillful and workmanlike manner and as may be directed by the Project Manager.

1.5.2. Prices for Extra Work shall be itemized and covered by a Supplemental Agreement submitted by the Contractor and approved by the Owner prior to the actual starting of such Work, in accordance with Section 1.3.2 of the General Conditions herein. Should the parties be unable to agree on unit prices for the Extra Work or if this method of pricing is impractical, the Project Manager may instruct the Contractor to proceed with the Work by day labor or Force Account as hereinafter provided in Section 7.6. Claims for Extra Work not authorized in writing by the Project Manager prior to the Work being done will be

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rejected and shall not be compensated for.

1.5.3. Extra Work shall not include materials, labor or equipment which is incidental or appurtenant to the Work indicated on the Drawings and in the Specifications. Such Work shall be completed and paid for as part of the Work to which it is appurtenant.

1.6. **UNAUTHORIZED WORK**: Work performed beyond the lines and grades shown on the Contract Drawings, approved Work and Shop Drawings and Extra Work done without written authorization will be considered "Unauthorized Work" and the Contractor will receive no compensation therefore. If required by the Owner, Unauthorized Work shall be remedied, removed or replaced by the Contractor at Contractor's expense. Upon failure of the Contractor to remedy, remove or replace unauthorized Work, the Owner may take action as provided in Section 2.11, Removal of Defective and Unauthorized Work.

1.7. **MAINTENANCE AND CONTROL OF TRAFFIC**:

1.7.1. Unless the Contract specifically provides for the closing to traffic of any local road or highway while construction is in progress, such road or highway shall be kept open to all traffic by the Contractor. The Contractor shall also provide and maintain in a safe condition temporary approaches, crossings or intersections with roads and highways.

1.7.2. The Contractor will provide their own traffic control, including flagging, traffic control supervisor, and traffic control devices for the duration of the project per the most current edition of the Manual on Uniform Traffic Control Devices (MUTCD).Traffic control plans will be required for review and approval prior to commencement on Work.

1.7.3. The Contractor shall bear all expense of maintaining traffic over the section of road affected by the Work to be done under this Contract, and of constructing and maintaining such approaches, crossings, intersections and any accessory features without direct compensation, except as otherwise provided.

1.8. **REMOVAL AND DISPOSAL OF STRUCTURES AND OBSTRUCTIONS:** All structures or obstructions found on the site and shown on the Plans which are not to remain in place or which are not to be used in the new construction shall be removed as directed by the Project Manager. Unless specified in the Proposal, this Work will not be paid for separately but will be included in the price bid for that portion of the Work requiring the removal of the obstruction. All material found on the site or removed therefrom shall become the property of the Contractor unless otherwise indicated. Materials determined by the Project Manager to be unsuitable for backfill shall be disposed of off the site at the Contractor's expense.

1.9. **USE OF MATERIALS FOUND ON THE WORK**:

1.9.1. The Contractor, with the approval of the Project Manager, may use in the proposed construction, any stone, sand, or gravel found on the site. The Contractor will not be paid for such excavation unless specifically stated in the Proposal, and he shall replace with other suitable material, without compensation, all of that portion of the material so removed

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and used as was contemplated for use in the embankments or otherwise. If it was intended that any or all of the material so excavated and used was to have been wasted, then the Contractor will not be required to replace it. The Contractor shall not excavate any material from the site which is not within the excavation as indicated by the slope and grade lines, without being authorized in writing by the Project Manager.

1.9.2. Specific job mix designs conforming to specifications for any Work shall be submitted for approval within ten (10) consecutive calendar days of the Notice to Proceed or a minimum of seven (7) consecutive calendar days prior to use of the material. This material approval applies to asphaltic concrete paving materials, concrete, aggregate base course, and fine grading material.

1.10. **FINAL CLEAN UP**:

1.10.1. During the Project's final cleanup, the Contractor shall remove from the site(s) all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. The streets and adjacent properties in the Project shall be repaired to as good or better condition than existed prior to construction. This shall include removal of all dirt or mud from streets and lawns. No extra payment shall be made for these items. The Contractor shall leave the Project in a neat and presentable condition.

1.10.2. The Contractor shall provide written notification to the Project Manager that the Work is complete and the site (s) ready for final inspection. If the Project Manager determines that the Work is not complete, he will immediately notify the Contractor in writing, stating the reasons. If the Project Manager determines the Work is complete, the Project Manager and Owner will inspect within seven (7) calendar days and prepare a final cleanup list. When the final cleanup list is completed by the Contractor and inspected by the Project Manager, the Project Manager will recommend to the Owner that the Work be accepted. The Owner will then initiate the Acceptance and Final Payment procedures as stated in Section 7.9. The final cleanup shall be completed before the expiration of the Contract's Time of Completion as set forth in the Contract Documents.

1.11. **DELAYS**: No payment, compensation, damages, or adjustment of any kind, other than extension of the contract time if received in writing by Owner shall be made to, or claimed by, Contractor because of hindrances or delays from any cause in the commencement, prosecution, or completion of the work, whether caused by Owner or any other party and whether avoidable or unavoidable other than as set forth in a change order described fully above.

SECTION 2
CONTROL OF THE WORK

2.1. **AUTHORITY OF PROJECT MANAGER**: The Project Manager shall decide any and all questions which may arise as to the quality and acceptability of the materials furnished, the Work performed, the manner of performance and the rate of progress of the Work. The Project Manager shall decide all questions which may arise as to the interpretation of the Plans and Specifications, all questions as to acceptable fulfillment of the Contract, all disputes and mutual

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rights by the Contractors if there be more than one Contractor on the Work, and all questions as to compensation. The decision of the Project Manager shall be final and shall have executive authority to make effective such decisions and to enforce the Contractor to carry out all orders promptly.

2.2.**PLANS AND SHOP DRAWINGS**:

2.2.1. The Contractor shall bring discrepancies between different Plans, or between Plans and Specifications, or regulations and codes covering the Work to the attention of the Project Manager in writing before the date of Proposal closing. In the event such discrepancies exist and the Project Manager is not so notified, the Project Manager shall reserve the right to exercise sole arbitration authority. It is mutually agreed that all authorized alterations affecting the requirements and information given on the Approved Plans shall be in writing and approved by the Project Manager.

2.2.2. The Plans will be supplemented by Shop Drawings as necessary to adequately control the Work or as specified. Shop Drawings are not part of the Contract Documents. Shop Drawings may consist of drawings, diagrams, illustrations, schedules, calculations, and other data prepared by the Contractor, Subcontractor, manufacturer, supplier, or distributor, which will illustrate how specific portions of the Work shall be fabricated and/or installed in accordance with the Plan details and Specifications. Any Work done prior to the Owner's approval of Shop Drawings will be at the Contractor's risk.

2.2.3. The Project Manager may request additional details and require the Contractor to make changes in the design which are necessary to conform to the provisions and intent of these Specifications without additional cost to the Owner.

2.2.4. Approval of the Shop Drawings by the Project Manager shall not be construed as a complete check and verification, but will indicate that general conformance with the design concept and general compliance with the information given in the Contract has been achieved. Any information or action to be taken as set forth in the Shop Drawings is subject to the requirements of the Plans and Specifications. The Contractor shall be responsible for all dimensions and quantities shown on the Shop Drawings. The Project Manager shall be notified in writing of any information in the Shop Drawings that deviates from the requirements of the Contract documents. Appropriate action will then be taken by the Project Manager.

2.2.5. Approval by the Project Manager of the Contractor's Shop Drawings shall not relieve the Contractor of his obligation to meet all requirements of the Plans and Specifications and shall not relieve the Contractor of his responsibility for the correctness of the Shop Drawings.

2.2.6. Five (5) sets of Shop Drawings shall be submitted to the Project Manager either in hard copy format or electronic format. No faxed copies will be accepted. After checking, two sets will be returned to the Contractor; one for his use and the other for the fabricator or supplier's use.

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i. Shop Drawings being returned will be stamped to indicate the following:

i) Shop Drawings approved for use in construction will have one of the following statements checked: Approved, No Exception Taken, or Approved as Noted.
ii) Shop Drawings to be corrected or redrawn and resubmitted for approval will have one of the following statements checked: Revise as Noted, Resubmit; or Rejected.

If Shop Drawings are returned for correction, corrections shall be made and the corrected drawings shall be resubmitted by the Contractor in the same manner as the first submittal. The time required for approval of each submittal will not exceed four (4) weeks after Shop Drawings are received by the Project Manager.

ii. It is the intent of these Specifications that no more than two submittals will be required. If, however, additional submittals are required by actions of the Contractor, the additional time for Shop Drawing approval will be borne by the Contractor. If additional submittals are required, or if Shop Drawing approval is delayed by actions of the Project Manager, and if the Contractor's controlling operations are delayed or interfered with by reason of the delay in Shop Drawing reviews, an extension of time commensurate with the delay in completion of the Work thus caused will be granted as provided herein.

iii. Specifications for the Shop Drawings:

i) All Shop Drawings shall be 36 inches long and 22 inches wide overall. There shall be a two inch margin on the left side of the sheet and one-half inch margin on the other three sides. A blank space, six inches by three inches, shall be left near the lower right-hand corner for an approval stamp.

i) Where design notes or catalogue cuts are required, they may be submitted on 8-1/2 in. x 11 in. sheets in lieu of the size mentioned above.

ii) There shall be a title block in the lower right-hand corner of each sheet. The title block shall show the Owner's name, structure number, the location of the structure, and the contents of the sheet.

iii) The Contract price will include the cost of furnishing all Shop Drawings. Shop drawings and working drawings submitted to the Project Manager by the Contractor, Subcontractor or any lower tier Subcontractor pursuant to the Work, may be duplicated by the Owner and the Owner may use and disclose, in any manner and for any purpose such Shop Drawings and Working Drawings delivered under this Contract.

This Section 2.2 shall be included in all subcontracts hereunder at all times.

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2.3. **OPERATING MANUALS AND PARTS LISTS**: The Contractor shall submit four (4) complete operating manuals and parts lists to the Project Manager for all items of mechanical and electrical equipment incorporated into the Work.

2.4. **AS-BUILT DRAWINGS**: The Contractor shall maintain a set of drawings at the site, with all changes or deviations from the original drawings neatly marked thereon in brightly contrasting color. This shall be a separate set of drawings, not used for construction purposes, which shall be kept up to date as the job progresses and shall be made available for inspection by the Project Manager at all times. Upon completion of the Contract, this set of drawings shall be delivered to the Project Manager.

2.5. **CONFORMITY WITH PLANS AND ALLOWABLE DEVIATIONS**: Finished surfaces shall conform with lines, grades, cross sections and dimensions shown on the Approved Plans. Any deviation from the Plans and working drawings, as may be required by the demands of construction, will in all cases be determined by the Project Manager and authorized in writing.

2.6. **COORDINATION OF SPECIFICATIONS, PLANS AND SPECIAL PROVISIONS**: The Specifications, the Plans, Special Provisions, and all supplementary Plans and documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be cooperative to describe and provide for a complete Work. In case of discrepancy, figured dimensions, unless obviously incorrect, shall govern over scaled dimensions. Plans shall govern over Specifications and Special Provisions shall govern over both Plans and Specifications. The Contractor shall not use to his advantage any apparent error or omission in the Plans or Specifications. In the event the Contractor discovers any apparent error or discrepancy, he shall immediately call upon the Project Manager for his interpretation and decision and such decision shall be final. In the event contradiction and/or conflicts occur in the Specifications not otherwise covered by Special Provisions, the Specifications deemed by the Project Manager to be most restrictive shall govern.

2.7. **CONSTRUCTION SURVEYING**: The Contractor will furnish and set all construction stakes. The Project Manager will review the stakes. The Contractor shall be held responsible for the proper preservation of all marks and stakes. If, in the opinion of the Project Manager, any marks or stakes have been willfully or carelessly disturbed or destroyed by the Contractor, or his employees, the cost of replacing them will be charged against the Contractor and be deducted from the final payment. Stakes which must be reset after the initial stakeout, will be replaced at a cost of $75.00 per hour for a survey crew.

2.8. **RIGHT OF ENTRY**: At all times, a representative of the Owner, the City of Littleton, shall have the right to enter and inspect the Project premises.

2.9. **AUTHORITY AND DUTIES OF INSPECTORS**:

2.9.1. All Work shall be subject to inspection and testing by the Project Manager, Owner or their agent at all reasonable times and at all places prior to acceptance. Inspectors, employed by the Owner, are authorized to inspect all Work done and all material furnished. Such inspection may extend to all of any part of the Work and to the preparation, fabrication, or

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manufacture of the materials to be used. The Inspector is not authorized to revoke, alter, or waive any requirements of the Plans and Specifications. The Inspector is authorized to call to the attention of the Contractor any failure of the Work or materials to conform to the Specifications and Contract Documents.

2.9.2. The Inspector shall have the authority to reject materials or suspend the Work until any question at issue can be referred to and decided by the Project Manager. If the Contractor refuses to suspend operations on verbal order, the Inspector shall issue a written order giving the reason for shutting down the Work. Work done during the absence of the Inspector will not be accepted nor paid for.

2.9.3. Inspections by the Project Manager, or the Owner, or any of their representatives, or others shall not relieve the Contractor from his obligations to perform the Work in accordance with the requirements of the Contract Documents and to also inspect his own Work.

2.9.4. Any plan of action, method of work or construction procedure suggested to the Contractor by the Project Manager, or the Owner, or their consultants, or any of their representatives, whether orally or in writing, if adopted or followed by the Contractor in whole or in part, shall be at the sole risk and responsibility of the Contractor.

2.9.5. The Inspector shall neither act as foreman or perform other duties for the Contractor nor interfere with the management of the Work by the Contractor. Any advice which the Inspector may give the Contractor shall, in no way, be construed as binding to the Project Manager in any way or releasing the Contractor from fulfilling any of the terms of the Contract.

2.10. **INSPECTION**:

2.10.1. Until final payment, all parts of the work may be subject to inspection and testing by Owner or its designated representatives. Contractor may furnish, at its own expense, all reasonable access, assistance, and facilities required by Owner for such inspection and testing. The Contractor may furnish the Project Manager with every reasonable facility for ascertaining whether the Work performed and materials used are in accordance with the requirements and intent of the Specifications and Contract. In the event of night Work, the Contractor may furnish proper lighting to adequately perform and inspect the Work being performed.

2.10.2. If the Project Manager requests it, the Contractor may, at any time before acceptance of the Work, remove or uncover such portion of the finished Work as may be directed. After examination, the Contractor may restore said portions of the Work to the standard required by the Specifications. Should the Work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the coverage or making good of the parts removed, may be paid for as Extra Work; but should the Work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed, maybe at the Contractor's expense. Any Work done or materials used by the Contractor without suitable supervision or inspection by the Project Manager or his authorized representative may be ordered removed and replaced at the Contractor's expense.

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2.10.3. If Contractor does not promptly replace rejected material or correct rejected workmanship the Owner may: (a) by separate Contract or otherwise, replace such material or correct such workmanship and charge the cost thereof to the Contractor, or (b) terminate the Contractor's right to proceed in accordance with this Agreement pursuant to Section 4.10. Such inspection and test is for the sole benefit of Owner and shall not relieve Contractor of the responsibility of providing quality control measures to assure that the Work strictly complies with the Contract. No inspection or test by the Owner, Project Manager or their agent may be construed as constituting or implying acceptance. Inspection or test shall neither relieve Contractor of responsibility for damage to or loss of the material prior to acceptance, nor in any way affect the continuing rights of the Owner after acceptance of the completed Work.

2.10.4. Any Work outside the normal five (5) day, forty (40) hour week will require the Project Manager or Inspector on the job. All inspection so required shall be done at the Contractor's expense and the cost thereof may be deducted from the final payment. Overtime inspection may be done by the City at the Contractor's expense at $50.00 per hour. The payment by the Contractor of overtime inspection fees shall not relieve the Contractor from the liquidated damages provisions as specified in Section 4.8 herein.

2.11. **REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK**:

2.11.1. All Work which has been rejected or condemned by Owner or Project Manager shall be repaired, or if it cannot be satisfactorily repaired, be removed and replaced at the Contractor's expense. The following work will be done at the Contractor's risk and will be considered "unauthorized." At the Project Manager's discretion the "Unauthorized Work" may not be measured and paid for and may need to be removed at the Contractor's sole expense.

i. Work done beyond the lines and grades shown on the Plans, or as given, except as herein provided;
ii. Work done without giving timely notice to the Project Manager so the Project Manager may, if he wishes, be present to observe the Work in progress; or
iii. Any Extra or unclassified Work done without written authority and prior Agreement in writing as to prices.

2.11.2. Upon the failure of the Contractor to satisfactorily repair or to remove and replace, if so directed, rejected, unauthorized, or condemned Work immediately after receiving formal notice from the Project Manager, the Owner may, at its sole option, recover for such defective Work on the Contractor's bond or by action in a court having proper jurisdiction over such matters, or may employ labor and equipment and satisfactorily repair or remove and replace such Work and charge the cost of the same to the Contractor, which cost will be deducted from any money due him.

2.12. **SUPERVISION AND SUPERINTENDENCE**:

2.12.1. The Contractor shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. The Contractor shall be

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solely responsible for the means, methods, techniques, sequences, and procedures of construction. The Contractor shall be responsible to see that the completed work complies with the Contract Documents.

2.12.2. The Contractor shall designate and keep on any work site(s), at all times during its progress, a competent Superintendent who shall not be replaced without prior written notice to the Owner. The Contractor shall provide contact information for the Superintendent who may be reached twenty-four (24) hours a day. The Superintendent will be the Contractor's representative at the site and shall have authority to act on behalf of the Contractor. All communications given to the Superintendent shall be as binding as if given to the Contractor. During periods when the Work is suspended, the Contractor shall make appropriate arrangements for any emergency work which may be required.

2.12.3. Whenever the Superintendent is not present on any particular part of the Work where the Project Manager may desire to inform the Contractor relative to interpretation of the Plans and Specifications or to disapproval or rejection of materials or Work performed, the Project Manager may so inform the foreman or other worker in charge of the particular part of the Work in reference to which the information is given. Information so given shall be as binding as if given to the Superintendent.

2.12.4. The Contractor will be supplied with four (4) copies of the Plans, and three (3) copies of the Specifications and Special Provisions. He shall have available on the Work at all times one copy each of said Plans, Specifications and Special Provisions, exclusive of the set designated for As-Built Drawings in Section 2.4 Additional copies of Plans, Specifications and Special Provisions can be obtained by the Contractor for the cost of reproduction.

SECTION 3
CONTROL OF MATERIAL

3.1.**MATERIAL**:

3.1.1. Unless otherwise indicated in this Contract, equipment, material and products incorporated in the Work covered by this Contract, shall be new and of the grade specified for the purpose intended. Unless otherwise specifically indicated, reference to equipment, material, product, or patented process by trade names, make or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition, and the Contractor may, with permission by the Project Manager, use any equipment, material, article, or process which is equivalent to that named, subject to the requirements of this Section.

3.1.2. Within the scope of his authority, the Project Manager shall be the sole judge of the quality and suitability of proposed alternative equipment, material, article or process. The burden of proving the quality and suitability of the alternative shall be upon the Contractor. Information required by the Project Manager in judging an alternative shall be supplied by the Contractor at the Contractor's expense.

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3.2.**APPROVAL AND ACCEPTANCE OF MATERIALS**:

3.2.1. Samples of all materials to be tested may be taken by the Project Manager or his authorized representative at the discretion of the Project Manager. Materials may be sampled either prior to shipment or after being received at the construction site. All sampling, inspection, and testing shall be done in accordance with the Specifications contained in the contract documents.

3.2.2. The Contractor shall provide such facilities as the Project Manager or his representative may require for conducting field tests and for collecting and forwarding samples. The Contractor shall not use or incorporate into the Work any materials represented by the samples until tests have been approved by the Project Manager or his authorized agents. Any material, which after approval, has for any reason become unfit for use, shall not be incorporated into the Work.

3.2.3. Tests or approvals by the Project Manager or others shall not relieve the Contractor from his obligations to perform the Work in accordance with the requirements of the Contract Documents.

3.3.**CITED SPECIFICATIONS; SAMPLES AND TESTS**:

3.3.1. Except as otherwise provided, sampling and testing of all materials, and the laboratory sampling and testing of equipment required under these Specifications, shall be in accordance with the current edition of the ASTM publication of Standards, adopted and in effect on the date of the Request for Proposal.

3.3.2. When designated, sampling and testing of materials shall be in accordance with the current edition of "The American Standards Association Specifications;" the current edition of the AASHTO publication "Standard Specification for Highway Materials and Methods of Sampling and Testing;" the current edition of the "American Water Works Association Specifications"; the current edition of the "Federal Specifications" or the current edition of "MIL Specifications" adopted and in effect on the date of the Request for Proposal.

3.3.3. The testing of all samples and materials shall be made at the expense of the Owner, when specified herein as by the Owner, unless the tests reveal nonconformance in which case said costs shall be reimbursed by the Contractor to the Owner. The Contractor shall furnish the required samples without charge. The Contractor shall give sufficient notification of the placing of orders for materials in order to permit the Project Manager to arrange for appropriate testing.

3.4.**STORAGE**: Materials shall be stored to insure the preservation of their quality and fitness for the Work. When necessary, they shall be placed on wooden platforms, or other hard, clean surfaces and not on the ground and shall be placed under cover when directed. Stored materials shall be located to facilitate prompt inspection.

3.5.**SUBSTITUTION OF MATERIALS AFTER AWARD OF CONTRACT**: Substitution of equipment and materials of makes and types other than those specified and/or those that have

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been given written approval prior to closing of the Proposal will be considered for approval only as hereafter provided: Proposed substitutes shall be equal or superior to items specified or previously approved. The Contractor shall submit any requests on his letterhead in duplicate within two weeks after the date of award of Contract. This request for substitutions shall be a complete typewritten list submitted at one time and must be accompanied by a statement outlining reasons for each requested substitution. The request shall include catalog number, technical data, cuts diagrams and such other descriptive data or samples as may be required. The Contractor shall also provide in his letter a detailed statement listing all significant details in which each item requested for approval differs from the item specified. Such listing or the failure to so list such information shall not relieve the Contractor from providing properly functioning and/or fitting materials, regardless of the approval action taken by the Project Manager. If so requested by the Project Manager, the Contractor shall submit samples of both the specified material or equipment and the proposed substitute. In case of a difference in price, the Owner shall receive all benefits of the difference for any substitutions, and the Contract amount shall be altered by Change Order to credit the Owner with any savings so obtained.

3.6. **DEFECTIVE MATERIALS**: All materials not conforming to the requirements of the Specifications shall be considered defective. Whether in place or not, such material shall be removed immediately from the site of the Work, unless otherwise permitted by the Project Manager. No rejected material, the defects of which have been subsequently corrected, shall be used until approval by the Project Manager has been given. Upon failure of the Contractor to comply promptly with any order of the Project Manager made under the provisions of this Section, the Owner shall have authority to remove defective materials and to deduct the cost of removal and replacement with specified materials from any moneys due or to become due to the Contractor or said costs of removal and replacement may be recovered in any action by the Owner against the Contractor's Surety Bond.

3.7. **PROPERTY RIGHTS IN MATERIALS**: The Contractor shall have no property right in materials after they have been attached, affixed or incorporated in the Work or the soil, or after payment has been made by the Owner to the Contractor for materials delivered to the site of the Work or stored subject to or under the control of Owner.

3.8. **DAMAGE TO THE WORK AND RESPONSIBILITY FOR MATERIALS**:

3.8.1. The Contractor shall be responsible for materials delivered and Work performed until completion and final acceptance of the entire construction thereof.

3.8.2. The Contractor shall bear the risk of injury, loss or damage to any and all parts of the Work for whatever cause, whether arising from the execution or from the non-execution of Work. The Contractor shall rebuild, repair or restore Work and materials which have been damaged or destroyed from any causes before completion and acceptance of the Work and shall bear the expense thereof. The Contractor shall provide security and drainage and erect temporary structures as necessary to protect the Work and materials from damage.

3.8.3. The Contractor shall be responsible for materials not delivered to the site for which any progress payment has been made to the same extent as if the materials were so delivered.

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SECTION 4
PERFORMANCE AND PROGRESS

4.1.**SUBCONTRACTING OR ASSIGNMENT OF WORK**:

4.1.1. No Contractual relationship will be recognized under the Contract other than the Contractual relationship between the Owner and Contractor.

4.1.2. No portion of the Contract shall be subcontracted, assigned or otherwise disposed of except with the written consent of the Owner or his authorized representative and Surety, which consent shall not be unreasonably withheld.

4.1.3. Requests for permission to subcontract, assign or otherwise dispose of any portion of the Contract shall be in writing and accompanied by a showing that the organization which will perform the Work is particularly experienced and equipped for such Work. Consent to subcontract, assign or otherwise dispose of any portion of the Contract shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the Contract.

4.2.**COMMENCEMENT OF WORK**: The Contractor shall begin the Work within the prescribed amount of days set by the City in the written Notice to Proceed. The Contractor shall notify the Project Manager at least forty-eight (48) hours in advance of the time he intends to begin Work. Work shall be completed in the prescribed amount of days set by the City in the Contract Documents, including any Change Orders, Supplemental Agreement, or Amendment. The Contractor shall conduct Work in such a manner and with sufficient materials, equipment, and labor as is considered necessary to insure its completion within the time limit set forth in the Contract. Should the prosecution of Work for any reason be discontinued by the Contractor, with the consent of the Project Manager, he shall notify the Project Manager at least 48 hours in advance of resuming operations.

4.3.**LIMITATION OF OPERATIONS**: Each item of Work shall be performed to completion without delay and in no instance will the Contractor be permitted to transfer his force from uncompleted Work to new Work without the permission of the Project Manager. The Contractor shall not open up Work to the prejudice of Work already started.

4.4.**PROGRESS SCHEDULE**:

4.4.1. The Contractor shall prepare and submit to the Project Manager for approval five (5) calendar days prior to the Preconstruction Conference, a practicable schedule, showing the order in which the Contractor proposes to carry on the Work, the date on which he will start the several salient features (including procurement of materials and equipment) and the contemplated dates for completing the same. The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of Work scheduled for completion at any time. The Contractor shall enter on the chart the actual progress at such intervals as directed by the Project Manager and shall immediately deliver three copies thereof. If the Contractor fails to submit a progress schedule within the time herein prescribed, the Project Manager may withhold approval of progress payment estimates until such time as the Contractor submits the required progress schedule.

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4.4.2. The Contractor shall perform the Work in accordance with the latest approved progress Schedule. If the progress of items along the critical path is delayed, the Contractor shall revise his planning to include additional forces, equipment, shifts or hours as necessary to meet the time or times of completion specified in this Contract. Additional costs resulting therefrom will be borne by the Contractor. The Contractor shall make such changes when his progress at any check period does not meet at least one of the following two tests:

i. The percentage of dollar value of completed Work with respect to the total amount of the Contract is within ten percentage points of the percentage of the Contract time elapsed, or;

ii. The percentage of dollar value of completed Work is within ten percentage points of the dollar value which should have been performed according to the Contractors own network analysis previously approved by the Project Manager.

4.4.3. Failure of the Contractor to comply with the requirements under this Section will be grounds for determination that the Contractor is not performing the Work with such diligence as will ensure completion within the time of completion specified in this Contract. Upon such determination, the Owner may terminate the Contractor's right to proceed with the Work, or any separate part thereof, in accordance with the provisions contained herein. The Owner may extend the time periods reflected by subparagraphs (i) and (ii) above, if those subparagraphs do not reasonably reflect upon the Contractor's prosecution of the Work.

4.5.**CHARACTER OF WORKMEN AND EQUIPMENT**:

4.5.1. The Contractor shall employ such superintendents, foremen, and workmen as are careful and competent, and the Project Manager may demand the dismissal of any person or persons employed by the Contractor in, about, or upon the Work who shall misconduct himself/herself or be incompetent or negligent in the proper performance of his or her duties, or neglects or refuses to comply with the directions given, and such person or persons shall not be employed again thereon without the written consent of the Project Manager. Should the Contractor continue to employ, or again employ such person or persons, the Project Manager may withhold all payments which are or may become due, or the Project Manager may suspend the Work until such orders are complied with.

4.5.2. In the employment of labor, preference shall be given, other conditions being equal, to residents of the area wherein the Work is being done, but no other preference or discrimination among citizens of the United States shall be made, except as may be required by special labor provisions. No convict labor shall be employed. The Contractor shall furnish such equipment as is considered necessary for the prosecution of the Work in an acceptable manner and at a satisfactory rate of progress. All equipment, tools, and machinery used for handling materials and executing any part of the Work shall be subject to the approval of the Project Manager and shall be maintained in a satisfactory working condition. Equipment used on any portion of the Work shall be such that no injury to the Work, roadways, adjacent property, or other objects will result from its use. The Contract may be terminated if the Contractor fails to provide adequate equipment for the Work.

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4.6.**TEMPORARY SUSPENSION OF WORK**: The Project Manager and/or Owner shall have the right to suspend, delay or interrupt the Work wholly or in part for such period as he may determine to be appropriate because of the failure on the part of the Contractor to perform properly the Work in accordance with the Contract, to carry out orders or to remove defective material or Work. The Contractor shall not suspend the Work without written order given by the Project Manager and prior to resuming Work shall give the Project Manager forty-eight (48) hours' notice to afford opportunity to reestablish supervision.

4.7.**DETERMINATION AND EXTENSION OF CONTRACT TIME FOR COMPLETION**:

4.7.1. The Contractor shall perform fully, entirely, and in a satisfactory and acceptable manner the Work, within the number of calendar days stipulated in the Contract. Time will be assessed against the Contractor beginning with the actual date the Work is started in accordance with the Notice to Proceed. If the Contractor does not begin the Work within the limit as designated in the Notice to Proceed, the calendar days shall start on the first calendar day after the expiration of the limit as stated in the Notice to Proceed.

4.7.2. In adjusting the Contract time for the completion of the Project, all strikes, lockouts, unanticipated delays in transportation or any condition over which the Contractor has no control, and any suspensions ordered by the Owner for causes not the fault of the Contractor, shall be excluded from the computation of the Contract time for completion of the Work and the Owner may extend the time for completion in such amount as the conditions justify. In order to secure an extension of time for delays beyond his control, the Contractor, shall within ten (10) days from the beginning of any such delay, notify the Owner in writing of the causes of delay, where upon the Owner shall ascertain the facts and the extent of the delay and extend the time for completing the Work when, in his judgment, the findings of fact justify such an extension, and his finding of fact thereon shall be final and conclusive. No allowances will be made for delays or suspensions of the performance of the Work which are in the control of the Contractor.

4.7.3. If the satisfactory execution and completion of the Contract shall require Work or materials in greater amounts or quantities than those set forth in the Contract, then the Contract time shall automatically be increased in the same proportion as the cost of the additional Work bears to the original Work contracted for.

4.8.**FAILURE TO COMPLETE WORK ON TIME**:

4.8.1. The Owner and Contractor agree and recognize that time is of the essence for every time period set forth in the Contract Documents and that the Owner will suffer financial loss if the Work is not substantially complete within the time set forth in the Contract Documents, plus any allowable extensions in writing. If the Contractor shall fail to fully perform and complete the Work in conformity with the provisions and conditions of the Contract within the specified time limit for such performance and completion or within such further time as, in accordance with the provision of this Contract, shall be fixed or allowed for such performance and completion, the Owner and Contractor agree that as liquidated damages, and not as a penalty, for the delay in performance, the Contractor shall pay to the Owner

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in the amount stipulated below for each and every calendar day that expires after the time set forth in the Contract Documents until the same is finally complete and ready for Final Payment as provided herein.

Original Contract Amount	Amount of Liquidated Damages Per Day
Less than $100,000	$300.00
$100,000 and less than $500,000	$600.00
$500,000 and less than $1,000,000	$1,000.00
$1,000,000 and over	$1,500.00

4.8.2. The Owner shall recover said inspection charges and damages by deducting the amount thereof out of any moneys which may be due or may become due to the Contractor, and/or by an action at law against the Contractor or his Surety. It is understood and agreed that aside from any other penalty or damage, all costs of the Project Manager and inspection on behalf of the Owner may be charged to the Contractor and be deducted from any estimate or payment otherwise due and payable to him. Additional inspections required after the Contractual "Time of Completion" shall be charged to the Contractor at the rate of $50.00 per hour.

4.8.3. If the Contractor shall fail to pay such liquidated damages promptly upon demand therefor, the Surety on the Performance Bond shall pay such damages. In addition, and at the Owner's option, the Owner may withhold all or any part of such liquidated damages from any payment due the Contractor.

4.9.**ADJUSTMENT FOR SUSPENDED WORK**:

4.9.1. In the event the Contractor is ordered by the Owner, in writing, to suspend Work for some unforeseen cause not provided for in the Contract, and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the job during the period of shutdown. No allowance will be made for lost profits. The period of shutdown shall be computed from the date set out in the written order for Work to cease until the date of the written order for Work to resume. Claims for such compensation shall be filed with the Owner within 10 days after date of written order to resume Work or such claims will not be considered. The Contractor shall submit with his claim, substantiating papers covering the entire amount shown on the claim. The Owner shall take the claim under consideration, and may make such investigations as are deemed necessary, and shall be the sole judge as to the equitability of such claim and such decision shall be final.

4.9.2. Notwithstanding any provisions of this Contract to the contrary, no provision of this section shall be construed as entitling the Contractor to compensation for delays due to inclement weather, delays due to failure of Surety, for suspensions made at the request of the Contractor, or for any other delay provided for in the Contract Documents, Specifications, Special Provisions, Proposal, Contract, Change Order or Field Order.

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4.10. **TERMINATION OF CONTRACT FOR DEFAULT**:

4.10.1. The Owner shall serve written notice upon the Contractor of its intention to terminate this Contract in the presence of at least one of the following events, collectively an "Event of Default:"

i. Failure of the Contractor to start the Work on the date given in the Notice to Proceed or if the Contractor, in any way, abandons the Work;

ii. Evidence that the progress being made by the Contractor is insufficient to complete the Work within the specified time, as it may be extended in accordance with the Contract Documents;

iii. Willful or deliberate failure or violation on the part of the Contractor of any requirement of the Contract Documents, including the Plans and Specifications, Special Provisions, or if the Contractor is executing the same in bad faith or otherwise not in accordance with its obligations;

iv. Failure to maintain any required bonds, licenses, permits, and/or insurance as required in the Contract Documents;

v. Failure of the Contractor to promptly repair, replace or remove any defects in materials or Work or any defects in materials or Work of any other nature, the correction of which has been directed in writing by the Project Manager;

vi. Substantial evidence of collusion for the purpose of illegally procuring a Contract or perpetrating fraud on the Owner in the construction of Work under Contract;

vii. If the Contractor files a voluntary petition in bankruptcy, if a receiver is appointed for the Contractor or any of its property, or the insolvency of the Contractor;

viii. If the Contractor shall allow any final judgment to stand against him unsatisfied for a period of ten (10) days or shall make an assignment for the benefit of creditors;

ix. If the Contractor or any of its officers or employees are convicted, plead nolo contendre, enter into a formal agreement in which they admit guilt, enter a plea of guilty, or otherwise admit culpability to criminal offenses of bribery, kickbacks, collusive bidding, bid-rigging, anti-trust, fraud, undue influence, theft, extortion, or any offense of similar nature, in connection with the Contractor's business;

x. If other just causes exist for termination.

4.10.2. Written Notice. Owner shall provide Contractor and Surety with written notice of intent to terminate. Contractor and/or Surety has ten (10) days from receipt of notice to cure any default or to provide to the Project Manager a detailed plan, in writing, of how the Contractor will cure the causes for termination listed within the written notice. If a satisfactory effort has not been made by the Contractor or his Surety to correct the default within the prescribed period in the notice, or, if in the judgment of the Project Manager, any submitted written plan does not ensure satisfactory performance of the Work, the Owner may declare the Contract terminated and notify the Contractor and his Surety accordingly. Upon receipt of notice from the Owner that the Contract has been terminated, the Contractor shall immediately discontinue all operations. The Owner may then proceed with the Work in any lawful manner that he may elect until completion.

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4.10.3. Owner reserves the right to take possession of any machinery, implements, tools, or materials of any description that shall be found upon the Work, to account for said equipment and materials, and to use the same to complete the Project. When the Work is thus finally completed, the total cost of the same will be computed. If the total cost is more than the Contract price, the difference shall be paid to the Owner either by the Contractor or his Surety. In case of termination all expenses incident to ascertaining and collecting losses under the bond, including Project Managering and legal services, shall be assessed against the bond.

4.11. **TERMINATION FOR CONVENIENCE OF THE OWNER**: This Contract and the performance of the Work hereunder may be terminated at any time, in whole or in part, for convenience. Any such termination shall be effected by delivery to the Contractor of a written notice ("Notice of Termination") specifying the extent to which performance of Work is terminated, the date upon which termination becomes effective, and any necessary actions to be taken by the Contractor to effectuate termination and close-out the Contract. If the Contract is terminated, the Contractor shall be paid on a prorated basis of Work satisfactorily completed, under the Work. The portion of Work satisfactorily completed but not yet accepted by the Owner shall be determined by the Owner.

4.12. **COOPERATION WITH OTHER CONTRACTORS**: In connection with the improvements under this Contract, the right is reserved by the Owner to award any Work not included in the Contract to another Contractor for performance during the progress of this Contract, or to perform such Work with the Owner's forces, and the Contractor for this Contract shall cooperate and so conduct his operation as to minimize the interference therewith, as directed by the Project Manager.

4.13. **TERMINATING OF CONTRACTOR'S RESPONSIBILITY**: This Contract will be considered complete when all Work and final cleanup has been finished, the Work accepted by the Owner, and all claims for payment of labor, materials, or services of any kind used in connection with the Work have been settled for by the Contractor or his Surety. The Contractor will then be released from further obligation except as set forth in the Surety Bond and for his responsibility for injury to persons or property arising from his duties and obligations under Section 7. The Surety Bond executed for performance of this Contract shall be in full effect for a period of one year following acceptance of the Work, except that with regard to the representation regarding copyright infringement found in Section 6.4, the Surety shall remain in effect for three years and with regard to the representation regarding patent infringement found in Section 6.4, the Surety shall remain in effect for six years. Neither the final payment nor any provision in the Contract documents shall relieve the Contractor of the responsibility for negligence or faulty materials or workmanship. The Contractor shall warrant his work to be free from faulty materials or workmanship for the period of two (2) years after Final Acceptance and upon written notice he shall remove any defect due thereto and pay for any damage due to other Work resulting there from which shall appear within the two-year period. Remedied Work shall carry the same warranty as the original Work starting with the date of acceptance of the replacement or repair. Payment to the Contractor will not relieve him of any obligation under this Contract.

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SECTION 5
WARRANTY

5.1. **SCOPE OF WARRANTY:**

5.1.1. Contractor warrants that the work and all of its components shall be free from defects and flaws in design, workmanship, and materials; shall strictly conform to the requirements of this contract; and shall be fit, sufficient and suitable for the purposes expressed in, or reasonably inferred from, this contract. The warranty herein expressed shall be in addition to any other warranties expressed or implied by law, which are hereby reserved unto Owner. In all emergencies the Contractor shall immediately remedy, repair, or replace, without cost to the Owner and to the entire satisfaction of the Owner, defects, damages or imperfections due to faulty materials or workmanship appearing in said Work within said period of not less than two years from the date of Final Acceptance. Remedied Work shall carry the same warranty as the original Work starting with the date of acceptance of the replacement or repair. Payment to the Contractor will not relieve him of any obligation under this Contract.

5.1.2. The Contractor, at no additional expense to the Owner, shall also remedy damage to equipment, the site, or the buildings or the contents thereof which is the result of any failure or defect in the Work, and restore any Work damaged in fulfilling the requirements of the Contract. Should the Contractor fail to remedy any such failure or defect within a reasonable time after receipt of notice thereof, the Owner will have the right to replace, repair, or otherwise remedy such failure or defect at the Contractor's expense.

5.1.3. Subcontractors', manufacturers', and suppliers' warranties and guarantees, expressed or implied, respecting any part of the Work and any material used therein shall be deemed obtained and shall be enforced by the Contractor for the benefit of the Owner without the necessity of separate transfer or assignment thereof.

5.1.4. The rights and remedies of the Owner provided in this Section are in addition to and do not limit any rights and remedies afforded by the Contract or by law. The Contractor specifically waives all the provisions of Chapter 8 of Article 20 of Title 13, Colorado Revised Statutes regarding defects in the Work under the Contract.

5.2. **OWNER'S RIGHT TO CORRECT**. If, within five (5) business days after Owner gives Contractor notice of any defect, damage, flaw, unsuitability, nonconformity, or failure to meet warranty subject to correction by Contractor, Contractor neglects to make, or undertake with due diligence to make, the necessary corrections, then Owner shall be entitled to make, either with its own forces or with contract forces, the corrections and to recover from Contractor all resulting costs, expenses, losses, or damages, including attorneys' fees and administrative expenses.

5.3. **WARRANTY PERIOD**: Except where longer periods of warranty are indicated for certain items, the Contractor warrants Work under the Contract to be free from faulty materials and workmanship for a period of not less than two (2) years from date of Final Acceptance, which

one year period shall be covered by the Performance Bond and Payment Bond, as specified in this Contract. In cases of warranty work, which is not an emergency, all necessary repairs shall be made within a reasonable time not to exceed twenty (20) days after notice of the required repair is received by the Contractor. For those items of warranty work which cannot be completed within said twenty (20) day period, the parties shall negotiate a reasonable period of time.

SECTION 6
LEGAL RELATIONSHIP AND RESPONSIBILITY TO THE PUBLIC

6.1. **LAWS TO BE OBSERVED**: The Contractor, shall at all times, observe and comply with all Federal, State and local laws, codes, ordinances, and regulations, which pertain to and affect the conduct of the Work, and the Contractor and his Surety shall indemnify and save harmless the City and all its officers, agents, employees, or any of their heirs, successors or assigns against any claim, judgment, demand, costs, liability or expenses, including, but not limited to, attorney's fees and costs of suit arising from or based on the violation of any such law, ordinance, regulations, order, or decree, whether such claim, judgment, demand, costs, liability or expenses arises from actions by himself, his employees, or agents or subcontractors. Nothing contained herein shall be deemed to create liability for the contractor for any design defects not Project Managered by the Contractor.

6.2. **PERMITS AND LICENSES**: The Contractor shall, at his own expense, procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the Work. Any costs incurred for these permits must be included in the unit costs Bid for the Work.

6.3. **PAYMENT OF TAXES**:

6.3.1. With the exception of being exempt from City of Littleton Sales and Use taxes, the Contractor shall pay all sales and use taxes required to be paid, shall maintain such records in respect to his Work, which shall be separate and distinct from all other records maintained by the Contractor and shall be available for inspection by the Owner at any and all reasonable times, and shall furnish the Owner with such data, as may be necessary to enable the Owner to obtain any refunds of such taxes which may be available to the Owner under the laws, ordinances, rules or regulations applicable to such taxes. The Contractor shall require each of his Subcontractors to pay all sales and use taxes required to be paid and to maintain such records and furnish the Contractor with such data as may be necessary to enable the Owner to obtain a refund of the taxes paid by such subcontractors.

6.3.2. In accordance with Colorado Revised Statutes Sections 39-26-114 and 39-26-203, and the related regulation of the Department of Revenue, State of Colorado, the Contractor shall apply to the Department of Revenue, and secure prior to commencing the Project an exemption certificate, which when issued by the Department of Revenue will enable the Contractor to purchase for the Project all materials free of State Sales and Use Taxes and Regional Transportation District (RTD) Tax, provided that any building permit fee shall be included in any bid with respect to the Project. Further, if awarded the Project, no

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Littleton sales and/or use tax shall be included in any billing with respect to the Project. This provision shall apply to all contractors, subcontractors and material suppliers. When Littleton sales tax is paid to licensed Littleton vendors for materials, which become part of the Project by a Contractor, the City of Littleton will refund that tax to the Contractor upon receipt of an application from the Contractor at the conclusion of the Project. Accompanying the application must be the material receipt(s) displaying a description of the items(s) purchased, date of purchase, amount of purchase, tax paid and any other documentation and information which may be required by the City to substantiate the payment and help validate a refund.

6.3.3. The Contractors who purchase materials, which become part of the Project in governmental entities, which do not honor the exemption and thereby pay sales tax will not be reimbursed for that tax payment by the City of Littleton. The Contractor shall bear the risk of any added or increased taxes occurring during the performance of the Work. A change in taxes shall under no circumstances entitle the Contractor to an adjustment under the Contract.

6.4. **PATENTED DEVISES, MATERIALS AND PROCESSES**: If the Contractor is required or desires to use any design, device, material or processes covered by patent or copyright, he shall provide for such use by suitable legal Agreement with the patentee or patent owner. The Contractor shall warrant that the materials, equipment or devices used on or incorporated in the Work shall be delivered free of any rightful claim of any third party for infringement of any United States patent or copyright. If notified promptly in writing and given authority, information and assistance, the Contractor shall defend, or may settle, at his expense, any suit or proceeding against the Owner or the Project Manager so far as based on a claimed patent or copyright infringement which would result in a breach of this warranty, and the Contractor shall pay all damages and costs awarded therein against the Owner or the Project Manager due to such breach. In case any use of any materials, equipment or devices is in such suit held to constitute an infringement and such use is enjoined, the Contractor shall, at his expense and option, either procure for the Owner the right to continue using said materials, equipment or devices, or replace same with noninfringing materials, or devices, or replace same with noninfringing materials, equipment or devices, or modify same so it becomes noninfringing. The Contractor shall report to the Owner promptly and in reasonable written detail each notice or claim of patent or copyright infringement based on the performance of this Contract of which the Contractor has knowledge. In the event of any claim or suit against the Owner as a result of any alleged patent or copyright infringement arising out of the performance of this Contract or out of the use of any supplies furnished or Work or services performed hereunder, the Contractor shall furnish to the Owner when requested by the Owner, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Owner except where the Contractor has agreed to indemnify the Owner. This clause shall be included in all subcontracts.

6.5. **SANITARY PROVISIONS**: The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements and regulations of the State Department of Health and the Occupational Safety and Health Administration (OSHA). As stated in OSHA Construction Standard 1926.51 C, the Contractor shall supply temporary sanitary facilities as per the following table:

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Number of Employees	Minimum Toilet Facilities
20 or less	1 Toilet
21 to 50	1 Toilet and 1 Urinal per 40 workers
51 or more	1 Toilet and 1 Urinal per 50 workers

This requirement to provide sanitary facilities will not be measured and paid for separately but shall be considered incidental to and included in the cost of the Work.

6.6.**PUBLIC CONVENIENCE AND SAFETY**:

6.6.1. The Contractor shall fully comply with all applicable Federal, State and local laws governing safety. He shall provide all safeguards, safety devices and protective equipment and take any other needed actions on his own responsibility reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the Work. Materials stored upon the site shall be so placed and the Work shall, at all times, be so conducted as to cause no greater obstruction to traffic than is considered necessary by the Project Manager.

6.6.2. The Contractor shall not close any road to the public except by the express permission of the Owner. When the improvement under construction is being used by the traveling public, special attention shall be paid to keeping both the sub-grade and surfacing in such condition that the public can travel over same in comfort and safety. The Contractor shall cooperate with the Project Manager in the regulation of traffic. If the Contractor constructs temporary bridges or temporary stream crossings, his responsibility for accidents shall include the roadway approaches as well as the structures of such crossing.

6.7.**BARRICADES, SIGNS AND HAZARD MARKINGS**:

6.7.1. The Contractor shall provide, erect and maintain all necessary barricades, signs, danger signals and lights for the protection of the Work and the safety of the public. All barricades, signs and obstructions erected by the Contractor shall be illuminated at night and all devices for this purpose shall be kept illuminated from sunset to sunrise.

6.7.2. The Contractor shall be held responsible for all damage to the Work due to failure of barricades, signs, lights and watchman to protect it , and whenever evidence of such damage is found prior to acceptance, the Project Manager may order the damaged portion immediately removed and replaced by the Contractor without cost to the Owner if, in the opinion of the Project Manager, such action is justified. The Contractor's responsibility for the maintenance of barricades, signs and lights shall not cease until the Project has been accepted.

6.8.**USE OF EXPLOSIVES**: When the use of explosives is necessary for the prosecution of the Work, the Contractor shall use the utmost care so as not to endanger life or property, and whenever directed by the Project Manager, the number and size of the charges shall be reduced.

The Contractor shall notify the proper representatives of any public services corporation, the Owner, any company, or any individual at least 8 hours in advance of any blasting which may damage his or their property on, along, or adjacent to the site. The Contractor shall comply with the requirements of Title 9, Article 7 of the Colorado Revised Statutes, as amended, titled "Explosive Permits". The Contractor shall also be required, at a minimum, to notify the Littleton Fire Department and the Littleton Police Department. All explosives shall be stored in a secure manner and all storage places shall be marked clearly "DANGEROUS EXPLOSIVES," and shall be in care of competent watchmen at all times.

6.9.**PROTECTION AND RESTORATION OF PROPERTY**:

6.9.1. The Contractor shall not enter upon private property for any purpose without first obtaining permission, and he shall be responsible for the preservation of all public and private property, sod, trees, fences, monuments, underground structures, etc., on and adjacent to the site(s) and shall use every precaution necessary to prevent damage or injury thereto. He shall protect carefully, from disturbance or damage, all land monuments and property markers until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed.

6.9.2. He shall be responsible for all damage or injury to property of any character resulting from any act, omission, neglect or misconduct in his manner, or method of executing said Work, or due to his non-execution of said Work, or at any time due to defective Work or materials, and said responsibility shall not be released until the Work shall have been completed and accepted.

6.9.3. The Contractor's attention is directed to the importance of protecting all public utilities encountered on all projects. Such utilities may include, but are not limited to telephone, telegraph and power lines, water lines, sewer lines, gas lines, railroad tracks, and other overhead and under ground utilities, cable television lines and facilities. Before any excavation is to begin in the vicinity of water lines, railroad tracks or structures, sewer lines, cable television lines, gas lines or telephone conduits, each utility company concerned must be notified in advance of such excavation, and such excavation shall not be made until an authorized representative of the utility company concerned is on the ground and has designated the location of their facilities.

6.9.4. When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect or misconduct in the execution of the Work, or in consequence of the non-execution thereof on the part of the Contractor, he shall restore, at his own expense, such property to a condition similar or equal to that existing before such damage or injury was done by repairing, rebuilding, or otherwise restoring, as may be directed, or he shall make good such damage or injury in an acceptable manner. In case of the failure on the part of the Contractor to restore such property or to have started action to make good such damage or injury, the Owner may upon forty-eight (48) hours' notice, proceed to repair, rebuild or otherwise restore such property as may be deemed necessary and the cost thereof will be deducted from any moneys due or which may become due the Contractor under the Contract or prosecuted as a claim against the Contractor's

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Surety Bond.

6.9.5. The cost of insurance for damages due to Contractor's operation or cost of protecting utilities where required to permit construction under this Contract shall be included in the original Contract prices for the Project.

6.10. **INDEMNIFICATION AND HOLD HARMLESS**: The Contractor and his Surety shall indemnify and save harmless the City, its officers, agents, employees, successors and assigns from all suits, demands, actions, or claims of any nature whatsoever brought or made against the City, its officers, agents, employees, successors or assigns from any injuries or damages sustained by any person, firm or corporation or property or resulting from or arising out of any neglect in safeguarding the Work, or through the use of unacceptable materials in the construction of the improvement, or as a result of any act or omission by the said Contractor, or from the use, misuse, storage or handling of explosives or on account of any claims or amounts recovered for any infringement of patent, trademark, or copyright, or from any claims or amounts arising or recovered under the Workmen's Compensation Laws, or any other law, by-law, ordinance, order or decree, and so much of the money due the said Contractor under and by virtue of the Work, as shall be considered necessary by the City, may be retained or, in case no money is due, his surety shall be held until such suit or suits, action or actions, claim or claims, for injuries or damages as aforesaid, shall have been settled and satisfactory evidence to that effect furnished to the City.

6.11. **NO PERSONAL LIABILITY OF THE PROJECT MANAGER**: The Project Manager is an agent of Owner and the Project Manager, his agents, heirs, successors and assigns shall have no liability to any third party as a result of his performance of this Contract.

6.12. **NO WAIVER OF LEGAL RIGHTS**: Inspection by the Project Manager or by any of his duly authorized representatives, of any order, measurement, or certificate by the Project Manager; of any order by the Owner for the payment of money; of any payment for or acceptance of any Work or any extension of time; or of any possession taken by the Owner, shall not operate as a waiver of any provision of the Contract, or any power therein provided. A waiver of any breach or term of the Contract shall not be deemed to be a waiver of any other or subsequent breach. The Owner reserves the right to correct any error that may be discovered in any estimate that may have been paid, and to adjust the same to meet the requirements of the Contract and Specifications. The Owner reserves the right to claim and recover, by process of law, sums as may be sufficient to correct any error or make good any deficit in the Work resulting from such error, dishonesty, or collusion upon proof of collusion or dishonesty between the Contractor or his agents and the Project Manager or his assistants, discovered in the Work after the final payment has been made.

6.13. **RIGHTS-OF-WAY**: The Owner shall furnish all lands and rights-of-way required for completion of this Contract. In acquiring rights-of-way, the Owner will proceed as expeditiously as possible, but in the event all rights-of-way or easements are not acquired prior to the beginning of construction, the Contractor shall begin Work on such lands and rights-of-way as have been acquired. No claim for damage will be allowed or shall be made by reason of the Owner's delay in obtaining lands, easements or rights-of-way. In the event of litigation

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or other delays in acquiring rights-of-way, the time allowed herein for completion will be extended to compensate for the time actually lost by such delay.

6.14. **SAFETY**:

6.14.1. The Contractor shall be solely and completely responsible for conditions of the jobsite, including safety of all persons and property during performance of the Work. The Contractor shall fully comply with all State, Federal and other laws, rules, and regulations relating to safety of the public and workers.

6.14.2. The right of the Project Manager to conduct construction review or observation of the Contractor's performance will not include review or observation of the adequacy of the Contractor's safety measures in, on, or near the construction site.

SECTION 7
MEASUREMENT AND PAYMENT

7.1.**BONDS**.

7.1.1. Contemporaneous with Contractor's execution of this contract, Contractor shall provide a Performance Bond and a Labor and Material Payment Bond, as security for the faithful performance and payment of all Contractor's obligations under the Contract Documents. All bonds shall be in the form prescribed by the Owner, executed by a surety company i) licensed to do business in the State of Colorado; ii) with a general rating of A and a financial size category of Class X or better in Best's Insurance Guide, each in the penal sum of the contract price; and iii) in conformance with C.R.S. §§ 38-26-105 and 106 ("Bonds"). All Bonds signed by an agent or attorney-in-fact shall be accompanied by a certified copy of the signatory's authority to act. Contractor shall, at all times while providing, performing, or completing the work, including, without limitation, at all times while correcting any failure to meet warranty pursuant to Section 5 of this contract, maintain and keep in force, at Contractor's expense, the Bonds required hereunder.

7.1.2. If the surety on any bond furnished by the Contractor is i) is placed in the hands o a receiver, is declared bankrupt; ii) its rights to do business in Colorado is terminated; or iii) it ceases to meet the requirements specified herein, the Contractor shall, within five (5) days thereafter, substitute another bond and surety, both of which shall be acceptable to the Owner.

7.2.**MEASUREMENT OF WORK PERFORMED**: The determination of the amount of Work acceptably completed under the terms of the Contract, or as directed by the Project Manager in writing, will be made by the Project Manager based on measurements taken by him or his agents. These measurements will be taken according to the United States standard measure. All surface and linear measurements will be taken horizontally unless otherwise shown on Plans or specified. Structures shall be measured to the neat lines as shown on the Plans, or as ordered in writing by the Project Manager.

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7.3.**SCOPE OF PAYMENT**:

7.3.1. The Contractor shall accept the compensation, as herein provided, in full payment for furnishing all materials, equipment, labor, tools, and incidentals necessary to complete the Work and for performing all Work contemplated and embraced under the Contract; also for loss or damage arising from the nature of the Work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the Work until the final acceptance by the Owner, and for all risks of every description connected with the prosecution of the Work, for all expenses incurred in consequence of the suspension or discontinuance of the Work as herein specified, and for any infringement of patent, trademark, or copyright; and for completing the Work according to the Plans and Specifications. Neither the payment of any partial payment nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective Work or material. No moneys, payable under Contract, or any part thereof, except the partial payment for the first month period, shall become due and payable if the Owner so elects, until the Contractor shall satisfy the Owner that he has fully settled or paid for all materials and equipment used in or upon the Work and labor done in connection therewith, and the Owner, if he so elects, may pay any or all such bills, wholly or in part, and deduct the amount or amounts so paid from any monthly or final partial payment excepting the first estimate.

7.4.**PAYMENT FOR INCREASED OR DECREASED QUANTITIES**: When alterations in the Plans or quantities of Work not requiring Supplemental Agreements, as provided for in Section 1.3 herein, are ordered and performed, the Contractor shall accept payment in full at the Contract unit price for the actual quantities of Work done. No allowance will be made for lost profits. Increased or decreased Work involving Supplemental Agreements will be paid for as stipulated herein, unless otherwise specified in such Supplemental Agreements.

7.5.**PAYMENT FOR OMITTED ITEMS**:

7.5.1. For any item omitted from the Work, the Owner will pay the Contractor a fair and equitable amount for costs incurred directly related to such item prior to the date of the Owner's order to omit the item, subject to Section 1.4 of the General Conditions. No allowance will be made for lost profits in reimbursements to the Contractor for omitted items of Work. Acceptable materials ordered by the Contractor or delivered to the Work site prior to the date of cancellation, alteration, or suspension of the Work by order of the Project Manager will be paid for at the actual cost to the Contractor and shall thereupon become the property of the Owner.

7.5.2. The Contractor shall immediately submit certified statements covering all money expended in preparation for any omitted item, and he shall be reimbursed for any money expended in preparation for Work on any omitted item when such preparation has no value to the remaining items of the Contract, or for a proportionate amount based on the total Contract price over which such preparation would ordinarily be distributed when other items are included in such preparation.

SAMPLE

7.6.**EXTRA AND FORCE ACCOUNT WORK**:

7.6.1. Extra Work, for which no price is provided in the Proposal, shall be covered by Supplemental Agreement or Change Order to be signed by both parties before such Work is commenced. Extra Work will be paid for either at a lump sum, or unit prices agreed upon, or on a Force Account basis, subject to Section 1.5 of the General Conditions. For all labor, teams, and foremen in direct charge of the specific operations accomplished on a Force Account basis, the Contractor shall receive the current local rate of wage, to be agreed upon before starting the Work, to which shall be added fifteen (15) percent of the sum thereof to cover cost of supervision, the rental of small tools and ordinary equipment, additional Bond, Unemployment Insurance, all overhead and any other costs not specifically stated. In addition, the Contractor shall be paid a sum equal to the Worker's Compensation insurance premium, the actual costs of Social Security taxes computed on the base rate for the class of Work involved for the actual amount of the payroll, and the public liability and property damage insurance premium; provided, however, that nothing in this Section will change the legal status of the relationship between the Parties to this Agreement. For all materials furnished and used by the Contractor on a Force Account basis, he shall receive the actual cost of such materials, including transportation charges as shown by original receipted bills, to which shall be added fifteen (15) percent of said actual cost.

7.6.2. For machine power tools or equipment, including fuel and lubricant, used on Force Account Work, payment for the same will be made on a rental basis at the rate agreed upon between the Contractor and the Project Manager, to which rate no percentage shall be added.

7.6.3. The compensation as herein provided shall be received by the Contractor as payment for Extra Work done on a Force Account basis and subject to any conditions or limitations as specified in Section 1.5 of the General Conditions. The Contractor shall make no claim for Force Account Work, unless performed on written order and in accordance therewith. The Contractor's representative and the Inspector shall compare records of Extra Work done on a Force Account basis at the end of each day. Copies of these records shall be made upon suitable forms provided for this purpose and signed by both the Inspector and the Contractor's representative, one copy being forwarded to the Project Manager and one copy to the Contractor.

7.6.4. All claims for Extra Work done on a Force Account basis shall be submitted each month to the Project Manager by the Contractor upon certified statements, or upon forms furnished by the Owner. Work performed prior to a written order by the Project Manager will not be paid for.

7.7.**PARTIAL PAYMENTS**:

7.7.1. Partial progress payments shall be made by the Owner to the Contractor for the percentage of the Work completed, subject to inspection by the Project Manager to verify percentage

SAMPLE

of completion. The Owner and/or Project Manager alone shall determine when work has been completed and progress payments shall not constitute a waiver of the Owner's right to require fulfillment of all terms of the Contract Documents and the delivery of all Work contemplated herein, complete and satisfactory to the Owner.

7.7.2. The Project Manager will make an estimate once each month as the Work progresses of the value of the Work performed and materials completed and in-place or delivered to the site in accordance with the Contract. On request of the Project Manager, the Contractor shall furnish a detailed estimate of the total Contract price showing the amount included therein for each category of Work, to provide a basis for determining the amount of progress payments. The market value of materials and equipment delivered to the construction site but not yet incorporated in the Work may, at the discretion of the Owner, be included with a progress payment. However, payment by the Owner for such materials and equipment shall not relieve the Contractor of the responsibility for the care of such materials and equipment because the Owner shall not be deemed to have assumed ownership of the materials or equipment until these are incorporated into the completed and accepted Work. Such increases to progress payments, if authorized, are intended only to reduce the cost of doing business with the Owner.

7.7.3. In accordance with C.R.S. § 24-91-103, where the Contract price exceeds one hundred fifty thousand dollars ($150,000.00), partial payments shall be authorized at the end of each calendar month, or as soon thereafter as practicable, to the Contractor upon satisfactory performance of the Contract. The Owner shall, from the total of the Contract estimate so ascertained, deduct an amount equivalent to five (5) percent of the whole, to be retained by the Owner until acceptance of the entire Contract and the balance of the sum equivalent to ninety-five (95) percent of the whole, shall be certified to by the Project Manager for payment.

7.7.4. Where the Contract price does not exceed one-hundred fifty thousand dollars ($150,000.00), the Owner shall, from the total of the Contract estimate so ascertained, deduct an amount equivalent to ten (10) percent of the whole, to be retained by the Owner until acceptance of the entire Contract and the balance of the sum equivalent to ninety (90) percent of the whole, shall be certified to by the Project Manager for payment.

7.7.5. The Owner shall retain from all progress payments an amount equal to all statutory claims filed against Contractor pursuant to C.R.S. § 38-26-107. No partial payments except final payment will be made for a sum less than $l,000.00. The estimates will be approximate only, and all partial or monthly estimates and payments shall be subject to correction in the estimate and payment rendered following discovery of an error in any previous estimates or payments. Should any defective Work or material be discovered, or should a reasonable doubt arise as to the integrity of any part of the Work completed previous to the final acceptance and payment, there will be deducted from the first payment rendered after the discovery of such Work an amount equal in value to the defective or questioned Work, and this Work will not be included in a subsequent estimate or payment until the defects have been remedied or the causes for doubt removed.

SAMPLE

7.8. **PUNCH LIST AND FINAL ACCEPTANCE**. The Work shall be finally accepted when, and only when, the whole and all parts thereof shall have been completed to the satisfaction of Owner in full compliance with, and as required by or pursuant to, this contract. Upon receipt of Contractor's Written Notice of Completion, Owner shall make a review of the Work and notify Contractor in writing of all Punch List Work, if any, to be completed or corrected. Following Contractor's completion or correction of all Punch List Work, Owner shall make another review of the work and prepare and deliver to Contractor either a written notice of additional Punch List Work to be completed or corrected or a written notice of Final Acceptance of the Work.

7.9. **ACCEPTANCE AND FINAL PAYMENT**:

7.9.1. Two weeks after acceptance of the Work, including final cleanup, the Owner shall initiate the Acceptance and Final Payment procedures. All prior partial estimates and payments shall be subject to correction in the final estimate and payment. Upon completion of the Acceptance and Final Payment Procedures, the Work will be considered accepted, the Contract considered complete, and, upon compliance with the provisions of State law, the final payment shall be executed and submitted to the Contractor.

7.9.2. The acceptance by the Contractor of the last payment as aforesaid shall operate as and shall be a release of the Owner from all claims for liability arising from the performance of the Work under the Contract.

7.10. **LIENS.**

7.10.1. *Title*. Nothing in this contract shall be construed as vesting in Contractor any right of property in any equipment, materials, supplies, and other items provided under this Contract after they have been installed in, incorporated into, attached to, or affixed to, the Work or the Work site(s). All such equipment, materials, supplies, and other items shall, upon being so installed, incorporated, attached or affixed, become the property of Owner, but such title shall not release Contractor from its duty to insure and protect the Work in accordance with the requirements of this Contract.

7.10.2. *Waivers of Lien*. Contractor shall, from time to time at Owner's request and in any event prior to final payment, furnish to Owner such receipts, releases, affidavits, certificates, and other evidence as may be necessary to establish, to the reasonable satisfaction of Owner, that no lien against the work or the public funds held by Owner exists in favor of any person whatsoever for or by reason of any equipment, material, supplies, or other item furnished, labor performed, or other thing done in connection with the work or this contract ("Lien") and that no right to file any Lien exists in favor of any person whatsoever.

7.10.3. *Removal of Liens*. If at any time any notice of any Lien is filed, then Contractor shall, promptly and without charge, discharge, remove, or otherwise dispose of such Lien. Until such discharge, removal, or disposition, Owner shall have the right to retain from any money payable hereunder an amount that Owner, in its sole judgment, deems necessary to satisfy such Lien and to pay the costs and expenses, including attorneys' fees and

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administrative expenses, of any actions brought in connection therewith or by reason thereof.

7.10.4. *Protection of Owner Only*. This section shall not operate to relieve Contractor's surety or sureties from any of their obligations under the Bonds, nor shall it be deemed to vest any right, interest, or entitlement in any subcontractor or supplier. Owner's retention of funds pursuant to this section shall be deemed solely for the protection of its own interests pending removal of such Liens by Contractor, and Owner shall have no obligation to apply such funds to such removal but may, nevertheless, do so where Owner's interests would thereby be served.

7.11. **DEDUCTIONS.**

7.11.1. *Owner's Right To Withhold*. Notwithstanding any other provision of this Contract and without prejudice to any of Owner's other rights or remedies, Owner shall have the right at any time, to deduct and withhold from any Progress or final payment that may be or become due under this contract such amount as may reasonably appear necessary to compensate Owner for any actual or prospective loss due to:

i. Work that is defective, damaged, flawed, unsuitable, nonconforming, or incomplete;

ii. Claims or liens filed or reasonable evidence indicating probable filing of claims or liens from third-parties, regardless of merit;

iii. Failure of the Contractor to make payments property and promptly to subcontractors for material or labor;

iv. Failure of the Contractor to prosecute any portion of the Work in compliance with an approved schedule;

v. Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract value;

vi. Failure of the Contractor to submit on a timely basis, any documentation required by the Contract Documents, including without limitation, monthly reports, schedules, or request for approval of subcontractors.

vii. Unauthorized Work or deviations by the Contractor from the Contract Documents;

viii. Damage to the Owner or to another contractor;

ix. State or local sales, use, or excise taxes from which Owner is exempt;

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x. Any other failure of Contractor to perform any of its obligations under this contract; or

xi. The cost to Owner, including attorneys' fees and administrative costs, of correcting any of the aforesaid matters or exercising any one or more of Owner's remedies set forth within the Contract Documents.

7.11.2. *Release and Use of Withheld Funds*. Owner shall be entitled to retain any and all amounts withheld pursuant to subsection 7.11.1 above until Contractor shall have either performed the obligations in question or furnished security for such performance satisfactory to Owner. Owner shall be entitled to apply any money withheld or any other money due Contractor under this contract to reimburse itself for any and all costs, expenses, losses, damages, liabilities, suits, judgments, awards, attorneys' fees and administrative expenses incurred, suffered, or sustained by Owner and chargeable to Contractor under this contract.

7.11.3. *Waiver under C.R.S. § 38-26-107*. Execution of the Contract Documents by the Contractor shall constitute waiver by the Contractor to claim any right of payment of interest upon any such retained funds, or to claim any right of payment of interest upon funds withheld under the provisions of C.R.S. § 38-26-107.

SECTION 8
DISPUTES AND REMEDIES

8.1. DISPUTE RESOLUTION PROCEDURE.

8.1.1. *Notice of Disputes and Objections.* If Contractor disputes or objects to any requirement, direction, instruction, interpretation, determination, or decision of Owner, Contractor may notify Owner in writing of the issue and of the amount of any equitable adjustment to the contract price or contract time to which Contractor claims it will be entitled as a result thereof; provided, however, that Contractor shall, nevertheless, proceed without delay to perform the Work as required, directed, instructed, interpreted, determined, or decided by Owner, without regard to such dispute or objection. Unless Contractor so notifies Owner within two business days after receipt of such requirement, direction, instruction, interpretation, determination, or decision, Contractor shall be conclusively deemed to have waived all such disputes or objections and all claims based thereon.

8.1.2. *Negotiation of Disputes and Objections.* To avoid and settle without litigation any such dispute or objection, Owner and Contractor agree to engage in good faith negotiations. Within ten (10) business days after Owner's receipt of Contractor's written notice of dispute or objection, a conference between Owner and Contractor shall be held to resolve the dispute. Within ten (10) business days after the end of the conference, Owner shall render its final decision, in writing, to Contractor. If Contractor objects to the final decision of Owner, then it shall, within ten (10) business days, give Owner notice thereof and, in such notice, shall state its final demand for settlement of the dispute. Unless Contractor so notifies Owner, Contractor shall be conclusively deemed: i) To have agreed to and accepted Owner's final decision; ii) To have waived all claims based on such final decision.

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8.2. **DISPUTED CLAIMS FOR EXTRA WORK**: In case the Contractor deems extra compensation is due him for Work or material not covered in the Contract Documents, or not ordered by the Project Manager as Extra Work, the Contractor shall notify the Project Manager in writing of his intention to make claim for such extra compensation before he begins the Work on which he bases the claim and shall afford the Project Manager every facility for keeping actual cost of the Work. Failure on the part of the Contractor to give such notification or to afford the Project Manager proper facilities for keeping strict account of actual cost shall constitute a waiver of the claim for such extra compensation. The filing of such notice by the Contractor and the keeping of costs by the Project Manager shall not in any way be construed to prove the validity of the claim. When the Work has been completed, the Contractor shall, within ten (10) days, file his claim for extra compensation with the Project Manager, who will present it to the Owner for consideration.

8.3. **CONTRACTOR'S REMEDIES**. If Owner fails or refuses to satisfy a final demand made by Contractor pursuant to Section 8.2 of this Contract, or to otherwise resolve the dispute which is the subject of such demand to the satisfaction of Contractor, within ten days following receipt of such demand, then Contractor shall be entitled to pursue such remedies, not inconsistent with the provisions of this Contract, as it may have in law or equity.

8.4. **OWNER'S REMEDIES**. If it should appear at any time prior to final payment that an Event of Default, and has failed to cure any such Event of Default, as defined within Section 4.10 of the General Conditions herein, then the Owner shall have the right, at its election and without prejudice to any other remedies provided by law or equity, to pursue any one or more of the following remedies:

i. Owner may require Contractor, within such reasonable time as may be fixed by Owner, to complete or correct all or any part of the work that is defective, damaged, flawed, unsuitable, nonconforming, or incomplete; to remove from the work site any such work; to accelerate all or any part of the work; and to take any or all other action necessary to bring Contractor and the work into strict compliance with this Contract.

ii. Owner may perform or have performed all work necessary for the accomplishment of the results stated in Paragraph (i) above and withhold or recover from Contractor all the cost and expense, including attorneys' fees and administrative costs, incurred by Owner in connection therewith.

iii. Owner may accept the defective, damaged, flawed, unsuitable, nonconforming, incomplete, or dilatory Work or part thereof and make an equitable reduction in the contract price.

iv. Owner may terminate this contract without liability for further payment of amounts due or to become due under this Contract, pursuant to Section 4.10 of the General Conditions herein.

v. Upon any termination of this contract or of Contractor's rights under this contract in accordance with Section 4.10 or 4.11 of the General Conditions herein, and at Owner's option exercised in writing, any or all subcontracts and supplier contracts of Contractor shall be deemed to be assigned to Owner without any further action being required, but Owner shall not thereby assume any obligation for payments due under such subcontracts and supplier contracts for any Work provided or performed prior to such assignment.

vi. Owner may withhold from any Progress Payment or Final Payment, whether or not previously approved, or may recover from Contractor, any and all costs, including attorneys' fees and administrative expenses, incurred by Owner as the result of any Event of Default or as a result of actions taken by Owner in response to any Event of Default.

vii. Owner may recover any damages suffered by Owner.

8.5. **OWNER'S SPECIAL REMEDY FOR DELAY**. If the work is not completed by Contractor, in full compliance with, and as required by or pursuant to, this contract, within the contract time as such time may be extended by Change Order, then Owner may invoke its remedies under Section 8.4 of this Contract or may, in the exercise of its sole and absolute discretion, permit Contractor to complete the work but charge to Contractor, and deduct from any Progress or Final Payments, whether or not previously approved, administrative expenses and costs for each day completion of the work is delayed beyond the Completion Date, computed as set forth in Section 4.8, as well as any additional damages caused by such delay.

8.6. **ATTORNEY FEES:** In the event there is any dispute between the Contractor or the Surety and the Owner, its officers, agents or employees, and the Owner, its officers, agents or employees prevail, the Owner, its officers, agents or employees shall be granted all of its costs, including but not limited to attorney's fees, court costs and expert witness fees.

SECTION 9
OTHER PROVISIONS

9.

9.1. Wherever a number of days is specified in this Contract it shall mean calendar days unless otherwise specified.

9.2. When a delay on any aspect of the Work occurs, the Contractor, to the maximum extent possible, shall utilize his resources elsewhere on the project. If the Contractor, after complying the maximum extent possible by the reassignment of his labor force, equipment and materials, alleges to have suffered damages due to delay, and the delay is caused in whole or in part by acts or omissions within the control of the Owner or persons acting on its behalf, then such a claim shall be treated as a change order request and shall be processed in accordance with the change order, audit and inspection requirements specified in the General Provisions or it shall be deemed forever waived. Nothing herein contained shall be interpreted so as to allow the Contractor to recover delay damages from the Owner for delays caused by acts of God, the

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acts or omissions of the Contractor, its subcontractors, employees or agents, or persons over which the Owner has no control.

9.3. Work performed by Contractor under this Contract shall conform to reasonable and normal professional standards and the Contractor shall conduct himself at all times in a manner consistent with industry standards.

9.4. No reports, graphics or other material produced specifically for the owner under this contract shall be the subject of an application for copyright or trademark by or on behalf of contractor.

9.5. No assignment of any claim or proceeds under this contract shall be binding upon the owner unless it shall be first notified thereof in writing.

9.6. Notices required in this contract shall be deemed to have been delivered five (5) business days after actual date of Notice of Award after having been placed in the U.S. mails, sent by certified mail, return receipt requested, addressed as set forth in the contract award page hereof, or to such other addresses as the parties may mutually designate in writing.

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SCHEDULE OF CONTRACT TERMS

Whenever the following terms or pronouns are used in the Specifications and Contract Documents, the intent and meaning shall be as follows:

1-1 **AASHTO**: The American Association of State Highway and Transportation Officials.

1-2 **ASA**: American Standards Association.

1-3 **ASTM**: American Society for Testing Materials.

1-4 **AWWA**: American Water Works Association.

1-5 **BIDS**: The offer or proposal of the Bidder submitted on the prescribed forms setting forth the prices for the Work to be performed.

1-6 **BIDDER**: Any individual, firm, or corporation, submitting a Proposal for the Work contemplated herein, acting directly or through a duly authorized representative.

1-7 **BID SECURITY**: The security, as designated in the Invitation to Bidders or in the Proposal form furnished with the Proposal by the Bidder as a guaranty that he will enter into Contract and furnish Bond as required, if the Work be awarded to him.

1-8 **BONDS**: Bid, performance and payment and material bonds.

1-9 **CHANGE ORDER**: A written order to the Contractor, signed by the Project Manager and the Owner, ordering a change that has been found necessary in the Work from that originally shown in the Plans and Specifications but which is still within the general scope of the Contract. If the Work is of a nature involving an adjustment of unit prices, a Supplemental Agreement shall be executed. Change Orders duly signed and executed by the Contractor constitute authorized modifications of the Contract.

1-10 **CDOT**: Colorado Department of Transportation

1-11 **CONTRACT OR CONTRACT DOCUMENTS**: The written Agreement executed between the Owner and the successful Bidder, covering the performance of the Work and the furnishing of labor and materials, by which the Contractor is bound to perform the Work and furnish the labor and materials and by which the Owner is obligated to compensate him therefore at a mutually established and accepted rate or price. The Contract shall include this Contract Agreement, Request for Proposal , Bidder's Proposal, Performance, Labor and Material Payment Bond, Notice of Award and Notice to Proceed, Final Acceptance and Warranty Initiation, Final Receipt, Notice of End of Basic Warranty Period, Special Provisions, General Provisions, Technical Specifications, Plans, Specifications, Drawings and Addenda or Change Orders, and any and all Supplemental Agreements which may be subsequently entered into to complete the Work in an acceptable manner in accordance with the Plans and Specifications.

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1-12 **CONTRACTOR**: The individual, partnership, firm, or corporation executing the Contract, acting directly or through lawful agents or employees, primarily liable for the acceptable performance of the Work for which contracted, and for the payment of all legal debts pertaining to the Work.

1-13 **DRAWINGS**: The Plans, profiles, typical cross-sections, general cross-sections, elevations, schedules, and details which show locations, character, dimensions, and details of the Work.

1-14 **DISTRICT**: A legally constituted group of individuals who have joined together in order to facilitate construction of utility systems within the limits of their property. The district shall be represented by its authorized Board of Directors.

1-15 **E-VERIFY**: (formerly known as the Basic Pilot/Employment Eligibility Verification Program) An internet based system operated by the Department of Homeland Security (DHS) in partnership with the Social Security Administration (SSA) that allows participating employers to electronically verify the employment eligibility of their newly hired employees.

1-16 **ENGINEER OR PROJECT MANAGER**: The Engineer or Project Manager, duly authorized representative of the City, acting directly or through an assistant or representative.

1-17 **EQUIPMENT**: All machinery, together with the necessary supplies for upkeep and maintenance, and all tools and apparatus necessary for the proper construction and acceptable completion of the Work.

1-18 **EXTRA WORK**: Work not provided for in the Contract as awarded but found to be essential to the satisfactory completion of the Contract, within its intended scope.

1-19 **FEDERAL SPECIFICATIONS**: The Federal Specifications and Standards, and supplements, amendments, and indices thereto, as prepared and issued by the General Services Administration of the Federal Government. These may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

1-20 **FIELD ORDER**: A written order effecting minor change in the Work not involving an adjustment in the Contract Price or an extension of the Contract Time, issued by the Project Manager to the Contractor during construction.

1-21 **FINAL ACCEPTANCE**: An acknowledgment made by the City that all Work, as defined in Paragraph 1-47 herein, has been completed.

1-22 **FORCE ACCOUNT**: A method of payment, other than lump sum or unit price, for Work ordered by a Change Order.

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1-23 **INSPECTOR**: An authorized representative of the Project Manager assigned to make all necessary inspection of the Work performed or being performed, or of the materials furnished or being furnished by the Contractor.

1-24 **INTENTION OF TERMS**: Whenever, in these Specifications or upon the Plans, the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of like import, are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Project Manager is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import shall mean approved by, or acceptable to or satisfactory to the Project Manager, unless otherwise expressly stated, subject in each case to the final determination of the Owner.

Any reference to a paragraph or subparagraph within a section shall include the general provision of the section or sections and paragraph pertinent thereto.

1-25 **LABORATORY**: The official testing laboratories of the Owner or such other laboratories as may be designated by the Project Manager.

1-26 **NOTICE OF AWARD**: A written notice to the successful Bidder stating that this Proposal has been accepted and that, in accordance with the terms of the notice to Contractors and the Specifications, he is required to execute the Contract and furnish satisfactory Contract bond.

1-27 **NOTICE TO PROCEED**: A written notice to the Contractor of the date on which he is to begin the prosecution of the Work for which he has contracted.

1-28 **NOTICE OF TERMINATION**: Written notice from the Owner to the Contractor to stop Work under the Contract on the date and to the extent specified in the Notice of Termination.

1-29 **OWNER**: City of Littleton, Colorado

1-30 **PAYMENT BOND**: The approved form of security furnished by the Contractor and his surety as a guarantee that he will pay in full all bills and accounts for materials and labor used in the construction of the Work, as provided by law.

1-31 **PERFORMANCE BOND**: The approved form of security furnished by the Contractor and his surety as a guarantee of good faith and ability on the part of the Contractor to execute the Work in accordance with the terms of the Plans, Specifications, and Contract. In lieu of a separate Performance Bond, a combination Performance, Labor and Material Payment Bond may be supplied by the Contractor.

1-32 **PERFORMANCE, LABOR AND MATERIAL PAYMENT BOND**: Security furnished by the Contractor and his surety as a guarantee that he will pay in full all bills and accounts for materials and labor used in the Work and that he will execute the Work in accordance with the Contract.

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1-33 **PLANS**: The official Plans, working drawings, or supplemental drawings or exact reproductions thereof, approved by the Project Manager which show the locations, character, dimensions, and details of the Work to be done and which are to be considered as part of the Contract, supplementary to these Specifications.

1-34 **PROGRESS SCHEDULE**: A construction schedule prepared by the Contractor in a bar-chart, critical path or other format acceptable to the Project Manager which includes the start and completion dates of all salient features of the Work as specified in Section 4.4 hereof.

1-35 **PROJECT**: The total construction of which the Work to be provided under the Contract may be the whole or part, as indicated elsewhere in the Contract.

1-36 **PROPOSAL**: The written offer of the Bidder, when submitted on the approved Proposal form, to perform the contemplated Work and furnish the necessary materials in accordance with the provisions of the Plans and Specifications.

1-37 **SHOP DRAWINGS**: All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a subcontractor, manufacturer, supplier, or distributor, which illustrate how specific portions of the Work shall be fabricated or installed.

1-38 **SPECIAL PROVISIONS**: The specific clauses setting forth conditions or requirements particular to the Project under consideration, covering Work or materials involved in the Proposal and estimate, which are not thoroughly or satisfactorily stipulated in the General Provisions or Technical Specifications.

1-39 **SPECIFICATIONS**: The directions, provisions, and requirements contained herein, supplemented by Special Provisions, pertaining to the method and manner of performing the Work, or to the quantities or the qualities of materials to be furnished under the Contract.

1-40 **STRUCTURES**: As used in this Contract, shall mean bridges, culverts, sewers, catch basins, retaining walls, manholes, headwalls, buildings, valve vaults and other features which may be encountered in the Work and not otherwise classified herein.

1-41 **SUBCONTRACTOR**: An individual, firm or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the site.

1-42 **SUBSTANTIAL COMPLETION**: The Work (or a specified part thereof) has progressed to the point where, in the opinion of the Project Manager, it is sufficiently complete, in accordance with the Contract, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. For the purposes of final acceptance of the work, this term shall include cleanup of the jobsite and all work areas.

1-43 **SUPERINTENDENT**: Executive representative for the Contractor present on the Work at all times, authorized to receive and fulfill instructions from the Project Manager and capable of superintending the Work efficiently.

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1-44 **SUPPLEMENTAL AGREEMENT**: A written Proposal and Agreement executed by the Contractor and by the Owner, with increased bonding from the surety if such agreement results in an increase in the total contract amount, covering Work not included in the Plans and Proposal or as specified in Section 1.3 which is necessary to the proper completion of the Project.

1-45 **SUPPLIER**: Any person or organization who supplies materials or equipment for the Work, including that fabricated to a special design.

1-46 **SURETY**: The corporate body or individuals who are bound by the Performance Bond and the Payment Bond or the Performance, labor and Material Payment Bond, with and for the Contractor and which engage to be responsible for the entire and satisfactory fulfillment of the Contract and for the payment of all debts incurred in fulfilling the Contract.

1-47 **TECHNICAL SPECIFICATIONS**: A part of the Contract Documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship. Also called SPECIFICATIONS.

1-48 **UNIT PRICE WORK**: Work to be paid for on the basis of unit prices.

1-49 **WORK**: The term "Work" shall be understood to mean the furnishing of all labor, materials, equipment, and other incidentals necessary or convenient to the successful completion of the Project and the carrying out of all the duties and obligations imposed by the Contract.

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EXHIBIT "A" – Price Sheet

Preservation Activities	
Rehabilitate Wood Siding and Trim	$
Rehabilitate Masonry	$
Rehabilitate Wood Doors	$
Rehabilitate Wood Windows	$
Replace Non-historic Windows	$
Rehabilitate Roof and Site Drainage	$
Architectural and Engineering Services	
Assist with some deliverables	$
Attend meetings	$
Provide construction administration	$
Archaeological Monitoring	
Monitor all work related to ground disturbance	$
Create monitoring report	$
Complete Office of Archaeology and Historic Preservation forms as necessary	$
Additional Costs (Must specify what this includes)	$
Total Cost	$



Figure 1: Overall view of the south elevation of the Geneva Lodge building.



Figure 2: Overall view of Geneva Lodge from the southwest.



Figure 3: Overall view of the north section of the east elevation.



Figure 4: Overall view of the center section of the east elevation.



Figure 5: Overall view of the south section of the east elevation.



Figure 6: Overall view of the north section of the building. Note original casement windows.



Figure 7: Overall view of casement windows at the north end of the building.



Figure 8: Interior view of original casement windows.



Figure 9: Detail view of sill condition at original casement windows.



Figure 10: Detail view of conditions typical at non-historic replacement windows.



Figure 11: Detail view of wood shingle siding condition.



Figure 12: Detail view of screen porch wood condition and clay tile condition.



Figure 13: Brick masonry conditions at east porch and wing walls.



Figure 14: Detail view of brick conditions at the porch. Note spalled brick faces at both wing walls.



Figure 15: Brick masonry foundation. Note open mortar joints to the left of the basement window opening.



Figure 16: Brick masonry chimney condition.



Figure 17: Overall view of brick masonry chimney.



Figure 18: Overall view of roof drainage conditions.



Figure 19: Drainage and wood deterioration typical at end rafter tails.



Figure 20: Site drainage condition at the north end of the building.



Figure 21: Drainage and concrete condition along west elevation. Note downspout will be piped under the sidewalk.



Figure 22: Detail of exterior wood door condition.

Certificate of Appropriateness

Geneva Lodge

2305 W. Berry Ave.
Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006



OWNER CERTIFICATE

Owner:

I, James L. Becklenberg, owner, or designated agent thereto, do hereby agree to develop the above described property in accordance with the use, restrictions, and conditions contained herein, and current ordinances, resolutions, and standards of the City of Littleton, Colorado.

By: _____
[Insert name of owner and/or agent]
City Manager
Title
2255 W. Berry Ave., Littleton, CO 80120
Address

Acknowledgement:

State of Colorado)
)SS
County of Arapahoe)

The foregoing dedication was acknowledged before me this 24th day of January, 2024, by James L. Becklenberg as City Manager of City of Littleton, Colorado

Witness my hand and official seal.

_____
Notary Public

My Commission Expires July 2, 2025

LUCY M LUCERO
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 19934009727
MY COMMISSION EXPIRES JULY 02, 2025

COMMUNITY DEVELOPMENT

Approved this 23rd day of January, 2024, by the Director of Community Development.

Director of Community Development

form+works design group, LLC

OWNER

City of Littleton
1800 West Belleview Avenue
Littleton, Colorado 80120
Alan Brown, Fleet and Facilities Manager
p. 303.795.3982 (o) 303.598.6320 (c)
e. abrown@littletongov.org

ARCHITECT

Form+Works Design Group, LLC
P.O. Box 476
Eastlake, Colorado 80614
Jessica Reske, AIA, LEED AP
p. 414.477.5348
e. jessica@formworksdesigngroup.com

GENERAL PROJECT NOTES:

- THE PROPERTY IS A CITY OF LITTLETON HISTORIC LANDMARK, RESOLUTION 38-1998.
- APPROVAL OF A CERTIFICATE OF APPROPRIATENESS (COA) SHALL BE REQUIRED PRIOR TO ISSUANCE OF BUILDING PERMITS FOR EXTERIOR WORK AS SHOWN ON THIS PLAN.
- ALL GLASS SHALL BE TRANSLUCENT AND CLEAR IN COLOR.
- ALL MECHANICAL EQUIPMENT SHALL BE SCREENED FROM VIEW FROM ADJACENT PROPERTIES.
- ANY CHANGES TO THE COA MUST FIRST BE APPROVED BY THE CITY.

LEGAL DESCRIPTION OF PROPERTY:

LOT 3, BLK 1, LITTLETON CENTER SUBDIVISION

STATEMENT OF INTENT:

THE PROJECT INCLUDES THE EXTERIOR REHABILITATION OF THE GENEVA LODGE BUILDING INCLUDING:

1. REHABILITATION OF ORIGINAL WOOD WINDOWS.
2. REPLACEMENT OF NON-HISTORIC WINDOWS.
3. REHABILITATION OF EXTERIOR DOORS.
4. REHABILITATION OF EXTERIOR SIDING AND TRIM.
5. LIMITED SITE GRADING.
6. BRICK MASONRY REHABILITATION.

HISTORICAL PRESERVATION BOARD

APPROVED AND ACCEPTED AT A MEETING HELD BY THE HISTORICAL PRESERVATION BOARD ON THE ____ DAY OF 20____

HISTORICAL PRESERVATION BOARD CHAIR:

_____

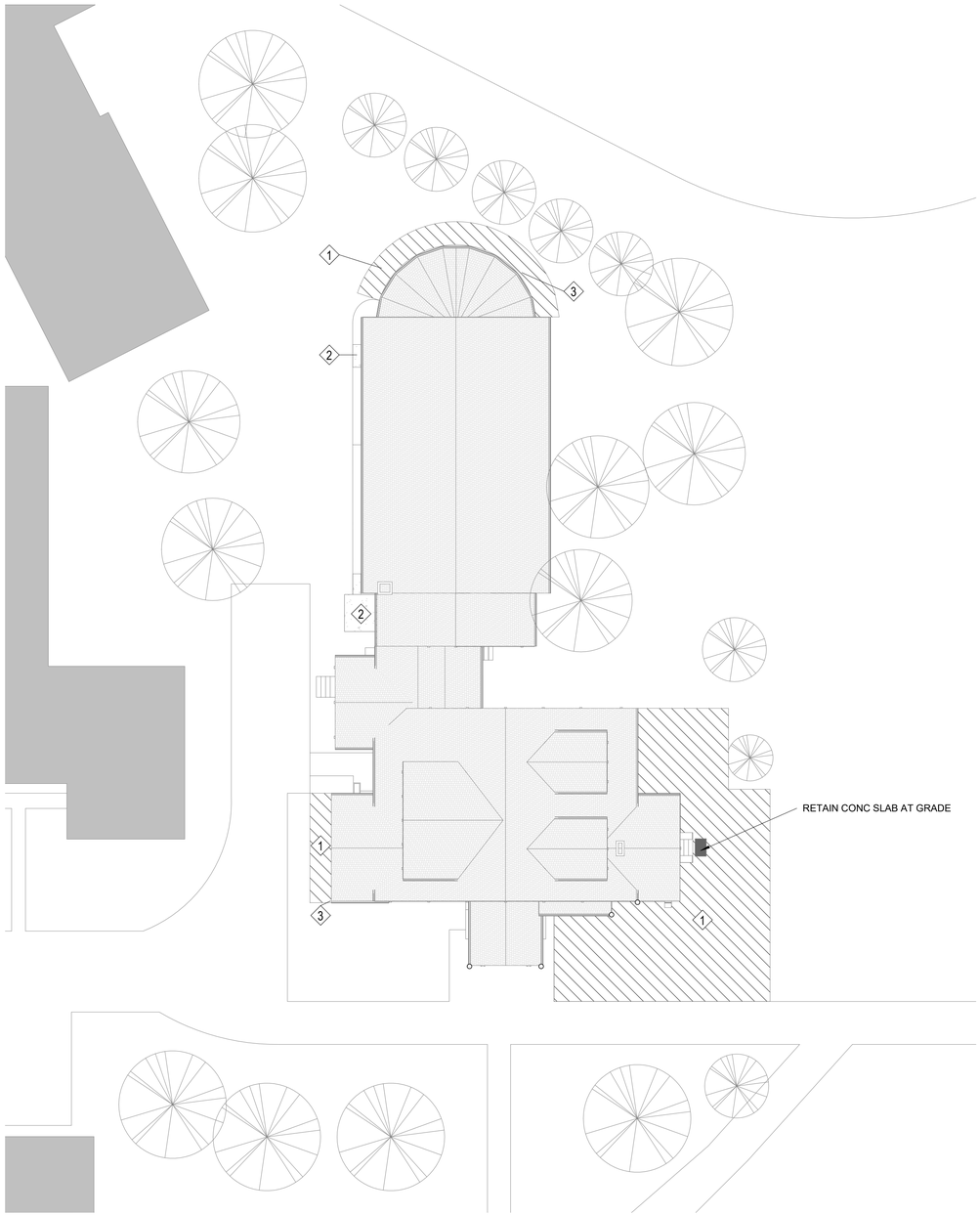
ATTEST CITY CLERK:

_____

CONSTRUCTION DOCUMENTS

SEPTEMBER 9, 2022

SHEET LIST	
SHEET NUMBER	SHEET NAME
00-GENERAL	
G-000	COVER SHEET
G-001	SITE PLAN, SHEET INDEX, GENERAL NOTES
04-ARCHITECTURAL	
A-100	BUILDING FOOTPRINT
A-120	ROOF PLAN
A-200	EXTERIOR ELEVATIONS
A-201	EXTERIOR ELEVATIONS
A-202	EXTERIOR ELEVATIONS
A-300	EXTERIOR ELEVATION SECTIONS
A-301	EXTERIOR ELEVATION SECTIONS
A-700	DOOR SCHEDULE & TYPES
A-701	WINDOW SCHEDULE & TYPES - BASEMENT
A-702	WINDOW SCHEDULE & TYPES - FIRST FLOOR
A-703	WINDOW SCHEDULE & TYPES - FIRST FLOOR
A-704	WINDOW SCHEDULE & TYPES - FIRST FLOOR
A-705	WINDOW SCHEDULE & TYPES - FIRST FLOOR
A-706	WINDOW SCHEDULE & TYPES - FIRST FLOOR
A-707	WINDOW SCHEDULE & TYPES - SECOND FLOOR
A-708	WINDOW DETAILS



1 SITE PLAN
1/16" = 1'-0"

N

PLAN NOTES

GENERAL NOTES:

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- NOTIFY ARCHITECT IF CONDITIONS IN FIELD DO NOT MATCH CONDITIONS SHOWN ON DRAWINGS.
- COORDINATE REQUIRED CLOSURES OF BUILDING AND SITE ACCESS WITH OWNER PRIOR TO COMMENCEMENT OF WORK.

X KEYNOTES

1. RE-GRADE SITE TO SLOPE AWAY FROM THE BUILDING.
2. REPLACE SECTION OF CONCRETE; PRIOR TO REPLACEMENT OF CONCRETE, PIPE DOWNSPOUTS AT CONCRETE BELOW GRADE.
3. INSTALL DOWNSPOUT EXTENSION AND SPLASH BLOCK.
4. REPLACE GUTTER SECTION IN KIND.
5. INSTALL FLASHING TO DIVERT WATER AWAY FROM END OF WOOD RAFTER TAIL. PROVIDE MOCK-UP OF FLASHING INSTALLATION AT ONE LOCATION FOR REVIEW AND APPROVAL BY ARCHITECT.
6. REPLACE TILE FLOORING IN KIND. REMOVE EXISTING TILE, SET NEW TILE IN SUBSTRATE SLOPED TO FLOOR DRAIN. RE: 2/A-100

GENERAL RESTORATION NOTES

1. The term “Owner” shall denote the client, or Owner, as designated in the Contract. The term “General Contractor” or “Contractor” shall denote the Corporation, Company, Partnership, Firm or Individual who has entered into the Contract for the performance of the work and has engaged Subcontractors to perform a part of the work. The term “Architect” refers to Form+Works Design Group, LLC.
2. The use of the words “provide” and “provided” in connection with any item specified shall be intended to mean that the item shall be furnished, installed and connected where so required.
3. Dimensions at existing construction are taken to existing surfaces. Dimensions at new work are taken from face of stud, grid centerlines, or face of masonry unless otherwise noted. Contractor is responsible for final verification of existing conditions and dimensions.
4. DO NOT scale drawings. Dimensions govern. Large scale details govern over small scale.
5. Notify Architect in writing immediately should conditions be found contradictory to these drawings.
6. The Drawings are supplied to illustrate the design intent and the general type of construction required. They are intended to imply the finest quality of construction, material and workmanship.
7. Drawings and general notes are complementary, and what is called for by one will be binding as if called for by all. Work shown or referred to on any drawing shall be completed as though shown on all related drawings.
8. The character and scope of work are described by the drawings and notes contained herein. Additional drawings and information deemed necessary by the Architect to interpret and/or explain drawings or notes previously issued shall be provided to the General Contractor. It shall be understood that such additional drawings and information shall be considered part of the Contract Documents.
9. If there are any questions regarding the Contract Documents, existing conditions or design intent, the General Contractor shall obtain a clarification in writing from the Owner's Representative or Architect prior to proceeding with the work in question.
10. All work performed and material installed shall be, as a minimum standard, in strict conformance with the latest editions of all general codes, regulations and ordinances including the building code. The General Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and lawful orders of any public authority having jurisdiction over the performance of the work.
11. The General Contractor is responsible for all work shown, noted, specified, or reasonably inferred from the contract documents.
12. The General Contractor, upon acceptance of the drawings, assumes full responsibility for the construction, materials and workmanship of the work, and shall comply with the spirit as well as the letter of that which is contained therein.
13. The scope of work described by the Contract Documents implies a completed project. Minor omissions from and discrepancies in the drawings and specifications shall not void such intention. The General Contractor shall inform the Architect in writing of any conflicts, omissions and discrepancies prior to construction.
14. The General Contractor shall obtain all required building permits.
15. The General Contractor shall obtain all special inspections required by the authority having jurisdiction over the project.
16. The General Contractor shall supervise and direct the work using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences and procedures. He shall coordinate all portions of the work under the Contract.
17. The General Contractor and subcontractors shall visit the project, as required by the specifications, to become familiar with all existing conditions affecting the work prior to submittal of bids.
18. The General Contractor shall perform high-quality professional work. Materials shall be joined to uniform, accurate fits so that they meet in neat, straight lines free of smears or overlaps. Exposed materials shall be installed appropriately level, plumb and at accurate right angles to or flush with adjacent materials. The work of each trade shall meet all National Standards published by the trade, except where the requirements of the Contact Document are more stringent.
19. The presence of an architectural representative on the jobsite does not imply concurrence of approval of the work. The General Contractor shall call to the attention of the Architect specific items for which he desires to obtain approval.
20. The General Contractor shall correct defects in material and workmanship noted by the Architect during periodic site observations and at project close-out.
21. The General Contractor shall turn the project over to the Owner free from all construction debris, scraps, materials and equipment; with all interior glass free from manufacturer's labels and tape and clean on both sides; with all doors and millwork wiped down and free of dirt, grease and other foreign material.

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303.598.6545

CERTIFICATE OF APPROPRIATENESS

Geneva Lodge

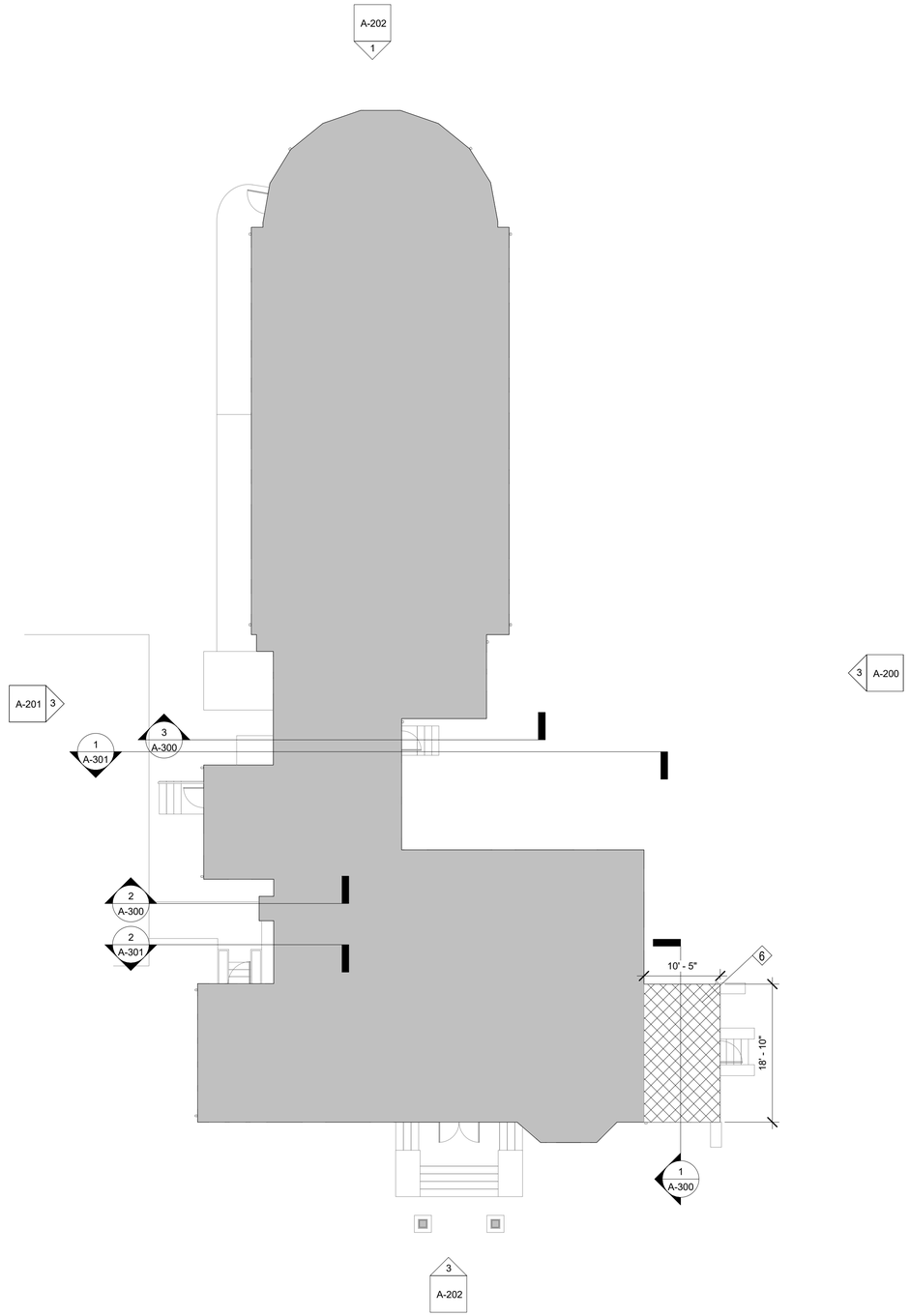
2305 W. Berry Ave.
Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006

No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

SITE PLAN, SHEET INDEX, GENERAL NOTES

G-001



1 FIRST FLOOR PLAN
1" = 10'-0"

N

PLAN NOTES

GENERAL NOTES:

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- COORDINATE REQUIRED CLOSURES OF BUILDING AND SITE ACCESS WITH OWNER PRIOR TO COMMENCEMENT OF WORK.

KEYNOTES

1. RE-GRADE SITE TO SLOPE AWAY FROM THE BUILDING.
2. REPLACE SECTION OF CONCRETE; PRIOR TO REPLACEMENT OF CONCRETE, PIPE DOWNSPOUTS AT CONCRETE BELOW GRADE.
3. INSTALL DOWNSPOUT EXTENSION AND SPLASH BLOCK.
4. REPLACE GUTTER SECTION IN KIND.
5. INSTALL FLASHING TO DIVERT WATER AWAY FROM END OF WOOD RAFTER TAIL. PROVIDE MOCK-UP OF FLASHING INSTALLATION AT ONE LOCATION FOR REVIEW AND APPROVAL BY ARCHITECT.
6. REPLACE TILE FLOORING IN KIND. REMOVE EXISTING TILE, SET NEW TILE IN SUBSTRATE SLOPED TO FLOOR DRAIN. RE: 2/A-100



2 EAST PORCH FLOOR EXISTING CONDITIONS
3/4" = 1'-0"

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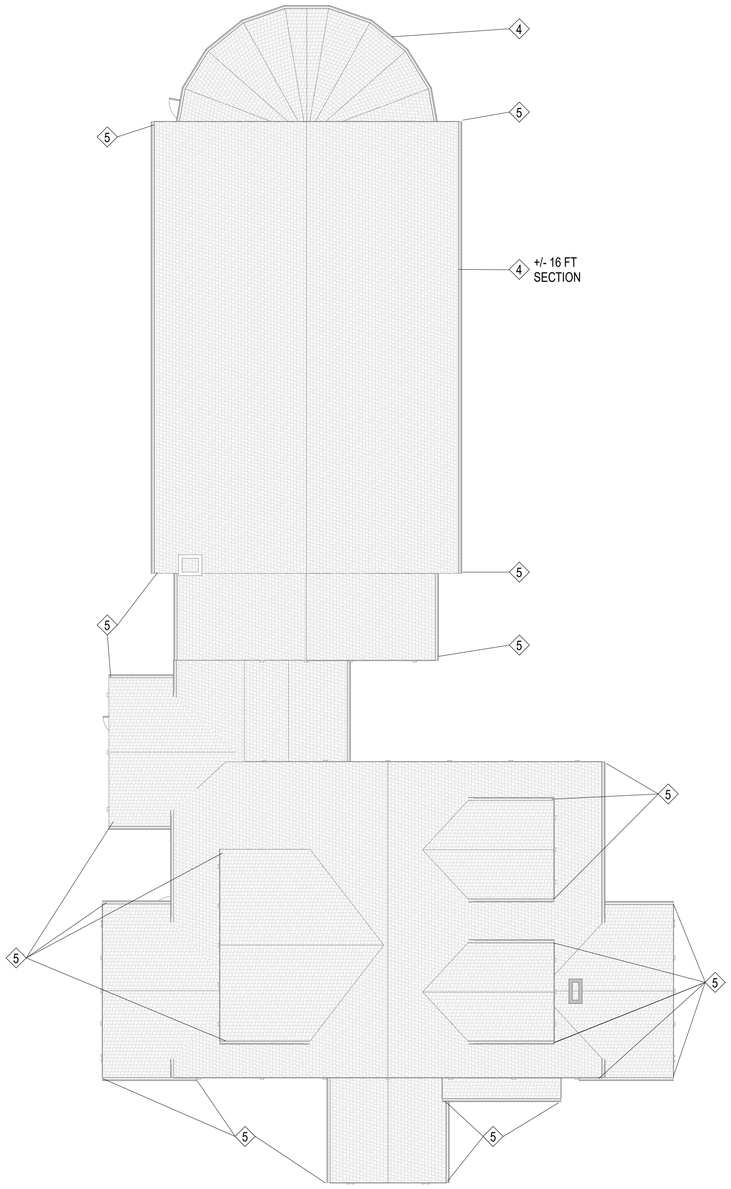
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No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
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Scale	As indicated

BUILDING FOOTPRINT

A-100



1 ROOF PLAN
1" = 10'-0"

N

PLAN NOTES

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(X) KEYNOTES

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6. REPLACE TILE FLOORING IN KIND. REMOVE EXISTING TILE, SET NEW TILE IN SUBSTRATE SLOPED TO FLOOR DRAIN. RE: 2/A-100



INSTALL DUTCHMAN REPAIR AT SEVERELY DETERIORATED RAFTER TAILS

WHERE RAFTER TAILS ARE SALVAGEABLE, COAT EXISTING WOOD COMPONENTS WITH EPOXY WOOD FILLER TO SOLIDIFY MATERIAL PRIOR TO INSTALLATION OF SHEET METAL

INSTALL SHEET METAL CAP AT EXTERIOR 14" OF END RAFTER TAILS. PROVIDE DRIP EDGE TO ALIGN WITH LOWER EDGE OF RAFTER TAIL. MATCH WOOD PROFILE AND DIMENSIONS. FINISH SHEET METAL TO MATCH WOOD COLOR.

CONTRACTOR TO PROVIDE MOCK-UP OF FLASHING FOR APPROVAL BY ARCHITECT AND OWNER.

2 RAFTER TAIL FLASHING
3/4" = 1'-0"

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Geneva Lodge

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Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006

No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

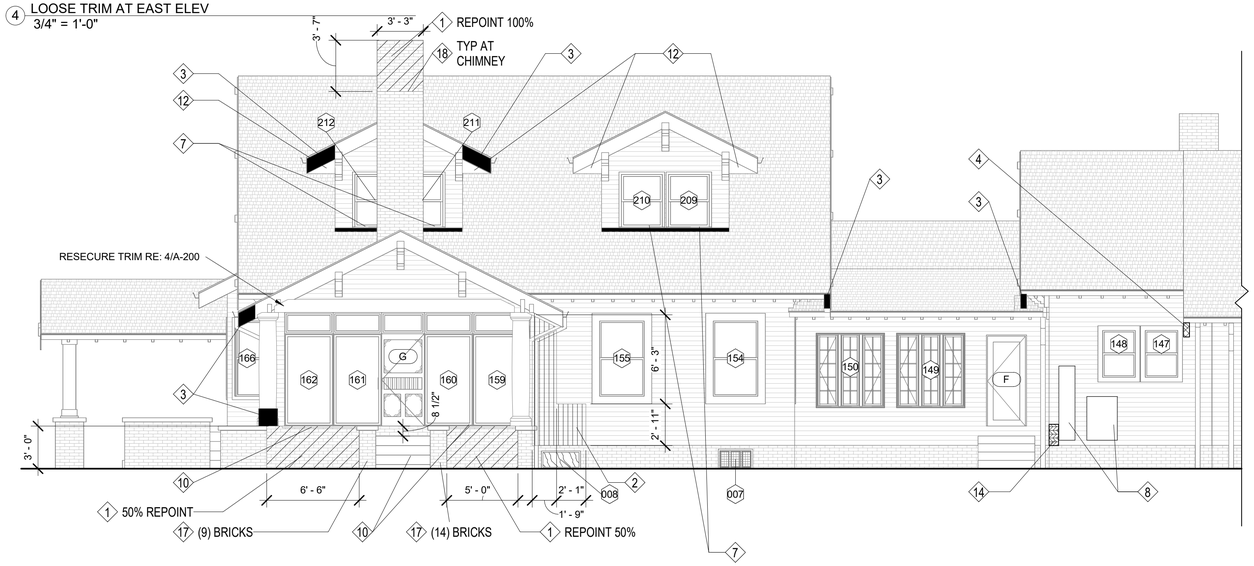
ROOF PLAN

A-120

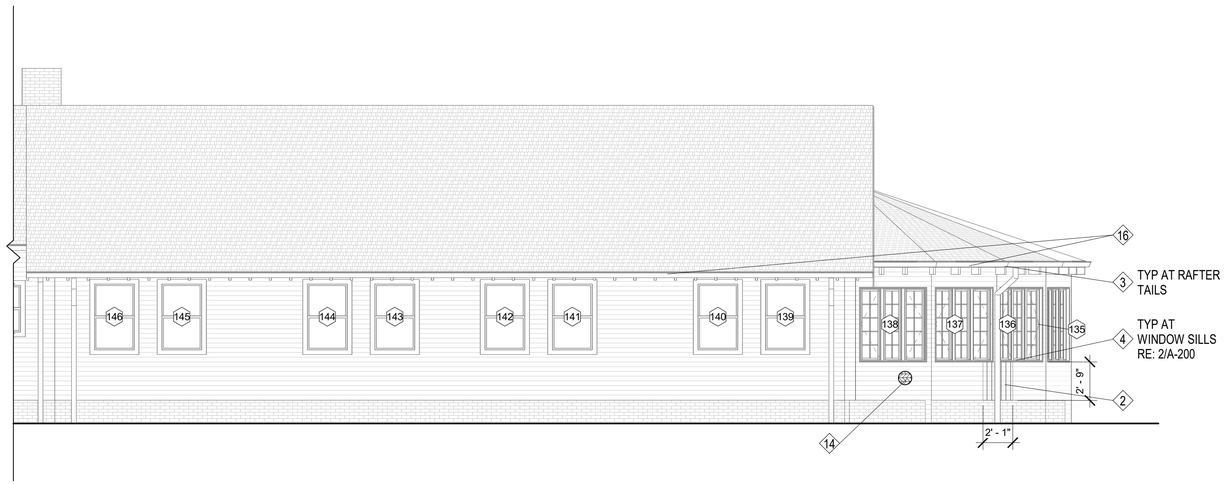


RESECURE LOOSE TRIM

4 LOOSE TRIM AT EAST ELEV
3/4" = 1'-0"



3 SOUTH - EAST ELEVATION
3/16" = 1'-0"



1 NORTH - EAST ELEVATION
3/16" = 1'-0"



2 WINDOW SILL CONDITIONS TYP AT CASEMENTS
3/4" = 1'-0"

NEW WORK
KEYNOTE

NOTES:

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- PREP, PRIME AND PAINT ALL EXTERIOR WOOD SIDING AND TRIM.

(#) WINDOW TAG, RE: WINDOW SCHEDULE

(#) DOOR TAG, RE: DOOR SCHEDULE

X KEYNOTE SYMBOL

1. REPOINT BRICK MASONRY. EXTENT INDICATED WITH:
2. REPLACE WOOD SHINGLE SIDING IN KIND. EXTENT INDICATED WITH:
3. EPOXY REPAIR WOOD SIDING / TRIM. EXTENT INDICATED WITH:
4. DUTCHMAN REPAIR WOOD COMPONENTS. EXTENT INDICATED WITH:
5. EXISTING DOWNSPOUT; REMOVE AND REINSTALL TO ACCESS WOOD SIDING.
6. REPLACE WOOD TRIM. EXTENT INDICATED WITH:
7. DUTCHMAN REPAIR OR REPLACE SILL; REPLACE FLASHING.
8. WALL MOUNTED SECURITY CAMERAS, LIGHT FIXTURES, AND ELECTRICAL EQUIPMENT TO REMAIN. PROTECT IN PLACE.
9. REPOINT CRACKS IN BRICK.
10. SEAL JOINTS AT JAMBS, TILE CAPS, AND STONE STEPS.
11. REMOVE SHEET METAL PATCH; REPLACE WOOD SHINGLE. EXTENT INDICATED WITH:
12. VERIFY CONDITION OF PLYWOOD PANELS AT SECOND FLOOR ROOFS; ANTICIPATE FLASHING INSTALLATION TO DIVERT WATER.
13. REPLACE WOOD PANEL.
14. PATCH HOLES / GAPS IN SIDING. EXTENT INDICATED WITH:
15. VERIFY WATER-TIGHT CONDITION AT FLASHING; SEAL JOINTS WHERE NECESSARY.
16. REPLACE SECTION OF GUTTER. HOLE OBSERVED.
17. ROTATE BRICK TO EXPOSE UNDAMAGED FACE. QUANTITY AS INDICATED. REPOINT AREA UPON COMPLETION
18. CLEAN BRICK MASONRY TO REMOVE ATMOSPHERIC AND BIOLOGIC STAINING

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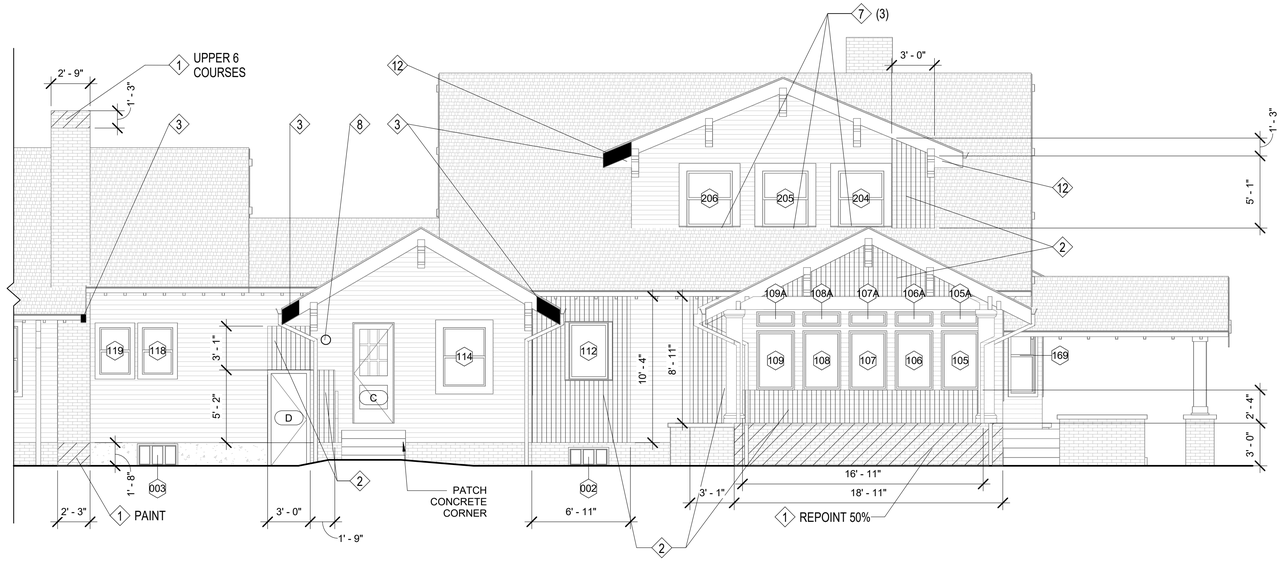
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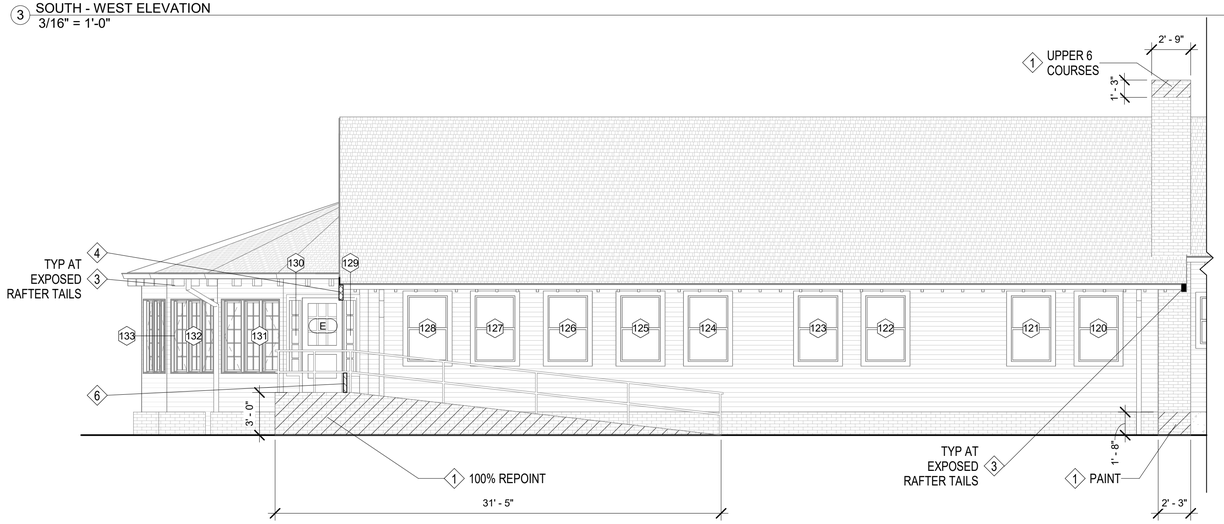
Project Number 22-005
Date SEPTEMBER 9, 2022
Drawn By KS
Checked By JR
Scale As indicated

EXTERIOR ELEVATIONS

A-200



3 SOUTH - WEST ELEVATION
3/16" = 1'-0"



1 NORTH - WEST ELEVATION
3/16" = 1'-0"



2 SOUTHWEST CORNER CONDITIONS
3/4" = 1'-0"

NEW WORK
KEYNOTE

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(#) WINDOW TAG, RE: WINDOW SCHEDULE

(#) DOOR TAG, RE: DOOR SCHEDULE

(X) KEYNOTE SYMBOL

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No.	Description	Date

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Checked By	JR
Scale	As indicated

EXTERIOR ELEVATIONS

A-201



4 EAVE AND SOFFIT REHAB
3/4" = 1'-0"



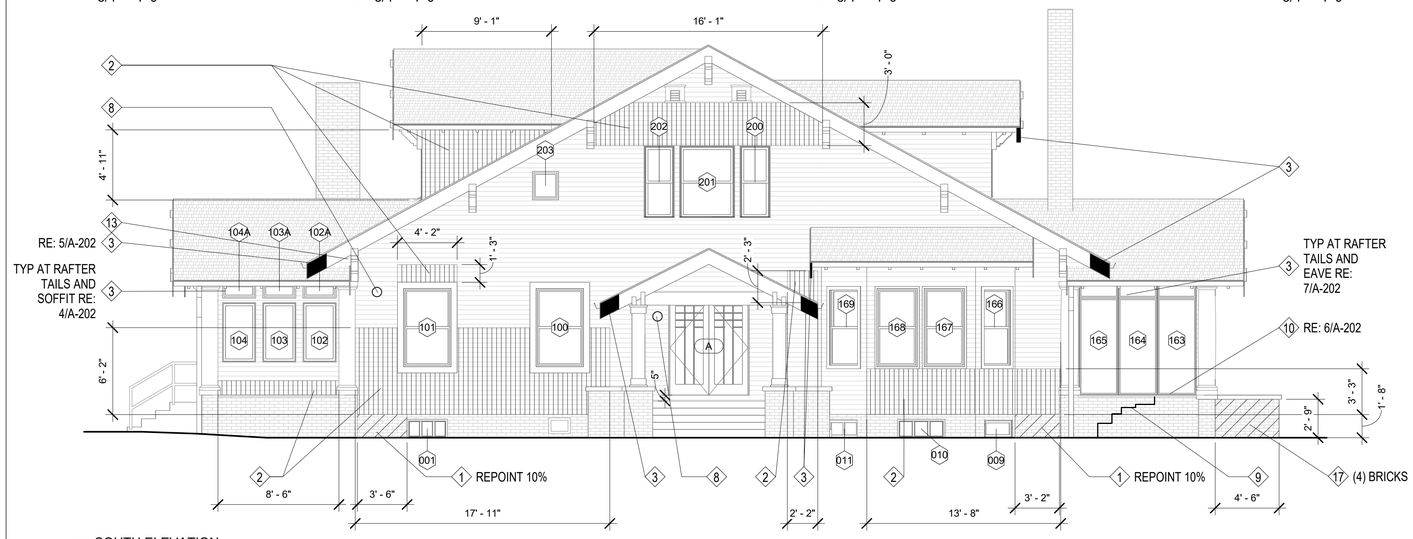
5 RAKING TRIM REHAB
3/4" = 1'-0"



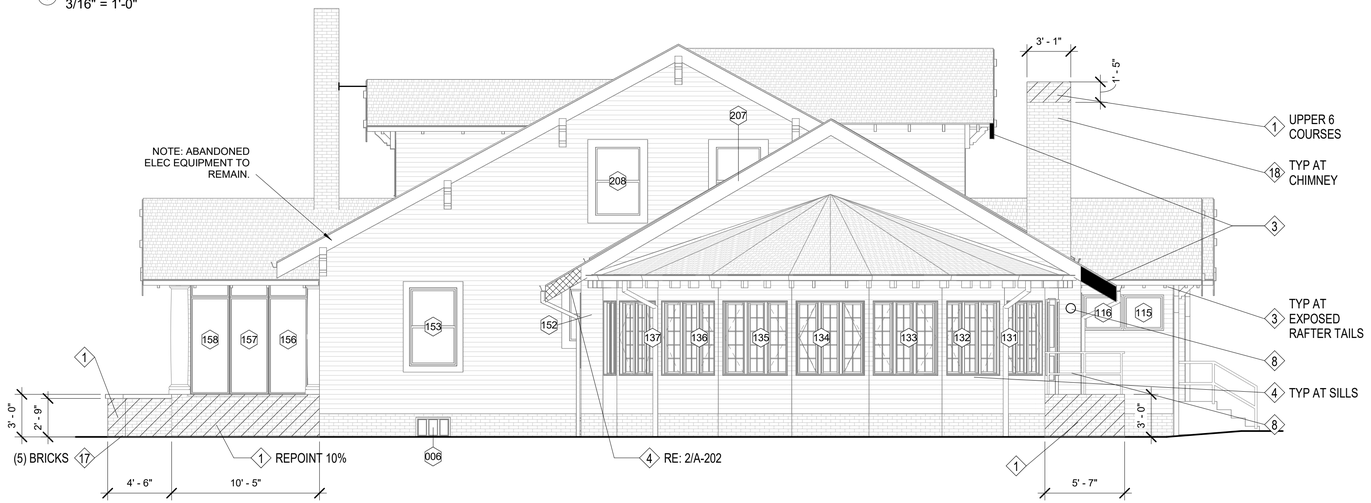
6 TILE CAP AT EAST PORCH
3/4" = 1'-0"



7 EAVE AT EAST PORCH
3/4" = 1'-0"



3 SOUTH ELEVATION
3/16" = 1'-0"



1 NORTH ELEVATION
3/16" = 1'-0"



2 NORTH ELEV WD REHAB
3/4" = 1'-0"

NEW WORK KEYNOTE

NOTES:

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9. REPOINT CRACKS IN BRICK.
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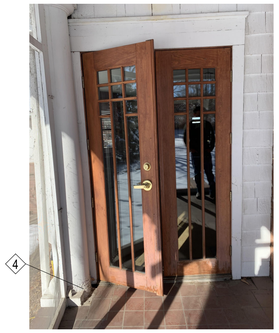
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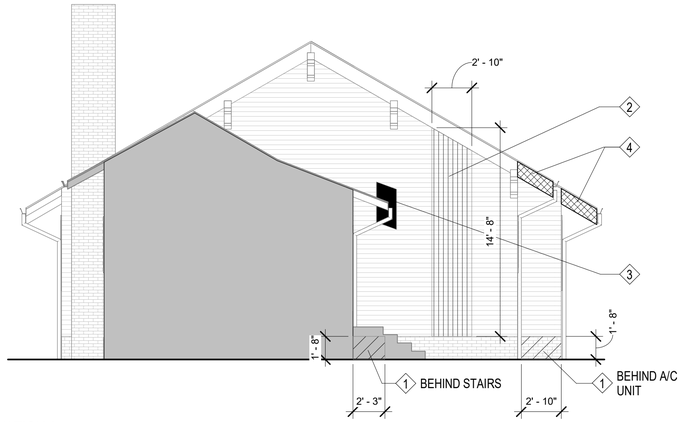
Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

EXTERIOR ELEVATIONS

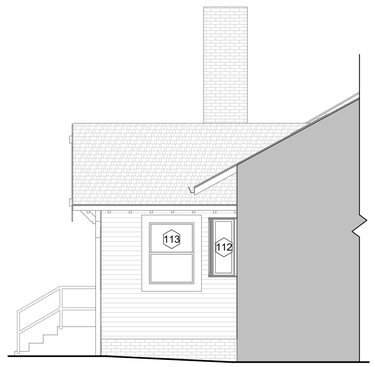
A-202



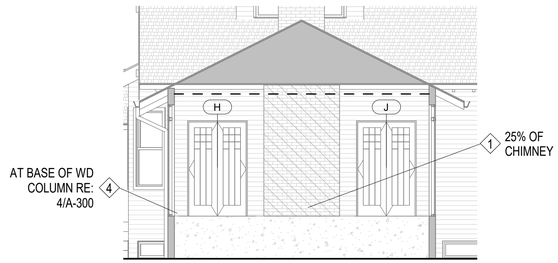
4 WD COLUMN BASE
3/4" = 1'-0"



3 PARTIAL SOUTH ELEVATION 2
3/16" = 1'-0"



2 PARTIAL SOUTH ELEVATION
3/16" = 1'-0"



1 EAST ENCLOSED PORCH ELEVATION
3/16" = 1'-0"

NEW WORK
KEYNOTE

NOTES:

- NOT ALL KEYNOTES ARE USED ON ALL SHEETS.
- CONTRACTOR TO VERIFY IN FIELD ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
- NOTIFY ARCHITECT IF CONDITIONS IN FIELD DO NOT MATCH CONDITIONS SHOWN ON DRAWINGS.
- COORDINATE REQUIRED CLOSURES OF BUILDING AND SITE ACCESS WITH OWNER PRIOR TO COMMENCEMENT OF WORK.
- PREP, PRIME AND PAINT ALL EXTERIOR WOOD SIDING AND TRIM.

(#) WINDOW TAG, RE: WINDOW SCHEDULE

(#) DOOR TAG, RE: DOOR SCHEDULE

(X) KEYNOTE SYMBOL

1. REPOINT BRICK MASONRY. EXTENT INDICATED WITH:
2. REPLACE WOOD SHINGLE SIDING IN KIND. EXTENT INDICATED WITH:
3. EPOXY REPAIR WOOD SIDING / TRIM. EXTENT INDICATED WITH:
4. DUTCHMAN REPAIR WOOD COMPONENTS. EXTENT INDICATED WITH:
5. EXISTING DOWNSPOUT; REMOVE AND REINSTALL TO ACCESS WOOD SIDING.
6. REPLACE WOOD TRIM. EXTENT INDICATED WITH:
7. DUTCHMAN REPAIR OR REPLACE SILL; REPLACE FLASHING.
8. WALL MOUNTED SECURITY CAMERAS, LIGHT FIXTURES, AND ELECTRICAL EQUIPMENT TO REMAIN. PROTECT IN PLACE.
9. REPOINT CRACKS IN BRICK.
10. SEAL JOINTS AT JAMBS, TILE CAPS, AND STONE STEPS.
11. REMOVE SHEET METAL PATCH; REPLACE WOOD SHINGLE. EXTENT INDICATED WITH:
12. VERIFY CONDITION OF PLYWOOD PANELS AT SECOND FLOOR ROOFS; ANTICIPATE FLASHING INSTALLATION TO DIVERT WATER.
13. REPLACE WOOD PANEL.
14. PATCH HOLES / GAPS IN SIDING. EXTENT INDICATED WITH:
15. VERIFY WATER-TIGHT CONDITION AT FLASHING; SEAL JOINTS WHERE NECESSARY.
16. REPLACE SECTION OF GUTTER. HOLE OBSERVED.
17. ROTATE BRICK TO EXPOSE UNDAMAGED FACE. QUANTITY AS INDICATED. REPOINT AREA UPON COMPLETION
18. CLEAN BRICK MASONRY TO REMOVE ATMOSPHERIC AND BIOLOGIC STAINING

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CERTIFICATE OF APPROPRIATENESS

Geneva Lodge

2305 W. Berry Ave.
Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006

No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

EXTERIOR ELEVATION SECTIONS

A-300

NEW WORK
KEYNOTE

NOTES:

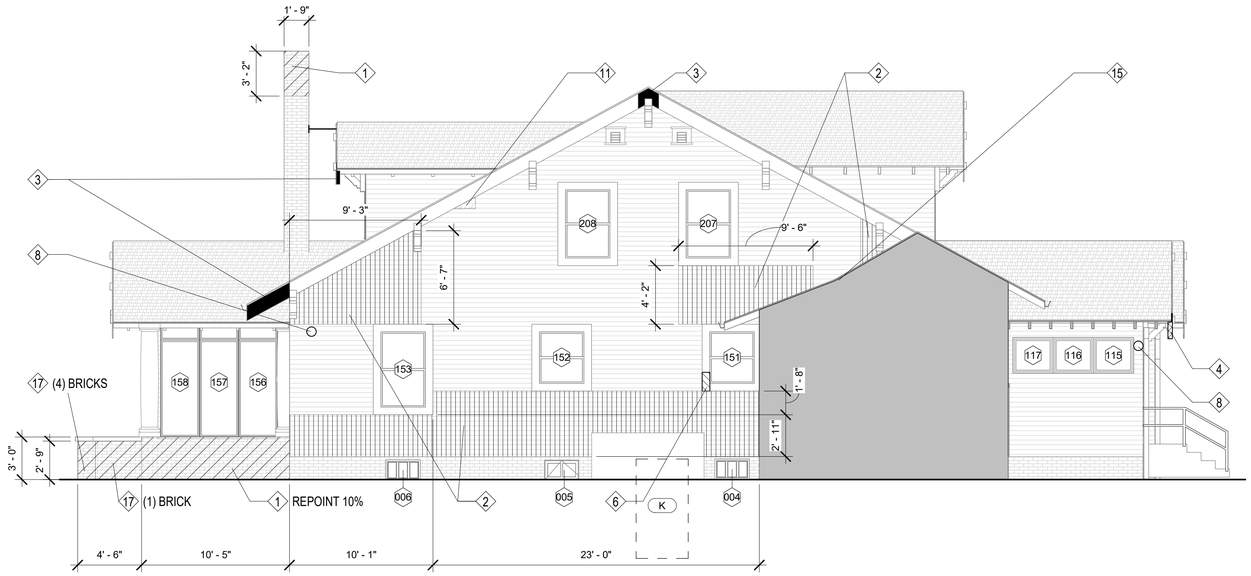
- NOT ALL KEYNOTES ARE USED ON ALL SHEETS.
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- NOTIFY ARCHITECT IF CONDITIONS IN FIELD DO NOT MATCH CONDITIONS SHOWN ON DRAWINGS.
- COORDINATE REQUIRED CLOSURES OF BUILDING AND SITE ACCESS WITH OWNER PRIOR TO COMMENCEMENT OF WORK.
- PREP, PRIME AND PAINT ALL EXTERIOR WOOD SIDING AND TRIM.

(#) WINDOW TAG, RE: WINDOW SCHEDULE

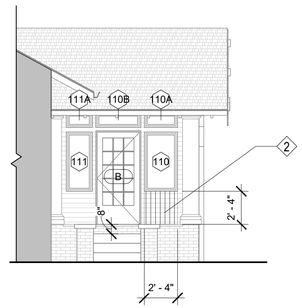
(#) DOOR TAG, RE: DOOR SCHEDULE

(X) KEYNOTE SYMBOL

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3. EPOXY REPAIR WOOD SIDING / TRIM. EXTENT INDICATED WITH:
4. DUTCHMAN REPAIR WOOD COMPONENTS. EXTENT INDICATED WITH:
5. EXISTING DOWNSPOUT; REMOVE AND REINSTALL TO ACCESS WOOD SIDING.
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9. REPOINT CRACKS IN BRICK.
10. SEAL JOINTS AT JAMBS, TILE CAPS, AND STONE STEPS.
11. REMOVE SHEET METAL PATCH; REPLACE WOOD SHINGLE. EXTENT INDICATED WITH:
12. VERIFY CONDITION OF PLYWOOD PANELS AT SECOND FLOOR ROOFS; ANTICIPATE FLASHING INSTALLATION TO DIVERT WATER.
13. REPLACE WOOD PANEL.
14. PATCH HOLES / GAPS IN SIDING. EXTENT INDICATED WITH:
15. VERIFY WATER-TIGHT CONDITION AT FLASHING; SEAL JOINTS WHERE NECESSARY.
16. REPLACE SECTION OF GUTTER. HOLE OBSERVED.
17. ROTATE BRICK TO EXPOSE UNDAMAGED FACE. QUANTITY AS INDICATED. REPOINT AREA UPON COMPLETION
18. CLEAN BRICK MASONRY TO REMOVE ATMOSPHERIC AND BIOLOGIC STAINING



1 PARTIAL NORTH ELEVATION
3/16" = 1'-0"



2 PARTIAL NORTH ELEVATION 2
3/16" = 1'-0"

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No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

EXTERIOR ELEVATION SECTIONS

A-301

Door Schedule

Mark	Width	Height	Door Type	Repair Level	Casing Trim Type	Door Material	Interior Finish	Previously Replaced Door (Y/N)	Hardware Notes	Comments
A	5' - 6"	6' - 8"	A	1	WOOD	WOOD/GLASS	STAINED	Y	EXISTING TO REMAIN	REPLACEMENT DOOR.
B	3' - 0"	6' - 6"	B	2	WOOD	WOOD/GLASS	PAINTED	N	MAIL BOX SLOT AND EXISTING HARDWARE TO REMAIN.	RE-HANG DOOR. REPAIR CRACKS AT THE BOTTOM OF SIDE RAIL. REFINISH INTERIOR PAINT. ORIGINAL SINGLE PANE GLAZING AND PUTTY WOOD STOPS AT INTERIOR.
C	2' - 9"	7' - 0"	D	3	WOOD	WOOD/GLASS	PAINTED	N	PROVIDE KNOB. LEAVE PANIC BAR IN PLACE.	RE-HANG DOOR. MATERIAL ADDED TO THE BOTTOM OF DOOR. REPLACE INTERIOR WOOD GLAZING STOPS. INSTALL NEW WEATHER STRIPPING.
D	2' - 6"	6' - 6"	C	4	WOOD	WOOD	INTERIOR NOT ACCESSABLE	N	EXISTING TO REMAIN	REPLACEMENT DOOR. REPLACE. REPAINT TRIM.
E	2' - 10"	6' - 8"	D	3	WOOD	WOOD/GLASS	PAINTED	N	EXISTING TO REMAIN	REPAIR LOWER PANELING AND LOWER TRIM.
F	2' - 8"	6' - 4"	F	1	WOOD	WOOD/GLASS	STAINED	Y	EXISTING TO REMAIN	NO INTERIOR WORK NEEDED.
G	3' - 0"	6' - 6"	E	3	WOOD	WOOD/SCREEN	PAINTED	N	SALVAGE HINGES; REPLACE LATCH AND HANDLE	RE-HANG DOOR, REPLACE SCREEN, PREP, PRIME, AND PAINT
H	4' - 0 1/2"	6' - 7 1/2"	A	1	WOOD	WOOD/GLASS	STAINED	Y	EXISTING TO REMAIN	
J	4' - 0 1/2"	6' - 7 1/2"	A	2	WOOD	WOOD/GLASS	STAINED	Y	EXISTING TO REMAIN	
K	3' - 8"	7' - 0"	G	3	WOOD	WOOD/GLASS	STAINED	N		

DOOR GENERAL NOTES

A. DOOR DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL OPENING DIMENSIONS.

B. CONTRACTOR TO COMPLETE PAINT ANALYSIS TO DETERMINE HISTORIC INTERIOR AND EXTERIOR COLOR/FINISH. SUBMIT PAINT DRAW DOWNS TO OWNER AND ARCHITECT FOR REVIEW. FINAL COLOR SELECTIONS BY OWNER AND ARCHITECT.

C. ASSUME 100% NEW HARDWARE SETS AT ALL REPLACEMENT DOORS.
   a. AT EXISTING DOORS TO REMAIN, REPLACE HARDWARE COMPONENTS AS NECESSARY FOR OPERATION

DOOR REPAIR CLASS

CLASS 1: ROUTINE MAINTENANCE (DOOR REMAINS IN SITU):

- SAND AND SCRAPE PAINT (ALL WOODWORK. INTERIOR AND EXTERIOR).
- REPLACE MISSING OR DAMAGED WEATHER STRIPPING
- IF GLAZED, MINOR PUTTY REPLACEMENT/ REPAIR.
- REPLACE BROKEN GLAZING - QUANTITY OF PANES INDICATED ON SCHEDULE (NOTE MATCH HISTORIC PATTERNED GLASS WHERE EXTANT)
- PREP, PRIME AND PAINT ALL INTERIOR AND EXTERIOR WOODWORK.
- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE DOOR AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

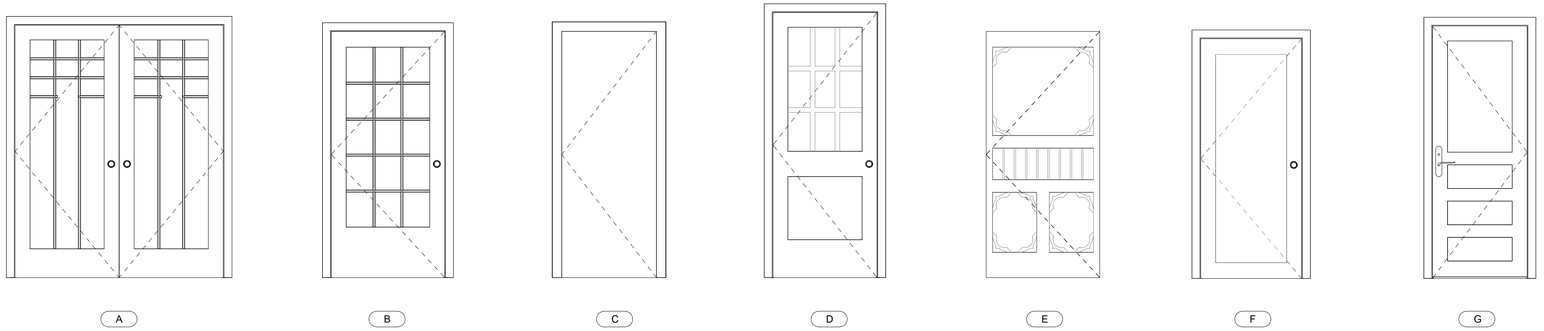
- ALL REPAIR CLASS 1 WORK
- REPAIR AREAS OF DETERIORATION / DAMAGE
- REMOVE AND REPLACE SEALANT BETWEEN BRICK MOLD AND BRICK

CLASS 3: SPLICES & PARTS REPLACEMENT:

- ALL REPAIR CLASS 1 & 2, PLUS
- REPLACE MISSING OR DAMAGED COMPONENTS AS NOTED IN SCHEDULE IN KIND.

CLASS 4: DOOR REPLACEMENT:

- MATCH HISTORIC IN ALL MANNERS



DOOR TYPES
1/2" = 1'-0"

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No.	Description	Date

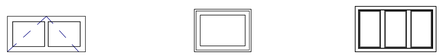
Project Number 22-005
Date SEPTEMBER 9, 2022
Drawn By KS
Checked By JR
Scale As indicated

DOOR SCHEDULE & TYPES

A-700

Window Schedule - Basement

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
BASEMENT										
001	2' - 9"	1' - 3"	F	3	IN-SWING AWNING	STAINED	N	WOOD	EXIST ORIGINAL HARDWARE TO REMAIN	STOOL AND APRON MISSING AT INTERIOR; REPLACE MISSING WD COMPONENTS.
002	2' - 9"	1' - 3"	F	2	IN-SWING AWNING	PAINTED	N	WOOD	EXIST ORIGINAL HARDWARE TO REMAIN	TRIM MODIFIED DUE TO PIPE. LEAVE AS IS.
003	2' - 9"	1' - 6"	F	2	NOT ACCESSIBLE AT INTERIOR	N/A	Y	METAL		REPLACE (1) BROKEN PANE
004	2' - 4"	1' - 4"	F	2	IN-SWING AWNING	PAINTED	N	WOOD	EXIST ORIGINAL HARDWARE TO REMAIN	
005	2' - 4"	1' - 4"	B	3	IN-SWING HOPPER	PAINTED	N	WOOD	EXIST ORIGINAL HARDWARE TO REMAIN	
006	2' - 4"	1' - 4"	F	2	IN-SWING AWNING	STAINED	N	WOOD	EXIST ORIGINAL HARDWARE TO REMAIN	FILL HOLES IN TRIM AT EXTERIOR
007	2' - 4"	1' - 4"	F	2	IN-SWING AWNING	STAINED	N	WOOD W/ METAL WIRE SCREEN	EXIST ORIGINAL HARDWARE TO REMAIN	EXTERIOR SCREEN; PREP, PRIME, AND PAINT EXTERIOR WOOD MATERIALS
008	2' - 9"	1' - 3"	D	N/A	INFILLED AT INTERIOR	N/A	N/A	N/A	N/A	MISSING GLAZING. WOOD PANEL REPLACING GLAZING; PREP, PRIME, AND PAINT EXTERIOR INFILL MATERIALS
009	2' - 9"	1' - 3"	D	4	MISSING	PAINTED	N/A	WOOD	WINDOW CHAIN IN PLACE	CONSTRUCT NEW SASH MATCHING WINDOW 011. REMOVE EXTERIOR PLEXI GLASS.
010	3' - 3"	1' - 3"	F	3	IN-SWING HOPPER	PAINTED	N	WOOD	REPLACE (2) HINGES TO MATCH ORIGINAL. EXISTING SASH LOCK TO REMAIN.	REPLACE MISSING INTERIOR STOOL; REPLACE (1) BROKEN PANE.
011	2' - 9"	1' - 3"	B	3	IN-SWING HOPPER	PAINTED	N	WOOD	REPLACE (2) HINGES. EXISTING SASH LOCK TO REMAIN.	REPLACE LOWER RAIL AND BOTH LOWER SECTIONS OF JAMBS.



B D F

WINDOW TYPES - BASEMENT
3/8" = 1'-0"

WINDOW GENERAL NOTES

A. WINDOW DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL WINDOW OPENING DIMENSIONS.

B. CONTRACTOR TO COMPLETE PAINT ANALYSIS TO DETERMINE HISTORIC INTERIOR AND EXTERIOR COLOR/FINISH. SUBMIT PAINT DRAW DOWNS TO OWNER AND ARCHITECT FOR REVIEW. FINAL COLOR SELECTIONS BY OWNER AND ARCHITECT.

C. ASSUME 100% NEW HARDWARE SETS AT ALL REPLACEMENT WINDOWS.
   a. AT EXISTING WINDOWS TO REMAIN, REPLACE HARDWARE COMPONENTS AS NECESSARY FOR WINDOW OPERATION

D. CONTRACTOR TO PROVIDE MOCK-UP OF CASEMENT WINDOW REHABILITATION FOR REVIEW AND APPROVAL BY ARCHITECT AND OWNER.

E. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR NEW WINDOWS

F. CONTRACTOR TO PROVIDE FINISH AND HARDWARE SAMPLES FOR SELECTION BY ARCHITECT AND OWNER.

G. NOTE THAT ALL WINDOWS TO BE REPLACED ARE NOT ORIGINAL, BUT HAVE BEEN PREVIOUSLY REPLACED (CIRCA 1998). ORIGINAL HISTORIC WINDOWS WILL BE REPAIRED.

WINDOW REPAIR CLASS

CLASS 1: ROUTINE MAINTENANCE (SASH REMAINS IN SITU):

- SAND AND SCRAPE PAINT (ALL WOODWORK. INTERIOR AND EXTERIOR).
- REPLACE MISSING OR DAMAGED WEATHER STRIPPING
- MINOR PUTTY REPLACEMENT/ REPAIR.
- SEAL WINDOW IN CLOSED POSITION. ENSURE SASHES ALIGN AT MEETING RAIL. PROVIDE WOOD BLOCKS AS REQ'D.
- REPLACE BROKEN GLAZING - QUANTITY OF PANES INDICATED ON SCHEDULE (NOTE MATCH HISTORIC PATTERNED GLASS WHERE EXTANT)
- PREP, PRIME AND PAINT ALL INTERIOR AND EXTERIOR WOODWORK.
- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

- ALL REPAIR CLASS 1 WORK
- DE-GLAZE SASH: REMOVE PUTTY, PREP SASH, PRIME & REPLACE PUTTY WITH NEW
- REPAIR AREAS OF DETERIORATION / DAMAGE
- REMOVE AND REPLACE SEALANT BETWEEN BRICK MOLD AND BRICK

CLASS 3: SPLICES & PARTS REPLACEMENT:

- ALL REPAIR CLASS 1 & 2, PLUS
- REPLACE MISSING OR DAMAGED COMPONENTS AS NOTED IN SCHEDULE IN KIND.

CLASS 4: WINDOW REPLACEMENT:

- MATCH HISTORIC IN ALL MANNERS
- REHABILITATE EXTERIOR WOOD SILLS
-REHABILITATE TRIM COMPONENTS TO REMAIN
-REFER TO SHEET A-708 FOR WINDOW DETAILS

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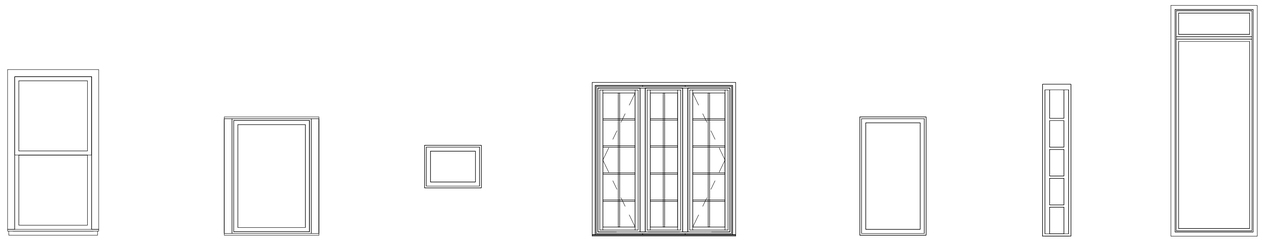
Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - BASEMENT

A-701

Window Schedule - First Floor

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
FIRST FLOOR										
100	3' - 4"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD		
101	3' - 4"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD		
102	2' - 4"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
102A	2' - 4"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
103	2' - 4"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
103A	2' - 4"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
104	2' - 4"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
104A	2' - 4"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
105	2' - 8"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD		WINDOW TO REMAIN INOPERABLE
105A	2' - 8"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
106	2' - 8"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD		WINDOW TO REMAIN INOPERABLE
106A	2' - 8"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
107	2' - 8"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
107A	2' - 8"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
108	2' - 8"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
108A	2' - 8"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
109	2' - 8"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
109A	2' - 8"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
110	2' - 4"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
110A	2' - 4"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
110B	3' - 2"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
111	1' - 10"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
111A	1' - 10"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
112	3' - 4"	4' - 2"	C	4	DOUBLE HUNG	PAINTED	Y	WOOD		REMOVE BOX WINDOW AND REPLACE WITH WINDOW TYPE A; FRAME AND FINISH WALL AROUND WINDOW TO MATCH EXIST ADJACENT
113	3' - 4"	4' - 6"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
114	3' - 2"	4' - 4"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	



WINDOW TYPES - FIRST FLOOR
3/8" = 1'-0"

WINDOW GENERAL NOTES

A. WINDOW DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL WINDOW OPENING DIMENSIONS.

B. CONTRACTOR TO COMPLETE PAINT ANALYSIS TO DETERMINE HISTORIC INTERIOR AND EXTERIOR COLOR/FINISH. SUBMIT PAINT DRAW DOWNS TO OWNER AND ARCHITECT FOR REVIEW. FINAL COLOR SELECTIONS BY OWNER AND ARCHITECT.

C. ASSUME 100% NEW HARDWARE SETS AT ALL REPLACEMENT WINDOWS.
   a. AT EXISTING WINDOWS TO REMAIN, REPLACE HARDWARE COMPONENTS AS NECESSARY FOR WINDOW OPERATION

D. CONTRACTOR TO PROVIDE MOCK-UP OF CASEMENT WINDOW REHABILITATION FOR REVIEW AND APPROVAL BY ARCHITECT AND OWNER.

E. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR NEW WINDOWS

F. CONTRACTOR TO PROVIDE FINISH AND HARDWARE SAMPLES FOR SELECTION BY ARCHITECT AND OWNER.

G. NOTE THAT ALL WINDOWS TO BE REPLACED ARE NOT ORIGINAL, BUT HAVE BEEN PREVIOUSLY REPLACED (CIRCA 1998). ORIGINAL HISTORIC WINDOWS WILL BE REPAIRED.

WINDOW REPAIR CLASS

CLASS 1: ROUTINE MAINTENANCE (SASH REMAINS IN SITU):

- SAND AND SCRAPE PAINT (ALL WOODWORK. INTERIOR AND EXTERIOR).
- REPLACE MISSING OR DAMAGED WEATHER STRIPPING
- MINOR PUTTY REPLACEMENT/ REPAIR.
- SEAL WINDOW IN CLOSED POSITION. ENSURE SASHES ALIGN AT MEETING RAIL. PROVIDE WOOD BLOCKS AS REQ'D.
- REPLACE BROKEN GLAZING - QUANTITY OF PANES INDICATED ON SCHEDULE (NOTE MATCH HISTORIC PATTERNED GLASS WHERE EXTANT)
- PREP, PRIME AND PAINT ALL INTERIOR AND EXTERIOR WOODWORK.
- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

- ALL REPAIR CLASS 1 WORK
- DE-GLAZE SASH: REMOVE PUTTY, PREP SASH, PRIME & REPLACE PUTTY WITH NEW
- REPAIR AREAS OF DETERIORATION / DAMAGE
- REMOVE AND REPLACE SEALANT BETWEEN BRICK MOLD AND BRICK

CLASS 3: SPLICES & PARTS REPLACEMENT:

- ALL REPAIR CLASS 1 & 2, PLUS
- REPLACE MISSING OR DAMAGED COMPONENTS AS NOTED IN SCHEDULE IN KIND.

CLASS 4: WINDOW REPLACEMENT:

- MATCH HISTORIC IN ALL MANNERS
- REHABILITATE EXTERIOR WOOD SILLS
-REHABILITATE TRIM COMPONENTS TO REMAIN
-REFER TO SHEET A-708 FOR WINDOW DETAILS



1 WINDOW 112
3/4" = 1'-0"

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P.O. Box 476
Eastlake, Colorado 80614
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CERTIFICATE OF APPROPRIATENESS

Geneva Lodge

2305 W. Berry Ave.
Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006

No.	Description	Date

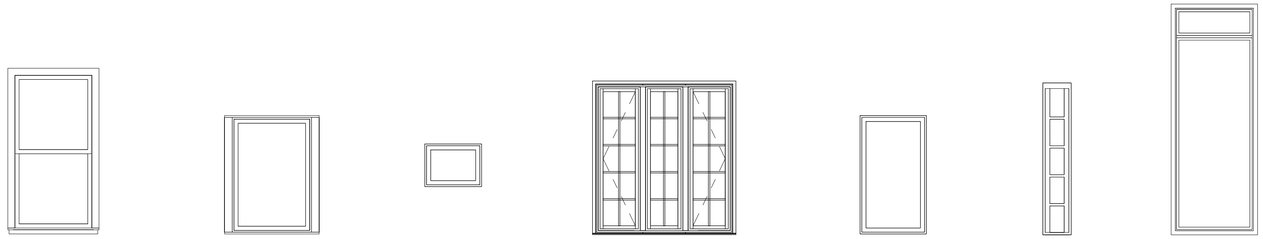
Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - FIRST FLOOR

A-702

Window Schedule - First Floor 2

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
FIRST FLOOR										
115	2' - 10"	2' - 6"	D	4	CASEMENT	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	CURRENTLY INOPERABLE. INSTALL OPERABLE CASEMENT WINDOW.
116	2' - 10"	2' - 6"	D	4	CASEMENT	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	CURRENTLY INOPERABLE. INSTALL OPERABLE CASEMENT WINDOW.
117	2' - 10"	2' - 6"	D	4	CASEMENT	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	CURRENTLY INOPERABLE. INSTALL OPERABLE CASEMENT WINDOW.
118	2' - 4"	3' - 6"	A	4	DOUBLE HUNG		Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	DID NOT ACCESS FROM INTERIOR
119	2' - 4"	3' - 6"	A	4	DOUBLE HUNG		Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	DID NOT ACCESS FROM INTERIOR
120	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
121	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
122	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
123	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
124	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	SASHES NOT ALIGNED
125	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
126	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD		SCREEN ON EXTERIOR. TRIM DOES NOT MATCH EXISTING.
127	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	
128	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	
129	1' - 0"	5' - 3"	H	2	FIXED SIDELITE	PAINTED	N	WOOD		
130	1' - 0"	5' - 3"	H	2	FIXED SIDELITE	PAINTED	N	WOOD		
131	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOWS
132	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOWS



WINDOW TYPES - FIRST FLOOR
3/8" = 1'-0"

WINDOW GENERAL NOTES

A. WINDOW DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL WINDOW OPENING DIMENSIONS.

B. CONTRACTOR TO COMPLETE PAINT ANALYSIS TO DETERMINE HISTORIC INTERIOR AND EXTERIOR COLOR/FINISH. SUBMIT PAINT DRAW DOWNS TO OWNER AND ARCHITECT FOR REVIEW. FINAL COLOR SELECTIONS BY OWNER AND ARCHITECT.

C. ASSUME 100% NEW HARDWARE SETS AT ALL REPLACEMENT WINDOWS.
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G. NOTE THAT ALL WINDOWS TO BE REPLACED ARE NOT ORIGINAL, BUT HAVE BEEN PREVIOUSLY REPLACED (CIRCA 1998). ORIGINAL HISTORIC WINDOWS WILL BE REPAIRED.

WINDOW REPAIR CLASS

CLASS 1: ROUTINE MAINTENANCE (SASH REMAINS IN SITU):

- SAND AND SCRAPE PAINT (ALL WOODWORK. INTERIOR AND EXTERIOR).
- REPLACE MISSING OR DAMAGED WEATHER STRIPPING
- MINOR PUTTY REPLACEMENT/ REPAIR.
- SEAL WINDOW IN CLOSED POSITION. ENSURE SASHES ALIGN AT MEETING RAIL. PROVIDE WOOD BLOCKS AS REQ'D.
- REPLACE BROKEN GLAZING - QUANTITY OF PANES INDICATED ON SCHEDULE (NOTE MATCH HISTORIC PATTERNED GLASS WHERE EXTANT)
- PREP, PRIME AND PAINT ALL INTERIOR AND EXTERIOR WOODWORK.
- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

- ALL REPAIR CLASS 1 WORK
- DE-GLAZE SASH: REMOVE PUTTY, PREP SASH, PRIME & REPLACE PUTTY WITH NEW
- REPAIR AREAS OF DETERIORATION / DAMAGE
- REMOVE AND REPLACE SEALANT BETWEEN BRICK MOLD AND BRICK

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-REFER TO SHEET A-708 FOR WINDOW DETAILS

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Case No. COA22-0006

No.	Description	Date

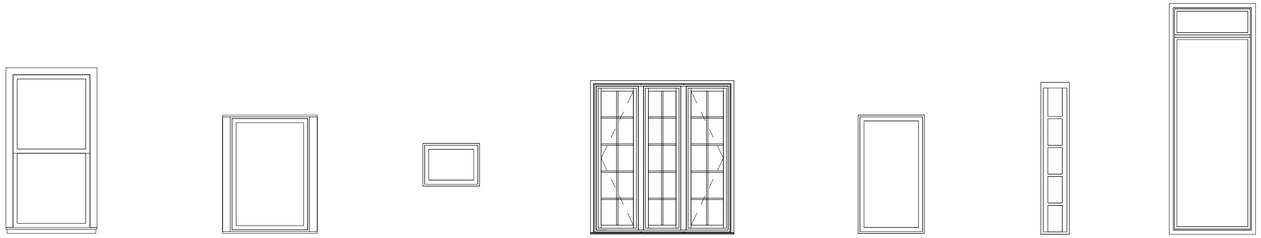
Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - FIRST FLOOR

A-703

Window Schedule - First Floor 3

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
FIRST FLOOR										
133	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOWS
134	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOWS
135	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOWS
136	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE SILL AND BOTTOM RAIL FOR ALL 3 UNITS. REPLACE INTERIOR STORM WINDOWS
137	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOWS
138	4' - 10"	5' - 3"	E	2	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOW
139	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
140	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
141	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	



WINDOW TYPES - FIRST FLOOR
3/8" = 1'-0"

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- REPLACE MISSING OR DAMAGED WEATHER STRIPPING
- MINOR PUTTY REPLACEMENT/ REPAIR.
- SEAL WINDOW IN CLOSED POSITION. ENSURE SASHES ALIGN AT MEETING RAIL. PROVIDE WOOD BLOCKS AS REQ'D.
- REPLACE BROKEN GLAZING - QUANTITY OF PANES INDICATED ON SCHEDULE (NOTE MATCH HISTORIC PATTERNED GLASS WHERE EXTANT)
- PREP, PRIME AND PAINT ALL INTERIOR AND EXTERIOR WOODWORK.
- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

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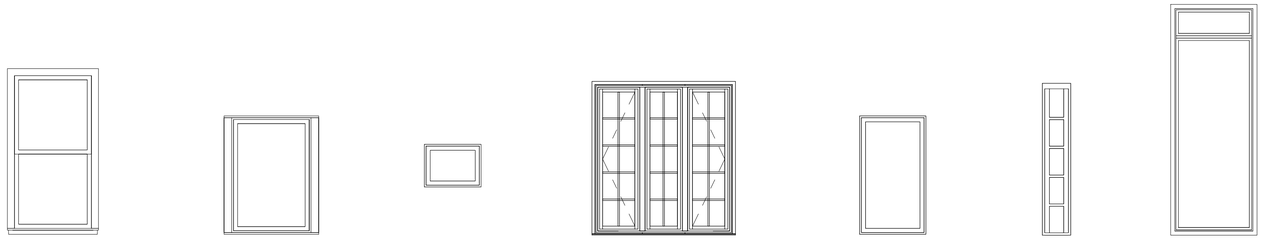
Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - FIRST FLOOR

A-704

Window Schedule - First Floor 4

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
FIRST FLOOR										
142	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
143	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
144	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
145	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
146	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
147	2' - 6"	3' - 6"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	DUTCHMAN REPAIR AT LOWER EXTERIOR TRIM
148	2' - 6"	3' - 6"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	DUTCHMAN REPAIR AT LOWER EXTERIOR TRIM
149	4' - 10"	5' - 3"	E	2	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	
150	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIORCRANKS NEEDED.	RE-HAND SOUTH SASH
151	3' - 4"	3' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REHABILITATE EXTERIOR WOOD TRIM
152	3' - 4"	3' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	INSTALL TEXTURED GLAZING
153	3' - 4"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REMOVE ELECTRICAL WIRE AT TRIM.
154	3' - 4"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
155	3' - 4"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
156	2' - 9"	7' - 10"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL AND LOWER SECTION OF FRAME; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS
157	2' - 9"	7' - 10"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL AND LOWER SECTION OF FRAME; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS
158	2' - 9"	7' - 10"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL AND LOWER SECTION OF FRAME; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS



WINDOW TYPES - FIRST FLOOR
3/8" = 1'-0"

WINDOW GENERAL NOTES

A. WINDOW DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL WINDOW OPENING DIMENSIONS.

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- SEAL WINDOW IN CLOSED POSITION. ENSURE SASHES ALIGN AT MEETING RAIL. PROVIDE WOOD BLOCKS AS REQ'D.
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- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

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No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - FIRST FLOOR

A-705

Window Schedule - First Floor 5

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
FIRST FLOOR										
159	3' - 5"	6' - 6"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS
160	3' - 5"	6' - 6"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS
161	3' - 5"	6' - 6"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS
162	3' - 5"	6' - 6"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS
163	2' - 9"	7' - 10"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL AND LOWER SECTION OF FRAME; PREP, PRIME, AND PAINT WOOD COMPONENTS
164	2' - 9"	7' - 10"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL AND LOWER SECTION OF FRAME; PREP, PRIME, AND PAINT WOOD COMPONENTS
165	2' - 9"	7' - 10"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL AND LOWER SECTION OF FRAME; PREP, PRIME, AND PAINT WOOD COMPONENTS
166	2' - 10"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD		
167	2' - 10"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD		
168	2' - 10"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD		
169	2' - 10"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	

WINDOW GENERAL NOTES

A. WINDOW DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL WINDOW OPENING DIMENSIONS.

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- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

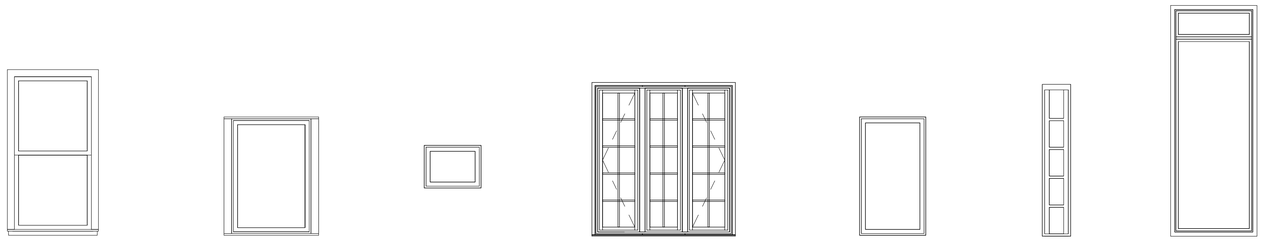
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- REPAIR AREAS OF DETERIORATION / DAMAGE
- REMOVE AND REPLACE SEALANT BETWEEN BRICK MOLD AND BRICK

CLASS 3: SPLICES & PARTS REPLACEMENT:

- ALL REPAIR CLASS 1 & 2, PLUS
- REPLACE MISSING OR DAMAGED COMPONENTS AS NOTED IN SCHEDULE IN KIND.

CLASS 4: WINDOW REPLACEMENT:

- MATCH HISTORIC IN ALL MANNERS
- REHABILITATE EXTERIOR WOOD SILLS
-REHABILITATE TRIM COMPONENTS TO REMAIN
-REFER TO SHEET A-708 FOR WINDOW DETAILS



WINDOW TYPES - FIRST FLOOR
3/8" = 1'-0"

form + works
design group, LLC
P.O. Box 476
Eastlake, Colorado 80614
www.formworksdesigngroup.com
303.598.6545

CERTIFICATE OF APPROPRIATENESS

Geneva Lodge

2305 W. Berry Ave.
Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006

No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - FIRST FLOOR

A-706

Window Schedule - Second Floor

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
SECOND FLOOR										
200	2' - 0"	5' - 0"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
201	3' - 9"	5' - 0"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
202	2' - 0"	5' - 0"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
203	1' - 10"	2' - 0"	D	4	CASEMENT	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS & ORIGINAL INTERIOR HARDWARE TO REMAIN	REGLAZED WINDOW. MAKE OPERABLE.
204	3' - 4"	4' - 0"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING
205	3' - 4"	4' - 0"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING
206	3' - 4"	4' - 0"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING
207	3' - 4"	5' - 0"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
208	3' - 4"	5' - 0"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REHABILITATE TRIM
209	3' - 0"	3' - 10"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING
210	3' - 0"	3' - 10"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING
211	3' - 0"	3' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING; GLAZE WITH TEXTURED GLASS
212	3' - 0"	3' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING; GLAZE WITH TEXTURED GLASS

WINDOW GENERAL NOTES

A. WINDOW DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL WINDOW OPENING DIMENSIONS.

B. CONTRACTOR TO COMPLETE PAINT ANALYSIS TO DETERMINE HISTORIC INTERIOR AND EXTERIOR COLOR/FINISH. SUBMIT PAINT DRAW DOWNS TO OWNER AND ARCHITECT FOR REVIEW. FINAL COLOR SELECTIONS BY OWNER AND ARCHITECT.

C. ASSUME 100% NEW HARDWARE SETS AT ALL REPLACEMENT WINDOWS.
   a. AT EXISTING WINDOWS TO REMAIN, REPLACE HARDWARE COMPONENTS AS NECESSARY FOR WINDOW OPERATION

D. CONTRACTOR TO PROVIDE MOCK-UP OF CASEMENT WINDOW REHABILITATION FOR REVIEW AND APPROVAL BY ARCHITECT AND OWNER.

E. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR NEW WINDOWS

F. CONTRACTOR TO PROVIDE FINISH AND HARDWARE SAMPLES FOR SELECTION BY ARCHITECT AND OWNER.

G. NOTE THAT ALL WINDOWS TO BE REPLACED ARE NOT ORIGINAL, BUT HAVE BEEN PREVIOUSLY REPLACED (CIRCA 1998). ORIGINAL HISTORIC WINDOWS WILL BE REPAIRED.

WINDOW REPAIR CLASS

CLASS 1: ROUTINE MAINTENANCE (SASH REMAINS IN SITU):

- SAND AND SCRAPE PAINT (ALL WOODWORK. INTERIOR AND EXTERIOR).
- REPLACE MISSING OR DAMAGED WEATHER STRIPPING
- MINOR PUTTY REPLACEMENT/ REPAIR.
- SEAL WINDOW IN CLOSED POSITION. ENSURE SASHES ALIGN AT MEETING RAIL. PROVIDE WOOD BLOCKS AS REQ'D.
- REPLACE BROKEN GLAZING - QUANTITY OF PANES INDICATED ON SCHEDULE (NOTE MATCH HISTORIC PATTERNED GLASS WHERE EXTANT)
- PREP, PRIME AND PAINT ALL INTERIOR AND EXTERIOR WOODWORK.
- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

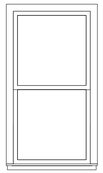
- ALL REPAIR CLASS 1 WORK
- DE-GLAZE SASH: REMOVE PUTTY, PREP SASH, PRIME & REPLACE PUTTY WITH NEW
- REPAIR AREAS OF DETERIORATION / DAMAGE
- REMOVE AND REPLACE SEALANT BETWEEN BRICK MOLD AND BRICK

CLASS 3: SPLICES & PARTS REPLACEMENT:

- ALL REPAIR CLASS 1 & 2, PLUS
- REPLACE MISSING OR DAMAGED COMPONENTS AS NOTED IN SCHEDULE IN KIND.

CLASS 4: WINDOW REPLACEMENT:

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- REFER TO SHEET A-708 FOR WINDOW DETAILS



A



D

WINDOW TYPES - SECOND FLOOR
3/8" = 1'-0"

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CERTIFICATE OF APPROPRIATENESS

Geneva Lodge

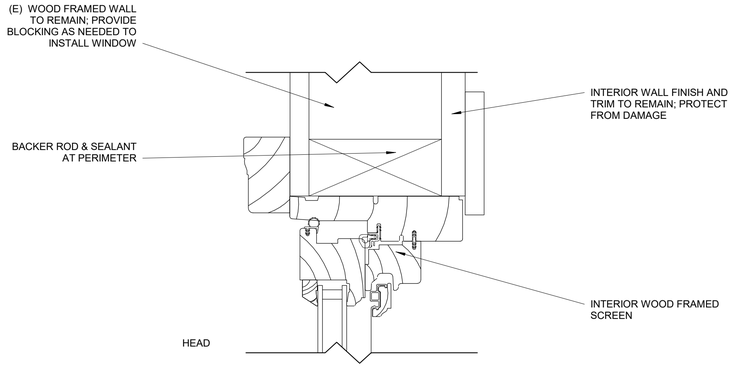
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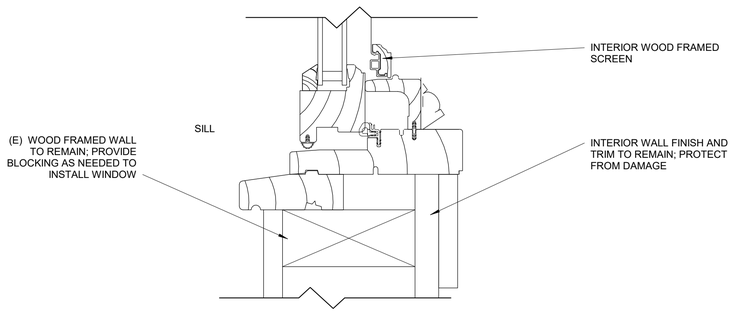
No.	Description	Date

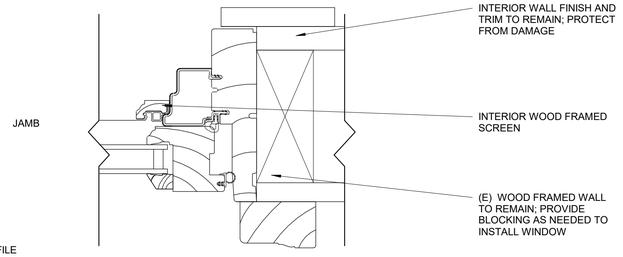
Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - SECOND FLOOR

A-707

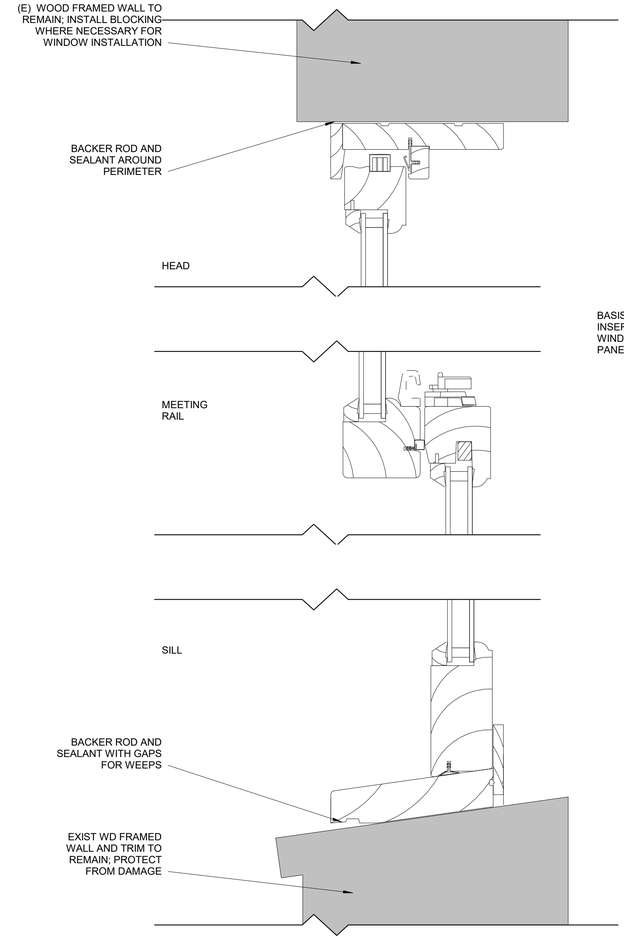




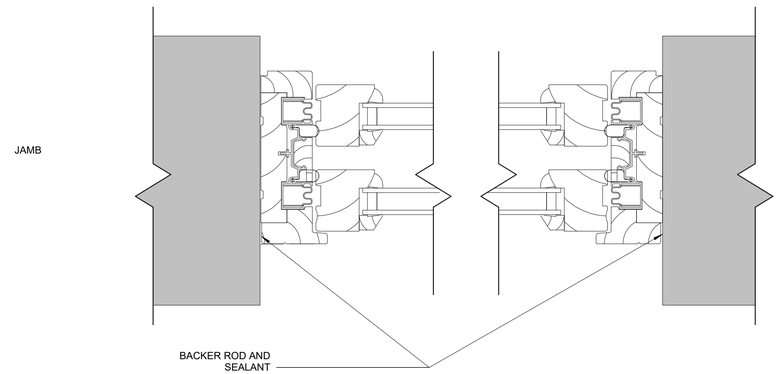


BASIS OF DESIGN: MARVIN ULTIMATE WOOD CASEMENT WITH PUTTY PROFILE AND DUAL PANE GLASS.

2 CASEMENT WINDOW DETAILS
6" = 1'-0"



BASIS OF DESIGN: MARVIN ULTIMATE INSERT DOUBLE-HUNG ALL WOOD WINDOW WITH PUTTY PROFILE AND DUAL PANE GLASS.



BASIS OF DESIGN: MARVIN ULTIMATE INSERT DOUBLE-HUNG ALL WOOD WINDOW WITH PUTTY PROFILE AND DUAL PANE GLASS.

1 DOUBLE HUNG WINDOW DETAILS
6" = 1'-0"

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Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
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Scale	6" = 1'-0"

WINDOW DETAILS

A-708



State Historical Fund

History Colorado

Grant Program Guidebook

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February 2023 Guidebook Update Highlights

New Archaeological Permit Requirement: Effective February 1, 2023, all applications for archaeology projects must include an approved archaeological permit from either the Office of Archaeology and Historic Preservation (for private land and state lands, which includes city and county as well as any political subdivision of the state) or the federal agency managing the federal land. Applications submitted without an approved permit will be considered incomplete.

Updates to the Diversity, Equity, and Inclusion application section: One year after implementing the Diversity Equity, and Inclusion section, we have new criteria to help applicants determine if the project qualifies as a BIPOC Project.

Cover Image: Monument Valley Park, El Paso County

Who We Are

History Colorado's State Historical Fund fosters heritage preservation through tangible and highly visible projects for direct and demonstrable public benefit. A 1990 constitutional amendment legalizing gambling in Black Hawk, Central City, and Cripple Creek created the State Historical Fund. The amendment mandates that a portion of gaming tax revenue goes to the State Historical Fund to fund historic preservation projects throughout Colorado. The Limited Gaming Act of 1991 (CRS 44-30-1201), authorizes History Colorado to administer the State Historical Fund as a statewide grants program.

The State Historical Fund is located on the third floor of the History Colorado Center in Denver, Colorado, with a satellite office in Durango. Staff can work with you and your team throughout the application process and execution of your project. Meet our staff members and contact them on our website.

As of 2022, 32 years after the start of the State Historical Fund, 4,956 grants awarded $328,974,085 in all 64 Colorado counties. Learn more about our funded projects in our Annual Reports.

Diversity, Equity, and Inclusion

The State Historical Fund is committed to diversity, equity, and inclusion work rooted in History Colorado's Anti-racism Grounding Virtues. We launched this process introspectively, reviewing past grants and identifying recipients from the last 30 years. We found that we already support projects that celebrate Black, Indigenous, and People of Color (BIPOC) and Lesbian, Gay, Bi-sexual, Transgender, and Queer (LGBTQ+) communities. The projects we fund also make historic buildings compliant with the Americans with Disabilities Act (ADA) throughout the state. However, we can increase our work in this area, and we are committed to fostering diversity, equity, and inclusion in our grants, in ourselves, and in the processes and committees making decisions for funding.

Efforts to continue this work include prioritizing grants benefiting BIPOC and other underrepresented communities, increasing accessibility in the application process, improving staff training, and creating new partnerships with consultants and community organizations. The Summer 2021 grant round launched changes to our competitive application including a narrative section on a project's diversity, equitability, and inclusion work with the BIPOC community(ies), as well as, a sliding scale cash match for BIPOC projects. We are making efforts immediately, but this is a permanent aspect of our work and we will take a long-term approach to promoting diversity, equity, and inclusion.



Sleeping Ute Mountain, Montezuma County

Application Requirements

Eligible Applicants

Public Entities within Colorado

- State agencies
- County, city, or township governments
- Special districts
- Sovereign nations

Nonprofit Organizations

- Includes any organization certified by the Internal Revenue Service as tax exempt under Internal Revenue Code Section 501 (c), (d), (e), (f), and (k), or Section 521 (a).
- Nonprofits must also be a registered business entity or charity in good standing with the Colorado Secretary of State.

Ineligible Applicants

Federal Agencies

- Federal agencies must partner with an eligible public entity or nonprofit organization willing to apply for and administer a grant on their behalf.

Private Individuals and For Profit Entities

- Private individuals and for-profit entities must partner with an eligible public entity or nonprofit organization willing to apply for and administer a grant on their behalf.
- State statute mandates that private owners must have the support of their local government. Your application must include either the signature of a local elected official or a letter of support from a local elected official.

Municipalities of Black Hawk, Central City, and Cripple Creek

- The three gaming towns receive a direct allocation of the annual disbursement of gaming tax revenues for their local preservation efforts.
- State Historical Fund money cannot be used for work on any properties owned by these municipalities, regardless of who applies for the grant.

National, State, or Local Landmark Designation

Property designation is required for all acquisitions and projects with any physical work. A property is designated when it is listed in the National Register of Historic Places, State Register of Historic Properties, or through an official municipal or county land marking process adopted by ordinance or resolution. Proposed work must occur within the boundaries outlined in the local, State, or National Register designation.

Certain grant types or projects require that you are actively working to designate a property or that it is eligible to be listed. See our specific grant programs for more information.
Contact our staff for additional guidance if your property is in the designation process.

Connection to Archaeology or Historic Preservation in Colorado

Projects must be for significant buildings, structures, objects, districts, or archaeology sites in Colorado, or be about the preservation of historic resources in Colorado.

By state code and statute, the State Historical Fund can only fund projects that meet the Standards for Archaeology and Historic Preservation, which includes the Secretary of the Interior's Standards for the Treatment of Historic Properties.

Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties

All State Historical Fund projects with physical work must adhere to the Secretary of the Interior's Standards for the Treatment of Historic Properties (SOI or Standards). The Standards are a series of concepts about maintaining, repairing, and replacing historic materials, as well as designing new additions or making alterations. The Guidelines offer general design and technical recommendations for applying the Standards to a specific property. Together, the Standards and Guidelines provide a framework for decision-making about work or changes to a historic property.

Four Approaches to the Treatment of Historic Properties

There are four distinct, but interrelated, approaches to the treatment of historic properties: preservation, rehabilitation, restoration, and reconstruction.

- **Preservation** focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved.
- **Rehabilitation** acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.
- **Restoration** depicts a property at a particular time in its history while removing evidence of other periods.
- **Reconstruction** recreates vanished or non-surviving portions of a property for interpretive purposes.

Preservation Briefs/Tech Notes

Preservation Briefs and Tech Notes provide detailed information about various aspects and methods of preserving, rehabilitating, and restoring historic buildings. These National Park Service publications align with the Standards and help historic building stewards recognize and resolve common problems before work. Briefs and Tech Notes recommend methods for rehabilitating historic buildings consistent with their historic character.



Wencel Barn, Boulder County

Cash Match

All projects require a cash match contribution toward the project total based on property ownership. Cash match is actual money in the bank or an accounting transaction that contributes to the completion of the project scope of work. The value of in-kind donations of goods, services, or labor are not eligible forms of cash match. If cash match originates as part of a salary, it must be “extra work” attributed to the project, not duties that are part of the employee's permanent job description.

Cash match must be used for work eligible for State Historical Fund funding and included in your project scope of work. Cash match must be in the bank before our contracts staff can create your grant award contract.

See Our Grant Programs tables for all cash match requirements including those for BIPOC Projects. Nonprofit organizations with a long-term lease of 39.5 years or more on a privately owned property qualify for the nonprofit ownership cash match.

If you cannot provide the required minimum cash match, you must request a cash match waiver in the application. Explain why the minimum cannot be met and the efforts your organization made to find funds or other community resources.

Ineligible Projects and Expenses

Per state statute and fiscal policy, some projects, activities, and costs do not qualify for State Historical Fund assistance and cannot be included in the scope of work, budget, and/or cash match for funded projects. Those projects and costs include:

Ineligible Projects

- Acquisition of or physical work on non-designated properties
- Acquisition of or excavation on non-designated archaeological sites
- Construction of new buildings and additions not original to the resource
- Construction of new parking lots, sidewalks, landscaping, or facilities unless to replace one that had been destroyed to enable work within a State Historical Fund grant
- Educational projects without a direct correlation to historic preservation, historic properties, sites, landmarks, landscapes, archaeology, or the state of Colorado
- Exhibit planning or creation of non-archaeological collections
- Moving historic buildings
- Oral histories or social history-heavy projects that do not bear a strong relationship to the significance of historic places in Colorado
- Printing or reprinting materials or signage produced outside of our grant program or without the inclusion of State Historical Fund staff review and approval
- Storage, conservation, curation, exhibition, or interpretation of non-archaeological collections
- Wayfinding signage
- Work required by Section 106 of the National Historic Preservation Act
- Work that does not take into account archaeological considerations
- Work on building elements or objects that contain religious symbols

Ineligible Expenses

- Archaeological monitoring requirements omitted from the application scope and budget
- Costs encumbered, contracted for, or incurred before receiving a fully executed grant award/agreement with the State Historical Fund
- Costs of utilities outside the designated area
- Entertainment costs and alcohol
- Fundraising costs
- Gifts, awards, and contributions
- Grant administration above 15% of total direct project costs
- Grant writing costs
- Late fees or interest charged for delinquent payment of invoices
- Lobbying expenses
- Moving or relocation costs for occupants or collections (including when necessary to complete grant-funded work)
- Purchase of equipment that costs more than $5,000 or more than the rental expense of the equipment for the project
- Travel expenses above the State of Colorado travel rates specified in your Grant Award Exhibit B
- The value of in-kind goods, services, or staff time or pay

State of Colorado Grant Award/Agreement

All awarded projects require the execution of a 24-month, non-negotiable grant award/agreement between the state of Colorado and the grant recipient organization. Depending on the awarded grant amount and the applicant entity, the document may not require a signature from your organization. It is your responsibility to review the Grant Award/Agreement Templates and the Award Conditions prior to application to be certain that your organization is willing to go under contract with the required terms should your grant be awarded.

Review the Managing Your Grant section to understand our exhibits, payment structure, and deliverable requirements for all projects, and review the Grant Recipient Responsibilities to understand the contractual and legal requirements for all state grants.

Property Protections for Acquisitions and Projects with Physical Work

Projects with physical work may require property protections. Property protections guard against alterations that would affect the property's historic character.

The duration and type of protection varies by the type of owner and the cumulative amount of State Historical Fund grant funds awarded for physical work at the property. The two types of protections are covenant and perpetual easement.

- **Covenant**: A recorded document that is tied to the land and binds current and future owners for a specific period of time. Covenants are processed and recorded in the county where the property is located. Alterations to the property during the covenant period require SHF staff approval.
- **Perpetual Easement**: A recorded document that is tied to the land and binds current and future owners in perpetuity. Exact terms of the easement will be negotiated between the property owner, the State Historical Fund, and a qualified easement holding organization.

Following application submission, our Property Protection Coordinator will notify you which protection, if any, will be required if the grant is awarded. The State Historical Fund pays all fees associated with the placement of a covenant or perpetual easement.

Review the table below for details on types of property protections and their duration based on property ownership and cumulative SHF grant funds awarded for physical work at that property.

Type of Protection	Public Owners	Nonprofit Owners	Private Owners
None	State-owned property, federally-owned property, archaeological sites, and railroad rolling stock; grants of $25,000 or less (Excludes all acquisitions)		
10-Year Covenant	$25,001 - $100,000		
20-Year Covenant	$100,001 - $250,000 Restart 20-year period at $250,001 and each subsequent $250,000 increment	$100,001 - $250,000 Restart 20-year period once at $250,001	$100,001 - $250,000
Perpetual Easement	All acquisition grants	$500,001 and above; all acquisition grants	$250,001 and above; all acquisition grants



Kneisel & Anderson and Spruance Buildings, Clear Creek County

Our Grant Programs

We offer two grant programs. Competitive Grants are available through two grant rounds a year with a maxiumum grant request of $250,000. Non-competitive Grants are available year-round for up to $15,000.

<table>
<tr><th></th><th>Grant Type</th><th>Maximum Grant Request</th><th>Cash Match Required (of project total)</th><th>BIPOC Project Cash Match Required (of project total)</th><th>Application Deadlines</th><th>Award Announcement</th></tr>
<tr><td rowspan="6">Non-Competitive</td><td>Archaeological Assessment</td><td>$15,000</td><td rowspan="3">10% for nonprofit or public owners

25% for private owners</td><td rowspan="3">0% for nonprofit or public owners

10% for private owners</td><td rowspan="6">Rolling, year-round</td><td rowspan="6">30-45 days from submission</td></tr>
<tr><td>Planning</td><td>$15,000</td></tr>
<tr><td>Historic Structure Assessment</td><td>$15,000</td></tr>
<tr><td>Micro</td><td>$5,000</td><td>50% for all applicants</td><td>25% for all applicants</td></tr>
<tr><td>Survey Plan</td><td>$15,000</td><td>10% for all applicants</td><td>0% for all applicants</td></tr>
<tr><td>Emergency</td><td>$15,000</td><td>No match required</td><td>No match required</td></tr>
<tr><td rowspan="2">Competitive</td><td>Mini</td><td>$50,000</td><td rowspan="2">25% for nonprofit or public owners

50% for private owners</td><td rowspan="2">0% for nonprofit or public owners

10% for private owners</td><td rowspan="2">Noon on
April 3, 2023 and
October 2, 2023</td><td>March 1 and November 1</td></tr>
<tr><td>General</td><td>$250,000</td><td>June 1 and December 1</td></tr>
</table>

Non-Competitive Grants

The primary purpose of the non-competitive grants is to aid in the planning and development of future, larger historic preservation and archaeology projects.

The State Historical Fund offers six types of non-competitive grants: Archaeological Assessment, Planning, Emergency, Historic Structure Assessment, Micro, and Survey Plan. We accept these applications year-round and fund them on a rolling basis by fiscal year (July 1–June 30). If awarded, the contracting process can take up to 6 weeks before the project can begin. If funds are no longer available within the current fiscal year, awarded applications will be approved for funding at the beginning of the next fiscal year (July 1).

The following table shows specific requirements for each grant.

<table>
<tr><th>Grant Type</th><th>Maximum Grant Request</th><th>Cash Match Required (% of Project Total)</th><th>BIPOC Project Cash Match Required (% of Project Total)</th><th>Historic Designation Required?</th></tr>
<tr><td>Archaeological Assessment</td><td rowspan="3">$15,000</td><td rowspan="3">10% for nonprofit or public owners

25% for private owners</td><td rowspan="3">0% for nonprofit or public owners

10% for private owners</td><td>No</td></tr>
<tr><td>Planning</td><td rowspan="2">If the property is not designated, it must be moving toward designation, which means that Form 1419 (Preliminary Property Evaluation Form) should be submitted to and approved by the State Historic Preservation Office.</td></tr>
<tr><td>Historic Structure Assessment</td></tr>
<tr><td>Micro</td><td>$5,000</td><td>50% for all applicants</td><td>25% for all applicants</td><td>Designation is required for projects with physical work. Other designation requirements may apply depending on the nature of the project.</td></tr>
<tr><td>Survey Plan</td><td>$15,000</td><td>10% for all applicants</td><td>0% for all applicants</td><td>No</td></tr>
<tr><td>Emergency</td><td>$15,000</td><td>No match required</td><td>No match required</td><td>National, state, or local designation at time of application.</td></tr>
</table>

Non-competitive Eligible Costs

Direct Costs: Expenses directly attributable to the grant project not the organization's general operation. This includes:

- Contractor/subcontractor labor, general conditions, overhead and profit, and bonding
- Consultant fees
- Permits
- Purchases for materials and supplies
- Rental costs
- Purchases of $5,000 or less for equipment
- OAHP File search fees
- Travel Expenses (within the state travel rates)

Ineligible Costs

- Grant Administration
- Contingency

Archaeological Assessment Grants

Archaeological Assessments collect and evaluate archaeological data to create a plan for larger-scale research, site preservation, and/or interpretation of a site. This grant funds testing for up to 10 square meters. See our Competitive Grant Program if your project includes excavating more than 10 square meters.

All applications for archaeology projects must include an approved archaeological permit from either the Office of Archaeology and Historic Preservation (for private land and state lands, which includes city and county as well as any political subdivision of the state) or the federal agency managing the federal land.

Eligible projects may include:

- Assessing a known archaeological site to direct future work, such as excavation; preservation; listing on local, state or national registers; and/or interpretation.
- Evaluating areas for the presence of archaeological resources.
- Testing archaeological research methodologies in preparation for a competitive grant.
- Assessing archaeological collections to plan future curation work.
- Developing an archaeological monitoring plan through survey, limited testing, and geophysical prospection techniques prior to a project with ground disturbing physical work.



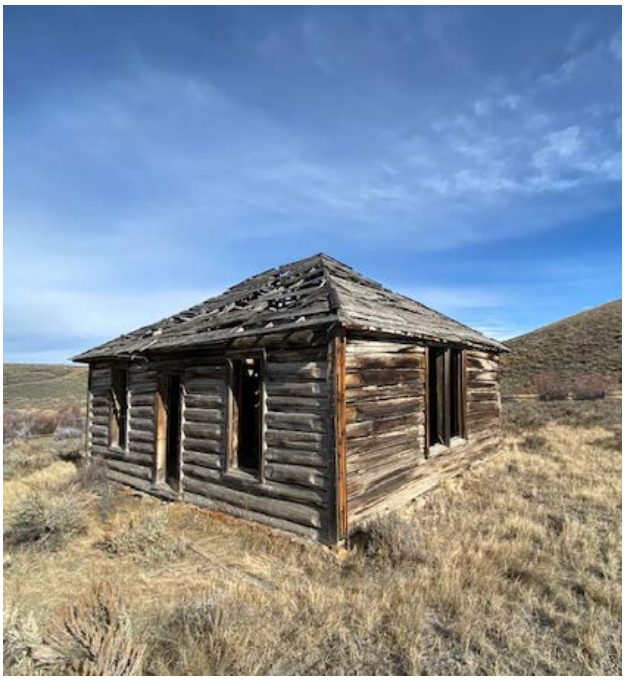
James Peak Wilderness Area, Clear Creek County

Planning Grants

Planning grants create documents that meet the Secretary of Interior's Standards and prepare for future physical work.

Final products may include:

- Designation nominations
- Historic contexts
- Construction documents
- Schematic design plans
- Design development plans
- Investigation (hazmat, geotechnical, structural, materials analysis, etc.)
- Cost estimating
- Maintenance plans
- Master plans



Town of Selak, Grand County

Historic Structure Assessment Grants

Historic Structure Assessment grants allow a Colorado licensed architect to fully document the physical condition of a historic resource. The completed assessment reflects a comprehensive understanding of the condition and needs of the resource. This information includes details specific to the historic character and significance; materials, features, elements, and spaces; and intended use. Ideally, a resource will be assessed in different seasonal conditions (wet, dry, hot, cold) to ensure a complete evaluation. Some conditions may not be evident in one visit or under one set of weather conditions.

Historic Structure Assessments must follow a set scope of work.

Emergency Grants

Emergency grants provide funding assistance for the immediate stabilization work needed when a designated resource faces imminent danger of being lost, demolished, or seriously damaged due to sudden or unexpected threats such as fire, flood, hail, or other acts of nature. Please contact any one of our Preservation Engagement Specialists as soon as possible (no more than three months) after the unexpected event to begin the application process.

Micro Grants

Micro grants support grassroot, small-scale preservation efforts, and can be for any project that could qualify for a competitive grant, but, due to the smaller dollar figure, offer more flexible application timing.

Final products may include:

- Preservation or Archaeology Internships
- Day-long workshops or conferences
- Small physical projects
- Lessons or other educational materials
- Interpretive Signage

Survey Plan Grants

Survey Plan grants create a comprehensive document that assesses a community's historic resource survey needs and provides a phased plan for future survey efforts.

Final products may include:

- Evaluation of previous survey work
- Identification of appropriate historic contexts
- Identification of current survey needs
- Completion of a Limited Reconnaissance Survey
- Prioritization of recommendations for future survey project phases and cost estimates
- Outreach to inform the public of the results

Experienced survey plan consultants understand survey and planning projects. The selected consultant should be knowledgeable in applying the Secretary of Interior's Standards for Identification and Evaluation.



Chicano Mural Project,
City and County of Denver



Julie Harris Theatre,
Perry-Mansfield Performing Arts School & Camp, Routt County

Competitive Grants

We offer two competitive grants, General and Mini, twice a year. The grants vary by request amount, review process, and award announcement date.

Grant Type	Maximum Grant Request	Letter of Intent Required	Cash Match Required (% of Project Total)	BIPOC Project Cash Match Required (% of Project Total)
Mini	Up to $50,000	Letter of Intent must be submitted at least one (1) month prior to application deadline.	**25%** for nonprofit or public owners **50%** for private owners	**0%** for nonprofit or public owners **10%** for private owners
General	$50,001 – $250,000			

Competitive Eligible Costs

Direct Costs: Expenses directly attributable to only the grant project and not the organization's operation. Direct costs may include:

- Contractor/subcontractor labor, general conditions, overhead and profit, and bonding
- Architect and engineering fees
- Consultant fees
- Permits
- Purchases for materials and supplies
- Rental costs
- Purchases of $5,000 or less for equipment unless renting during the project period costs more
- OAHP Site File and/or Photo Search fees
- Travel Costs (within state travel rates)
- Archaeological monitoring for projects with any ground disturbance

Grant Administration up to 15% of the total direct project costs to cover the management of the grant itself. This may include:

- The cost of time associated with preparing and filing deliverables, progress reports, and financial reports; maintaining communications with the assigned staff; and ensuring the work is carried out in accordance with the project's scope of work and budget. These costs may include salary and benefits paid to an employee if grant administration goes beyond their normal job duties.
- **Indirect Costs**: Expenses indirectly associated with grant administration, such as office overhead, supplies, accounting support, and use of other equipment or services not otherwise included in the project budget.

Some projects, activities, and costs do not qualify for assistance and cannot be included in the project scope of work, budget, and/or cash match. Review our list of Ineligible Projects and Costs to ensure your project does not

include work we can not pay for. Please contact our engagement staff with questions regarding scope of work or project cost eligibility.

Eligible Projects

All projects must meet the Secretary of the Interior's Standards for Historic Properties and abide by the Colorado State Historic Preservation Office's Survey Manual, if applicable. Your project may require historic designation or eligibility. Qualified projects focus on the built environment, archaeology, and education or training related to historic preservation.

For full project requirements, visit the Competitive Grant webpage.

Planning Projects

Planning projects develop documents to outline future physical work on a site or resource that address potential changes, alternative approaches, preservation of historic materials and finishes, and/or the prevention of loss, damage, and irreversible changes.

Final products may include:

- Schematic designs
- Construction and/or Design documents
- Investigation and/or testing reports (structural, hazardous materials, paint analysis, geotechnical, etc.)
- Master plans
- Historic Structure Assessments (for a large or complex building or a multiple building site)
- Maintenance plans

The property must be listed, or in the process of being listed, in the National or State Register, or as a local landmark prior to application.

Physical Work Projects

Physical work projects are for construction related to the preservation, rehabilitation, restoration, or reconstruction of a historic resource. The submitted application must include all proposed construction tasks in the scope of work and budget. We advise you to complete construction documents prior to an application for physical work, however architectural and engineering fees may still be appropriate to include for this type of request.



Star Filling Station, Weld County

Some examples include:

- Masonry repointing
- Window/door restoration
- Foundation waterproofing
- Roof replacement in-kind
- Mechanical, structural, electrical, and geotechnical engineering components
- Site work and regrading within the designation boundary
- Alterations for Americans with Disabilities Act

The property must be listed in the National or State Register, or as a local landmark prior to application. And a project that has any amount of ground disturbance is required to include archaeological monitoring.

Acquisition Projects

Acquisition projects are for the purchase of historic and archaeological structures, buildings, sites, objects, and districts resulting in the transfer of a deed. The property must be listed in the National or State Register, or as a local landmark prior to application, and the placement of a Perpetual Easement will be required.

Archaeology Projects

Archaeology projects include the identification, recordation, preservation, and/or interpretation of archaeological resources. This includes work with archaeological sites and artifact collections. For all projects that physically impact a site with excavation or site protection, the property must be either locally landmarked or listed in the State or National Register. Collected artifacts must be curated and publically accessible after the project.

All applications for archaeology projects must include an approved archaeological permit from either the Office of Archaeology and Historic Preservation (for private land and state lands, which includes city and county as well as any political subdivision of the state) or the federal agency managing the federal land.

Project examples may include:

- Artifact analysis
- Excavation
- Field school
- Place-based ethnographic studies
- Surveys



Amache Archaeology Field School, Prowers County

Architectural Survey and Nomination Projects

Architectural survey and nomination projects cover the identification, documentation, evaluation, designation, and/or planning for the protection of historic buildings, structures, sites, and districts.

Final products may include:

- Surveys
- Survey plans
- Preservation plans
- Nominations for local landmarks, the State Register of Historic Properties, and/or the National Register of Historic Places
- Multiple Property Documentation Forms
- Historic contexts
- Design guidelines

Education Projects

Education projects provide education or training in historic preservation practices, or education about the preservation or significance of a historic resource in Colorado. Education projects must demonstrate a direct correlation to historic preservation, the built environment, and/or archaeology in Colorado. For projects about a specific resource(s), the resource must be listed in the National or State Register or as a local landmark, or have documented eligibility for designation.

Final products for education projects may include:

- Preservation technical guidance, trainings, or workshops
- Interpretive signage and planning
- Curricula or Lessons
- Audio/walking tours

Loan Program Projects

This type of project includes the creation and support of loan or sub-grant programs for historic preservation. Projects supported by these programs must comply with the Secretary of the Interior's Standards. Any interest or principal payments generated by such programs shall continue to be used for those purposes, including costs for the administration of the program, or shall be returned to the State Historical Fund.

Other Preservation Projects

Contact our engagement staff to discuss other project ideas that may meet our program requirements.



Fox Theater, Huerfano County

Application Process

Letter of Intent

The Letter of Intent is a Competitive Grant requirement intended to be an easy access point to the application process and makes sure all proposed projects meet our program guidelines. It also gives new applicants a quick and simple way to introduce their project to our staff so we can help guide applicants through the process and provide assistance. For experienced applicants, it is an easy way to check in and make sure their project is on track for success.

Non-competitive grants do not require a Letter of Intent. Find detailed application instructions for each non-competitive project type by selecting its orange name here.

In order to receive access to the competitive application, a Letter of Intent must be submitted and approved. We accept Letters of Intent on a rolling basis, but must receive one no later than seven (7) days prior to your target grant round deadline.

To submit a Letter of Intent, complete this Google Form or send your answers to the following questions to Andres Borunda at HC_SHF@state.co.us.

- Tell us your name, phone number, and email address.
- Identify the grant applicant organization's tax status (nonprofit or government/public entity) and the property owner's name and tax status, if different.
- Provide the name of the organization applying.
- In what city and county is your resource/project located? If applicable, what is the property address?
- Tell us the historic name of the property.
- Describe the resource(s) that is the focus of your project. (100 words or less)
- What is the designation level of the resource? (local, State, National, not applicable, or unsure/unknown)
- In brief words or phrases, list your anticipated tasks (Scope of Work) for the project. Such as:
    - Restore Masonry
    - Rehabilitate Windows and Doors
    - Design, Produce, and Install Interpretive Sign
- Do you plan to apply as a Black, Indigenous, or People of Color (BIPOC) project?
- Will your grant request be more or less than $50,000?

Our staff will review the Letter of Intent within one business week and let you know if your project receives a green, yellow, or red light.

- Green projects can proceed. You will receive a link to access the competitive grant application.
- Yellow projects meet with our staff to clarify project components. Staff will provide a green or red light following additional information.
- Red projects do not align with our grant program’s requirements.

Engagement Staff Assistance

We encourage you to contact our engagement staff to discuss your proposed project. We can help you develop a scope of work eligible for our program, conduct site visits, provide samples of successful applications with similar scopes, and offer draft reviews. Please see above for Letter of Intent requirements.

Request site visits at least three months before your target application deadline.

Acknowledgment of Program Award Conditions

By applying for a grant with us, you must agree to our program terms. These terms ensure the applicant organization is in agreement with the state contractual and state fiscal requirements and grant award provisions. Terms also stipulate the applicant organization follows the Secretary of Interior's Standards for the Treatment of Historic Properties (the Standards) and/or the Colorado State Historic Preservation Office's Survey Manual.

Please carefully read and review the information and requirements with your applicant organization (including your board) prior to applying. It may be helpful for your organization's attorney to review the terms and Award/Agreement template.

Project Team Roles

Multiple roles play a part in the preparation, submission, and administration of an application/grant. You must have an Organization Contact with legal signing authority and a Grant Recipient Contact to oversee the project day-to-day. You may need additional roles such as a Grant Administrator, Project Manager, Consultant, Contractor, or Archaeologist on your project team. Take the time to understand these roles and how they may or may not apply to your project.

Key roles for managing the grant:

The **Applicant Organization Representative** is the legal contact between the State Historical Fund and the Applicant organization, and should have the legal authority to sign contracts. The applicant organization, not the property owner or any subcontractor, is responsible for the fulfillment of the grant award and cannot assign, or pass through, their responsibilities to a third party. The applicant organization representative can be, but does not need to be, the grant recipient contact.

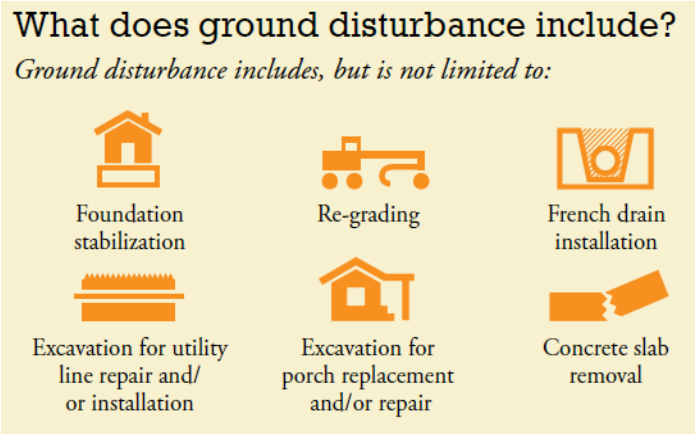
The **Grant Recipient Contact** (GRC) is the primary point of contact between the State Historical Fund and the grant recipient organization for oversight of the project. The GRC should be an employee of the applicant organization. This individual coordinates all project team members to ensure the project complies with the contractual requirements. The GRC may also act as the Grant Administrator.

The **Grant Administrator** is responsible for accurate and timely completion of all payment requests, financial reports and documentation, and deliverables. The grant administrator must follow the guidebook, the grant award contract, and proper general accounting procedures. This individual may not be a subcontractor or otherwise financially compensated for other work under the grant award.

Archaeological Monitoring

Projects that involve any amount of ground disturbance require archaeological monitoring.

Waivers are available for minor ground disturbances (such as small-scale geotechnical borings). Archaeological monitoring can also be waived with documentation of previous ground disturbance in the area to-be-disturbed. Evidence includes photographs, previous archaeological reports, and construction documents. Contact our Archaeological Specialist to discuss a waiver for your project. If granted, we will provide a formal letter for inclusion in your application.



Gather Resource and Project Information

The list below describes the materials and resources needed to develop your grant application.

Historic Resource Data

Gather a history of the significance of your site and previous preservation work or physical changes at your historic resource. Potential resources for this information include:

- Local, State, or National Register nomination forms
- Site Forms
- Previous Historic Structure Assessments
- Construction documents
- Previous State Historical Fund grant applications

Contractor Estimates and/or Bids

Estimates from contractors and consultants form the backbone of the application scope of work and budget. Reviewers want to know how the costs for the project were determined and if they are reasonable, how you selected your contractors and/or consultants, and that they meet the Secretary of the Interior's Standards (if applicable, or are otherwise qualified). We highly suggest obtaining at least two estimates and building your budget off the most expensive one. Do *not* average the cost of multiple bids.

Locating a Contractor

As a state agency, we cannot recommend a contractor for your project. However, you can also consult History Colorado's non-comprehensive Directory of Cultural Resource Professionals and Historic Preservation Service Specialists for Colorado, which includes organizations and individuals that have requested to be added.

Supporting Materials

Support your application with the requested materials in the attachments section.

Application Software Requirements

All applications except for Emergency Grants must be completed and submitted through our online applicant portal. To ensure full functionality of the grant application system, you must use Mozilla Firefox, Google Chrome (Windows), or Safari (Mac) as your internet browser.

The free version of Adobe Acrobat Reader may be helpful throughout the application process.

During the creation of the attachments for your application, you may need to convert or combine documents into one PDF.

The application is divided into tabbed sections containing a mix of short-answer and long-answer questions. You may upload attachments to support and strengthen the request. There is a 25MB size limit per application. Manage, edit, or share an open application through the Applicant Portal.

Non-Competitive Online Application

Find detailed application instructions for each non-competitive project type by selecting its orange name here.

Contact staff throughout the application process with any questions.

Competitive Online Application

Competitive applications are scored out of 100 points. The following provides the narrative questions requiring response, and specific directions, including word counts and point allocations, for each scored section. Reviewers use this guidance to score applications.

We recommend you draft and save your narrative content in a Word document to prevent loss of progress in the application portal. Once you complete your narrative sections, copy and paste the content into the online application. Formatting in Word, such as bullets, does not transfer into the online application.

Please note that no narrative section should be left blank (or N/A) for any project type. The only exception to this is if your project does not primarily benefit or involve BIPOC communities. You will skip the narrative part of that section. For more information, see the Diversity, Equity, and Inclusion section below.

We do not process applications or attachments received after the deadline.

Section 1: Organization & Contact Information

The first section pertains to the Applicant Organization and the Contact for the project.

You will need the nine-digit tax identification number (TIN) assigned to the applicant organization by the IRS, not the Colorado state tax-exempt number. For Colorado organizations, TINs typically start with the numbers “98” or “84.”

If you do not know your Federal Tax ID number, contact the IRS to obtain the number.

This section also includes questions intended to help us gather data about our applicants and measure our progress in our diversity, equity, and inclusion work.

Section 2: Property & Project Information

This section gathers more details about the project and property (if applicable). You will provide information about the project's Geographic Information, Property Information, and Property Owner, and provide a Project Title and Project Summary for the grant request.

This section also requests information about revised applications – this only applies to applicants who are reapplying for all or any part of a previously declined grant. If this is a revised application, please explain how this application addresses the previous reviewers' concerns and include the declined SHF project number.

To find out if your request qualifies as a repeat application please contact our engagement staff.

Section 3: Narrative Questions

Diversity, Equity, and Inclusion – 10 points

The State Historical Fund is committed to diversity, equity, and inclusion rooted in History Colorado's Anti-racism Grounding Virtues. One of our goals is to seek racial equity within our funding by providing grants that clearly benefit Black, Indigenous, and People of Color (BIPOC) communities.

A BIPOC project is one that significantly benefits and involves one or more BIPOC communities.

To be eligible for the BIPOC cash match and the points in this section, your project must qualify as a BIPOC Project according to the two criteria below and attach two letters of support from BIPOC organizations or individuals. Please upload the letters as the "BIPOC Letters of Support" attachment at the end of the application.

If you can respond "Yes" to both criteria below, we invite you to answer the three questions that follow, and you are eligible to request the lower BIPOC Cash Match. Please note, should reviewers determine your project does *not* satisfy the two criteria, these points will not be counted and the lower BIPOC cash match, if requested, may be denied.

If the answer is "No" to either Criteria, this section of questions is not eligible for points. Skip the questions that follow and continue on to the Project Team tab.

Please tell us about additional project public benefits (ADA, LGBTQ+, religious minorities, etc) in either of the Resource Significance or Public Benefit application sections.

A BIPOC project is one that significantly benefits and involves one or more BIPOC communities.

For examples of how a project can benefit and involve BIPOC communities, click here. If you're unsure if your project is a BIPOC project, see the two criteria below or call us at 303-866-2825.

Criteria 1 (must answer Yes to at least one statement)

- The applicant organization identifies as a BIPOC organization or primarily serves the BIPOC community.
  Or
- The property is owned by a BIPOC organization or BIPOC individual/private owner.
  Or
- The BIPOC community is involved in project planning and/or will be involved during the project.

Criteria 2 (must answer Yes to this statement)

- The completed project will directly benefit the BIPOC community and two letters of support from that community are included with the application.

Diversity, Equity, and Inclusion Questions:

1. How has and/or how will the BIPOC community be involved in this project? Include BIPOC partnerships, consultation, reference letters of support, etc.

2. Which communities will benefit from the project and/or will be involved? Select all that apply:

    - ❏ African, African-American, Black
    - ❏ American Indian, Native American
    - ❏ Asian, Asian-American, Filipino
    - ❏ Latino/a/x, Hispanic, Chicano
    - ❏ Middle Eastern, Arab, Arab-American
    - ❏ Native Hawaiian, Pacific Islander
    - ❏ Multi-racial or more than one identity
    - ❏ Prefer to self-describe _____

3. How will BIPOC communities directly benefit from the completed project?

Project Team – 10 points

This section demonstrates the project team's ability to successfully complete and manage the grant project in accordance to our program guidelines (1,000 word limit).

1. Briefly describe similar projects or grants the applicant has completed or managed.

2. List your project team members and include:
    - Each person's role and responsibilities for this project.
    - Their qualifications for carrying out this project.
    - Any other relevant experience with historic preservation, and/or grant finance and management, etc.

Resource Description and Significance – 10 points

This section explains the history, appearance, and importance of the resource(s) (500 word limit).

Historic Designation Information: If the resource is designated, you can find the following information in the historic designation nomination. To get a nomination for resources designated at the local level, contact the local authority. For resources listed in the State or National Registers, see Listed Properties.

1. Briefly describe the prehistory or history of the resource, survey area or archaeological site. If applicable, describe how the resource represents a historically excluded history or community. (For example, LGBTQ+, women's history, religious minorities, etc.)

2. In your own words, briefly explain why the resource, survey area, or archaeological site is important. (For example, the cultural importance to a community, the architectural features, or archaeological value.)

3. Briefly describe the appearance of the resource and how it has changed over time (refer to construction history on survey/site forms or nominations, if available).

Scope of Work and Budget – 15 points

In this section you will provide a list of tasks and reasonable costs to complete the project. The Project Budget should include all direct, grant administration, and contingency costs related to completing the scope of work and managing the grant. Your application should include clear calculations for each budget task and/or reference a contractor-provided bid or estimate.

In the Scope of Work and Budget template, provide the following information:

1. Identify a task title for each scope item and describe the relevant work required for the task. If necessary, include archaeological monitoring for any excavation or ground disturbing activities related to a built environment project.
2. Make sure the tasks and costs are eligible for our funding. Review the list of Ineligible Projects and Costs.
3. For archaeology projects, include curation fees and/or consultation with appropriate descendent communities, if necessary. This may include tribal consultation and/or consultation with other groups as appropriate. For example, projects at a Japanese internment camp should include consultation with former internees and their descendants. Note: this is not needed for archaeological monitoring.
4. Make sure attached bids match the scope of work and budget.
5. For physical work projects, costs for general conditions, overhead and profit, permits, and bonding must be clearly broken out. Bonding is required for all construction contracts of more than $150,000.
6. Include an amount for contingency that is reasonable for the type of project; typically 10–20% of the project subtotal.
7. If you include Grant Administration, provide the calculation here or in a bid for how the amount was estimated. Up to 15% of the total direct costs is allowed, but the average range is 3–10%. Justify costs higher than 10% in the comments section of this scope of work.
8. The cash match should be at least the minimum required (25% of the project total for nonprofit or public owners, and 50% of the project total for private owners; BIPOC projects: 0% for nonprofit/public owners or 10% for private owners.)
9. If you request a cash match waiver (any cash match amount less than the minimum required), explain why the minimum cannot be met and the efforts your organization made to find funds or other community resources.
10. Double-check that your Grant Request Amount plus Cash Match add up to the Project Total AND that the Grant Request Percent plus the Cash Match Percent add up to 100%.

Project Description – 20 points

This section defines your understanding of preservation and archaeology approaches, methodologies, and techniques as they relate to your project (1500 word limit).

Verify that the project description correlates directly with the scope of work. If you listed an activity or task in the scope, describe it in this section.

Your description should make clear that your project meets the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation and/or the Colorado Cultural Resource Survey Manual.

1. List the steps you completed that led to this grant project.

2. Clearly explain this proposed project:
   - Describe all the tasks that will be completed.
   - Explain how the components of the project will be executed and by whom.
   - Discuss why the specific treatments, strategies, or methods were chosen.

3. Briefly list future phases or programming directly related to this project.

4. Describe how you will financially commit to this project or resource going forward.

5. Depending on your type of project, attach photos that:
   - Show the condition of the resource(s), including overall and detailed views; or
   - Capture a representative sample of the resource(s) to be researched; or
   - Feature potential outcomes of the project; and
   - Include captions.

6. If previous planning documents exist for this project, attach the most recent and relevant sections of those documents that support this proposed project (e.g., historic structure assessment, construction documents, survey forms, reports).

Urgency – 15 points

This section focuses on the critical need(s) for completing this project (1000 word limit).

Provide the following information, as it may apply to your project:

1. The physical conditions of the resource that make the project urgent. For example, if the grant is not funded now:
   - The conditions that could cause a public health or safety concern.
   - The conditions that will quickly deteriorate.
   - The conditions that will further damage the resource.

2. All current or potential threats to the resource(s) or program.

3. Any community participation, partnerships, or cash match funds that might be in jeopardy or dependent on this grant.

4. Whether this project will be delayed if this grant is not awarded.

5. Other valid reasons for urgency.

Public Benefit, Project Promotion, and State Preservation Plan – 20 points

This section illustrates: (1) how the public benefits from and supports the project (750 word limit)*, (2) how you will promote the project* (300 word limit)*, and (3) the project's relationship to the Colorado Statewide Preservation Plan* (200 word limit).

Community Support & Benefit of Project

1. Explain how the public supports and benefits from this project. Things to consider:
    - The use of the resource or project products.
    - The source(s) of the cash match and whether it was provided by the community.
    - Non-monetary ways the community supports this project.
    - Enhancement of historic preservation, economic development, and heritage tourism.
    - Encouragement of existing or new partnerships.
    - Increasing historically excluded community engagement in preservation. For example, LGBTQ+, women, religious minorities, etc.

2. **Highly recommended**: Attach at least five recent letters of support (dated within the last six months) from people and organizations who will use this resource, community members, and elected officials.

Project Promotion

1. Explain how you will promote this project, such as:
    - Public events or celebrations
    - Physical and digital media
    - Presentations/tours
    - Other

State Preservation Plan

1. Review the 2020 Colorado Statewide Preservation Plan and explain how this project will directly support at least two of the five goals (Goals A-E).

Project Timeline – Zero (0) points

This section confirms that you understand the State Historical Fund's policies and procedures.

You will acknowledge your understanding of the following program policies pertaining to timeline requirements for an awarded project with the following statements:

- I understand that if awarded, it can take up to six weeks to execute the grant agreement with the State Historical Fund.
- I understand that the State Historical Fund agreement period is 24 months and this project will be completed within that time period.
- I understand that the State Historical Fund has 30 calendar days to complete review of the deliverables (products) and payment requests that will be required with this project, and I have accounted for the 30-day reviews within the 24-month agreement period.

- I understand that weather may delay completion of some projects and I have accounted for possible delays within the 24-month agreement period.

Acknowledgement of Award Conditions

By applying for a grant, you must agree to our program terms. These terms ensure the applicant organization is in agreement with the state contractual and state fiscal requirements and grant award provisions and will meet the Secretary of Interior's Standards for the Treatment of Historic Properties (the Standards) and/or the Colorado State Historic Preservation Office's Survey Manual. You acknowledge here that you have reviewed our program terms and that your organization agrees to them.

Section 4: Application Attachments

Several attachments are required, while others are recommended. There is a 25MB size limit per application.

Please use the following naming convention for all attachments:

Applicant Organization_Name of Attachment.pdf

For example: Colorado Barn Coalition_Letters of Support.pdf

All attachments (except for the overall image) must be in a PDF file format. The overall image must be in a JPEG file. If you have multiple documents or images for an attachment, please combine them into a single PDF file.

Required Attachments

Your application will be returned as incomplete if these attachments are not included.

Signature Page(s): An individual with signatory authority (the ability to sign contracts on behalf of the organization) for the applicant organization must sign this page.

- If the applicant organization is not the property owner, the property owner(s) must also sign a signature page.
- If there are multiple property owners, signatures from all owners are required.
- Archaeology projects on federal land must obtain a signature from the appropriate federal agency Line Officer or National Park Service Superintendent.
- If survey fieldwork requires access to private property, obtain permission at the time of application. Property owner permission can be provided in a signed letter of support for the project or with the property owner signature page attachment.
- If the property is privately owned, a local government official must sign OR provide a letter of support.
- Attach multiple signature pages if needed.

Proof of Local Designation, if applicable: If your property is locally landmarked, provide documentation from the designating authority, such as a historic preservation board. This may be a certificate, ordinance, or correspondence from a city/county official.

Archaeological Permit (Archaeology Projects Only): All applications for archaeological investigation must include an approved archaeological permit from either the Office of Archaeology and Historic

Preservation (for private land and state lands, which includes city and county as well as any political subdivision of the state) or the federal agency managing the federal land.

BIPOC Letters of Support if your project qualifies as a BIPOC Project, attach the two letters of support from the BIPOC communities the project benefits.

IRS Letter of Determination (For religious organizations only): Due to group exemptions for many religious organizations, we need this form to verify your nonprofit status.

Highly Recommended Attachments

Not including these attachments will likely result in a lower application score.

Overall Image: Provide a high-resolution image (300dpi or greater, JPG or JPEG format) that best represents your historic resource or project.

Project Images: Submit clear, large, and current photos of your historic resource that help reviewers see what is relevant to your proposal and necessary for understanding the project. This could include detailed photos of the current physical condition of a building or photos of the area of a survey or site on which you propose to place interpretive signage. *For archaeological projects*: include a representative image for your project. This could include artifacts, a landscape overview, or an image of a crew working in a similar area.

Captions help reviewers understand what they are seeing. For example: “NE corner of the second floor, interior, crown molding detail—see rot caused by moisture penetration.”

Bids and/or Estimates: We recommend that applicants obtain two to three bids to ensure the project budget is appropriate and reasonable for the proposed scope of work. Attaching these documents helps justify your project budget. Bids should be no more than six months old and reflect and clarify the budget information provided in your scope of work and budget. Explain which bid you used for the budget and why. We suggest using the highest bid for budget creation. Do not average the bids together.

Professional Project Team Members’ Resumes: One-page resumes for professional project team members listed in your project team section should include relevant qualifications and experience as they relate to this project.

Letters of Support: All grants must demonstrate a public benefit. Letters of support indicate that someone other than you or your organization supports your project. Most successful applicants include five to seven letters of support from people and organizations who will use this resource, community members, and elected officials. Be sure they are recent (no older than six months from the deadline). If re-applying, ask writers to initial and date their previous letters to indicate continued support. Letters of support may be addressed to the History Colorado Executive Director, Dawn DiPrince, but please do not mail any letters. Attach them to the application.

Excerpts of most recent supporting documents: archaeological assessment, historic structure assessment, construction documents, survey forms, survey plans, reports

Optional Attachments

These attachments may help further explain or provide context for your scope of work and budget.

Detailed Scope of Work and Budget: A PDF document of a more detailed scope of work and budget prepared by the architect/contractor/consultant.

Historic Images: Show the historic Integrity and significance of a building or a site and how it has evolved over time with historic images.

Media Images, Newspaper Clippings, Etc.: Demonstrate public support for your project with media materials.

Maps, Site Plans, or Drawings: Show reviewers your project's location with a map. Help them visualize your building and project proposal with site plans and drawings.

Research Design: Include this when applicable for survey and planning, education, and/or archaeology projects. (For example, document outlining archaeological or survey research questions and methods for obtaining data to answer those questions.)

Miscellaneous Attachments: Use this attachment for any other materials you want to include.

Draft Review

The State Historical Fund offers competitive grant draft application reviews to any interested applicant. Applicants must have an approved Letter of Intent before they begin the application process, including draft reviews.

Draft Review Policy

We accept draft reviews up to two weeks prior to the application deadline (For example, March 15 for the April 1 deadline). Submit all draft reviews through the application draft function in the top right corner of the application portal, to: hc_shfdrafts@state.co.us.

Submit Application

Once you complete the application requirements, the application will prompt you to review all of your content prior to submitting. After you submit your application, you will receive an email verification with a full copy of your application attached. Review the information submitted. If you identify any issues, contact us immediately for help correcting errors **prior to the application deadline**. We cannot accept additional attachments, such as letters of support or bids, after the noon application deadline.

How We Check For Completeness

Once we receive the application, we check for completeness and eligibility of the applicant organization and project. The staff may contact the GRC listed on the application to provide required information, so please be sure this person will be available to respond after the deadline. If not provided within 48 hours of our request, we may determine the project cannot move forward in the review process.

Public Notice

Once the competitive grant deadlines close, we post a list of all received applications to our website within a few business days. A legal notice is published in the Sunday *Denver Post* within two weeks of the grant deadline. The public can comment on received applications by writing to us at hc_shf@state.co.us with the requisite grant number in the subject line. Comments must be received within three weeks of the grant deadline. Grant review committees receive all submitted comments for consideration during the grant review presentations.

Review Process

Non-Competitive

Non-competitive grants are reviewed by the project-appropriate Resource Specialist (historic preservation, survey, or archaeology) and a Contract Specialist. During review, we may request additional information to clarify the grant proposal. Staff funding recommendations are sent to the Deputy Director or designee of the State Historical Fund who makes the final funding decision for all applications.



American Legion Hall, Kiowa County

Competitive

Application Review Process

Mini grant applications are reviewed by four History Colorado staff members who meet to discuss all applications and recommend funding or non-funding based on the technical aspects, feasibility, and urgency of the project. A History Colorado leadership team reviews these recommendations for diversity of communities and geography before approval.

General grants are reviewed by one State Historical Fund staff member and three external reviewers, including one from the State Historical Fund Grant Council (Grant Council). Applications then go through three rounds of review meetings with State Historical Fund staff, History Colorado leadership team, and the Grant Council before going to the History Colorado Board of Directors for final approval.

External Reviewers

Selection

Individuals with State Historical Fund grant experience, such as a grant recipient contact, consultant, or contractor, or other members of the public that meet the Secretary of the Interior's Professional Qualifications Standards for architecture, historic preservation, architectural historians, or archaeologists can apply to be a grant reviewer.

Reviewer Notification

Before each grant round, review invitations are sent to all past reviewers and reviewer applicants. Interested reviewers are placed on the eligible reviewer list. Due to the specific expertise required, not all interested reviewers will receive applications. We notify reviewers of assigned grants and give access to the reviewer portal by email about one week after the application deadline.

Reviewer Conflict of Interest

Upon accepting the opportunity to review grants in any given round, reviewers must notify us of any conflicts of interests with the assigned projects or organizations. If a conflicting assignment is made, the reviewer shall immediately email the Grant Systems Manager so that the application can be reassigned.

A conflict of interest occurs when financial or other personal considerations may compromise or bias professional judgment and objectivity. A conflict of interest exists if a professional's objectivity and independent judgment might reasonably be questioned based on their financial or personal interests or relationships. A conflict of interest exists whether or not decisions would be affected by a personal interest; a conflict of interest requires only the potential for bias, not the likelihood.

Grant reviewers have a conflict of interest if they review or act on grant applications when they: serve on the board of directors, are an employee, or have a financial stake in a grant project of the grant applicant organization or property owner; or are a potential recipient of our funding through the grant application under consideration. Reviewers who have been involved with a building or site in the past may not necessarily have a conflict, but must not have involvement with the specific scope of work in the current grant application.

When there may be a real or perceived conflict of interest, the following procedures should be followed.

Review Meeting Conflict of Interest Protocol

Before discussions about the grant application start, the Grant Council Chair prompts council members with conflicts of interest to remove themselves from the room. Grant discussions ensue when all members with a conflict of interest have left the room. Once discussion and a vote is complete, the council member(s) returns to the room. There should be no further discussion of the grant or outcome.

Reviewer Instructions

- Score on whether the applicant fully answers the prompt questions for each section.
- Score on whether the applicant provided the appropriate level and amount of information and back-up documentation, and whether it supports the project's details.
- Score on whether the project seems feasible and is properly detailed and scheduled, in your professional opinion.
- Do not simply comment with a "yes" or "no." This is not a checklist. Provide helpful feedback so that the project will be successful and, if denied, the applicant can improve their application. If a section has a perfect score, no questions or concerns should be noted but justification should still be provided. If a section has a less than perfect score, provide comments indicating what improvements need to be made, clarification provided, and/or questions answered.
- The scores are based on a 100-point (or grading) scale. Your overall score and your score for each section should reflect this 100-point scale.
- Confidentiality
    - Reviews and meeting results are confidential until the History Colorado Board of Directors votes on the final grant funding recommendations.
    - Reviewers may not discuss or provide information regarding reviews to others.
    - Grant Council members may not request confidential information from other council members if they have a conflict of interest, nor may any member provide information to the public, including applicants.
- For more information or additional grant reviewer resources, visit our website.

Award Announcement

Funding decisions are emailed to all applicants within one to two business days of the award announcement dates for competitive grants and 30-45 days of submitting a non-competitive application. We also post all competitive funding decisions to our website.

Reapplication

If denied funding, applicants are welcome to reapply. Our staff contacts all non-funded applicants to provide reviewer comments, meeting notes, an invitation to discuss the denied application, and helpful strategies for a new application.

Non-Funded Appeals

The State Historical Fund accepts appeals for applications that meet program requirements and are eligible for funding pursuant to state statute and policies described in this guide, but that were not funded. Appeal requests must be made by the applicant organization within 30 days of notification of non-funding by the State Historical Fund. The appeal will be reviewed by the Preservation Programs Committee at their next regularly scheduled meeting. Submit written appeal requests to hc_shf@state.co.us with "Appeal" in the email's subject line.



La Sociedad Protección Mutua de Trabajadores Unidos, Conejos County

Managing Your Grant

Notification of Award

Award notifications come via email from the assigned Contract Specialist to the grant recipient contact, and include contact information for your Historic Resource Specialist (who may be a preservation, archaeological, or survey specialist). This email contains instructions to follow and documents to submit before we can create a fully executed grant award. No work, purchase of supplies, nor contracting with your project consultant(s)/contractor(s) can take place prior to the start date of our grant award.

Once we receive the requested information and documents, it typically takes up to 6 weeks for you to receive the executed grant award PDF. Grant agreements with nonprofit organizations for $150,000 or more, or with a sovereign nation for any amount, will be sent via DocuSign for a signature by an authorized signatory for your organization and the property owner(s), if different. All awards for less than $150,000, or with a public entity, require no grant recipient or owner signatures.

Initial Paperwork may include the following:

Acknowledgement of Award Conditions

This acknowledgement documents your organization's and the property owner's acceptance of the grant award terms and conditions. An authorized signer must read and initial each term, sign and date, scan, and email it back to your Contract Specialist. If the property owner is different, they must also read and initial the last term, and sign and date the letter.

The award notification email includes a sample grant award for review prior to signing the acknowledgement.

Exhibit E

If applicable, Exhibit E contains the **property protection** that will be placed on the property at the close of the grant award. An authorized signer for the property owner (or future property owner for acquisition grants) must sign and date the number of copies indicated in the email and mail the original(s) to staff to be included in your grant award document.

- Covenants require notarization of the property owner signature on all copies.
- For Easements, you must submit a letter from the easement-accepting organization stating:
    - That the easement-holding organization is willing to accept the easement for the property; and
    - The anticipated fees. All easement fees are paid by the State Historical Fund outside of your awarded grant funds.

See the accompanying *Property Protection Information Sheet* attached to the email for additional details.

Direct Deposit Authorization or Verification Form

Grant payments are sent by Electronic Funds Transfer to a bank account owned by the grant recipient organization. If a bank account is not already linked in the state's financial system, or is linked but has not been verified previously for State Historical Fund payments, complete the form and email it to your Contract Specialist.

State Substitute W-9

The state controller only accepts the Colorado Substitute W-9 version found on our website. If your application contains a different or older version, you must complete this W-9.

Not-Under-Contract

To keep State funds actively making an impact across the state, grant awards that are not executed within 9 months of their award date will be taken before the History Colorado board of directors for possible rescission. Please let your Contract Specialist know of any delays you may encounter getting the project started.

The Grant Award/Agreement Document

The grant award is the non-negotiable, legally binding contract between the State of Colorado and the grant recipient organization outlining all terms and conditions for acceptance of the grant money. Exhibits A, B, and C are customized for your particular project. The initial grant period is 24 months.

Exhibit A: Scope of Work

Exhibit A outlines the work allowed under the grant award and aligns with the scope from your application. The awarded funds and cash match may only be used for this scope of work.

Exhibit B: Budget

Exhibit B directly relates to the work described in Exhibit A and aligns with the budget figures from your application.

- The project budget is on a line-by-line basis not just by the project total. Pay close attention to each budget line throughout the project. Budget modifications may be needed in order to use savings from one line to cover overages on others.
- Project savings are shared between your organization and ours based on the grant award/cash match percents.
- The final grant award share paid out equals the grant award percentage of the project subtotal, plus the State Historical Fund share of any contingency approved throughout the project, not to exceed the grant award amount.

Exhibit C: Submittals and Deliverables

Exhibit C outlines all products and documents that you must submit throughout the project for State Historical Fund review and approval, and shows the grant payment amounts and payment schedule.

Progress Reports

Progress reports provide your Historic Resource Specialist with a status on project activity since the last progress report, what you hope to accomplish before the next progress report, and any issues or concerns related to the project or budget. Submit progress reports by email to your Historic Resource Specialist on the day listed in the schedule.

Payments

Your grant is established with either three or four payments. Payment amounts are pre-calculated as percentages of the grant award amount minus the grant share of the contingency budget line, typically using one of two schedules:

One Interim Payment	Two Interim Payments
Advance Payment = 40% of award amount Interim Payment = 50% of award amount Final Payment = 10% of award amount	Advance Payment = 30% of award amount 1st Interim Payment = 30% of award amount 2nd Interim Payment = 30% of award amount Final Payment = 10% of award amount

Payments are listed with an associated due date, however, this date is only a guideline. You can request payment when the indicated deliverables have been submitted and approved and at least 40% of the previous payment has been spent or invoiced.

State fiscal rules mandate that we withhold the final 10% of the grant award until the project is complete and all invoices are paid in full.

Financial Reports

Throughout the project, you must maintain a clean file of all financial records including detailed invoices and itemized receipts, legal, financial, or other documentation, communications, and other materials pertaining to the scope of work and budget in the case of audit or staff request.

You must report all project expenses on the interim and final financial reports when requesting payments to ensure the expenses are eligible within the grant award and meet all state fiscal rules.

See Grant Payment Requests below for instructions on how to report your expenses and request payments.

Deliverables

Deliverables document progress and completion of the grant scope of work, satisfy required state fiscal and program term compliance, and ensure appropriate application of the Secretary of the Interior's Standards for Historic Preservation. Submission and approval of deliverables is directly tied to payments, so while there are no due dates specified, deliverables must be submitted in sequence. Note those deliverables that require approval prior to beginning any physical work. Failure to submit deliverables before starting work may result in work done that does not meet the Standards and/or is ineligible for our funding.

How to Submit

Submit deliverables to your Historic Resource Specialist through email unless otherwise noted.

Mail hard copy deliverables to the History Colorado Center/State Historical Fund at 1200 Broadway, Denver, CO 80203.

Review of Deliverables and Payment Request and Financial Report Form

State Historical Fund staff have 30 days from the date of submission to review each deliverable, progress report, financial report, and pay request. Staff may request revisions or additional information prior to approval, which may add time to the review period.

Grant Payment Requests

You must formally request your grant payment(s) using the Payment Request and Financial Report Form. We do not send payments without a request. All financial forms require signatures from a representative of the grant recipient organization, but you may use an Adobe® certificate-based digital signature on fillable PDF forms. Ink-signed forms may be scanned. No hard copies are needed.

Advance Payment

You may request the advance payment after execution of your grant award and approval of the required deliverables associated with the advance payment in Exhibit C.

To request an advance payment, complete the Payment Request and Financial Report Form with only steps one, two, and five completed, and email it to your assigned Contract Specialist.

Interim and Final Financial Reporting and Payments

You may request interim payments when at least 40% of the previous grant payment has been paid or invoiced. The final payment is a reimbursement and may only be requested once all invoices are paid in full and the project is complete.

Email your Contract Specialist the following information to request interim or final payments:

- ❏ Payment Request and Financial Report Form
- ❏ All required supporting documentation * if applicable
  - ❏ Hotel, airfare, and car rental receipts
  - ❏ Mileage log(s)
  - ❏ Grant administration

  *Additional documentation may be requested at any time at the discretion of your Contract Specialist.

Supporting Documentation Requirements

Grant Administration

All grant administration expenses must be accompanied by a clear, detailed calculation, or other documentation for the charges. The cost of time must include the name of the individual, task, date and time period of services provided, rate or cost per unit, and overall total. Indirect costs must include a clear calculation for how you determined the amount reported.

Travel Costs

Project travel costs cannot exceed the state travel rates stated on Exhibit B of your grant award. The rate is set using the state travel rates at the time your grant award contract is executed. You must keep all documentation for travel expenses for audit purposes including itemized meal receipts, but we only require you to submit documentation for mileage, hotels, vehicle rental, and air travel.

Mileage

Check this website for current mileage rates. The listed state rate per mile is the maximum allowed for vehicle travel and includes the cost of fuel; do not report separate charges for fuel. Reimbursement for mileage should include: project personnel name, date of travel, purpose of travel, number of miles traveled, and rate per mile claimed. Reimbursement at the four-wheel drive (4WD) rate can be claimed only if a 4WD vehicle is necessary to access the project site due to off-road conditions.

Per Diem

Per Diem for meals is $59 per day: $13 for breakfast, $15 for lunch, and $26 for dinner, plus $5 for incidental expenses when traveling overnight. You do not need to submit receipts to claim per diem, but please tell us how many people ate at each meal and keep the itemized receipt for your project records. Alcoholic beverages are not allowable expenses.

Hotels

Hotel allowance is at-cost with hotel receipt. Please make every effort to find lodging at a reasonable rate in the respective location.

Ineligible Expenses

Per state statute and fiscal policy, some costs do not qualify for State Historical Fund assistance and are not eligible for reimbursement.

- Archaeological monitoring requirements omitted from the scope and budget
- Budget line overages of 25%+ of the budgeted amount without contingency approval or a budget modification to move savings
- Costs encumbered, contracted for, or incurred before receiving a fully executed grant award with the State Historical Fund
- Costs of utilities or any work outside the designated area
- Entertainment costs and alcohol
- Fundraising costs
- Gifts, awards, and contributions
- Grant administration in excess of 15% of total direct project costs or with no documentation
- Grant writing costs
- Late fees or interest charged for delinquent payment of invoices
- Lobbying expenses
- Moving or relocation costs for occupants or collections (including when necessary to complete work funded by our grant)
- Purchase of equipment that costs more than $5,000 or more than the rental expense of equipment during the project
- Travel expenses in excess of the state travel rates specified in your grant award Exhibit B and travel expenses with no documentation
- The value of In-kind goods, services, or staff time or pay

Expense Reporting Checklist

Double-check your financial reporting information:

- ❑ Are reported expenses allowed?
- ❑ Are invoices broken out by the tasks listed in Exhibit B?
- ❑ Did you report interest earned on advanced grant funds or enter zero?
- ❑ Double-check all calculations.
- ❑ Are travel expenses within the state rates listed in Exhibit B?
- ❑ Is required documentation for grant administration and travel included?
- ❑ Did you sign, initial, and date the forms?

Contingency Payments

Review our contingency policy prior to submitting a contingency payment request. You *must* have prior approval from your Resource Specialist for use of contingency money. If approved, the State Historical Fund share of approved contingency funds can be added to an interim payment when specified on the payment request and financial form or requested as an additional, separate payment. Alternatively, if not requested in a previous payment, we will automatically add the approved amount of our share to the final payment.

Easement Payments

Easement fee payments can be requested individually or combined with an interim or final payment request, and must include a copy of the fee invoice from the easement holding company. You are not expected to pay these

fees prior to requesting the payment(s) from us. We send the easement payments to the grant recipient organization. Once received you can use the funds to pay the easement fee(s) to your holding company.

Payment Review Process

Contract Specialists review payment requests within 30 days of receipt of the completed documentation. They review for the following information:

- The required Exhibit C deliverables tied to the payment are submitted and approved.
- Reported expenses correspond to the task items and amounts listed in Exhibit B.
- All reported expenses are paid.
- Invoices and Payments are within the grant award period.
- Supporting documentation has been submitted for travel and grant administration.
- Additional payment information meets our requirements, if requested.

After the first review, the report is submitted for a second staff review and final approval by the Contracts Officer and processed. Once processed, the grant recipient contact receives notification by email from your Contract Specialist.

Payments are made to the grantee listed on the cover page of your grant award and issued via ACH electronic fund transfer through the state accounting system.

Project Close Out

To close out your grant, submit all outstanding deliverables to your Resource Specialist and submit the final Payment Request and Financial Report Form to your Contract Specialist 30 days before the Grant End Date.

For projects with property protection, review your responsibilities and incorporate into your own operations.

The property recapture term for privately owned properties begins the date your final payment is approved.

The final payment closes the project. Contact our office no later than 30 days from final payment with any questions or concerns. Any remaining grant balance will be reallocated for future State Historical Fund grants.

End of Project Cost Savings

All project cost savings are shared between the State Historical Fund and your organization. The amount you save is based on the cash match percentage ratio shown in Exhibit B. For example, the project budget is $100,000, but the final project expenses total $80,000 resulting in savings of $20,000. If the grant ratio to cash match ratio is 75% grant to 25% match, your organization would save $5,000 (25%) of the $20,000 in savings and we would save $15,000 (75%).

Money Owed

Grant funds that are advanced to you in the advance and interim payment but that do not get utilized during the project must return to the State Historical Fund. If repayment of unspent funds or ineligible costs is necessary, refunds should be made payable to State Historical Fund and mailed to 1200 Broadway, Denver, Colorado 80203.

Grant Award Modifications

Once your grant award is fully executed, we allow limited modifications to the exhibits with prior approval from our staff. Modification requests include reductions to the scope of work and budget, reallocation of budget line

item figures, grant period extensions, and contingency use requests. Staff must review each request to ensure the project maintains the appropriate amount of preservation work and original intent of the application, and that the request does not violate any state fiscal rules.

If approved, your Contract Specialist creates and sends the appropriate revised exhibit(s). Modifications made to Grant Agreements (Awards of $150,000+ to nonprofit organizations) require a signed amendment with signatures from the original parties. If not approved, we may request additional information or notify the grant recipient contact of the decision.

Scope of Work

Our grant program only allows reductions to the scope of work. This may have to happen when one task costs substantially more than estimated. To prevent the entire project from going over budget, you can remove a task from the scope of work and reallocate its budget to the task that now costs more.

To request a scope reduction, contact your Historic Resource Specialist as soon as possible to review the situation and receive verbal approval before proceeding with any work related to the proposed changes. As soon as possible, follow your verbal request with a redlined Exhibit A showing which scope item(s) is being removed and a redlined Exhibit B showing the requested budget changes (ie. Which line(s) goes up and by how much and which line(s) goes down and by how much), along with a brief explanation for the requested change(s).

Budget

Funds may be reallocated from one budget line to another to use savings from one line to cover overages on another. Contact your Historic Resource Specialist as soon as possible to review the situation and receive verbal approval before proceeding with any work related to proposed changes.

Minor adjustments of less than 25% change may be made between each line item of the budget without formal modification to the grant award/agreement, as long as the maximum award amount does not change.

If the budget modification is a 25% or more change of a budget line, in addition to contacting your Historic Resource Specialist, submit a redlined Exhibit B or spreadsheet showing the requested changes **in whole numbers**, along with a brief explanation. Figures with cents will be rounded by contract staff.

Grant Extension

We are authorized to grant a one-year extension on the initial 24-month grant term. If you need more than 36 months to complete the project, you must talk to your Historic Resource Specialist. Extensions beyond 60 months are not permitted.

To request an extension, email the following information at least 60 days before the grant end date.

- Project progress to date
- Why you need an extension
- How you will ensure the project will be completed within the extended grant award term
- A revised project schedule with dates for remaining deliverables

Contingency

Unexpected costs can occur in any project. We encourage applicants to include 10–20% of the project subtotal as contingency in the budget for these unanticipated expenses. Contingency may only be used for unanticipated expenses directly related to the grant scope of work, not for poor planning, or forgotten expenses excluded from the application scope of work. The State Historical Fund withholds its share (the grant award %) of the contingency line from the grant payments. If contingency is not needed during the project, the State Historical Fund and the grant recipient organization share those project savings based on the grant award/cash match ratio.



Denver and Rio Grande Passenger Car 256, Conjeos County

You must get approval to use any of the contingency funds from your Historic Resource Specialist before starting the work that requires contingency money. Utilizing contingency money without SHF approval will result in those expenses being ineligible for grant reimbursement.

Request to Use Contingency Funds

Contact your Historic Resource Specialist to receive verbal approval to providing an explanation and a proposed cost. As soon as possible, follow your verbal request with an email including either:

- a redlined Exhibit B showing how much contingency is requested **in whole numbers** and which budget line(s) the money is allocated with an explanation for the need, or
- a completed Contingency Use Form.

Your Contract Specialist will review this information and generate an updated Exhibit B with contingency use tracking.

Approved Contingency Request Example:

- You discover unexpected conditions as demolition begins, such as structural issues or additional damage to historic fabric unable to be seen at the time of obtaining an estimate.
    - Contingency request is approved because the additional costs were unknown at grant application. The funds may be used for the additional labor, materials, and architect and/or engineering costs.

Not Approved Contingency Request Examples:

- You realize a task is over budget after the work is finished and the contractor is paid.
    - The request is not approved because contingency was not discussed with your specialist prior to the work commencing.

- Your contractor is restoring the building's façade and notices needed roof and gutter work.
    - While the work may be needed and appropriate under the Secretary of the Interior's standards, the request is not approved because it is outside of the scope of work.

Grant Recipient Responsibilities

These are some of the grant award terms and conditions that the grant recipient organization, grant recipient contact, and property owner should consider before applying and throughout the project.

Audit

You must maintain detailed financial, legal, and communication records for your project in an auditable condition for at least three (3) years after date of final payment. All invoices should include an itemized, detailed calculation. Grantee unwillingness or inability to provide documentation requested by an audit or staff review will render disputed charges ineligible as either grant or matching costs.

Bonding

You must require Labor and Material Payment Bonds and Performance Bonds from subcontractors conducting physical work. This statutory requirement (24-105-202) in State Law (CRS 38-26-105) requires construction contracts of more than $150,000 to deliver to the state, upon execution of the contract:

1.) A payment bond executed by a surety company authorized to do business in Colorado, for the protections of all persons supplying labor and material to the contract or its subcontractors for the performance of the work provided for in the contract. The bond shall be in an amount equal to at least 50% of the price specified in the contract.

2.) A performance bond, executed by a surety company authorized to do business in this state, in an amount equal to at least 50% of the price specified in the contract.

Conflict of Interest

A conflict of interest is a financial, personal, or familial interest that can potentially compromise the person's duty to put the interest of the state first. A conflict of interest exists if a person's objectivity, professional judgement, or ability to perform their duties might reasonably be questioned based on their financial or personal interests or relationships. A conflict of interest exists whether or not decisions would in fact be affected by a personal interest; a conflict of interest requires only the potential for bias not the likelihood.

A financial, personal, or familial interest includes, but is not limited to:

- any business in which the person has a direct or indirect monetary interest
- a familial relationship in connection with the grant recipient or property owner
- any real property in which the person has a direct or indirect monetary interest
- any source of income, loans, or gifts received by or promised to the person within 12 months prior to the execution date of the contract, and/or
- any business in which the person is a director, officer, general, limited partner, or trustee.

The following are common examples of how conflict of interests apply to our grant program:

- No person at any time exercising any function or responsibility in connection with the project on behalf of a grant recipient shall have or acquire any personal financial or economic interest, direct or indirect, that is materially affected by the contract, except to the extent that such person may receive compensation for this performance pursuant to the contract.
- Grant administrators cannot be hired as a subcontractor to perform any other task, technically or otherwise, within this project. For example, the architect of record cannot also be the grant administrator or grant recipient contact.

- No employee or member of a board of the grant recipient or History Colorado party may perform or provide services for compensation, monetary or otherwise, to a consultant or consultant firm retained by the grant recipient organization or property owner.
- No property owner, employee, or member of the board of the property owner may perform or provide services for the project for compensation, monetary or otherwise, to the grant recipient.

If in doubt, err on the conservative side: a conflict of interest can be real or perceived. A conflict of interest involves abuse—actual, apparent, or potential—of the trust that people have in professionals.

Compliance with Historic Preservation Laws

If your project includes any federal involvement, the involved federal agency must complete consultation of Section 106 or 110 of the National Historic Preservation Act.

State agency applicants proposing work on properties listed on the State Register must consult under the Colorado State Register Act (CRS 24-80.1-104).

Copyright & Right of Use Policy

All copyrightable materials and/or submittals developed or produced under this grant award are subject to a royalty-free, nonexclusive, and irrevocable license to History Colorado to reproduce, publish, display, perform, prepare derivative works, or otherwise use, and authorize others to reproduce, publish, display, perform, prepare derivative works, or otherwise use, the work or works for History Colorado and/or the State Historical Fund's purposes.

Insurance Requirements

State regulations require your organization to carry workers' compensation, employer's liability (if you have employees), general liability, and automobile liability insurance. Most governmental entities and nonprofits carry these types of insurance.

State regulations require that your organization carry insurance covering premises operations, fire damage, independent contractors, products and completed operations, blanket contractual liability, personal injury, and advertising liability with minimum limits as follows: (a) $1,000,000 each occurrence; (b) $1,000,000 general aggregate; (c) $1,000,000 products and completed operations aggregate; and (d) $50,000 any one fire.

State regulations require that your organization carry automobile liability Insurance covering any auto including owned, hired, and non-owned autos) with a minimum limit of $1,000,000 each accident combined single limit.

Procurement

You must follow your organization's procurement guidelines when hiring consultants and contractors or making purchases. If your organization does not have an established procurement process, you must follow the state's Recommended Guidelines for Procurement detailed below:

Competitive bidding or Request for Proposals (RFPs) are **not** required for the following purchases:

- Acquisition of services, equipment, products, or supplies in the amount of $50,000 or less
- Construction projects in the amount of $50,000 or less

Competitive bidding or RFPs are required for all other purchases. There are two ways to meet this requirement:

1. A process of obtaining documented quotes from at least two qualified vendors is acceptable for the following purchases:

    - ❖ Acquisition of services, equipment, products, or supplies using more than $50,000 but less than $250,000
    - ❖ Construction projects using more than $50,000 but less than $250,000

2. A formal competitive bidding or RFP process, including publication of notice in a newspaper of general circulation in the project area at least twice in a 30-day period, is required for all other purchases including the following:

    - ❖ Acquisition of services, equipment, products, or supplies using $250,000 or more
    - ❖ Construction projects using $250,000 or more

Profit from Grant-Funded Products

Projects that produce deliverables that result in a profit, such as publications, conferences, or workshops, must report the amount of profit earned during the project and certify that the funds will be used by the grant recipient organization to further its historic preservation mission.

Public Acknowledgement of Funding Source

All publications and similar materials funded by the State Historical Fund shall include a credit line that reads: "This project is/was paid for in part by a History Colorado State Historical Fund grant." History Colorado reserves the right to require that the following sentence be included in any publication or similar material funded through this program: "The contents and opinions contained herein do not necessarily reflect the views or policies of History Colorado."

Our logo may be used instead of the credit line when appropriate. Contact your Historic Resource Specialist for approval.

Recapture Provision

All grant awards include a provision that if a privately owned property is sold within a five-year period after completion of the project, the following recapture provision shall apply: If the property is sold within the first year after completion of the project, 100% of the grant funds paid to the grant recipient organization shall be returned to the state, with a 20% reduction per year thereafter.

Taxation

A State Historical Fund grant may be considered taxable income or revenue to the grant recipient, the property owner, or other beneficiary of grant funds. However, the State Historical Fund is not authorized to provide legal advice on this issue. The grant recipient is advised to consult with their tax attorney or accountant. Contact the IRS for federal income tax information. Contact the Colorado Department of Revenue for state income tax information.

Publicity after Award

Colorado State gaming tax revenue funds the State Historical Fund. Celebrate and acknowledge Colorado's support of your project to ensure that all Coloradans understand the impact of this program.

Press Releases and Social Media

We encourage the production of public information about your project. Please provide us with copies of press materials, social media articles, website updates, and a list of event acknowledgements. Our grant award requires a public acknowledgement of our funding in your public materials.

For examples of various media templates, contact Engagement Staff who can provide you with a Marketing Toolkit. History Colorado actively gathers photos from social media posts. To have your post noticed by History Colorado, use #*PreserveCO*.

Signage

Promote your project with free State Historical Fund banners and signs. Your Historic Resource Specialist will give you a vinyl banner (96 x 30 inches) or semi-flexible plastic sign (32 x 24 inches) at your initial consultation.

Big Check Presentation

Celebrate your grant with a big check presentation. Our staff will present an oversized check to your organization at one of your planned events. Speak with your Historic Resource Specialist to schedule. Please note that the check is for publicity purposes only and all payments are by electronic funds transfer.

Public Information

Colorado Open Records Act

Under the Colorado Open Records Act (CORA), all messages sent to the State Historical Fund may be subject to public disclosure.

File Access Policy

All funded grant applications and materials are accessible to the public upon request. Please complete our File Access Request Form. We do not aggregate or share contact information to other entities for outside uses.

Website Posted Application Information

The following information is posted on our website:

- All grants funded through the fiscal year
- Grants awarded each competitive grant round
- Grant applications received

Appendix A: List of Potential Deliverables

Project Deliverables document project progress. Required deliverables vary by project, but include meetings, reports, forms, photographs, and press releases. See below for examples of the most common deliverables.

Standard Deliverables for all projects

- Initial consultation with SHF Historic Resource Specialist
- Before/existing condition photos of scope of work
- Documentation of professional/public outreach

Acquisition Deliverables

- Current appraisal
- Photographs of current condition
- Closing schedule
- Good faith estimate/closing cost
- Copy of the recorded deed

Administrative/Property Protection Deliverables

- Written documentation of owner(s) permission
- Copy of MOU/LOA between grant recipient and owner
- Complete, certified copy of the original, signed, and recorded perpetual easement OR easement update

Archaeological Monitoring Deliverables

- Copy of Federal or State Archaeological Permit
- Consultation with SHF Archaeology Specialist prior to ground disturbance
- SHPO Site/Archaeological Forms, if necessary
- Final Archaeological Report

Archaeology Deliverables

- Copy of Federal or State Archaeological Permit
- Archaeological Research Work Plan
- Archaeological Methodology
- Draft/Sample SHPO Site/Archaeological Forms
- Final SHPO Site/Archaeological Forms and GIS shapefiles
- Draft Archaeological Report
- Final Archaeological Report
- Artifact Catalog, if necessary
- Documentation of professional/public outreach

Archaeological Assessments Deliverables

- Copy of Federal or State Archaeological Permit
- Site Visit with SHF Archaeological Specialist
- Draft SHPO Site/Archaeological Forms
- Final SHPO Site/Archaeological Forms and GIS shapefiles
- SHPO Site/Archaeological Form Suite and GIS shapefiles
- Archaeological Report
- Artifact Catalog, if necessary

Education Project Deliverables

- *Print Media*
    - Draft text and photographs
    - Interpretative Sign Draft layout
    - Final proof
    - Final Brochure
    - Interpretative Sign Final
    - Proposed sign installation site
    - Final copies (for books or brochures)
    - Photo(s) of sign(s) in place
- *Audio Video Recordin*g
    - Draft script
    - Draft historic images
    - Draft video or audio recording
    - Final video or audio recording
- *Display or Exhibit (Archaeology only)*
    - Draft text and photographs
    - Draft graphic design for text (label, panels, etc.)
    - Artifact list
    - Photo(s) of exhibit in place
- *Lesson Plan or Field School*
    - Promotion material for seeking students to attend
    - Draft lesson plans/presentations/educational material
    - Final lesson plans/presentations/educational material
    - Attendance summary
    - Educator or student feedback
- *Research and Collection Analysis*
    - Collection(s) accessed
    - Annotated Bibliography

Physical Work Deliverables

- Historical photos/documentation of areas to be treated
- Construction Documents/Plans and Specifications
- Materials Testing Analysis & Results
- Pre-construction meeting with SHF Historic Resource Specialist
- Mockup
- Draft Maintenance Plan
- Copies of Change Orders
- Interim meeting with SHF Historic Resource Specialist
- Final Maintenance Plan
- After photos of Scope of Work

Glossary

Applicant Capacity
Applicant capacity demonstrates the applicant and project team's ability to complete and manage the grant project according to the State Historical Fund program guidelines.

Applicant Organization
An applicant organization is any eligible organization applying for a State Historical Fund grant.

Applicant Portal
The applicant portal is the online platform applicants use to create, manage, edit, share, and submit their applications.

Archaeologist
An archaeologist studies the human past through archival research, archeology survey, limited testing, excavation, and/or artifact analysis. They meet the qualifications of the Secretary of the Interior's Standards for Archaeology and for obtaining the appropriate archaeological permit.

Archaeology Permit
Permits authorize an archaeologist to complete work. The Office of the State Archaeologist issues permits for private land and state lands. Federal permits are issued by the federal agency managing the lands covered by the permit.

Architect
This refers to an architect with experience in historic preservation who meets the Secretary of the Interior's Standards for Architecture and has a State of Colorado issued license to practice architecture. The architect's role may include writing Historic Structure Assessments, creating construction documents, reviewing physical work for compliance with construction documents, and other appropriate project assistance.

BIPOC (Black, Indigenous, People of Color) Project
A BIPOC project significantly benefits and involves one or more BIPOC communities and satisfies the following criteria:

Criteria 1 (must answer Yes to at least one statement)

- The applicant organizations identifies as a BIPOC organization or primarily serves the BIPOC community.
  Or
- The property is owned by a BIPOC organization or BIPOC individual/private owner.
  Or
- The BIPOC community is involved in project planning and/or will be involved during the project.

Criteria 2 (must answer Yes to this statement)

- The completed project will directly benefit the BIPOC community and two letters of support from that community are included with the application.

Cash Match
Cash match is actual money or an accounting transaction that contributes to the completion of the project. The value of in-kind donations of goods, services, or labor are not eligible forms of cash match. If a cash match originates as part of a salary, it must be “extra work” attributed to a project, not duties that are part of the employee’s permanent job description.

Conflict of Interest
A conflict of interest exists if a professional’s objectivity and independent judgment might reasonably be questioned based on the individual's financial or personal interests or relationships.

Consultant/Contractor
A consultant or contractor refers to an individual or company hired by the grant recipient to complete some or all of the project's scope of work due to their knowledge and experience. If applicable, they must meet the Secretary of the Interior’s Standards Professional Qualifications (36 CFR Part 61) and hold the appropriate certifications and licenses for their profession. This term may be used interchangeably with “subcontractor.”

Contingency
A contingency is a line item in the project budget set aside for unexpected needed work during the project (typically 10-20% of the project total). Contingency may not be used to cover forgotten expenses due to poor project planning.

Contract Specialist
This is the State Historical Fund staff member who prepares the grant award document and oversees financial documentation for compliance with the grant contract and State of Colorado fiscal rules.

Direct Costs
Direct Costs are expenses directly attributable to the specific grant project, not the organization’s operation, such as construction costs and consultant fees.

Deliverable
Deliverables include materials submitted to demonstrate project progress and completion, such as photographs, reports, or documents.

Electronic Funds Transfer (EFT)
EFT, also known as Automated Clearing House (ACH) transfer, is the electronic transfer of grant payments directly to a bank account for quicker and safer deposits.

Engagement Specialist
An Engagement Specialist is the State Historical Fund staff member that coaches grant applicants on developing projects for a State Historical Fund application.

File Searches
File searches for site forms and reports can be made at the State Historic Preservation Office. Photograph file and archive searches can be made at the History Colorado Steven Hart Research Center, Denver Public Library, or your local museum and/or library.

General Conditions
General conditions are expenses for a construction project associated with job site startup and supervision. They may include portable toilets, site utilities, insurance, temporary fences, scaffolding, temporary weather protection, trash disposal, and photographic records.

General Contractor
A general contractor is the consultant or company handling the construction portion of the project.

Geographic Information
Geographic information refers to the required application information on the location of the county, city, and legislative districts of a property or resource.

Grant Administration
Grant administration includes the indirect costs of managing the project and the actual time to prepare and file deliverables, progress reports, and financial reports; maintaining communications with the staff; and ensuring the work is carried out following the project's scope of work and budget. These costs may include employee salary and benefits if grant administration is beyond their normal job duties. All grant administration costs must include a clear calculation.

Grant Administrator
The grant administrator is responsible for the accurate and timely completion of all payment requests, financial reports and documentation, and deliverables. The grant administrator must follow the program guidebook, the grant award contract, and general accounting procedures. If financially compensated for this time above their normal job responsibilities, this individual may not be a subcontractor or otherwise financially compensated under the grant award.

Grant Award Period
The grant award period refers to the length of time for a State Historical Fund grant award. The award period begins on the grant award/agreement effective date and ends on the fund expenditure date.

Grant Award/Agreement/Contract
The grant award/agreement/contract* is the nonnegotiable, legally binding agreement between the State of Colorado and the grant recipient organization outlining all terms and conditions for your acceptance of the grant money.
*These terms may be used interchangeably throughout your project.

Grant Recipient Contact (GRC)
The grant recipient contact is the primary point of contact between the State Historical Fund and the grant recipient organization for the awarded grant.

Historic Integrity
Historic integrity refers to the resource's ability to convey its historic identity for which it is significant.

Historic Resource Specialist
The Historic Resource Specialist is the State Historical Fund staff member who oversees grants by advising the project team and ensuring that work follows the Secretary of the Interior's Standards and the State Historical Fund contract. They review and approve all grant contract deliverables, scope/budget changes, and contingency requests

Indirect Costs
Indirect Costs are expenses indirectly associated with grant administration, such as office overhead, supplies, accounting support, and the use of other equipment or services not included in the project budget. Indirect costs should be allocated according to their use in relation to the project.

In-kind Contributions
In-kind contributions are non-monetary donations of goods, services, or labor. The value of any in-kind contributions cannot be used as a cash match. If a cash match originates as part of a salary, it must be "extra work" attributed to a project, not duties that are part of the permanent job description.

Legal Property Description
This is the description that unquestionably and uniquely identifies the property, as found on the assessment record or deed of title.

New Application
A new application refers to the initial request for a project or for the next phase of a multi-phased project.

Period of Significance
The period of significance is the length of time a property was associated with important events, activities, or persons, or attained the characteristics that qualify it for National Register, State Register, or Local Landmark listing.

Physical Work
Physical work tangibly alters a cultural resource. This includes physical construction to buildings, structures, and landscapes; archaeological excavation; and physical cultural resource protection measures such as enclosures for archaeological sites.

Principal Investigator
A principal investigator is the archaeologist that oversees an archaeological project. They ensure that work complies with the Secretary of the Interior's Standards. The principal investigator must be permitted appropriately for the project area; this includes a federal permit for archaeology on federal lands or a Colorado state permit for non-federal land projects.

Project Budget
The Project Budget includes all direct, indirect, and contingency costs, to complete the scope of work and manage the grant. Applications must include clear calculations for each budget task and/or reference a contractor- or consultant-provided bid, estimate, or proposal.

Project Context
A narrative section of the grant application, the project context explains the circumstances and work that led up to the proposed project. It also includes a brief summary of any work that may occur after, specifying additional phases of physical work or the continued maintenance or distribution of the project results.

Project Manager
A project manager oversees physical work on the building and ensures that the work complies with the Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties. The project manager understands construction processes and can read and interpret construction documents and specifications.

Project Title
A brief title of no more than 15 words, the project title summarizes the purpose of the project. Examples include: Interior Restoration, Exterior Rehabilitation, Cultural Resource Survey, and Construction Documents.

Project Summary
A brief outline (150 words or less) of the proposed project, the project summary includes the applicant organization and property name, and is suitable for a press release.

Property Information
This is the section of the grant application that provides the address and legal description of the property proposed for work.

Property Protection
Property protection refers to legally binding documents—such as an easement or covenant—recorded with the county clerk and recorder to guard the property against alterations that would affect its historic character.

Property Protection Coordinator
A State Historical Fund staff member, the Property Protection Coordinator communicates property protection requirements at the application stage. After the grant closes, they work with property owners to discuss compliance questions and review proposed projects throughout the covenant protection period.

Repeat Application
A repeat application is the request for any part of a project's scope of work that the State Historical Fund declined within the last two grant rounds.

Resource
Any building, structure, site, or object that is part of or constitutes a prehistoric or historic property.

Site Form
Archaeology and survey consultants complete Colorado State Historic Preservation Office site forms to record cultural resources such as archaeological sites, buildings, structures, objects, landscapes, and historic districts. Access all forms here.

State Preservation Plan
The State Preservation Plan, developed with public input, documents Colorado's preservation goals and objectives. Access the current State Preservation Plan here.

Subcontractors*
Subcontractors are individuals or companies hired by the grant recipient to complete some or all of the project scope of work due to their knowledge and experience. If applicable, subcontractors must meet the Secretary of the Interior's Standards Professional Qualifications (36 CFR Part 61) and hold the appropriate certifications and licenses for their profession. All subcontracts shall comply with all applicable federal and state laws and regulations, shall provide that they are governed by the laws of the State of Colorado, and shall be subject to all provisions of the State Historical Fund Grant Award/Agreement.
*May be used interchangeably with "contractor" and/or "consultant."

State Historical Fund
History Colorado

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GRANT AWARD LETTER COVER PAGE

INTERGOVERNMENTAL
SUMMARY OF GRANT AWARD TERMS AND CONDITIONS

State Agency Department of Higher Education, History Colorado, the Colorado Historical Society		**SHF Grant Number** 2023-02-021
Grantee City of Littleton		**Grant Issuance Date** 7/27/2023
Maximum Grant Amount $250,000.00	**Maximum Grant Percentage** 26.85%	**Grant End Date** 7/27/2025
Cash Match Amount $681,128.00	**Cash Match Percentage** 73.15%	**Encumbrance:** CTGG1 2023*4039

Agreement Authority
Authority exists under the State Constitution article XVIII, §9(5)(b)(III) and CRS §44-30-1201 for the annual distribution of monies from the State Historical Fund (SHF).

Grant Purpose
The purpose of this project is to rehabilitate the exterior of Geneva Home-Geneva Lodge in Littleton, Colorado.

Exhibits and Order of Precedence
The following Exhibits and attachments are included with this Agreement:

1. Exhibit A, Scope of Work
2. Exhibit B, Budget
3. Exhibit C, Submittals & Deliverables
4. Exhibit D, SHF Provisions
5. Exhibit E, Property Protection
6. Attachment 1, SHF Payment Request & Financial Report form

In the event of a conflict or inconsistency between this Agreement and any Exhibit or attachment, such conflict or inconsistency shall be resolved by reference to the documents in the following order of priority:

1. The provisions of the other sections of the main body of this Agreement.
2. Exhibit A, Scope of Work
3. Exhibit B, Budget
4. Exhibit C, Submittals & Deliverables
5. Exhibit D, SHF Provisions
6. Exhibit E, Property Protection

Modifications

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SIGNATURE PAGE

THE SIGNATORIES LISTED BELOW AUTHORIZE THIS GRANT

STATE OF COLORADO Jared S. Polis, Governor History Colorado Dawn DiPrince, Executive Director or Designee DocuSigned by: Dawn DiPrince CFFF3E033D454B9... By: Dawn DiPrince, Executive Director or Designee Date: 7/27/2023	In accordance with §24-30-202 C.R.S., this Grant is not valid until signed and dated below by the State Controller or an authorized delegate. **STATE CONTROLLER** **Robert Jaros, CPA, MBA, JD** History Colorado Breanne Nugent, Contracts Officer DocuSigned by: B52EA1E14621434... By: Breanne Nugent or Designee Date: 7/27/2023

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1. GRANT

As of the Grant Issuance Date, the State Agency shown on the first page of this Grant Award Letter (the "State") hereby obligates and awards to Grantee shown on the first page of this Grant Award Letter (the "Grantee") an award of Grant Funds in the amounts shown on the first page of this Grant Award Letter. By accepting the Grant Funds provided under this Grant Award Letter, Grantee agrees to comply with the terms and conditions of this Grant Award Letter and requirements and provisions of all Exhibits to this Grant Award Letter.

2. TERM

A. Initial Grant Term and Extension

The Parties' respective performances under this Grant Award Letter shall commence on the Grant Issuance Date and shall terminate on the Grant Expiration Date unless sooner terminated or further extended in accordance with the terms of this Grant Award Letter. Upon request of Grantee, the State may, in its sole discretion, extend the term of this Grant Award Letter by providing Grantee with an updated Grant Award Letter showing the new Grant Expiration Date.

B. Early Termination in the Public Interest

The State is entering into this Grant Award Letter to serve the public interest of the State of Colorado as determined by its Governor, General Assembly, or Courts. If this Grant Award Letter ceases to further the public interest of the State or if State, Federal or other funds used for this Grant Award Letter are not appropriated, or otherwise become unavailable to fund this Grant Award Letter, the State, in its discretion, may terminate this Grant Award Letter in whole or in part by providing written notice to Grantee that includes, to the extent practicable, the public interest justification for the termination. If the State terminates this Grant Award Letter in the public interest, the State shall pay Grantee an amount equal to the percentage of the total reimbursement payable under this Grant Award Letter that corresponds to the percentage of Work satisfactorily completed, as determined by the State, less payments previously made. Additionally, the State, in its discretion, may reimburse Grantee for a portion of actual, out-of-pocket expenses not otherwise reimbursed under this Grant Award Letter that are incurred by Grantee and are directly attributable to the uncompleted portion of Grantee's obligations, provided that the sum of any and all reimbursements shall not exceed the maximum amount payable to Grantee hereunder. This subsection shall not apply to a termination of this Grant Award Letter by the State for breach by Grantee.

3. DEFINITIONS

The following terms shall be construed and interpreted as follows:

A. "**Budget**" means the budget for the Work described in Exhibit B.

B. "**Business Day**" means any day in which the State is open and conducting business, but shall not include Saturday, Sunday or any day on which the State observes one of the holidays listed in §24-11-101(1), C.R.S.

C. "**CORA**" means the Colorado Open Records Act, §§24-72-200.1, *et seq.*, C.R.S.

D. "**Grant Award Letter**" means this letter which offers Grant Funds to Grantee, including all attached Exhibits, all documents incorporated by reference, all referenced statutes, rules and cited authorities, and any future updates thereto.

E. "**Grant Funds**" means the funds that have been appropriated, designated, encumbered, or otherwise made available for payment by the State under this Grant Award Letter.

F. "**Grant Expiration Date**" means the Grant Expiration Date shown on the first page of this Grant Award Letter.

G. "**Grant Issuance Date**" means the Grant Issuance Date shown on the first page of this Grant Award Letter.

H. "**Exhibits**" exhibits and attachments included with this Grant as shown on the first page of this Grant

I. "**Extension Term**" means the period of time by which the Grant Expiration Date is extended by the State through delivery of an updated Grant Award Letter

J. "**Goods**" means any movable material acquired, produced, or delivered by Grantee as set forth in this Grant Award Letter and shall include any movable material acquired, produced, or delivered by Grantee in connection with the Services.

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K. "**Incident**" means any accidental or deliberate event that results in or constitutes an imminent threat of the unauthorized access or disclosure of State Confidential Information or of the unauthorized modification, disruption, or destruction of any State Records.

L. "**Initial Term**" means the time period between the Grant Issuance Date and the Grant Expiration Date.

M. "**Matching Funds**" means the funds provided by Grantee as a match required to receive the Grant Funds.

N. "**Party**" means the State or Grantee, and "Parties" means both the State and Grantee.

O. "**Services**" means the services to be performed by Grantee as set forth in this Grant Award Letter, and shall include any services to be rendered by Grantee in connection with the Goods.

P. "**State Confidential Information**" means any and all State Records not subject to disclosure under CORA. State Confidential Information shall include, but is not limited to, PII, and State personnel records not subject to disclosure under CORA. State Confidential Information shall not include information or data concerning individuals that is not deemed confidential but nevertheless belongs to the State, which has been communicated, furnished, or disclosed by the State to Contractor which (i) is subject to disclosure pursuant to CORA; (ii) is already known to Contractor without restrictions at the time of its disclosure to Contractor; (iii) is or subsequently becomes publicly available without breach of any obligation owed by Contractor to the State; (iv) is disclosed to Contractor, without confidentiality obligations, by a third party who has the right to disclose such information; or (v) was independently developed without reliance on any State Confidential Information.

Q. "**State Fiscal Rules**" means the fiscal rules promulgated by the Colorado State Controller pursuant to §24-30-202(13)(a), C.R.S.

R. "**State Fiscal Year**" means a 12 month period beginning on July 1 of each calendar year and ending on June 30 of the following calendar year. If a single calendar year follows the term, then it means the State Fiscal Year ending in that calendar year.

S. "**State Records**" means any and all State data, information, and records, regardless of physical form, including, but not limited to, information subject to disclosure under CORA.

T. "**Subcontractor**" means third-parties, if any, engaged by Grantee to aid in performance of the Work. "Subcontractor" also includes sub-grantees.

U. "**Work**" means the delivery of the Goods and performance of the Services described in this Grant Award Letter.

V. "**Work Product**" means the tangible and intangible results of the Work, whether finished or unfinished, including drafts. Work Product includes, but is not limited to, documents, text, software (including source code), research, reports, proposals, specifications, plans, notes, studies, data, images, photographs, negatives, pictures, drawings, designs, models, surveys, maps, materials, ideas, concepts, know-how, and any other results of the Work. "Work Product" does not include any material that was developed prior to the Grant Issuance Date that is used, without modification, in the performance of the Work.

Any other term used in this Grant Award Letter that is defined in an Exhibit shall be construed and interpreted as defined in that Exhibit.

4. STATEMENT OF WORK

Grantee shall complete the Work as described in this Grant Award Letter and in accordance with the provisions of Exhibit A. The State shall have no liability to compensate or reimburse Grantee for the delivery of any goods or the performance of any services that are not specifically set forth in this Grant Award Letter.

5. PROPERTY

The real property in Arapahoe County, Colorado, which has been listed in the National Register of Historic Places, as the Geneva Home-Geneva Lodge-Sweet Home-Romoco Poultry Farm located at 2305 West Berry Avenue, Littleton, Colorado more particularly described as

Lot 3 Blk 1 Littleton Center Sub

6. PAYMENTS TO GRANTEE

A. Maximum Amount

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Payments to Grantee are limited to the unpaid, obligated balance of the Grant Funds. The State shall not pay Grantee any amount under this Grant that exceeds the Grant Amount for each State Fiscal Year shown on the first page of this Grant Award Letter. Financial obligations of the State payable after the current State Fiscal Year are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available. The State shall not be liable to pay or reimburse Grantee for any Work performed or expense incurred before the Grant Issuance Date or after the Grant Expiration Date; provided, however, that Work performed and expenses incurred by Grantee before the Grant Issuance Date that are chargeable to an active Federal Award may be submitted for reimbursement as permitted by the terms of the Federal Award.

B. Matching Funds

Grantee shall provide the Cash Match Amount shown on the first page of this Grant Award Letter and described in Exhibit B (the "Cash Match Amount"). Grantee's obligation to pay all or part of any matching funds, whether direct or contingent, only extends to funds duly and lawfully appropriated for the purpose of this Agreement by the authorized representatives of Grantee and paid into Grantee's treasury or bank account. Grantee shall appropriate and allocate all Cash Match Amounts to the purpose of this Grant Award Letter each fiscal year prior to accepting any Grant Funds for that fiscal year. Grantee does not by accepting this Grant Award Letter irrevocably pledge present cash reserves for payments in future fiscal years, and this Grant Award Letter is not intended to create a multiple-fiscal year debt of Grantee. Grantee shall not pay or be liable for any claimed interest, late charges, fees, taxes or penalties of any nature, except as required by Grantee's laws or policies.

C. Reimbursement of Grantee Costs

Upon prior written approval, the State shall reimburse Grantee's allowable costs, not exceeding the maximum total amount described in this Grant Award Letter for all allowable costs described in this Grant Award Letter and shown in the Budget, except that Grantee may adjust the amounts between each line item of the Budget without formal modification to this Agreement as long as the Grantee provides notice to the State of the change, the change does not modify the total maximum amount of this Grant Award Letter or the maximum amount for any state fiscal year, and the change does not modify any requirements of the Work. The State shall only reimburse allowable costs if those costs are: (i) reasonable and necessary to accomplish the Work and for the Goods and Services provided; and (ii) equal to the actual net cost to Grantee (i.e. the price paid minus any items of value received by Grantee that reduce the cost actually incurred).

D. Payments

i. Payment Requests and Financial Reporting

a. The State shall pay Grantee in the amounts and in accordance with the schedule and other conditions set forth in Exhibit C.

b. Grantee shall initiate payment requests using Attachment 1 submitted to the State in a form and manner approved by the State.

c. The acceptance of an invoice shall not constitute acceptance of any Work performed or deliverables provided under this Agreement.

ii. Payment Disputes

If Grantee disputes any calculation, determination or amount of any payment, Grantee shall notify the State in writing of its dispute within 30 days following the earlier to occur of Grantee's receipt of the payment or notification of the determination or calculation of the payment by the State. The State will review the information presented by Grantee and may make changes to its determination based on this review. No payment subject to a dispute under this subsection shall be due until after the State has concluded its review.

E. Close-Out

Grantee shall close out this Grant within 30 days after the Grant Expiration Date. To complete close out, Grantee shall submit to the State all deliverables (including documentation) as defined in this Grant Award Letter and Grantee's final reimbursement request or invoice. The State will withhold 10% of grant award amount until all final documentation has been submitted and accepted by the State as substantially complete.

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7. REPORTING - NOTIFICATION

A. Performance and Final Status

Grantee shall submit all financial, performance and other reports to the State no later than the end of the close out described in **§6.E**, containing an evaluation and review of Grantee's performance and the final status of Grantee's obligations hereunder.

B. Violations Reporting

Grantee shall disclose, in a timely manner, in writing to the State, all violations of federal or State criminal law involving fraud, bribery, or gratuity violations potentially affecting the Award. The State may impose any penalties for noncompliance allowed under 2 CFR Part 180 and 31 U.S.C. 3321, which may include, without limitation, suspension or debarment.

8. GRANTEE RECORDS

A. Maintenance and Inspection

Grantee shall make, keep, and maintain, all records, documents, communications, notes and other written materials, electronic media files, and communications, pertaining in any manner to this Grant for a period of three years following the completion of the close out of this Grant. Grantee shall permit the State to audit, inspect, examine, excerpt, copy and transcribe all such records during normal business hours at Grantee's office or place of business, unless the State determines that an audit or inspection is required without notice at a different time to protect the interests of the State.

B. Monitoring

The State will monitor Grantee's performance of its obligations under this Grant Award Letter using procedures as determined by the State. The State shall have the right, in its sole discretion, to change its monitoring procedures and requirements at any time during the term of this Agreement. The State shall monitor Grantee's performance in a manner that does not unduly interfere with Grantee's performance of the Work.

C. Final Audit Report

Grantee shall promptly submit to the State a copy of any final audit report of an audit performed on Grantee's records that relates to or affects this Grant or the Work, whether the audit is conducted by Grantee or a third party.

9. CONFIDENTIAL INFORMATION-STATE RECORDS

A. Confidentiality

Grantee shall hold and maintain, and cause all Subcontractors to hold and maintain, any and all State Records that the State provides or makes available to Grantee for the sole and exclusive benefit of the State, unless those State Records are otherwise publically available at the time of disclosure or are subject to disclosure by Grantee under CORA. Grantee shall not, without prior written approval of the State, use for Grantee's own benefit, publish, copy, or otherwise disclose to any third party, or permit the use by any third party for its benefit or to the detriment of the State, any State Records, except as otherwise stated in this Grant Award Letter. Grantee shall provide for the security of all State Confidential Information in accordance with all policies promulgated by the Colorado Office of Information Security and all applicable laws, rules, policies, publications, and guidelines. If Grantee or any of its Subcontractors will or may receive the following types of data, Grantee or its Subcontractors shall provide for the security of such data according to the following: **(i)** the most recently promulgated IRS Publication 1075 for all Tax Information and in accordance with the Safeguarding Requirements for Federal Tax Information attached to this Grant as an Exhibit, if applicable, **(ii)** the most recently updated PCI Data Security Standard from the PCI Security Standards Council for all PCI, **(iii)** the most recently issued version of the U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Security Policy for all CJI, and **(iv)** the federal Health Insurance Portability and Accountability Act for all PHI and the HIPAA Business Associate Agreement attached to this Grant, if applicable. Grantee shall immediately forward any request or demand for State Records to the State's principal representative.

B. Other Entity Access and Nondisclosure Agreements

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Grantee may provide State Records to its agents, employees, assigns and Subcontractors as necessary to perform the Work, but shall restrict access to State Confidential Information to those agents, employees, assigns and Subcontractors who require access to perform their obligations under this Grant Award Letter. Grantee shall ensure all such agents, employees, assigns, and Subcontractors sign nondisclosure agreements with provisions at least as protective as those in this Grant, and that the nondisclosure agreements are in force at all times the agent, employee, assign or Subcontractor has access to any State Confidential Information. Grantee shall provide copies of those signed nondisclosure restrictions to the State upon request.

C. Use, Security, and Retention

Grantee shall use, hold and maintain State Confidential Information in compliance with any and all applicable laws and regulations in facilities located within the United States, and shall maintain a secure environment that ensures confidentiality of all State Confidential Information wherever located. Grantee shall provide the State with access, subject to Grantee's reasonable security requirements, for purposes of inspecting and monitoring access and use of State Confidential Information and evaluating security control effectiveness. Upon the expiration or termination of this Grant, Grantee shall return State Records provided to Grantee or destroy such State Records and certify to the State that it has done so, as directed by the State. If Grantee is prevented by law or regulation from returning or destroying State Confidential Information, Grantee warrants it will guarantee the confidentiality of, and cease to use, such State Confidential Information.

D. Incident Notice and Remediation

If Grantee becomes aware of any Incident, it shall notify the State immediately and cooperate with the State regarding recovery, remediation, and the necessity to involve law enforcement, as determined by the State. After an Incident, Grantee shall take steps to reduce the risk of incurring a similar type of Incident in the future as directed by the State, which may include, but is not limited to, developing and implementing a remediation plan that is approved by the State at no additional cost to the State.

10. CONFLICTS OF INTEREST

Grantee shall not engage in any business or activities, or maintain any relationships that conflict in any way with the full performance of the obligations of Grantee under this Grant. Grantee acknowledges that, with respect to this Grant, even the appearance of a conflict of interest shall be harmful to the State's interests and absent the State's prior written approval, Grantee shall refrain from any practices, activities or relationships that reasonably appear to be in conflict with the full performance of Grantee's obligations under this Grant. If a conflict or the appearance of a conflict arises, or if Grantee is uncertain whether a conflict or the appearance of a conflict has arisen, Grantee shall submit to the State a disclosure statement setting forth the relevant details for the State's consideration. Grantee acknowledges that all State employees are subject to the ethical principles described in §24-18-105, C.R.S. Grantee further acknowledges that State employees may be subject to the requirements of §24-18-105, C.R.S. with regard to this Grant.

11. INSURANCE

Grantee shall maintain at all times during the term of this Grant such liability insurance, by commercial policy or self-insurance, as is necessary to meet its liabilities under the Colorado Governmental Immunity Act, §24-10-101, *et seq.*, C.R.S. (the "GIA"). Grantee shall ensure that any Subcontractors maintain all insurance customary for the completion of the Work done by that Subcontractor and as required by the State or the GIA.

12. REMEDIES

In addition to any remedies available under any exhibit to this Grant Award Letter, if Grantee fails to comply with any term or condition of this Grant, the State may terminate some or all of this Grant and require Grantee to repay any or all Grant funds to the State in the State's sole discretion. The State may also terminate this Grant Award Letter at any time if the State has determined, in its sole discretion, that Grantee has ceased performing the Work without intent to resume performance, prior to the completion of the Work.

13. DISPUTE RESOLUTION

Except as herein specifically provided otherwise or as, disputes concerning the performance of this Grant that cannot be resolved by the designated Party representatives shall be referred in writing to a senior departmental management staff member designated by the State and a senior manager or official designated by Grantee for resolution.

14. NOTICES AND REPRESENTATIVES

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Each Party shall identify an individual to be the principal representative of the designating Party and shall provide this information to the other Party. All notices required or permitted to be given under this Grant Award Letter shall be in writing, and shall be delivered either in hard copy or by email to the representative of the other Party. Either Party may change its principal representative or principal representative contact information by notice submitted in accordance with this **§13**.

15. RIGHTS IN WORK PRODUCT AND OTHER INFORMATION

Grantee hereby grants to the State a perpetual, irrevocable, non-exclusive, royalty free license, with the right to sublicense, to make, use, reproduce, distribute, perform, display, create derivatives of and otherwise exploit all intellectual property created by Grantee or any Subcontractors or Subgrantees and paid for with Grant Funds provided by the State pursuant to this Grant.

16. GOVERNMENTAL IMMUNITY

Liability for claims for injuries to persons or property arising from the negligence of the Parties, their departments, boards, commissions committees, bureaus, offices, employees and officials shall be controlled and limited by the provisions of the Colorado Governmental Immunity Act, §24-10-101, et seq., C.R.S.; the Federal Tort Claims Act, 28 U.S.C. Pt. VI, Ch. 171 and 28 U.S.C. 1346(b), and the State's risk management statutes, §§24-30-1501, *et seq*. C.R.S. No term or condition of this Contract shall be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protections, or other provisions, contained in these statutes.

17. GENERAL PROVISIONS

A. Assignment

Grantee's rights and obligations under this Grant are personal and may not be transferred or assigned without the prior, written consent of the State. Any attempt at assignment or transfer without such consent shall be void. Any assignment or transfer of Grantee's rights and obligations approved by the State shall be subject to the provisions of this Grant Award Letter.

B. Captions and References

The captions and headings in this Grant Award Letter are for convenience of reference only, and shall not be used to interpret, define, or limit its provisions. All references in this Grant Award Letter to sections (whether spelled out or using the § symbol), subsections, exhibits or other attachments, are references to sections, subsections, exhibits or other attachments contained herein or incorporated as a part hereof, unless otherwise noted.

C. Entire Understanding

This Grant Award Letter represents the complete integration of all understandings between the Parties related to the Work, and all prior representations and understandings related to the Work, oral or written, are merged into this Grant Award Letter.

D. Modification

The State may modify the terms and conditions of this Grant by issuance of an updated Grant Award Letter, which shall be effective if Grantee accepts Grant Funds following receipt of the updated letter. The Parties may also agree to modification of the terms and conditions of the Grant in a formal amendment to this Grant, properly executed and approved in accordance with applicable Colorado State law and State Fiscal Rules.

E. Statutes, Regulations, Fiscal Rules, and Other Authority

Any reference in this Grant Award Letter to a statute, regulation, State Fiscal Rule, fiscal policy or other authority shall be interpreted to refer to such authority then current, as may have been changed or amended since the Grant Issuance Date. Grantee shall strictly comply with all applicable Federal and State laws, rules, and regulations in effect or hereafter established, including, without limitation, laws applicable to discrimination and unfair employment practices.

F. Digital Signatures

If any signatory signs this agreement using a digital signature in accordance with the Colorado State Controller Contract, Grant and Purchase Order Policies regarding the use of digital signatures issued under the State Fiscal Rules, then any agreement or consent to use digital signatures within the electronic system through which that signatory signed shall be incorporated into this Contract by reference.

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G. Severability

The invalidity or unenforceability of any provision of this Grant Award Letter shall not affect the validity or enforceability of any other provision of this Grant Award Letter, which shall remain in full force and effect, provided that the Parties can continue to perform their obligations under the Grant in accordance with the intent of the Grant.

H. Survival of Certain Grant Award Letter Terms

Any provision of this Grant Award Letter that imposes an obligation on a Party after termination or expiration of the Grant shall survive the termination or expiration of the Grant and shall be enforceable by the other Party.

I. Third Party Beneficiaries

Except for the Parties' respective successors and assigns described above, this Grant Award Letter does not and is not intended to confer any rights or remedies upon any person or entity other than the Parties. Any services or benefits which third parties receive as a result of this Grant are incidental to the Grant, and do not create any rights for such third parties.

J. Waiver

A Party's failure or delay in exercising any right, power, or privilege under this Grant Award Letter, whether explicit or by lack of enforcement, shall not operate as a waiver, nor shall any single or partial exercise of any right, power, or privilege preclude any other or further exercise of such right, power, or privilege.

K. Accessibility

i. Grantee shall comply with and the Work Product provided under this Contract shall be in compliance with all applicable provisions of §§24-85-101, *et seq*., C.R.S., and the *Accessibility Standards for Individuals with a Disability,* as established by OIT pursuant to Section §24-85-103 (2.5), C.R.S. Grantee shall also comply with all State of Colorado technology standards related to technology accessibility and with Level AA of the most current version of the Web Content Accessibility Guidelines (WCAG), incorporated in the State of Colorado technology standards.

ii. The State may require Contractor's compliance to the State's Accessibility Standards to be determined by a third party selected by the State to attest to Contractor's Work Product and software is in compliance with §§24-85-101, *et seq*., C.R.S., and the *Accessibility Standards for Individuals with a Disability* as established by OIT pursuant to Section §24-85-103 (2.5), C.R.S.

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City of Littleton **Exhibit A**
Exterior Rehabilitation
Project #2023-02-021

SCOPE OF WORK

I. Purpose: The purpose of this project is to rehabilitate the exterior of Geneva Home-Geneva Lodge in Littleton, Colorado.

II. Scope of Work is as follows:

A. Preservation Activities

1. Rehabilitate Wood Siding and Trim
    a. Repair siding and trim with epoxy, Dutchman or in-kind replacement as necessary
    b. Prep, prime and paint
2. Rehabilitate Masonry
    a. Repoint brick masonry
    b. Replace missing and severely deteriorated bricks
    c. Rotate bricks where face loss has occurred
    d. Remove paint from chimney and clean and repoint brick chimneys
    e. Remove and replace porch tile
3. Rehabilitate Wood Doors
    a. Repair original wood components with epoxy
    b. Replace missing and severely deteriorated wood components
    c. Install weather-stripping
    d. Replace broken and missing hardware
    e. Prep, prime and paint wood components
4. Rehabilitate Wood Windows
    a. Repair original wood components with epoxy
    b. Replace missing and severely deteriorated wood components
    c. Replace glazing putty
    d. Install weather-stripping
    e. Replace broken and missing hardware
    f. Prep, prime and paint wood components
5. Replace Non-historic Windows
    a. Replace existing non-historic wood windows with appropriate historic windows and joinery
6. Rehabilitate Roof and Site Drainage
    a. Regrade site at locations of slope toward building and ponding water
    b. Rehabilitate rafter tails to protect from further deterioration due to roof drainage
    c. Replace damaged areas of site concrete
    d. Replace broken and leaking gutters and downspouts

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B. Architectural and Engineering Services
    1. Assist with some deliverables
    2. Attend meetings
    3. Provide construction administration
C. Archaeological Monitoring
    1. Monitor all work related to ground disturbance
    2. Create monitoring report
    3. Complete Office of Archaeology and Historic Preservation forms as necessary

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City of Littleton **Exhibit B**
Exterior Rehabilitation
Project #2023-02-021

BUDGET

TASK	AMOUNT
A. Preservation Activities	$638,266
B. Architectural and Engineering Services	$21,420
C. Overhead and Profit	$41,588
D. General Conditions	$117,836
E. Bonding	$23,994
F. Permits	$3,611
G. Archaeological Monitoring	$4,413
PROJECT SUBTOTAL	**$851,128**
Contingency †	*$80,000*
PROJECT TOTAL	**$931,128**
Grant Award (26.85%)	**$250,000**
Cash Match (73.15%)	**$681,128**

Grant payments are based off the **Project Subtotal**. Total payments will equal Grant Award percentage of **Project Subtotal** up to a maximum of the Grant Award Amount should contingency be requested and approved.

† Contingency **-** Must receive written approval from SHF Staff prior to use.

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City of Littleton **Exhibit C**
Exterior Rehabilitation
Project #2023-02-021

LIST OF SUBMITTALS

Project Reports	Due Date	Society Response
a. Payment Request Form (Attachment 1). Deliverables # 1-4 below must be approved before Advance Payment is made.	N/A	Advance Payment of Grant Award $91,409.
b. Progress Report # 1	October 1, 2023	Review *
c. Progress Report # 2	December 1, 2023	Review *
d. Progress Report # 3	February 1, 2024	Review *
e. Progress Report # 4	April 1, 2024	Review *
f. Progress Report # 5	June 1, 2024	Review *
g. Progress Report # 6	August 1, 2024	Review *
h. Interim Financial Report (Attachment 1). Deliverables # 5-12 below must be approved before Interim Payment is made.	August 15, 2024 **	Review & Approve. Interim Payment of Grant Award $114,259. †
i. Progress Report # 7	October 1, 2024	Review *
j. Progress Report # 8	December 1, 2024	Review *
k. Progress Report # 9	February 1, 2025	Review *
l. Progress Report # 10	April 1, 2025	Review *
m. Final Financial Report (Attachment 1). All deliverables must be approved before payment is made.	May 15, 2025 ***	Review & Approve. Final Payment of Grant Award $22,853. †

* At the discretion of the SHF technical staff, progress reports may not receive a response.

** Interim Financial Report due date is a guideline. Please submit Interim Financial Report when 40% or more of Advance is expended and you are ready for the next payment.

*** Final Payment is a reimbursement ONLY after all contractors are paid in full.

† Payment may increase due to approval of contingency funds.

All deliverables and submittals must be received at least 30 days prior to the Grant End Date.

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PROJECT DELIVERABLES

All deliverables must be submitted digitally to your assigned Resource Specialist unless a Hard Copy (HC) is specified, then a digital *and* hard copy must be submitted.

Project Deliverables	SHF Response
1. Initial Consultation with SHF Resource Specialist	Review Comment and/or Approve
2. Contract Certification for: architect	Review Comment and/or Approve
3. Before/existing condition photos of Scope of Work (HC)	Review Comment and/or Approve
4. Historical photos/documentation of areas to be treated	Review Comment and/or Approve
5. Construction Documents/Plans and Specifications (HC)	Review Comment and/or Approve
6. Contract Certification for: contractor	Review Comment and/or Approve
7. Contract Certification for archaeologist	Review Comment and/or Approve
8. Copy of Federal or State Archaeological Permit	Review Comment and/or Approve
9. Preconstruction meeting with SHF Resource Specialist	Review Comment and/or Approve
10. Consultation with SHF Archaeological Specialist prior to ground disturbance	Review Comment and/or Approve
11. Mockup of: masonry repairs	Review Comment and/or Approve
12. Mockup of: window repairs and sample window replacement	Review Comment and/or Approve
13. Materials Testing Analysis and Results: paint analysis	Review Comment and/or Approve
14. Interim meeting with SHF Resource Specialist	Review Comment and/or Approve
15. OAHP Site/Archaeological Forms, if necessary	Review Comment and/or Approve
16. Final Archaeological Report	Review Comment and/or Approve
17. Copies of Change Orders	Review Comment and/or Approve
18. After photos of Scope of Work	Review Comment and/or Approve

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City of Littleton **Exhibit D**
Exterior Rehabilitation
Project #2023-02-021

STATE HISTORICAL FUND PROVISIONS

1. STANDARDS OF WORK

The Property Owner and Grantee agree that they will perform the activities listed in Exhibit A and produce the deliverables listed in Exhibit C in accordance with the pertinent sections of the applicable Secretary of the Interior's Standards for Archaeology and Historic Preservation. The Property Owner and Grantee shall perform any and all survey activities and submittals in accordance with the Survey Manual and How to Complete Colorado Cultural Resource Inventory Forms, Volumes I and II, June 1998 (Revised December 2001) for any and all survey activities and projects (copies of which are available through History Colorado).

2. DISSEMINATION OF ARCHAEOLOGICAL SITE LOCATIONS

The Grantee and Property Owner agree to provide History Colorado with copies of any archaeological surveys developed during the course of, or under a project financed either wholly or in part by History Colorado. The Grantee and Property Owner agree to otherwise restrict access to such archaeological surveys, as well as access to any other information concerning the nature and location of archaeological resources, in strict accordance with the provisions of History Colorado-Office of Archaeology and Historic Preservation, Policy on Dissemination of Information, adopted October 1991, a copy of which is available from History Colorado.

3. PUBLIC ACKNOWLEDGEMENT OF FUNDING SOURCE

In all publications and similar materials funded under this Agreement, a credit line shall be included that reads: "This project is/was paid for in part by a History Colorado State Historical Fund grant." In addition, History Colorado reserves the right to require that the following sentence be included in any publication or similar material funded through this program: "The contents and opinions contained herein do not necessarily reflect the views or policies of History Colorado".

4. MATCHING FUNDS

In the event that matching funds, as provided in Cover Page & Exhibit B, become unavailable, the State may, in its sole discretion, reduce its total funding commitment to the Project in proportion to the reduction in matching funds. If the total funding set forth in the Project Budget is not expended on completion of the Project, the State may reduce its pro-rata share of the unexpended budget.

5. ACCOUNTING

At all times from the effective date of this Contract until completion of this Project, the Grant Recipient and Property Owner shall maintain properly segregated books of State funds, matching funds, and other funds associated with this Project. All receipts and expenditures associated with said Project shall be documented in a detailed and specific manner, and shall accord with the Budget set forth in Exhibit B. Interest earned on funds advanced by the State shall be applied to eligible project expenditures, and will be deducted from the final payment.

6. QUALIFYING EXPENDITURES

Expenditures incurred by the Grantee or Property Owner prior to execution of this Agreement are not eligible expenditures for State reimbursement. If the Project involves matching funds, the State

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may allow prior expenditures in furtherance of the Scope of Work to be counted as part of such matching funds.

7. BUDGET REVISIONS

In the event budget line(s) need to be increased/decreased by 25% or more for any budget line item, grantee shall provide a written request, in advance, with a detailed explanation and information for the revision(s) in a form and manner approved by the state.

8. RECAPTURE

The following recapture provision shall apply only to a private/for-profit property owner: in the event that the property, as a whole, is sold or ownership transferred within a five-year period after completion of the grant, the following recapture provision shall apply: if the property is sold or ownership transferred within the first year after completion, one-hundred percent (100%) of the funds awarded shall be returned to the state, with a twenty percent (20%) reduction per year thereafter.

9. ACQUISITIONS

For acquisition projects, upon receipt by the State of documentation for the execution of a recorded deed of real property between Property Owner and Grantee, the State, Grantee, and Property Owner agree the Property Owner will cease to be a party to the Agreement.

10. PROPERTY INSURANCE

For projects with physical work, Property insurance covering the building, including the premises, its equipment, and owner’s interest in improvements and betterments on an "all risk" basis, including where appropriate the perils of fire, flood, and earthquake. Coverage shall be written with a replacement cost valuation and include an agreed value provision. Coverage shall also include restoration back to the original state. The deductible amount shall not exceed $25,000.

v. 3.2023

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City of Littleton **Exhibit E**
Exterior Rehabilitation
Project #2023-02-021

COVENANT PROPERTY PROTECTION

I. Parties: This Agreement is by and between the State of Colorado for the use and benefit of the Department of Higher Education, History Colorado, the Colorado Historical Society, 1200 Broadway, Denver, Colorado 80203 and **City of Littleton,** Property Owner, 2255 West Berry Street, Littleton, Colorado 80120.

II. Property: the Geneva Home-Geneva Lodge-Sweet Home-Romoco Poultry Farm located at 2305 West Berry Avenue, Littleton, Colorado, in Arapahoe County, which has been listed in the National Register of Historic Places, and is more particularly described as follows:

Lot 3 Blk 1 Littleton Center Sub

III. Preservation of Property:

A. EASEMENT: If required, in the sole discretion of the State, the provisions in the following paragraph are hereby incorporated into this agreement:

Easement Required: ☐ Yes ☒ No

i. Property Owner shall place or cause to be placed on the property title a perpetual easement, which easement shall be transferred to an organization qualified to hold easements of this kind under Section 170(h)(3) of the Internal Revenue Code and Internal Revenue Service Regulations, Section 1.170A-14(c).

ii. The easement shall, at a minimum, prohibit any alteration of the premises, which would affect the exterior appearance of the property unless first authorized by the easement holding organization with appropriate exceptions to permit routine maintenance. Other necessary language shall protect the interests of the easement holding organization in the event of damage to the property, and shall further require that the easement be transferred to a similar organization in the event that the selected organization becomes unable for any reason to perform its obligations pursuant to the easement agreement.

iii. Property Owner agrees that the easement form and any associated costs shall be subject to the approval of the State. State shall pay the costs for the easement in the amount(s) set forth in Exhibit B.

B. COVENANT: The Property Owner hereby agrees to the following for a period of 20 years commencing on the date it is filed with the County Recorder.

i. Without the express written permission of History Colorado, no construction, alteration, movement, relocation or remodeling or any other activity shall be undertaken or permitted to be undertaken on the Property which would alter the architectural appearance of the Property, adversely affect the structural soundness of the Property, encroach on the open

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land area of the Property, or adversely affect such prominent landscape features as trees, hedges, fences, walls or paths. Such work, when permitted shall be performed according to the Secretary of the Interior's *Standards for the Treatment of Historic Properties and the Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*, issued and as may from time to time be amended by the U.S. Secretary of the Interior, hereinafter collectively referred to as the "*Standards*". In all events, the Property Owner further agrees at all times to maintain the Property in a good and sound state of repair and to maintain the Property according to the *Standards* so as to prevent deterioration of the Property.

ii. In the event of severe damage or total destruction to the Property (defined, for the purpose of this provision, as sudden damage or loss caused by fire, earthquake, inclement weather, acts of the public enemy, riot or other similar casualty) not due to the fault of the Property Owner this provision shall terminate as of the date of such damage or destruction.

iii. History Colorado, or a duly appointed representative of History Colorado, shall be permitted to inspect the Property at all reasonable times in order to ascertain if the above conditions are being observed.

iv. When Section B is for COVENANT, within sixty (60) days of the completion of this Award, Property Owner covenants and agrees that History Colorado will record this Exhibit with the county clerk and recorder for the county in which the property is located. Property Owner further covenants and agrees that this Exhibit will constitute a binding covenant that will run with the land.

v. When section B is for LETTER OF AGREEMENT, History Colorado will maintain record of this Exhibit until the expiration of the letter of agreement period.

vi. The provisions of this Paragraph will cease to be effective upon the conveyance of an approved easement if such is required pursuant to EASEMENT Paragraph above.

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SIGNATURE PAGE

*Persons signing for Owner hereby swear and affirm that they are authorized to act on Parties' behalf and acknowledge that the State is relying on their representations to that effect.

OWNER
City of Littleton, CO

*Signature of Authorized Officer for Owner

Date: July 10, 2023

James L. Becklenberg
Printed Name of Authorized Officer

City Manager
Title of Authorized Officer

PROPERTY OWNER NOTARIZATION:

STATE OF COLORADO, Arapahoe COUNTY:

On this 10th day of July, 2023, before me the undersigned, a Notary Public for said State, personally appeared James L. Becklenberg, to me personally known, who stated that he/she is Littleton City Manager, that no seal has been procured by said city, and that the foregoing instrument was signed on behalf of said city by authority of its city council, and that as such officer, he/she acknowledged that he/she executed the foregoing instrument as his/her voluntary act and the voluntary act of the city.

LUCY M LUCERO
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 19934009727
MY COMMISSION EXPIRES JULY 02, 2025

NOTARY PUBLIC
Lucy M. Lucero

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STATE OF COLORADO
Jared S. Polis, Governor
History Colorado
Dawn DiPrince, Executive Director or Designee

By: Dawn DiPrince, Executive Director or Designee

Date: 6/21/23

STATE OF COLORADO, CITY & COUNTY OF DENVER:

On this 21 day of June, 2023, before me the undersigned, a Notary Public for said State, personally appeared **Dawn DiPrince,** to me personally known, who stated that she is **Executive Director of History Colorado**, that no seal has been procured by said organization, and that the foregoing instrument was signed on behalf of said organization by authority of its Board of Directors, and that as such officer, she acknowledged that she executed the foregoing instrument as her voluntary act and the voluntary act of the State of Colorado-Department of Higher Education, History Colorado, the Colorado Historical Society.

NOTARY PUBLIC

DANY MCCOY
Notary Public
State of Colorado
Notary ID # 20164031357
My Commission Expires 12-16-2024

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State Historical Fund
History Colorado

PAYMENT REQUEST AND FINANCIAL REPORT FORM (ATTACHMENT 1)

For advance, contingency, and easement fee payments: Only complete steps 1, 2, and 5**.**

- Include a copy of the Easement Fee invoice when requesting an Easement Payment.

For all other payments, ALL steps and page 2 must be completed.

- Copies of invoices are not required, but may be requested by SHF staff.

Guidelines:

- Refer to Exhibit C of your grant award document for payment amounts and deliverables due before submitting a payment request.
- At least 40% of your previous grant payment must be spent or invoiced prior to receiving the Interim Payment(s).
- Approved contingency funds will be added to your final payment if not requested previously.
- **Final payment is a reimbursement only**. All invoices must be paid in full.

Step 1) General Information:

Project # _____ Grant Recipient Organization: _____

Step 2) Payment(s) Requested (Choose all that apply):

☐ Advance ☐ Interim ☐ 2nd Interim *(if applicable)* ☐ Final ☐ Contingency ☐ Easement

Step 3) Financial Report:

- Report all payments you've made, including payments of cash match, to subcontractors and individuals for work on the project since your last payment request.
- You must indicate which budget task(s) from Exhibit B the payment is for. If a single payment is for more than one budget task, break the invoice out onto multiple lines to report the amount paid for each task.

Award Amount	$	Project Ratio Grant Funds:	% / Cash Match:	%

PAYEE NAME **whom you paid**	BUDGETED TASK ***as listed in Exhibit B of Contract***	DATE PAID	CHECK #	AMOUNT **PAID**

I hereby certify that all expenses reported above have been PAID and that all of the information is correct and that any false or misrepresented information may require immediate repayment of any or all funds.	1st Interim Financial Report Total	
	2nd Interim Financial Report Total	
	Final Financial Report Total	
	Project Total	

Step 4) Additional Information:

Project is estimated _____% Complete Interest Earned: $_____

Step 5) Signature:

_____

Grant Recipient Organization Signatory Date

FOR SHF USE ONLY

_____ Review

_____ QC

_____ Approved

WEBSITE DESIGN AND DIGITAL TRANSFORMATION
PROPOSAL SUBMISSION FORM and CERTIFICATION

SUBMISSION FORM: Include this two-page signed form and certification as a PDF with your electronic submission. Proposals must be submitted online via Rocky Mountain E-Purchasing System (RMEPS) at www.bidnetdirect.com/colorado.

Vendor Name: _____

Vendor's Website: _____

Vendor's Address: _____

Vendor's City, State, Zip: _____

Vendor's Primary Contact: _____

Primary Contact's Email: _____

Primary Contact's Phone: _____

SPECIFICATIONS MET: Does your proposal meet or exceed all specification and requirements of the RFP? YES or NO *If No. Please explain in detail. Use additional space as needed.*

_____

_____

VENDOR CERTIFICATION

The individual, by signing below represents that they are a duly authorized signer able to bind the Vendor and by signing below the Vendor acknowledges the following:

The SCHEDULE OF ACTIVITIES and dates contained in the RFP are subject to change and the City reserves the right to adjust this schedule as necessary.

The Vendor acknowledges they must register with (BidNet) to access and download the City of Littleton's solicitation documents. It is the responsibility of each potential Vendor to monitor the BidNet website regularly for any changes or addenda to this RFP.

The City of Littleton reserves the right to modify or cancel this Request for Proposal (RFP) at any time.

Costs for developing proposals in response to the RFP are entirely the obligation of the Vendor and shall not be chargeable in any manner to the City. This includes travel to and from the City of Littleton for the purposes of participating in interviews and presentations as part of the selection process.

Proposals may be withdrawn at any time prior to the submission time specified in this RFP, provided notification is received in writing. Proposals cannot be changed or withdrawn after the time designated for receipt.

WEBSITE DESIGN AND DIGITAL TRANSFORMATION
PROPOSAL SUBMISSION FORM and CERTIFICATION (Continued)

The City reserves the right to reject any or all proposals, to waive any minor informalities or irregularities contained in any proposal, and to accept any proposal(s) deemed to be in the best interest of the City.

Any information submitted with the Vendor's proposal shall become public information, subject to release, under the Colorado Open Records Act. Littleton shall be held harmless from any claims. arising from the release of information within the proposal. It is the responsibility of the proposing Vendor to ensure that no confidential or proprietary information is included in the proposal that the proposing Vendor would not wish to be released.

Any proposed deviation from the requirements and specifications contained in the RFP MUST be noted in detail and submitted in writing with the proposal. Complete specifications shall be attached for any substitutions proposed, or when amplifications are desirable or necessary. Failure to submit documentation with changes, if applicable, may be grounds for the City to reject the proposal.

The Vendor recognizes the evaluation process is intended to help the City select the Vendor, or a combination of vendors, that is the most qualified and capable of delivering the best value/best solution to meet the objectives and requirements of this RFP. Cost is one contributing factor the City will use when determining best value/best solution.

The City reserves the right to require that a group of finalist Vendors attend an interview and make a presentation to the selection team.

The City reserves the right to conduct negotiations with one or more Vendor(s) and to accept revisions of proposals before award. In addition, the City may award contracts to more than one Vendor in the event a combination of Vendors provides the best overall solution to the City.

The undersigned, being duly sworn, deposes and says that the person, firm, association, co-partnership or corporation herein named, has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in the preparation and submission of a proposal to the City of Littleton for consideration in the award of a contract for services identified in this RFP.

By signing below, the following individual represents that they are a duly authorized signer able to obligate the Vendor and that they have read, understood, and agree to all the elements contained in this Vendor Submission Form and Certification.

Printed Name: _____

Title: _____

Date: _____

Signature: _____

Geneva Lodge
Exterior Rehabilitation

2305 West Berry Avenue
Littleton, Colorado 80120

Form+Works Project No. 22-005

CONSTRUCTION DOCUMENTS FOR REVIEW

May 6, 2022

SPECIFICATIONS

DIVISION 01 THROUGH DIVISION 33

form+works
design group, LLC

P.O. Box 476
Eastlake, Colorado 80614
(303) 598-6545

SPECIFICATION TABLE OF CONTENTS

FOR

Geneva Lodge Exterior Rehabilitation
Littleton, Colorado

FWDG Project No. 22-005

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NOT USED.

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NOT USED.

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NOT USED.

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DIVISION 10 - SPECIALTIES

NOT USED.

DIVISION 11 - EQUIPMENT

NOT USED.

DIVISION 12 - FURNISHINGS

NOT USED.

DIVISION 13 - SPECIAL CONDITIONS

NOT USED.

DIVISION 14 - CONVEYING SYSTEMS

NOT USED.

DIVISION 21 - FIRE SUPPRESSION

NOT USED.

DIVISION 22 - PLUMBING

NOT USED.

DIVISION 23 - HEATING VENTILATING AND AIR CONDITIONING

NOT USED.

DIVISION 26 - ELECTRICAL

NOT USED.

DIVISION 27 - COMMUNICATIONS

NOT USED.

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

NOT USED.

DIVISION 31 - EARTHWORK

NOT USED.

DIVISION 32 - EXTERIOR IMPROVEMENTS

NOT USED.

DIVISION 33 - UTILITIES

NOT USED.

END OF TABLE OF CONTENTS

SECTION 01 1000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Work by Owner.
4. Work under separate contracts.
5. Purchase contracts.
6. Owner-furnished products.
7. Contractor-furnished, Owner-installed products.
8. Access to site.
9. Coordination with occupants.
10. Work restrictions.
11. Specification and Drawing conventions.
12. Miscellaneous provisions.

B. Related Requirements:

1. Section 01 5000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

A. Project Identification: Geneva Lodge Exterior Rehabilitation.

1. Project Location: 2305 West Berry Avenue, Littleton, CO 80120.

B. Owner: City of Littleton, 1800 W Belleview Avenue, Littleton, CO 80120.

1. Owner's Representative: Justin Yeo, Project Manager; 303.795.3958 (office), 303.549.9297 (cell), jyeo@littletongov.org

C. Architect: Form+Works Design Group, LLC; P.O. Box 476, Eastlake, CO 80614.
1. Architect’s Representative: Jessica Reske, AIA, LEED AP; 414.477.5348 (cell), jessica@formworksdesigngroup.com

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. Site Rehabilitation.
2. Roof Drainage Rehabilitation.
3. Exterior Wood Siding and Trim Rehabilitation.
4. Exterior Brick Masonry Rehabilitation.
5. Exterior Wood Window and Door Rehabilitation and Replacement.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.5 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits: Confine construction operations to work areas identified on the drawings.
2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.

    a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.6 COORDINATION WITH OCCUPANTS

A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

1.7 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7 a.m. to 6 p.m., Monday through Friday, unless otherwise indicated.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify Owner not less than two days in advance of proposed utility interruptions.
2. Obtain Owner's written permission before proceeding with utility interruptions.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Owner not less than two days in advance of proposed disruptive operations.
2. Obtain Owner's written permission before proceeding with disruptive operations.

E. Restricted Substances: Use of tobacco products and other controlled substances within the existing building is not permitted.

F. Employee Identification: Owner will provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

G. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with Owner's representative.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1000

SECTION 01 2500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

1.2 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.3 ACTION SUBMITTALS

A. Substitution Requests: Submit one electronic copy of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.

h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES or IBC.
j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.5 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.6 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 30 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect

will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.
e. Requested substitution will not adversely affect Contractor's construction schedule.
f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the Work.
h. Requested substitution has been coordinated with other portions of the Work.
i. Requested substitution provides specified warranty.
j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2500

SECTION 01 2600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

B. Related Sections include the following:

(1) Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions" or other mutually agreed upon form.

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

(1) Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.

(2) Within 14 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

(a) Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

(b) Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

(c) Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Requests for Information: When latent or other unforseen conditions require clarifications or modifications to the Contract Documents, the Contractor may

request additional information, clarification and/or modification instructions by submitting a Request for Information to the Architect.

(1) Number each Request for Information consecutively.

(2) Include a statement outlining the reasons for the request. Propose suggested remedies or suggestions, if possible. Describe the work effected and potential for delays, if any.

(3) The Architect will respond to each Request for Information in written form by issuing additional instructions, clarifications or drawings. If it is expected that these additional instructions will affect the Contract Sum or Contract Time, the Architect will issue a Change Order Request to accompany the additional instructions.

(a) The Architect will respond to each Request for Information within seven calendar days of receiving Request for Information from Contractor.

(4) Respond to Change Order Requests issued by the above procedure as described in Owner-Initiated Proposal Requests above.

C. Contractor-Initiated Proposals: Where latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change prior to commencement of work for proposed change.

(1) Include a statement outlining 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 the Contract Time.

(2) Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

(3) Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

(4) Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

(5) Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

D. Proposal Request Form: Use AIA Document G709 or other approved form for Proposal Requests.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701 or similar form.

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714 or similar form. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

(1) Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the 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 change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

END OF SECTION 01 2600

SECTION 01 2900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.3 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule. Cost-loaded Critical Path Method Schedule may serve to satisfy requirements for the schedule of values.

1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
3. Sub-schedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values coordinated with each phase of payment.

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the schedule of values:

    a. Project name and location.
    b. Name of Architect.
    c. Architect's Project number.
    d. Contractor's name and address.
    e. Date of submittal.

2. Arrange schedule of values consistent with format of AIA Document G703.
3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:

    a. Related Specification Section or Division.
    b. Description of the Work.

c. Name of subcontractor.
d. Name of manufacturer or fabricator.
e. Name of supplier.
f. Change Orders (numbers) that affect value.
g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.

1) Labor.
2) Materials.
3) Equipment.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

a. Differentiate between items stored on-site and items stored off-site.

6. Overhead Costs: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
7. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
8. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.4 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

1. Other Application for Payment forms proposed by the Contractor shall be acceptable to Architect and Owner. Submit forms for approval with initial submittal of schedule of values.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:

    a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

F. Transmittal: Submit one electronic scan of signed and notarized original copies of each Application for Payment to Architect by e-mail. Application shall include waivers of lien and similar attachments if required.

G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.

2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
5. Products list (preliminary if not final).
6. Submittal schedule (preliminary if not final).
7. List of Contractor's staff assignments.
8. List of Contractor's principal consultants.
9. Copies of building permits.
10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
11. Initial progress report.
12. Report of preconstruction conference.

I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706.
5. AIA Document G706A.
6. AIA Document G707.
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2900

SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General coordination procedures.
2. Coordination drawings.
3. RFIs.
4. Digital project management procedures.
5. Project meetings.

1.2 DEFINITIONS

A. BIM: Building Information Modeling.

B. RFI: Request for Information. Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.3 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room, in temporary field office, in web-based Project software directory, and in prominent location in built facility. Keep list current at all times.

1.4 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

1.5 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.

b. Coordinate the addition of trade-specific information to coordination drawings in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
c. Indicate functional and spatial relationships of components.
d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
f. Indicate required installation sequences.
g. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:

1. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.
2. File Submittal Format: Submit or post coordination drawing files using PDF format.

3. Architect will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.

a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
b. Digital Data Software Program: Drawings are available in REVIT or can be exported to CAD.
c. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.

1.6 REQUEST FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.

5. Name of Architect.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Architect.

1. Attachments shall be electronic files in PDF format.

D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.

1. The following Contractor-generated RFIs will be returned without action:

    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for approval of Contractor's means and methods.
    d. Requests for coordination information already indicated in the Contract Documents.
    e. Requests for adjustments in the Contract Time or the Contract Sum.
    f. Requests for interpretation of Architect's actions on submittals.
    g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal.

    a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:

1. Project name.
2. Name and address of Contractor.

3. Name and address of Architect.
4. RFI number including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

1.7 DIGITAL PROJECT MANAGEMENT PROCEDURES

A. Use of Architect's Digital Data Files: Digital data files of Architect's BIM model or CAD drawings can be requested from the Architect for Contractor's use during construction.

1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
3. Digital Drawing Software Program: Contract Drawings are available in REVIT or can be exported to CAD
4. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.

    a. Subcontractors, and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of Agreement acceptable to Owner and Architect.

B. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.8 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of 10 working days prior to meeting.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Architect, History Colorado and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:

a. Responsibilities and personnel assignments.
b. Tentative construction schedule.
c. Phasing.
d. Critical work sequencing and long lead items.
e. Designation of key personnel and their duties.
f. Lines of communications.
g. Use of web-based Project software.
h. Procedures for processing field decisions and Change Orders.
i. Procedures for RFIs.
j. Procedures for testing and inspecting.
k. Procedures for processing Applications for Payment.
l. Distribution of the Contract Documents.
m. Submittal procedures.
n. Preparation of Record Documents.
o. Use of the premises and existing building.
p. Work restrictions.
q. Working hours.
r. Owner's occupancy requirements.
s. Responsibility for temporary facilities and controls.
t. Procedures for moisture and mold control.
u. Procedures for disruptions and shutdowns.
v. Construction waste management and recycling.
w. Parking availability.
x. Office, work, and storage areas.
y. Equipment deliveries and priorities.
z. First aid.
aa. Security.
bb. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

    a. Contract Documents.
    b. Options.
    c. Related RFIs.
    d. Related Change Orders.
    e. Purchases.
    f. Deliveries.
    g. Submittals.
    h. Review of mockups.
    i. Possible conflicts.
    j. Compatibility requirements.
    k. Time schedules.
    l. Weather limitations.
    m. Manufacturer's written instructions.
    n. Warranty requirements.
    o. Compatibility of materials.
    p. Acceptability of substrates.
    q. Temporary facilities and controls.
    r. Space and access limitations.
    s. Regulations of authorities having jurisdiction.
    t. Testing and inspecting requirements.
    u. Installation procedures.
    v. Coordination with other work.
    w. Required performance results.
    x. Protection of adjacent work.
    y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: Conduct progress meetings at biweekly or intervals approved by Owner and Architect.

1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: In addition to representatives of Owner, History Colorado and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

    a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction 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.

        1) Review schedule for next period.

    b. Review present and future needs of each entity present, including the following:

        1) Interface requirements.
        2) Sequence of operations.
        3) Status of submittals.
        4) Deliveries.
        5) Off-site fabrication.
        6) Access.
        7) Site use.
        8) Temporary facilities and controls.
        9) Progress cleaning.
        10) Quality and work standards.
        11) Status of correction of deficient items.
        12) Field observations.
        13) Status of RFIs.
        14) Status of Proposal Requests.
        15) Pending changes.
        16) Status of Change Orders.
        17) Pending claims and disputes.
        18) Documentation of information for payment requests.

4. Minutes: Contractor will record and distribute the meeting minutes to each party present and to parties requiring information.

    a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 01 3200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Contractor's Construction Schedule.
2. Construction schedule updating reports.
3. Daily construction reports.
4. Material location reports.
5. Site condition reports.
6. Unusual event reports.

1.2 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the schedule of values for completing an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum.

C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Event: The starting or ending point of an activity.

F. Float: The measure of leeway in starting and completing an activity.

1. Float time belongs to Owner.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

G. Resource Loading: The allocation of manpower and equipment necessary for completing an activity as scheduled.

1.3 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file, where indicated.
2. PDF file.

B. Startup construction schedule.

1. Submittal of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.

C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

D. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.

1. Activity Report: List of activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for each activity, sorted in ascending order by activity number and then by early start date, or actual start date if known.
3. Total Float Report: List of activities sorted in ascending order of total float.
4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.

E. Construction Schedule Updating Reports: Submit with Applications for Payment.

F. Daily Construction Reports: Submit at weekly intervals.

G. Material Location Reports: Submit at weekly intervals.

H. Site Condition Reports: Submit at time of discovery of differing conditions.

I. Unusual Event Reports: Submit at time of unusual event.

J. Qualification Data: For scheduling consultant.

1.4 QUALITY ASSURANCE

A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 01 3100 "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's Construction Schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, including phasing, area separations, interim milestones and partial Owner occupancy.
4. Review submittal requirements and procedures.
5. Review time required for review of submittals and resubmittals.
6. Review requirements for tests and inspections by independent testing and inspecting agencies.
7. Review time required for Project closeout.
8. Review and finalize list of construction activities to be included in schedule.
9. Review procedures for updating schedule.

1.5 COORDINATION

A. Coordinate Contractor's Construction Schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.6 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

B. Time Frame: Extend schedule from date established for commencement of the Work to date of final completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each floor or separate area as a separate numbered activity for each main element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

   Submittal Review Time: Include review and resubmittal times indicated in Section 01 3300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
3. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
4. Commissioning Time: Include no fewer than 15 days for commissioning.

5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
3. Products Ordered in Advance: Include a separate activity for each product. Include delivery date. Delivery dates indicated stipulate the earliest possible delivery date.
4. Owner-Furnished Products: Include a separate activity for each product. Include delivery date. Delivery dates indicated stipulate the earliest possible delivery date.
5. Work Restrictions: Show the effect of the following items on the schedule:

    a. Coordination with existing construction.
    b. Limitations of continued occupancies.
    c. Uninterruptible services.
    d. Partial occupancy before Substantial Completion.
    e. Use-of-premises restrictions.
    f. Provisions for future construction.
    g. Seasonal variations.
    h. Environmental control.

6. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:

    a. Structural completion.
    b. Temporary enclosure and space conditioning.
    c. Permanent space enclosure.
    d. Completion of mechanical installation.
    e. Completion of electrical installation.
    f. Substantial Completion.

E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.

F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and the Contract Time.

G. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate final completion percentage for each activity.

H. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

I. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules 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 performance of construction activities.

1.7 GANTT-CHART SCHEDULE REQUIREMENTS

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for commencement of the Work.

1. Base schedule on the startup construction schedule and additional information received since the start of Project.

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

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

1.8 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.

4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions, including presence of rain or snow.
7. Testing and inspection.
8. Accidents.
9. Meetings and significant decisions.
10. Unusual events.
11. Stoppages, delays, shortages, and losses.
12. Meter readings and similar recordings.
13. Emergency procedures.
14. Orders and requests of authorities having jurisdiction.
15. Change Orders received and implemented.
16. Construction Change Directives received and implemented.
17. Services connected and disconnected.
18. Equipment or system tests and startups.
19. Partial completions and occupancies.
20. Substantial Completions authorized.

B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.
2. Material stored prior to previous report and since removed from storage and installed.
3. Material stored following previous report and remaining in storage.

C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

D. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

1. Submit unusual event reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3200

SECTION 01 3233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.
4. Preconstruction video recordings.
5. Periodic construction video recordings.

1.2 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

B. Digital Photographs: Submit image files within three days of taking photographs.

1. Submit photos by uploading to web-based project software site. Include copy of key plan indicating each photograph's location and direction.
2. Identification: Provide the following information with each image description in web-based project software site:

a. Name of Project.
b. Name and contact information for photographer.
c. Name of Architect.
d. Name of Contractor.
e. Date photograph was taken.
f. Description of location, vantage point, and direction.
g. Unique sequential identifier keyed to accompanying key plan.

1.3 FORMATS AND MEDIA

A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels ,and with vibration-reduction technology. Use flash in low light levels or backlit conditions.

B. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

C. Metadata: Record accurate date and time from camera.

D. File Names: Name media files with date, Project area and sequential numbering suffix.

1.4 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs with maximum depth of field and in focus.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.

1. Flag construction limits before taking construction photographs.
2. Take a minimum of 20 photographs to show existing conditions adjacent to property before starting the Work.
3. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

C. Periodic Construction Photographs: Take a minimum of 20 photographs weekly. Select vantage points to show status of construction and progress since last photographs were taken.

D. Final Completion Construction Photographs: If requested by Owner or Architect, take up to 50 photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.

E. Additional Photographs: Architect may request photographs in addition to periodic photographs specified.

1. Three days' notice will be given, where feasible.
2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:

a. Special events planned at Project site.
b. Immediate follow-up when on-site events result in construction damage or losses.
c. Photographs to be taken at fabrication locations away from Project site.
d. Substantial Completion of a major phase or component of the Work.
e. Extra record photographs at time of final acceptance.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3233

SECTION 01 3300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.3 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

3. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal Category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.

1.4 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Contractor.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
8. Category and type of submittal.
9. Submittal purpose and description.
10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
11. Drawing number and detail references, as appropriate.
12. Indication of full or partial submittal.
13. Location(s) where product is to be installed, as appropriate.
14. Other necessary identification.
15. Remarks.
16. Signature of transmitter.

B. Options: Identify options requiring selection by Architect.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. PDF Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

1.5 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Email: Prepare submittals as PDF package, and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect.

    a. Architect will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.

5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.6 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.
    f. Application of testing agency labels and seals.
    g. Notation of coordination requirements.
    h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams that show factory-installed wiring.
    b. Printed performance curves.
    c. Operational range diagrams.
    d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Identification of products.
    b. Schedules.
    c. Compliance with specified standards.
    d. Notation of coordination requirements.
    e. Notation of dimensions established by field measurement.
    f. Relationship and attachment to adjoining construction clearly indicated.
    g. Seal and signature of professional engineer if specified.

C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

a. Project name and submittal number.
b. Generic description of Sample.
c. Product name and name of manufacturer.
d. Sample source.
e. Number and title of applicable Specification Section.
f. Specification paragraph number and generic name of each item.

3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.
4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.

        1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
        2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.

E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

F. Certificates:

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

G. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

    a. Name of evaluation organization.
    b. Date of evaluation.
    c. Time period when report is in effect.
    d. Product and manufacturers' names.
    e. Description of product.
    f. Test procedures and results.
    g. Limitations of use.

1.7 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Contractor's Approval: Indicate Contractor's approval for each submittal with indication in web-based Project software. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

    1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.8 ARCHITECT'S REVIEW

A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return it.

    1. PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action.

B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Architect will return without review submittals received from sources other than Contractor.

F. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3300

SECTION 01 3591 - HISTORIC TREATMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general protection and treatment procedures for designated historic spaces, areas, rooms, and surfaces in Project.

1.2 DEFINITIONS

A. Consolidate: To strengthen loose or deteriorated materials in place.

B. Design Reference Sample: A sample that represents Architect's pre-bid selection of work to be matched; it may be existing work or work specially produced for Project.

C. Dismantle: To disassemble or detach a historic item from a surface, or a non-historic item from a historic surface, using gentle methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

D. Historic: Spaces, areas, rooms, surfaces, materials, finishes, and overall appearance that are important to the successful rehabilitation as determined by Architect.

E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect.

F. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.

G. Reinstall: To protect removed or dismantled item, repair and clean it as indicated for reuse, and reinstall it in original position, or where indicated.

H. Remove: To take down or detach a non-historic item located within a historic space, area, or room, using methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

I. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

J. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.

K. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.

L. Reproduce: To fabricate a new item, accurate in detail to the original, and from either the same or a similar material as the original, unless otherwise indicated.

M. Restore: To consolidate, replicate, reproduce, repair, and refinish as required to achieve the indicated results.

N. Retain: To keep existing items that are not to be removed or dismantled.

O. Reversible: New construction work, treatments, or processes that can be removed or undone in the future without damaging historic materials unless otherwise indicated.

P. Salvage: To protect removed or dismantled items and deliver them to Owner[ready for reuse].

Q. Stabilize: To provide structural reinforcement of unsafe or deteriorated items while maintaining the essential form as it exists at present; also, to reestablish a weather-resistant enclosure.

R. Strip: To remove existing finish down to base material unless otherwise indicated.

1.3 COORDINATION

A. Historic Treatment Sub-schedule: A construction schedule coordinating the sequencing and scheduling of historic treatment work for entire Project, including each activity to be performed in historic spaces, areas, and rooms, and on historic surfaces; and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for historic treatment work.

1. Schedule construction operations in sequence required to obtain best historic treatment results.
2. Coordinate sequence of historic treatment work activities to accommodate the following:
   a. Owner's partial occupancy of completed Work.
   b. Other known work in progress.
   c. Tests and inspections.
3. Detail sequence of historic treatment work, with start and end dates.
4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
5. Use of elevator and stairs.
6. Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use. Do not use such equipment without certification from Contractor's professional engineer that the structure can support the imposed loadings without damage.

1.4 PROJECT MEETINGS FOR HISTORIC TREATMENT

A. Preliminary Historic Treatment Conference: Before starting historic treatment work, conduct conference at project site.

1. Attendees: In addition to representatives of Owner, Architect, and Contractor, testing service representative, historic treatment specialists, chemical-cleaner manufacturer(s), and installers whose work interfaces with or affects historic treatment shall be represented at the meeting.

2. Agenda: Discuss items of significance that could affect progress of historic treatment work, including review of the following:

    a. Historic Treatment Sub-schedule: Discuss and finalize; verify availability of materials, historic treatment specialists' personnel, equipment, and facilities needed to make progress and avoid delays.
    b. Fire-prevention plan.
    c. Governing regulations.
    d. Areas where existing construction is to remain and the required protection.
    e. Hauling routes.
    f. Sequence of historic treatment work operations.
    g. Storage, protection, and accounting for salvaged and specially fabricated items.
    h. Existing conditions, staging, and structural loading limitations of areas where materials are stored.
    i. Qualifications of personnel assigned to historic treatment work and assigned duties.
    j. Requirements for extent and quality of work, tolerances, and required clearances.
    k. Methods and procedures related to historic treatments, including product manufacturers' written instructions and precautions regarding historic treatment procedures and their effects on materials, components, and vegetation.
    l. Embedded work such as flashings and lintels, special details, collection of wastes, protection of occupants and the public, and condition of other construction that affect the Work or will affect the work.

3. Reporting: Record conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.

B. Coordination Meetings: Conduct specifically for historic treatment work at intervals deemed appropriate by Architect and Owner. Coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

1. Attendees: In addition to representatives of Owner, Architect, and Contractor, each historic treatment specialist, supplier, installer, and other entity concerned with progress or involved in planning, coordination, or performance of historic treatment work activities shall be represented at these meetings. All participants at conference shall be familiar with Project and authorized to conclude matters relating to historic treatment work.
2. Agenda: Review and correct or approve minutes of previous coordination meeting. Review other items of significance that could affect progress of historic treatment work. Include topics for discussion as appropriate to status of Project.

    a. Historic Treatment Sub-schedule: Review progress since last coordination meeting. Determine whether each schedule item is on time, ahead of schedule, or behind schedule. Determine how construction behind schedule will be expedited with retention of quality; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities are completed within the Contract Time.
    b. Schedule Updating: Revise Contractor's Historic Treatment Sub-schedule after each coordination meeting where revisions to schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.

c. Review present and future needs of each entity present, including review items listed in the "Preliminary Historic Treatment Conference" Paragraph in this article and the following:

1) Interface requirements of historic treatment work with other Project Work.
2) Status of submittals for historic treatment work.
3) Access to historic treatment work.
4) Effectiveness of fire-prevention plan.
5) Quality and work standards of historic treatment work.
6) Change Orders for historic treatment work.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.5 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered or uncovered during the Work, regardless of whether they were previously documented, remain Owner's property.

1. Dismantle and salvage each item or object and protect it from damage, then promptly deliver it to Owner where directed.
2. Coordinate with Owner's archaeologist who will establish special procedures for dismantling and salvaging.

1.6 INFORMATIONAL SUBMITTALS

A. Historic Treatment Sub-schedule:

1. Submit historic treatment sub-schedule within seven days of date established for commencement of historic treatment work.

B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by Contractor's historic treatment operations.

C. Historic Treatment Program: Submit 30 days before work begins.

D. Fire-Prevention Plan: Submit 30 days before work begins.

1.7 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: An experienced firm regularly engaged in historic treatments similar in nature, materials, design, and extent to the work as specified in each Section and that has completed a minimum of five recent projects with a record of successful in-service performance that demonstrates the firm's qualifications to perform this work.

1. Field Supervisor Qualifications: Full-time supervisors experienced in historic treatment work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on site when historic treatment work begins and during its progress. Supervisors shall not be changed during Project except for causes beyond control of the specialist firm.

    a. Construct new mockups of required work whenever a supervisor is replaced.

B. Historic Treatment Program: Prepare a written plan for historic treatment for whole Project, including each phase or process and protection of surrounding materials during operations. Describe in detail the materials, methods, and equipment to be used for each phase of work. Show compliance with indicated methods and procedures specified in this and other Sections. Coordinate this whole-Project historic treatment program with specific requirements of programs required in other historic treatment Sections.

1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.

C. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-control devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include fire-watch personnel's training, duties, and authority to enforce fire safety.

D. Safety and Health Standard: ANSI/ASSE A10.6.

1.8 STORAGE AND HANDLING OF HISTORIC MATERIALS

A. Salvaged Historic Materials:

1. Clean loose dirt and debris from salvaged historic items unless more extensive cleaning is indicated.
2. Pack or crate items after cleaning; cushion against damage during handling. Label contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

B. Historic Materials for Reinstallation:

1. Repair and clean historic items for reuse as indicated.
2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make items functional for use indicated.

C. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after historic treatment and construction work in the vicinity is complete.

D. Storage: Catalog and store historic items within a weathertight enclosure where they are protected from moisture, weather, condensation, and freezing temperatures.

1. Identify each item with a nonpermanent mark to document its original location. Indicate original locations on plans, elevations, sections, or photographs by annotating the identifying marks.
2. Secure stored materials to protect from theft.
3. Control humidity so that it does not exceed 85 percent. Maintain temperatures 5 deg F or more above the dew point.

E. Storage Space:

1. Owner will arrange for limited on-site location(s) for free storage of historic material. This storage space does not include security and climate control for stored material.
2. Arrange for off-site locations for storage and protection of historic material that cannot be stored and protected on-site.

1.9 FIELD CONDITIONS

A. Size Limitations in Historic Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches or more.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 PROTECTION

A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from historic treatment procedures.

1. Use only proven protection methods, appropriate to each area and surface being protected.
2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where historic treatment work is being performed.
3. Erect temporary barriers to form and maintain fire-egress routes.
4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during historic treatment work.
5. Contain dust and debris generated by historic treatment work, and prevent it from reaching the public or adjacent surfaces.

6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.

B. Temporary Protection of Historic Materials:

1. Protect existing historic materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
2. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by Architect.

C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.

D. Utility and Communications Services:

1. Notify Owner, Architect, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by historic treatment work before commencing operations.
2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for historic treatment work.
3. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.

E. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is functioning properly.

1. Prevent solids such as stone or mortar residue or other debris from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from historic treatment work.
2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

3.2 PROTECTION FROM FIRE

A. Follow fire-prevention plan and the following:

1. Comply with NFPA 241 requirements unless otherwise indicated.
2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.

    a. If combustible material cannot be removed, provide fire blankets to cover such materials.

3. Prohibit smoking by all persons within Project work and staging areas.

B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or combustible materials, including

welding, torch-cutting, soldering, brazing, removing paint with heat, or other operations where open flames or implements using high heat or combustible solvents and chemicals are anticipated:

1. Obtain Owner's approval for operations involving use of open-flame or welding or other high-heat equipment. Notify Owner at least 72 hours before each occurrence, indicating location of such work.
2. As far as practicable, restrict heat-generating equipment to shop areas or outside the building.
3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that area is safe.
4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
6. Fire Watch: Before working with heat-generating equipment or combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows:

    a. Train each fire watch in proper operation of fire-control equipment and alarms.
    b. Prohibit fire-watch personnel from other work that would distract from fire-watch duties.
    c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
    d. Have fire-watch personnel perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work in each area to detect hidden or smoldering fires and to ensure that proper fire prevention is maintained.

C. Fire-Control Devices: Provide and maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for type of fire risk in each work area. Ensure that nearby personnel and fire-watch personnel are trained in fire-extinguisher and blanket use.

3.3 PROTECTION DURING APPLICATION OF CHEMICALS

A. Protect motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm or spillage resulting from applications of chemicals and adhesives.

B. Cover adjacent surfaces with protective materials that are proven to resist chemicals selected for Project unless chemicals being used will not damage adjacent surfaces as indicated in historic treatment program. Use covering materials and masking agents that are waterproof and UV resistant and that will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to manufacturer's written instructions. Do not apply liquid masking agents or adhesives to painted or porous surfaces. When no longer needed, promptly remove protective materials.

C. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.

D. Neutralize alkaline and acid wastes and legally dispose of off Owner's property.

E. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

3.4 GENERAL HISTORIC TREATMENT

A. Have historic treatment work performed only by qualified historic treatment specialists.

B. Ensure that supervisory personnel are present when historic treatment work begins and during its progress.

C. Record existing work before each procedure (preconstruction), and record progress during the work. Use digital preconstruction documentation photographs. Comply with requirements in Section 01 3233 "Photographic Documentation."

D. Perform regular inspections of Project site as the Work progresses to detect hazards resulting from historic treatment procedures.

E. Follow the procedures in subparagraphs below and procedures approved in historic treatment program unless otherwise indicated:

1. Retain as much existing material as possible; repair and consolidate rather than replace.
2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
3. Use reversible processes wherever possible.
4. Use historically accurate repair and replacement materials and techniques unless otherwise indicated.
5. Record existing work before each procedure (preconstruction) and progress during the work with digital preconstruction documentation photographs. Comply with requirements in Section 01 3233 "Photographic Documentation."

F. Notify Architect of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.

1. Do not proceed with the work in question until directed by Architect.

G. Where missing features are indicated to be repaired or replaced, provide work with appearance based on accurate duplications rather than on conjecture, subject to approval of Architect.

H. Where work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

I. Identify new and replacement materials and features with permanent marks hidden in the completed Work to distinguish them from original materials. Record a legend of identification marks and the locations of the items on record Drawings.

END OF SECTION 01 3591

SECTION 01 4000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
4. Specific test and inspection requirements are not specified in this Section.

1.2 DEFINITIONS

A. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

B. Field Quality-Control Tests: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

D. Mockups: Full-size physical assemblies that are constructed on-site either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation

tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Integrated Exterior Mockups: Mockups of the exterior envelope constructed on-site as part of permanent construction, consisting of multiple products, assemblies, and subassemblies.

E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

G. Source Quality-Control Tests: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

J. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect[or Construction Manager].

1.3 CONFLICTING REQUIREMENTS

A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for direction before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 ACTION SUBMITTALS

A. Shop Drawings: For integrated exterior mockups.

1. Include plans, sections, and elevations, indicating materials and size of mockup construction.
2. Indicate manufacturer and model number of individual components.
3. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.5 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

B. Qualification Data: For Contractor's quality-control personnel.

C. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

D. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Entity responsible for performing tests and inspections.
3. Description of test and inspection.
4. Identification of applicable standards.
5. Identification of test and inspection methods.
6. Number of tests and inspections required.
7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

E. Reports: Prepare and submit certified written reports and documents as specified.

F. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.6 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice of Award, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's Construction Schedule.

B. Quality-Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.

1. Project quality-control manager may also serve as Project superintendent.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor-performed tests and inspections including Subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.
2. Special inspections required by authorities having jurisdiction and indicated on the Statement of Special Inspections.
3. Owner-performed tests and inspections indicated in the Contract Documents.

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.

F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.7 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, telephone number, and email address of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.

12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

1.8 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

G. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
d. Build in situ mockups using installers who will perform same tasks for Project.
e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups of size indicated.
2. Build mockups in location indicated or, if not indicated, as directed by Architect.
3. Notify Architect seven days in advance of dates and times when mockups will be constructed.

4. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed to perform same tasks during the construction at Project.
5. Demonstrate the proposed range of aesthetic effects and workmanship.
6. Obtain Architect's approval of mockups before starting corresponding work, fabrication, or construction.

    a. Allow seven days for initial review and each re-review of each mockup.

7. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
8. Demolish and remove mockups when directed unless otherwise indicated.

K. Integrated Exterior Mockups: Construct integrated exterior mockup according to approved Shop Drawings or as coordinated with Architect. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials. Comply with requirements in "Mockups" Paragraph.

1.9 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
2. Payment for these services will be made from testing and inspection allowances, as authorized by Change Orders.
3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
2. Engage a qualified testing agency to perform quality-control services.

    a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform duties of Contractor.

E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01 3300 "Submittal Procedures."

F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

G. Associated Contractor Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspection equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.10 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 4000

SECTION 01 4200 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": The term "approved," when used in conjunction with Architect's action on Contractor's submittals, applications, and requests, is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by Architect, requested by Architect, and similar phrases.

D. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on Drawings; or to other paragraphs or schedules in Specifications and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the user locate the reference.

E. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": The term "furnish" means to supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": The term "install" describes operations at Project site including unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.

I. "Installer": An installer is Contractor or another entity engaged by Contractor, as an employee, subcontractor, or contractor of lower tier, to perform a particular construction operation, including installation, erection, application, and similar operations.

J. The term "experienced," when used with the term "installer," means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with the special requirements indicated; and having complied with requirements of authorities having jurisdiction, unless more restrictions are indicated in specific sections.

(1) Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

K. "Project site" is the space available for performing construction activities, either exclusively or in conjunction with others performing other work as part of Project. The extent of Project site is shown on the Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of the date of the Contract Documents, unless otherwise indicated.

C. Conflicting Requirements: Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

(1) Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to Architect for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

(1) Where copies of standards are needed to perform a required construction activity, obtain copies directly from the publication source and make them available on request.

E. Abbreviations and Names: Abbreviations and acronyms are frequently used in the Specifications and other Contract Documents to represent the name of a trade association, standards-developing organization, authorities having jurisdiction, or other entity in the context of referencing a standard or publication. Where abbreviations and acronyms are used in the Specifications or other Contract Documents, they mean the recognized name of these entities. Refer to Gale Research's "Encyclopedia of Associations" or Columbia Books' "National Trade & Professional Associations of the U.S.," which are available in most libraries.

F. Federal Government Agencies: Names and titles of Federal Government standards- or specification-developing agencies are often abbreviated. A list of abbreviations and acronyms referenced in the Contract Documents of standards- or specification-developing agencies of the Federal Government is available from the Architect upon request.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

END OF SECTION 01 4200

SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.2 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Architect, testing agencies, and authorities having jurisdiction.

B. Sewer Service: Owner will pay sewer-service use charges for sewer usage by all entities for construction operations.

C. Water Service: Owner will pay water-service use charges for water used by all entities for construction operations.

D. Electric Power Service: Owner will pay electric-power-service use charges for electricity used by all entities for construction operations.

1.3 INFORMATIONAL SUBMITTALS

A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.

B. Implementation and Termination Schedule: Within 15 days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility.

C. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.

D. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

E. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold.

F. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:

1. Locations of dust-control partitions at each phase of work.
2. HVAC system isolation schematic drawing.
3. Location of proposed air-filtration system discharge.
4. Waste-handling procedures.
5. Other dust-control measures.

1.4 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top rails.

B. Fencing Windscreen Privacy Screen: Polyester fabric scrim with grommets for attachment to chain link fence, sized to height of fence, in color selected by Architect from manufacturer's standard colors.

C. Dust-Control Adhesive-Surface Walk-Off Mats: Provide mats minimum 36 by 60 inches.

D. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

A. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Permanent HVAC system will be in use inside the building during construction activities. Coordinate with Owner if adjustments are necessary.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.

C. Air-Filtration Units: If necessary, primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

C. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

1. Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

E. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.

F. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.

G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.4 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E136. Comply with NFPA 241.
2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: Use designated areas of Owner's existing parking areas for construction personnel.

D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

E. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated on Drawings.
2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.

a. Provide temporary, directional signs for construction personnel and visitors.

3. Maintain and touch up signs so they are legible at all times.

F. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

G. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

C. Temporary Erosion and Sedimentation Control: Comply with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

F. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.

G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

H. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.6 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture-Protection Plan: Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.

1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
2. Indicate sequencing of work that requires water. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
3. Indicate methods to be used to avoid trapping water in finished work.

B. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
   1. Keep interior spaces reasonably clean and protected from water damage.
   2. Periodically collect and remove waste containing cellulose or other organic matter.
   3. Discard or replace water-damaged material.
   4. Do not install material that is wet.
   5. Discard and replace stored or installed material that begins to grow mold.
   6. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.

3.7 OPERATION, TERMINATION, AND REMOVAL

A. Maintenance: Maintain facilities in good operating condition until removal.

   1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

B. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

   1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
   2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01 7700 "Closeout Procedures."

END OF SECTION 01 5000

SECTION 01 6000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following administrative and procedural requirements: selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

B. Related Sections include the following:

(1) Division 01 Section "References" for applicable industry standards for products specified.

(2) Division 01 Section "Closeout Procedures" for submitting warranties for contract closeout.

(3) Divisions 02 through 33 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

(1) Named Products: Items identified by manufacturer's product name, including make or model number or other designation, shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.

(2) New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.

(3) Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-

service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

D. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

1.4 SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

(1) Documentation: Show compliance with requirements for substitutions and the following, as applicable:

(a) Statement indicating why specified material or product cannot be provided.

(b) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.

(c) Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

(d) Product Data, including drawings and descriptions of products and fabrication and installation procedures.

(e) Samples, where applicable or requested.

(f) List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.

(g) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

(h) Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.

(i) Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.

(j) Cost information, including a proposal of change, if any, in the Contract Sum.

(k) Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.

(l) Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

(2) Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

(a) Form of Acceptance: Change Order.

(b) Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

(1) Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

(2) Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

(3) Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

(4) Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

(5) Store products to allow for inspection and measurement of quantity or counting of units.

(6) Store materials in a manner that will not endanger Project structure.

(7) Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.

(8) Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

(9) Protect stored products from damage.

B. Storage: Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

PART 2 - PRODUCTS

2.1 PRODUCT OPTIONS

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged, and unless otherwise indicated, that are new at time of installation.

(1) Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

(2) Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.

(3) Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

(4) Where products are accompanied by the term "as selected," Architect will make selection.

(5) Where products are accompanied by the term "match sample," sample to be matched is Architect's.

(6) Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

(7) Where products are specified by name and accompanied by the term "or acceptable substitute," comply with provisions in "Comparable Products" Article to obtain acceptance for use of an unnamed product.

B. Product Selection Procedures: Procedures for product selection include the following:

(1) Product: Where Specification paragraphs or subparagraphs titled "Product" name a single product and manufacturer, provide the product named.

(2) Manufacturer/Source: Where Specification paragraphs or subparagraphs titled "Manufacturer" or "Source" name single manufacturers or sources, provide a

product by the manufacturer or from the source named that complies with requirements.

(3) Products: Where Specification paragraphs or subparagraphs titled "Products" introduce a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.

(4) Manufacturers: Where Specification paragraphs or subparagraphs titled "Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.

(5) Available Products: Where Specification paragraphs or subparagraphs titled "Available Products" introduce a list of names of both products and manufacturers, provide one of the products listed or another product that complies with requirements. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.

(6) Available Manufacturers: Where Specification paragraphs or subparagraphs titled "Available Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed or another manufacturer that complies with requirements. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.

(7) Basis-of-Design Products: Where Specification paragraphs or subparagraphs titled "Basis-of-Design Product" are included and also introduce or refer to a list of manufacturers' names, provide either the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.

(a) Substitutions may be considered, unless otherwise indicated.

(8) Visual Matching Specification: Where Specifications require matching an established Sample, select a product (and manufacturer) that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches satisfactorily.

(a) If no product available within specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents on "substitutions" for selection of a matching product.

(9) Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product (and manufacturer) that complies with other specified requirements.

(a) Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that does not include premium items.

(b) Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: Architect will consider requests for substitution if received within 60 days after commencement of the Work. Requests received after that time may be considered or rejected at discretion of Architect.

B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

(1) Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

(2) Requested substitution does not require extensive revisions to the Contract Documents.

(3) Requested substitution is consistent with the Contract Documents and will produce indicated results.

(4) Substitution request is fully documented and properly submitted.

(5) Requested substitution will not adversely affect Contractor's Construction Schedule.

(6) Requested substitution has received necessary approvals of authorities having jurisdiction.

(7) Requested substitution is compatible with other portions of the Work.
(8) Requested substitution has been coordinated with other portions of the Work.

(9) Requested substitution provides specified warranty.

(10) If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.3 COMPARABLE PRODUCTS

A. Where products or manufacturers are specified by name, submit the following, in addition to other required submittals, to obtain approval of an unnamed product:

(1) Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.

(2) Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

(3) Evidence that proposed product provides specified warranty.

(4) List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.

(5) Samples, if requested.

PART 3 - EXECUTION

(Not Used)

END OF SECTION 01 6000

SECTION 01 7300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

(1) General installation of products.

(2) Progress cleaning.

(3) Protection of installed construction.

(4) Correction of the Work.

B. Related Sections include the following:

(1) Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.

(2) Division 01 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.

(3) Division 01 Section "Closeout Procedures" for submitting Project Record Documents and final cleaning.

1.3 SUBMITTALS

A. Qualification Data: If requested by Owner or Architect, for subcontractors to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of other construction affecting the Work.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework,

investigate and verify the existence and location of underground utilities and other construction affecting the Work.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

(1) Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

(a) Description of the Work.

(b) List of detrimental conditions, including substrates.

(c) List of unacceptable installation tolerances.

(d) Recommended corrections.

(2) Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

(3) Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.

(4) Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on "Request for Information" form.

3.3 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

(1) Make vertical work plumb and make horizontal work level.

(2) Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

3.4 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

(1) Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.

(2) Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.

(3) Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

(1) Remove liquid spills promptly.

(2) Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

(1) Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.6 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."

(1) Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 7300

SECTION 01 7320 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for cutting and patching.

B. Cutting and patching includes cutting existing construction to provide for installation or performance of other Work, and subsequent fitting and patching required to restore surfaces to original conditions.

C. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 SUBMITTALS

A. Cutting and Patching Proposal: Where approval of procedures for cutting and patching is required before proceeding, submit a description of proposed procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:

(1) Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.

(2) Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.

(3) List products to be used and firms or entities that will perform Work.

(4) Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.

1.4 QUALITY ASSURANCE

A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio.

(1) Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:

(a) Foundation construction.

(b) Bearing walls.

(c) Wood structural members.

B. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.

(1) Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:

(a) Water, moisture, or vapor barriers.

(b) Roofing and flashings.

C. Visual Requirements: Do not cut and patch construction exposed on the exterior in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 - EXECUTION

3.1 INSPECTION

A. Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect existing construction during cutting and patching to prevent damage.

C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.3 PERFORMANCE

A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

(1) Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.

(1) In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Do not cut holes larger than necessary. Temporarily cover openings when not in use.

(2) To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

(3) Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.

(4) Comply with requirements of applicable Sections where cutting and patching requires excavating and backfilling.

C. Perform all patching with durable seams that are not discernable from normal viewing distances. Comply with specified tolerances.

(1) Where feasible, inspect and test patched areas to demonstrate integrity of the installation.

(2) Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

3.4 CLEANING

A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION 01 7320

SECTION 01 7700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.
5. Repair of the Work.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at final completion.

1.3 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number.

    a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
4. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
5. Complete final cleaning requirements.
6. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.6 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit final completion photographic documentation.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project name.
    b. Date.
    c. Name of Architect.
    d. Name of Contractor.
    e. Page number.

4. Submit list of incomplete items in the following format:
    a. PDF electronic file. Architect will return annotated file.

1.8 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1. Submit by email to Architect.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Sweep concrete floors broom clean in unoccupied spaces.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.

p. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
q. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 5000 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 01 7700

SECTION 01 7839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set(s) of marked-up record prints.

B. Record Specifications: Submit electronic copy of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one electronic copy of each submittal.

D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one electronic copy of each submittal.

E. Reports: Submit written report weekly indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

1.3 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an acceptable drawing technique.
c. Record data as soon as possible after obtaining it.

d. Record and check the markup before enclosing concealed installations.
e. Cross-reference record prints to corresponding photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Depths of foundations.
d. Locations and depths of underground utilities.
e. Changes made by Change Order or Construction Change Directive.
f. Changes made following Architect's written orders.
g. Details not on the original Contract Drawings.
h. Field records for variable and concealed conditions.
i. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

1.4 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
3. Note related Change Orders and record Drawings where applicable.

B. Format: Submit record Specifications as paper copy or scanned electronic copy.

1.5 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders and record Drawings where applicable.

C. Format: Submit record Product Data as electronic document.

1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

1.6 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as electronic document.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

1.7 MAINTENANCE OF RECORD DOCUMENTS

A. Maintenance of Record Documents: Store record documents in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 01 7839

SECTION 04 0322 - HISTORIC BRICK UNIT MASONRY REPAIR

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes historic treatment work consisting of repairing historic clay brick masonry as follows:

1. Repairing unit masonry.
2. Removing abandoned anchors.
3. Painting steel uncovered during the work.

1.2 DEFINITIONS

A. Low-Pressure Spray:

1. Pressure: 100 to 400 psi.
2. Flow Rate: 4 to 6 gpm.

B. Rebuilding (Setting) Mortar: Mortar used to set and anchor masonry in a structure, distinct from pointing mortar installed after masonry is set in place.

C. Saturation Coefficient: Ratio of the weight of water absorbed during immersion in cold water to weight absorbed during immersion in boiling water; used as an indication of resistance of bricks to freezing and thawing.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to masonry historic treatment and repair.
2. Review methods and procedures related to repairing historic brick masonry, including, but not limited to, the following:

a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
b. Materials, material application, sequencing, tolerances, and required clearances.
c. Quality-control program.
d. Fire-protection plan.
e. Unit masonry historic treatment program.
f. Coordination with building occupants.

1.4 SEQUENCING AND SCHEDULING

A. Order sand for colored mortar immediately after approval of mockups. Take delivery of and store at Project site a sufficient quantity to complete Project.

B. Work Sequence: Perform masonry historic treatment work in the following sequence, which includes work specified in this and other Sections:
   1. Inspect masonry for open mortar joints and permanently or temporarily point them before cleaning to prevent intrusion of water and other cleaning materials into the wall.
   2. Remove loose paint.
   3. Clean masonry.
   4. Rake out mortar from joints surrounding masonry to be replaced and from joints adjacent to masonry repairs along joints.
   5. Repair masonry, including replacing existing masonry with new masonry materials.
   6. Rake out mortar from joints to be repointed.
   7. Point mortar and sealant joints.
   8. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.
   9. Repaint in areas as indicated with breathable exterior paint. Provide product data for Architect and Owner’s Review and Approval.

C. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in bricks according to "Brick Masonry Patching" Article. Patch holes in mortar joints according to Section 04 0323 "Historic Brick Unit Masonry Repointing."

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
   2. Include recommendations for product application and use.
   3. Include test data substantiating that products comply with requirements.

B. Samples for Initial Selection: For the following:

   1. Colored Mortar: Submit sets of mortar that will be left exposed in the form of sample mortar strips, 6 inches long by 1/2 inch wide, set in aluminum or plastic channels.

      a. Have each set contain a close color range of at least three Samples of different mixes of colored sands and cements that produce a mortar matching existing, cleaned mortar when cured and dry.
      b. Submit with precise measurements on ingredients, proportions, gradations, and sources of colored sands from which each Sample was made.

   2. Sand Types Used for Mortar: Minimum 8 oz. of each in plastic screw-top jars.

      a. For blended sands, provide Samples of each component and blend. Identify blend ratio.
      b. Identify sources, both supplier and quarry, of each type of sand.

3. Patching Compound: Submit sets of patching compound Samples in the form of plugs (patches in drilled holes) in sample units of masonry representative of the range of masonry colors on the building.

    a. Have each set contain a close color range of at least three. Samples of different mixes of patching compound that match the variations in existing masonry when cured and dry.

4. Include similar Samples of accessories involving color selection.

C. Samples for Verification: For the following:

1. Each type of brick to be used for replacing existing units. Include sets of Samples to show the full range of shape, color, and texture to be expected.

    a. For each brick type, provide straps or panels containing at least four bricks. Include multiple straps for brick with a wide range.

2. Accessories: Each type of anchor, accessory, and miscellaneous support.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic treatment specialist including field supervisors and workers and testing service.

B. Quality-control program.

C. Unit masonry historic treatment program.

1.7 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic brick masonry repair specialist. Experience installing standard unit masonry is insufficient experience for masonry historic treatment work.

1. Historic Treatment Worker Qualifications: When bricks are being patched, assign at least one worker per crew who is trained and certified by manufacturer of patching compound to apply its products.

B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising worker performance and preventing damage.

C. Unit Masonry Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of historic treatment work, including protection of surrounding materials and Project site.

1. Include methods for keeping exposed mortar damp during curing period.

2. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add to the quality-control program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

D. Mockups: Prepare mockups of historic treatment to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.

1. Masonry Repair: Prepare sample areas for each type of masonry material indicated to have repair work performed. If not otherwise indicated, size each mockup not smaller than two adjacent whole units or approximately 48 inches in least dimension. Construct sample areas in locations in existing walls where directed by Architect unless otherwise indicated. Demonstrate quality of materials, workmanship, and blending with existing work. Include the following as a minimum:

   a. Replacement: Four brick units replaced.
   b. Patching: Three small holes at least 1 inch for each type of brick indicated to be patched, so as to leave no evidence of repair.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on brick masonry as follows:

1. Provide test specimens as indicated and representative of proposed materials and existing construction.
2. Existing Mortar: Test according to ASTM C1324, modified as agreed by testing service and Architect for Project requirements, to determine proportional composition of original ingredients, sizes and colors of aggregates, and approximate strength. Carefully remove existing mortar for testing from within joints at five locations designated by Architect.
3. Temporary Patch: As directed by Architect, provide temporary materials followed by permanent repairs at locations from which existing samples were taken.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver bricks to Project site strapped together in suitable packs or pallets or in heavy-duty cartons and protected against impact and chipping.

B. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.

C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

D. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.

E. Store lime putty covered with water in sealed containers.

F. Store sand where grading and other required characteristics can be maintained and contamination avoided.

G. Handle bricks to prevent overstressing, chipping, defacement, and other damage.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit repair work to be performed according to product manufacturers' written instructions and specified requirements.

B. Temperature Limits: Repair brick masonry only when air temperature is between 40 and 90 deg F and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.

C. Cold-Weather Requirements: Comply with the following procedures for masonry repair unless otherwise indicated:

1. When air temperature is below 40 deg F, heat mortar ingredients, masonry repair materials, and existing masonry walls to produce temperatures between 40 and 120 deg F.
2. When mean daily air temperature is below 40 deg F, provide enclosure and heat to maintain temperatures above 32 deg F within the enclosure for seven days after repair.

D. Hot-Weather Requirements: Protect masonry repairs when temperature and humidity conditions produce excessive evaporation of water from mortar and repair materials. Provide artificial shade and wind breaks, and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F and above unless otherwise indicated.

E. For manufactured repair materials, perform work within the environmental limits set by each manufacturer.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Source Limitations: Obtain each type of material for repairing historic masonry (face brick, cement, sand, etc.) from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 MASONRY MATERIALS

A. Face Brick: Units, including molded, ground, cut, or sawed shapes as required to complete masonry repair work.

1. Brick Matching Existing: Units with colors, color variation within units, surface texture, size, and shape that match existing brickwork and with physical properties within 10 percent of those determined from preconstruction testing of selected existing units.

a. For existing brickwork that exhibits a range of colors or color variation within units, provide brick that proportionally matches that range and variation rather than brick that matches an individual color within that range.

2.3 MORTAR MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I or Type II; white or gray or both where required for color matching of mortar.

1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C114.

B. Hydrated Lime: ASTM C207, Type S.

C. Mortar Sand: ASTM C144 unless otherwise indicated.

1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
2. Colored Mortar: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
3. For exposed mortar, provide sand with rounded edges.

D. Mortar Pigments: ASTM C979/C979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.

E. Water: ASTM C270, potable.

2.4 MANUFACTURED REPAIR MATERIALS

A. Brick Patching Compound: Factory-mixed cementitious product that is custom manufactured for patching brick masonry.

1. Manufacturers:
   a. Cathedral Stone Products, Inc. 7266 Park Circle Drive, Hanover, MD, 21076. 800-684-0901. https://www.cathedralstone.com/
   b. Edison Coatings, Inc. 3 Northwest Drive. Plainville, CT 06062. 860-747-2220. http://www.edisoncoatings.com/
2. Use formulation that is vapor and water permeable (equal to or more than the brick), exhibits low shrinkage, has lower modulus of elasticity than the bricks being repaired, and develops high bond strength to all types of masonry.

3. Use formulation having working qualities and retardation control to permit forming and sculpturing where necessary.
4. Formulate patching compound used for patching brick in colors and textures to match each unit being patched. Provide sufficient number of colors to enable matching the color, texture, and variation of each unit.

2.5 ACCESSORY MATERIALS

A. Masonry Repair Anchors, Expansion Type: Mechanical fasteners designed for masonry veneer stabilization consisting of 1/4-inch diameter, Type 304 stainless-steel rod with brass expanding shells at each end and water-shedding washer in the middle. Expanding shells shall be designed to provide positive mechanical anchorage to veneer on one end and backup masonry on the other.

1. Hohmann & Barnard, Inc. 30 Rasons Ct. P.O. Box 5270 Hauppauge, NY 11788-0270. 800-283-3888. https://www.h-b.com/

2. Or Approved Alternate

B. Setting Buttons and Shims: Resilient plastic, nonstaining to masonry, sized to suit joint thicknesses and bed depths of bricks, less the required depth of pointing materials unless removed before pointing.

C. Masking Tape: Nonstaining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.

D. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:

1. Previous effectiveness in performing the work involved.
2. Minimal possibility of damaging exposed surfaces.
3. Consistency of each application.
4. Uniformity of the resulting overall appearance.
5. Do not use products or tools that could do the following:

   a. Remove, alter, or harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in Contract.
   b. Leave residue on surfaces.

2.6 MORTAR MIXES

A. Preparing Lime Putty: Slake quicklime and prepare lime putty according to appendix to ASTM C5 and manufacturer's written instructions.

B. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.

C. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.

1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance.

D. Do not use admixtures in mortar unless otherwise indicated.

E. Mixes: Mix mortar materials in the following proportions:
1. Rebuilding (Setting) Mortar by Type: ASTM C270, Proportion Specification, Type O unless otherwise indicated; with cementitious material limited to portland cement and lime.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT SPECIALIST

A. Historic Treatment Specialist Firms: Subject to compliance with requirements, firms that may provide historic brick repair include, but are not limited to, the following:

1. Summit Sealants Inc. 2000 W. Quincy Avenue, Englewood, CO 80110.0720-389-8633. http://summitsealants.com/services/

2. Approved Alternate Specialists: Provide Qualifications for Architect’s Review.

3.2 PROTECTION

A. Prevent mortar from staining face of surrounding masonry and other surfaces.

1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
2. Keep wall area wet below rebuilding and repair work to discourage mortar from adhering.
3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.

B. Remove gutters and downspouts and associated hardware adjacent to immediate work area, and store during masonry repair work. Reinstall when repairs are complete.

1. Provide temporary rain drainage during work to direct water away from building.

3.3 MASONRY REPAIR, GENERAL

A. Have repair work performed only by qualified historic treatment specialist.

B. Repair Appearance Standard: Repaired surfaces are to have a uniform appearance as viewed from 10 feet away by Architect.

3.4 ABANDONED ANCHOR REMOVAL

A. Remove abandoned anchors, brackets, wood nailers, and other extraneous items no longer in use unless indicated to remain.

1. Remove items carefully to avoid spalling or cracking masonry.
2. Notify Architect before proceeding if an item cannot be removed without damaging surrounding masonry. Do the following where directed:

3. Patch the hole where each item was removed unless directed to remove and replace brick.

3.5 BRICK REMOVAL AND REPLACEMENT

A. At locations indicated, remove bricks that are damaged, spalled, or deteriorated. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.

1. When removing single bricks, remove material from center of brick and work toward outside edges.

B. Support and protect remaining masonry that surrounds removal area.

C. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.

D. Notify Architect of unforeseen detrimental conditions, including voids, cracks, bulges, loose masonry units in existing backup, rotted wood, rusted metal, and other deteriorated items.

E. Remove in an undamaged condition as many whole bricks as possible.

1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
3. Store brick for reuse. Store off ground, on skids, and protected from weather.
4. Deliver cleaned brick not required for reuse to Owner unless otherwise indicated.

F. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.

G. Replace removed damaged brick with other removed brick in good condition, where possible, or with new brick matching existing brick. Do not use broken units unless they can be cut to usable size.

H. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.

1. Maintain joint width for replacement units to match existing joints.
2. Use setting buttons or shims to set units accurately spaced with uniform joints.

I. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet

both replacement and surrounding bricks that have ASTM C67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.

1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
2. Rake out mortar used for laying brick before mortar sets. Point at same time as repointing of surrounding area.
3. When mortar is hard enough to support units, remove shims and other devices interfering with pointing of joints.

J. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.

1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.6 BACKUP MASONRY REMOVAL AND REPLACEMENT

A. Where backup masonry is fractured or unstable and at locations indicated, remove mortar and masonry units that are broken or deteriorated and rebuild with whole, new brick or whole salvaged backup masonry units. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.

B. Support and protect remaining masonry that surrounds removal area.

C. Maintain flashing, reinforcement, anchors, lintels, and adjoining construction in an undamaged condition.

D. Notify Architect of unforeseen detrimental conditions, including voids, cracks, bulges, loose masonry units beyond the removal area, rotted wood, rusted metal, and other deteriorated items.

E. Remove in an undamaged condition as many whole bricks as possible.

1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
3. Store brick for reuse. Store off ground, on skids, and protected from weather.
4. Deliver cleaned brick not required for reuse to Owner unless otherwise indicated.

F. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.

G. Replace removed damaged brick with salvaged backup brick in good condition, where possible, or with new building brick matching existing backup brick. Do not use broken units unless they can be cut to usable size.

H. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.

I. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.

J. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.

1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.7 REANCHORING VENEERS

A. Install masonry repair anchors in horizontal mortar joints and according to manufacturer's written instructions. Space anchors not more than 16 inches o.c. vertically and 24 inches o.c. horizontally apart unless otherwise indicated or required by manufacturer. Install at locations to avoid penetrating flashing.

B. Recess anchors 5/8 inch or more from surface of mortar joint, and fill recess with pointing mortar.

3.8 PAINTING STEEL UNCOVERED DURING THE WORK

A. Notify Architect if steel is exposed during masonry removal. Where Architect determines that steel is structural, or for other reasons cannot be totally removed, prepare and paint it as follows:

1. Surface Preparation: Remove paint, rust, and other contaminants according to SSPC-SP 2, "Hand Tool Cleaning," as applicable to comply with paint manufacturer's recommended preparation.
2. Antirust Coating: Immediately paint exposed steel with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended rate of application (dry film thickness per coat).

B. If on inspection and rust removal, the thickness of a steel member is found to be reduced from rust by more than 1/16 inch(es), notify Architect before proceeding.

3.9 BRICK MASONRY PATCHING

A. Patch the following bricks unless another type of repair or replacement is indicated:

1. Units indicated to be patched.
2. Units with holes.
3. Units with chipped edges or corners. Patch chipped edges or corners measuring more than 3/4 inch in least dimension.
4. Units with small areas of deep deterioration. Patch deep deteriorations measuring more than 3/4 inch in least dimension and more than 1/4 inch deep.

B. Remove and replace existing patches unless otherwise indicated or approved by Architect.

C. Patching Bricks:

1. Remove loose material from masonry surface. Carefully remove additional material so patch does not have feathered edges but has square or slightly undercut edges on area to be patched and is at least 1/4 inch(es) thick, but not less than recommended in writing by patching compound manufacturer.
2. Mask adjacent mortar joint or rake out for repointing if patch extends to edge of brick.
3. Mix patching compound in individual batches to match each unit being patched. Combine one or more colors of patching compound, as needed, to produce exact match.
4. Rinse surface to be patched and leave damp, but without standing water.
5. Brush-coat surfaces with slurry coat of patching compound according to manufacturer's written instructions.
6. Place patching compound in layers as recommended in writing by patching compound manufacturer, but not less than 1/4 inch or more than 2 inches thick. Roughen surface of each layer to provide a key for next layer.
7. Trowel, scrape, or carve surface of patch to match texture and surrounding surface plane or contour of the brick. Shape and finish surface before or after curing, as determined by testing, to best match existing brick.
8. Keep each layer damp for 72 hours or until patching compound has set.

3.10 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low-pressure spray.

1. Do not use metal scrapers or brushes.
2. Do not use acidic or alkaline cleaners.

B. Clean adjacent nonmasonry surfaces. Use detergent and soft brushes or cloths.

C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.

D. Remove masking materials, leaving no residues that could trap dirt.

3.11 FIELD QUALITY CONTROL

A. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.

B. Notify Architect's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Architect's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

3.12 MASONRY-WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property.

B. Masonry Waste: Remove masonry waste and legally dispose of off Owner's property.

END OF SECTION 04 0322

SECTION 04 0323 - HISTORIC BRICK UNIT MASONRY REPOINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes historic treatment work consisting of repointing brick masonry as follows:

1. Repointing joints with mortar.
2. Widening joints.

1.2 DEFINITIONS

A. Low-Pressure Spray:

1. Pressure: 100 to 400 psi.
2. Flow Rate: 4 to 6 gpm.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to masonry historic treatment and repointing.
2. Review methods and procedures related to repointing historic brick masonry, including, but not limited to, the following:

    a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
    b. Materials, material application, sequencing, tolerances, and required clearances.
    c. Quality-control program.
    d. Fire-protection plan.
    e. Unit masonry historic treatment program.
    f. Coordination with building occupants.

1.4 SEQUENCING AND SCHEDULING

A. Order sand for pointing mortar immediately after approval of mockups. Take delivery of and store at Project site a sufficient quantity to complete Project.

B. Work Sequence: Perform masonry historic treatment work in the following sequence, which includes work specified in this and other Sections:
1. Inspect masonry for open mortar joints and permanently or temporarily point them before cleaning to prevent intrusion of water and other cleaning materials into the wall.
2. Remove loose paint.
3. Clean masonry.

4. Rake out mortar from joints surrounding masonry to be replaced and from joints adjacent to masonry repairs along joints.
5. Repair masonry, including replacing existing masonry with new masonry materials.
6. Rake out mortar from joints to be repointed.
7. Point mortar joints.
8. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.

C. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in bricks according to Section 04 0322 "Historic Brick Unit Masonry Repair." Patch holes in mortar joints according to "Repointing" Article.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
2. Include recommendations for product application and use.
3. Include test data substantiating that products comply with requirements.

B. Samples for Initial Selection: For the following:

1. Pointing Mortar: Submit sets of mortar for pointing in the form of sample mortar strips, 6 inches long by 1/2 inch wide, set in aluminum or plastic channels.

    a. Have each set contain a close color range of at least three Samples of different mixes of colored sands and cements that produce a mortar matching existing, cleaned mortar when cured and dry.
    b. Submit with precise measurements on ingredients, proportions, gradations, and sources of colored sands from which each Sample was made.

2. Sand Type Used for Pointing Mortar: Minimum 8 oz. of each in plastic screw-top jars.

    a. For blended sands, provide Samples of each component and blend. Identify blend ratio.
    b. Identify sources, both supplier and quarry, of each type of sand.

3. Sealant materials.
4. Include similar Samples of accessories involving color selection.

C. Samples for Verification: For the following:

1. Each type, color, and texture of pointing mortar in the form of sample mortar strips, 6 inches long by 1/2 inch wide, set in aluminum or plastic channels.

    a. Include with each Sample a list of ingredients with proportions of each. Identify sources, both supplier and quarry, of each type of sand and brand names of cementitious materials and pigments if any.

2. Sealant materials.
3. Accessories: Each type of anchor, accessory, and miscellaneous support.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic treatment specialist including field supervisors and workers and testing service.

B. Preconstruction Test Reports: For existing bricks and mortar.

C. Quality-control program.

D. Unit masonry historic treatment program.

1.7 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic masonry repointing specialist. Experience in pointing or repointing only new or nonhistoric masonry is insufficient experience for masonry historic treatment work.

B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising worker performance and preventing damage.

C. Unit Masonry Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of historic treatment work, including protection of surrounding materials and Project site.

1. Include methods for keeping pointing mortar damp during curing period.
2. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add to the quality-control program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

D. Mockups: Prepare mockups of historic treatment on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Widening Joints: Widen a joint in two separate locations, each approximately 12 inches long.
2. Repointing: Rake out joints in two separate areas, each approximately 24 inches high by 24 inches wide for each type of repointing required, and repoint one of the areas.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on brick masonry as follows:

1. Provide test specimens as indicated and representative of proposed materials and existing construction.
2. Existing Mortar: Test according to ASTM C1324, modified as agreed by testing service and Architect for Project requirements, to determine proportional composition of original ingredients, sizes and colors of aggregates, and approximate strength. Carefully remove existing mortar for testing from within joints at five locations designated by Architect.
3. Temporary Patch: As directed by Architect, provide temporary materials at locations from which existing samples were taken.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.

D. Store lime putty covered with water in sealed containers.

E. Store sand where grading and other required characteristics can be maintained and contamination avoided.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit repointing work to be performed according to product manufacturers' written instructions and specified requirements.

B. Temperature Limits: Repoint mortar joints only when air temperature is between 40 and 90 deg F and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.

C. Cold-Weather Requirements: Comply with the following procedures for mortar-joint pointing unless otherwise indicated:

1. When air temperature is below 40 deg F, heat mortar ingredients and existing masonry walls to produce temperatures between 40 and 120 deg F.
2. When mean daily air temperature is below 40 deg F, provide enclosure and heat to maintain temperatures above 32 deg F within the enclosure for seven days after pointing.

D. Hot-Weather Requirements: Protect mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar materials. Provide artificial

shade and wind breaks, and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F and above unless otherwise indicated.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Source Limitations: Obtain each type of material for repointing historic masonry (cement, sand, etc.) from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 MORTAR MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I or Type II; white or gray or both where required for color matching of mortar.

1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C114.

B. Hydrated Lime: ASTM C207, Type S.

C. Mortar Sand: ASTM C144 unless otherwise indicated.

1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
2. Color: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
3. Provide sand with rounded edges.

D. Mortar Pigments: ASTM C979/C979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.

E. Water: ASTM C270, potable.

2.3 ACCESSORY MATERIALS

A. Sealant Materials:

1. Sealant manufacturer's standard elastomeric sealant(s) of base polymer and characteristics indicated below.

a. Type: Single-component, nonsag urethane sealant.

2. Colors: Provide colors of exposed sealants to match colors of mortar adjoining installed sealant unless otherwise indicated.
3. Ground-Mortar Aggregate: Custom crushed and ground pointing mortar sand or existing mortar retrieved from joints. Grind to a particle size that matches the adjacent mortar aggregate and color. Remove all fines passing No. 100 sieve.

B. Joint-Sealant Backing:

1. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin) and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
2. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended in writing by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

C. Masking Tape: Nonstaining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.

D. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:

1. Previous effectiveness in performing the work involved.
2. Minimal possibility of damaging exposed surfaces.
3. Consistency of each application.
4. Uniformity of the resulting overall appearance.
5. Do not use products or tools that could do the following:

a. Remove, alter, or harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in Contract.
b. Leave residue on surfaces.

2.4 MORTAR MIXES

A. Preparing Lime Putty: Slake quicklime and prepare lime putty according to appendix to ASTM C5 and manufacturer's written instructions.

B. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.

1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.

C. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.

1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black, which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance.

D. Do not use admixtures in mortar unless otherwise indicated.

E. Mixes: Mix mortar materials in the following proportions:

1. Pointing Mortar by Volume: ASTM C270, Proportion Specification, to match ratio established in mortar analysis. Add mortar pigments to produce mortar colors required.
2. Pointing Mortar by Type: ASTM C270, Proportion Specification, Type O unless otherwise indicated; with cementitious material limited to portland cement and lime. Add mortar pigments to produce mortar colors required.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT SPECIALIST

A. Historic Treatment Specialist Firms: Subject to compliance with requirements, firms that may provide historic masonry repointing include, but are not limited to, the following:

1. Summit Sealants Inc. 2000 W. Quincy Avenue, Englewood, CO 80110.0720-389-8633. http://summitsealants.com/services/

2. Approved Alternate Specialists: Provide Qualifications for Architect's Review.

3.2 PROTECTION

A. Prevent mortar from staining face of surrounding masonry and other surfaces.

1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
2. Keep wall area wet below rebuilding and pointing work to discourage mortar from adhering.
3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.

B. Remove gutters and downspouts and associated hardware adjacent to immediate work area and store during masonry repointing work. Reinstall when repointing is complete.

1. Provide temporary rain drainage during work to direct water away from building.

3.3 MASONRY REPOINTING, GENERAL

A. Have repointing work performed only by qualified historic treatment specialist.

B. Appearance Standard: Repointed surfaces are to have a uniform appearance as viewed from 10 feet away by Architect.

3.4 WIDENING JOINTS

A. Do not widen a joint, except where indicated or approved by Architect.

B. Location Guideline: Where an existing brick abuts another or the joint is less than 1/8 inch(es), widen the joint for length indicated and to depth required for repointing after obtaining Architect's approval.

C. Carefully perform widening by using cutting, grinding, routing, or filing procedures demonstrated in an approved mockup.

D. Widen joint to width equal to or less than predominant width of other joints on building. Make sides of widened joint uniform and parallel. Ensure that edges of units along widened joint are in alignment with joint edges at unaltered joints.

3.5 REPOINTING

A. Rake out and repoint joints to the following extent:

1. All joints in areas indicated.
2. Joints indicated as sealant-filled joints.
3. Joints at locations of the following defects:

    a. Holes and missing mortar.
    b. Cracks that can be penetrated 1/4 inch or more by a knife blade 0.027 inch thick.
    c. Cracks 1/16 inch(es) or more in width and of any depth.
    d. Hollow-sounding joints when tapped by metal object.
    e. Eroded surfaces 1/4 inch or more deep.
    f. Deterioration to point that mortar can be easily removed by hand, without tools.
    g. Joints filled with substances other than mortar.

B. Do not rake out and repoint joints where not required.

C. Rake out joints as follows, according to procedures demonstrated in approved mockup:

1. Remove mortar from joints to depth of joint width plus 1/8 inch and not less than that required to expose sound, unweathered mortar. Do not remove unsound mortar more than 2 inches deep; consult Architect for direction.
2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
3. Do not spall edges of bricks or widen joints. Replace or patch damaged bricks as directed by Architect.

    a. Cut out mortar by hand with chisel and resilient mallet. Do not use power-operated grinders without Architect's written approval based on approved quality-control program.

D. Notify Architect of unforeseen detrimental conditions, including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.

E. Pointing with Mortar:

1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch(es) until a uniform depth is formed. Fully compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
3. After deep areas have been filled to same depth as remaining joints, point joints by placing mortar in layers not greater than 3/8 inch(es). Fully compact each layer and allow it to become thumbprint hard before applying next layer. Where existing brick have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed masonry surfaces or to featheredge the mortar.
4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.
5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.

    a. Acceptable curing methods include covering with wet burlap and plastic sheeting, periodic hand misting, and periodic mist spraying using system of pipes, mist heads, and timers.
    b. Adjust curing methods to ensure that pointing mortar is damp throughout its depth without eroding surface mortar.

6. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Remove mortar and repoint.

F. Pointing with Sealant:

1. After raking out, keep joints dry and free of mortar and debris.
2. Clean and prepare joint surfaces. Prime joint surfaces unless sealant manufacturer recommends against priming. Do not allow primer to spill or migrate onto adjoining surfaces.
3. Fill sealant joints with specified joint sealant:

    a. Install cylindrical sealant backing beneath the sealant. Where space is insufficient for cylindrical sealant backing, install bond-breaker tape.
    b. Install sealant using only proven installation techniques that ensure that sealant is deposited in a uniform, continuous ribbon, without gaps or air pockets, and with complete wetting of the joint bond surfaces equally on both sides. Fill joint flush with surrounding masonry and matching the contour of adjoining mortar joints.
    c. Install sealant as recommended in writing by sealant manufacturer but within the following general limitations, measured at the center (thin) section of the bead:

        1) Fill joints to a depth equal to joint width, but not more than 1/2 inch deep or less than 1/4 inch deep.

    d. Tool sealant to form smooth, uniform beads, slightly concave. Remove excess sealant from surfaces adjacent to joint.

e. Do not allow sealant to overflow or spill onto adjoining surfaces, or to migrate into the voids of adjoining surfaces, particularly rough textures. Remove excess and spillage of sealant promptly as the work progresses. Clean adjoining surfaces by the means necessary to eliminate evidence of spillage, without damage to adjoining surfaces or finishes, as demonstrated in an approved mockup.

G. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

3.6 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low-pressure spray.

1. Do not use metal scrapers or brushes.
2. Do not use acidic or alkaline cleaners.

B. Clean adjacent nonmasonry surfaces. Use detergent and soft brushes or cloths.

C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.

D. Remove masking materials, leaving no residues that could trap dirt.

3.7 FIELD QUALITY CONTROL

A. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.

B. Notify Architect's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Architect's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

END OF SECTION 04 0323

SECTION 06 0312 - HISTORIC WOOD REPAIR

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes historic treatment of wood in the form of repairing wood features as follows:

1. Repairing wood siding and trim.
2. Replacing wood siding and trim.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to historic wood repair.
2. Review methods and procedures related to historic wood repair, including, but not limited to, the following:

    a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
    b. Materials, material application, sequencing, tolerances, and required clearances.
    c. Fire-protection plan.
    d. Wood historic treatment program.
    e. Coordination with building occupants.

1.3 SEQUENCING AND SCHEDULING

A. Perform historic wood repair in the following sequence, which includes work specified in this and other Sections:

1. Before removing wood components for on-site or off-site repair, tag each component with location-identification numbers. Indicate on tags and building plans the locations of each component.
2. In the shop, label each repaired component and whole or partial replacement with permanent location-identification number in inconspicuous location and remove site-applied tags.
3. Sort units by condition, separating those that need extensive repair.
4. Clean surfaces.
5. General Wood-Repair Sequence:

    a. Remove paint to bare wood.
    b. Repair wood by consolidation, replacement, partial replacement, and patching.
    c. Sand, prime, fill, sand again, and prime surfaces again for refinishing.

6. Repair, refinish, and replace hardware if required. Reinstall operating hardware.

7. Reinstall components.
8. Apply finish coats.
9. Install remaining hardware.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.

B. Shop Drawings:

1. Include plans, elevations, and sections showing locations and extent of repair and replacement work, with enlarged details of replacement parts indicating materials, profiles, joinery, reinforcing, method of splicing or attaching wood members to other surfaces, accessory items, and finishes.
2. Include field-verified dimensions and the following:

   a. Full-size shapes and profiles with complete dimensions for replacement components and their jointing, showing relationship of existing components to new components.
   b. Templates and directions for installing hardware and anchorages.
   c. Identification of each new unit and its corresponding location in the building on annotated plans and elevations.
   d. Provisions for sealant joints and flashing as required for location.

C. Samples for Initial Selection: For each type of exposed wood and finish.

1. Identify wood species, cut, and other features.
2. Include Samples of hardware and accessories involving color selection.

D. Samples for Verification: For the following products in manufacturer's standard sizes unless otherwise indicated, finished as required for use in the Work:

1. Replacement Wood: 12 inch long, full-size molding sections with applied finish.

   a. Additional Samples of replacement members that show fabrication techniques, materials, and finishes as requested by Architect.

2. Repaired Wood: Prepare Samples using existing wood removed from site, repaired, and prepared for refinishing.
3. Refinished Wood: Prepare Samples using existing wood removed from site, repaired, and refinished.
4. Hardware: Full-size units with each factory-applied or restored finish.

1.5 INFORMATIONAL SUBMITTALS

A. Wood Historic Treatment Program: Submit before work begins.

B. Preconstruction Test Reports: For historic wood repair.

1.6 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic wood-repair specialist, experienced in repairing, refinishing, and replacing wood in whole and in part. Experience only in fabricating and installing new woodwork is insufficient experience for wood historic treatment work.

B. Wood-Repair-Material Manufacturer Qualifications: A firm regularly engaged in producing wood consolidant and wood patching compound that have been used for similar historic wood-treatment applications with successful results, and with factory-authorized service representatives who are available for consultation, Project-site inspection, and on-site assistance.

C. Wood Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic treatment work, including protection of surrounding materials and Project site.

1. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

D. Mockups: Prepare mockups of historic treatment repair processes to demonstrate aesthetic effects and to set quality standards for materials and execution, and for fabrication and installation. Prepare mockups so they are as inconspicuous as practicable.

1. Locate mockups on existing surfaces where directed by Architect.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified historic treatment specialist to perform preconstruction testing on historic wood materials as follows:

1. Provide test specimens representative of proposed materials and existing construction.
2. Test historic treatment products and methods for effectiveness and compliance with specified requirements.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Pack, deliver, and store products in suitable packs, heavy-duty cartons, or wooden crates; surround with sufficient packing material to ensure that products will not be deformed, broken, or otherwise damaged.

B. Until installed, store products inside a well-ventilated area and protect from weather, moisture, soiling, abrasion, extreme temperatures, and humidity, and where environmental conditions comply with manufacturer's requirements.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with historic wood repair only when existing and forecasted weather conditions are within the environmental limits set by each manufacturer's written instructions and specified requirements.

PART 2 - PRODUCTS

2.1 HISTORIC WOOD REPAIR, GENERAL

A. Quality Standard: Comply with applicable requirements in Section 12, "Historic Restoration Work," and related requirements in AWI/AWMAC/WI's "Architectural Woodwork Standards" for construction, finishes, grade rules, and other requirements unless otherwise indicated.

1. Exception: Industry practices cited in Section 12, Article 1.5, "Industry Practices," of the Architectural Woodwork Standards do not apply to the work of this Section.

2.2 REPLICATED WOOD ITEMS

A. Replicated Wood Siding and Trim: Custom-fabricated replacement wood components.

1. Joint Construction: Joints matching existing joints.
2. Wood Species: Match species of existing wood.
3. Wood Cut: Match cut of existing wood.
4. Wood Member and Trim Profiles: Match profiles and detail of existing.
5. Date Identification: Emboss on a concealed surface of each replaced item, in easily read characters, "MADE <Insert year>." Manufacturer's name may also be embossed.

2.3 WOOD-REPLACEMENT MATERIALS

A. Wood, General: Clear fine-grained lumber; kiln dried to a moisture content of 6 to 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide.

1. Species: Match species of each existing type of wood component or assembly unless otherwise indicated.

B. Exterior Trim: Match existing species.

2.4 WOOD-REPAIR MATERIALS

A. Source Limitations: Obtain wood consolidant and wood-patching compound from single source from single manufacturer.

B. Wood Consolidant: Ready-to-use product designed to penetrate, consolidate, and strengthen soft fibers of wood materials that have deteriorated due to weathering and decay and designed specifically to enhance the bond of wood-patching compound to existing wood.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Abatron, Inc.
b. ConServ Epoxy LLC.
c. Gougeon Brothers, Inc.

C. Wood-Patching Compound: Two-part, epoxy-resin, wood-patching compound; knife-grade formulation as recommended in writing by manufacturer for type of wood repair indicated, tooling time required for the detail of work, and site conditions. Compound shall be designed for filling voids in damaged wood materials that have deteriorated due to weathering and decay. Compound shall be capable of filling deep holes and spreading to featheredge.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Abatron, Inc.
b. Advanced Repair Technology, Inc.
c. ConServ Epoxy LLC.
d. Gougeon Brothers, Inc.

2.5 MISCELLANEOUS MATERIALS

A. Borate Preservative Treatment: Inorganic, borate-based solution, with disodium octaborate tetrahydrate as the primary ingredient; manufactured for preserving weathered and decayed wood from further damage caused by fungi and wood-boring insects; complying with AWPA P5; containing no boric acid.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Nisus Corporation.
b. Sashco, Inc.

B. Cleaning Materials:

1. Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 1/2 cup of laundry detergent that contains no ammonia, 5 quarts of 5 percent sodium hypochlorite bleach, and 15 quarts of warm water for each 5 gal. of solution required.
2. Mildewcide: Commercial, proprietary mildewcide or a solution prepared by mixing 1/3 cup of household detergent that contains no ammonia, 1 quart of 5 percent sodium hypochlorite bleach, and 3 quarts of warm water.

C. Adhesives: Wood adhesives with minimum 15- to 45-minute cure at 70 deg F, in gunnable and liquid formulations as recommended in writing by adhesive manufacturer for each type of repair and exposure condition.

D. Fasteners: Use fastener metals that are noncorrosive and compatible with each material joined.

1. Match existing fasteners in material and type of fastener unless otherwise indicated.
2. Use concealed fasteners for interconnecting wood components.
3. Use concealed fasteners for attaching items to other work unless exposed fasteners are unavoidable or the existing fastening method.
4. For fastening metals, use fasteners of same basic metal as fastened metal unless otherwise indicated.
5. For exposed fasteners, use Phillips-type machine screws of head profile flush with metal surface unless otherwise indicated.
6. Finish exposed fasteners to match finish of metal fastened unless otherwise indicated.

2.6 WOOD FINISHES

A. Unfinished Replacement Units: Provide exposed exterior wood surfaces of replacement units unfinished; smooth, filled, and suitably prepared for on-site priming and finishing.

B. Factory-Primed Replacement Units: Manufacturer's standard factory-prime coat on exposed exterior wood surfaces; compatible with indicated finish coating.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect adjacent materials from damage by historic wood repair.

B. Clean wood of mildew, algae, moss, plant material, loose paint, grease, dirt, and other debris by scrubbing with bristle brush or sponge and detergent solution. Scrub mildewed areas with mildewcide. After cleaning, rinse thoroughly with fresh water. Allow to dry before repairing or painting.

C. Condition replacement wood members and replacement units to prevailing conditions at installation areas before installing.

3.2 HISTORIC WOOD REPAIR, GENERAL

A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from 20 feet away for exterior work.

B. General: In treating historic items, disturb them as minimally as possible and as follows:

1. Stabilize and repair wood to reestablish structural integrity and weather resistance while maintaining the existing form of each item.
2. Remove coatings and apply borate preservative treatment before repair.
3. Repair items in place where possible.
4. Install temporary protective measures to protect wood-treatment work that is indicated to be completed later.
5. Refinish historic wood unless otherwise indicated.

C. Mechanical Abrasion: Where mechanical abrasion is needed for the work, use only the gentlest mechanical methods, such as scraping and natural-fiber bristle brushing, that will not abrade wood substrate, reducing clarity of detail. Do not use abrasive methods, such as sanding, wire brushing, or power tools, except as indicated as part of the historic treatment program and as approved by Architect.

D. Repair Wood: Match existing materials and features, retaining as much original material as possible to perform repairs.

1. Unless otherwise indicated, repair wood by consolidating, patching, splicing, or otherwise reinforcing wood with new wood matching existing wood or with salvaged, sound, original wood.
2. Where indicated, repair wood by limited replacement matching existing material.

E. Replace Wood: Where indicated, duplicate and replace units with units made from salvaged, sound, original wood or with new wood matching existing wood. Use surviving prototypes to create patterns for duplicate replacements.

1. Do not use substitute materials unless otherwise indicated.
2. Compatible substitute materials may be used.

F. Identify removed items with numbering system corresponding to item locations, to ensure reinstallation in same location. Key items to Drawings showing location of each removed unit. Permanently label units in a location that will be concealed after reinstallation.

3.3 WOOD PATCH-TYPE REPAIR

A. General: Patch wood that exhibits depressions, holes, or similar voids, and that has limited amounts of rotted or decayed wood.

1. Verify that surfaces are sufficiently clean and free of paint residue prior to patching.
2. Treat wood with wood consolidant prior to application of patching compound. Coat wood surfaces by brushing, applying multiple coats until wood is saturated and refuses to absorb more. Allow treatment to harden before filling void with patching compound.
3. Remove rotted or decayed wood down to sound wood.

B. Apply borate preservative treatment to accessible surfaces either before applying wood consolidant or after removing rotted or decayed wood. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom. Allow treatment to dry.

C. Apply wood-patching compound to fill depressions, nicks, cracks, and other voids created by removed or missing wood.

1. Prime patch area with application of wood consolidant or manufacturer's recommended primer.
2. Mix only as much patching compound as can be applied according to manufacturer's written instructions.
3. Apply patching compound in layers as recommended in writing by manufacturer until the void is completely filled.
4. Sand patch surface smooth and flush with adjacent wood, without voids in patch material, and matching contour of wood member.
5. Clean spilled compound from adjacent materials immediately.

3.4 WOOD-REPLACEMENT REPAIR

A. General: Replace parts of or entire wood items at locations indicated on Drawings.

1. Remove surface-attached items from wood surface before performing wood-replacement repairs unless otherwise indicated.
2. Verify that surfaces are sufficiently clean and free of paint residue prior to repair.
3. Remove broken, rotted, and decayed wood down to sound wood.
4. Custom fabricate new wood to replace missing wood; either replace entire wood member or splice new wood part into existing member.
5. Secure new wood using finger joints, multiple dowels, or splines with adhesive and nailing to ensure maximum structural integrity at each splice. Use only concealed fasteners. Fill nail holes and patch surface to match surrounding sound wood.

B. Apply borate preservative treatment to accessible surfaces after replacements are made. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.

C. Repair remaining depressions, holes, or similar voids with patch-type repairs.

D. Clean spilled materials from adjacent surfaces immediately.

E. Reinstall items removed for repair into original locations.

3.5 FIELD QUALITY CONTROL

A. Manufacturers Field Service: Engage wood-repair-material manufacturers' factory-authorized service representatives for consultation and Project-site inspection and provide on-site assistance when requested by Architect.

3.6 ADJUSTMENT

A. Adjust existing and replacement operating items, hardware, and accessories for a tight fit at contact points and for smooth operation and tight closure. Lubricate hardware and moving parts.

3.7 CLEANING AND PROTECTION

A. Protect wood surfaces from contact with contaminating substances resulting from construction operations. Monitor wood surfaces adjacent to and below exterior concrete and masonry during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances contact wood surfaces, remove contaminants immediately.

B. Clean exposed surfaces immediately after historic wood repair. Avoid damage to coatings and finishes. Remove excess sealants, patching materials, dirt, and other substances.

END OF SECTION 06 0312

SECTION 06 1000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

(1) Wood blocking, cants, and nailers.

(2) Wood furring and grounds.

1.3 DEFINITIONS

A. Rough Carpentry: Carpentry work not specified in other Sections and not exposed, unless otherwise indicated.

B. Lumber grading agencies, and the abbreviations used to reference them, include the following:

(1) NLGA - National Lumber Grades Authority.

(2) WCLIB - West Coast Lumber Inspection Bureau.

(3) WWPA - Western Wood Products Association.

1.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

(1) Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.

(2) For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

(3) Include copies of warranties from chemical treatment manufacturers for each type of treatment.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.

(1) Factory mark each piece of lumber with grade stamp of grading agency.

(2) Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.

(3) Provide dressed lumber, S4S, unless otherwise indicated.

(4) Provide dry lumber with 15 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA C2 (lumber) and AWPA C9 (plywood), except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).

(1) Preservative Chemicals: Acceptable to authorities having jurisdiction and one of the following:

(a) Chromated copper arsenate (CCA).

(b) Ammoniacal copper zinc arsenate (ACZA).

(c) Ammoniacal, or amine, copper quat (ACQ).

(d) Copper bis (dimethyldithiocarbamate) (CDDC).

(e) Ammoniacal copper citrate (CC).

(f) Copper azole, Type A (CBA-A).

(g) Oxine copper (copper-8-quinolinolate) in a light petroleum solvent.

(2) For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

B. Kiln-dry material after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.

(1) For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece, or omit marking and provide certificates of treatment compliance issued by inspection agency.

D. Application: Treat items indicated on Drawings, and the following:

(1) Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

(2) Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.

(3) Wood framing members less than 18 inches above grade.

2.3 MISCELLANEOUS LUMBER

A. General: Provide lumber for support or attachment of other construction, including the following:

(1) Blocking.

(2) Cants.

(3) Nailers.

(4) Furring.

(5) Grounds.

B. For items of dimension lumber size, provide Select Structural, No. 1 grade, or No. 2 grade lumber with 19 percent maximum moisture content and any of the following species:

(1) Southern Yellow Pine, SPIB.

(2) Douglas Fir-Larch; NLGA, WCLIB, or WWPA.

C. For concealed boards, provide lumber with 15 19 percent maximum moisture content and any of the following species and grades:

(1) Southern Yellow Pine, No. 2 grade; SPIB.

(2) Hem-fir or Hem-fir (north), Construction or 2 Common Standard or 3 Common grade; NLGA, WCLIB, or WWPA.

(3) Spruce-pine-fir (south) or Spruce-pine-fir, Construction or 2 Common Standard or 3 Common grade; NELMA, NLGA, WCLIB, or WWPA.

2.4 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

(1) Where rough carpentry is exposed to weather, or in ground contact, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M of Type 304 stainless steel.

B. Nails, Brads, and Staples: ASTM F 1667.

C. Power-Driven Fasteners: CABO NER-272.

D. Wood Screws: ASME B18.6.1.

A. Connector Bolts: ANSI/ASME B18.2.1 and ASTM SEA J429 Grade 1.

B. Light Gage Metal Connectors: Simpson Strong-Tie or pre-approved equivalent.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

B. Do not use materials with defects that impair quality of rough carpentry or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

C. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.

D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

(1) CABO NER-272 for power-driven fasteners.

(2) Published requirements of metal framing anchor manufacturer.

(3) Table 23-II-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural Panel Roof Sheathing Nailing Schedule," in the IBC.

E. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; predrill as required.

F. Use finishing nails for exposed work, unless otherwise indicated. Countersink nail heads and fill holes with wood filler.

G. Do not splice structural members between supports, unless otherwise indicated.

H. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

3.2 WOOD GROUND, SLEEPER, BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build anchor bolts into masonry during installation of masonry work. Where possible, secure anchor bolts to formwork before concrete placement.

C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

END OF SECTION 06 1000

SECTION 06 2023 - INTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior trim at window openings.

B. Related Requirements:
1. Section 09 9100 " Painting" for priming and painting of interior finish carpentry.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber, mark grade stamp on end or back of each piece.

B. Softwood Plywood: DOC PS 1.

C. Hardboard: ANSI A135.4.

D. MDF: ANSI A208.2, Grade 130.

E. Particleboard: ANSI A208.1, Grade M-2.

2.2 FIRE-RETARDANT-TREATED MATERIALS

A. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent, respectively.

B. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.

1. For exposed lumber and plywood indicated to receive a stained or natural finish, mark back of each piece.

C. Application: Where required by Code.

2.3 INTERIOR TRIM

A. Softwood Lumber Trim:

1. Species and Grade: Eastern white, Idaho white, lodgepole, ponderosa, radiata, or sugar pine, C Select (Choice); NeLMA, NLGA, or WWPA.
2. Species and Grade: Douglas fir-larch or Douglas fir south, Superior or C & Btr finish; NLGA, WCLIB, or WWPA.
3. Species and Grade: Southern pine, C & Btr finish; SPIB.
4. Species and Grade: Western red cedar, Grade A; NLGA, WCLIB, or WWPA.
5. Maximum Moisture Content: 15 percent with at least 85 percent of shipment at 12 percent or less.
6. Finger Jointing: Allowed only if matching existing conditions.

B. Hardwood Lumber Trim:

1. Species and Grade: Match existing; NHLA.
2. Maximum Moisture Content: 10 percent.
3. Finger Jointing: Not allowed.

C. Moldings for Opaque Finish (Painted Finish): Made to patterns included in MMPA's "WM/Series Wood Moulding Patterns."

1. Softwood Moldings: MMPA WM 4, P grade.

a. Species: Match existing species.
b. Maximum Moisture Content: 15 percent with at least 85 percent of shipment at 12 percent or less.

2. Hardwood Moldings: MMPA HWM 4, P-grade.

a. Species: Match existing species.
b. Maximum Moisture Content: 9 percent.

3. Optional Material: Primed MDF.
4. Finger Jointing: Allowed if matching existing.

D. Molding Patterns:

1. Casing Pattern: To match existing salvaged casing.
2. Mull-Casing Pattern: To match existing salvaged casing.
3. Stop Pattern: To match existing salvaged stop.

2.4 MISCELLANEOUS MATERIALS

A. Low-Emitting Materials: Adhesives shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.

C. Multipurpose Construction Adhesive: Formulation complying with ASTM D 3498 that is recommended for indicated use by adhesive manufacturer.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

3.2 INSTALLATION, GENERAL

A. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.

1. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
2. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
3. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
4. Install stairs with no more than 3/16-inch variation between adjacent treads and risers and with no more than 3/8-inch variation between largest and smallest treads and risers within each flight.

3.3 STANDING AND RUNNING TRIM INSTALLATION

A. Install with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long, except where necessary. Stagger joints in adjacent and related standing and running trim. Miter at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint. Use scarf joints for end-to-end joints.

END OF SECTION 06 2023

SECTION 07 4624 - WOOD SHINGLE AND SHAKE SIDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Wood-shingle siding.
2. Felt weather-resistive barrier.
3. Flexible flashing.

B. Related Requirements:
1. Section 07 6200 "Sheet Metal Flashing and Trim" for metal flashing and trim installed with siding.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and finish specified, in sizes indicated.

1. Wood Shingles: Full size unit.

C. Samples for Initial Selection: For each type of siding product with factory-applied finishes.

D. Samples for Verification: For the following products, of sizes indicated, to verify color and finish selected.

1. Wood Shingles: Full size.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Sample Warranty: For special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For siding to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Wood Shingles: 100 sq ft of each type, color, and finish, in unbroken bundles.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: Approved by CSSB.

B. Grading Agency Qualifications: An independent testing and inspecting agency recognized by authorities having jurisdiction as qualified to label siding for compliance with referenced grading rules.

C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Build mockups for siding including accessories.

a. Size: 48 long by 48 wide.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Store siding in a dry, well-ventilated, weathertight location according to manufacturer's written instructions.

B. Store rolls of felt used for weather-resistive barrier on end, on pallets or other raised surfaces. Do not double stack rolls.

1. Protect unused felt from weather, sunlight, and moisture when left overnight or when work is not in progress.

1.10 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit siding installation and related work to be performed according to manufacturer's written instructions.

1. Field-Finished Siding: Proceed with installation of siding only when existing and forecast weather conditions permit installation and the immediate application of at least one coat of specified finish on siding before it is exposed to rain, snow, or dampness.

    a. Proceed with installation only after base or primer coat has been applied to every surface of siding units and has dried.

1.11 WARRANTY

A. Special Materials Warranty: Manufacturer's warranty administered by CSSB and on CSSB's standard form in which Manufacturer agrees to repair or replace CSSB-labeled products that fail in materials within specified warranty period. Material failures include manufacturing defects that result in leaks.

1. Materials Warranty Period: Limited lifetime from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire Resistance: Provide wood products that are fire-retardant treated according to AWPA U1, pressure treated in closed vessels under pressures of not less than 50 psig, and as follows:

1. Surface-Burning Characteristics: According to ASTM E 84; testing by a qualified testing agency acceptable to authorities having jurisdiction, as follows:

    a. Flame-Spread Index: 25 or less.
    b. Progressive Combustion: No evidence of significant progressive combustion when the test is continued for an additional 20-minute period.
    c. Flame Front: Does not progress more than 10-1/2 feet beyond the centerline of the burners at any time during the test.
    d. Effect of Weathering: No increase in the listed classification when subjected to accelerated weathering according to ASTM D 2898 Method A.

2. Product Identification: Attach a label to each bundle of wood products that includes the following:

    a. Identification mark of testing agency acceptable to authorities having jurisdiction.
    b. Identification of treatment manufacturer, chemical treatment, method of application, purpose of treatment, and warranties available.
    c. Species of wood.
    d. Flame-spread and smoke-developed indexes.
    e. Method of drying after treatment.
    f. The words "No increase in the listed classification when subjected to the Standard Rain Test."
    g. References to model-code approval.

B. Decay Resistance: Provide wood products that are preservative treated according to AWPA U1, chromated copper arsenate (CCA) pressure treatment; with a minimum of 0.40 lb/cu. ft. retention.

1. Identification: Attach a label to each bundle of wood products; identify manufacturer and include chemical treatment, method of application, purpose of treatment, and warranties available.

C. Grading Rules: Provide siding that complies with CSSB's grading rules for products indicated.

1. Identification: Attach a label to each bundle of siding that identifies manufacturer, type of product, grade, dimensions, and identification mark of grading agency.

2.2 EXPOSED SHINGLE SIDING

A. Smooth-Sawn Cedar Shingles: Western red cedar shingles.

1. Grade: No. 1.
2. Size: Match existing length; 0.50 inch (13 mm) at butt.
3. Finish: Unfinished.

2.3 ACCESSORIES

A. Felt Weather-Resistive Barrier: ASTM D 226/D 226M, Type II, asphalt-saturated organic felt, nonperforated.

B. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable rubberized-asphalt compound bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin.
1. Minimum Overall Thickness: 0.020 inch.
2. Primer for Flexible Flashing: Product recommended by manufacturer of flexible flashing for applicable substrate.

C. Nails: ASTM F 1667, stainless-steel, Type 316, wire nails, sharp pointed, and of sufficient length to penetrate a minimum of 3/4 inch into sheathing.

1. Shingles: Use box or casing nails.
2. Shakes: Use box nails.
3. Felt Weather-Resistive Barrier: Use roofing nails.
4. Nails in Contact with Metal Flashing: Use nails made from same metal as flashing.

D. Cedar Lath Strip: Western red cedar, clear heartwood, a minimum of 1-1/2 inches wide.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FELT WEATHER-RESISTIVE BARRIER INSTALLATION

A. General: Comply with felt manufacturer's written installation instructions and CSSB recommendations applicable to products and applications indicated unless more stringent requirements apply.

B. Cover exposed exterior surface of sheathing with felt nailed to framing immediately after sheathing is installed.

1. Apply horizontally with a 2-inch overlap and a 6-inch end lap. Wrap around inside and outside corners 4 inches.
2. Cut back felt 1/2 inch on each side of the break in supporting members at expansion- or control-joint locations.
3. Apply felt to cover vertical flashing with a minimum 4-inch overlap unless otherwise indicated.

3.3 FLEXIBLE FLASHING INSTALLATION

A. Apply flexible flashing to comply with manufacturer's written instructions.

1. Prime substrates as recommended by flashing manufacturer.
2. Lap seams and junctures with other materials at least 4 inches except that at flashing flanges of other construction, laps need not exceed flange width.
3. Lap flashing over felt weather-resistive barrier at bottom and sides of openings.
4. Lap felt weather-resistive barrier over flashing at heads of openings.
5. After flashing has been applied, roll surfaces with a hard rubber or metal roller to ensure that flashing is completely adhered to substrates.

3.4 SINGLE-COURSED WALLS

A. Install products according to manufacturer's written instructions and recommendations in CSSB's "Exterior and Interior Wall Manual."

B. Install products, beginning at base of wall.

C. Starter Undercourse: Install a single course of undercoursing at the base of the wall in a continuous straight line.

1. Extend 1 inch below top of foundation wall. Match existing appearance.
2. Match fastening and corner treatment of siding.

D. Exposed Siding:

1. Install starter (first) course of exposed siding over starter undercourse with butts 1/2 inch lower than undercourse butts.
2. Offset joints in first course of exposed siding a minimum of 1-1/2 inches from joints in starter undercourse.
3. Install succeeding exposed siding courses with joints offset a minimum of 1-1/2 inches between adjacent courses.
4. Install exposed siding courses with butt lines even.
5. Fasten each unit with two concealed nails spaced 3/4 to 1 inch from edges and 1 inch above butt line of succeeding course. For units wider than 10 inches, add two concealed fasteners, spaced 1 inch apart, to the center of the unit. Drive fasteners flush with top surface of units without crushing wood.
6. Interior Corner Treatment: Butted against wood stop.
7. Exterior Corner Treatment: Butted against corner boards.

E. Weather Exposure and Spacing:

1. Shingles:

a. Maintain maximum weather exposure matching existing shingles.

END OF SECTION 07 4624

SECTION 07 6200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
1. Formed roof-drainage sheet metal fabrications.
2. Formed steep-slope roof sheet metal fabrications.
3. Formed wall sheet metal fabrications.

1.3 COORDINATION

A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.

B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project Site.

1. Review construction schedule. Verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Review special roof and wall details, and condition of other construction that affect sheet metal flashing and trim.
3. Review requirements for insurance and certificates if applicable.
4. Review sheet metal flashing observation and repair procedures after flashing installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

B. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.

2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work.
3. Include identification of material, thickness, weight, and finish for each item and location in Project.
4. Include details for forming, including profiles, shapes, seams, and dimensions.
5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
6. Include details of termination points and assemblies.
7. Include details of special conditions.
8. Include details of connections to adjoining work.
9. Detail formed flashing and trim at scale of not less than 1-1/2 inches per 12 inches.

C. Samples for Initial Selection: For each type of sheet metal and accessory indicated with factory-applied finishes.

D. Samples for Verification: For each type of exposed finish.

1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
2. Unit-Type Accessories and Miscellaneous Materials: Full-size Sample.
3. Anodized Aluminum Samples: Samples to show full range to be expected for each color required.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

B. Product Test Reports: For each product, for tests performed by a qualified testing agency.

C. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.

1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.10 WARRANTY

A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Sheet Metal Standard for Flashing and Trim: Comply with SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 deg F.

2.2 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth surface.
   1. Color Anodic Finish, Coil Coated: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.
      a. Color: As selected by Architect from full range of industry colors and color densities.
      b. Color Range: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

   2. Exposed Coil-Coated Finish:

      a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      b. Three-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      c. Mica Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      d. Metallic Fluoropolymer: AAMA 2605. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      e. FEVE Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish containing 100 percent fluorinated ethylene vinyl ether resin in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      f. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with dry film thickness of not less than 0.2 mil for primer and 0.8 mil for topcoat.

   3. Color: As indicated by manufacturer's designations.
   4. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.

2.3 UNDERLAYMENT MATERIALS

A. Felt: ASTM D 226/D 226M, Type II (No. 30), asphalt-saturated organic felt; nonperforated.

B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. minimum.

2.4 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

    a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
    b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
    c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.

2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.

C. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, non-sag, nontoxic, non-staining tape 1/2 inch wide and 1/8 inch thick.

D. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

G. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.

H. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.5 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
2. Obtain field measurements for accurate fit before shop fabrication.
3. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

C. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

D. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

E. Sealant Joints: Where movable, non-expansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.

F. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

G. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.

H. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer.

I. Do not use graphite pencils to mark metal surfaces.

2.6 ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Hanging Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch-long sections. Furnish flat-stock gutter brackets and gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard but with thickness not less than twice the gutter

thickness. Fabricate expansion joints, expansion-joint covers,and gutter accessories from same metal as gutters.

1. Gutter Profile: Match existing.
2. Expansion Joints: Lap type.
3. Gutters with Girth up to 15 Inches: Fabricate from the following materials:
   a. Aluminum: 0.032 inch thick.

B. Downspouts: Fabricate downspouts to dimensions indicated, matching existing profiles, complete with mitered elbows. Furnish with metal hangers from same material as downspouts.

2.7 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:
   1. Aluminum: 0.032 inch thick.

B. Drip Edges: Fabricate from the following materials:
   1. Aluminum: 0.032 inch thick.

C. Counterflashing: Fabricate from the following materials:
   1. Aluminum: 0.032 inch thick.

2.8 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.

1. Verify compliance with requirements for installation tolerances of substrates.
2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

2.9 UNDERLAYMENT INSTALLATION

A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.

B. Apply slip sheet, wrinkle free, directly on substrate before installing sheet metal flashing and trim.

2.10 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fastener, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
3. Space cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
5. Torch cutting of sheet metal flashing and trim is not permitted.
6. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.

1. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.

E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Seal joints as required for watertight construction.

1. Use sealant-filled joints unless otherwise indicated. Embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.

2. Prepare joints and apply sealants to comply with requirements in Section 07 9200 "Joint Sealants."

2.11 ROOF-DRAINAGE SYSTEM INSTALLATION

A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

B. Hanging Gutters: Join sections matching existing conditions. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.

1. Fasten gutter spacers to front and back of gutter.
2. Anchor and loosely lock back edge of gutter to continuous eave or apron flashing.
3. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet apart. Install expansion-joint caps.

C. Downspouts: Join sections with 1-1/2-inch telescoping joints.

1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches o.c.
2. Provide elbows at base of downspout to direct water away from building.
3. Connect downspouts to underground drainage system.

2.12 ROOF FLASHING INSTALLATION

A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently atertight and weather resistant.

B. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints minimum of 4 inches. Secure in waterproof manner.

2.13 WALL FLASHING INSTALLATION

A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

2.14 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

B. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

2.15 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder.

C. Clean off excess sealants.

D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. Maintain sheet metal flashing and trim in clean condition during construction.

E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07 6200

SECTION 07 9200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes joint sealers for the following locations:

(1) Exterior joints in vertical surfaces and nontraffic horizontal surfaces as indicated below.

(a) Perimeter joints between siding and trim and frames of doors and windows.

(2) Exterior joints in horizontal traffic surfaces as indicated below:

(a) Joints in cast-in-place concrete slabs for paving to building junctions.

(b) Other joints as indicated.

1.3 SYSTEM PERFORMANCES

A. Provide elastomeric joint sealants that have been produced and installed to establish and maintain watertight and airtight continuous seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in ½ inch wide joints formed between two 6 inch long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

D. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.

E. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:

(1) Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.

(2) Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Engage an Installer who has successfully completed within the last 3 years at least 3 joint sealer applications similar in type and size to that of this Project.

B. Single Source Responsibility for Joint Sealer Materials: Obtain joint sealer materials from a single manufacturer for each different product required.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multicomponent materials.

B. Store and handle materials in compliance with manufacturers' recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.7 PROJECT CONDITIONS

A. Environmental Conditions: Do not proceed with installation of joint sealers under the following conditions:

(1) When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturer or below 40 deg F (4.4 deg C).

(2) When joint substrates are wet due to rain, frost, condensation, or other causes.

B. Joint Width Conditions: Do not proceed with installation of joint sealers where joint widths are less than allowed by joint sealer manufacturer for application indicated.

C. Joint Substrate Conditions: Do not proceed with installation of joint sealers until contaminants capable of interfering with their adhesion are removed from joint substrates.

1.8 WARRANTY

A. Special Installer’s Warranty: Installer’s standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

(1) Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

B. Colors: Provide color of exposed joint sealers indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors.

2.2 ELASTOMERIC JOINT SEALANTS

A. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealant of base polymer indicated which complies with ASTM C 920 requirements, including those referenced for Type, Grade, Class, and Uses.

B. Multi-Part Non-sag Urethane Sealant for Use NT: Type M, Grade NS, Class 25, and complying with the following requirements for Uses:

(1) Uses NT, M, G, A, and, as applicable to joint substrates indicated, O.

C. Multi-Part Non-sag Urethane Sealant for Use T: Type M, Grade NS, Class 25, and complying with the following requirements for Uses:

(1) Uses T, M, G, A, and, as applicable to joint substrates indicated, O.

D. One-Part Non-sag Urethane Sealant for Use NT: Type S; Grade NS; Class 25; and Uses NT, M, A, and, as applicable to joint substrates indicated, O.

E. One-Part Nonacid-Curing Silicone Sealant: Type S, Grade NS, Class 25, and complying with the following requirements for Uses and additional joint movement capability:

(1) Uses NT, M, G, A, and, as applicable to joint substrates indicated, O.

(2) Additional capability, when tested for adhesion and cohesion under maximum cyclic movement per ASTM C 719, to withstand the following percentage changes in joint width as measured at time of application and remain in compliance with other requirements of ASTM C 920 for Uses indicated:

(a) 50 percent movement in both extension and compression for a total of 100 percent movement.

F. Products: Subject to compliance with requirements, provide one of the following for each type of joint:

(1) Multi-Part Non-sag Urethane Sealant for Use NT:

(a) "Vulkem 227"; Mameco.

(b) "Dynatrol II"; Pecora Corp.

(c) "Sikaflex-2c NS"; Sika Corp.

(d) "Sonolastic NP2"; Sonneborne Bldg. Prod. Div.

(e) "Dymeric"; Tremco Inc.

(2) Multi-Part Non-sag Urethane Sealant for Use T:

(a) "Vulkem 227"; Mameco.

(b) "Dynatred"; Pecora Corp.

(c) "Sikaflex-2c NS"; Sika Corp.

(d) "Sonolastic NP2"; Sonneborne Bldg. Prod. Div.

(e) "THC-901"; Tremco Inc.

(3) One-Part Non-sag Urethane Sealant for Use NT:

(a) "Vulkem 116"; Mameco.

(b) "Dynatrol I"; Pecora Corp.

(c) "Sikaflex-1a"; Sika Corp.

(d) "Sikaflex-15LM"; Sika Corp.

(e) "Sonolastic NP1"; Sonneborne Bldg. Prod. Div.

(f) "Dymonic"; Tremco Inc.

(4) One-Part Non-sag Urethane Sealant for Use T:

(a) "Vulkem 116"; Mameco.

(b) "Sikaflex-1a"; Sika Corp.

(c) "Sikaflex-15LM"; Sika Corp.

(d) "Sonolastic NP1"; Sonneborne Bldg. Prod. Div.

2.3 JOINT SEALANT BACKING

A. General: Provide sealant backings of material and type which are non-staining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Plastic Foam Joint Fillers: Preformed, compressible, resilient, non-waxing, non-extruding strips of flexible, non-gassing plastic foam of material indicated below; nonabsorbent to water and gas; and of size, shape and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

(1) Closed-cell polyethylene foam, nonabsorbent to liquid water and gas, non-out-gassing in unruptured state.

(2) Proprietary, reticulated, closed-cell polymeric foam, non-out-gassing, with a density of 2.5 pcf and tensile strength of 35 psi per ASTM D 1623, and with water absorption less than 0.02 gms/cc per ASTM C 1083.

(3) Either material indicated above.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials

or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.4 MISCELLANEOUS MATERIALS

A. Primer: Provide type recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealer-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Provide non-staining, chemical cleaners of type which are acceptable to manufacturers of sealants and sealant backing materials, which are not harmful to substrates and adjacent nonporous materials, and which do not leave oily residues or otherwise have a detrimental effect on sealant adhesion or in-service performance.

C. Masking Tape: Provide non-staining, nonabsorbent type compatible with joint sealants and to surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealers, with Installer present, for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer performance. Do not proceed with installation of joint sealers until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements:

(1) Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; old joint sealers; oil; grease; waterproofing; water repellents; water; surface dirt; and frost.

(2) Clean concrete and similar porous joint substrate surfaces, by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

(3) Remove laitance and form release agents from concrete.

(4) Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile; and other nonporous surfaces by chemical cleaners or other means which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.

B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior

experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond, do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALERS

A. General: Comply with joint sealer manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

B. Elastomeric Sealant Installation Standard: Comply with recommendations of ASTM C 962 for use of joint sealants as applicable to materials, applications and conditions indicated.

C. Latex Sealant Installation Standard: Comply with requirements of ASTM C 790 for use of latex sealants.

D. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:

(1) Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.

(a) Do not leave gaps between ends of joint fillers.

(b) Do not stretch, twist, puncture, or tear joint fillers.

(c) Remove absorbent joint fillers which have become wet prior to sealant application and replace with dry material.

(2) Install bond breaker tape between sealants and joint fillers, compression seals, or back of joints where adhesion of sealant to surfaces at back of joints would result in sealant failure.

(3) Install compressible seals serving as sealant backings to comply with requirements indicated above for joint fillers.

E. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

F. Tooling of Non-sag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling

agents which discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

(1) Provide concave joint configuration per Figure 6A in ASTM C 962, unless otherwise indicated.

(2) Provide flush joint configuration per Figure 6B in ASTM C 962, where indicated.

(3) Use masking tape to protect adjacent surfaces of tooled joints.

3.4 CLEANING

A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealers during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Final Acceptance. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealers immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original work.

3.6 JOINT SEALER SCHEDULE

A. Multi-part or One-part Non Sag Urethane Sealant: Use in exterior joints and in interior joints subject to movement; and all other exterior locations not indicated otherwise.

END OF SECTION 07 9200

SECTION 08 0314 - HISTORIC TREATMENT OF WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes historic treatment of wood doors in the form of the following:

1. Repairing wood doors and trim.
2. Replacing wood door leaves and frames.
3. Reglazing.
4. Repairing, refinishing, and replacing hardware.

1.2 DEFINITIONS

A. Glazing: Includes glass, glazing points, glazing tapes, glazing sealants, and glazing compounds.

B. Door: Generally, this term includes door frame, leaves, hardware, side panels or lights, fan light, transom, and storm vestibule unless otherwise indicated by context.

C. Wood Door Component Terminology: Wood door components for historic treatment work include the following classifications:

1. Frame Components: Head, jambs, stop, and threshold or sill.
2. Leaf Components: Stiles, rails, and muntins.
3. Exterior Trim: Exterior casing, brick mold, and cornice or drip cap.
4. Interior Trim: Casing.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to historic treatment of wood doors.
2. Review methods and procedures related to historic treatment of wood doors including, but not limited to, the following:

a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
b. Materials, material application, sequencing, tolerances, and required clearances.
c. Fire-protection plan.
d. Wood door historic treatment program.
e. Coordination with building occupants.

1.4 SEQUENCING AND SCHEDULING

A. Perform historic treatment of wood doors in the following sequence, which includes work specified in this and other Sections:

1. Label each door frame with permanent opening-identification number in inconspicuous location.
2. Tag existing door leaves, storm doors, and storm-vestibule panels with opening-identification numbers and remove for on-site or off-site repair. Indicate on tags the locations on door of each component, such as "left-hand door leaf," "right-hand reverse door leaf," "first left-side storm-vestibule panel," and "second left-side storm-vestibule panel."
3. Remove door, dismantle hardware, and tag hardware with door opening-identification numbers.
4. In the shop, label each leaf with permanent opening-identification number in inconspicuous location and remove site-applied tags.
5. Install temporary protection and security at door openings.
6. Sort units by condition, separating those that need extensive repair.
7. Clean surfaces.
8. General Wood-Repair Sequence:

    a. Remove paint to bare wood.
    b. Rack frames slightly to inject adhesive into mortise and tenon joints; square frames to proper fit before adhesive sets.
    c. Repair wood by consolidation, member replacement, partial member replacement, and patching.
    d. Sand, prime, fill, sand again, and prime surfaces again for refinishing.

9. Repair, refinish, and replace hardware if required. Reinstall operating hardware.
10. Install glazing.
11. Remove temporary protection and security at door openings.
12. Reinstall units.
13. Apply finish coats.
14. Install remaining hardware and weather stripping.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.

B. Shop Drawings: For locations and extent of wood-door repair and replacement work.

1. Include plans, elevations, sections, and details of replacement parts indicating materials, profiles, joinery, reinforcing, method of splicing into or attaching to existing wood door, accessory items, and finishes.
2. Include field-verified dimensions and the following:

a. Full-size shapes and profiles with complete dimensions for replacement components and their jointing, showing relation of existing to new components.
b. Templates and directions for installing hardware and anchorages.
c. Identification of each new unit and its corresponding door locations in the building on annotated plans and elevations.
d. Provisions for sealant joints and flashing as required for location.

C. Samples for Initial Selection: For each type of exposed wood and finish.

1. Identify wood species, cut, and other features.
2. Include Samples of hardware and accessories involving color selection.

D. Samples for Verification: For the following products in manufacturer's standard sizes unless otherwise indicated, finished as required for use in the Work:

1. Replacement Units: 12-inch-long, full-size frame and leaf sections with applied finish.
2. Replacement Members: 12 inches long for each replacement member, including parts of frame, leaf, exterior trim, and interior trim.

a. Additional Samples of replacement members that show fabrication techniques, materials, and finishes as requested by Architect.

3. Repaired Wood Door Members: Prepare Samples using existing wood door members removed from site, repaired, and prepared for refinishing.
4. Refinished Wood Door Members: Prepare Samples using existing wood door members removed from site, repaired, and refinished.
5. Hardware: Full-size units with each factory-applied or restored finish.
6. Glass: Full size units of each type and appearance.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic treatment specialist.

B. Wood Door Historic Treatment Program: Submit before work begins.

C. Preconstruction Test Reports: For historic treatment of wood doors.

1.7 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic wood door specialist, experienced in repairing, refinishing, and replacing wood doors in whole and in part. Experience only in fabricating and installing new wood doors is insufficient experience for wood-door historic treatment work.

B. Wood-Repair-Material Manufacturer Qualifications: A firm regularly engaged in producing wood consolidant and wood patching compound that have been used for similar historic wood-treatment applications with successful results, and with factory-authorized service representatives who are available for consultation and Project-site inspection and on-site assistance.

C. Wood Door Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic treatment work, including protection of surrounding materials and Project site.

1. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

D. Mockups: Prepare mockups of historic treatment repair processes to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation. Prepare mockups so they are as inconspicuous as practicable.

1. Locate mockups on existing wood materials where directed by Architect.
2. Wood Door Repair: Prepare one entire door unit to serve as mockup to demonstrate Samples of each type of repair of wood door members including frame, leaves, glazing, and hardware.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified historic treatment specialist to perform preconstruction testing on historic wood doors.

1. Provide test specimens representative of proposed materials and existing construction.
2. Test historic treatment products and methods for effectiveness and compliance with specified requirements.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Pack, deliver, and store products in suitable packs, heavy-duty cartons, or wooden crates; surround with sufficient packing material to ensure that products will not be deformed, broken, or otherwise damaged.

B. Store products inside a well-ventilated area, protected from weather, moisture, soiling, abrasion, extreme temperatures, and humidity, and where environmental conditions comply with manufacturer's requirements.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with historic treatment of wood doors only when existing and forecasted weather conditions are within the environmental limits set by each manufacturer's written instructions and specified requirements.

PART 2 - PRODUCTS

2.1 HISTORIC TREATMENT OF WOOD DOORS, GENERAL

A. Quality Standard: Comply with applicable requirements in Section 12, "Historic Restoration Work," and related requirements in AWI/AWMAC/WI's "Architectural Woodwork Standards" for construction, finishes, grades of wood doors, and other requirements unless otherwise indicated.

1. Exception: Industry practices cited in the "Architectural Woodwork Standards," Section 12, Article 1.5, "Industry Practices," do not apply to the work of this Section.

2.2 REPLICATED WOOD DOOR UNITS

A. Replicated Wood Door Frames and Leaves: Custom-fabricated replacement wood units and trim, with operating and latching hardware.
1. Joint Construction: Joints matching existing.
2. Wood Species: Match wood species of existing exterior door and frame parts.
3. Wood Cut: Match cut of existing exterior wood door and frame parts.
4. Wood Member and Trim Profiles: Match profiles and detail of existing door members and trim.
5. Hardware: Reuse existing unless otherwise indicated. If reuse of existing is not possible, match existing hardware.
6. Glazing Stops: Provide replacement glazing stops coordinated with glazing system indicated.
7. Weather Stripping: Full-perimeter weather stripping for each exterior door leaf.
8. Date Identification: Emboss on a concealed surface of each replaced door frame and leaf, in easily read characters, "DOOR FRAME MADE <Insert year>" or "DOOR LEAF MADE <Insert year>." Manufacturer's name may also be embossed.

2.3 WOOD-REPLACEMENT MATERIALS

A. Wood, General: Clear fine-grained lumber; kiln dried to a moisture content of 6 to 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide.

1. Species: Match species of each existing type of wood component or assembly unless otherwise indicated.

B. Frame Heads and Jambs and Exterior Trim: Match existing species.

C. Exterior Trim: Match existing species.

D. Thresholds or Sills: Match existing species.

E. Leaf Components: Match existing species.

F. Interior Trim: Match existing species.

2.4 WOOD-REPAIR MATERIALS

A. Source Limitations: Obtain wood consolidant and wood-patching compound from single source from single manufacturer.

B. Wood Consolidant: Ready-to-use product designed to penetrate, consolidate, and strengthen soft fibers of wood materials that have deteriorated because of weathering and decay and designed specifically to enhance the bond of wood-patching compound to existing wood.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Abatron, Inc.
    b. ConServ Epoxy LLC.
    c. Gougeon Brothers, Inc.

C. Wood-Patching Compound: Two-part epoxy-resin wood-patching compound; knife-grade formulation as recommended in writing by manufacturer for type of wood repair indicated, tooling time required for the detail of work, and site conditions. Compound shall be designed for filling voids in damaged wood materials that have deteriorated because of weathering and decay. Compound shall be capable of filling deep holes and spreading to feather edge.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Abatron, Inc.
    b. Advanced Repair Technology, Inc.
    c. ConServ Epoxy LLC.
    d. Gougeon Brothers, Inc.

2.5 GLAZING MATERIALS

A. Glass: Uncoated clear safety glass units matching existing glass appearance.

B. Plastic Glazing: Abrasion- and UV-resistant monolithic polycarbonate sheet to be installed at exterior of window openings where indicated on drawings.

C. Glazing Systems:

1. Traditional Glazing Products: Glazing points and oil-based glazing putty or latex glazing compound. Tint to required color according to manufacturer's written instructions.

2. Modern Glazing Products: Glazing points and single-component polyurethane glazing compound; ASTM C920, Type S, Grade NS, Class 25, Use G; struck uniformly to match taper of existing glazing putty (removed); colored as required to match painted sash.
3. Primers and Cleaners for Glazing: As recommended in writing by glazing material manufacturer.

2.6 HARDWARE

A. Primary Door Hardware, General: Provide complete sets of door hardware consisting of hinges, pulls, locks, latches, and accessories indicated for each door or required for proper operation. Sets shall include replacement hardware to complement repaired and refinished, existing hardware. Door hardware shall smoothly operate, tightly close, and securely lock wood doors and be sized to accommodate frequency of use, glazing weight, and dimensions.

B. Replacement Hardware: Replace existing damaged or missing hardware with new hardware to match existing.

C. Material and Design:

1. Material: Match existing unless otherwise indicated.
2. Design: Match type and appearance of existing hardware.
3. Replacement Door Hardware: Regardless of mechanisms within, match existing, exposed door hardware of the following types:

    a. Door knobs, levers, and escutcheons.
    b. Door latches.
    c. Surface-mounted flush bolts.
    d. Handles.
    e. Projecting transom hinges and latch with pole ring.

4. Date Identification: Emboss on a concealed surface of the metal body of each new hardware item, in easily read characters, "MADE <**Insert year**>." Manufacturer's name may also be embossed.

D. Hardware Finishes: Comply with BHMA A156.18 for base material and finish requirements indicated by the following:
1. Match existing hardware finishes.

2.7 WEATHER STRIPPING

A. Compression-Type Weather Stripping: Compressible weather stripping designed for permanently resilient sealing under bumper or wiper action; completely concealed when door is closed.
1. Weather-Stripping Material: Match existing materials and profiles as much as possible unless otherwise indicated.

    a. Cellular Elastomeric Gaskets: Preformed; complying with ASTM C509.
    b. Dense Elastomeric Gaskets: Preformed; complying with ASTM C864.

B. Sliding-Type Weather Stripping: Woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric.

1. Weather Seals: Provide weather stripping with integral barrier fin or fins of semirigid, polypropylene sheet or polypropylene-coated material.

C. Metal Weather Stripping: Bronze weather stripping; designed either as one piece to seal door at head and jambs by door sliding against it or as two pieces that interlock; and completely concealed when door is closed.

2.8 MISCELLANEOUS MATERIALS

A. Cleaning Materials:

1. Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 1/2 cup of laundry detergent that contains no ammonia, 5 quarts of 5 percent sodium hypochlorite bleach, and 15 quarts of warm water for each 5 gal. of solution required.
2. Mildewcide: Commercial, proprietary mildewcide or a solution prepared by mixing 1/3 cup of household detergent that contains no ammonia, 1 quart of 5 percent sodium hypochlorite bleach, and 3 quarts of warm water.

B. Adhesives: Wood adhesives with minimum 15- to 45-minute cure at 70 deg F, in gunnable and liquid formulations as recommended in writing by adhesive manufacturer for each type of repair and exposure conditions.

C. Fasteners: Use fastener metals that are noncorrosive and compatible with each material joined.

1. Match existing fasteners in material and type of fastener unless otherwise indicated.
2. Use concealed fasteners for interconnecting wood components.
3. Use concealed fasteners for attaching items to other work unless exposed fasteners are unavoidable or the existing fastening method.
4. For fastening metals, use fasteners of same basic metal as fastened metal unless otherwise indicated.
5. For exposed fasteners, use Phillips-type machine screws of head profile flush with metal surface unless otherwise indicated.
6. Finish exposed fasteners to match finish of metal fastened unless otherwise indicated.

D. Anchors, Clips, and Accessories: Fabricate anchors, clips, and door accessories of aluminum, nonmagnetic stainless steel, or hot-dip zinc-coated steel complying with requirements in ASTM B633 for SC 3 (Severe) service condition.

2.9 WOOD DOOR FINISHES

A. Unfinished Replacement Units: Provide exposed exterior and interior wood surfaces of replacement units unfinished; smooth, filled, and suitably prepared for on-site priming and finishing.

B. Factory-Primed Replacement Units: Manufacturer's standard factory-prime coat on exposed exterior and interior wood surfaces; compatible with indicated finish coating.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect adjacent materials from damage by historic treatment of wood doors.

B. Clean wood doors of mildew, algae, moss, plant material, loose paint, grease, dirt, and other debris by scrubbing with bristle brush or sponge and detergent solution. Scrub mildewed areas with mildewcide. After cleaning, rinse thoroughly with fresh water. Allow to dry before repairing or painting.

C. Condition replacement wood members and replacement units to prevailing conditions at installation areas before installing.

3.2 HISTORIC TREATMENT OF WOOD DOORS, GENERAL

A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from the door interior at 10 feet away and from the door exterior at 20 feet away.

B. General: In treating historic items, disturb them as minimally as possible and as follows:

1. Stabilize and repair wood doors to reestablish structural integrity and weather resistance while maintaining the existing form of each item.
2. Remove coatings and apply borate preservative treatment before repair.
3. Repair items in place where possible.
4. Install temporary protective measures to protect wood door work that is indicated to be completed later.

C. Mechanical Abrasion: Where mechanical abrasion is needed for the work, use only the gentlest mechanical methods, such as scraping and natural-fiber bristle brushing, that will not abrade wood substrate, reducing clarity of detail. Do not use abrasive methods such as sanding, wire brushing, or power tools except as indicated as part of the historic treatment program and as approved by Architect.

D. Repair and Refinish Existing Hardware: Dismantle door hardware; strip paint, repair, and refinish it to match finish Samples; and lubricate moving parts just enough to function smoothly.

E. Repair Wood Doors: Match existing materials and features, retaining as much original material as possible to perform repairs.

1. Unless otherwise indicated, repair wood doors by consolidating, patching, splicing, or otherwise reinforcing wood with new wood matching existing wood or with salvaged, sound, original wood.
2. Where indicated, repair wood doors by limited replacement matching existing material.

F. Replace Wood Units: Where indicated, duplicate and replace units with units made from salvaged, sound, original wood or with new wood matching existing wood. Use surviving prototypes to create patterns for duplicate replacements.

1. Do not use substitute materials unless otherwise indicated.
2. Compatible substitute materials may be used.

G. Protection of Openings: Where doors are indicated for removal, cover resultant openings with temporary enclosures so that openings are weathertight during repair period.

H. Identify removed doors, frames, leaves, and members with numbering system corresponding to door locations to ensure reinstallation in same location. Key doors, leaves, and members to Drawings showing location of each removed unit. Permanently label units in a location that will be concealed after reinstallation.

3.3 WOOD DOOR PATCH-TYPE REPAIR

A. General: Patch wood members that exhibit depressions, holes, or similar voids and that have limited amounts of rotted or decayed wood.

1. Remove leaves from door frames before performing patch-type repairs at meeting or sliding surfaces unless otherwise indicated. Reglaze units prior to reinstallation.
2. Verify that surfaces are sufficiently clean and free of paint residue before patching.
3. Treat wood members with wood consolidant before applying patching compound. Coat wood surfaces by brushing, applying multiple coats until wood is saturated and unable to absorb more. Allow treatment to harden before filling void with patching compound.
4. Remove rotted or decayed wood down to sound wood.

B. Apply borate preservative treatment to accessible surfaces either before applying wood consolidant or after removing rotted or decayed wood. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom. Allow treatment to dry.

C. Apply wood-patching compound to fill depressions, nicks, cracks, and other voids created by removed or missing wood.

1. Prime patch area with application of wood consolidant or manufacturer's recommended primer.
2. Mix only as much patching compound as can be applied according to manufacturer's written instructions.
3. Apply patching compound in layers as recommended in writing by manufacturer until the void is completely filled.
4. Sand patch surface smooth and flush with adjacent wood, without voids in patch material, and matching contour of wood member.
5. Clean spilled compound from adjacent materials immediately.

3.4 WOOD DOOR MEMBER-REPLACEMENT REPAIR

A. General: Replace parts of or entire wood door members at locations indicated on Drawings.

1. Remove leaves from door openings before performing member-replacement repairs unless otherwise indicated.
2. Verify that surfaces are sufficiently clean and free of paint residue before repair.
3. Remove broken, rotted, and decayed wood down to sound wood.
4. Custom fabricate new wood to replace missing wood; either replace entire wood member or splice new wood part into existing member.
5. Secure new wood using finger joints, multiple dowels, or splines with adhesive and nailing to ensure maximum structural integrity at each splice. Use only concealed fasteners. Fill nail holes and patch surface to match surrounding sound wood.

B. Apply borate preservative treatment to accessible surfaces after replacements are made. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.

C. Repair remaining depressions, holes, or similar voids with patch-type repairs.

D. Clean spilled materials from adjacent surfaces immediately.

E. Glazing: Reglaze units before reinstallation.

1. Mill new and rout existing glazed members to accommodate new glass thickness.
2. Provide replacement glazing stops coordinated with glazing system indicated.
3. Provide glazing stops to match contour of door frames.

F. Reinstall units removed for repair into original openings.

G. Weather Stripping: Replace nonfunctioning and install missing weather stripping to ensure full-perimeter weather stripping for each exterior leaf.

3.5 GLAZING

A. Comply with combined written instructions of manufacturers of glass, glazing system, and glazing materials, unless more stringent requirements are indicated.

B. Remove cracked and damaged glass and glazing materials from openings and prepare surfaces for reglazing.

C. Remove existing glass and glazing where indicated on Drawings, and prepare surfaces for reglazing.

D. Remove glass and glazing from openings and prepare surfaces for reglazing.

E. Size glass as required by Project conditions to provide necessary bite on glass, minimum edge and face clearances, with reasonable tolerances.

F. Apply primers to joint surfaces where required for adhesion of glazing system, as determined by preconstruction testing.

G. Install setting bead, side beads, and back bead against stop in glazing rabbets before setting glass.

H. Install glass with proper orientation so that coatings, if any, face exterior or interior as required.

I. Install glazing points.

J. Disposal of Removed Glass: Remove from Owner's property and legally dispose of it unless otherwise indicated.

3.6 WOOD DOOR UNIT REPLACEMENT

A. General: Replace existing wood door frame and leaf with new custom-fabricated units to match existing at locations indicated on drawings.

B. Apply borate preservative treatment to accessible surfaces before finishing. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.

C. Mill glazed members to accommodate glass thickness. Glaze units before installation.

D. Install units, hardware, weather stripping, accessories, and other components.

E. Install units level, plumb, square, true to line, without distortion or impeding movement, anchored securely in place to structural support, and in proper relation to wall flashing, trim, and other adjacent construction.

F. Set threshold or sill members in bed of sealant for weathertight construction unless otherwise indicated.

G. Install door units with new anchors into existing openings.

H. Weather Stripping: Install full-perimeter weather stripping for each operable exterior leaf.

I. Metal Protection: Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

J. Disposal of Removed Units: Remove from Owner's property and legally dispose of them.

3.7 WEATHER STRIPPING INSTALLATION

A. Install weather stripping for tight seal of joints as determined by preconstruction testing and demonstrated in mockup.

3.8 FIELD QUALITY CONTROL

A. Manufacturers Field Service: Engage a factory-authorized, wood-repair-material service representative for consultation and Project-site inspection and to provide on-site assistance when requested by Architect.

3.9 ADJUSTING

A. Adjust existing and replacement operating leaves, hardware, weather stripping, and accessories for a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

3.10 CLEANING AND PROTECTION

A. Protect door surfaces from contact with contaminating substances resulting from construction operations. Monitor door surfaces adjacent to and below exterior concrete and masonry during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances contact door surfaces, remove contaminants immediately.

B. Clean exposed surfaces immediately after historic treatment of wood doors. Avoid damage to coatings and finishes. Remove excess sealants, glazing and patching materials, dirt, and other substances.

C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

END OF SECTION 08 0314

SECTION 08 0352 - HISTORIC TREATMENT OF WOOD WINDOWS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes historic treatment of wood windows in the form of the following:

1. Repairing wood windows and trim.
2. Reglazing.
3. Repairing, refinishing, and replacing hardware.
4. Replacing insect screen units.
5. Providing new storm window units.

1.2 DEFINITIONS

A. Glazing: Includes glass, glazing points, glazing tapes, glazing sealants, and glazing compounds.

B. Window: Includes window frame, sash, hardware, storm window, and exterior and interior shutters unless otherwise indicated by context.

C. Wood Window Component Terminology: Wood window components for historic treatment work include the following classifications:

1. Frame Components: Head, jambs, and sill.
2. Sash Components: Stiles and rails, parting bead, stop, and muntins.
3. Exterior Trim: Exterior casing, brick mold, and cornice or drip cap.
4. Interior Trim: Casing, stool, and apron.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to historic treatment of wood windows.
2. Review methods and procedures related to historic treatment of wood windows including, but not limited to, the following:

a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
b. Materials, material application, sequencing, tolerances, and required clearances.
c. Fire-protection plan.
d. Wood window historic treatment program.

1.4 SEQUENCING AND SCHEDULING

A. Perform historic treatment of wood windows in the following sequence, which includes work specified in this and other Sections:

1. Label each window frame with permanent opening-identification number in inconspicuous location.
2. Tag existing window sash with opening-identification numbers and remove for on-site or off-site repair. Indicate on tags the locations on window of each component.
3. Remove window, dismantle hardware, and tag hardware with opening-identification numbers.
4. Install temporary protection and security at window openings.
5. In the shop, label each sash unit with permanent opening-identification number in inconspicuous location and remove site-applied tags.
6. Sort units by condition, separating those that need extensive repair.
7. Clean surfaces.
8. General Wood-Repair Sequence:

    a. Remove paint to bare wood.
    b. Rack frames slightly to inject adhesive into mortise and tenon joints; square frames to proper fit before adhesive sets.
    c. If thicker than original glass is required, rout existing muntins to required rebate size.
    d. Repair wood by consolidation, member replacement, partial member replacement, and patching.
    e. Sand, prime, fill, sand again, and prime surfaces again for refinishing.

9. Repair, refinish, and replace hardware if required. Reinstall operating hardware.
10. Install glazing.
11. Remove temporary protection and security at window openings.
12. Reinstall units.
13. Apply finish coats.
14. Install remaining hardware and weather stripping.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.

B. Shop Drawings:

1. Include plans, elevations, and sections showing locations and extent of repair and replacement work, with enlarged details of replacement parts indicating materials, profiles, joinery, reinforcing, method of splicing into or attaching to existing wood window, accessory items, and finishes.
2. Include field-verified dimensions and the following:

a. Full-size shapes and profiles with complete dimensions for replacement components and their jointing, showing relation of existing to new components.
b. Templates and directions for installing hardware and anchorages.
c. Identification of each new unit and its corresponding window locations in the building on annotated plans and elevations.
d. Provisions for joint sealants as required for location.

C. Samples for Initial Selection: For each type of exposed wood and finish.

1. Identify wood species, cut, and other features.
2. Include Samples of hardware and accessories involving color selection.

D. Samples for Verification: For the following products in manufacturer's standard sizes unless otherwise indicated, finished as required for use in the Work:

1. Replacement Units: 12 inch long, full-size frame and sash sections with applied finish.
2. Replacement Members: 12 inch long for each replacement member, including parts of frame, sash, exterior trim, and interior trim.

a. Additional Samples of replacement members that show fabrication techniques, materials, and finishes as requested by Architect.

3. Repaired Wood Window Members: Prepare Samples using existing wood window members removed from site, repaired, and prepared for refinishing.
4. Refinished Wood Window Members: Prepare Samples using existing wood window members removed from site, repaired, and refinished.
5. Hardware: Full-size units with each factory-applied or restored finish.
6. Weather Stripping: 12 inch long sections.
7. Glass: Full size units of each type and appearance.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic wood window restoration specialist.

B. Wood Window Historic Treatment Program: Submit before work begins.

C. Preconstruction Test Reports: For historic treatment of wood windows.

1.7 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic wood window specialist, experienced in repairing, refinishing, and replacing wood windows in whole and in part. Experience only in fabricating and installing new wood windows is insufficient experience for wood-window historic treatment work.

B. Wood-Repair-Material Manufacturer Qualifications: A firm regularly engaged in producing wood consolidant and wood-patching compound that have been used for similar historic wood-treatment applications with successful results, and with factory-authorized service

representatives who are available for consultation and Project-site inspection and on-site assistance.

C. Wood Window Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic treatment work, including protection of surrounding materials and Project site.

1. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

D. Mockups: Prepare mockups of historic treatment repair processes to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation. Prepare mockups so they are as inconspicuous as practicable.

1. Locate mockups on existing windows where directed by Architect.
2. Wood Window Repair: Prepare one entire window unit to serve as mockup to demonstrate samples of each type of repair of wood window members including frame, sash, glazing, and hardware.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified historic treatment specialist to perform preconstruction testing on historic wood windows.

1. Provide test specimens representative of proposed materials and existing construction.
2. Test historic treatment products and methods for effectiveness and compliance with specified requirements.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Pack, deliver, and store products in suitable packs, heavy-duty cartons, or wooden crates; surround with sufficient packing material to ensure that products are not deformed, broken, or otherwise damaged.

B. Store products inside a well-ventilated area and protect from weather, moisture, soiling, abrasion, extreme temperatures, and humidity, and where environmental conditions comply with manufacturer's requirements.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with historic treatment of wood windows only when existing and forecasted weather conditions are within the environmental limits set by each manufacturer's written instructions and specified requirements.

PART 2 - PRODUCTS

2.1 HISTORIC TREATMENT OF WOOD WINDOWS, GENERAL

A. Quality Standard: Comply with applicable requirements in Section 12, "Historic Restoration Work," and related requirements in AWI/AWMAC/WI's "Architectural Woodwork Standards" for construction, finishes, grades of wood windows, and other requirements unless otherwise indicated.

1. Exception: Industry practices cited in Section 12, Article 1.5, Industry Practices, of the Architectural Woodwork Standards do not apply to the work of this Section.

2.2 STORM WINDOWS

A. General: Custom fabricated, tight fitting, and with operating and latching hardware.

1. Fabricate storm windows for installation where indicated on Drawings.
2. Make storm windows removable for cleaning and storage.

B. Wood Storm Windows:
1. Joint Construction: Joints matching existing.
2. Wood Species: Match wood species of exterior trim and sash parts.
3. Wood Cut: Match cut of existing exterior wood window trim and sash parts.
4. Wood Storm-Window Members: As indicated on Drawings.
5. Hardware: As indicated on Drawings.
6. Glazing Material: Uncoated clear float glass.
7. Date Identification: Emboss on a concealed surface of each storm window, in easily read characters, "STORM WINDOW MADE <Insert year>." Manufacturer's name may also be embossed.

2.3 WOOD-REPLACEMENT MATERIALS

A. Wood, General: Clear fine-grained lumber; kiln dried to a moisture content of 6 to 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide.

1. Species: Match species of each existing type of wood component or assembly unless otherwise indicated.

B. Frame Heads and Jambs and Exterior Trim: Match existing species.

C. Exterior Trim: Match existing species.

D. Sills: Match existing species.

E. Sash Components: Match existing species.

F. Interior Trim: Match existing species.

2.4 WOOD-REPAIR MATERIALS

A. Source Limitations: Obtain wood consolidant and wood-patching compound from single source from single manufacturer.

B. Wood Consolidant: Ready-to-use product designed to penetrate, consolidate, and strengthen soft fibers of wood materials that have deteriorated due to weathering and decay and designed specifically to enhance the bond of wood-patching compound to existing wood.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Abatron, Inc.
b. ConServ Epoxy LLC.
c. Gougeon Brothers, Inc.

C. Wood-Patching Compound: Two-part epoxy-resin wood-patching compound; knife-grade formulation as recommended in writing by manufacturer for type of wood repair indicated, tooling time required for the detail of work, and site conditions. Compound shall be designed for filling voids in damaged wood materials that have deteriorated due to weathering and decay. Compound shall be capable of filling deep holes and spreading to feather edge.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Abatron, Inc.
b. Advanced Repair Technology, Inc.
c. ConServ Epoxy LLC.
d. Gougeon Brothers, Inc.

2.5 GLAZING MATERIALS

A. Glass: Match Existing.

B. Glazing Systems:

1. Traditional Glazing Products: Glazing points and oil-based glazing putty or latex glazing compound. Tint to required color according to manufacturer's written instructions.

2. Modern Glazing Products: Glazing points and single-component polyurethane glazing compound; ASTM C920, Type S, Grade NS, Class 25, Use G; struck uniformly to match taper of existing glazing putty (removed); colored as required to match painted sash.

3. Primers and Cleaners for Glazing: As recommended in writing by glazing material manufacturer.

2.6 HARDWARE

A. Window Hardware: Provide complete sets of window hardware consisting of window cranks, hinges, pulls, latches, and accessories indicated for each window or required for proper operation. Sets shall include replacement hardware to complement repaired and refinished, existing hardware. Window hardware shall smoothly operate, tightly close, and securely lock wood windows and be sized to accommodate sash or ventilator weight and dimensions.

B. Other Hardware: Provide complete sets of hardware for each type of storm window consisting of hinges, pulls, latches, and accessories indicated or required for proper operation. Hardware shall smoothly operate, tightly close, and secure units appropriately for unit weight and dimensions.

C. Replacement Hardware: Replace existing damaged or missing hardware with new hardware matching existing.

D. Material and Design:

1. Material: Match existing unless otherwise indicated.
2. Design: Match type and appearance of existing hardware.
3. Replacement Window Hardware: Match existing window hardware of the following types:

    a. Projected window hinge.
    b. Window lock.
    c. Window latch.
    d. Handle.
    e. Hand crank.

4. Date Identification: Emboss on a concealed surface of the metal body of each new hardware item, in easily read characters, "MADE <Insert year>." Manufacturer's name may also be embossed.

E. Hardware Finishes: Comply with BHMA A156.18 for base material and finish requirements indicated by the following:
1. BHMA 613: Dark-oxidized satin bronze, oil-rubbed; bronze base metal.

2.7 WEATHER STRIPPING

A. Compression-Type Weather Stripping: Compressible weather stripping designed for permanently resilient sealing under bumper or wiper action; completely concealed when window is closed.
1. Weather-Stripping Material: Match existing materials and profiles as much as possible unless otherwise indicated.

    a. Cellular Elastomeric Gaskets: Preformed; complying with ASTM C509.

b. Dense Elastomeric Gaskets: Preformed; complying with ASTM C864.

B. Metal Weather Stripping: Bronze weather stripping; designed either as one piece to seal by sliding into a groove in the sash or as two pieces that interlock; and completely concealed when window is closed.

2.8 MISCELLANEOUS MATERIALS

A. Borate Preservative Treatment: Inorganic, borate-based solution, with disodium octaborate tetrahydrate as the primary ingredient; manufactured for preserving weathered and decayed wood from further damage by decay fungi and wood-boring insects; complying with AWPA P5; containing no boric acid.

B. Cleaning Materials:

1. Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 1/2 cup of laundry detergent that contains no ammonia, 5 quarts of 5 percent sodium hypochlorite bleach, and 15 quarts of warm water for each 5 gal. of solution required.
2. Mildewcide: Commercial, proprietary mildewcide or a solution prepared by mixing 1/3 cup of household detergent that contains no ammonia, 1 quart of 5 percent sodium hypochlorite bleach, and 3 quarts of warm water.

C. Adhesives: Wood adhesives for exterior exposure, with minimum 15- to 45-minute cure at 70 deg F, in gunnable and liquid formulations as recommended in writing by adhesive manufacturer for each type of repair.

D. Fasteners: Use fastener metals that are noncorrosive and compatible with each material joined.

1. Match existing fasteners in material and type of fastener unless otherwise indicated.
2. Use concealed fasteners for interconnecting wood components.
3. Use concealed fasteners for attaching items to other work unless exposed fasteners are unavoidable or the existing fastening method.
4. For fastening metals, use fasteners of same basic metal as fastened metal unless otherwise indicated.
5. For exposed fasteners, use Phillips-type machine screws of head profile flush with metal surface unless otherwise indicated.
6. Finish exposed fasteners to match finish of metal fastened unless otherwise indicated.

E. Anchors, Clips, and Accessories: Fabricate anchors, clips, and window accessories of aluminum, nonmagnetic stainless steel, or hot-dip zinc-coated steel complying with requirements in ASTM B633 for SC 3 (Severe) service condition.

2.9 WOOD WINDOW FINISHES

A. Unfinished Replacement Units: Provide exposed exterior and interior wood surfaces of replacement units unfinished; smooth, filled, and suitably prepared for on-site priming and finishing.

B. Factory-Primed Replacement Units: Manufacturer's standard factory-prime coat on exposed exterior and interior wood surfaces; compatible with indicated finish coating.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT SPECIALIST

A. Historic Treatment Specialist Firms: Subject to compliance with requirements, provide historic treatment of wood windows by one of the following:

1. Summit Sealants and Restoration Services 2000 W Quincy Avenue, Englewood, CO 80110 720-389-8633. http://www.summitsealants.com

2. Heritage Window Restoration 5800 East 58th Avenue, Unit K, Commerce City, CO 80022 303-482-7532. http://www.heritagewindowrestoration.com/

3.2 PREPARATION

A. Protect adjacent materials from damage by historic treatment of wood windows.

B. Clean wood windows of mildew, algae, moss, plant material, loose paint, grease, dirt, and other debris by scrubbing with bristle brush or sponge and detergent solution. Scrub mildewed areas with mildewcide. After cleaning, rinse thoroughly with fresh water. Allow to dry before repairing or painting.

C. Condition replacement wood members and replacement units to prevailing conditions at installation areas before installing.

3.3 HISTORIC TREATMENT OF WOOD WINDOWS, GENERAL

A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from the window interior at 10 feet away and from the window exterior at 20 feet away.

B. General: In treating historic items, disturb them as minimally as possible and as follows:

1. Stabilize and repair wood windows to reestablish structural integrity and weather resistance while maintaining the existing form of each item.
2. Remove coatings and apply borate preservative treatment before repair.
3. Repair items in place where possible.
4. Install temporary protective measures to protect wood window work that is indicated to be completed later.
5. Refinish historic wood windows unless otherwise indicated.

C. Mechanical Abrasion: Where mechanical abrasion is needed for the work, use only the gentlest mechanical methods, such as scraping and natural-fiber bristle brushing, that will not abrade wood substrate, reducing clarity of detail. Do not use abrasive methods such as sanding, wire

brushing, or power tools except as indicated as part of the historic treatment program and as approved by Architect.

D. Repair and Refinish Existing Hardware: Dismantle window hardware; strip paint, repair, and refinish it to match finish samples; and lubricate moving parts just enough to function smoothly.

E. Repair Wood Windows: Match existing materials and features, retaining as much original material as possible to perform repairs.

1. Unless otherwise indicated, repair wood windows by consolidating, patching, splicing, or otherwise reinforcing wood with new wood matching existing wood or with salvaged, sound, original wood.
2. Where indicated, repair wood windows by limited replacement matching existing material.
3. Sash Balance: Repair sash balances to function according to type as specified in "Hardware" Article" above. Provide missing sash balances.

F. Replace Wood Units: Where indicated, duplicate and replace units with units made from salvaged, sound, original wood or with new wood matching existing wood. Use surviving prototypes to create patterns for duplicate replacements.

1. Do not use substitute materials unless otherwise indicated.
2. Compatible substitute materials may be used.

G. Protection of Openings: Where sash or windows are indicated for removal, cover resultant openings with temporary enclosures so that openings are weathertight during repair period.

H. Identify removed windows, frames, sash, and members with numbering system corresponding to window locations to ensure reinstallation in same location. Key windows, sash, and members to Drawings showing location of each removed unit. Permanently label units in a location that will be concealed after reinstallation.

3.4 WOOD WINDOW PATCH-TYPE REPAIR

A. General: Patch wood members that exhibit depressions, holes, or similar voids, and that have limited amounts of rotted or decayed wood.

1. Remove sash from windows before performing patch-type repairs at meeting or sliding surfaces unless otherwise indicated. Reglaze units before reinstallation.
2. Verify that surfaces are sufficiently clean and free of paint residue before patching.
3. Treat wood members with wood consolidant before applying patching compound. Coat wood surfaces by brushing, applying multiple coats until wood is saturated and unable to absorb more. Allow treatment to harden before filling void with patching compound.
4. Remove rotted or decayed wood down to sound wood.

B. Apply borate preservative treatment to accessible surfaces either before applying wood consolidant or after removing rotted or decayed wood. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom. Allow treatment to dry.

C. Apply wood-patching compound to fill depressions, nicks, cracks, and other voids created by removed or missing wood.

1. Prime patch area with application of wood consolidant or manufacturer's recommended primer.
2. Mix only as much patching compound as can be applied according to manufacturer's written instructions.
3. Apply patching compound in layers as recommended in writing by manufacturer until the void is completely filled.
4. Sand patch surface smooth and flush with adjacent wood, without voids in patch material, and matching contour of wood member.
5. Clean spilled compound from adjacent materials immediately.

3.5 WOOD WINDOW MEMBER-REPLACEMENT REPAIR

A. General: Replace parts of or entire wood window members at locations indicated on Drawings and where damage is too extensive to patch.

1. Remove sash from windows before performing member-replacement repairs unless otherwise indicated.
2. Verify that surfaces are sufficiently clean and free of paint residue before repair.
3. Remove broken, rotted, and decayed wood down to sound wood.
4. Custom fabricate new wood to replace missing wood; either replace entire wood member or splice new wood part into existing member.
5. Secure new wood using finger joints, multiple dowels, or splines with adhesive and nailing to ensure maximum structural integrity at each splice. Use only concealed fasteners. Fill nail holes and patch surface to match surrounding sound wood.

B. Apply borate preservative treatment to accessible surfaces after replacements are made. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.

C. Repair remaining depressions, holes, or similar voids with patch-type repairs.

D. Clean spilled materials from adjacent surfaces immediately.

E. Glazing: Reglaze units before reinstallation.

1. Mill new and rout existing glazed members to accommodate new glass thickness.
2. Provide replacement glazing stops coordinated with glazing system indicated.
3. Provide glazing stops to match contour of sash frames.

F. Reinstall units removed for repair into original openings.

G. Weather Stripping: Replace nonfunctioning and install missing weather stripping to ensure full-perimeter and meeting rail weather stripping for each operable sash.

3.6 GLAZING

A. Comply with combined written instructions of manufacturers of glass, glazing systems, and glazing materials, unless more stringent requirements are indicated.

B. Remove cracked and damaged glass and glazing materials from openings and prepare surfaces for reglazing.

C. Remove existing glass and glazing where indicated on Drawings, and prepare surfaces for reglazing.

D. Remove glass and glazing from openings and prepare surfaces for reglazing.

E. Size glass as required by Project conditions to provide necessary bite on glass, minimum edge and face clearances, with reasonable tolerances.

F. Apply primers to joint surfaces where required for adhesion of glazing system, as determined by preconstruction testing.

G. Install setting bead, side beads, and back bead against stop in glazing rabbets before setting glass.

H. Install glass with proper orientation so that coatings, if any, face exterior or interior as required.

I. Install glazing points.

J. Disposal of Removed Glass: Remove from Owner's property and legally dispose of it unless otherwise indicated.

3.7 WEATHER STRIPPING INSTALLATION

A. Install weather stripping for tight seal of joints as determined by preconstruction testing and demonstrated in mockup.

3.8 FIELD QUALITY CONTROL

A. Manufacturers Field Service: Engage wood-repair-material manufacturers' factory-authorized service representatives for consultation and Project-site inspection and to provide on-site assistance when requested by Architect.

3.9 ADJUSTING

A. Adjust existing and replacement operating sash, screens, hardware, weather stripping, and accessories for a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

3.10 CLEANING AND PROTECTION

A. Protect window surfaces from contact with contaminating substances resulting from construction operations. Monitor window surfaces adjacent to and below exterior concrete and masonry during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances contact window surfaces, remove contaminants immediately.

B. Clean exposed surfaces immediately after historic treatment of wood windows. Avoid damage to coatings and finishes. Remove excess sealants, glazing and patching materials, dirt, and other substances.

C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction.

END OF SECTION 08 0352

SECTION 08 5200 - WOOD WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes wood windows.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project Site.

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Review, discuss, and coordinate the interrelationship of wood windows with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealing perimeters, and protecting finishes.
3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for wood windows.

B. Shop Drawings: For wood windows.

1. Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.

C. Samples: For each exposed product and for each color specified, 2 by 4 inches in size.

D. Samples for Initial Selection: For units with factory-applied finishes.

1. Include Samples of hardware and accessories involving color selection.

E. Samples for Verification: For wood windows and components required, prepared on Samples of size indicated below:

1. Exposed Finishes: 2 by 4 inches.
2. Exposed Hardware: Full-size units.

F. Product Schedule: For wood windows. Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Test Reports: For each type of wood window, for tests performed by a qualified testing agency.

C. Field quality-control reports.

D. Sample Warranties: For manufacturer's warranties.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An installer acceptable to wood window manufacturer for installation of units required for this Project.

B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Build mockup of typical wall area as shown on Drawings.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace wood windows that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure to meet performance requirements.
b. Structural failures including excessive deflection, water leakage, and air infiltration.
c. Faulty operation of movable sash and hardware.
d. Deterioration of materials and finishes beyond normal weathering.
e. Failure of insulating glass.

2. Warranty Period:

a. Window: 10 years from date of Substantial Completion.
b. Glazing Units: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain wood windows from single source from single manufacturer.

2.2 WINDOW PERFORMANCE REQUIREMENTS

A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.

1. Window Certification: WDMA certified with label attached to each window.

B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:

1. Minimum Performance Class: LC.
2. Minimum Performance Grade: 40.

C. Thermal Transmittance: NFRC 100 maximum whole-window U-factor of 0.30 Btu/sq. ft. x h x deg F.

D. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.40.

E. Windborne-Debris-Impact Resistance: Comply requirements of authorities having jurisdiction.

2.3 WOOD WINDOWS

A. Wood Windows:

1. Basis of Design: Marvin Ultimate Double Hung Wood Windows.

B. Operating Types: Provide the following operating types in locations indicated on Drawings:
1. Double hung.

C. Frames and Sashes: Fine-grained wood lumber complying with AAMA/WDMA/CSA 101/I.S.2/A440; kiln dried to a moisture content of not more than 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide; water-repellent preservative treated.

1. Exterior Finish: Manufacturer's standard factory-prime coat wood.
   a. Color: As selected by Architect from manufacturer's full range.

2. Interior Finish: Manufacturer's standard color-coated finish or Manufacturer's standard stain-and-varnish finish to match existing conditions.

a. Exposed Unfinished Wood Surfaces: Pine.
b. Color: As selected by Architect from manufacturer's full range.

D. Glass: Clear annealed glass, ASTM C 1036, Type 1, Class 1, q3.

1. Kind: Fully tempered where required by applicable building codes.

E. Insulating-Glass Units: ASTM E 2190.

1. Glass: ASTM C 1036, Type 1, Class 1, q3.

a. Tint: Clear.
b. Kind: Fully tempered where required by applicable building codes.

2. Lites: Two.
3. Filling: Fill space between glass lites with air.
4. Low-E Coating: Sputtered on second or third surface.

F. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

G. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.

1. Exposed Hardware Color and Finish: As selected by Architect from manufacturer's full range.

H. Hung Window Hardware:

1. Counterbalancing Mechanism: Complying with AAMA 902, concealed, of size and capacity to hold sash stationary at any open position.
2. Locks and Latches: Allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only.
3. Tilt Hardware: Releasing tilt latch allows sash to pivot about horizontal axis to facilitate cleaning exterior surfaces from the interior.

I. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.

J. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.

1. Exposed Fasteners: Do not use exposed fasteners to greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

2.4 INSECT SCREENS

A. General: Fabricate insect screens to integrate with window frame. Provide screen for each operable exterior sash. Screen wickets are not permitted.

1. Type and Location: Full, outside for double-hung sashes.

B. Aluminum Frames: Manufacturer's standard aluminum alloy complying with SMA 1004 or SMA 1201. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners, and removable PVC spline/anchor concealing edge of frame.

1. Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet.
2. Finish for Exterior Screens: Baked-on organic coating in color selected by Architect from manufacturer's full range.

C. Aluminum Wire Fabric: 18-by-16 mesh of 0.011-inch-diameter, coated aluminum wire.

1. Wire-Fabric Finish: Natural bright.

2.5 FABRICATION

A. Fabricate wood windows in sizes indicated. Include a complete system for installing and anchoring windows.

B. Glaze wood windows in the factory.

C. Weather strip each operable sash to provide weathertight installation.

D. Mullions: Provide mullions and cover plates, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units.

E. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.

C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.

B. Install windows level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

3.3 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.

B. Clean exposed surfaces immediately after installing windows. Remove excess sealants, glazing materials, dirt, and other substances.

1. Keep protective films and coverings in place until final cleaning.

C. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.

D. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 08 5200

SECTION 09 9100 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes surface preparation, painting, and finishing of exposed interior and exterior items and surfaces.

(1) Surface preparation, priming, and finish coats specified in this Section are in addition to shop-priming and surface treatment specified under other Sections.

B. Paint exposed surfaces whether or not colors are designated in schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Architect will select from standard colors or finishes available.

C. Painting is not required on prefinished items, finished metal surfaces, concealed surfaces, operating parts, and labels.

D. Painting is not required on interior and exterior surfaces that are not affected by the scope of work of this project.

E. Related Sections: The following Sections contain requirements that relate to this Section:

(1) Division 01 Section “Special Procedures for Historic Treatment” for general historic treatment requirements.

(2) Division 08 Section “Treatment of Historic Wood Windows” for repairs and surface preparation related to the rehabilitation of the existing historic wood windows.

(3) Division 08 Section “Treatment of Historic Wood Doors” for repairs and surface preparation related to the rehabilitation of the existing historic wood doors.

1.3 DEFINITIONS

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

B. Historic Paint Materials: Paint materials manufactured to match historic paint formulations but that may be required to match historic paint colors.

C. Modern Paint Materials: Paint materials not designated to match historic paint formulations but that may be required to match historic paint colors.

D. General: Standard coating terms defined in ASTM D 16 apply to this Section.

(1) Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.

(2) Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.

(3) Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.

(4) Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.

1.4 SUBMITTALS

E. General: Submit the following according to Conditions of the Contract and Division 01 Specification Sections.

F. Product data for each paint system specified, including block fillers and primers.

(1) Provide the manufacturer's technical information including label analysis and instructions for handling, storage, and application of each material proposed for use.

(2) List each material and cross-reference the specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.

(3) Printed Statement of Volatile Organic Compounds (VOC) content and chemical components and indicated compliance with Green Seal Standards GS-11.

G. Samples for initial color selection in the form of manufacturer's color charts.

(1) After color selection, the Architect will furnish color chips for surfaces to be coated.

H. Samples for Verification Purposes: Provide samples of each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate.

(1) Provide stepped samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing samples for review. Resubmit until required sheen, color, and texture are achieved.

(2) Provide a list of material and application for each coat of each sample. Label each sample as to location and application.

(3) Submit samples on the following substrates:
Provide two 12 inch square samples of each color and finish.

1.4 MOCK-UPS

A. Apply mock-ups of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic affects and set quality standards for materials and execution.

(1) Architect will select one window to represent surfaces and conditions for application of paint system.

(2) Approval of mock-ups does not constitute approval of deviations from the Contract Documents contained in mock-ups unless Architect specifically approves such deviations in writing.

(3) Subject to compliance with requirements, approved mock-ups may become part of the completed work if undisturbed at time of substantial completion.

1.5 QUALITY ASSURANCE

A. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to those indicated for the Project that have resulted in a construction record of successful in-service performance.

B. Single-Source Responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats.

C. Paints formulated with any of the following ingredients, in any amount, are prohibited:

(1) Lead, red lead.

(2) Basic lead silico chromate.

(3) Zinc chromate.

(4) Lead driers.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:

(1) Product name or title of material.

(2) Product description (generic classification or binder type).

(3) Manufacturer's stock number and date of manufacture.

(4) Contents by volume, for pigment and vehicle constituents.

(5) Thinning instructions.

(6) Application instructions.

(7) Color name and number.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.

(1) Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.7 JOB CONDITIONS

A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 deg F and 90 deg F.

B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 deg F and 95 deg F.

C. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

(1) Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.

1.8 EXTRA MATERIALS

A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.

(1) Quantity: Furnish Owner with two gallons of each opaque coating material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

(1) Benjamin Moore & Co. (Benjamin Moore).

(2) The Sherwin Williams Company (Sherwin-Williams).

(3) PPG Industries, Inc. (Pittsburgh Paints).

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, finish coat materials, and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.

B. Material Quality: Provide the manufacturer's best-quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.

C. Colors: Match color selections made by the Architect.

D. Paint VOC Limits: All interior paints, stains, and coatings shall comply with the requirements of Green Seal Standard GS-11. VOC weight in grams/liter of product minus water must not exceed 150 for non-flat coatings, or 50 for flat coatings. Refer to Green Seal Standard GS-11 for balance of requirements.

2.3 WOOD PRIMERS

A. Primers: Provide the manufacturer's recommended factory-formulated primers that are compatible with the substrate and finish coats indicated.

B. Alkyd Wood Primer: MPI #5.

(1) Benjamin Moore: Super Spec, Alkyd Exterior Primer, 176/K176.

(2) Benjamin Moore: Fresh Start Moorwhite Exterior Wood Primer 100.

(3) Pittsburgh Paints: Primz220 Exterior Alkyd Wood Primer/Sealer, DR1102N.

(4) Sherwin-Williams: Exterior Oil-Based Wood Primer, Y24W8020/Y24WQ8820.

2.4 WOOD FINISH PAINT MATERIAL

A. Finish Paint: Provide the manufacturer's recommended factory-formulated finish-coat materials that are compatible with the substrate and undercoats indicated.

B. Exterior Semi-Gloss Acrylic Enamel: Factory-formulated semi-gloss acrylic enamel for exterior application over wood.

(1) Benjamin Moore: Regal Select, Exterior Paint, High Build Soft, Gloss Finish, N403/K403.

(2) Pittsburgh Paints: Fortis 450 Exterior Premium 100% Acrylic Semi-Gloss, 6407G.

(3) Sherwin-Williams: A-100, Exterior Latex Gloss, A08W00151/A08WQ0151

2.5 INTERIOR WOOD FINISH PAINT MATERIAL

A. Finish Paint: Provide the manufacturer's recommended factory-formulated finish-coat materials that are compatible with the substrate and undercoats indicated.

B. Interior Low Odor, Low VOC Acrylic Enamel: Factory-formulated acrylic-latex interior enamel over interior gypsum board, plaster and wood surfaces.

(1) Prime previously uncoated surfaces with appropriate primer as recommended by top coat product manufacturer.

(2) Comply with MPI 143, 144, 145, 146, 147 or 148 as required to match existing interior conditions.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions under which painting will be performed for compliance with paint application requirements. Surfaces receiving paint must be thoroughly dry before paint is applied.

(1) Do not begin to apply paint until unsatisfactory conditions have been corrected.

(2) Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.

B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

(1) Notify the Architect about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items, if necessary, to completely paint the items and adjacent surfaces. Following completion of

painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.

(1) Completely remove areas of unsound, loose or peeling paint and prepare as for new work.

(2) Grind or sand shoulders between existing paint, patches and bare substrates smooth. Sand as necessary to prevent flaws from showing through new paint.

(3) Cleaning: Before starting painting, repainting, finishing, or refinishing in each area, broom-clean and remove excessive dust. After beginning operations in a given area, do not broom-clean; clean then only with commercial vacuum cleaning equipment.

(4) Surface to be painted or finished shall be clean, dry, smooth, and free from dust and foreign matter which will adversely affect adhesion or appearance.

B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease prior to cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

C. Surface Preparation: Clean and prepare surfaces to be painted according to the manufacturer's instructions for each particular substrate condition and as specified.

(1) Provide barrier coats over incompatible primers or remove and reprime. Notify Architect in writing about anticipated problems using the specified finish-coat material with substrates primed by others.

(2) Cementitious Materials: Prepare concrete, concrete masonry block, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen, as required, to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.

(a) Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

(3) Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.

D. Materials Preparation: Carefully mix and prepare paint materials according to manufacturer's directions.

(1) Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.

(2) Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

(3) Use only thinners approved by the paint manufacturer and only within recommended limits.

E. Tinting: Tint each undercoat a lighter shade to facilitate identification of each coat where multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

A. General: Apply paint according to manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

B. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.

(1) Paint colors, surface treatments, and finishes are indicated in the schedules.

(2) Provide finish coats that are compatible with primers used.

(3) The number of coats and the film thickness required are the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce a smooth even surface according to the manufacturer's directions.

(4) Apply additional coats if undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.

(5) Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.

(6) Sand lightly between each succeeding enamel or finish coat.

(7) Omit primer on metal surfaces that have been shop-primed and touch-up painted.

C. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

(1) Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky

under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.

D. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to the manufacturer's directions.

(1) Brushes: Use brushes best suited for the material applied.

(2) Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.

(3) Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

E. Minimum Coating Thickness: Apply materials no thinner than the manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

F. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime-coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.

G. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling such as laps, irregularity in texture, skid marks, or other surface imperfections.

H. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.

(1) Provide satin finish for final coats.

I. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with specified requirements.

3.4 CLEANING

A. Cleanup: At the end of each work day, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

(1) After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION

A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

(1) At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 PAINT SCHEDULE

A. General: Provide the following paint systems for the various substrates indicated.

B. Exterior Wood Doors, Frames, and Trim:

(1) Semi-Gloss Acrylic Enamel: 2 finish coats over primer.

(a) Primer: Alkyd Primer.

(b) First Finish Coat: Acrylic Semi-Gloss Enamel.

(c) Second Finish Coat: Acrylic Semi-Gloss Enamel.

3.7 INTERIOR PAINT SCHEDULE

A. General: Provide the following paint systems for the various substrates, as indicated.

A. Interior Wood Window Sash, Frames, and Trim and Interior Wood Doors, Frames, and Trim:

(1) Acrylic enamel as required to match existing conditions.

END OF SECTION 09 9100

BUDGET

ESTIMATES TOTAL	$	932,848
GRANT	$	(250,000)
Balance (City of Littleton funding)	$	682,848

SPECTRUM
GENERAL CONTRACTORS

TO: Keith Reester
Public Works Director, City of Littleton
1800 W. Belleview Ave
Littleton, CO
80210

FROM: Graham Johnson
Vice President, Spectrum General Contractors
5135 E. 38th Ave
Denver, CO
80207

Dear Mr. Reester,

Thank you for the opportunity to present our proposal for the restoration and historic preservation activities at the Geneva Lodge. We are excited to present our qualifications for your review and hopeful to partner with you for the restoration work. Spectrum has built a decades long specialization in preservation work and maintains a strong in-house team who will be responsible for 100% of carpentry and window restoration work included in the scope. We have brought trusted trade partners with extensive historic project experience to assist with masonry, tile, and new window replacements. With dozens of successful State Historic Fund projects completed to date we hope to bring our experience to the Geneva Lodge restoration also.

I will be the project manager for the duration of the project working closely with our trades and restoration crew to coordinate and manage the flow of work from start to finish. The following package includes necessary bid documentation as well as our preservation qualifications summary and milestone schedule for the project. Please don't hesitate to reach out to me with any additional questions.

Thank you,



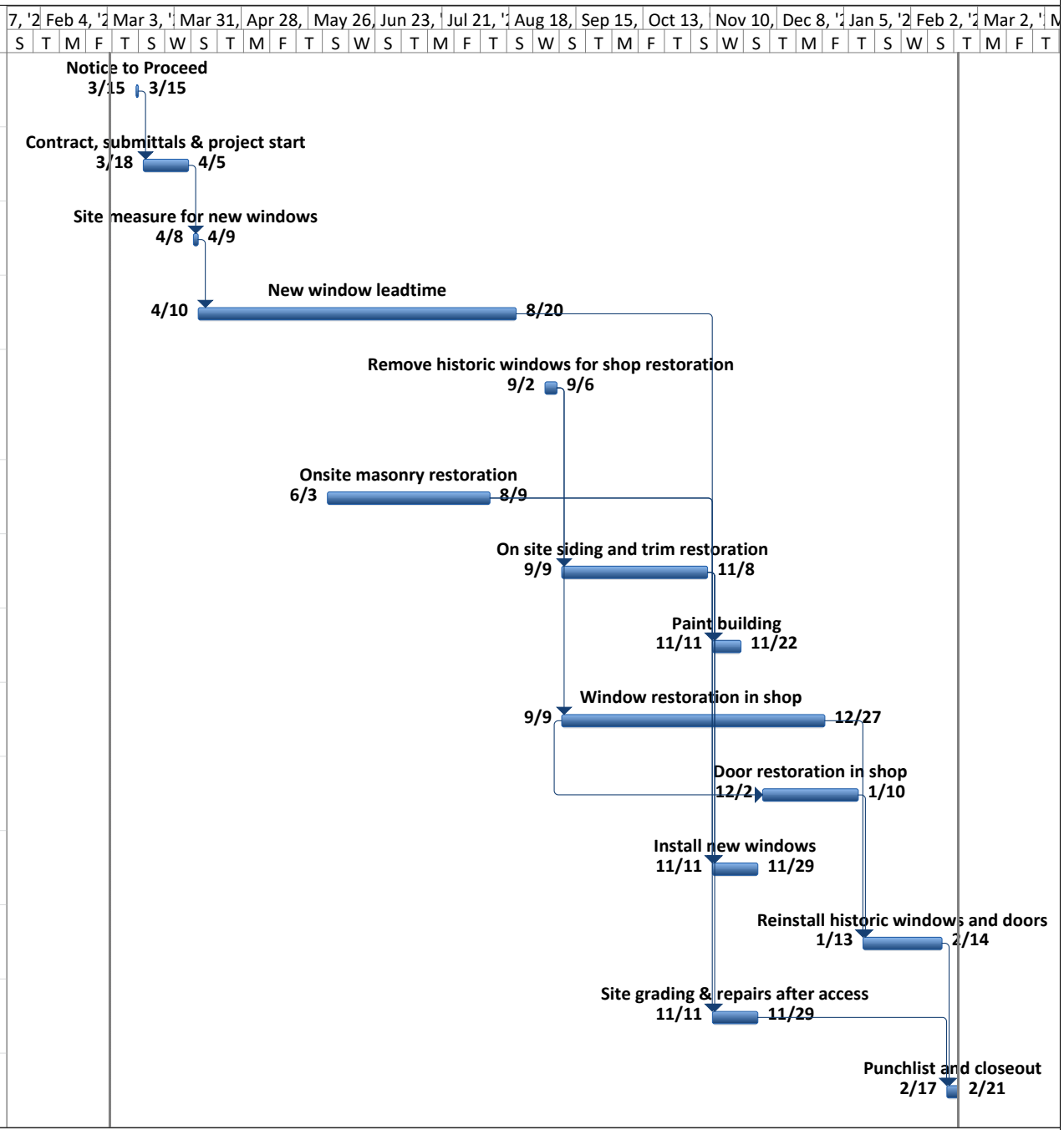
Graham Johnson
Vice President/Project Manager
303 981 8280

Geneva Lodge Bid Qualifications 3.4.2024

- Use tax and permit fees are not included in our estimate due to City ownership and nature of work as restoration and maintenance instead of new construction.
- It is assumed that this will not be and EPA RRP Project due to non-residential nature of the building use. All work will be completed in a lead safe manner by crews who are EPA and OSHA certified in lead safe work practices.
- Our mobilization costs do not include moving furniture or removing window coverings, if present, when access to interior of windows is necessary for restoration or replacement activity.
- Although contingency is broken out in the SHF Grant budget we have not included any contingency in our proposal under the assumption that contingency will be held by owner and can be drawn on as approved by owner and architect if necessary during construction.
- As clarified in the bidding questions we do not have any costs associated with archaeological monitoring or architect's C/A services. We are prepared to coordinate with archaeologist, owner and design team for observation during ground disturbance as necessary.
- Flag pole base masonry restoration is not included in our scope but can be added for $4795
- We anticipate having a 20' trailer on site during the work period as a storage and mobile workshop. This can be parked nearby and does not necessarily need to be immediately adjacent to the building.
- It is anticipated that restrooms, water and power are accessible for crews working on site.
- With long lead times for new windows (14-16 weeks) we would like to measure and order early in the process to avoid any delays for installation later in the process. Similarly, the shop restoration process for historic windows and doors is expected to take 4-5 months. In the interim our goal would be to have masonry and carpentry trim crews on site working on siding, window frame and masonry preservation tasks. All non-historic windows could remain in place until new replacements arrive and openings where historic windows and doors are removed will receive fully secure and weathertight temp enclosures until restored units are re-installed. Temp-enclosures are reinforced poly-gal material that allow full natural light in during the restoration process.
- All work is bid to follow the Secretary of the Interior standards for preservation activities and will follow necessary compliance as required for SHF Grant contract certification.
- It is our practice to use conservation epoxy sparingly. While epoxy repair is noted in many places in the drawings, we may recommend dutchmen repairs with material in kind for a longer lasting restoration treatment depending on overall condition of area to be repaired once failing coatings are removed to sound substrate.

Geneva Lodge Preliminary Schedule 3.4.24

ID	Task Name	Start	Finish
1	Notice to Proceed	Fri 3/15/24	Fri 3/15/24
2	Contract, submittals & project start	Mon 3/18/24	Fri 4/5/24
3	Site measure for new windows	Mon 4/8/24	Tue 4/9/24
4	New window leadtime	Wed 4/10/24	Tue 8/20/24
5	Remove historic windows for shop restoration	Mon 9/2/24	Fri 9/6/24
6	Onsite masonry restoration	Mon 6/3/24	Fri 8/9/24
7	On site siding and trim restoration	Mon 9/9/24	Fri 11/8/24
8	Paint building	Mon 11/11/24	Fri 11/22/24
9	Window restoration in shop	Mon 9/9/24	Fri 12/27/24
10	Door restoration in shop	Mon 12/2/24	Fri 1/10/25
11	Install new windows	Mon 11/11/24	Fri 11/29/24
12	Reinstall historic windows and doors	Mon 1/13/25	Fri 2/14/25
13	Site grading & repairs after access	Mon 11/11/24	Fri 11/29/24
14	Punchlist and closeout	Mon 2/17/25	Fri 2/21/25



Spectrum General Contractors

Littleton
Colorado

WEBSITE DESIGN AND DIGITAL TRANSFORMATION
PROPOSAL SUBMISSION FORM and CERTIFICATION

SUBMISSION FORM: Include this two-page signed form and certification as a PDF with your electronic submission. Proposals must be submitted online via Rocky Mountain E-Purchasing System (RMEPS) at www.bidnetdirect.com/colorado.

Vendor Name: Spectrum General Contractors
Vendor's Website: www.spectrumgc.com
Vendor's Address: 5135 E. 38th Ave
Vendor's City, State, Zip: Denver, CO 80207
Vendor's Primary Contact: Graham Johnson
Primary Contact's Email: grahamj@spectrumgc.com
Primary Contact's Phone: (303) 981 8280

SPECIFICATIONS MET: Does your proposal meet or exceed all specification and requirements of the RFP? YES or NO *If No. Please explain in detail. Use additional space as needed.*

YES.

VENDOR CERTIFICATION

The individual, by signing below represents that they are a duly authorized signer able to bind the Vendor and by signing below the Vendor acknowledges the following:

The SCHEDULE OF ACTIVITIES and dates contained in the RFP are subject to change and the City reserves the right to adjust this schedule as necessary.

The Vendor acknowledges they must register with (BidNet) to access and download the City of Littleton's solicitation documents. It is the responsibility of each potential Vendor to monitor the BidNet website regularly for any changes or addenda to this RFP.

The City of Littleton reserves the right to modify or cancel this Request for Proposal (RFP) at any time.

Costs for developing proposals in response to the RFP are entirely the obligation of the Vendor and shall not be chargeable in any manner to the City. This includes travel to and from the City of Littleton for the purposes of participating in interviews and presentations as part of the selection process.

Proposals may be withdrawn at any time prior to the submission time specified in this RFP, provided notification is received in writing. Proposals cannot be changed or withdrawn after the time designated for receipt.

WEBSITE DESIGN AND DIGITAL TRANSFORMATION
PROPOSAL SUBMISSION FORM and CERTIFICATION (Continued)

The City reserves the right to reject any or all proposals, to waive any minor informalities or irregularities contained in any proposal, and to accept any proposal(s) deemed to be in the best interest of the City.

Any information submitted with the Vendor's proposal shall become public information, subject to release, under the Colorado Open Records Act. Littleton shall be held harmless from any claims. arising from the release of information within the proposal. It is the responsibility of the proposing Vendor to ensure that no confidential or proprietary information is included in the proposal that the proposing Vendor would not wish to be released.

Any proposed deviation from the requirements and specifications contained in the RFP MUST be noted in detail and submitted in writing with the proposal. Complete specifications shall be attached for any substitutions proposed, or when amplifications are desirable or necessary. Failure to submit documentation with changes, if applicable, may be grounds for the City to reject the proposal.

The Vendor recognizes the evaluation process is intended to help the City select the Vendor, or a combination of vendors, that is the most qualified and capable of delivering the best value/best solution to meet the objectives and requirements of this RFP. Cost is one contributing factor the City will use when determining best value/best solution.

The City reserves the right to require that a group of finalist Vendors attend an interview and make a presentation to the selection team.

The City reserves the right to conduct negotiations with one or more Vendor(s) and to accept revisions of proposals before award. In addition, the City may award contracts to more than one Vendor in the event a combination of Vendors provides the best overall solution to the City.

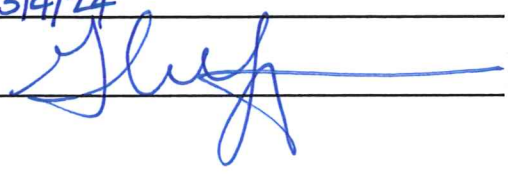
The undersigned, being duly sworn, deposes and says that the person, firm, association, co-partnership or corporation herein named, has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in the preparation and submission of a proposal to the City of Littleton for consideration in the award of a contract for services identified in this RFP.

By signing below, the following individual represents that they are a duly authorized signer able to obligate the Vendor and that they have read, understood, and agree to all the elements contained in this Vendor Submission Form and Certification.

Printed Name: Graham Johnson

Title: Vice President

Date: 3/4/24

Signature: 

Document A310™ – 2010

Conforms with The American Institute of Architects AIA Document 310

Bid Bond

CONTRACTOR:
(Name, legal status and address)

Spectrum General Contractors, Inc.

5135 E 38th Ave.

Denver, CO 80207

SURETY:
(Name, legal status and principal place of business)

Amerisure Mutual Insurance Company

PO Box 9098

Farmington Hills, MI 48333-9098

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:
(Name, legal status and address)

City of Littleton

2255 West Berry Avenue

Littleton, CO 80120

BOND AMOUNT: $ Five Percent of the Total Amount Bid (5%)

PROJECT:
(Name, location or address, and Project number, if any)

2024 Historic Preservation of the Geneva Lodge, City Project No. 24-F01 - Littleton, CO

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 1st day of March, 2024

(Witness)

Spectrum General Contractors, Inc.
(Principal) *(Seal)*

Vice President
(Title)

SPECTRUM GENERAL CONTRACTORS, INC. CORPORATE SEAL COLORADO

Mark Sweigart
(Witness) Mark Sweigart, Surety Witness

Amerisure Mutual Insurance Company
(Surety) *(Seal)*

Mary Ashley Allen
(Title) Mary Ashley Allen, Attorney-in-Fact

AMERISURE MUTUAL INSURANCE COMPANY CORPORATE SEAL 2000 MICHIGAN

AMERISURE MUTUAL INSURANCE COMPANY
AMERISURE INSURANCE COMPANY
AMERISURE PARTNERS INSURANCE COMPANY

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Amerisure Mutual Insurance Company, Amerisure Insurance Company and Amerisure Partners Insurance Company are corporations duly organized under the laws of the State of Michigan (herein collectively the "Companies"), and that the Companies do hereby make, constitute and appoint:

DONALD E. APPLEBY, MARK SWEIGART, SARAH C. BROWN, MARY ASHLEY ALLEN, MEGAN A. BROWN, JESSICA JEAN RINI, JAY D. FREIERMUTH and TODD D. BENGFORD

of Holmes, Murphy and Associates, LLC, its true and lawful Attorney(s)-in Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge, for and on its behalf and as its act and deed, bonds or others writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts or suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of:

ONE HUNDRED MILLION ($100,000,000.00) DOLLARS

This Power of Attorney is granted and signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of Amerisure Mutual Insurance Company, Amerisure Insurance Company and Amerisure Partners Insurance Company at meetings duly called and held on February 17, 2022.

"**RESOLVED**, that any two of the President & Chief Executive Officer, the Chief Financial Officer & Treasurer, the Senior Vice President Surety, the Vice President Surety, or the General Counsel & Corporate Secretary be, and each or any of them hereby is authorized to execute, a Power of Attorney qualifying the attorney-in-fact named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings and all contracts of surety, and that President & Chief Executive Officer, Chief Financial Officer & Treasurer or General Counsel & Corporate Secretary each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Company;

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to anycertificate relating thereto electronically/digitally or by facsimile, and any such Power of Attorney or certificate bearing such electronic/digital or facsimile signatures or electronic/digital or facsimile seal shall be binding upon the Company when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached;

FURTHER RESOLVED, that any work carried out by the attorney-in-fact pursuant to this resolution shall be valid and binding upon the Company."

AMERISURE MUTUAL INSURANCE CORPORATE COMPANY SEAL 2000 MICHIGAN

AMERISURE INSURANCE CORPORATE COMPANY SEAL 1968 MICHIGAN

By: _____
Michael A. Ito, Senior Vice President Surety

By: _____
Aaron Green, Vice President Surety

AMERISURE PARTNERS INSURANCE CORPORATE COMPANY SEAL 2000 MICHIGAN

IN WITNESS WHEREOF, Amerisure Mutual Insurance Company, Amerisure Insurance Company and Amerisure Partners Insurance Company have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 26th day of April, 2024.

Amerisure Mutual Insurance Company
Amerisure Insurance Company
Amerisure Partners Insurance Company

State of Illinois
County of Kane

On this 26th day of April, 2024, before me, a Notary Public personally appeared Michael A. Ito, of Amerisure Mutual Insurance Company, Amerisure Insurance Company and Amerisure Partners Insurance Company and Aaron Green of Amerisure Mutual Insurance Company, Amerisure Insurance Company and Amerisure Partners Insurance Company, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.

OFFICIAL SEAL
M KENNY
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 12/04/2025

_____
M.Kenny, Notary Public

I, Christopher M. Spaude, the duly elected Chief Financial Officer & Treasurer of Amerisure Mutual Insurance Company, Amerisure Insurance Company and Amerisure Partners Insurance Company, do hereby certify and attest that the above and foregoing is a true and correct copy of a Power of Attorney executed by said Companies, which remains in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 1st day of March 2024.

_____
Christopher M. Spaude, Chief Financial Officer & Treasurer

SPECTRUM
GENERAL CONTRACTORS

FIRM BACKGROUND AND QUALIFICATIONS

LEGAL STATUS

Spectrum General Contractors, Inc is a Colorado Corporation.

OWNERS

Brion Doyle, President
John Lanphier, Vice President
Graham Johnson, Vice President

BRIEF HISTORY

For more than 40 years, Spectrum General Contractors has established a reputation for building some of the most challenging and creative projects in the Colorado market. Our project types include commercial construction, adaptive reuse, historical restoration and commercial remodel. Our principal focus is to work closely with Owners and Architects to build a project with the greatest value and craftsmanship attainable.

MANAGEMENT TEAM

Spectrum is proud of their deep experience in historic preservation and the strong leadership team bringing multi-faceted experience to many specialized preservation disciplines. Three project managers, Steven Hansen, Jonas Landes and Graham Johnson each bring project and hands on experience managing restoration projects ranging in size from $10,000 to $10M. With decades of combined experience working in masonry, frame, heavy timber and log buildings that span all eras and styles of Colorado's history we are able to draw on best practices for all restoration types ranging from structural remediation to architectural finishes and everything in between. In addition to our project management team Husani Lampkin and Jess Dinsmore, our window restoration managers, bring the same level of management and experience to our dedicated window, door and trim restoration crew. Managing a diverse range of projects in the shop and field Jess and Husani oversee a restoration crew of 19 skilled craftsmen who are versed in window and door restoration and replication, trim repair and profile matching and fabrication of storms, screens and other architectural details. Our team also includes several members who are apprenticed to a stained glass master craftsman adding stained glass stabilization and restoration to our abilities. We can provide exacting historic matches and stabilization of historic architectural features with our in-house crew.

BUSINESS APPROACH

Spectrum practices the Relationship Management approach for a complete team immersion during all stages of a project. This means having our estimators, superintendents, project managers, and assistant project mangers involved from day one, whether that be starting with design-assist or submitting a bid. This level of Team involvement allows us to achieve successful completion of projects.

FACILITIES

Spectrum offers a custom approach to construction unlike other general contractors. Adjoining the company office at 5135 E. 38th Ave. is a millwork shop, steel shop and steel yard. The ten thousand square foot millwork shop specializes in custom millwork and historic window restoration. The four thousand square foot steel shop produces creative architectural and structural steel with access to a six thousand square foot yard for storage. With these shops, Spectrum can produce many specialty items that satisfy complicated or unique scheduling, sourcing, and budget requirements.

Main Office	5135 East 38th Avenue, Denver, CO
Steel Shop	5145 East 38th Avenue, Denver, CO
Millwork Shop	3649 East 40th Avenue, Denver, CO

INSURANCE CAPACITY

Spectrum insurance limits typically meet or exceed our clients insurance requirements. Certificates for evidence of our insurance are available upon request.

EXPERIENCE

Our deep history of historic projects includes dozens of jobs ranging in size from $5,000 to $10m. Each historic project brings a new set of challenges. The ability to work in a Design/Build arrangement and assist the design team in selective demolition and exploration prior to beginning the job is invaluable in identifying limitations and potential issues before they are discovered. The combination of deep project experience in our management team and strong subcontractor participation in project planning has been a winning combination for many successful historic projects.





SUBCONTRACTOR SELECTION

Spectrum is fortunate to have a long history working with high caliber subcontractors and tradesmen. Our wide variety of project types has also helped to build a diverse base of subcontractors that affords the project manager options for competitive pricing and assurance of expertise and quality. Clear communication from the beginning in defining responsibility and quality expectations is critical in successful subcontractor relationships. The project manager will also work with subcontractors to ensure that the job is adequately staffed, supplied and that cost and schedule milestones are maintained.

MANAGEMENT STRUCTURE

Spectrum is organized with three senior project managers who actively manage and oversee all company activity as well as seven full time project managers who focus on several projects at one time. The project managers are responsible for every aspect of their projects and are intimately involved in the project process from early in the estimating phase until project close out. Their direct oversight includes cost and budget management, scheduling, project sequencing and full communication with all subcontractors, owners and owner's representatives.



SPECTRUM
GENERAL CONTRACTORS

PROJECT NARRATIVE AND APPROACH

1. Providing continuity between the construction staff and project management team
The project engineer/superintendent will be the greatest means of continuity between the construction staff and project management team. They are the face of the project and the central point for communication between the subs and project management team. Superintendents are on site to oversee, guide, and line-out the subcontractors' work. Their on-site presence allows them to update the project manager of the current and future project needs, react to immediate needs of the client (i.e. ensure the building remains accessible for the occupants), and reach out to the client for immediate needs of the project (i.e. notifications to the occupants, obtain answers directly from client or architect when the answer cannot wait for the project manager to issue an RFI). Our project management team will be in daily communication with the superintendent to ensure that they have all of the information, resources and tools necessary to complete the job successfully.

2. Constructibility review and value engineering to control costs and maintain budget
Projects become feasible — and remain feasible — when we scrutinize a project using our method of value analysis. We lead the Project Team to understand cost and constructibility to identify the most sensible choices early in the project. This results in up front cost savings, better quality project and avoiding certain change orders.

Value analysis includes evaluation of the "constructibility" of the design. Our method includes brainstorming, creative problem solving, positive Team dynamics, and a solid understanding of the realities of the design and construction process. Selecting one building system can have an effect on the cost of other systems, or the long-term operation. The true cost of the system must be analyzed in light of the complex interrelationships of its many components.

Identify characteristics of the system – performance, durability, availability, appearance, prestige, etc. – and then creatively identify alternative systems and components that meet (or exceed) the design and functional requirements. Compare alternatives for cost and value and provide clear and timely information on the viable choices to the Project Team to make the best decision.

Bottom line, we control costs and maintain the budget by expertly leading the Project Team through the value analysis process to select project components with a full understanding of their effect on design, cost, quality, constructibility, and schedule.

3. Communication with the Owner and Design Team
Maintaining open lines of communication is very important for the success of the project. A weekly or bi-weekly meeting or conference call with the team will help ensure everyone is up to date with all facets of the project so they can contribute as necessary. During these meetings project-related topics could be discussed such as 'Hot Topics' - issues needing urgent resolution, design or structural conflicts, submittal reviews, schedule updates, budget updates for projected use of contingency or owner change order, safety concerns, public relations, and so forth. While this meeting agenda is created by the construction project manager, all participants are welcome to add to the agenda. Pending direction from the owner, these meetings can be documented as a separate set of minutes or noted in the next agenda.

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GENERAL CONTRACTORS

4. Quality Control

A few ways Spectrum implements quality control is through:

- OAC Meetings (as described above)
- On-site contractor-subcontractor meetings ran by the project superintendent to discuss such matters as method of procedures, contractor and occupant safety, problems, and scheduling.
- Implementation of Safety Procedures—when contractors are working safely they help avoid incidents that can be damaging to work already completed or damaging to the schedule.

5. Construction Schedule

Spectrum uses Microsoft Project to list project tasks with start and finish dates. This can then be shown in calendar view or more commonly, as a Gantt chart. We create an overall project schedule to understand the big picture and on a more regular basis update a detailed two or three-week look ahead schedule. The project manager and superintendent collaborate on updating the schedule and reach out to subcontractors for input as well.

6. Safety

Job-site safety is achieved by (but not limited to):

- Implementation of OSHA standards
- Use of site logistic and material staging plans
- Various safety training to Spectrum employees provided by Spectrum's 3rd-party safety inspector, Hellman and associates
- Periodic site visits by Hellman & Associates to ensure safety measurements are being followed during construction.
- A copy of Spectrum's Safety Program is available upon request.

7. Project Closeout

To ensure we leave the owner and architect with a favorable impression of Spectrum, it is important we complete our inspections and punch lists, as well as submit all warranties (from contractor, subcontractor, and specialty equipment), and operations and maintenance manuals in a timely fashion. If as-built records are part of the contract we push for subcontractors to update the drawings during the project so they can submit their red-lines at closeout.

SPECTRUM
GENERAL CONTRACTORS

IN-HOUSE CRAFT LABOR

The ability accurately self estimate and self perform a wider variety of work than many general contractors sets Spectrum apart in this busy construction market. Our in house staff includes welders, carpenters , and laborers working on site and in two dedicated shops totaling almost 15,000 square feet. The management team works closely with the field staff to have a true understanding of costs and requirements associated with providing an efficient and high-quality product in these areas. We rely on a diverse group of subcontractors for many aspects of project delivery but are also able to self perform:

- Structural and ornamental steel
- Custom mill-work and casework (including historic replication)
- Custom doors and windows (including historic replication and restoration)
- Installation of doors, hardware, trim and casework

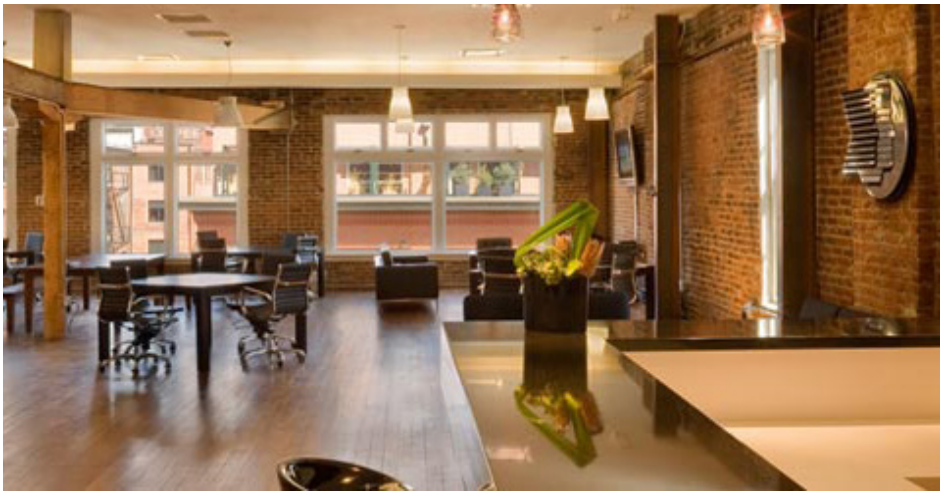
In addition to self performance of the work listed above, we also maintain strong relationships with independent subcontractors of similar trades who have assisted in many successful past projects. When self performance of certain aspects of a project do not meet the needs of the project team we are willing and open to explore all options available.

STEEL AND METAL FABRICATION

Our skilled fabricators and welders have built impressive objects out of steel. A few examples of this shop's work include detailed railings and handrails, light fixtures, trellis/pergola, fencing, doors, window frame/sash, storefront, desks, and so on. There is no limit to what the shops at Spectrum can do. If you can dream it made out of steel, then our skilled craftsmen and fabricators will figure out how to craftily fabricate each piece with a high level of detail.

We offer customer ornamental and structural steel services in both residential and commercial construction. Specializing in boutique work; custom elements in restaurants and other tenant improvement work.

Maintaining the same personnel in this shop for over a decade has allowed us to develop very good quality, consistency and respectable understanding of costs and schedules to fabricate and install steel elements on any project. Furthermore; we work almost exclusively on projects for which we are the general contractor. Self-performing this portion of the work provides a much more control of schedule and cost.







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GENERAL CONTRACTORS

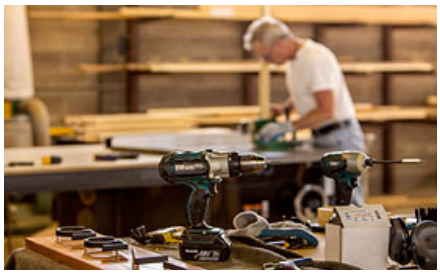
SERVICE

MILLWORK

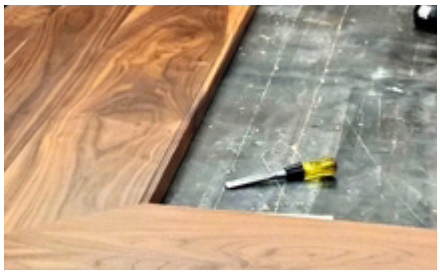
The Spectrum mill shop specializes in wainscot, storefront, arched doors, reception desks, rounded panel walls, cabinets, suspended ceilings, pergola, fencing, and display walls. If you can dream it made out of wood, then the skilled craftsmen and fabricators will figure out how to make it and provide a shop drawing for you to approve before they get started.

Rather than ordering a custom cabinet from a cabinet company who may charge more than the budget allowance and has a lead time longer than the schedule allows, we can use the employees of the mill work shop to build the cabinet, stay on schedule, and more often than not meet or beat the budget allowance. However, we welcome competitive bidding against ourselves. We are not opposed to using a subcontractor when they can offer better pricing or scheduling than our own shops can.

Projects become feasible, and remain feasible, when we scrutinize a project using our method of Value Engineering. Project value is maximized when a cost-conscious Project Team applies Value Engineering from the beginning of the design. Proper leadership of the Value Engineering process is rigorous and creative. Our method includes brainstorming, dynamic problem solving, positive Team dynamics, and a solid understanding of the realities of the design and construction process. We lead the Project Team to identify the most sensible choices early in the design. We believe Value Engineering is not a mere “shopping list” but a means to savings, better quality, and little or no change orders because of the early evaluation of the constructibility of the design.









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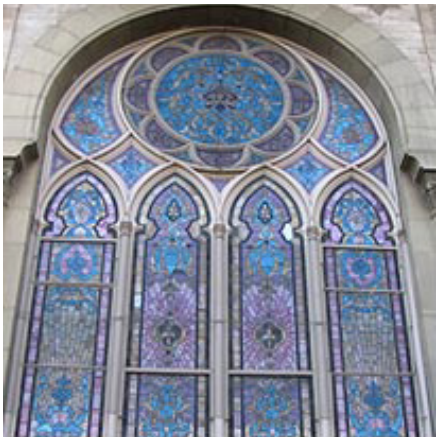
SERVICE

WINDOW RESTORATION

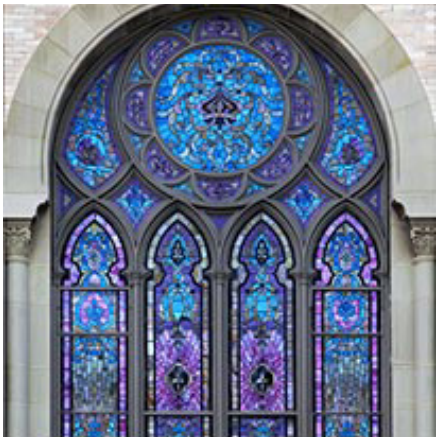
Noted preservation architect Carl Elefante famously coined the phrase, “The greenest building is the one that is already built.” Here at Spectrum General Contractors we also believe that the greenest window is the one that is already in place. We have spent the last decade perfecting and continually updating our shop and restoration practices in order to provide the highest quality services for historic window and door restoration in the Rocky Mountain West.

Our shop dedicated specifically to the tasks of window, door and historic mill-work restoration is capable of restorations ranging from the smallest residence to the largest office building and everything in between. We have a strong working relationship with one of Denver’s most renowned stained glass artists and have worked in cooperation to restore and install protective glazing in many local churches.

The staff at our shop is well versed in every aspect of window restoration and possess the diverse skill set required to seamlessly integrating state-of-the-art technology with old world craftsmanship. Our restoration process closely follows accepted restoration and repair procedures as outlined by the National Parks Service in addition to constant improvement through in house research and development.



Before



After



Before



After

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SERVICE

STAINED GLASS PARTNERSHIP

Spectrum has recently partnered with the Watkins Stained Glass Studio to sponsor an internship program with the goal of sharing the Watkin's deep history and experience with the next generation of historic crafts people. We currently have full time apprentice positions that include daily instruction and hands on experience in the stained glass studio as well as in-situ restoration, window condition evaluations and technical instruction.

Many of our window craftsmen are also spending time working along side the Watkins team to learn the trade for application on shared projects. The focus of the program is to build and encourage strong craft in the traditional English style of full lead construction of stained and leaded glass windows that can be employed for local preservation efforts. Once participants have mastered the basics of window layout, patterning, assembly, glass cutting, cementing and soldering there are opportunities to also learn the art of fired painting that is frequently present for historic portraits and fine details of stained glass panels.

In addition to the stained glass specific tasks interns and Spectrum staff frequently interact to ensure the site access, logistics, associated building restoration scope (window frames, masonry etc.) are completed by efficient, historically accurate means for a complete final product. We are eager to continue to partnership and training effort for this important historic trade and feel honored to be selected as an industry partner by the Watkins Studio.







CASE STUDIES

LOVELAND FEED AND GRAIN

Address - 130 W 3rd Street, Loveland, CO

Project Size - 23,000 SF

Project Description - Nine residential units and 5,000 SF of leasable commercial space in a historic mill

Scope of Work - Structural, HVAC, Electrical, Plumbing, Fire Suppression, Fire Alarm, Historic Window and Door Restoration, Roofing, Siding, Finishes, Landscaping

Architect - RATIO

Owner - Artspace

Estimated Completion - March 2024

Valuation - $9 MM









CO STATE CAPITOL SENATE CHAMBER FLOOR RENOVATION

Address - 200 E Colfax Ave, Denver

Project Size - 3,000 SF

Scope of Work - non-combustible structura floor, underfloor ventilation, new electrical/mechanical and new carpet

Architect - EUA

Owner - State of Colorado

Year of Completion - 2023

Valuation - $1.39 MM





HARRIS STREET COMMUNITY BUILDING

Address - 103 South Harris Street, Breckenridge, CO

Project Size - 26,000 SF

Scope of Work - Structural rehabilitation, MEP, building addition, interior finishes

Architect - Anderson Hallas

Owner - Town of Breckenridge

Year of Completion - 2015

Valuation - $8.35 MM





ST. BARNABAS

Address - 1280 Vine Street, Denver, CO

Project Size - 14,000 SF

Scope of Work - Full structural and MEP rehabilitation as well as a second story addition and restoration work

Architect - Anderson Hallas

Owner - St. Barnabas Episcopal Church - Jim Hayes

Year of Completion - 2018

Valuation - $2.28MM





BEAVER MEADOWS VISITOR CENTER

Address - 1000 US 36, Estes Park, CO

Project Size - 18,000 SF

Scope of Work - HVAC, Electrical, Fire Supression, Terrazzo Repair

Architect - Anderson Hallas

Owner - National Park Service

Year of Completion - 2021

Valuation - $7MM





SPECTRUM
GENERAL CONTRACTORS

KEY PERSONNEL

Spectrum is a mid-sized commercial construction company whose philosophy includes maintaining the same Project Team members throughout the project. The continuity of Project Manager, Project Superintendent, and Assistant Project Manager ensures that points-of-contact and communication/documentation remain consistent throughout all phases of the project.

The Spectrum team maintains an “always available” approach to communication. This means that if there is an off-hours emergency, we will answer and respond.

SPECTRUM
GENERAL CONTRACTORS



GRAHAM JOHNSON

Historic Preservation Specialist
Senior Project Manager

PHONE
303.981.8280
EMAIL
grahamj@spectrumgc.com

BACKGROUND

Graham is a native of Colorado. He received his undergraduate degree in Architectural Engineering from the University of Colorado, Boulder and his Masters of Science in Historic Preservation from the University of Colorado, Denver. He also holds a Certificate from the Lockheed Martin Engineering Management program. Graham fluidly applies his education and experience in many successful projects completed with Spectrum.

In addition to his education and work experience, Graham is also widely engaged in the local preservation community. He is a second term member of the Board of Directors for Colorado Preservation, Inc., an adjunct faculty in the historic preservation department of the College of Architecture and Planning at the University of Denver and an appointed member of the Denver Landmarks Preservation Commission.

RELATED PROJECT EXPERIENCE

Larimer Square – Valuation: $5 Million - Ongoing
Larimer Square, Denver, CO Owner: Asana Partners
Core and Shell renovations for multiple buildings, interior tenant finish projects and historic window restoration team member for coordination of multi million dollar historic exterior renovation throughout the block

Beaver Meadows Visitor Center – Valuation: $7 Million - 2021
1000 US 36, Estes Park, CO Owner: National Park Service
Rehabilitation of existing building in remote location with architectural and MEP upgrades, coordination of temporary facilities and utilities and extensive terrazzo repair

The Denver Mint – Valuation of $1 Million - 2021
201 W Colfax Ave, Denver, CO
Historic restoration of windows and skylights
Complex coordination of multi-phased project in large occupied building

Colorado Building Restoration – Valuation: $3 Million - 2017-2020
1615 California Street, Denver, CO Owner: Dikeou Realty
7 story exterior restoration of historic terracotta, cast iron facade and windows

Molly Brown House - Valuation: $771,000 - 2019
1340 Pennsylvania Street, Denver, CO Owner: Historic Denver Inc.
Historic restoration of front porch and basement accessibility upgrades
Multi-staged renovation projects with museum open to public for duration

St. Barnabas Church – Valuation: $2.1 Million - 2018
1280 Vine Street, Denver, CO Owner: St. Barnabas Episcopal Church
Full structural, mechanical and architectural rehabilitation with close neighborhood coordination on small urban job-site

Emerson School – Valuation: $2.2 Million - 2012, 2016
1420 Ogden Street, Denver, CO Owner: National Trust for Historic Pres.
Interior Rehabilitation/Redevelopment & Window Restoration
Coordination of year long restoration with occupied building

Harris Street Community Building Rehabilitation – Valuation: $8.1 Million - 2013-2015
103 S. Harris St. Breckenridge, CO Owner: Town of Breckenridge
18 month project with 6 month pre-construction period working with design team, Town of Breckenridge and Summit County including full structural, mechanical and architectural rehabilitation and extensive site-work

SPECTRUM GENERAL CONTRACTORS

REFERENCES

COLORADO STATE CAPITOL - JOINT LIBRARY RESTORATION AND OLD SUPREME COURT RESTORATION

Owner: State of Colorado
Randy Guisebert - (303) 866-4619

Architect: Form+Works Design Group
Natalie Lord - (303) 501-7427

LOVELAND FEED AND GRAIN ADAPTIVE REUSE

Owner: Artspace
Lucas Koski - (718) 316-7491

Architect: Ratio Design
Gabe Bergeron - (303) 518-0760

COLORADO STATE CAPITOL - HOUSE AND SENATE CHAMBER RESTORATION

Owner: State of Colorado
Randy Guisebert - (303) 866-4619

Architect: Anderson Hallas Architects
Nan or Dave Anderson, or Anne Cutrell - (303) 278-7378

BEAVER MEADOWS VISITOR CENTER

Owner: National Park Service
Emmeline Morris - (720) 726-0175

Architect: Anderson Hallas Architects
Andy Ducket-Emke - (303) 275-4378

MOLLY BROWN HOUSE FRONT PORCH & BASEMENT

Owner: Historic Denver Inc.
Andrea Malcomb - (303) 831-1312

Architect: Hoehn Architects PC
Kris Hoehn - (303) 282-3884

HARRIS STREET COMMUNITY CHURCH

Owner: Town of Breckenridge
Dale Stein - (970) 453-3146

Architect: Anderson Hallas Architects
Liz Hallas & Ben Heppe - (303) 278-4378

EMERSON SCHOOL

Owner: National Trust for Historic Preservation
Barb Paul - (303) 909-3726

LIV APARTMENTS

Owner: Hans Nielsen, Inc.
Nanna Smith - (303) 980-9100

Architect: Blue Sky Studio
Joe Simmons - (303) 601 - 8956

SABLE RIDGE APARTMENTS

Owner: Sable Ridge Apartments, LLC
Ken Walker - (720) 581 - 4263

Architect: Langley Architects
David Langley - (719) 330 - 7199

COLORADO BUILDING

Owner: Dikeou Realty
Neil Goldblatt - (303) 884 - 6192

CONTACT PERSON

Graham Johnson
Project Manager

grahamj@spectrumgc.com

c. (303)981-8280
p. (303)329-8003
f. (303)329-8280

5135 E. 38th Avenue
Denver, CO 80207

NOTICE OF AWARD
2024 HISTORIC PRESERVATION OF THE GENEVA LODGE
CITY PROJECT NO. 24-F01

Date: 3/15/2024

TO: **Spectrum General Contractors**
5135 East 38th Ave
Denver, Colorado 80207-1104

The City of Littleton, having duly considered the proposal submitted on **March 4, 2024** for the work covered by the proposal and contract documents for the **2024 HISTORIC PRESERVATION OF THE GENEVA LODGE, CITY PROJECT NO. 24-F01,** and it appearing that your proposal is fair, equitable, and to the best interest of the owner, said proposal is hereby accepted at the prices contained therein.

In accordance with the terms of the contract documents, you are required to execute the Contract and Performance, Labor and Material Payment Bond in one (1) counterpart within ten (10) calendar days from and including the date of this notice. In addition, you are requested to furnish at the same time Certificates of Insurance evidencing compliance with the requirements for insurance stated in the contract documents.

The proposal guaranty submitted with your proposal will be returned upon execution of the contract, furnishing of the required performance bond and Certificates of Insurance within the time limit specified. In the event that you should fail to execute the contract agreement and Performance, Labor and Material Payment Bond, and provide the proper Certificates of Insurance within the time limit specified, said bid security will be retained by the owner as liquidated damages and not as penalty for the delay and extra work caused thereby.

By:_____ TITLE: _____

EXHIBIT E

DRAWINGS AND SPECIFICATIONS

Certificate of Appropriateness

Geneva Lodge

2305 W. Berry Ave.
Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006



OWNER CERTIFICATE

Owner:

I, James L. Becklenberg, owner, or designated agent thereto, do hereby agree to develop the above described property in accordance with the use, restrictions, and conditions contained herein, and current ordinances, resolutions, and standards of the City of Littleton, Colorado.

By: _____
[Insert name of owner and/or agent]
City Manager
Title
2255 W. Berry Ave., Littleton, CO 80120
Address

Acknowledgement:

State of Colorado)
)SS
County of Arapahoe)

The foregoing dedication was acknowledged before me this 24th day of January, 2024, by James L. Becklenberg as City Manager of City of Littleton, Colorado

Witness my hand and official seal.

_____
Notary Public

My Commission Expires July 2, 2025

LUCY M LUCERO
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 19934009727
MY COMMISSION EXPIRES JULY 02, 2025

COMMUNITY DEVELOPMENT

Approved this 23rd day of January, 2024, by the Director of Community Development.

Director of Community Development

GENERAL PROJECT NOTES:

- THE PROPERTY IS A CITY OF LITTLETON HISTORIC LANDMARK, RESOLUTION 38-1998.
- APPROVAL OF A CERTIFICATE OF APPROPRIATENESS (COA) SHALL BE REQUIRED PRIOR TO ISSUANCE OF BUILDING PERMITS FOR EXTERIOR WORK AS SHOWN ON THIS PLAN.
- ALL GLASS SHALL BE TRANSLUCENT AND CLEAR IN COLOR.
- ALL MECHANICAL EQUIPMENT SHALL BE SCREENED FROM VIEW FROM ADJACENT PROPERTIES.
- ANY CHANGES TO THE COA MUST FIRST BE APPROVED BY THE CITY.

LEGAL DESCRIPTION OF PROPERTY:

LOT 3, BLK 1, LITTLETON CENTER SUBDIVISION

STATEMENT OF INTENT:

THE PROJECT INCLUDES THE EXTERIOR REHABILITATION OF THE GENEVA LODGE BUILDING INCLUDING:

1. REHABILITATION OF ORIGINAL WOOD WINDOWS.
2. REPLACEMENT OF NON-HISTORIC WINDOWS.
3. REHABILITATION OF EXTERIOR DOORS.
4. REHABILITATION OF EXTERIOR SIDING AND TRIM.
5. LIMITED SITE GRADING.
6. BRICK MASONRY REHABILITATION.

HISTORICAL PRESERVATION BOARD

APPROVED AND ACCEPTED AT A MEETING HELD BY THE HISTORICAL PRESERVATION BOARD ON THE ____ DAY OF 20____

HISTORICAL PRESERVATION BOARD CHAIR:

_____

ATTEST CITY CLERK:

_____

CONSTRUCTION DOCUMENTS

SEPTEMBER 9, 2022

form + works design group, LLC

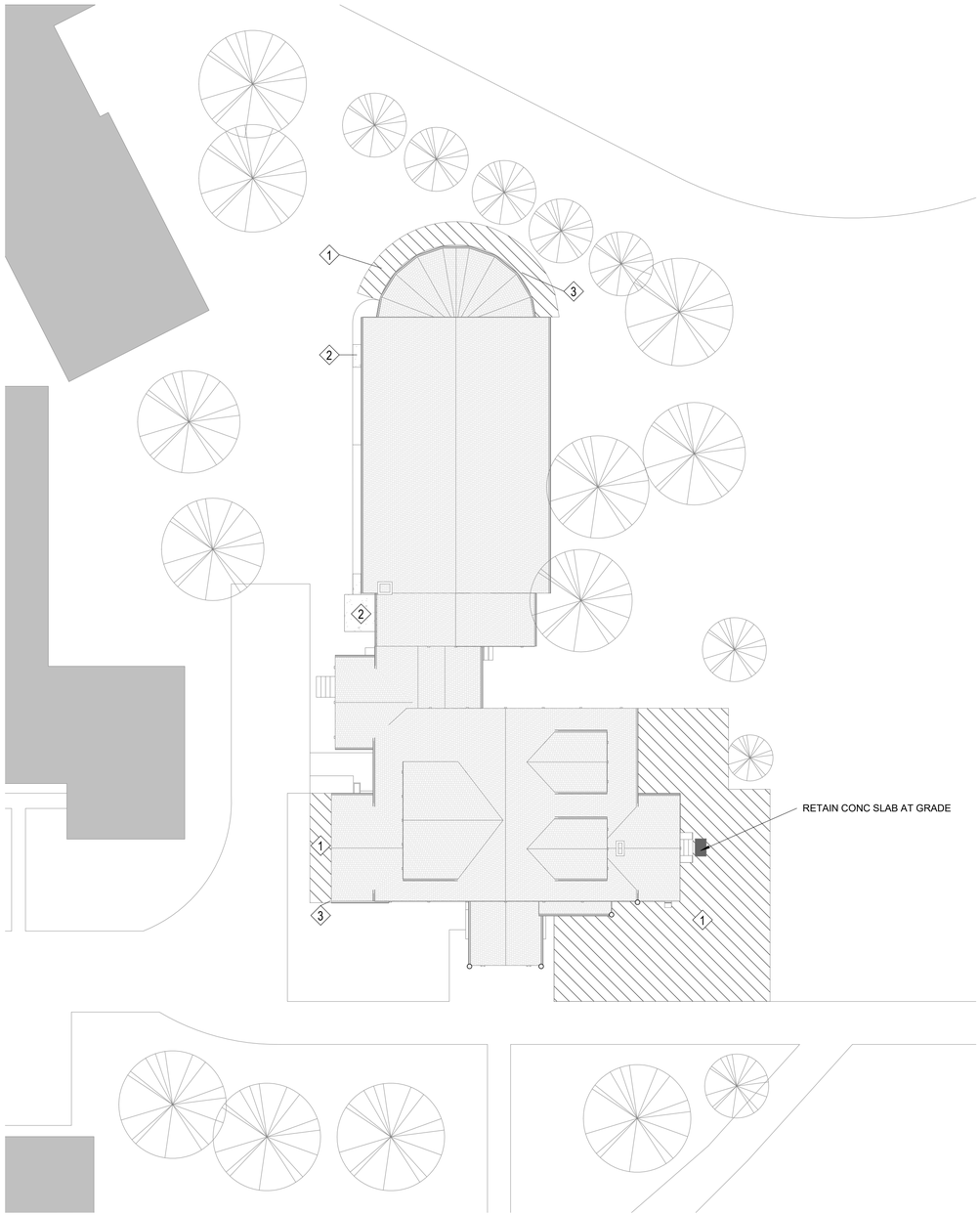
OWNER

City of Littleton
1800 West Belleview Avenue
Littleton, Colorado 80120
Alan Brown, Fleet and Facilities Manager
p. 303.795.3982 (o) 303.598.6320 (c)
e. abrown@littletongov.org

ARCHITECT

Form+Works Design Group, LLC
P.O. Box 476
Eastlake, Colorado 80614
Jessica Reske, AIA, LEED AP
p. 414.477.5348
e. jessica@formworksdesigngroup.com

SHEET LIST	
SHEET NUMBER	SHEET NAME
00-GENERAL	
G-000	COVER SHEET
G-001	SITE PLAN, SHEET INDEX, GENERAL NOTES
04-ARCHITECTURAL	
A-100	BUILDING FOOTPRINT
A-120	ROOF PLAN
A-200	EXTERIOR ELEVATIONS
A-201	EXTERIOR ELEVATIONS
A-202	EXTERIOR ELEVATIONS
A-300	EXTERIOR ELEVATION SECTIONS
A-301	EXTERIOR ELEVATION SECTIONS
A-700	DOOR SCHEDULE & TYPES
A-701	WINDOW SCHEDULE & TYPES - BASEMENT
A-702	WINDOW SCHEDULE & TYPES - FIRST FLOOR
A-703	WINDOW SCHEDULE & TYPES - FIRST FLOOR
A-704	WINDOW SCHEDULE & TYPES - FIRST FLOOR
A-705	WINDOW SCHEDULE & TYPES - FIRST FLOOR
A-706	WINDOW SCHEDULE & TYPES - FIRST FLOOR
A-707	WINDOW SCHEDULE & TYPES - SECOND FLOOR
A-708	WINDOW DETAILS



1 SITE PLAN
1/16" = 1'-0"

N

PLAN NOTES

GENERAL NOTES:

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- NOTIFY ARCHITECT IF CONDITIONS IN FIELD DO NOT MATCH CONDITIONS SHOWN ON DRAWINGS.
- COORDINATE REQUIRED CLOSURES OF BUILDING AND SITE ACCESS WITH OWNER PRIOR TO COMMENCEMENT OF WORK.

X KEYNOTES

1. RE-GRADE SITE TO SLOPE AWAY FROM THE BUILDING.
2. REPLACE SECTION OF CONCRETE; PRIOR TO REPLACEMENT OF CONCRETE, PIPE DOWNSPOUTS AT CONCRETE BELOW GRADE.
3. INSTALL DOWNSPOUT EXTENSION AND SPLASH BLOCK.
4. REPLACE GUTTER SECTION IN KIND.
5. INSTALL FLASHING TO DIVERT WATER AWAY FROM END OF WOOD RAFTER TAIL. PROVIDE MOCK-UP OF FLASHING INSTALLATION AT ONE LOCATION FOR REVIEW AND APPROVAL BY ARCHITECT.
6. REPLACE TILE FLOORING IN KIND. REMOVE EXISTING TILE, SET NEW TILE IN SUBSTRATE SLOPED TO FLOOR DRAIN. RE: 2/A-100

GENERAL RESTORATION NOTES

1. The term “Owner” shall denote the client, or Owner, as designated in the Contract. The term “General Contractor” or “Contractor” shall denote the Corporation, Company, Partnership, Firm or Individual who has entered into the Contract for the performance of the work and has engaged Subcontractors to perform a part of the work. The term “Architect” refers to Form+Works Design Group, LLC.
2. The use of the words “provide” and “provided” in connection with any item specified shall be intended to mean that the item shall be furnished, installed and connected where so required.
3. Dimensions at existing construction are taken to existing surfaces. Dimensions at new work are taken from face of stud, grid centerlines, or face of masonry unless otherwise noted. Contractor is responsible for final verification of existing conditions and dimensions.
4. DO NOT scale drawings. Dimensions govern. Large scale details govern over small scale.
5. Notify Architect in writing immediately should conditions be found contradictory to these drawings.
6. The Drawings are supplied to illustrate the design intent and the general type of construction required. They are intended to imply the finest quality of construction, material and workmanship.
7. Drawings and general notes are complementary, and what is called for by one will be binding as if called for by all. Work shown or referred to on any drawing shall be completed as though shown on all related drawings.
8. The character and scope of work are described by the drawings and notes contained herein. Additional drawings and information deemed necessary by the Architect to interpret and/or explain drawings or notes previously issued shall be provided to the General Contractor. It shall be understood that such additional drawings and information shall be considered part of the Contract Documents.
9. If there are any questions regarding the Contract Documents, existing conditions or design intent, the General Contractor shall obtain a clarification in writing from the Owner's Representative or Architect prior to proceeding with the work in question.
10. All work performed and material installed shall be, as a minimum standard, in strict conformance with the latest editions of all general codes, regulations and ordinances including the building code. The General Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and lawful orders of any public authority having jurisdiction over the performance of the work.
11. The General Contractor is responsible for all work shown, noted, specified, or reasonably inferred from the contract documents.
12. The General Contractor, upon acceptance of the drawings, assumes full responsibility for the construction, materials and workmanship of the work, and shall comply with the spirit as well as the letter of that which is contained therein.
13. The scope of work described by the Contract Documents implies a completed project. Minor omissions from and discrepancies in the drawings and specifications shall not void such intention. The General Contractor shall inform the Architect in writing of any conflicts, omissions and discrepancies prior to construction.
14. The General Contractor shall obtain all required building permits.
15. The General Contractor shall obtain all special inspections required by the authority having jurisdiction over the project.
16. The General Contractor shall supervise and direct the work using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences and procedures. He shall coordinate all portions of the work under the Contract.
17. The General Contractor and subcontractors shall visit the project, as required by the specifications, to become familiar with all existing conditions affecting the work prior to submittal of bids.
18. The General Contractor shall perform high-quality professional work. Materials shall be joined to uniform, accurate fits so that they meet in neat, straight lines free of smears or overlaps. Exposed materials shall be installed appropriately level, plumb and at accurate right angles to or flush with adjacent materials. The work of each trade shall meet all National Standards published by the trade, except where the requirements of the Contact Document are more stringent.
19. The presence of an architectural representative on the jobsite does not imply concurrence of approval of the work. The General Contractor shall call to the attention of the Architect specific items for which he desires to obtain approval.
20. The General Contractor shall correct defects in material and workmanship noted by the Architect during periodic site observations and at project close-out.
21. The General Contractor shall turn the project over to the Owner free from all construction debris, scraps, materials and equipment; with all interior glass free from manufacturer's labels and tape and clean on both sides; with all doors and millwork wiped down and free of dirt, grease and other foreign material.

form+works
design group, LLC
P.O. Box 476
Eastlake, Colorado 80614
www.formworksdesigngroup.com
303.598.6545

CERTIFICATE OF APPROPRIATENESS

Geneva Lodge

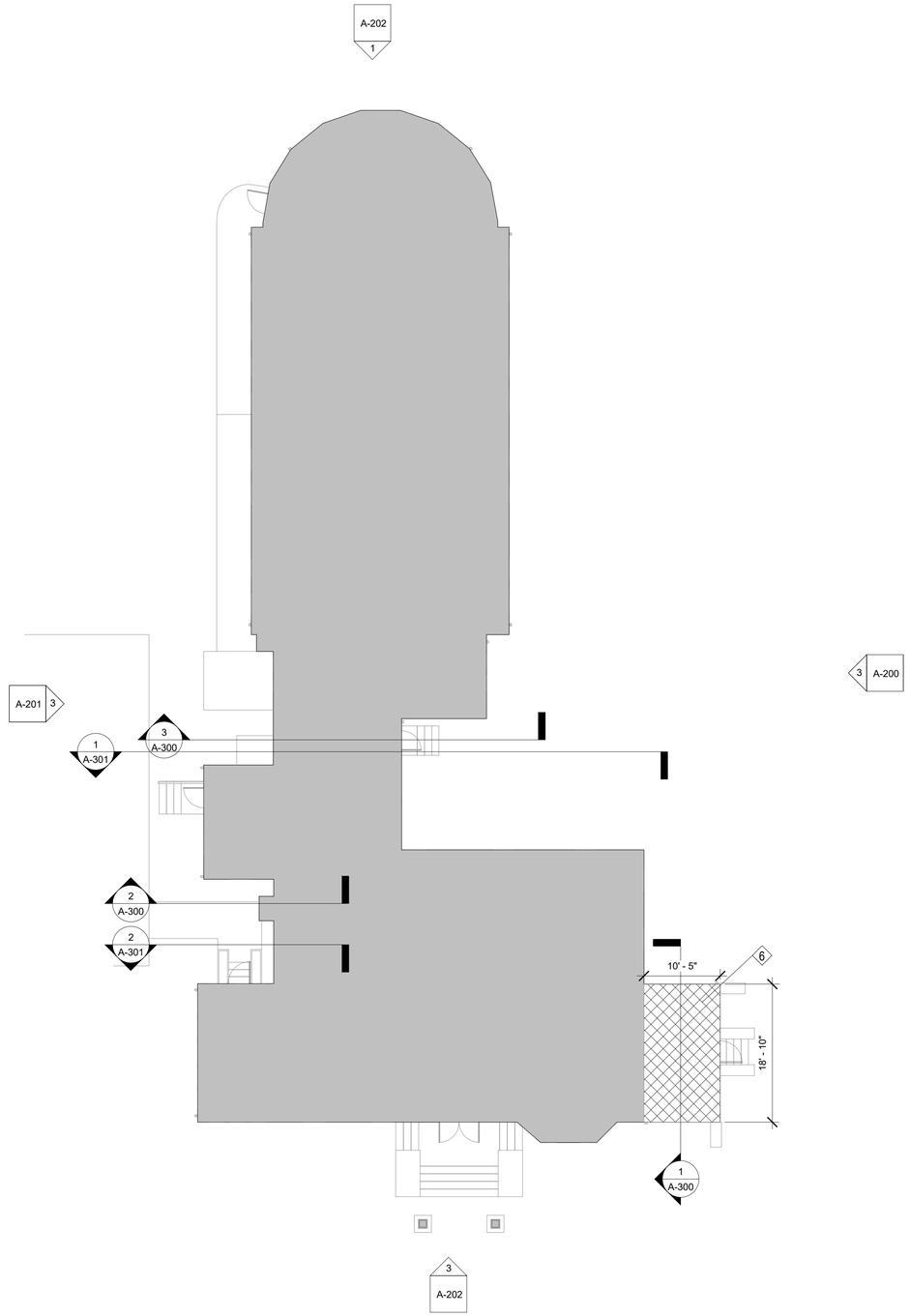
2305 W. Berry Ave.
Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006

No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

SITE PLAN, SHEET INDEX, GENERAL NOTES

G-001



1 FIRST FLOOR PLAN
1" = 10'-0"

N

PLAN NOTES

GENERAL NOTES:

- NOT ALL KEYNOTES ARE USED ON ALL SHEETS.
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- COORDINATE REQUIRED CLOSURES OF BUILDING AND SITE ACCESS WITH OWNER PRIOR TO COMMENCEMENT OF WORK.

KEYNOTES

1. RE-GRADE SITE TO SLOPE AWAY FROM THE BUILDING.
2. REPLACE SECTION OF CONCRETE; PRIOR TO REPLACEMENT OF CONCRETE, PIPE DOWNSPOUTS AT CONCRETE BELOW GRADE.
3. INSTALL DOWNSPOUT EXTENSION AND SPLASH BLOCK.
4. REPLACE GUTTER SECTION IN KIND.
5. INSTALL FLASHING TO DIVERT WATER AWAY FROM END OF WOOD RAFTER TAIL. PROVIDE MOCK-UP OF FLASHING INSTALLATION AT ONE LOCATION FOR REVIEW AND APPROVAL BY ARCHITECT.
6. REPLACE TILE FLOORING IN KIND. REMOVE EXISTING TILE, SET NEW TILE IN SUBSTRATE SLOPED TO FLOOR DRAIN. RE: 2/A-100



2 EAST PORCH FLOOR EXISTING CONDITIONS
3/4" = 1'-0"

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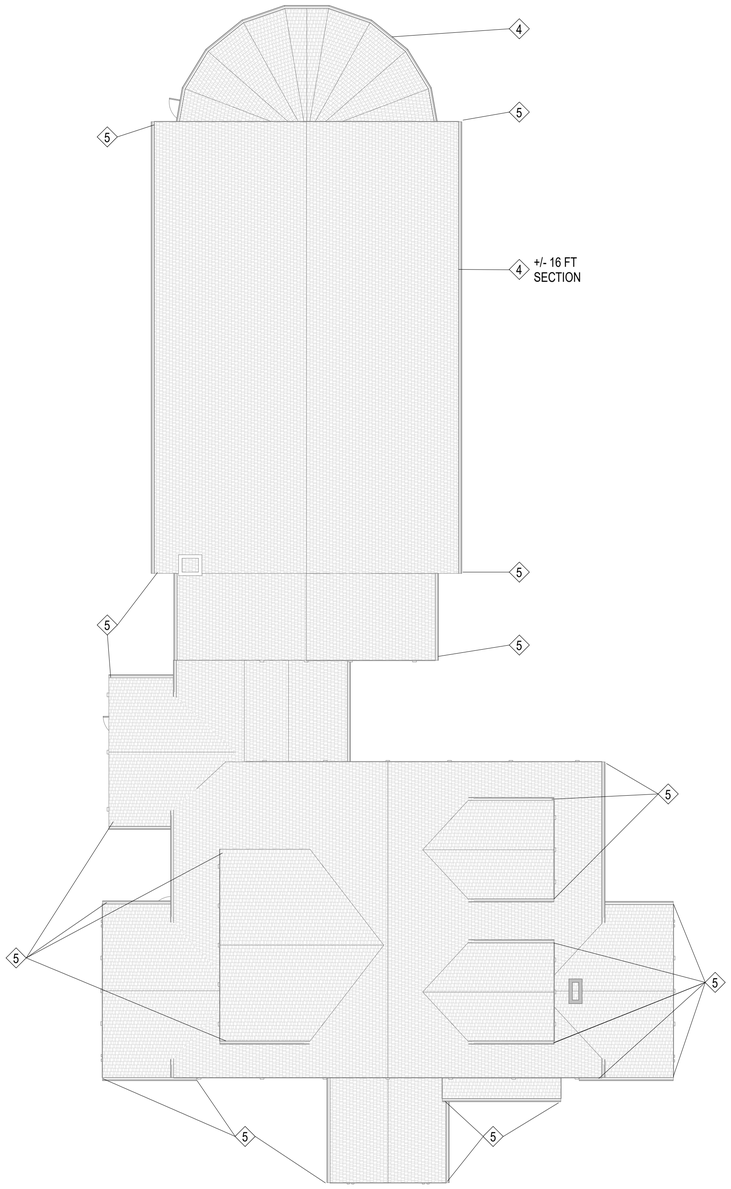
2305 W. Berry Ave.
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Case No. COA22-0006

No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

BUILDING FOOTPRINT

A-100



1 ROOF PLAN
1" = 10'-0"

N

PLAN NOTES

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(X) KEYNOTES

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INSTALL DUTCHMAN REPAIR AT SEVERELY DETERIORATED RAFTER TAILS

WHERE RAFTER TAILS ARE SALVAGEABLE, COAT EXISTING WOOD COMPONENTS WITH EPOXY WOOD FILLER TO SOLIDIFY MATERIAL PRIOR TO INSTALLATION OF SHEET METAL

INSTALL SHEET METAL CAP AT EXTERIOR 14" OF END RAFTER TAILS. PROVIDE DRIP EDGE TO ALIGN WITH LOWER EDGE OF RAFTER TAIL. MATCH WOOD PROFILE AND DIMENSIONS. FINISH SHEET METAL TO MATCH WOOD COLOR.

CONTRACTOR TO PROVIDE MOCK-UP OF FLASHING FOR APPROVAL BY ARCHITECT AND OWNER.

2 RAFTER TAIL FLASHING
3/4" = 1'-0"

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Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006

No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

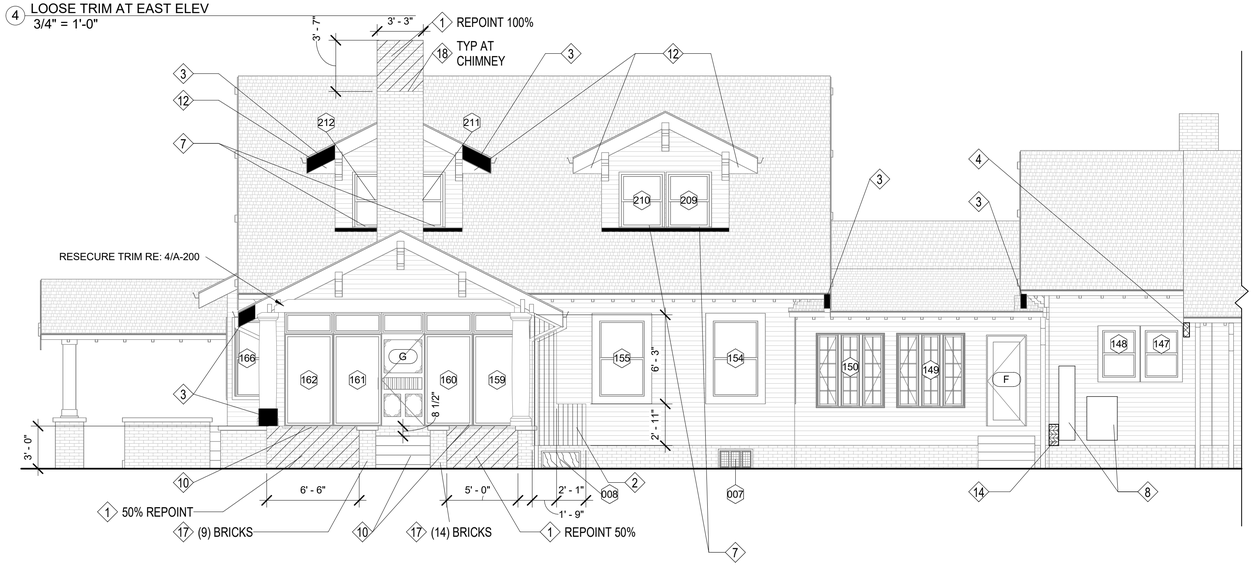
ROOF PLAN

A-120

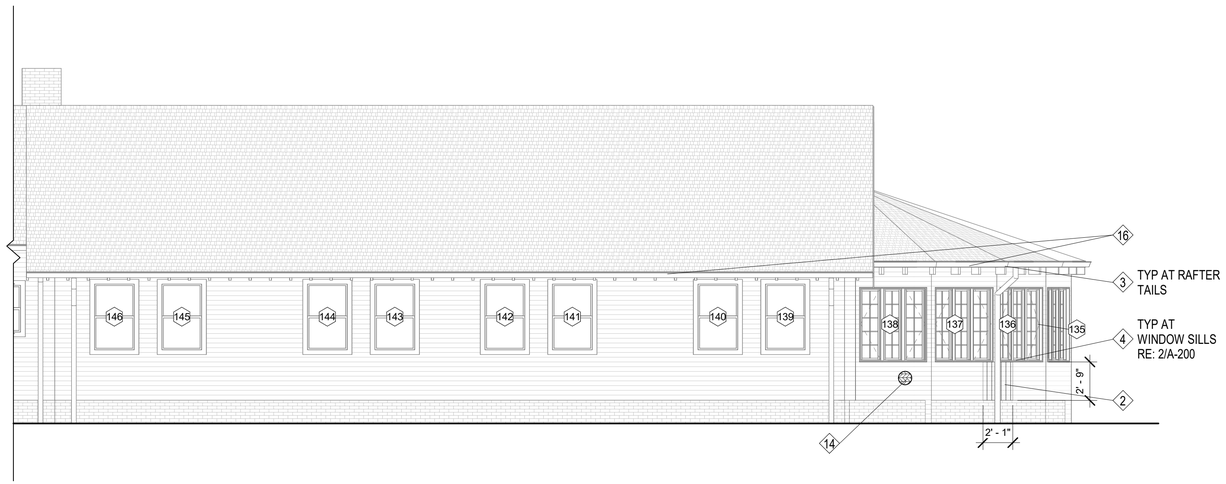


RESECURE LOOSE TRIM

4 LOOSE TRIM AT EAST ELEV
3/4" = 1'-0"



3 SOUTH - EAST ELEVATION
3/16" = 1'-0"



1 NORTH - EAST ELEVATION
3/16" = 1'-0"



2 WINDOW SILL CONDITIONS TYP AT CASEMENTS
3/4" = 1'-0"

NEW WORK
KEYNOTE

NOTES:

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- PREP, PRIME AND PAINT ALL EXTERIOR WOOD SIDING AND TRIM.

(#) WINDOW TAG, RE: WINDOW SCHEDULE

(#) DOOR TAG, RE: DOOR SCHEDULE

X KEYNOTE SYMBOL

1. REPOINT BRICK MASONRY. EXTENT INDICATED WITH:
2. REPLACE WOOD SHINGLE SIDING IN KIND. EXTENT INDICATED WITH:
3. EPOXY REPAIR WOOD SIDING / TRIM. EXTENT INDICATED WITH:
4. DUTCHMAN REPAIR WOOD COMPONENTS. EXTENT INDICATED WITH:
5. EXISTING DOWNSPOUT; REMOVE AND REINSTALL TO ACCESS WOOD SIDING.
6. REPLACE WOOD TRIM. EXTENT INDICATED WITH:
7. DUTCHMAN REPAIR OR REPLACE SILL; REPLACE FLASHING.
8. WALL MOUNTED SECURITY CAMERAS, LIGHT FIXTURES, AND ELECTRICAL EQUIPMENT TO REMAIN. PROTECT IN PLACE.
9. REPOINT CRACKS IN BRICK.
10. SEAL JOINTS AT JAMBS, TILE CAPS, AND STONE STEPS.
11. REMOVE SHEET METAL PATCH; REPLACE WOOD SHINGLE. EXTENT INDICATED WITH:
12. VERIFY CONDITION OF PLYWOOD PANELS AT SECOND FLOOR ROOFS; ANTICIPATE FLASHING INSTALLATION TO DIVERT WATER.
13. REPLACE WOOD PANEL.
14. PATCH HOLES / GAPS IN SIDING. EXTENT INDICATED WITH:
15. VERIFY WATER-TIGHT CONDITION AT FLASHING; SEAL JOINTS WHERE NECESSARY.
16. REPLACE SECTION OF GUTTER. HOLE OBSERVED.
17. ROTATE BRICK TO EXPOSE UNDAMAGED FACE. QUANTITY AS INDICATED. REPOINT AREA UPON COMPLETION
18. CLEAN BRICK MASONRY TO REMOVE ATMOSPHERIC AND BIOLOGIC STAINING

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CERTIFICATE OF APPROPRIATENESS

Geneva Lodge

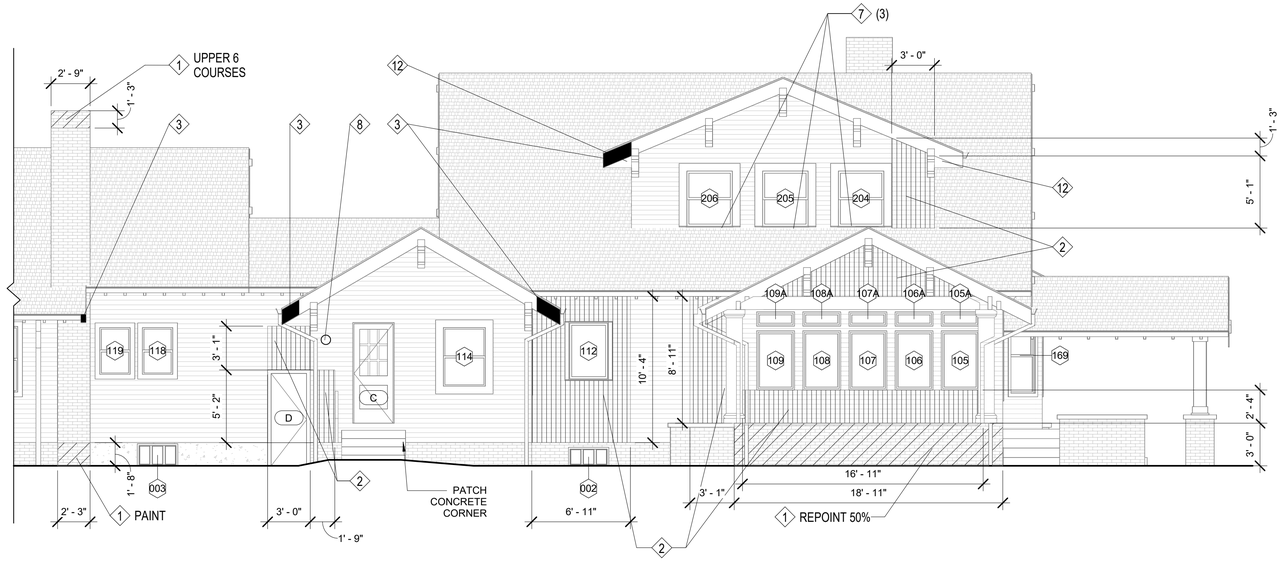
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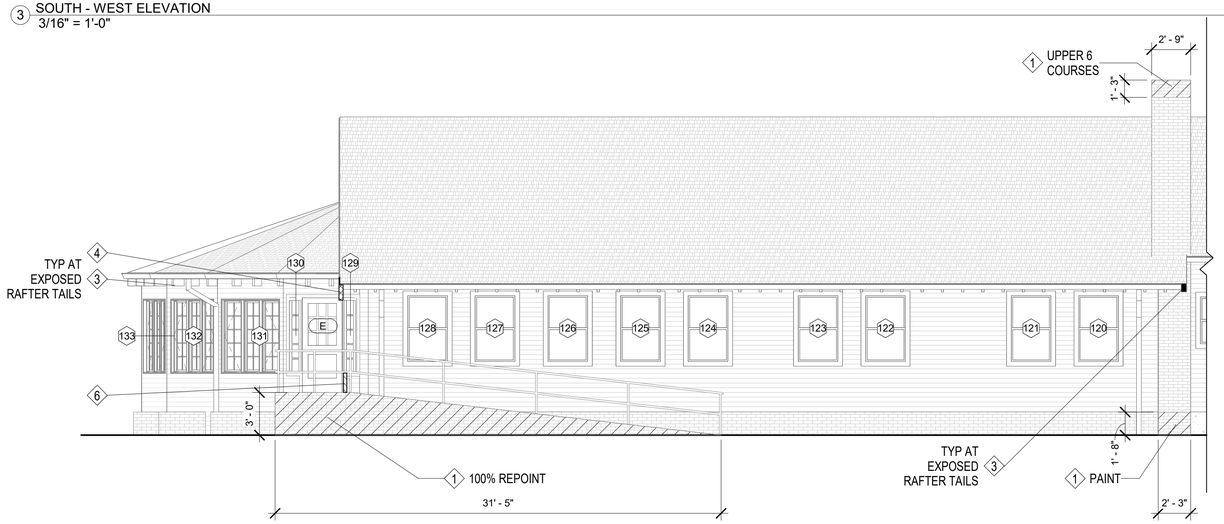
Project Number 22-005
Date SEPTEMBER 9, 2022
Drawn By KS
Checked By JR
Scale As indicated

EXTERIOR ELEVATIONS

A-200



3 SOUTH - WEST ELEVATION
3/16" = 1'-0"



1 NORTH - WEST ELEVATION
3/16" = 1'-0"



2 SOUTHWEST CORNER CONDITIONS
3/4" = 1'-0"

NEW WORK
KEYNOTE

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- PREP, PRIME AND PAINT ALL EXTERIOR WOOD SIDING AND TRIM.

(#) WINDOW TAG, RE: WINDOW SCHEDULE

(#) DOOR TAG, RE: DOOR SCHEDULE

(X) KEYNOTE SYMBOL

1. REPOINT BRICK MASONRY. EXTENT INDICATED WITH:
2. REPLACE WOOD SHINGLE SIDING IN KIND. EXTENT INDICATED WITH:
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No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

EXTERIOR ELEVATIONS

A-201



4 EAVE AND SOFFIT REHAB
3/4" = 1'-0"



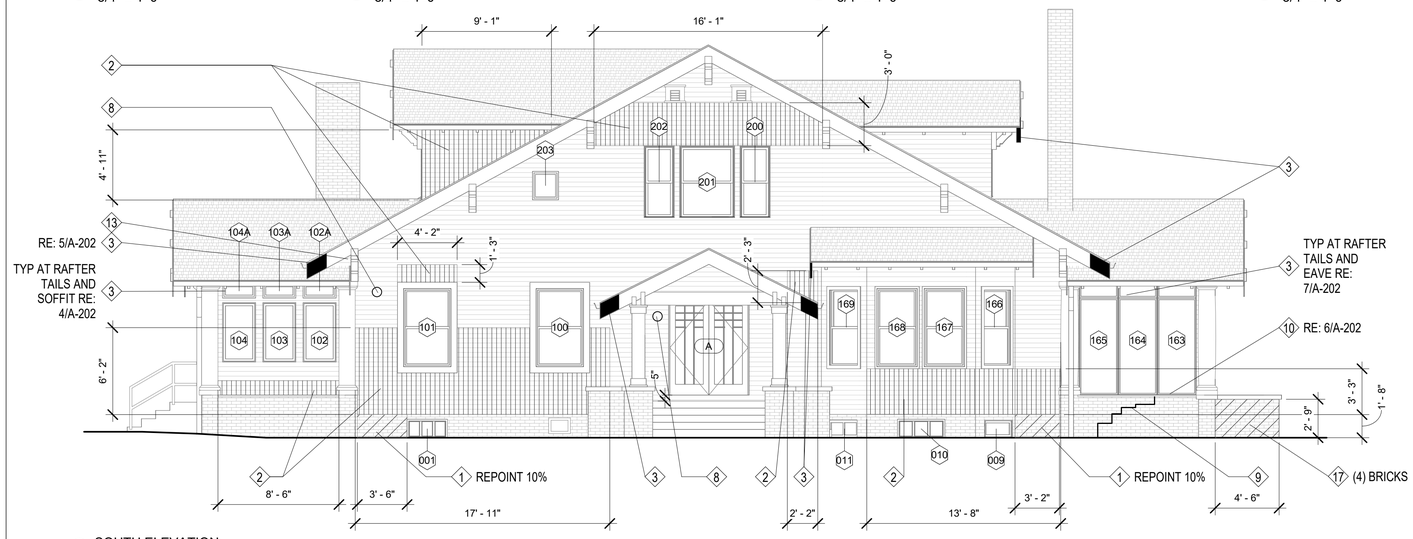
5 RAKING TRIM REHAB
3/4" = 1'-0"



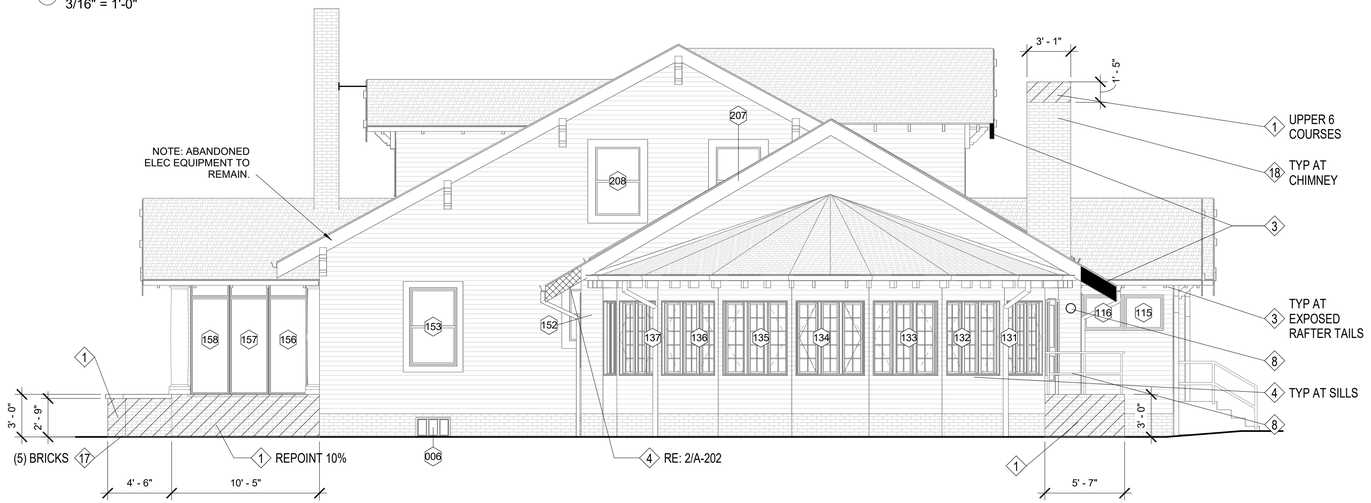
6 TILE CAP AT EAST PORCH
3/4" = 1'-0"



7 EAVE AT EAST PORCH
3/4" = 1'-0"



3 SOUTH ELEVATION
3/16" = 1'-0"



1 NORTH ELEVATION
3/16" = 1'-0"



2 NORTH ELEV WD REHAB
3/4" = 1'-0"

NEW WORK KEYNOTE

NOTES:

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CERTIFICATE OF APPROPRIATENESS

Geneva Lodge

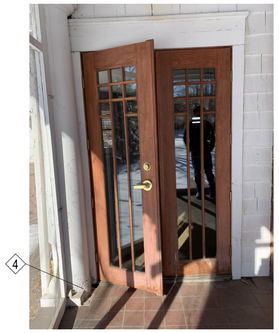
2305 W. Berry Ave.
Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006

No.	Description	Date

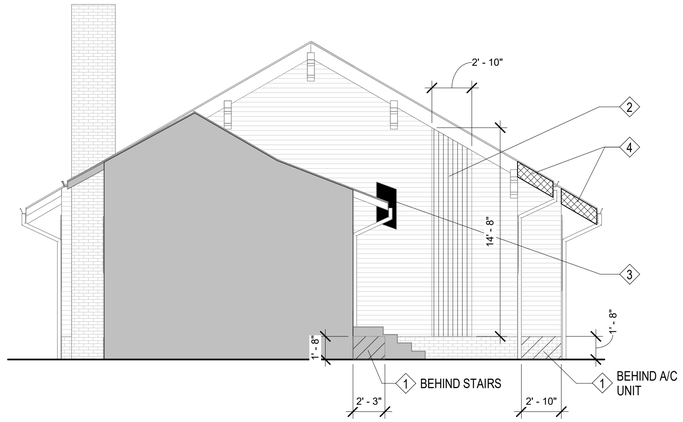
Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

EXTERIOR ELEVATIONS

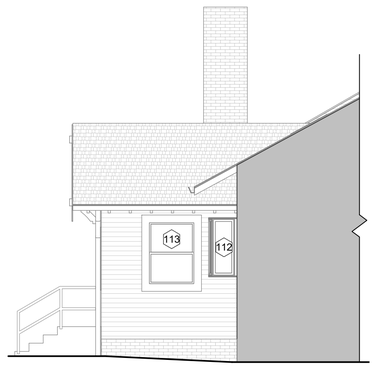
A-202



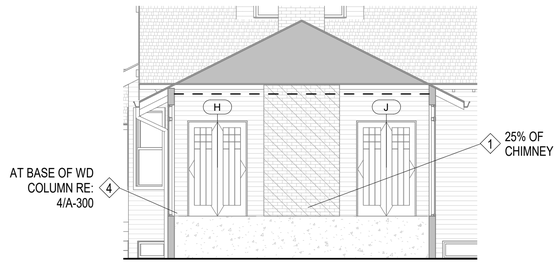
4 WD COLUMN BASE
3/4" = 1'-0"



3 PARTIAL SOUTH ELEVATION 2
3/16" = 1'-0"



2 PARTIAL SOUTH ELEVATION
3/16" = 1'-0"



1 EAST ENCLOSED PORCH ELEVATION
3/16" = 1'-0"

NEW WORK
KEYNOTE

NOTES:

- NOT ALL KEYNOTES ARE USED ON ALL SHEETS.
- CONTRACTOR TO VERIFY IN FIELD ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
- NOTIFY ARCHITECT IF CONDITIONS IN FIELD DO NOT MATCH CONDITIONS SHOWN ON DRAWINGS.
- COORDINATE REQUIRED CLOSURES OF BUILDING AND SITE ACCESS WITH OWNER PRIOR TO COMMENCEMENT OF WORK.
- PREP, PRIME AND PAINT ALL EXTERIOR WOOD SIDING AND TRIM.

(#) WINDOW TAG, RE: WINDOW SCHEDULE

(#) DOOR TAG, RE: DOOR SCHEDULE

(X) KEYNOTE SYMBOL

1. REPOINT BRICK MASONRY. EXTENT INDICATED WITH:
2. REPLACE WOOD SHINGLE SIDING IN KIND. EXTENT INDICATED WITH:
3. EPOXY REPAIR WOOD SIDING / TRIM. EXTENT INDICATED WITH:
4. DUTCHMAN REPAIR WOOD COMPONENTS. EXTENT INDICATED WITH:
5. EXISTING DOWNSPOUT; REMOVE AND REINSTALL TO ACCESS WOOD SIDING.
6. REPLACE WOOD TRIM. EXTENT INDICATED WITH:
7. DUTCHMAN REPAIR OR REPLACE SILL; REPLACE FLASHING.
8. WALL MOUNTED SECURITY CAMERAS, LIGHT FIXTURES, AND ELECTRICAL EQUIPMENT TO REMAIN. PROTECT IN PLACE.
9. REPOINT CRACKS IN BRICK.
10. SEAL JOINTS AT JAMBS, TILE CAPS, AND STONE STEPS.
11. REMOVE SHEET METAL PATCH; REPLACE WOOD SHINGLE. EXTENT INDICATED WITH:
12. VERIFY CONDITION OF PLYWOOD PANELS AT SECOND FLOOR ROOFS; ANTICIPATE FLASHING INSTALLATION TO DIVERT WATER.
13. REPLACE WOOD PANEL.
14. PATCH HOLES / GAPS IN SIDING. EXTENT INDICATED WITH:
15. VERIFY WATER-TIGHT CONDITION AT FLASHING; SEAL JOINTS WHERE NECESSARY.
16. REPLACE SECTION OF GUTTER. HOLE OBSERVED.
17. ROTATE BRICK TO EXPOSE UNDAMAGED FACE. QUANTITY AS INDICATED. REPOINT AREA UPON COMPLETION
18. CLEAN BRICK MASONRY TO REMOVE ATMOSPHERIC AND BIOLOGIC STAINING

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No.	Description	Date

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Drawn By	KS
Checked By	JR
Scale	As indicated

EXTERIOR ELEVATION SECTIONS

A-300

NEW WORK
KEYNOTE

NOTES:

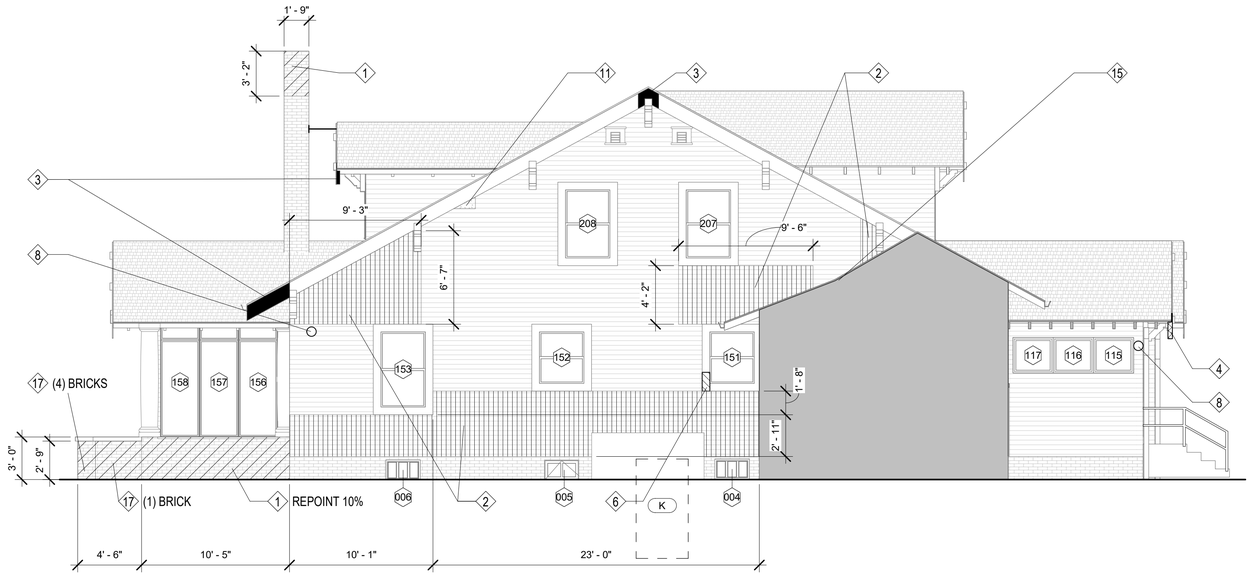
- NOT ALL KEYNOTES ARE USED ON ALL SHEETS.
- CONTRACTOR TO VERIFY IN FIELD ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
- NOTIFY ARCHITECT IF CONDITIONS IN FIELD DO NOT MATCH CONDITIONS SHOWN ON DRAWINGS.
- COORDINATE REQUIRED CLOSURES OF BUILDING AND SITE ACCESS WITH OWNER PRIOR TO COMMENCEMENT OF WORK.
- PREP, PRIME AND PAINT ALL EXTERIOR WOOD SIDING AND TRIM.

(#) WINDOW TAG, RE: WINDOW SCHEDULE

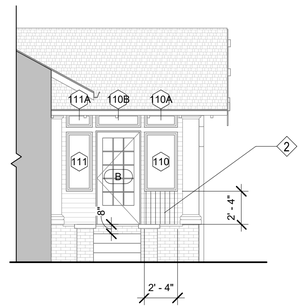
(#) DOOR TAG, RE: DOOR SCHEDULE

(X) KEYNOTE SYMBOL

1. REPOINT BRICK MASONRY. EXTENT INDICATED WITH:
2. REPLACE WOOD SHINGLE SIDING IN KIND. EXTENT INDICATED WITH:
3. EPOXY REPAIR WOOD SIDING / TRIM. EXTENT INDICATED WITH:
4. DUTCHMAN REPAIR WOOD COMPONENTS. EXTENT INDICATED WITH:
5. EXISTING DOWNSPOUT; REMOVE AND REINSTALL TO ACCESS WOOD SIDING.
6. REPLACE WOOD TRIM. EXTENT INDICATED WITH:
7. DUTCHMAN REPAIR OR REPLACE SILL; REPLACE FLASHING.
8. WALL MOUNTED SECURITY CAMERAS, LIGHT FIXTURES, AND ELECTRICAL EQUIPMENT TO REMAIN. PROTECT IN PLACE.
9. REPOINT CRACKS IN BRICK.
10. SEAL JOINTS AT JAMBS, TILE CAPS, AND STONE STEPS.
11. REMOVE SHEET METAL PATCH; REPLACE WOOD SHINGLE. EXTENT INDICATED WITH:
12. VERIFY CONDITION OF PLYWOOD PANELS AT SECOND FLOOR ROOFS; ANTICIPATE FLASHING INSTALLATION TO DIVERT WATER.
13. REPLACE WOOD PANEL.
14. PATCH HOLES / GAPS IN SIDING. EXTENT INDICATED WITH:
15. VERIFY WATER-TIGHT CONDITION AT FLASHING; SEAL JOINTS WHERE NECESSARY.
16. REPLACE SECTION OF GUTTER. HOLE OBSERVED.
17. ROTATE BRICK TO EXPOSE UNDAMAGED FACE. QUANTITY AS INDICATED. REPOINT AREA UPON COMPLETION
18. CLEAN BRICK MASONRY TO REMOVE ATMOSPHERIC AND BIOLOGIC STAINING



1 PARTIAL NORTH ELEVATION
3/16" = 1'-0"



2 PARTIAL NORTH ELEVATION 2
3/16" = 1'-0"

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No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

EXTERIOR ELEVATION SECTIONS

A-301

Door Schedule

Mark	Width	Height	Door Type	Repair Level	Casing Trim Type	Door Material	Interior Finish	Previously Replaced Door (Y/N)	Hardware Notes	Comments
A	5' - 6"	6' - 8"	A	1	WOOD	WOOD/GLASS	STAINED	Y	EXISTING TO REMAIN	REPLACEMENT DOOR.
B	3' - 0"	6' - 6"	B	2	WOOD	WOOD/GLASS	PAINTED	N	MAIL BOX SLOT AND EXISTING HARDWARE TO REMAIN.	RE-HANG DOOR. REPAIR CRACKS AT THE BOTTOM OF SIDE RAIL. REFINISH INTERIOR PAINT. ORIGINAL SINGLE PANE GLAZING AND PUTTY WOOD STOPS AT INTERIOR.
C	2' - 9"	7' - 0"	D	3	WOOD	WOOD/GLASS	PAINTED	N	PROVIDE KNOB. LEAVE PANIC BAR IN PLACE.	RE-HANG DOOR. MATERIAL ADDED TO THE BOTTOM OF DOOR. REPLACE INTERIOR WOOD GLAZING STOPS. INSTALL NEW WEATHER STRIPPING.
D	2' - 6"	6' - 6"	C	4	WOOD	WOOD	INTERIOR NOT ACCESSABLE	N	EXISTING TO REMAIN	REPLACEMENT DOOR. REPLACE. REPAINT TRIM.
E	2' - 10"	6' - 8"	D	3	WOOD	WOOD/GLASS	PAINTED	N	EXISTING TO REMAIN	REPAIR LOWER PANELING AND LOWER TRIM.
F	2' - 8"	6' - 4"	F	1	WOOD	WOOD/GLASS	STAINED	Y	EXISTING TO REMAIN	NO INTERIOR WORK NEEDED.
G	3' - 0"	6' - 6"	E	3	WOOD	WOOD/SCREEN	PAINTED	N	SALVAGE HINGES; REPLACE LATCH AND HANDLE	RE-HANG DOOR, REPLACE SCREEN, PREP, PRIME, AND PAINT
H	4' - 0 1/2"	6' - 7 1/2"	A	1	WOOD	WOOD/GLASS	STAINED	Y	EXISTING TO REMAIN	
J	4' - 0 1/2"	6' - 7 1/2"	A	2	WOOD	WOOD/GLASS	STAINED	Y	EXISTING TO REMAIN	
K	3' - 8"	7' - 0"	G	3	WOOD	WOOD/GLASS	STAINED	N		

DOOR GENERAL NOTES

A. DOOR DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL OPENING DIMENSIONS.

B. CONTRACTOR TO COMPLETE PAINT ANALYSIS TO DETERMINE HISTORIC INTERIOR AND EXTERIOR COLOR/FINISH. SUBMIT PAINT DRAW DOWNS TO OWNER AND ARCHITECT FOR REVIEW. FINAL COLOR SELECTIONS BY OWNER AND ARCHITECT.

C. ASSUME 100% NEW HARDWARE SETS AT ALL REPLACEMENT DOORS.
   a. AT EXISTING DOORS TO REMAIN, REPLACE HARDWARE COMPONENTS AS NECESSARY FOR OPERATION

DOOR REPAIR CLASS

CLASS 1: ROUTINE MAINTENANCE (DOOR REMAINS IN SITU):

- SAND AND SCRAPE PAINT (ALL WOODWORK. INTERIOR AND EXTERIOR).
- REPLACE MISSING OR DAMAGED WEATHER STRIPPING
- IF GLAZED, MINOR PUTTY REPLACEMENT/ REPAIR.
- REPLACE BROKEN GLAZING - QUANTITY OF PANES INDICATED ON SCHEDULE (NOTE MATCH HISTORIC PATTERNED GLASS WHERE EXTANT)
- PREP, PRIME AND PAINT ALL INTERIOR AND EXTERIOR WOODWORK.
- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE DOOR AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

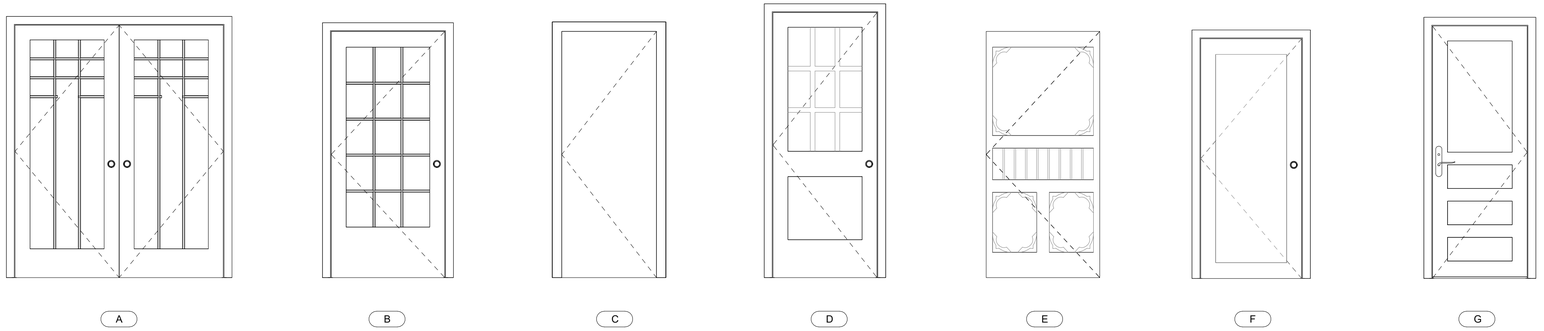
- ALL REPAIR CLASS 1 WORK
- REPAIR AREAS OF DETERIORATION / DAMAGE
- REMOVE AND REPLACE SEALANT BETWEEN BRICK MOLD AND BRICK

CLASS 3: SPLICES & PARTS REPLACEMENT:

- ALL REPAIR CLASS 1 & 2, PLUS
- REPLACE MISSING OR DAMAGED COMPONENTS AS NOTED IN SCHEDULE IN KIND.

CLASS 4: DOOR REPLACEMENT:

- MATCH HISTORIC IN ALL MANNERS



DOOR TYPES
1/2" = 1'-0"

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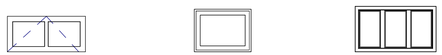
Project Number 22-005
Date SEPTEMBER 9, 2022
Drawn By KS
Checked By JR
Scale As indicated

DOOR SCHEDULE & TYPES

A-700

Window Schedule - Basement

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
BASEMENT										
001	2' - 9"	1' - 3"	F	3	IN-SWING AWNING	STAINED	N	WOOD	EXIST ORIGINAL HARDWARE TO REMAIN	STOOL AND APRON MISSING AT INTERIOR; REPLACE MISSING WD COMPONENTS.
002	2' - 9"	1' - 3"	F	2	IN-SWING AWNING	PAINTED	N	WOOD	EXIST ORIGINAL HARDWARE TO REMAIN	TRIM MODIFIED DUE TO PIPE. LEAVE AS IS.
003	2' - 9"	1' - 6"	F	2	NOT ACCESSIBLE AT INTERIOR	N/A	Y	METAL		REPLACE (1) BROKEN PANE
004	2' - 4"	1' - 4"	F	2	IN-SWING AWNING	PAINTED	N	WOOD	EXIST ORIGINAL HARDWARE TO REMAIN	
005	2' - 4"	1' - 4"	B	3	IN-SWING HOPPER	PAINTED	N	WOOD	EXIST ORIGINAL HARDWARE TO REMAIN	
006	2' - 4"	1' - 4"	F	2	IN-SWING AWNING	STAINED	N	WOOD	EXIST ORIGINAL HARDWARE TO REMAIN	FILL HOLES IN TRIM AT EXTERIOR
007	2' - 4"	1' - 4"	F	2	IN-SWING AWNING	STAINED	N	WOOD W/ METAL WIRE SCREEN	EXIST ORIGINAL HARDWARE TO REMAIN	EXTERIOR SCREEN; PREP, PRIME, AND PAINT EXTERIOR WOOD MATERIALS
008	2' - 9"	1' - 3"	D	N/A	INFILLED AT INTERIOR	N/A	N/A	N/A	N/A	MISSING GLAZING. WOOD PANEL REPLACING GLAZING; PREP, PRIME, AND PAINT EXTERIOR INFILL MATERIALS
009	2' - 9"	1' - 3"	D	4	MISSING	PAINTED	N/A	WOOD	WINDOW CHAIN IN PLACE	CONSTRUCT NEW SASH MATCHING WINDOW 011. REMOVE EXTERIOR PLEXI GLASS.
010	3' - 3"	1' - 3"	F	3	IN-SWING HOPPER	PAINTED	N	WOOD	REPLACE (2) HINGES TO MATCH ORIGINAL. EXISTING SASH LOCK TO REMAIN.	REPLACE MISSING INTERIOR STOOL; REPLACE (1) BROKEN PANE.
011	2' - 9"	1' - 3"	B	3	IN-SWING HOPPER	PAINTED	N	WOOD	REPLACE (2) HINGES. EXISTING SASH LOCK TO REMAIN.	REPLACE LOWER RAIL AND BOTH LOWER SECTIONS OF JAMBS.



B D F

WINDOW TYPES - BASEMENT
3/8" = 1'-0"

WINDOW GENERAL NOTES

A. WINDOW DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL WINDOW OPENING DIMENSIONS.

B. CONTRACTOR TO COMPLETE PAINT ANALYSIS TO DETERMINE HISTORIC INTERIOR AND EXTERIOR COLOR/FINISH. SUBMIT PAINT DRAW DOWNS TO OWNER AND ARCHITECT FOR REVIEW. FINAL COLOR SELECTIONS BY OWNER AND ARCHITECT.

C. ASSUME 100% NEW HARDWARE SETS AT ALL REPLACEMENT WINDOWS.
   a. AT EXISTING WINDOWS TO REMAIN, REPLACE HARDWARE COMPONENTS AS NECESSARY FOR WINDOW OPERATION

D. CONTRACTOR TO PROVIDE MOCK-UP OF CASEMENT WINDOW REHABILITATION FOR REVIEW AND APPROVAL BY ARCHITECT AND OWNER.

E. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR NEW WINDOWS

F. CONTRACTOR TO PROVIDE FINISH AND HARDWARE SAMPLES FOR SELECTION BY ARCHITECT AND OWNER.

G. NOTE THAT ALL WINDOWS TO BE REPLACED ARE NOT ORIGINAL, BUT HAVE BEEN PREVIOUSLY REPLACED (CIRCA 1998). ORIGINAL HISTORIC WINDOWS WILL BE REPAIRED.

WINDOW REPAIR CLASS

CLASS 1: ROUTINE MAINTENANCE (SASH REMAINS IN SITU):

- SAND AND SCRAPE PAINT (ALL WOODWORK. INTERIOR AND EXTERIOR).
- REPLACE MISSING OR DAMAGED WEATHER STRIPPING
- MINOR PUTTY REPLACEMENT/ REPAIR.
- SEAL WINDOW IN CLOSED POSITION. ENSURE SASHES ALIGN AT MEETING RAIL. PROVIDE WOOD BLOCKS AS REQ'D.
- REPLACE BROKEN GLAZING - QUANTITY OF PANES INDICATED ON SCHEDULE (NOTE MATCH HISTORIC PATTERNED GLASS WHERE EXTANT)
- PREP, PRIME AND PAINT ALL INTERIOR AND EXTERIOR WOODWORK.
- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

- ALL REPAIR CLASS 1 WORK
- DE-GLAZE SASH: REMOVE PUTTY, PREP SASH, PRIME & REPLACE PUTTY WITH NEW
- REPAIR AREAS OF DETERIORATION / DAMAGE
- REMOVE AND REPLACE SEALANT BETWEEN BRICK MOLD AND BRICK

CLASS 3: SPLICES & PARTS REPLACEMENT:

- ALL REPAIR CLASS 1 & 2, PLUS
- REPLACE MISSING OR DAMAGED COMPONENTS AS NOTED IN SCHEDULE IN KIND.

CLASS 4: WINDOW REPLACEMENT:

- MATCH HISTORIC IN ALL MANNERS
- REHABILITATE EXTERIOR WOOD SILLS
-REHABILITATE TRIM COMPONENTS TO REMAIN
-REFER TO SHEET A-708 FOR WINDOW DETAILS

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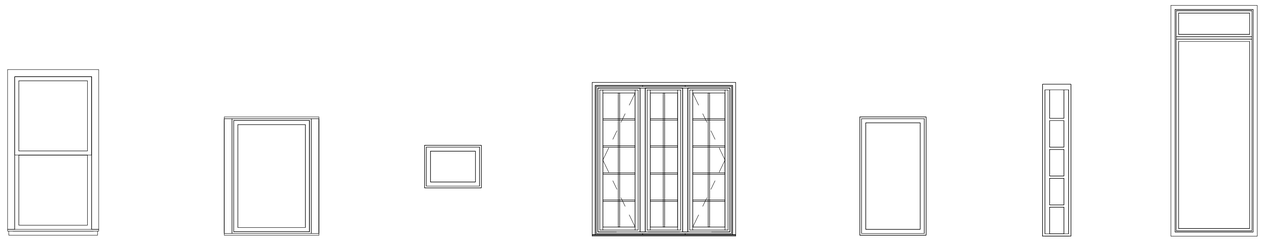
Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - BASEMENT

A-701

Window Schedule - First Floor

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
FIRST FLOOR										
100	3' - 4"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD		
101	3' - 4"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD		
102	2' - 4"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
102A	2' - 4"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
103	2' - 4"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
103A	2' - 4"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
104	2' - 4"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
104A	2' - 4"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
105	2' - 8"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD		WINDOW TO REMAIN INOPERABLE
105A	2' - 8"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
106	2' - 8"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD		WINDOW TO REMAIN INOPERABLE
106A	2' - 8"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
107	2' - 8"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
107A	2' - 8"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
108	2' - 8"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
108A	2' - 8"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
109	2' - 8"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
109A	2' - 8"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
110	2' - 4"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
110A	2' - 4"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
110B	3' - 2"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD		
111	1' - 10"	4' - 2"	G	4	SINGLE HUNG (INOPERABLE)	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	WINDOW TO REMAIN INOPERABLE
111A	1' - 10"	1' - 0"	D	4	FIXED	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
112	3' - 4"	4' - 2"	C	4	DOUBLE HUNG	PAINTED	Y	WOOD		REMOVE BOX WINDOW AND REPLACE WITH WINDOW TYPE A; FRAME AND FINISH WALL AROUND WINDOW TO MATCH EXIST ADJACENT
113	3' - 4"	4' - 6"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
114	3' - 2"	4' - 4"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	



WINDOW TYPES - FIRST FLOOR
3/8" = 1'-0"

WINDOW GENERAL NOTES

A. WINDOW DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL WINDOW OPENING DIMENSIONS.

B. CONTRACTOR TO COMPLETE PAINT ANALYSIS TO DETERMINE HISTORIC INTERIOR AND EXTERIOR COLOR/FINISH. SUBMIT PAINT DRAW DOWNS TO OWNER AND ARCHITECT FOR REVIEW. FINAL COLOR SELECTIONS BY OWNER AND ARCHITECT.

C. ASSUME 100% NEW HARDWARE SETS AT ALL REPLACEMENT WINDOWS.
   a. AT EXISTING WINDOWS TO REMAIN, REPLACE HARDWARE COMPONENTS AS NECESSARY FOR WINDOW OPERATION

D. CONTRACTOR TO PROVIDE MOCK-UP OF CASEMENT WINDOW REHABILITATION FOR REVIEW AND APPROVAL BY ARCHITECT AND OWNER.

E. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR NEW WINDOWS

F. CONTRACTOR TO PROVIDE FINISH AND HARDWARE SAMPLES FOR SELECTION BY ARCHITECT AND OWNER.

G. NOTE THAT ALL WINDOWS TO BE REPLACED ARE NOT ORIGINAL, BUT HAVE BEEN PREVIOUSLY REPLACED (CIRCA 1998). ORIGINAL HISTORIC WINDOWS WILL BE REPAIRED.

WINDOW REPAIR CLASS

CLASS 1: ROUTINE MAINTENANCE (SASH REMAINS IN SITU):

- SAND AND SCRAPE PAINT (ALL WOODWORK. INTERIOR AND EXTERIOR).
- REPLACE MISSING OR DAMAGED WEATHER STRIPPING
- MINOR PUTTY REPLACEMENT/ REPAIR.
- SEAL WINDOW IN CLOSED POSITION. ENSURE SASHES ALIGN AT MEETING RAIL. PROVIDE WOOD BLOCKS AS REQ'D.
- REPLACE BROKEN GLAZING - QUANTITY OF PANES INDICATED ON SCHEDULE (NOTE MATCH HISTORIC PATTERNED GLASS WHERE EXTANT)
- PREP, PRIME AND PAINT ALL INTERIOR AND EXTERIOR WOODWORK.
- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

- ALL REPAIR CLASS 1 WORK
- DE-GLAZE SASH: REMOVE PUTTY, PREP SASH, PRIME & REPLACE PUTTY WITH NEW
- REPAIR AREAS OF DETERIORATION / DAMAGE
- REMOVE AND REPLACE SEALANT BETWEEN BRICK MOLD AND BRICK

CLASS 3: SPLICES & PARTS REPLACEMENT:

- ALL REPAIR CLASS 1 & 2, PLUS
- REPLACE MISSING OR DAMAGED COMPONENTS AS NOTED IN SCHEDULE IN KIND.

CLASS 4: WINDOW REPLACEMENT:

- MATCH HISTORIC IN ALL MANNERS
- REHABILITATE EXTERIOR WOOD SILLS
-REHABILITATE TRIM COMPONENTS TO REMAIN
-REFER TO SHEET A-708 FOR WINDOW DETAILS



1 WINDOW 112
3/4" = 1'-0"

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Eastlake, Colorado 80614
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CERTIFICATE OF APPROPRIATENESS

Geneva Lodge

2305 W. Berry Ave.
Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006

No.	Description	Date

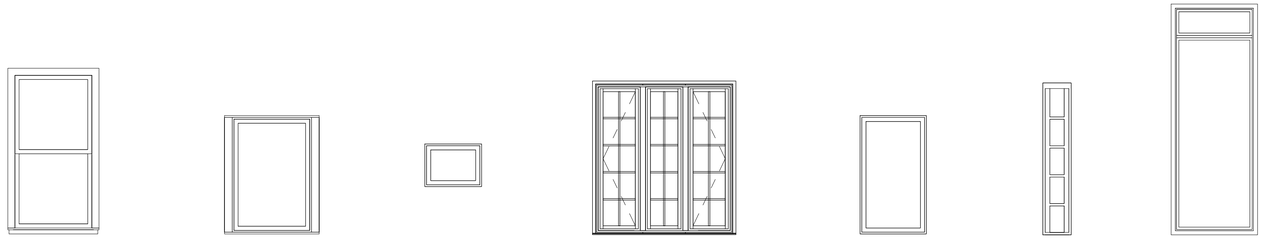
Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - FIRST FLOOR

A-702

Window Schedule - First Floor 2

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
FIRST FLOOR										
115	2' - 10"	2' - 6"	D	4	CASEMENT	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	CURRENTLY INOPERABLE. INSTALL OPERABLE CASEMENT WINDOW.
116	2' - 10"	2' - 6"	D	4	CASEMENT	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	CURRENTLY INOPERABLE. INSTALL OPERABLE CASEMENT WINDOW.
117	2' - 10"	2' - 6"	D	4	CASEMENT	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	CURRENTLY INOPERABLE. INSTALL OPERABLE CASEMENT WINDOW.
118	2' - 4"	3' - 6"	A	4	DOUBLE HUNG		Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	DID NOT ACCESS FROM INTERIOR
119	2' - 4"	3' - 6"	A	4	DOUBLE HUNG		Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	DID NOT ACCESS FROM INTERIOR
120	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
121	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
122	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
123	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
124	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	SASHES NOT ALIGNED
125	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
126	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD		SCREEN ON EXTERIOR. TRIM DOES NOT MATCH EXISTING.
127	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	
128	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	
129	1' - 0"	5' - 3"	H	2	FIXED SIDELITE	PAINTED	N	WOOD		
130	1' - 0"	5' - 3"	H	2	FIXED SIDELITE	PAINTED	N	WOOD		
131	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOWS
132	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOWS



WINDOW TYPES - FIRST FLOOR
3/8" = 1'-0"

WINDOW GENERAL NOTES

A. WINDOW DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL WINDOW OPENING DIMENSIONS.

B. CONTRACTOR TO COMPLETE PAINT ANALYSIS TO DETERMINE HISTORIC INTERIOR AND EXTERIOR COLOR/FINISH. SUBMIT PAINT DRAW DOWNS TO OWNER AND ARCHITECT FOR REVIEW. FINAL COLOR SELECTIONS BY OWNER AND ARCHITECT.

C. ASSUME 100% NEW HARDWARE SETS AT ALL REPLACEMENT WINDOWS.
   a. AT EXISTING WINDOWS TO REMAIN, REPLACE HARDWARE COMPONENTS AS NECESSARY FOR WINDOW OPERATION

D. CONTRACTOR TO PROVIDE MOCK-UP OF CASEMENT WINDOW REHABILITATION FOR REVIEW AND APPROVAL BY ARCHITECT AND OWNER.

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G. NOTE THAT ALL WINDOWS TO BE REPLACED ARE NOT ORIGINAL, BUT HAVE BEEN PREVIOUSLY REPLACED (CIRCA 1998). ORIGINAL HISTORIC WINDOWS WILL BE REPAIRED.

WINDOW REPAIR CLASS

CLASS 1: ROUTINE MAINTENANCE (SASH REMAINS IN SITU):

- SAND AND SCRAPE PAINT (ALL WOODWORK. INTERIOR AND EXTERIOR).
- REPLACE MISSING OR DAMAGED WEATHER STRIPPING
- MINOR PUTTY REPLACEMENT/ REPAIR.
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- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

- ALL REPAIR CLASS 1 WORK
- DE-GLAZE SASH: REMOVE PUTTY, PREP SASH, PRIME & REPLACE PUTTY WITH NEW
- REPAIR AREAS OF DETERIORATION / DAMAGE
- REMOVE AND REPLACE SEALANT BETWEEN BRICK MOLD AND BRICK

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- MATCH HISTORIC IN ALL MANNERS
- REHABILITATE EXTERIOR WOOD SILLS
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-REFER TO SHEET A-708 FOR WINDOW DETAILS

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CERTIFICATE OF APPROPRIATENESS

Geneva Lodge

2305 W. Berry Ave.
Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006

No.	Description	Date

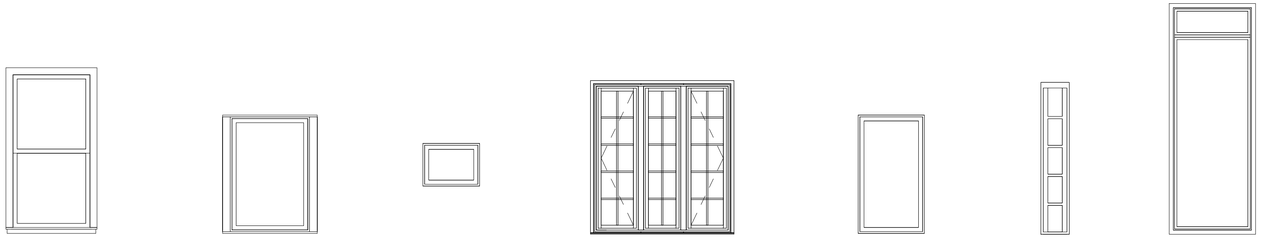
Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - FIRST FLOOR

A-703

Window Schedule - First Floor 3

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
FIRST FLOOR										
133	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOWS
134	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOWS
135	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOWS
136	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE SILL AND BOTTOM RAIL FOR ALL 3 UNITS. REPLACE INTERIOR STORM WINDOWS
137	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOWS
138	4' - 10"	5' - 3"	E	2	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	REPLACE INTERIOR STORM WINDOW
139	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
140	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
141	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	



WINDOW TYPES - FIRST FLOOR
3/8" = 1'-0"

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WINDOW REPAIR CLASS

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- SAND AND SCRAPE PAINT (ALL WOODWORK. INTERIOR AND EXTERIOR).
- REPLACE MISSING OR DAMAGED WEATHER STRIPPING
- MINOR PUTTY REPLACEMENT/ REPAIR.
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- PREP, PRIME AND PAINT ALL INTERIOR AND EXTERIOR WOODWORK.
- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

- ALL REPAIR CLASS 1 WORK
- DE-GLAZE SASH: REMOVE PUTTY, PREP SASH, PRIME & REPLACE PUTTY WITH NEW
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- REMOVE AND REPLACE SEALANT BETWEEN BRICK MOLD AND BRICK

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No.	Description	Date

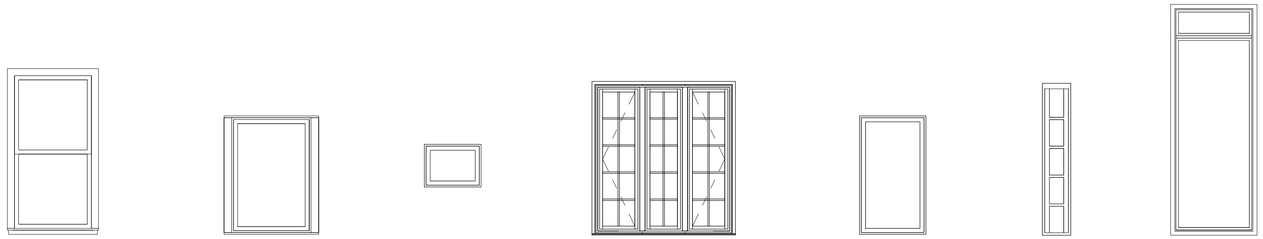
Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - FIRST FLOOR

A-704

Window Schedule - First Floor 4

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
FIRST FLOOR										
142	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
143	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
144	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
145	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
146	3' - 0"	4' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
147	2' - 6"	3' - 6"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	DUTCHMAN REPAIR AT LOWER EXTERIOR TRIM
148	2' - 6"	3' - 6"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	DUTCHMAN REPAIR AT LOWER EXTERIOR TRIM
149	4' - 10"	5' - 3"	E	2	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIOR CRANKS NEEDED.	
150	4' - 10"	5' - 3"	E	3	CASEMENT / FIXED / CASEMENT	PAINTED	N	WOOD	CASEMENT HARDWARE TO REMAIN. INTERIORCRANKS NEEDED.	RE-HAND SOUTH SASH
151	3' - 4"	3' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REHABILITATE EXTERIOR WOOD TRIM
152	3' - 4"	3' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	INSTALL TEXTURED GLAZING
153	3' - 4"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REMOVE ELECTRICAL WIRE AT TRIM.
154	3' - 4"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
155	3' - 4"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
156	2' - 9"	7' - 10"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL AND LOWER SECTION OF FRAME; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS
157	2' - 9"	7' - 10"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL AND LOWER SECTION OF FRAME; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS
158	2' - 9"	7' - 10"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL AND LOWER SECTION OF FRAME; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS



WINDOW TYPES - FIRST FLOOR
3/8" = 1'-0"

WINDOW GENERAL NOTES

A. WINDOW DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL WINDOW OPENING DIMENSIONS.

B. CONTRACTOR TO COMPLETE PAINT ANALYSIS TO DETERMINE HISTORIC INTERIOR AND EXTERIOR COLOR/FINISH. SUBMIT PAINT DRAW DOWNS TO OWNER AND ARCHITECT FOR REVIEW. FINAL COLOR SELECTIONS BY OWNER AND ARCHITECT.

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- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

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Case No. COA22-0006

No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - FIRST FLOOR

A-705

Window Schedule - First Floor 5

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
FIRST FLOOR										
159	3' - 5"	6' - 6"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS
160	3' - 5"	6' - 6"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS
161	3' - 5"	6' - 6"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS
162	3' - 5"	6' - 6"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL; REPLACE SCREEN; PREP, PRIME, AND PAINT WOOD COMPONENTS
163	2' - 9"	7' - 10"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL AND LOWER SECTION OF FRAME; PREP, PRIME, AND PAINT WOOD COMPONENTS
164	2' - 9"	7' - 10"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL AND LOWER SECTION OF FRAME; PREP, PRIME, AND PAINT WOOD COMPONENTS
165	2' - 9"	7' - 10"	I	3	FIXED SCREEN	PAINTED	N	WOOD	NONE - FIXED SCREEN PANEL	REPLACE BOTTOM RAIL AND LOWER SECTION OF FRAME; PREP, PRIME, AND PAINT WOOD COMPONENTS
166	2' - 10"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD		
167	2' - 10"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD		
168	2' - 10"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD		
169	2' - 10"	5' - 6"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	

WINDOW GENERAL NOTES

A. WINDOW DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL WINDOW OPENING DIMENSIONS.

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- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

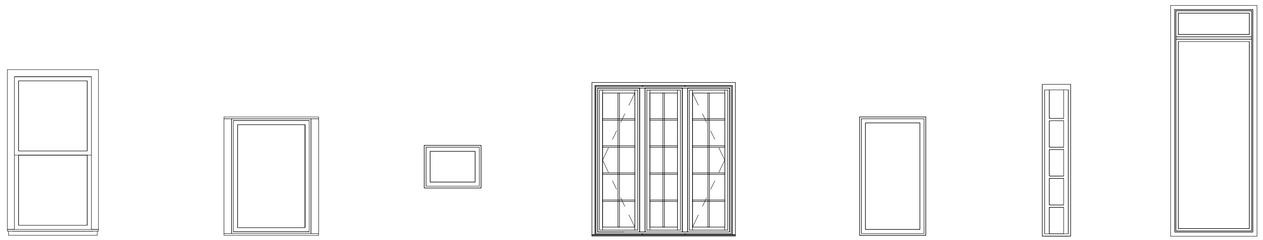
- ALL REPAIR CLASS 1 WORK
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- REPAIR AREAS OF DETERIORATION / DAMAGE
- REMOVE AND REPLACE SEALANT BETWEEN BRICK MOLD AND BRICK

CLASS 3: SPLICES & PARTS REPLACEMENT:

- ALL REPAIR CLASS 1 & 2, PLUS
- REPLACE MISSING OR DAMAGED COMPONENTS AS NOTED IN SCHEDULE IN KIND.

CLASS 4: WINDOW REPLACEMENT:

- MATCH HISTORIC IN ALL MANNERS
- REHABILITATE EXTERIOR WOOD SILLS
-REHABILITATE TRIM COMPONENTS TO REMAIN
-REFER TO SHEET A-708 FOR WINDOW DETAILS



WINDOW TYPES - FIRST FLOOR
3/8" = 1'-0"

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P.O. Box 476
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www.formworksdesigngroup.com
303.598.6545

CERTIFICATE OF APPROPRIATENESS

Geneva Lodge

2305 W. Berry Ave.
Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006

No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - FIRST FLOOR

A-706

Window Schedule - Second Floor

Mark	Width	Height	Window Type	Repair Class	Window Operation Type	Interior Finishes	Previously Replaced (Y/N)	Frame/Sash Material	Hardware Comments	Comments
SECOND FLOOR										
200	2' - 0"	5' - 0"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
201	3' - 9"	5' - 0"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
202	2' - 0"	5' - 0"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
203	1' - 10"	2' - 0"	D	4	CASEMENT	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS & ORIGINAL INTERIOR HARDWARE TO REMAIN	REGLAZED WINDOW. MAKE OPERABLE.
204	3' - 4"	4' - 0"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING
205	3' - 4"	4' - 0"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING
206	3' - 4"	4' - 0"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING
207	3' - 4"	5' - 0"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	
208	3' - 4"	5' - 0"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REHABILITATE TRIM
209	3' - 0"	3' - 10"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING
210	3' - 0"	3' - 10"	A	4	DOUBLE HUNG	STAINED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING
211	3' - 0"	3' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING; GLAZE WITH TEXTURED GLASS
212	3' - 0"	3' - 10"	A	4	DOUBLE HUNG	PAINTED	Y	WOOD	EXIST EXT SCREEN HANGERS TO REMAIN	REPLACE EXTERIOR SILL AND FLASHING; GLAZE WITH TEXTURED GLASS

WINDOW GENERAL NOTES

A. WINDOW DIMENSIONS VARY THROUGHOUT BUILDING. DIMENSIONS GIVEN ARE TAKEN FROM INTERIOR. FIELD VERIFY ALL WINDOW OPENING DIMENSIONS.

B. CONTRACTOR TO COMPLETE PAINT ANALYSIS TO DETERMINE HISTORIC INTERIOR AND EXTERIOR COLOR/FINISH. SUBMIT PAINT DRAW DOWNS TO OWNER AND ARCHITECT FOR REVIEW. FINAL COLOR SELECTIONS BY OWNER AND ARCHITECT.

C. ASSUME 100% NEW HARDWARE SETS AT ALL REPLACEMENT WINDOWS.
   a. AT EXISTING WINDOWS TO REMAIN, REPLACE HARDWARE COMPONENTS AS NECESSARY FOR WINDOW OPERATION

D. CONTRACTOR TO PROVIDE MOCK-UP OF CASEMENT WINDOW REHABILITATION FOR REVIEW AND APPROVAL BY ARCHITECT AND OWNER.

E. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR NEW WINDOWS

F. CONTRACTOR TO PROVIDE FINISH AND HARDWARE SAMPLES FOR SELECTION BY ARCHITECT AND OWNER.

G. NOTE THAT ALL WINDOWS TO BE REPLACED ARE NOT ORIGINAL, BUT HAVE BEEN PREVIOUSLY REPLACED (CIRCA 1998). ORIGINAL HISTORIC WINDOWS WILL BE REPAIRED.

WINDOW REPAIR CLASS

CLASS 1: ROUTINE MAINTENANCE (SASH REMAINS IN SITU):

- SAND AND SCRAPE PAINT (ALL WOODWORK. INTERIOR AND EXTERIOR).
- REPLACE MISSING OR DAMAGED WEATHER STRIPPING
- MINOR PUTTY REPLACEMENT/ REPAIR.
- SEAL WINDOW IN CLOSED POSITION. ENSURE SASHES ALIGN AT MEETING RAIL. PROVIDE WOOD BLOCKS AS REQ'D.
- REPLACE BROKEN GLAZING - QUANTITY OF PANES INDICATED ON SCHEDULE (NOTE MATCH HISTORIC PATTERNED GLASS WHERE EXTANT)
- PREP, PRIME AND PAINT ALL INTERIOR AND EXTERIOR WOODWORK.
- REMOVE / REPLACE EXTERIOR SEALANT
- REMOVE PAINT FROM (E) GLAZING. COMPLETE FINAL CLEAN.

CLASS 2: STABILIZATION (REMOVE SASH AND RESTORE IN SHOP, RESTORE FRAME IN PLACE):

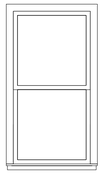
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- REFER TO SHEET A-708 FOR WINDOW DETAILS



A



D

WINDOW TYPES - SECOND FLOOR
3/8" = 1'-0"

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CERTIFICATE OF APPROPRIATENESS

Geneva Lodge

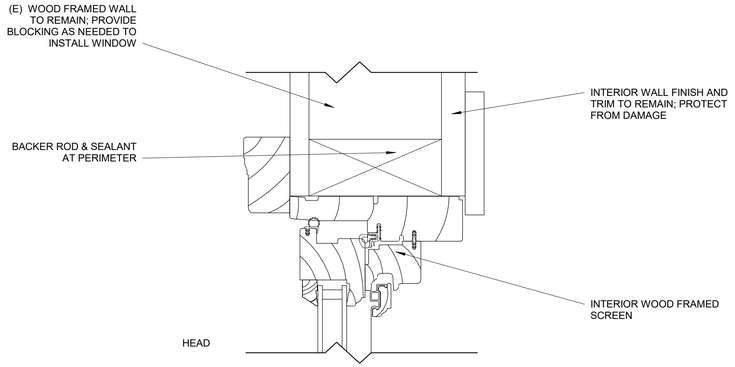
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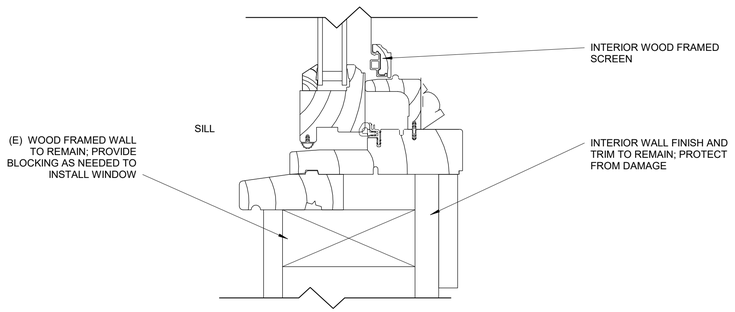
No.	Description	Date

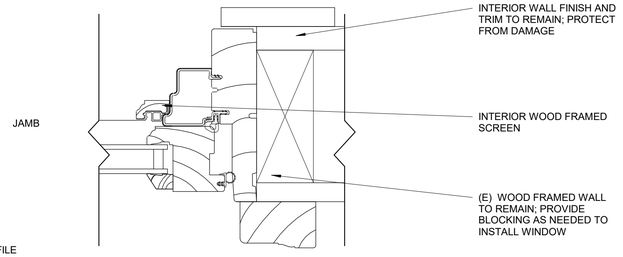
Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	As indicated

WINDOW SCHEDULE & TYPES - SECOND FLOOR

A-707

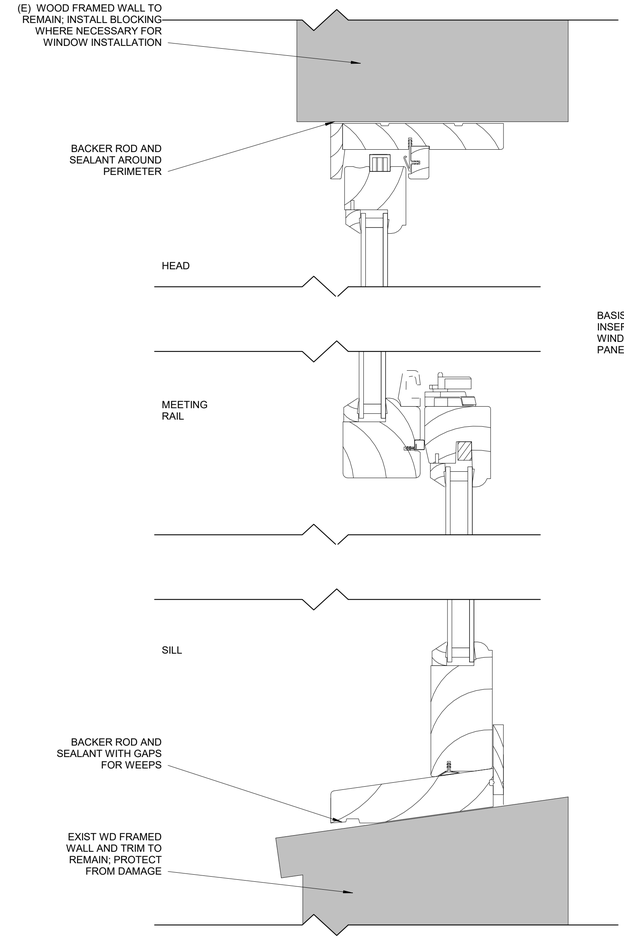




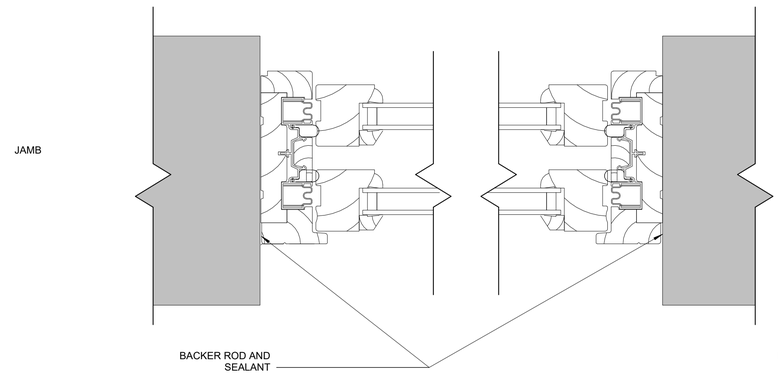


BASIS OF DESIGN: MARVIN ULTIMATE WOOD CASEMENT WITH PUTTY PROFILE AND DUAL PANE GLASS.

2 CASEMENT WINDOW DETAILS
6" = 1'-0"



BASIS OF DESIGN: MARVIN ULTIMATE INSERT DOUBLE-HUNG ALL WOOD WINDOW WITH PUTTY PROFILE AND DUAL PANE GLASS.



BASIS OF DESIGN: MARVIN ULTIMATE INSERT DOUBLE-HUNG ALL WOOD WINDOW WITH PUTTY PROFILE AND DUAL PANE GLASS.

1 DOUBLE HUNG WINDOW DETAILS
6" = 1'-0"

form + works
design group, LLC
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CERTIFICATE OF APPROPRIATENESS

Geneva Lodge

2305 W. Berry Ave.
Littleton Historic Landmark and National Register Landmark
Case No. COA22-0006

No.	Description	Date

Project Number	22-005
Date	SEPTEMBER 9, 2022
Drawn By	KS
Checked By	JR
Scale	6" = 1'-0"

WINDOW DETAILS

A-708

Geneva Lodge
Exterior Rehabilitation

2305 West Berry Avenue
Littleton, Colorado 80120

Form+Works Project No. 22-005

CONSTRUCTION DOCUMENTS FOR REVIEW

May 6, 2022

SPECIFICATIONS

DIVISION 01 THROUGH DIVISION 33

form+works
design group, LLC

P.O. Box 476
Eastlake, Colorado 80614
(303) 598-6545

SPECIFICATION TABLE OF CONTENTS

FOR

Geneva Lodge Exterior Rehabilitation
Littleton, Colorado

FWDG Project No. 22-005

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SECTION 01 2900	PAYMENT PROCEDURES
SECTION 01 3100	PROJECT MANAGEMENT AND COORDINATION
SECTION 01 3200	CONSTRUCTION PROGRESS DOCUMENTATION
SECTION 01 3233	PHOTOGRAPHIC DOCUMENTATION
SECTION 01 3300	SUBMITTAL PROCEDURES
SECTION 01 3591	SPECIAL PROCEDURES FOR HISTORIC TREATMENT
SECTION 01 4000	QUALITY REQUIREMENTS
SECTION 01 4200	REFERENCES
SECTION 01 5000	TEMPORARY FACILITIES AND CONTROLS
SECTION 01 6000	PRODUCT REQUIREMENTS
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DIVISION 2 - SITE WORK

NOT USED.

DIVISION 3 - CONCRETE

NOT USED.

DIVISION 4 - MASONRY

SECTION 04 0322	HISTORIC BRICK UNIT MASONRY REPAIR
SECTION 04 0323	HISTORIC BRICK UNIT MASONRY REPOINTING

DIVISION 5 - METALS

NOT USED.

DIVISION 6 - WOOD AND PLASTICS

SECTION 06 0312	HISTORIC WOOD REPAIR
SECTION 06 1000	ROUGH CARPENTRY
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DIVISION 7 - THERMAL AND MOISTURE PROTECTION

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SECTION 07 9200 JOINT SEALANTS

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SECTION 08 0352 HISTORIC TREATMENT OF WOOD WINDOWS
SECTION 08 5200 WOOD WINDOWS

DIVISION 9 - FINISHES

SECTION 09 9100 PAINTING

DIVISION 10 - SPECIALTIES

NOT USED.

DIVISION 11 - EQUIPMENT

NOT USED.

DIVISION 12 - FURNISHINGS

NOT USED.

DIVISION 13 - SPECIAL CONDITIONS

NOT USED.

DIVISION 14 - CONVEYING SYSTEMS

NOT USED.

DIVISION 21 - FIRE SUPPRESSION

NOT USED.

DIVISION 22 - PLUMBING

NOT USED.

DIVISION 23 - HEATING VENTILATING AND AIR CONDITIONING

NOT USED.

DIVISION 26 - ELECTRICAL

NOT USED.

DIVISION 27 - COMMUNICATIONS

NOT USED.

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

NOT USED.

DIVISION 31 - EARTHWORK

NOT USED.

DIVISION 32 - EXTERIOR IMPROVEMENTS

NOT USED.

DIVISION 33 - UTILITIES

NOT USED.

END OF TABLE OF CONTENTS

SECTION 01 1000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Work by Owner.
4. Work under separate contracts.
5. Purchase contracts.
6. Owner-furnished products.
7. Contractor-furnished, Owner-installed products.
8. Access to site.
9. Coordination with occupants.
10. Work restrictions.
11. Specification and Drawing conventions.
12. Miscellaneous provisions.

B. Related Requirements:

1. Section 01 5000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

A. Project Identification: Geneva Lodge Exterior Rehabilitation.

1. Project Location: 2305 West Berry Avenue, Littleton, CO 80120.

B. Owner: City of Littleton, 1800 W Belleview Avenue, Littleton, CO 80120.

1. Owner's Representative: Justin Yeo, Project Manager; 303.795.3958 (office), 303.549.9297 (cell), jyeo@littletongov.org

C. Architect: Form+Works Design Group, LLC; P.O. Box 476, Eastlake, CO 80614.
1. Architect’s Representative: Jessica Reske, AIA, LEED AP; 414.477.5348 (cell), jessica@formworksdesigngroup.com

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. Site Rehabilitation.
2. Roof Drainage Rehabilitation.
3. Exterior Wood Siding and Trim Rehabilitation.
4. Exterior Brick Masonry Rehabilitation.
5. Exterior Wood Window and Door Rehabilitation and Replacement.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.5 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits: Confine construction operations to work areas identified on the drawings.
2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.

    a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.6 COORDINATION WITH OCCUPANTS

A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

1.7 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7 a.m. to 6 p.m., Monday through Friday, unless otherwise indicated.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify Owner not less than two days in advance of proposed utility interruptions.
2. Obtain Owner's written permission before proceeding with utility interruptions.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Owner not less than two days in advance of proposed disruptive operations.
2. Obtain Owner's written permission before proceeding with disruptive operations.

E. Restricted Substances: Use of tobacco products and other controlled substances within the existing building is not permitted.

F. Employee Identification: Owner will provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

G. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with Owner's representative.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1000

SECTION 01 2500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

1.2 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.3 ACTION SUBMITTALS

A. Substitution Requests: Submit one electronic copy of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.

h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES or IBC.
j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.5 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.6 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 30 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect

will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.
e. Requested substitution will not adversely affect Contractor's construction schedule.
f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the Work.
h. Requested substitution has been coordinated with other portions of the Work.
i. Requested substitution provides specified warranty.
j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2500

SECTION 01 2600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

B. Related Sections include the following:

(1) Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions" or other mutually agreed upon form.

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

(1) Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.

(2) Within 14 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

(a) Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

(b) Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

(c) Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Requests for Information: When latent or other unforseen conditions require clarifications or modifications to the Contract Documents, the Contractor may

request additional information, clarification and/or modification instructions by submitting a Request for Information to the Architect.

(1) Number each Request for Information consecutively.

(2) Include a statement outlining the reasons for the request. Propose suggested remedies or suggestions, if possible. Describe the work effected and potential for delays, if any.

(3) The Architect will respond to each Request for Information in written form by issuing additional instructions, clarifications or drawings. If it is expected that these additional instructions will affect the Contract Sum or Contract Time, the Architect will issue a Change Order Request to accompany the additional instructions.

(a) The Architect will respond to each Request for Information within seven calendar days of receiving Request for Information from Contractor.

(4) Respond to Change Order Requests issued by the above procedure as described in Owner-Initiated Proposal Requests above.

C. Contractor-Initiated Proposals: Where latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change prior to commencement of work for proposed change.

(1) Include a statement outlining 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 the Contract Time.

(2) Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

(3) Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

(4) Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

(5) Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

D. Proposal Request Form: Use AIA Document G709 or other approved form for Proposal Requests.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701 or similar form.

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714 or similar form. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

(1) Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the 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 change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

END OF SECTION 01 2600

SECTION 01 2900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.3 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule. Cost-loaded Critical Path Method Schedule may serve to satisfy requirements for the schedule of values.

1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
3. Sub-schedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values coordinated with each phase of payment.

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the schedule of values:

    a. Project name and location.
    b. Name of Architect.
    c. Architect's Project number.
    d. Contractor's name and address.
    e. Date of submittal.

2. Arrange schedule of values consistent with format of AIA Document G703.
3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:

    a. Related Specification Section or Division.
    b. Description of the Work.

c. Name of subcontractor.
d. Name of manufacturer or fabricator.
e. Name of supplier.
f. Change Orders (numbers) that affect value.
g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.

1) Labor.
2) Materials.
3) Equipment.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

a. Differentiate between items stored on-site and items stored off-site.

6. Overhead Costs: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
7. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
8. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.4 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

1. Other Application for Payment forms proposed by the Contractor shall be acceptable to Architect and Owner. Submit forms for approval with initial submittal of schedule of values.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:

    a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

F. Transmittal: Submit one electronic scan of signed and notarized original copies of each Application for Payment to Architect by e-mail. Application shall include waivers of lien and similar attachments if required.

G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.

2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
5. Products list (preliminary if not final).
6. Submittal schedule (preliminary if not final).
7. List of Contractor's staff assignments.
8. List of Contractor's principal consultants.
9. Copies of building permits.
10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
11. Initial progress report.
12. Report of preconstruction conference.

I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706.
5. AIA Document G706A.
6. AIA Document G707.
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2900

SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General coordination procedures.
2. Coordination drawings.
3. RFIs.
4. Digital project management procedures.
5. Project meetings.

1.2 DEFINITIONS

A. BIM: Building Information Modeling.

B. RFI: Request for Information. Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.3 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room, in temporary field office, in web-based Project software directory, and in prominent location in built facility. Keep list current at all times.

1.4 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

1.5 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.

b. Coordinate the addition of trade-specific information to coordination drawings in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
c. Indicate functional and spatial relationships of components.
d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
f. Indicate required installation sequences.
g. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:

1. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.
2. File Submittal Format: Submit or post coordination drawing files using PDF format.

3. Architect will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.

a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
b. Digital Data Software Program: Drawings are available in REVIT or can be exported to CAD.
c. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.

1.6 REQUEST FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.

5. Name of Architect.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Architect.

1. Attachments shall be electronic files in PDF format.

D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.

1. The following Contractor-generated RFIs will be returned without action:

    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for approval of Contractor's means and methods.
    d. Requests for coordination information already indicated in the Contract Documents.
    e. Requests for adjustments in the Contract Time or the Contract Sum.
    f. Requests for interpretation of Architect's actions on submittals.
    g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal.

    a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:

1. Project name.
2. Name and address of Contractor.

3. Name and address of Architect.
4. RFI number including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

1.7 DIGITAL PROJECT MANAGEMENT PROCEDURES

A. Use of Architect's Digital Data Files: Digital data files of Architect's BIM model or CAD drawings can be requested from the Architect for Contractor's use during construction.

1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
3. Digital Drawing Software Program: Contract Drawings are available in REVIT or can be exported to CAD
4. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.

    a. Subcontractors, and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of Agreement acceptable to Owner and Architect.

B. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.8 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of 10 working days prior to meeting.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Architect, History Colorado and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:

a. Responsibilities and personnel assignments.
b. Tentative construction schedule.
c. Phasing.
d. Critical work sequencing and long lead items.
e. Designation of key personnel and their duties.
f. Lines of communications.
g. Use of web-based Project software.
h. Procedures for processing field decisions and Change Orders.
i. Procedures for RFIs.
j. Procedures for testing and inspecting.
k. Procedures for processing Applications for Payment.
l. Distribution of the Contract Documents.
m. Submittal procedures.
n. Preparation of Record Documents.
o. Use of the premises and existing building.
p. Work restrictions.
q. Working hours.
r. Owner's occupancy requirements.
s. Responsibility for temporary facilities and controls.
t. Procedures for moisture and mold control.
u. Procedures for disruptions and shutdowns.
v. Construction waste management and recycling.
w. Parking availability.
x. Office, work, and storage areas.
y. Equipment deliveries and priorities.
z. First aid.
aa. Security.
bb. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

    a. Contract Documents.
    b. Options.
    c. Related RFIs.
    d. Related Change Orders.
    e. Purchases.
    f. Deliveries.
    g. Submittals.
    h. Review of mockups.
    i. Possible conflicts.
    j. Compatibility requirements.
    k. Time schedules.
    l. Weather limitations.
    m. Manufacturer's written instructions.
    n. Warranty requirements.
    o. Compatibility of materials.
    p. Acceptability of substrates.
    q. Temporary facilities and controls.
    r. Space and access limitations.
    s. Regulations of authorities having jurisdiction.
    t. Testing and inspecting requirements.
    u. Installation procedures.
    v. Coordination with other work.
    w. Required performance results.
    x. Protection of adjacent work.
    y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: Conduct progress meetings at biweekly or intervals approved by Owner and Architect.

1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: In addition to representatives of Owner, History Colorado and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

    a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction 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.

        1) Review schedule for next period.

    b. Review present and future needs of each entity present, including the following:

        1) Interface requirements.
        2) Sequence of operations.
        3) Status of submittals.
        4) Deliveries.
        5) Off-site fabrication.
        6) Access.
        7) Site use.
        8) Temporary facilities and controls.
        9) Progress cleaning.
        10) Quality and work standards.
        11) Status of correction of deficient items.
        12) Field observations.
        13) Status of RFIs.
        14) Status of Proposal Requests.
        15) Pending changes.
        16) Status of Change Orders.
        17) Pending claims and disputes.
        18) Documentation of information for payment requests.

4. Minutes: Contractor will record and distribute the meeting minutes to each party present and to parties requiring information.

    a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 01 3200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Contractor's Construction Schedule.
2. Construction schedule updating reports.
3. Daily construction reports.
4. Material location reports.
5. Site condition reports.
6. Unusual event reports.

1.2 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the schedule of values for completing an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum.

C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Event: The starting or ending point of an activity.

F. Float: The measure of leeway in starting and completing an activity.

1. Float time belongs to Owner.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

G. Resource Loading: The allocation of manpower and equipment necessary for completing an activity as scheduled.

1.3 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file, where indicated.
2. PDF file.

B. Startup construction schedule.

1. Submittal of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.

C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

D. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.

1. Activity Report: List of activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for each activity, sorted in ascending order by activity number and then by early start date, or actual start date if known.
3. Total Float Report: List of activities sorted in ascending order of total float.
4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.

E. Construction Schedule Updating Reports: Submit with Applications for Payment.

F. Daily Construction Reports: Submit at weekly intervals.

G. Material Location Reports: Submit at weekly intervals.

H. Site Condition Reports: Submit at time of discovery of differing conditions.

I. Unusual Event Reports: Submit at time of unusual event.

J. Qualification Data: For scheduling consultant.

1.4 QUALITY ASSURANCE

A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 01 3100 "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's Construction Schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, including phasing, area separations, interim milestones and partial Owner occupancy.
4. Review submittal requirements and procedures.
5. Review time required for review of submittals and resubmittals.
6. Review requirements for tests and inspections by independent testing and inspecting agencies.
7. Review time required for Project closeout.
8. Review and finalize list of construction activities to be included in schedule.
9. Review procedures for updating schedule.

1.5 COORDINATION

A. Coordinate Contractor's Construction Schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.6 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

B. Time Frame: Extend schedule from date established for commencement of the Work to date of final completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each floor or separate area as a separate numbered activity for each main element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

   Submittal Review Time: Include review and resubmittal times indicated in Section 01 3300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
3. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
4. Commissioning Time: Include no fewer than 15 days for commissioning.

5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
3. Products Ordered in Advance: Include a separate activity for each product. Include delivery date. Delivery dates indicated stipulate the earliest possible delivery date.
4. Owner-Furnished Products: Include a separate activity for each product. Include delivery date. Delivery dates indicated stipulate the earliest possible delivery date.
5. Work Restrictions: Show the effect of the following items on the schedule:

    a. Coordination with existing construction.
    b. Limitations of continued occupancies.
    c. Uninterruptible services.
    d. Partial occupancy before Substantial Completion.
    e. Use-of-premises restrictions.
    f. Provisions for future construction.
    g. Seasonal variations.
    h. Environmental control.

6. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:

    a. Structural completion.
    b. Temporary enclosure and space conditioning.
    c. Permanent space enclosure.
    d. Completion of mechanical installation.
    e. Completion of electrical installation.
    f. Substantial Completion.

E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.

F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and the Contract Time.

G. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate final completion percentage for each activity.

H. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

I. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules 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 performance of construction activities.

1.7 GANTT-CHART SCHEDULE REQUIREMENTS

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for commencement of the Work.

1. Base schedule on the startup construction schedule and additional information received since the start of Project.

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

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

1.8 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.

4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions, including presence of rain or snow.
7. Testing and inspection.
8. Accidents.
9. Meetings and significant decisions.
10. Unusual events.
11. Stoppages, delays, shortages, and losses.
12. Meter readings and similar recordings.
13. Emergency procedures.
14. Orders and requests of authorities having jurisdiction.
15. Change Orders received and implemented.
16. Construction Change Directives received and implemented.
17. Services connected and disconnected.
18. Equipment or system tests and startups.
19. Partial completions and occupancies.
20. Substantial Completions authorized.

B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.
2. Material stored prior to previous report and since removed from storage and installed.
3. Material stored following previous report and remaining in storage.

C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

D. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

1. Submit unusual event reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3200

SECTION 01 3233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.
4. Preconstruction video recordings.
5. Periodic construction video recordings.

1.2 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

B. Digital Photographs: Submit image files within three days of taking photographs.

1. Submit photos by uploading to web-based project software site. Include copy of key plan indicating each photograph's location and direction.
2. Identification: Provide the following information with each image description in web-based project software site:

a. Name of Project.
b. Name and contact information for photographer.
c. Name of Architect.
d. Name of Contractor.
e. Date photograph was taken.
f. Description of location, vantage point, and direction.
g. Unique sequential identifier keyed to accompanying key plan.

1.3 FORMATS AND MEDIA

A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels ,and with vibration-reduction technology. Use flash in low light levels or backlit conditions.

B. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

C. Metadata: Record accurate date and time from camera.

D. File Names: Name media files with date, Project area and sequential numbering suffix.

1.4 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs with maximum depth of field and in focus.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.

1. Flag construction limits before taking construction photographs.
2. Take a minimum of 20 photographs to show existing conditions adjacent to property before starting the Work.
3. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

C. Periodic Construction Photographs: Take a minimum of 20 photographs weekly. Select vantage points to show status of construction and progress since last photographs were taken.

D. Final Completion Construction Photographs: If requested by Owner or Architect, take up to 50 photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.

E. Additional Photographs: Architect may request photographs in addition to periodic photographs specified.

1. Three days' notice will be given, where feasible.
2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:

a. Special events planned at Project site.
b. Immediate follow-up when on-site events result in construction damage or losses.
c. Photographs to be taken at fabrication locations away from Project site.
d. Substantial Completion of a major phase or component of the Work.
e. Extra record photographs at time of final acceptance.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3233

SECTION 01 3300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.3 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

3. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal Category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.

1.4 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Contractor.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
8. Category and type of submittal.
9. Submittal purpose and description.
10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
11. Drawing number and detail references, as appropriate.
12. Indication of full or partial submittal.
13. Location(s) where product is to be installed, as appropriate.
14. Other necessary identification.
15. Remarks.
16. Signature of transmitter.

B. Options: Identify options requiring selection by Architect.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. PDF Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

1.5 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Email: Prepare submittals as PDF package, and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect.

    a. Architect will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.

5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.6 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.
    f. Application of testing agency labels and seals.
    g. Notation of coordination requirements.
    h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams that show factory-installed wiring.
    b. Printed performance curves.
    c. Operational range diagrams.
    d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Identification of products.
    b. Schedules.
    c. Compliance with specified standards.
    d. Notation of coordination requirements.
    e. Notation of dimensions established by field measurement.
    f. Relationship and attachment to adjoining construction clearly indicated.
    g. Seal and signature of professional engineer if specified.

C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

a. Project name and submittal number.
b. Generic description of Sample.
c. Product name and name of manufacturer.
d. Sample source.
e. Number and title of applicable Specification Section.
f. Specification paragraph number and generic name of each item.

3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.
4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.

        1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
        2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.

E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

F. Certificates:

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

G. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

    a. Name of evaluation organization.
    b. Date of evaluation.
    c. Time period when report is in effect.
    d. Product and manufacturers' names.
    e. Description of product.
    f. Test procedures and results.
    g. Limitations of use.

1.7 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Contractor's Approval: Indicate Contractor's approval for each submittal with indication in web-based Project software. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

    1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.8 ARCHITECT'S REVIEW

A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return it.

    1. PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action.

B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Architect will return without review submittals received from sources other than Contractor.

F. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3300

SECTION 01 3591 - HISTORIC TREATMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general protection and treatment procedures for designated historic spaces, areas, rooms, and surfaces in Project.

1.2 DEFINITIONS

A. Consolidate: To strengthen loose or deteriorated materials in place.

B. Design Reference Sample: A sample that represents Architect's pre-bid selection of work to be matched; it may be existing work or work specially produced for Project.

C. Dismantle: To disassemble or detach a historic item from a surface, or a non-historic item from a historic surface, using gentle methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

D. Historic: Spaces, areas, rooms, surfaces, materials, finishes, and overall appearance that are important to the successful rehabilitation as determined by Architect.

E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect.

F. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.

G. Reinstall: To protect removed or dismantled item, repair and clean it as indicated for reuse, and reinstall it in original position, or where indicated.

H. Remove: To take down or detach a non-historic item located within a historic space, area, or room, using methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

I. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

J. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.

K. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.

L. Reproduce: To fabricate a new item, accurate in detail to the original, and from either the same or a similar material as the original, unless otherwise indicated.

M. Restore: To consolidate, replicate, reproduce, repair, and refinish as required to achieve the indicated results.

N. Retain: To keep existing items that are not to be removed or dismantled.

O. Reversible: New construction work, treatments, or processes that can be removed or undone in the future without damaging historic materials unless otherwise indicated.

P. Salvage: To protect removed or dismantled items and deliver them to Owner[ready for reuse].

Q. Stabilize: To provide structural reinforcement of unsafe or deteriorated items while maintaining the essential form as it exists at present; also, to reestablish a weather-resistant enclosure.

R. Strip: To remove existing finish down to base material unless otherwise indicated.

1.3 COORDINATION

A. Historic Treatment Sub-schedule: A construction schedule coordinating the sequencing and scheduling of historic treatment work for entire Project, including each activity to be performed in historic spaces, areas, and rooms, and on historic surfaces; and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for historic treatment work.

1. Schedule construction operations in sequence required to obtain best historic treatment results.
2. Coordinate sequence of historic treatment work activities to accommodate the following:
   a. Owner's partial occupancy of completed Work.
   b. Other known work in progress.
   c. Tests and inspections.
3. Detail sequence of historic treatment work, with start and end dates.
4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
5. Use of elevator and stairs.
6. Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use. Do not use such equipment without certification from Contractor's professional engineer that the structure can support the imposed loadings without damage.

1.4 PROJECT MEETINGS FOR HISTORIC TREATMENT

A. Preliminary Historic Treatment Conference: Before starting historic treatment work, conduct conference at project site.

1. Attendees: In addition to representatives of Owner, Architect, and Contractor, testing service representative, historic treatment specialists, chemical-cleaner manufacturer(s), and installers whose work interfaces with or affects historic treatment shall be represented at the meeting.

2. Agenda: Discuss items of significance that could affect progress of historic treatment work, including review of the following:

    a. Historic Treatment Sub-schedule: Discuss and finalize; verify availability of materials, historic treatment specialists' personnel, equipment, and facilities needed to make progress and avoid delays.
    b. Fire-prevention plan.
    c. Governing regulations.
    d. Areas where existing construction is to remain and the required protection.
    e. Hauling routes.
    f. Sequence of historic treatment work operations.
    g. Storage, protection, and accounting for salvaged and specially fabricated items.
    h. Existing conditions, staging, and structural loading limitations of areas where materials are stored.
    i. Qualifications of personnel assigned to historic treatment work and assigned duties.
    j. Requirements for extent and quality of work, tolerances, and required clearances.
    k. Methods and procedures related to historic treatments, including product manufacturers' written instructions and precautions regarding historic treatment procedures and their effects on materials, components, and vegetation.
    l. Embedded work such as flashings and lintels, special details, collection of wastes, protection of occupants and the public, and condition of other construction that affect the Work or will affect the work.

3. Reporting: Record conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.

B. Coordination Meetings: Conduct specifically for historic treatment work at intervals deemed appropriate by Architect and Owner. Coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

1. Attendees: In addition to representatives of Owner, Architect, and Contractor, each historic treatment specialist, supplier, installer, and other entity concerned with progress or involved in planning, coordination, or performance of historic treatment work activities shall be represented at these meetings. All participants at conference shall be familiar with Project and authorized to conclude matters relating to historic treatment work.
2. Agenda: Review and correct or approve minutes of previous coordination meeting. Review other items of significance that could affect progress of historic treatment work. Include topics for discussion as appropriate to status of Project.

    a. Historic Treatment Sub-schedule: Review progress since last coordination meeting. Determine whether each schedule item is on time, ahead of schedule, or behind schedule. Determine how construction behind schedule will be expedited with retention of quality; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities are completed within the Contract Time.
    b. Schedule Updating: Revise Contractor's Historic Treatment Sub-schedule after each coordination meeting where revisions to schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.

c. Review present and future needs of each entity present, including review items listed in the "Preliminary Historic Treatment Conference" Paragraph in this article and the following:

1) Interface requirements of historic treatment work with other Project Work.
2) Status of submittals for historic treatment work.
3) Access to historic treatment work.
4) Effectiveness of fire-prevention plan.
5) Quality and work standards of historic treatment work.
6) Change Orders for historic treatment work.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.5 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered or uncovered during the Work, regardless of whether they were previously documented, remain Owner's property.

1. Dismantle and salvage each item or object and protect it from damage, then promptly deliver it to Owner where directed.
2. Coordinate with Owner's archaeologist who will establish special procedures for dismantling and salvaging.

1.6 INFORMATIONAL SUBMITTALS

A. Historic Treatment Sub-schedule:

1. Submit historic treatment sub-schedule within seven days of date established for commencement of historic treatment work.

B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by Contractor's historic treatment operations.

C. Historic Treatment Program: Submit 30 days before work begins.

D. Fire-Prevention Plan: Submit 30 days before work begins.

1.7 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: An experienced firm regularly engaged in historic treatments similar in nature, materials, design, and extent to the work as specified in each Section and that has completed a minimum of five recent projects with a record of successful in-service performance that demonstrates the firm's qualifications to perform this work.

1. Field Supervisor Qualifications: Full-time supervisors experienced in historic treatment work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on site when historic treatment work begins and during its progress. Supervisors shall not be changed during Project except for causes beyond control of the specialist firm.

    a. Construct new mockups of required work whenever a supervisor is replaced.

B. Historic Treatment Program: Prepare a written plan for historic treatment for whole Project, including each phase or process and protection of surrounding materials during operations. Describe in detail the materials, methods, and equipment to be used for each phase of work. Show compliance with indicated methods and procedures specified in this and other Sections. Coordinate this whole-Project historic treatment program with specific requirements of programs required in other historic treatment Sections.

1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.

C. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-control devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include fire-watch personnel's training, duties, and authority to enforce fire safety.

D. Safety and Health Standard: ANSI/ASSE A10.6.

1.8 STORAGE AND HANDLING OF HISTORIC MATERIALS

A. Salvaged Historic Materials:

1. Clean loose dirt and debris from salvaged historic items unless more extensive cleaning is indicated.
2. Pack or crate items after cleaning; cushion against damage during handling. Label contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

B. Historic Materials for Reinstallation:

1. Repair and clean historic items for reuse as indicated.
2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make items functional for use indicated.

C. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after historic treatment and construction work in the vicinity is complete.

D. Storage: Catalog and store historic items within a weathertight enclosure where they are protected from moisture, weather, condensation, and freezing temperatures.

1. Identify each item with a nonpermanent mark to document its original location. Indicate original locations on plans, elevations, sections, or photographs by annotating the identifying marks.
2. Secure stored materials to protect from theft.
3. Control humidity so that it does not exceed 85 percent. Maintain temperatures 5 deg F or more above the dew point.

E. Storage Space:

1. Owner will arrange for limited on-site location(s) for free storage of historic material. This storage space does not include security and climate control for stored material.
2. Arrange for off-site locations for storage and protection of historic material that cannot be stored and protected on-site.

1.9 FIELD CONDITIONS

A. Size Limitations in Historic Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches or more.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 PROTECTION

A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from historic treatment procedures.

1. Use only proven protection methods, appropriate to each area and surface being protected.
2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where historic treatment work is being performed.
3. Erect temporary barriers to form and maintain fire-egress routes.
4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during historic treatment work.
5. Contain dust and debris generated by historic treatment work, and prevent it from reaching the public or adjacent surfaces.

6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.

B. Temporary Protection of Historic Materials:

1. Protect existing historic materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
2. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by Architect.

C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.

D. Utility and Communications Services:

1. Notify Owner, Architect, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by historic treatment work before commencing operations.
2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for historic treatment work.
3. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.

E. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is functioning properly.

1. Prevent solids such as stone or mortar residue or other debris from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from historic treatment work.
2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

3.2 PROTECTION FROM FIRE

A. Follow fire-prevention plan and the following:

1. Comply with NFPA 241 requirements unless otherwise indicated.
2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.

    a. If combustible material cannot be removed, provide fire blankets to cover such materials.

3. Prohibit smoking by all persons within Project work and staging areas.

B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or combustible materials, including

welding, torch-cutting, soldering, brazing, removing paint with heat, or other operations where open flames or implements using high heat or combustible solvents and chemicals are anticipated:

1. Obtain Owner's approval for operations involving use of open-flame or welding or other high-heat equipment. Notify Owner at least 72 hours before each occurrence, indicating location of such work.
2. As far as practicable, restrict heat-generating equipment to shop areas or outside the building.
3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that area is safe.
4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
6. Fire Watch: Before working with heat-generating equipment or combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows:

    a. Train each fire watch in proper operation of fire-control equipment and alarms.
    b. Prohibit fire-watch personnel from other work that would distract from fire-watch duties.
    c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
    d. Have fire-watch personnel perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work in each area to detect hidden or smoldering fires and to ensure that proper fire prevention is maintained.

C. Fire-Control Devices: Provide and maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for type of fire risk in each work area. Ensure that nearby personnel and fire-watch personnel are trained in fire-extinguisher and blanket use.

3.3 PROTECTION DURING APPLICATION OF CHEMICALS

A. Protect motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm or spillage resulting from applications of chemicals and adhesives.

B. Cover adjacent surfaces with protective materials that are proven to resist chemicals selected for Project unless chemicals being used will not damage adjacent surfaces as indicated in historic treatment program. Use covering materials and masking agents that are waterproof and UV resistant and that will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to manufacturer's written instructions. Do not apply liquid masking agents or adhesives to painted or porous surfaces. When no longer needed, promptly remove protective materials.

C. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.

D. Neutralize alkaline and acid wastes and legally dispose of off Owner's property.

E. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

3.4 GENERAL HISTORIC TREATMENT

A. Have historic treatment work performed only by qualified historic treatment specialists.

B. Ensure that supervisory personnel are present when historic treatment work begins and during its progress.

C. Record existing work before each procedure (preconstruction), and record progress during the work. Use digital preconstruction documentation photographs. Comply with requirements in Section 01 3233 "Photographic Documentation."

D. Perform regular inspections of Project site as the Work progresses to detect hazards resulting from historic treatment procedures.

E. Follow the procedures in subparagraphs below and procedures approved in historic treatment program unless otherwise indicated:

1. Retain as much existing material as possible; repair and consolidate rather than replace.
2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
3. Use reversible processes wherever possible.
4. Use historically accurate repair and replacement materials and techniques unless otherwise indicated.
5. Record existing work before each procedure (preconstruction) and progress during the work with digital preconstruction documentation photographs. Comply with requirements in Section 01 3233 "Photographic Documentation."

F. Notify Architect of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.

1. Do not proceed with the work in question until directed by Architect.

G. Where missing features are indicated to be repaired or replaced, provide work with appearance based on accurate duplications rather than on conjecture, subject to approval of Architect.

H. Where work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

I. Identify new and replacement materials and features with permanent marks hidden in the completed Work to distinguish them from original materials. Record a legend of identification marks and the locations of the items on record Drawings.

END OF SECTION 01 3591

SECTION 01 4000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
4. Specific test and inspection requirements are not specified in this Section.

1.2 DEFINITIONS

A. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

B. Field Quality-Control Tests: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

D. Mockups: Full-size physical assemblies that are constructed on-site either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation

tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Integrated Exterior Mockups: Mockups of the exterior envelope constructed on-site as part of permanent construction, consisting of multiple products, assemblies, and subassemblies.

E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

G. Source Quality-Control Tests: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

J. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect[or Construction Manager].

1.3 CONFLICTING REQUIREMENTS

A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for direction before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 ACTION SUBMITTALS

A. Shop Drawings: For integrated exterior mockups.

1. Include plans, sections, and elevations, indicating materials and size of mockup construction.
2. Indicate manufacturer and model number of individual components.
3. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.5 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

B. Qualification Data: For Contractor's quality-control personnel.

C. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

D. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Entity responsible for performing tests and inspections.
3. Description of test and inspection.
4. Identification of applicable standards.
5. Identification of test and inspection methods.
6. Number of tests and inspections required.
7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

E. Reports: Prepare and submit certified written reports and documents as specified.

F. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.6 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice of Award, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's Construction Schedule.

B. Quality-Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.

1. Project quality-control manager may also serve as Project superintendent.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor-performed tests and inspections including Subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.
2. Special inspections required by authorities having jurisdiction and indicated on the Statement of Special Inspections.
3. Owner-performed tests and inspections indicated in the Contract Documents.

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.

F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.7 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, telephone number, and email address of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.

12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

1.8 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

G. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
d. Build in situ mockups using installers who will perform same tasks for Project.
e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups of size indicated.
2. Build mockups in location indicated or, if not indicated, as directed by Architect.
3. Notify Architect seven days in advance of dates and times when mockups will be constructed.

4. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed to perform same tasks during the construction at Project.
5. Demonstrate the proposed range of aesthetic effects and workmanship.
6. Obtain Architect's approval of mockups before starting corresponding work, fabrication, or construction.

    a. Allow seven days for initial review and each re-review of each mockup.

7. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
8. Demolish and remove mockups when directed unless otherwise indicated.

K. Integrated Exterior Mockups: Construct integrated exterior mockup according to approved Shop Drawings or as coordinated with Architect. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials. Comply with requirements in "Mockups" Paragraph.

1.9 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
2. Payment for these services will be made from testing and inspection allowances, as authorized by Change Orders.
3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
2. Engage a qualified testing agency to perform quality-control services.

    a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform duties of Contractor.

E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01 3300 "Submittal Procedures."

F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

G. Associated Contractor Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspection equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.10 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 4000

SECTION 01 4200 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": The term "approved," when used in conjunction with Architect's action on Contractor's submittals, applications, and requests, is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by Architect, requested by Architect, and similar phrases.

D. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on Drawings; or to other paragraphs or schedules in Specifications and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the user locate the reference.

E. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": The term "furnish" means to supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": The term "install" describes operations at Project site including unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.

I. "Installer": An installer is Contractor or another entity engaged by Contractor, as an employee, subcontractor, or contractor of lower tier, to perform a particular construction operation, including installation, erection, application, and similar operations.

J. The term "experienced," when used with the term "installer," means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with the special requirements indicated; and having complied with requirements of authorities having jurisdiction, unless more restrictions are indicated in specific sections.

(1) Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

K. "Project site" is the space available for performing construction activities, either exclusively or in conjunction with others performing other work as part of Project. The extent of Project site is shown on the Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of the date of the Contract Documents, unless otherwise indicated.

C. Conflicting Requirements: Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

(1) Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to Architect for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

(1) Where copies of standards are needed to perform a required construction activity, obtain copies directly from the publication source and make them available on request.

E. Abbreviations and Names: Abbreviations and acronyms are frequently used in the Specifications and other Contract Documents to represent the name of a trade association, standards-developing organization, authorities having jurisdiction, or other entity in the context of referencing a standard or publication. Where abbreviations and acronyms are used in the Specifications or other Contract Documents, they mean the recognized name of these entities. Refer to Gale Research's "Encyclopedia of Associations" or Columbia Books' "National Trade & Professional Associations of the U.S.," which are available in most libraries.

F. Federal Government Agencies: Names and titles of Federal Government standards- or specification-developing agencies are often abbreviated. A list of abbreviations and acronyms referenced in the Contract Documents of standards- or specification-developing agencies of the Federal Government is available from the Architect upon request.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

END OF SECTION 01 4200

SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.2 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Architect, testing agencies, and authorities having jurisdiction.

B. Sewer Service: Owner will pay sewer-service use charges for sewer usage by all entities for construction operations.

C. Water Service: Owner will pay water-service use charges for water used by all entities for construction operations.

D. Electric Power Service: Owner will pay electric-power-service use charges for electricity used by all entities for construction operations.

1.3 INFORMATIONAL SUBMITTALS

A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.

B. Implementation and Termination Schedule: Within 15 days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility.

C. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.

D. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

E. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold.

F. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:

1. Locations of dust-control partitions at each phase of work.
2. HVAC system isolation schematic drawing.
3. Location of proposed air-filtration system discharge.
4. Waste-handling procedures.
5. Other dust-control measures.

1.4 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top rails.

B. Fencing Windscreen Privacy Screen: Polyester fabric scrim with grommets for attachment to chain link fence, sized to height of fence, in color selected by Architect from manufacturer's standard colors.

C. Dust-Control Adhesive-Surface Walk-Off Mats: Provide mats minimum 36 by 60 inches.

D. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

A. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Permanent HVAC system will be in use inside the building during construction activities. Coordinate with Owner if adjustments are necessary.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.

C. Air-Filtration Units: If necessary, primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

C. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

1. Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

E. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.

F. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.

G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.4 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E136. Comply with NFPA 241.
2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: Use designated areas of Owner's existing parking areas for construction personnel.

D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

E. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated on Drawings.
2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.

a. Provide temporary, directional signs for construction personnel and visitors.

3. Maintain and touch up signs so they are legible at all times.

F. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

G. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

C. Temporary Erosion and Sedimentation Control: Comply with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

F. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.

G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

H. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.6 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture-Protection Plan: Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.

1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
2. Indicate sequencing of work that requires water. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
3. Indicate methods to be used to avoid trapping water in finished work.

B. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
   1. Keep interior spaces reasonably clean and protected from water damage.
   2. Periodically collect and remove waste containing cellulose or other organic matter.
   3. Discard or replace water-damaged material.
   4. Do not install material that is wet.
   5. Discard and replace stored or installed material that begins to grow mold.
   6. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.

3.7 OPERATION, TERMINATION, AND REMOVAL

A. Maintenance: Maintain facilities in good operating condition until removal.

   1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

B. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

   1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
   2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01 7700 "Closeout Procedures."

END OF SECTION 01 5000

SECTION 01 6000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following administrative and procedural requirements: selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

B. Related Sections include the following:

(1) Division 01 Section "References" for applicable industry standards for products specified.

(2) Division 01 Section "Closeout Procedures" for submitting warranties for contract closeout.

(3) Divisions 02 through 33 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

(1) Named Products: Items identified by manufacturer's product name, including make or model number or other designation, shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.

(2) New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.

(3) Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-

service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

D. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

1.4 SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

(1) Documentation: Show compliance with requirements for substitutions and the following, as applicable:

(a) Statement indicating why specified material or product cannot be provided.

(b) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.

(c) Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

(d) Product Data, including drawings and descriptions of products and fabrication and installation procedures.

(e) Samples, where applicable or requested.

(f) List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.

(g) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

(h) Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.

(i) Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.

(j) Cost information, including a proposal of change, if any, in the Contract Sum.

(k) Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.

(l) Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

(2) Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

(a) Form of Acceptance: Change Order.

(b) Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

(1) Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

(2) Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

(3) Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

(4) Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

(5) Store products to allow for inspection and measurement of quantity or counting of units.

(6) Store materials in a manner that will not endanger Project structure.

(7) Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.

(8) Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

(9) Protect stored products from damage.

B. Storage: Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

PART 2 - PRODUCTS

2.1 PRODUCT OPTIONS

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged, and unless otherwise indicated, that are new at time of installation.

(1) Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

(2) Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.

(3) Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

(4) Where products are accompanied by the term "as selected," Architect will make selection.

(5) Where products are accompanied by the term "match sample," sample to be matched is Architect's.

(6) Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

(7) Where products are specified by name and accompanied by the term "or acceptable substitute," comply with provisions in "Comparable Products" Article to obtain acceptance for use of an unnamed product.

B. Product Selection Procedures: Procedures for product selection include the following:

(1) Product: Where Specification paragraphs or subparagraphs titled "Product" name a single product and manufacturer, provide the product named.

(2) Manufacturer/Source: Where Specification paragraphs or subparagraphs titled "Manufacturer" or "Source" name single manufacturers or sources, provide a

product by the manufacturer or from the source named that complies with requirements.

(3) Products: Where Specification paragraphs or subparagraphs titled "Products" introduce a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.

(4) Manufacturers: Where Specification paragraphs or subparagraphs titled "Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.

(5) Available Products: Where Specification paragraphs or subparagraphs titled "Available Products" introduce a list of names of both products and manufacturers, provide one of the products listed or another product that complies with requirements. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.

(6) Available Manufacturers: Where Specification paragraphs or subparagraphs titled "Available Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed or another manufacturer that complies with requirements. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.

(7) Basis-of-Design Products: Where Specification paragraphs or subparagraphs titled "Basis-of-Design Product" are included and also introduce or refer to a list of manufacturers' names, provide either the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.

(a) Substitutions may be considered, unless otherwise indicated.

(8) Visual Matching Specification: Where Specifications require matching an established Sample, select a product (and manufacturer) that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches satisfactorily.

(a) If no product available within specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents on "substitutions" for selection of a matching product.

(9) Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product (and manufacturer) that complies with other specified requirements.

(a) Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that does not include premium items.

(b) Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: Architect will consider requests for substitution if received within 60 days after commencement of the Work. Requests received after that time may be considered or rejected at discretion of Architect.

B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

(1) Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

(2) Requested substitution does not require extensive revisions to the Contract Documents.

(3) Requested substitution is consistent with the Contract Documents and will produce indicated results.

(4) Substitution request is fully documented and properly submitted.

(5) Requested substitution will not adversely affect Contractor's Construction Schedule.

(6) Requested substitution has received necessary approvals of authorities having jurisdiction.

(7) Requested substitution is compatible with other portions of the Work.
(8) Requested substitution has been coordinated with other portions of the Work.

(9) Requested substitution provides specified warranty.

(10) If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.3 COMPARABLE PRODUCTS

A. Where products or manufacturers are specified by name, submit the following, in addition to other required submittals, to obtain approval of an unnamed product:

(1) Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.

(2) Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

(3) Evidence that proposed product provides specified warranty.

(4) List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.

(5) Samples, if requested.

PART 3 - EXECUTION

(Not Used)

END OF SECTION 01 6000

SECTION 01 7300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

(1) General installation of products.

(2) Progress cleaning.

(3) Protection of installed construction.

(4) Correction of the Work.

B. Related Sections include the following:

(1) Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.

(2) Division 01 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.

(3) Division 01 Section "Closeout Procedures" for submitting Project Record Documents and final cleaning.

1.3 SUBMITTALS

A. Qualification Data: If requested by Owner or Architect, for subcontractors to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of other construction affecting the Work.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework,

investigate and verify the existence and location of underground utilities and other construction affecting the Work.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

(1) Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

(a) Description of the Work.

(b) List of detrimental conditions, including substrates.

(c) List of unacceptable installation tolerances.

(d) Recommended corrections.

(2) Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

(3) Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.

(4) Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on "Request for Information" form.

3.3 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

(1) Make vertical work plumb and make horizontal work level.

(2) Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

3.4 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

(1) Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.

(2) Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.

(3) Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

(1) Remove liquid spills promptly.

(2) Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

(1) Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.6 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."

(1) Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 7300

SECTION 01 7320 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for cutting and patching.

B. Cutting and patching includes cutting existing construction to provide for installation or performance of other Work, and subsequent fitting and patching required to restore surfaces to original conditions.

C. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 SUBMITTALS

A. Cutting and Patching Proposal: Where approval of procedures for cutting and patching is required before proceeding, submit a description of proposed procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:

(1) Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.

(2) Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.

(3) List products to be used and firms or entities that will perform Work.

(4) Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.

1.4 QUALITY ASSURANCE

A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio.

(1) Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:

(a) Foundation construction.

(b) Bearing walls.

(c) Wood structural members.

B. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.

(1) Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:

(a) Water, moisture, or vapor barriers.

(b) Roofing and flashings.

C. Visual Requirements: Do not cut and patch construction exposed on the exterior in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 - EXECUTION

3.1 INSPECTION

A. Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect existing construction during cutting and patching to prevent damage.

C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.3 PERFORMANCE

A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

(1) Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.

(1) In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Do not cut holes larger than necessary. Temporarily cover openings when not in use.

(2) To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

(3) Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.

(4) Comply with requirements of applicable Sections where cutting and patching requires excavating and backfilling.

C. Perform all patching with durable seams that are not discernable from normal viewing distances. Comply with specified tolerances.

(1) Where feasible, inspect and test patched areas to demonstrate integrity of the installation.

(2) Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

3.4 CLEANING

A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION 01 7320

SECTION 01 7700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.
5. Repair of the Work.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at final completion.

1.3 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number.

    a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
4. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
5. Complete final cleaning requirements.
6. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.6 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit final completion photographic documentation.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project name.
    b. Date.
    c. Name of Architect.
    d. Name of Contractor.
    e. Page number.

4. Submit list of incomplete items in the following format:
    a. PDF electronic file. Architect will return annotated file.

1.8 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1. Submit by email to Architect.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Sweep concrete floors broom clean in unoccupied spaces.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.

p. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
q. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 5000 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 01 7700

SECTION 01 7839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set(s) of marked-up record prints.

B. Record Specifications: Submit electronic copy of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one electronic copy of each submittal.

D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one electronic copy of each submittal.

E. Reports: Submit written report weekly indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

1.3 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an acceptable drawing technique.
c. Record data as soon as possible after obtaining it.

d. Record and check the markup before enclosing concealed installations.
e. Cross-reference record prints to corresponding photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Depths of foundations.
d. Locations and depths of underground utilities.
e. Changes made by Change Order or Construction Change Directive.
f. Changes made following Architect's written orders.
g. Details not on the original Contract Drawings.
h. Field records for variable and concealed conditions.
i. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

1.4 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
3. Note related Change Orders and record Drawings where applicable.

B. Format: Submit record Specifications as paper copy or scanned electronic copy.

1.5 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders and record Drawings where applicable.

C. Format: Submit record Product Data as electronic document.

1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

1.6 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as electronic document.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

1.7 MAINTENANCE OF RECORD DOCUMENTS

A. Maintenance of Record Documents: Store record documents in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 01 7839

SECTION 04 0322 - HISTORIC BRICK UNIT MASONRY REPAIR

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes historic treatment work consisting of repairing historic clay brick masonry as follows:

1. Repairing unit masonry.
2. Removing abandoned anchors.
3. Painting steel uncovered during the work.

1.2 DEFINITIONS

A. Low-Pressure Spray:

1. Pressure: 100 to 400 psi.
2. Flow Rate: 4 to 6 gpm.

B. Rebuilding (Setting) Mortar: Mortar used to set and anchor masonry in a structure, distinct from pointing mortar installed after masonry is set in place.

C. Saturation Coefficient: Ratio of the weight of water absorbed during immersion in cold water to weight absorbed during immersion in boiling water; used as an indication of resistance of bricks to freezing and thawing.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to masonry historic treatment and repair.
2. Review methods and procedures related to repairing historic brick masonry, including, but not limited to, the following:

a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
b. Materials, material application, sequencing, tolerances, and required clearances.
c. Quality-control program.
d. Fire-protection plan.
e. Unit masonry historic treatment program.
f. Coordination with building occupants.

1.4 SEQUENCING AND SCHEDULING

A. Order sand for colored mortar immediately after approval of mockups. Take delivery of and store at Project site a sufficient quantity to complete Project.

B. Work Sequence: Perform masonry historic treatment work in the following sequence, which includes work specified in this and other Sections:
   1. Inspect masonry for open mortar joints and permanently or temporarily point them before cleaning to prevent intrusion of water and other cleaning materials into the wall.
   2. Remove loose paint.
   3. Clean masonry.
   4. Rake out mortar from joints surrounding masonry to be replaced and from joints adjacent to masonry repairs along joints.
   5. Repair masonry, including replacing existing masonry with new masonry materials.
   6. Rake out mortar from joints to be repointed.
   7. Point mortar and sealant joints.
   8. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.
   9. Repaint in areas as indicated with breathable exterior paint. Provide product data for Architect and Owner’s Review and Approval.

C. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in bricks according to "Brick Masonry Patching" Article. Patch holes in mortar joints according to Section 04 0323 "Historic Brick Unit Masonry Repointing."

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
   2. Include recommendations for product application and use.
   3. Include test data substantiating that products comply with requirements.

B. Samples for Initial Selection: For the following:

   1. Colored Mortar: Submit sets of mortar that will be left exposed in the form of sample mortar strips, 6 inches long by 1/2 inch wide, set in aluminum or plastic channels.

      a. Have each set contain a close color range of at least three Samples of different mixes of colored sands and cements that produce a mortar matching existing, cleaned mortar when cured and dry.
      b. Submit with precise measurements on ingredients, proportions, gradations, and sources of colored sands from which each Sample was made.

   2. Sand Types Used for Mortar: Minimum 8 oz. of each in plastic screw-top jars.

      a. For blended sands, provide Samples of each component and blend. Identify blend ratio.
      b. Identify sources, both supplier and quarry, of each type of sand.

3. Patching Compound: Submit sets of patching compound Samples in the form of plugs (patches in drilled holes) in sample units of masonry representative of the range of masonry colors on the building.

    a. Have each set contain a close color range of at least three. Samples of different mixes of patching compound that match the variations in existing masonry when cured and dry.

4. Include similar Samples of accessories involving color selection.

C. Samples for Verification: For the following:

1. Each type of brick to be used for replacing existing units. Include sets of Samples to show the full range of shape, color, and texture to be expected.

    a. For each brick type, provide straps or panels containing at least four bricks. Include multiple straps for brick with a wide range.

2. Accessories: Each type of anchor, accessory, and miscellaneous support.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic treatment specialist including field supervisors and workers and testing service.

B. Quality-control program.

C. Unit masonry historic treatment program.

1.7 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic brick masonry repair specialist. Experience installing standard unit masonry is insufficient experience for masonry historic treatment work.

1. Historic Treatment Worker Qualifications: When bricks are being patched, assign at least one worker per crew who is trained and certified by manufacturer of patching compound to apply its products.

B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising worker performance and preventing damage.

C. Unit Masonry Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of historic treatment work, including protection of surrounding materials and Project site.

1. Include methods for keeping exposed mortar damp during curing period.

2. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add to the quality-control program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

D. Mockups: Prepare mockups of historic treatment to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.

1. Masonry Repair: Prepare sample areas for each type of masonry material indicated to have repair work performed. If not otherwise indicated, size each mockup not smaller than two adjacent whole units or approximately 48 inches in least dimension. Construct sample areas in locations in existing walls where directed by Architect unless otherwise indicated. Demonstrate quality of materials, workmanship, and blending with existing work. Include the following as a minimum:

   a. Replacement: Four brick units replaced.
   b. Patching: Three small holes at least 1 inch for each type of brick indicated to be patched, so as to leave no evidence of repair.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on brick masonry as follows:

1. Provide test specimens as indicated and representative of proposed materials and existing construction.
2. Existing Mortar: Test according to ASTM C1324, modified as agreed by testing service and Architect for Project requirements, to determine proportional composition of original ingredients, sizes and colors of aggregates, and approximate strength. Carefully remove existing mortar for testing from within joints at five locations designated by Architect.
3. Temporary Patch: As directed by Architect, provide temporary materials followed by permanent repairs at locations from which existing samples were taken.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver bricks to Project site strapped together in suitable packs or pallets or in heavy-duty cartons and protected against impact and chipping.

B. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.

C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

D. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.

E. Store lime putty covered with water in sealed containers.

F. Store sand where grading and other required characteristics can be maintained and contamination avoided.

G. Handle bricks to prevent overstressing, chipping, defacement, and other damage.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit repair work to be performed according to product manufacturers' written instructions and specified requirements.

B. Temperature Limits: Repair brick masonry only when air temperature is between 40 and 90 deg F and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.

C. Cold-Weather Requirements: Comply with the following procedures for masonry repair unless otherwise indicated:

1. When air temperature is below 40 deg F, heat mortar ingredients, masonry repair materials, and existing masonry walls to produce temperatures between 40 and 120 deg F.
2. When mean daily air temperature is below 40 deg F, provide enclosure and heat to maintain temperatures above 32 deg F within the enclosure for seven days after repair.

D. Hot-Weather Requirements: Protect masonry repairs when temperature and humidity conditions produce excessive evaporation of water from mortar and repair materials. Provide artificial shade and wind breaks, and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F and above unless otherwise indicated.

E. For manufactured repair materials, perform work within the environmental limits set by each manufacturer.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Source Limitations: Obtain each type of material for repairing historic masonry (face brick, cement, sand, etc.) from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 MASONRY MATERIALS

A. Face Brick: Units, including molded, ground, cut, or sawed shapes as required to complete masonry repair work.

1. Brick Matching Existing: Units with colors, color variation within units, surface texture, size, and shape that match existing brickwork and with physical properties within 10 percent of those determined from preconstruction testing of selected existing units.

a. For existing brickwork that exhibits a range of colors or color variation within units, provide brick that proportionally matches that range and variation rather than brick that matches an individual color within that range.

2.3 MORTAR MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I or Type II; white or gray or both where required for color matching of mortar.

1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C114.

B. Hydrated Lime: ASTM C207, Type S.

C. Mortar Sand: ASTM C144 unless otherwise indicated.

1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
2. Colored Mortar: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
3. For exposed mortar, provide sand with rounded edges.

D. Mortar Pigments: ASTM C979/C979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.

E. Water: ASTM C270, potable.

2.4 MANUFACTURED REPAIR MATERIALS

A. Brick Patching Compound: Factory-mixed cementitious product that is custom manufactured for patching brick masonry.

1. Manufacturers:
   a. Cathedral Stone Products, Inc. 7266 Park Circle Drive, Hanover, MD, 21076. 800-684-0901. https://www.cathedralstone.com/
   b. Edison Coatings, Inc. 3 Northwest Drive. Plainville, CT 06062. 860-747-2220. http://www.edisoncoatings.com/
2. Use formulation that is vapor and water permeable (equal to or more than the brick), exhibits low shrinkage, has lower modulus of elasticity than the bricks being repaired, and develops high bond strength to all types of masonry.

3. Use formulation having working qualities and retardation control to permit forming and sculpturing where necessary.
4. Formulate patching compound used for patching brick in colors and textures to match each unit being patched. Provide sufficient number of colors to enable matching the color, texture, and variation of each unit.

2.5 ACCESSORY MATERIALS

A. Masonry Repair Anchors, Expansion Type: Mechanical fasteners designed for masonry veneer stabilization consisting of 1/4-inch diameter, Type 304 stainless-steel rod with brass expanding shells at each end and water-shedding washer in the middle. Expanding shells shall be designed to provide positive mechanical anchorage to veneer on one end and backup masonry on the other.

1. Hohmann & Barnard, Inc. 30 Rasons Ct. P.O. Box 5270 Hauppauge, NY 11788-0270. 800-283-3888. https://www.h-b.com/

2. Or Approved Alternate

B. Setting Buttons and Shims: Resilient plastic, nonstaining to masonry, sized to suit joint thicknesses and bed depths of bricks, less the required depth of pointing materials unless removed before pointing.

C. Masking Tape: Nonstaining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.

D. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:

1. Previous effectiveness in performing the work involved.
2. Minimal possibility of damaging exposed surfaces.
3. Consistency of each application.
4. Uniformity of the resulting overall appearance.
5. Do not use products or tools that could do the following:

   a. Remove, alter, or harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in Contract.
   b. Leave residue on surfaces.

2.6 MORTAR MIXES

A. Preparing Lime Putty: Slake quicklime and prepare lime putty according to appendix to ASTM C5 and manufacturer's written instructions.

B. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.

C. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.

1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance.

D. Do not use admixtures in mortar unless otherwise indicated.

E. Mixes: Mix mortar materials in the following proportions:
1. Rebuilding (Setting) Mortar by Type: ASTM C270, Proportion Specification, Type O unless otherwise indicated; with cementitious material limited to portland cement and lime.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT SPECIALIST

A. Historic Treatment Specialist Firms: Subject to compliance with requirements, firms that may provide historic brick repair include, but are not limited to, the following:

1. Summit Sealants Inc. 2000 W. Quincy Avenue, Englewood, CO 80110.0720-389-8633. http://summitsealants.com/services/

2. Approved Alternate Specialists: Provide Qualifications for Architect’s Review.

3.2 PROTECTION

A. Prevent mortar from staining face of surrounding masonry and other surfaces.

1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
2. Keep wall area wet below rebuilding and repair work to discourage mortar from adhering.
3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.

B. Remove gutters and downspouts and associated hardware adjacent to immediate work area, and store during masonry repair work. Reinstall when repairs are complete.

1. Provide temporary rain drainage during work to direct water away from building.

3.3 MASONRY REPAIR, GENERAL

A. Have repair work performed only by qualified historic treatment specialist.

B. Repair Appearance Standard: Repaired surfaces are to have a uniform appearance as viewed from 10 feet away by Architect.

3.4 ABANDONED ANCHOR REMOVAL

A. Remove abandoned anchors, brackets, wood nailers, and other extraneous items no longer in use unless indicated to remain.

1. Remove items carefully to avoid spalling or cracking masonry.
2. Notify Architect before proceeding if an item cannot be removed without damaging surrounding masonry. Do the following where directed:

3. Patch the hole where each item was removed unless directed to remove and replace brick.

3.5 BRICK REMOVAL AND REPLACEMENT

A. At locations indicated, remove bricks that are damaged, spalled, or deteriorated. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.

1. When removing single bricks, remove material from center of brick and work toward outside edges.

B. Support and protect remaining masonry that surrounds removal area.

C. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.

D. Notify Architect of unforeseen detrimental conditions, including voids, cracks, bulges, loose masonry units in existing backup, rotted wood, rusted metal, and other deteriorated items.

E. Remove in an undamaged condition as many whole bricks as possible.

1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
3. Store brick for reuse. Store off ground, on skids, and protected from weather.
4. Deliver cleaned brick not required for reuse to Owner unless otherwise indicated.

F. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.

G. Replace removed damaged brick with other removed brick in good condition, where possible, or with new brick matching existing brick. Do not use broken units unless they can be cut to usable size.

H. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.

1. Maintain joint width for replacement units to match existing joints.
2. Use setting buttons or shims to set units accurately spaced with uniform joints.

I. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet

both replacement and surrounding bricks that have ASTM C67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.

1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
2. Rake out mortar used for laying brick before mortar sets. Point at same time as repointing of surrounding area.
3. When mortar is hard enough to support units, remove shims and other devices interfering with pointing of joints.

J. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.

1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.6 BACKUP MASONRY REMOVAL AND REPLACEMENT

A. Where backup masonry is fractured or unstable and at locations indicated, remove mortar and masonry units that are broken or deteriorated and rebuild with whole, new brick or whole salvaged backup masonry units. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.

B. Support and protect remaining masonry that surrounds removal area.

C. Maintain flashing, reinforcement, anchors, lintels, and adjoining construction in an undamaged condition.

D. Notify Architect of unforeseen detrimental conditions, including voids, cracks, bulges, loose masonry units beyond the removal area, rotted wood, rusted metal, and other deteriorated items.

E. Remove in an undamaged condition as many whole bricks as possible.

1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
3. Store brick for reuse. Store off ground, on skids, and protected from weather.
4. Deliver cleaned brick not required for reuse to Owner unless otherwise indicated.

F. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.

G. Replace removed damaged brick with salvaged backup brick in good condition, where possible, or with new building brick matching existing backup brick. Do not use broken units unless they can be cut to usable size.

H. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.

I. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.

J. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.

1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.7 REANCHORING VENEERS

A. Install masonry repair anchors in horizontal mortar joints and according to manufacturer's written instructions. Space anchors not more than 16 inches o.c. vertically and 24 inches o.c. horizontally apart unless otherwise indicated or required by manufacturer. Install at locations to avoid penetrating flashing.

B. Recess anchors 5/8 inch or more from surface of mortar joint, and fill recess with pointing mortar.

3.8 PAINTING STEEL UNCOVERED DURING THE WORK

A. Notify Architect if steel is exposed during masonry removal. Where Architect determines that steel is structural, or for other reasons cannot be totally removed, prepare and paint it as follows:

1. Surface Preparation: Remove paint, rust, and other contaminants according to SSPC-SP 2, "Hand Tool Cleaning," as applicable to comply with paint manufacturer's recommended preparation.
2. Antirust Coating: Immediately paint exposed steel with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended rate of application (dry film thickness per coat).

B. If on inspection and rust removal, the thickness of a steel member is found to be reduced from rust by more than 1/16 inch(es), notify Architect before proceeding.

3.9 BRICK MASONRY PATCHING

A. Patch the following bricks unless another type of repair or replacement is indicated:

1. Units indicated to be patched.
2. Units with holes.
3. Units with chipped edges or corners. Patch chipped edges or corners measuring more than 3/4 inch in least dimension.
4. Units with small areas of deep deterioration. Patch deep deteriorations measuring more than 3/4 inch in least dimension and more than 1/4 inch deep.

B. Remove and replace existing patches unless otherwise indicated or approved by Architect.

C. Patching Bricks:

1. Remove loose material from masonry surface. Carefully remove additional material so patch does not have feathered edges but has square or slightly undercut edges on area to be patched and is at least 1/4 inch(es) thick, but not less than recommended in writing by patching compound manufacturer.
2. Mask adjacent mortar joint or rake out for repointing if patch extends to edge of brick.
3. Mix patching compound in individual batches to match each unit being patched. Combine one or more colors of patching compound, as needed, to produce exact match.
4. Rinse surface to be patched and leave damp, but without standing water.
5. Brush-coat surfaces with slurry coat of patching compound according to manufacturer's written instructions.
6. Place patching compound in layers as recommended in writing by patching compound manufacturer, but not less than 1/4 inch or more than 2 inches thick. Roughen surface of each layer to provide a key for next layer.
7. Trowel, scrape, or carve surface of patch to match texture and surrounding surface plane or contour of the brick. Shape and finish surface before or after curing, as determined by testing, to best match existing brick.
8. Keep each layer damp for 72 hours or until patching compound has set.

3.10 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low-pressure spray.

1. Do not use metal scrapers or brushes.
2. Do not use acidic or alkaline cleaners.

B. Clean adjacent nonmasonry surfaces. Use detergent and soft brushes or cloths.

C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.

D. Remove masking materials, leaving no residues that could trap dirt.

3.11 FIELD QUALITY CONTROL

A. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.

B. Notify Architect's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Architect's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

3.12 MASONRY-WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property.

B. Masonry Waste: Remove masonry waste and legally dispose of off Owner's property.

END OF SECTION 04 0322

SECTION 04 0323 - HISTORIC BRICK UNIT MASONRY REPOINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes historic treatment work consisting of repointing brick masonry as follows:

1. Repointing joints with mortar.
2. Widening joints.

1.2 DEFINITIONS

A. Low-Pressure Spray:

1. Pressure: 100 to 400 psi.
2. Flow Rate: 4 to 6 gpm.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to masonry historic treatment and repointing.
2. Review methods and procedures related to repointing historic brick masonry, including, but not limited to, the following:

    a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
    b. Materials, material application, sequencing, tolerances, and required clearances.
    c. Quality-control program.
    d. Fire-protection plan.
    e. Unit masonry historic treatment program.
    f. Coordination with building occupants.

1.4 SEQUENCING AND SCHEDULING

A. Order sand for pointing mortar immediately after approval of mockups. Take delivery of and store at Project site a sufficient quantity to complete Project.

B. Work Sequence: Perform masonry historic treatment work in the following sequence, which includes work specified in this and other Sections:
1. Inspect masonry for open mortar joints and permanently or temporarily point them before cleaning to prevent intrusion of water and other cleaning materials into the wall.
2. Remove loose paint.
3. Clean masonry.

4. Rake out mortar from joints surrounding masonry to be replaced and from joints adjacent to masonry repairs along joints.
5. Repair masonry, including replacing existing masonry with new masonry materials.
6. Rake out mortar from joints to be repointed.
7. Point mortar joints.
8. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.

C. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in bricks according to Section 04 0322 "Historic Brick Unit Masonry Repair." Patch holes in mortar joints according to "Repointing" Article.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
2. Include recommendations for product application and use.
3. Include test data substantiating that products comply with requirements.

B. Samples for Initial Selection: For the following:

1. Pointing Mortar: Submit sets of mortar for pointing in the form of sample mortar strips, 6 inches long by 1/2 inch wide, set in aluminum or plastic channels.

    a. Have each set contain a close color range of at least three Samples of different mixes of colored sands and cements that produce a mortar matching existing, cleaned mortar when cured and dry.
    b. Submit with precise measurements on ingredients, proportions, gradations, and sources of colored sands from which each Sample was made.

2. Sand Type Used for Pointing Mortar: Minimum 8 oz. of each in plastic screw-top jars.

    a. For blended sands, provide Samples of each component and blend. Identify blend ratio.
    b. Identify sources, both supplier and quarry, of each type of sand.

3. Sealant materials.
4. Include similar Samples of accessories involving color selection.

C. Samples for Verification: For the following:

1. Each type, color, and texture of pointing mortar in the form of sample mortar strips, 6 inches long by 1/2 inch wide, set in aluminum or plastic channels.

    a. Include with each Sample a list of ingredients with proportions of each. Identify sources, both supplier and quarry, of each type of sand and brand names of cementitious materials and pigments if any.

2. Sealant materials.
3. Accessories: Each type of anchor, accessory, and miscellaneous support.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic treatment specialist including field supervisors and workers and testing service.

B. Preconstruction Test Reports: For existing bricks and mortar.

C. Quality-control program.

D. Unit masonry historic treatment program.

1.7 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic masonry repointing specialist. Experience in pointing or repointing only new or nonhistoric masonry is insufficient experience for masonry historic treatment work.

B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising worker performance and preventing damage.

C. Unit Masonry Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of historic treatment work, including protection of surrounding materials and Project site.

1. Include methods for keeping pointing mortar damp during curing period.
2. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add to the quality-control program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

D. Mockups: Prepare mockups of historic treatment on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Widening Joints: Widen a joint in two separate locations, each approximately 12 inches long.
2. Repointing: Rake out joints in two separate areas, each approximately 24 inches high by 24 inches wide for each type of repointing required, and repoint one of the areas.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on brick masonry as follows:

1. Provide test specimens as indicated and representative of proposed materials and existing construction.
2. Existing Mortar: Test according to ASTM C1324, modified as agreed by testing service and Architect for Project requirements, to determine proportional composition of original ingredients, sizes and colors of aggregates, and approximate strength. Carefully remove existing mortar for testing from within joints at five locations designated by Architect.
3. Temporary Patch: As directed by Architect, provide temporary materials at locations from which existing samples were taken.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.

D. Store lime putty covered with water in sealed containers.

E. Store sand where grading and other required characteristics can be maintained and contamination avoided.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit repointing work to be performed according to product manufacturers' written instructions and specified requirements.

B. Temperature Limits: Repoint mortar joints only when air temperature is between 40 and 90 deg F and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.

C. Cold-Weather Requirements: Comply with the following procedures for mortar-joint pointing unless otherwise indicated:

1. When air temperature is below 40 deg F, heat mortar ingredients and existing masonry walls to produce temperatures between 40 and 120 deg F.
2. When mean daily air temperature is below 40 deg F, provide enclosure and heat to maintain temperatures above 32 deg F within the enclosure for seven days after pointing.

D. Hot-Weather Requirements: Protect mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar materials. Provide artificial

shade and wind breaks, and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F and above unless otherwise indicated.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Source Limitations: Obtain each type of material for repointing historic masonry (cement, sand, etc.) from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 MORTAR MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I or Type II; white or gray or both where required for color matching of mortar.

1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C114.

B. Hydrated Lime: ASTM C207, Type S.

C. Mortar Sand: ASTM C144 unless otherwise indicated.

1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
2. Color: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
3. Provide sand with rounded edges.

D. Mortar Pigments: ASTM C979/C979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.

E. Water: ASTM C270, potable.

2.3 ACCESSORY MATERIALS

A. Sealant Materials:

1. Sealant manufacturer's standard elastomeric sealant(s) of base polymer and characteristics indicated below.

a. Type: Single-component, nonsag urethane sealant.

2. Colors: Provide colors of exposed sealants to match colors of mortar adjoining installed sealant unless otherwise indicated.
3. Ground-Mortar Aggregate: Custom crushed and ground pointing mortar sand or existing mortar retrieved from joints. Grind to a particle size that matches the adjacent mortar aggregate and color. Remove all fines passing No. 100 sieve.

B. Joint-Sealant Backing:

1. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin) and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
2. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended in writing by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

C. Masking Tape: Nonstaining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.

D. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:

1. Previous effectiveness in performing the work involved.
2. Minimal possibility of damaging exposed surfaces.
3. Consistency of each application.
4. Uniformity of the resulting overall appearance.
5. Do not use products or tools that could do the following:

a. Remove, alter, or harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in Contract.
b. Leave residue on surfaces.

2.4 MORTAR MIXES

A. Preparing Lime Putty: Slake quicklime and prepare lime putty according to appendix to ASTM C5 and manufacturer's written instructions.

B. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.

1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.

C. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.

1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black, which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance.

D. Do not use admixtures in mortar unless otherwise indicated.

E. Mixes: Mix mortar materials in the following proportions:

1. Pointing Mortar by Volume: ASTM C270, Proportion Specification, to match ratio established in mortar analysis. Add mortar pigments to produce mortar colors required.
2. Pointing Mortar by Type: ASTM C270, Proportion Specification, Type O unless otherwise indicated; with cementitious material limited to portland cement and lime. Add mortar pigments to produce mortar colors required.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT SPECIALIST

A. Historic Treatment Specialist Firms: Subject to compliance with requirements, firms that may provide historic masonry repointing include, but are not limited to, the following:

1. Summit Sealants Inc. 2000 W. Quincy Avenue, Englewood, CO 80110.0720-389-8633. http://summitsealants.com/services/

2. Approved Alternate Specialists: Provide Qualifications for Architect's Review.

3.2 PROTECTION

A. Prevent mortar from staining face of surrounding masonry and other surfaces.

1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
2. Keep wall area wet below rebuilding and pointing work to discourage mortar from adhering.
3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.

B. Remove gutters and downspouts and associated hardware adjacent to immediate work area and store during masonry repointing work. Reinstall when repointing is complete.

1. Provide temporary rain drainage during work to direct water away from building.

3.3 MASONRY REPOINTING, GENERAL

A. Have repointing work performed only by qualified historic treatment specialist.

B. Appearance Standard: Repointed surfaces are to have a uniform appearance as viewed from 10 feet away by Architect.

3.4 WIDENING JOINTS

A. Do not widen a joint, except where indicated or approved by Architect.

B. Location Guideline: Where an existing brick abuts another or the joint is less than 1/8 inch(es), widen the joint for length indicated and to depth required for repointing after obtaining Architect's approval.

C. Carefully perform widening by using cutting, grinding, routing, or filing procedures demonstrated in an approved mockup.

D. Widen joint to width equal to or less than predominant width of other joints on building. Make sides of widened joint uniform and parallel. Ensure that edges of units along widened joint are in alignment with joint edges at unaltered joints.

3.5 REPOINTING

A. Rake out and repoint joints to the following extent:

1. All joints in areas indicated.
2. Joints indicated as sealant-filled joints.
3. Joints at locations of the following defects:

    a. Holes and missing mortar.
    b. Cracks that can be penetrated 1/4 inch or more by a knife blade 0.027 inch thick.
    c. Cracks 1/16 inch(es) or more in width and of any depth.
    d. Hollow-sounding joints when tapped by metal object.
    e. Eroded surfaces 1/4 inch or more deep.
    f. Deterioration to point that mortar can be easily removed by hand, without tools.
    g. Joints filled with substances other than mortar.

B. Do not rake out and repoint joints where not required.

C. Rake out joints as follows, according to procedures demonstrated in approved mockup:

1. Remove mortar from joints to depth of joint width plus 1/8 inch and not less than that required to expose sound, unweathered mortar. Do not remove unsound mortar more than 2 inches deep; consult Architect for direction.
2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
3. Do not spall edges of bricks or widen joints. Replace or patch damaged bricks as directed by Architect.

    a. Cut out mortar by hand with chisel and resilient mallet. Do not use power-operated grinders without Architect's written approval based on approved quality-control program.

D. Notify Architect of unforeseen detrimental conditions, including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.

E. Pointing with Mortar:

1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch(es) until a uniform depth is formed. Fully compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
3. After deep areas have been filled to same depth as remaining joints, point joints by placing mortar in layers not greater than 3/8 inch(es). Fully compact each layer and allow it to become thumbprint hard before applying next layer. Where existing brick have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed masonry surfaces or to featheredge the mortar.
4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.
5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.

    a. Acceptable curing methods include covering with wet burlap and plastic sheeting, periodic hand misting, and periodic mist spraying using system of pipes, mist heads, and timers.
    b. Adjust curing methods to ensure that pointing mortar is damp throughout its depth without eroding surface mortar.

6. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Remove mortar and repoint.

F. Pointing with Sealant:

1. After raking out, keep joints dry and free of mortar and debris.
2. Clean and prepare joint surfaces. Prime joint surfaces unless sealant manufacturer recommends against priming. Do not allow primer to spill or migrate onto adjoining surfaces.
3. Fill sealant joints with specified joint sealant:

    a. Install cylindrical sealant backing beneath the sealant. Where space is insufficient for cylindrical sealant backing, install bond-breaker tape.
    b. Install sealant using only proven installation techniques that ensure that sealant is deposited in a uniform, continuous ribbon, without gaps or air pockets, and with complete wetting of the joint bond surfaces equally on both sides. Fill joint flush with surrounding masonry and matching the contour of adjoining mortar joints.
    c. Install sealant as recommended in writing by sealant manufacturer but within the following general limitations, measured at the center (thin) section of the bead:

        1) Fill joints to a depth equal to joint width, but not more than 1/2 inch deep or less than 1/4 inch deep.

    d. Tool sealant to form smooth, uniform beads, slightly concave. Remove excess sealant from surfaces adjacent to joint.

e. Do not allow sealant to overflow or spill onto adjoining surfaces, or to migrate into the voids of adjoining surfaces, particularly rough textures. Remove excess and spillage of sealant promptly as the work progresses. Clean adjoining surfaces by the means necessary to eliminate evidence of spillage, without damage to adjoining surfaces or finishes, as demonstrated in an approved mockup.

G. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

3.6 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low-pressure spray.

1. Do not use metal scrapers or brushes.
2. Do not use acidic or alkaline cleaners.

B. Clean adjacent nonmasonry surfaces. Use detergent and soft brushes or cloths.

C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.

D. Remove masking materials, leaving no residues that could trap dirt.

3.7 FIELD QUALITY CONTROL

A. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.

B. Notify Architect's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Architect's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

END OF SECTION 04 0323

SECTION 06 0312 - HISTORIC WOOD REPAIR

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes historic treatment of wood in the form of repairing wood features as follows:

1. Repairing wood siding and trim.
2. Replacing wood siding and trim.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to historic wood repair.
2. Review methods and procedures related to historic wood repair, including, but not limited to, the following:

    a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
    b. Materials, material application, sequencing, tolerances, and required clearances.
    c. Fire-protection plan.
    d. Wood historic treatment program.
    e. Coordination with building occupants.

1.3 SEQUENCING AND SCHEDULING

A. Perform historic wood repair in the following sequence, which includes work specified in this and other Sections:

1. Before removing wood components for on-site or off-site repair, tag each component with location-identification numbers. Indicate on tags and building plans the locations of each component.
2. In the shop, label each repaired component and whole or partial replacement with permanent location-identification number in inconspicuous location and remove site-applied tags.
3. Sort units by condition, separating those that need extensive repair.
4. Clean surfaces.
5. General Wood-Repair Sequence:

    a. Remove paint to bare wood.
    b. Repair wood by consolidation, replacement, partial replacement, and patching.
    c. Sand, prime, fill, sand again, and prime surfaces again for refinishing.

6. Repair, refinish, and replace hardware if required. Reinstall operating hardware.

7. Reinstall components.
8. Apply finish coats.
9. Install remaining hardware.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.

B. Shop Drawings:

1. Include plans, elevations, and sections showing locations and extent of repair and replacement work, with enlarged details of replacement parts indicating materials, profiles, joinery, reinforcing, method of splicing or attaching wood members to other surfaces, accessory items, and finishes.
2. Include field-verified dimensions and the following:

   a. Full-size shapes and profiles with complete dimensions for replacement components and their jointing, showing relationship of existing components to new components.
   b. Templates and directions for installing hardware and anchorages.
   c. Identification of each new unit and its corresponding location in the building on annotated plans and elevations.
   d. Provisions for sealant joints and flashing as required for location.

C. Samples for Initial Selection: For each type of exposed wood and finish.

1. Identify wood species, cut, and other features.
2. Include Samples of hardware and accessories involving color selection.

D. Samples for Verification: For the following products in manufacturer's standard sizes unless otherwise indicated, finished as required for use in the Work:

1. Replacement Wood: 12 inch long, full-size molding sections with applied finish.

   a. Additional Samples of replacement members that show fabrication techniques, materials, and finishes as requested by Architect.

2. Repaired Wood: Prepare Samples using existing wood removed from site, repaired, and prepared for refinishing.
3. Refinished Wood: Prepare Samples using existing wood removed from site, repaired, and refinished.
4. Hardware: Full-size units with each factory-applied or restored finish.

1.5 INFORMATIONAL SUBMITTALS

A. Wood Historic Treatment Program: Submit before work begins.

B. Preconstruction Test Reports: For historic wood repair.

1.6 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic wood-repair specialist, experienced in repairing, refinishing, and replacing wood in whole and in part. Experience only in fabricating and installing new woodwork is insufficient experience for wood historic treatment work.

B. Wood-Repair-Material Manufacturer Qualifications: A firm regularly engaged in producing wood consolidant and wood patching compound that have been used for similar historic wood-treatment applications with successful results, and with factory-authorized service representatives who are available for consultation, Project-site inspection, and on-site assistance.

C. Wood Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic treatment work, including protection of surrounding materials and Project site.

1. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

D. Mockups: Prepare mockups of historic treatment repair processes to demonstrate aesthetic effects and to set quality standards for materials and execution, and for fabrication and installation. Prepare mockups so they are as inconspicuous as practicable.

1. Locate mockups on existing surfaces where directed by Architect.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified historic treatment specialist to perform preconstruction testing on historic wood materials as follows:

1. Provide test specimens representative of proposed materials and existing construction.
2. Test historic treatment products and methods for effectiveness and compliance with specified requirements.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Pack, deliver, and store products in suitable packs, heavy-duty cartons, or wooden crates; surround with sufficient packing material to ensure that products will not be deformed, broken, or otherwise damaged.

B. Until installed, store products inside a well-ventilated area and protect from weather, moisture, soiling, abrasion, extreme temperatures, and humidity, and where environmental conditions comply with manufacturer's requirements.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with historic wood repair only when existing and forecasted weather conditions are within the environmental limits set by each manufacturer's written instructions and specified requirements.

PART 2 - PRODUCTS

2.1 HISTORIC WOOD REPAIR, GENERAL

A. Quality Standard: Comply with applicable requirements in Section 12, "Historic Restoration Work," and related requirements in AWI/AWMAC/WI's "Architectural Woodwork Standards" for construction, finishes, grade rules, and other requirements unless otherwise indicated.

1. Exception: Industry practices cited in Section 12, Article 1.5, "Industry Practices," of the Architectural Woodwork Standards do not apply to the work of this Section.

2.2 REPLICATED WOOD ITEMS

A. Replicated Wood Siding and Trim: Custom-fabricated replacement wood components.

1. Joint Construction: Joints matching existing joints.
2. Wood Species: Match species of existing wood.
3. Wood Cut: Match cut of existing wood.
4. Wood Member and Trim Profiles: Match profiles and detail of existing.
5. Date Identification: Emboss on a concealed surface of each replaced item, in easily read characters, "MADE <Insert year>." Manufacturer's name may also be embossed.

2.3 WOOD-REPLACEMENT MATERIALS

A. Wood, General: Clear fine-grained lumber; kiln dried to a moisture content of 6 to 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide.

1. Species: Match species of each existing type of wood component or assembly unless otherwise indicated.

B. Exterior Trim: Match existing species.

2.4 WOOD-REPAIR MATERIALS

A. Source Limitations: Obtain wood consolidant and wood-patching compound from single source from single manufacturer.

B. Wood Consolidant: Ready-to-use product designed to penetrate, consolidate, and strengthen soft fibers of wood materials that have deteriorated due to weathering and decay and designed specifically to enhance the bond of wood-patching compound to existing wood.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Abatron, Inc.
b. ConServ Epoxy LLC.
c. Gougeon Brothers, Inc.

C. Wood-Patching Compound: Two-part, epoxy-resin, wood-patching compound; knife-grade formulation as recommended in writing by manufacturer for type of wood repair indicated, tooling time required for the detail of work, and site conditions. Compound shall be designed for filling voids in damaged wood materials that have deteriorated due to weathering and decay. Compound shall be capable of filling deep holes and spreading to featheredge.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Abatron, Inc.
b. Advanced Repair Technology, Inc.
c. ConServ Epoxy LLC.
d. Gougeon Brothers, Inc.

2.5 MISCELLANEOUS MATERIALS

A. Borate Preservative Treatment: Inorganic, borate-based solution, with disodium octaborate tetrahydrate as the primary ingredient; manufactured for preserving weathered and decayed wood from further damage caused by fungi and wood-boring insects; complying with AWPA P5; containing no boric acid.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Nisus Corporation.
b. Sashco, Inc.

B. Cleaning Materials:

1. Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 1/2 cup of laundry detergent that contains no ammonia, 5 quarts of 5 percent sodium hypochlorite bleach, and 15 quarts of warm water for each 5 gal. of solution required.
2. Mildewcide: Commercial, proprietary mildewcide or a solution prepared by mixing 1/3 cup of household detergent that contains no ammonia, 1 quart of 5 percent sodium hypochlorite bleach, and 3 quarts of warm water.

C. Adhesives: Wood adhesives with minimum 15- to 45-minute cure at 70 deg F, in gunnable and liquid formulations as recommended in writing by adhesive manufacturer for each type of repair and exposure condition.

D. Fasteners: Use fastener metals that are noncorrosive and compatible with each material joined.

1. Match existing fasteners in material and type of fastener unless otherwise indicated.
2. Use concealed fasteners for interconnecting wood components.
3. Use concealed fasteners for attaching items to other work unless exposed fasteners are unavoidable or the existing fastening method.
4. For fastening metals, use fasteners of same basic metal as fastened metal unless otherwise indicated.
5. For exposed fasteners, use Phillips-type machine screws of head profile flush with metal surface unless otherwise indicated.
6. Finish exposed fasteners to match finish of metal fastened unless otherwise indicated.

2.6 WOOD FINISHES

A. Unfinished Replacement Units: Provide exposed exterior wood surfaces of replacement units unfinished; smooth, filled, and suitably prepared for on-site priming and finishing.

B. Factory-Primed Replacement Units: Manufacturer's standard factory-prime coat on exposed exterior wood surfaces; compatible with indicated finish coating.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect adjacent materials from damage by historic wood repair.

B. Clean wood of mildew, algae, moss, plant material, loose paint, grease, dirt, and other debris by scrubbing with bristle brush or sponge and detergent solution. Scrub mildewed areas with mildewcide. After cleaning, rinse thoroughly with fresh water. Allow to dry before repairing or painting.

C. Condition replacement wood members and replacement units to prevailing conditions at installation areas before installing.

3.2 HISTORIC WOOD REPAIR, GENERAL

A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from 20 feet away for exterior work.

B. General: In treating historic items, disturb them as minimally as possible and as follows:

1. Stabilize and repair wood to reestablish structural integrity and weather resistance while maintaining the existing form of each item.
2. Remove coatings and apply borate preservative treatment before repair.
3. Repair items in place where possible.
4. Install temporary protective measures to protect wood-treatment work that is indicated to be completed later.
5. Refinish historic wood unless otherwise indicated.

C. Mechanical Abrasion: Where mechanical abrasion is needed for the work, use only the gentlest mechanical methods, such as scraping and natural-fiber bristle brushing, that will not abrade wood substrate, reducing clarity of detail. Do not use abrasive methods, such as sanding, wire brushing, or power tools, except as indicated as part of the historic treatment program and as approved by Architect.

D. Repair Wood: Match existing materials and features, retaining as much original material as possible to perform repairs.

1. Unless otherwise indicated, repair wood by consolidating, patching, splicing, or otherwise reinforcing wood with new wood matching existing wood or with salvaged, sound, original wood.
2. Where indicated, repair wood by limited replacement matching existing material.

E. Replace Wood: Where indicated, duplicate and replace units with units made from salvaged, sound, original wood or with new wood matching existing wood. Use surviving prototypes to create patterns for duplicate replacements.

1. Do not use substitute materials unless otherwise indicated.
2. Compatible substitute materials may be used.

F. Identify removed items with numbering system corresponding to item locations, to ensure reinstallation in same location. Key items to Drawings showing location of each removed unit. Permanently label units in a location that will be concealed after reinstallation.

3.3 WOOD PATCH-TYPE REPAIR

A. General: Patch wood that exhibits depressions, holes, or similar voids, and that has limited amounts of rotted or decayed wood.

1. Verify that surfaces are sufficiently clean and free of paint residue prior to patching.
2. Treat wood with wood consolidant prior to application of patching compound. Coat wood surfaces by brushing, applying multiple coats until wood is saturated and refuses to absorb more. Allow treatment to harden before filling void with patching compound.
3. Remove rotted or decayed wood down to sound wood.

B. Apply borate preservative treatment to accessible surfaces either before applying wood consolidant or after removing rotted or decayed wood. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom. Allow treatment to dry.

C. Apply wood-patching compound to fill depressions, nicks, cracks, and other voids created by removed or missing wood.

1. Prime patch area with application of wood consolidant or manufacturer's recommended primer.
2. Mix only as much patching compound as can be applied according to manufacturer's written instructions.
3. Apply patching compound in layers as recommended in writing by manufacturer until the void is completely filled.
4. Sand patch surface smooth and flush with adjacent wood, without voids in patch material, and matching contour of wood member.
5. Clean spilled compound from adjacent materials immediately.

3.4 WOOD-REPLACEMENT REPAIR

A. General: Replace parts of or entire wood items at locations indicated on Drawings.

1. Remove surface-attached items from wood surface before performing wood-replacement repairs unless otherwise indicated.
2. Verify that surfaces are sufficiently clean and free of paint residue prior to repair.
3. Remove broken, rotted, and decayed wood down to sound wood.
4. Custom fabricate new wood to replace missing wood; either replace entire wood member or splice new wood part into existing member.
5. Secure new wood using finger joints, multiple dowels, or splines with adhesive and nailing to ensure maximum structural integrity at each splice. Use only concealed fasteners. Fill nail holes and patch surface to match surrounding sound wood.

B. Apply borate preservative treatment to accessible surfaces after replacements are made. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.

C. Repair remaining depressions, holes, or similar voids with patch-type repairs.

D. Clean spilled materials from adjacent surfaces immediately.

E. Reinstall items removed for repair into original locations.

3.5 FIELD QUALITY CONTROL

A. Manufacturers Field Service: Engage wood-repair-material manufacturers' factory-authorized service representatives for consultation and Project-site inspection and provide on-site assistance when requested by Architect.

3.6 ADJUSTMENT

A. Adjust existing and replacement operating items, hardware, and accessories for a tight fit at contact points and for smooth operation and tight closure. Lubricate hardware and moving parts.

3.7 CLEANING AND PROTECTION

A. Protect wood surfaces from contact with contaminating substances resulting from construction operations. Monitor wood surfaces adjacent to and below exterior concrete and masonry during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances contact wood surfaces, remove contaminants immediately.

B. Clean exposed surfaces immediately after historic wood repair. Avoid damage to coatings and finishes. Remove excess sealants, patching materials, dirt, and other substances.

END OF SECTION 06 0312

SECTION 06 1000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

(1) Wood blocking, cants, and nailers.

(2) Wood furring and grounds.

1.3 DEFINITIONS

A. Rough Carpentry: Carpentry work not specified in other Sections and not exposed, unless otherwise indicated.

B. Lumber grading agencies, and the abbreviations used to reference them, include the following:

(1) NLGA - National Lumber Grades Authority.

(2) WCLIB - West Coast Lumber Inspection Bureau.

(3) WWPA - Western Wood Products Association.

1.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

(1) Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.

(2) For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

(3) Include copies of warranties from chemical treatment manufacturers for each type of treatment.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.

(1) Factory mark each piece of lumber with grade stamp of grading agency.

(2) Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.

(3) Provide dressed lumber, S4S, unless otherwise indicated.

(4) Provide dry lumber with 15 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA C2 (lumber) and AWPA C9 (plywood), except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).

(1) Preservative Chemicals: Acceptable to authorities having jurisdiction and one of the following:

(a) Chromated copper arsenate (CCA).

(b) Ammoniacal copper zinc arsenate (ACZA).

(c) Ammoniacal, or amine, copper quat (ACQ).

(d) Copper bis (dimethyldithiocarbamate) (CDDC).

(e) Ammoniacal copper citrate (CC).

(f) Copper azole, Type A (CBA-A).

(g) Oxine copper (copper-8-quinolinolate) in a light petroleum solvent.

(2) For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

B. Kiln-dry material after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.

(1) For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece, or omit marking and provide certificates of treatment compliance issued by inspection agency.

D. Application: Treat items indicated on Drawings, and the following:

(1) Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

(2) Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.

(3) Wood framing members less than 18 inches above grade.

2.3 MISCELLANEOUS LUMBER

A. General: Provide lumber for support or attachment of other construction, including the following:

(1) Blocking.

(2) Cants.

(3) Nailers.

(4) Furring.

(5) Grounds.

B. For items of dimension lumber size, provide Select Structural, No. 1 grade, or No. 2 grade lumber with 19 percent maximum moisture content and any of the following species:

(1) Southern Yellow Pine, SPIB.

(2) Douglas Fir-Larch; NLGA, WCLIB, or WWPA.

C. For concealed boards, provide lumber with 15 19 percent maximum moisture content and any of the following species and grades:

(1) Southern Yellow Pine, No. 2 grade; SPIB.

(2) Hem-fir or Hem-fir (north), Construction or 2 Common Standard or 3 Common grade; NLGA, WCLIB, or WWPA.

(3) Spruce-pine-fir (south) or Spruce-pine-fir, Construction or 2 Common Standard or 3 Common grade; NELMA, NLGA, WCLIB, or WWPA.

2.4 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

(1) Where rough carpentry is exposed to weather, or in ground contact, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M of Type 304 stainless steel.

B. Nails, Brads, and Staples: ASTM F 1667.

C. Power-Driven Fasteners: CABO NER-272.

D. Wood Screws: ASME B18.6.1.

A. Connector Bolts: ANSI/ASME B18.2.1 and ASTM SEA J429 Grade 1.

B. Light Gage Metal Connectors: Simpson Strong-Tie or pre-approved equivalent.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

B. Do not use materials with defects that impair quality of rough carpentry or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

C. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.

D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

(1) CABO NER-272 for power-driven fasteners.

(2) Published requirements of metal framing anchor manufacturer.

(3) Table 23-II-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural Panel Roof Sheathing Nailing Schedule," in the IBC.

E. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; predrill as required.

F. Use finishing nails for exposed work, unless otherwise indicated. Countersink nail heads and fill holes with wood filler.

G. Do not splice structural members between supports, unless otherwise indicated.

H. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

3.2 WOOD GROUND, SLEEPER, BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build anchor bolts into masonry during installation of masonry work. Where possible, secure anchor bolts to formwork before concrete placement.

C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

END OF SECTION 06 1000

SECTION 06 2023 - INTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior trim at window openings.

B. Related Requirements:
1. Section 09 9100 " Painting" for priming and painting of interior finish carpentry.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber, mark grade stamp on end or back of each piece.

B. Softwood Plywood: DOC PS 1.

C. Hardboard: ANSI A135.4.

D. MDF: ANSI A208.2, Grade 130.

E. Particleboard: ANSI A208.1, Grade M-2.

2.2 FIRE-RETARDANT-TREATED MATERIALS

A. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent, respectively.

B. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.

1. For exposed lumber and plywood indicated to receive a stained or natural finish, mark back of each piece.

C. Application: Where required by Code.

2.3 INTERIOR TRIM

A. Softwood Lumber Trim:

1. Species and Grade: Eastern white, Idaho white, lodgepole, ponderosa, radiata, or sugar pine, C Select (Choice); NeLMA, NLGA, or WWPA.
2. Species and Grade: Douglas fir-larch or Douglas fir south, Superior or C & Btr finish; NLGA, WCLIB, or WWPA.
3. Species and Grade: Southern pine, C & Btr finish; SPIB.
4. Species and Grade: Western red cedar, Grade A; NLGA, WCLIB, or WWPA.
5. Maximum Moisture Content: 15 percent with at least 85 percent of shipment at 12 percent or less.
6. Finger Jointing: Allowed only if matching existing conditions.

B. Hardwood Lumber Trim:

1. Species and Grade: Match existing; NHLA.
2. Maximum Moisture Content: 10 percent.
3. Finger Jointing: Not allowed.

C. Moldings for Opaque Finish (Painted Finish): Made to patterns included in MMPA's "WM/Series Wood Moulding Patterns."

1. Softwood Moldings: MMPA WM 4, P grade.

a. Species: Match existing species.
b. Maximum Moisture Content: 15 percent with at least 85 percent of shipment at 12 percent or less.

2. Hardwood Moldings: MMPA HWM 4, P-grade.

a. Species: Match existing species.
b. Maximum Moisture Content: 9 percent.

3. Optional Material: Primed MDF.
4. Finger Jointing: Allowed if matching existing.

D. Molding Patterns:

1. Casing Pattern: To match existing salvaged casing.
2. Mull-Casing Pattern: To match existing salvaged casing.
3. Stop Pattern: To match existing salvaged stop.

2.4 MISCELLANEOUS MATERIALS

A. Low-Emitting Materials: Adhesives shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.

C. Multipurpose Construction Adhesive: Formulation complying with ASTM D 3498 that is recommended for indicated use by adhesive manufacturer.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

3.2 INSTALLATION, GENERAL

A. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.

1. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
2. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
3. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
4. Install stairs with no more than 3/16-inch variation between adjacent treads and risers and with no more than 3/8-inch variation between largest and smallest treads and risers within each flight.

3.3 STANDING AND RUNNING TRIM INSTALLATION

A. Install with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long, except where necessary. Stagger joints in adjacent and related standing and running trim. Miter at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint. Use scarf joints for end-to-end joints.

END OF SECTION 06 2023

SECTION 07 4624 - WOOD SHINGLE AND SHAKE SIDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Wood-shingle siding.
2. Felt weather-resistive barrier.
3. Flexible flashing.

B. Related Requirements:
1. Section 07 6200 "Sheet Metal Flashing and Trim" for metal flashing and trim installed with siding.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and finish specified, in sizes indicated.

1. Wood Shingles: Full size unit.

C. Samples for Initial Selection: For each type of siding product with factory-applied finishes.

D. Samples for Verification: For the following products, of sizes indicated, to verify color and finish selected.

1. Wood Shingles: Full size.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Sample Warranty: For special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For siding to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Wood Shingles: 100 sq ft of each type, color, and finish, in unbroken bundles.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: Approved by CSSB.

B. Grading Agency Qualifications: An independent testing and inspecting agency recognized by authorities having jurisdiction as qualified to label siding for compliance with referenced grading rules.

C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Build mockups for siding including accessories.

a. Size: 48 long by 48 wide.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Store siding in a dry, well-ventilated, weathertight location according to manufacturer's written instructions.

B. Store rolls of felt used for weather-resistive barrier on end, on pallets or other raised surfaces. Do not double stack rolls.

1. Protect unused felt from weather, sunlight, and moisture when left overnight or when work is not in progress.

1.10 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit siding installation and related work to be performed according to manufacturer's written instructions.

1. Field-Finished Siding: Proceed with installation of siding only when existing and forecast weather conditions permit installation and the immediate application of at least one coat of specified finish on siding before it is exposed to rain, snow, or dampness.

    a. Proceed with installation only after base or primer coat has been applied to every surface of siding units and has dried.

1.11 WARRANTY

A. Special Materials Warranty: Manufacturer's warranty administered by CSSB and on CSSB's standard form in which Manufacturer agrees to repair or replace CSSB-labeled products that fail in materials within specified warranty period. Material failures include manufacturing defects that result in leaks.

1. Materials Warranty Period: Limited lifetime from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire Resistance: Provide wood products that are fire-retardant treated according to AWPA U1, pressure treated in closed vessels under pressures of not less than 50 psig, and as follows:

1. Surface-Burning Characteristics: According to ASTM E 84; testing by a qualified testing agency acceptable to authorities having jurisdiction, as follows:

    a. Flame-Spread Index: 25 or less.
    b. Progressive Combustion: No evidence of significant progressive combustion when the test is continued for an additional 20-minute period.
    c. Flame Front: Does not progress more than 10-1/2 feet beyond the centerline of the burners at any time during the test.
    d. Effect of Weathering: No increase in the listed classification when subjected to accelerated weathering according to ASTM D 2898 Method A.

2. Product Identification: Attach a label to each bundle of wood products that includes the following:

    a. Identification mark of testing agency acceptable to authorities having jurisdiction.
    b. Identification of treatment manufacturer, chemical treatment, method of application, purpose of treatment, and warranties available.
    c. Species of wood.
    d. Flame-spread and smoke-developed indexes.
    e. Method of drying after treatment.
    f. The words "No increase in the listed classification when subjected to the Standard Rain Test."
    g. References to model-code approval.

B. Decay Resistance: Provide wood products that are preservative treated according to AWPA U1, chromated copper arsenate (CCA) pressure treatment; with a minimum of 0.40 lb/cu. ft. retention.

1. Identification: Attach a label to each bundle of wood products; identify manufacturer and include chemical treatment, method of application, purpose of treatment, and warranties available.

C. Grading Rules: Provide siding that complies with CSSB's grading rules for products indicated.

1. Identification: Attach a label to each bundle of siding that identifies manufacturer, type of product, grade, dimensions, and identification mark of grading agency.

2.2 EXPOSED SHINGLE SIDING

A. Smooth-Sawn Cedar Shingles: Western red cedar shingles.

1. Grade: No. 1.
2. Size: Match existing length; 0.50 inch (13 mm) at butt.
3. Finish: Unfinished.

2.3 ACCESSORIES

A. Felt Weather-Resistive Barrier: ASTM D 226/D 226M, Type II, asphalt-saturated organic felt, nonperforated.

B. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable rubberized-asphalt compound bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin.
1. Minimum Overall Thickness: 0.020 inch.
2. Primer for Flexible Flashing: Product recommended by manufacturer of flexible flashing for applicable substrate.

C. Nails: ASTM F 1667, stainless-steel, Type 316, wire nails, sharp pointed, and of sufficient length to penetrate a minimum of 3/4 inch into sheathing.

1. Shingles: Use box or casing nails.
2. Shakes: Use box nails.
3. Felt Weather-Resistive Barrier: Use roofing nails.
4. Nails in Contact with Metal Flashing: Use nails made from same metal as flashing.

D. Cedar Lath Strip: Western red cedar, clear heartwood, a minimum of 1-1/2 inches wide.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FELT WEATHER-RESISTIVE BARRIER INSTALLATION

A. General: Comply with felt manufacturer's written installation instructions and CSSB recommendations applicable to products and applications indicated unless more stringent requirements apply.

B. Cover exposed exterior surface of sheathing with felt nailed to framing immediately after sheathing is installed.

1. Apply horizontally with a 2-inch overlap and a 6-inch end lap. Wrap around inside and outside corners 4 inches.
2. Cut back felt 1/2 inch on each side of the break in supporting members at expansion- or control-joint locations.
3. Apply felt to cover vertical flashing with a minimum 4-inch overlap unless otherwise indicated.

3.3 FLEXIBLE FLASHING INSTALLATION

A. Apply flexible flashing to comply with manufacturer's written instructions.

1. Prime substrates as recommended by flashing manufacturer.
2. Lap seams and junctures with other materials at least 4 inches except that at flashing flanges of other construction, laps need not exceed flange width.
3. Lap flashing over felt weather-resistive barrier at bottom and sides of openings.
4. Lap felt weather-resistive barrier over flashing at heads of openings.
5. After flashing has been applied, roll surfaces with a hard rubber or metal roller to ensure that flashing is completely adhered to substrates.

3.4 SINGLE-COURSED WALLS

A. Install products according to manufacturer's written instructions and recommendations in CSSB's "Exterior and Interior Wall Manual."

B. Install products, beginning at base of wall.

C. Starter Undercourse: Install a single course of undercoursing at the base of the wall in a continuous straight line.

1. Extend 1 inch below top of foundation wall. Match existing appearance.
2. Match fastening and corner treatment of siding.

D. Exposed Siding:

1. Install starter (first) course of exposed siding over starter undercourse with butts 1/2 inch lower than undercourse butts.
2. Offset joints in first course of exposed siding a minimum of 1-1/2 inches from joints in starter undercourse.
3. Install succeeding exposed siding courses with joints offset a minimum of 1-1/2 inches between adjacent courses.
4. Install exposed siding courses with butt lines even.
5. Fasten each unit with two concealed nails spaced 3/4 to 1 inch from edges and 1 inch above butt line of succeeding course. For units wider than 10 inches, add two concealed fasteners, spaced 1 inch apart, to the center of the unit. Drive fasteners flush with top surface of units without crushing wood.
6. Interior Corner Treatment: Butted against wood stop.
7. Exterior Corner Treatment: Butted against corner boards.

E. Weather Exposure and Spacing:

1. Shingles:

a. Maintain maximum weather exposure matching existing shingles.

END OF SECTION 07 4624

SECTION 07 6200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
1. Formed roof-drainage sheet metal fabrications.
2. Formed steep-slope roof sheet metal fabrications.
3. Formed wall sheet metal fabrications.

1.3 COORDINATION

A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.

B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project Site.

1. Review construction schedule. Verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Review special roof and wall details, and condition of other construction that affect sheet metal flashing and trim.
3. Review requirements for insurance and certificates if applicable.
4. Review sheet metal flashing observation and repair procedures after flashing installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

B. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.

2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work.
3. Include identification of material, thickness, weight, and finish for each item and location in Project.
4. Include details for forming, including profiles, shapes, seams, and dimensions.
5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
6. Include details of termination points and assemblies.
7. Include details of special conditions.
8. Include details of connections to adjoining work.
9. Detail formed flashing and trim at scale of not less than 1-1/2 inches per 12 inches.

C. Samples for Initial Selection: For each type of sheet metal and accessory indicated with factory-applied finishes.

D. Samples for Verification: For each type of exposed finish.

1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
2. Unit-Type Accessories and Miscellaneous Materials: Full-size Sample.
3. Anodized Aluminum Samples: Samples to show full range to be expected for each color required.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

B. Product Test Reports: For each product, for tests performed by a qualified testing agency.

C. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.

1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.10 WARRANTY

A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Sheet Metal Standard for Flashing and Trim: Comply with SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 deg F.

2.2 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth surface.
   1. Color Anodic Finish, Coil Coated: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.
      a. Color: As selected by Architect from full range of industry colors and color densities.
      b. Color Range: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

   2. Exposed Coil-Coated Finish:

      a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      b. Three-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      c. Mica Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      d. Metallic Fluoropolymer: AAMA 2605. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      e. FEVE Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish containing 100 percent fluorinated ethylene vinyl ether resin in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      f. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with dry film thickness of not less than 0.2 mil for primer and 0.8 mil for topcoat.

   3. Color: As indicated by manufacturer's designations.
   4. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.

2.3 UNDERLAYMENT MATERIALS

A. Felt: ASTM D 226/D 226M, Type II (No. 30), asphalt-saturated organic felt; nonperforated.

B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. minimum.

2.4 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

    a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
    b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
    c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.

2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.

C. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, non-sag, nontoxic, non-staining tape 1/2 inch wide and 1/8 inch thick.

D. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

G. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.

H. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.5 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
2. Obtain field measurements for accurate fit before shop fabrication.
3. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

C. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

D. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

E. Sealant Joints: Where movable, non-expansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.

F. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

G. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.

H. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer.

I. Do not use graphite pencils to mark metal surfaces.

2.6 ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Hanging Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch-long sections. Furnish flat-stock gutter brackets and gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard but with thickness not less than twice the gutter

thickness. Fabricate expansion joints, expansion-joint covers,and gutter accessories from same metal as gutters.

1. Gutter Profile: Match existing.
2. Expansion Joints: Lap type.
3. Gutters with Girth up to 15 Inches: Fabricate from the following materials:
   a. Aluminum: 0.032 inch thick.

B. Downspouts: Fabricate downspouts to dimensions indicated, matching existing profiles, complete with mitered elbows. Furnish with metal hangers from same material as downspouts.

2.7 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:
   1. Aluminum: 0.032 inch thick.

B. Drip Edges: Fabricate from the following materials:
   1. Aluminum: 0.032 inch thick.

C. Counterflashing: Fabricate from the following materials:
   1. Aluminum: 0.032 inch thick.

2.8 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.

1. Verify compliance with requirements for installation tolerances of substrates.
2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

2.9 UNDERLAYMENT INSTALLATION

A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.

B. Apply slip sheet, wrinkle free, directly on substrate before installing sheet metal flashing and trim.

2.10 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fastener, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
3. Space cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
5. Torch cutting of sheet metal flashing and trim is not permitted.
6. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.

1. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.

E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Seal joints as required for watertight construction.

1. Use sealant-filled joints unless otherwise indicated. Embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.

2. Prepare joints and apply sealants to comply with requirements in Section 07 9200 "Joint Sealants."

2.11 ROOF-DRAINAGE SYSTEM INSTALLATION

A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

B. Hanging Gutters: Join sections matching existing conditions. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.

1. Fasten gutter spacers to front and back of gutter.
2. Anchor and loosely lock back edge of gutter to continuous eave or apron flashing.
3. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet apart. Install expansion-joint caps.

C. Downspouts: Join sections with 1-1/2-inch telescoping joints.

1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches o.c.
2. Provide elbows at base of downspout to direct water away from building.
3. Connect downspouts to underground drainage system.

2.12 ROOF FLASHING INSTALLATION

A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently atertight and weather resistant.

B. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints minimum of 4 inches. Secure in waterproof manner.

2.13 WALL FLASHING INSTALLATION

A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

2.14 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

B. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

2.15 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder.

C. Clean off excess sealants.

D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. Maintain sheet metal flashing and trim in clean condition during construction.

E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07 6200

SECTION 07 9200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes joint sealers for the following locations:

(1) Exterior joints in vertical surfaces and nontraffic horizontal surfaces as indicated below.

(a) Perimeter joints between siding and trim and frames of doors and windows.

(2) Exterior joints in horizontal traffic surfaces as indicated below:

(a) Joints in cast-in-place concrete slabs for paving to building junctions.

(b) Other joints as indicated.

1.3 SYSTEM PERFORMANCES

A. Provide elastomeric joint sealants that have been produced and installed to establish and maintain watertight and airtight continuous seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in ½ inch wide joints formed between two 6 inch long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

D. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.

E. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:

(1) Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.

(2) Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Engage an Installer who has successfully completed within the last 3 years at least 3 joint sealer applications similar in type and size to that of this Project.

B. Single Source Responsibility for Joint Sealer Materials: Obtain joint sealer materials from a single manufacturer for each different product required.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multicomponent materials.

B. Store and handle materials in compliance with manufacturers' recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.7 PROJECT CONDITIONS

A. Environmental Conditions: Do not proceed with installation of joint sealers under the following conditions:

(1) When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturer or below 40 deg F (4.4 deg C).

(2) When joint substrates are wet due to rain, frost, condensation, or other causes.

B. Joint Width Conditions: Do not proceed with installation of joint sealers where joint widths are less than allowed by joint sealer manufacturer for application indicated.

C. Joint Substrate Conditions: Do not proceed with installation of joint sealers until contaminants capable of interfering with their adhesion are removed from joint substrates.

1.8 WARRANTY

A. Special Installer’s Warranty: Installer’s standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

(1) Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

B. Colors: Provide color of exposed joint sealers indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors.

2.2 ELASTOMERIC JOINT SEALANTS

A. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealant of base polymer indicated which complies with ASTM C 920 requirements, including those referenced for Type, Grade, Class, and Uses.

B. Multi-Part Non-sag Urethane Sealant for Use NT: Type M, Grade NS, Class 25, and complying with the following requirements for Uses:

(1) Uses NT, M, G, A, and, as applicable to joint substrates indicated, O.

C. Multi-Part Non-sag Urethane Sealant for Use T: Type M, Grade NS, Class 25, and complying with the following requirements for Uses:

(1) Uses T, M, G, A, and, as applicable to joint substrates indicated, O.

D. One-Part Non-sag Urethane Sealant for Use NT: Type S; Grade NS; Class 25; and Uses NT, M, A, and, as applicable to joint substrates indicated, O.

E. One-Part Nonacid-Curing Silicone Sealant: Type S, Grade NS, Class 25, and complying with the following requirements for Uses and additional joint movement capability:

(1) Uses NT, M, G, A, and, as applicable to joint substrates indicated, O.

(2) Additional capability, when tested for adhesion and cohesion under maximum cyclic movement per ASTM C 719, to withstand the following percentage changes in joint width as measured at time of application and remain in compliance with other requirements of ASTM C 920 for Uses indicated:

(a) 50 percent movement in both extension and compression for a total of 100 percent movement.

F. Products: Subject to compliance with requirements, provide one of the following for each type of joint:

(1) Multi-Part Non-sag Urethane Sealant for Use NT:

(a) "Vulkem 227"; Mameco.

(b) "Dynatrol II"; Pecora Corp.

(c) "Sikaflex-2c NS"; Sika Corp.

(d) "Sonolastic NP2"; Sonneborne Bldg. Prod. Div.

(e) "Dymeric"; Tremco Inc.

(2) Multi-Part Non-sag Urethane Sealant for Use T:

(a) "Vulkem 227"; Mameco.

(b) "Dynatred"; Pecora Corp.

(c) "Sikaflex-2c NS"; Sika Corp.

(d) "Sonolastic NP2"; Sonneborne Bldg. Prod. Div.

(e) "THC-901"; Tremco Inc.

(3) One-Part Non-sag Urethane Sealant for Use NT:

(a) "Vulkem 116"; Mameco.

(b) "Dynatrol I"; Pecora Corp.

(c) "Sikaflex-1a"; Sika Corp.

(d) "Sikaflex-15LM"; Sika Corp.

(e) "Sonolastic NP1"; Sonneborne Bldg. Prod. Div.

(f) "Dymonic"; Tremco Inc.

(4) One-Part Non-sag Urethane Sealant for Use T:

(a) "Vulkem 116"; Mameco.

(b) "Sikaflex-1a"; Sika Corp.

(c) "Sikaflex-15LM"; Sika Corp.

(d) "Sonolastic NP1"; Sonneborne Bldg. Prod. Div.

2.3 JOINT SEALANT BACKING

A. General: Provide sealant backings of material and type which are non-staining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Plastic Foam Joint Fillers: Preformed, compressible, resilient, non-waxing, non-extruding strips of flexible, non-gassing plastic foam of material indicated below; nonabsorbent to water and gas; and of size, shape and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

(1) Closed-cell polyethylene foam, nonabsorbent to liquid water and gas, non-out-gassing in unruptured state.

(2) Proprietary, reticulated, closed-cell polymeric foam, non-out-gassing, with a density of 2.5 pcf and tensile strength of 35 psi per ASTM D 1623, and with water absorption less than 0.02 gms/cc per ASTM C 1083.

(3) Either material indicated above.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials

or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.4 MISCELLANEOUS MATERIALS

A. Primer: Provide type recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealer-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Provide non-staining, chemical cleaners of type which are acceptable to manufacturers of sealants and sealant backing materials, which are not harmful to substrates and adjacent nonporous materials, and which do not leave oily residues or otherwise have a detrimental effect on sealant adhesion or in-service performance.

C. Masking Tape: Provide non-staining, nonabsorbent type compatible with joint sealants and to surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealers, with Installer present, for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer performance. Do not proceed with installation of joint sealers until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements:

(1) Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; old joint sealers; oil; grease; waterproofing; water repellents; water; surface dirt; and frost.

(2) Clean concrete and similar porous joint substrate surfaces, by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

(3) Remove laitance and form release agents from concrete.

(4) Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile; and other nonporous surfaces by chemical cleaners or other means which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.

B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior

experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond, do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALERS

A. General: Comply with joint sealer manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

B. Elastomeric Sealant Installation Standard: Comply with recommendations of ASTM C 962 for use of joint sealants as applicable to materials, applications and conditions indicated.

C. Latex Sealant Installation Standard: Comply with requirements of ASTM C 790 for use of latex sealants.

D. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:

(1) Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.

(a) Do not leave gaps between ends of joint fillers.

(b) Do not stretch, twist, puncture, or tear joint fillers.

(c) Remove absorbent joint fillers which have become wet prior to sealant application and replace with dry material.

(2) Install bond breaker tape between sealants and joint fillers, compression seals, or back of joints where adhesion of sealant to surfaces at back of joints would result in sealant failure.

(3) Install compressible seals serving as sealant backings to comply with requirements indicated above for joint fillers.

E. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

F. Tooling of Non-sag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling

agents which discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

(1) Provide concave joint configuration per Figure 6A in ASTM C 962, unless otherwise indicated.

(2) Provide flush joint configuration per Figure 6B in ASTM C 962, where indicated.

(3) Use masking tape to protect adjacent surfaces of tooled joints.

3.4 CLEANING

A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealers during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Final Acceptance. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealers immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original work.

3.6 JOINT SEALER SCHEDULE

A. Multi-part or One-part Non Sag Urethane Sealant: Use in exterior joints and in interior joints subject to movement; and all other exterior locations not indicated otherwise.

END OF SECTION 07 9200

SECTION 08 0314 - HISTORIC TREATMENT OF WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes historic treatment of wood doors in the form of the following:

1. Repairing wood doors and trim.
2. Replacing wood door leaves and frames.
3. Reglazing.
4. Repairing, refinishing, and replacing hardware.

1.2 DEFINITIONS

A. Glazing: Includes glass, glazing points, glazing tapes, glazing sealants, and glazing compounds.

B. Door: Generally, this term includes door frame, leaves, hardware, side panels or lights, fan light, transom, and storm vestibule unless otherwise indicated by context.

C. Wood Door Component Terminology: Wood door components for historic treatment work include the following classifications:

1. Frame Components: Head, jambs, stop, and threshold or sill.
2. Leaf Components: Stiles, rails, and muntins.
3. Exterior Trim: Exterior casing, brick mold, and cornice or drip cap.
4. Interior Trim: Casing.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to historic treatment of wood doors.
2. Review methods and procedures related to historic treatment of wood doors including, but not limited to, the following:

a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
b. Materials, material application, sequencing, tolerances, and required clearances.
c. Fire-protection plan.
d. Wood door historic treatment program.
e. Coordination with building occupants.

1.4 SEQUENCING AND SCHEDULING

A. Perform historic treatment of wood doors in the following sequence, which includes work specified in this and other Sections:

1. Label each door frame with permanent opening-identification number in inconspicuous location.
2. Tag existing door leaves, storm doors, and storm-vestibule panels with opening-identification numbers and remove for on-site or off-site repair. Indicate on tags the locations on door of each component, such as "left-hand door leaf," "right-hand reverse door leaf," "first left-side storm-vestibule panel," and "second left-side storm-vestibule panel."
3. Remove door, dismantle hardware, and tag hardware with door opening-identification numbers.
4. In the shop, label each leaf with permanent opening-identification number in inconspicuous location and remove site-applied tags.
5. Install temporary protection and security at door openings.
6. Sort units by condition, separating those that need extensive repair.
7. Clean surfaces.
8. General Wood-Repair Sequence:

    a. Remove paint to bare wood.
    b. Rack frames slightly to inject adhesive into mortise and tenon joints; square frames to proper fit before adhesive sets.
    c. Repair wood by consolidation, member replacement, partial member replacement, and patching.
    d. Sand, prime, fill, sand again, and prime surfaces again for refinishing.

9. Repair, refinish, and replace hardware if required. Reinstall operating hardware.
10. Install glazing.
11. Remove temporary protection and security at door openings.
12. Reinstall units.
13. Apply finish coats.
14. Install remaining hardware and weather stripping.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.

B. Shop Drawings: For locations and extent of wood-door repair and replacement work.

1. Include plans, elevations, sections, and details of replacement parts indicating materials, profiles, joinery, reinforcing, method of splicing into or attaching to existing wood door, accessory items, and finishes.
2. Include field-verified dimensions and the following:

a. Full-size shapes and profiles with complete dimensions for replacement components and their jointing, showing relation of existing to new components.
b. Templates and directions for installing hardware and anchorages.
c. Identification of each new unit and its corresponding door locations in the building on annotated plans and elevations.
d. Provisions for sealant joints and flashing as required for location.

C. Samples for Initial Selection: For each type of exposed wood and finish.

1. Identify wood species, cut, and other features.
2. Include Samples of hardware and accessories involving color selection.

D. Samples for Verification: For the following products in manufacturer's standard sizes unless otherwise indicated, finished as required for use in the Work:

1. Replacement Units: 12-inch-long, full-size frame and leaf sections with applied finish.
2. Replacement Members: 12 inches long for each replacement member, including parts of frame, leaf, exterior trim, and interior trim.

a. Additional Samples of replacement members that show fabrication techniques, materials, and finishes as requested by Architect.

3. Repaired Wood Door Members: Prepare Samples using existing wood door members removed from site, repaired, and prepared for refinishing.
4. Refinished Wood Door Members: Prepare Samples using existing wood door members removed from site, repaired, and refinished.
5. Hardware: Full-size units with each factory-applied or restored finish.
6. Glass: Full size units of each type and appearance.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic treatment specialist.

B. Wood Door Historic Treatment Program: Submit before work begins.

C. Preconstruction Test Reports: For historic treatment of wood doors.

1.7 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic wood door specialist, experienced in repairing, refinishing, and replacing wood doors in whole and in part. Experience only in fabricating and installing new wood doors is insufficient experience for wood-door historic treatment work.

B. Wood-Repair-Material Manufacturer Qualifications: A firm regularly engaged in producing wood consolidant and wood patching compound that have been used for similar historic wood-treatment applications with successful results, and with factory-authorized service representatives who are available for consultation and Project-site inspection and on-site assistance.

C. Wood Door Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic treatment work, including protection of surrounding materials and Project site.

1. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

D. Mockups: Prepare mockups of historic treatment repair processes to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation. Prepare mockups so they are as inconspicuous as practicable.

1. Locate mockups on existing wood materials where directed by Architect.
2. Wood Door Repair: Prepare one entire door unit to serve as mockup to demonstrate Samples of each type of repair of wood door members including frame, leaves, glazing, and hardware.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified historic treatment specialist to perform preconstruction testing on historic wood doors.

1. Provide test specimens representative of proposed materials and existing construction.
2. Test historic treatment products and methods for effectiveness and compliance with specified requirements.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Pack, deliver, and store products in suitable packs, heavy-duty cartons, or wooden crates; surround with sufficient packing material to ensure that products will not be deformed, broken, or otherwise damaged.

B. Store products inside a well-ventilated area, protected from weather, moisture, soiling, abrasion, extreme temperatures, and humidity, and where environmental conditions comply with manufacturer's requirements.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with historic treatment of wood doors only when existing and forecasted weather conditions are within the environmental limits set by each manufacturer's written instructions and specified requirements.

PART 2 - PRODUCTS

2.1 HISTORIC TREATMENT OF WOOD DOORS, GENERAL

A. Quality Standard: Comply with applicable requirements in Section 12, "Historic Restoration Work," and related requirements in AWI/AWMAC/WI's "Architectural Woodwork Standards" for construction, finishes, grades of wood doors, and other requirements unless otherwise indicated.

1. Exception: Industry practices cited in the "Architectural Woodwork Standards," Section 12, Article 1.5, "Industry Practices," do not apply to the work of this Section.

2.2 REPLICATED WOOD DOOR UNITS

A. Replicated Wood Door Frames and Leaves: Custom-fabricated replacement wood units and trim, with operating and latching hardware.
1. Joint Construction: Joints matching existing.
2. Wood Species: Match wood species of existing exterior door and frame parts.
3. Wood Cut: Match cut of existing exterior wood door and frame parts.
4. Wood Member and Trim Profiles: Match profiles and detail of existing door members and trim.
5. Hardware: Reuse existing unless otherwise indicated. If reuse of existing is not possible, match existing hardware.
6. Glazing Stops: Provide replacement glazing stops coordinated with glazing system indicated.
7. Weather Stripping: Full-perimeter weather stripping for each exterior door leaf.
8. Date Identification: Emboss on a concealed surface of each replaced door frame and leaf, in easily read characters, "DOOR FRAME MADE <Insert year>" or "DOOR LEAF MADE <Insert year>." Manufacturer's name may also be embossed.

2.3 WOOD-REPLACEMENT MATERIALS

A. Wood, General: Clear fine-grained lumber; kiln dried to a moisture content of 6 to 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide.

1. Species: Match species of each existing type of wood component or assembly unless otherwise indicated.

B. Frame Heads and Jambs and Exterior Trim: Match existing species.

C. Exterior Trim: Match existing species.

D. Thresholds or Sills: Match existing species.

E. Leaf Components: Match existing species.

F. Interior Trim: Match existing species.

2.4 WOOD-REPAIR MATERIALS

A. Source Limitations: Obtain wood consolidant and wood-patching compound from single source from single manufacturer.

B. Wood Consolidant: Ready-to-use product designed to penetrate, consolidate, and strengthen soft fibers of wood materials that have deteriorated because of weathering and decay and designed specifically to enhance the bond of wood-patching compound to existing wood.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Abatron, Inc.
    b. ConServ Epoxy LLC.
    c. Gougeon Brothers, Inc.

C. Wood-Patching Compound: Two-part epoxy-resin wood-patching compound; knife-grade formulation as recommended in writing by manufacturer for type of wood repair indicated, tooling time required for the detail of work, and site conditions. Compound shall be designed for filling voids in damaged wood materials that have deteriorated because of weathering and decay. Compound shall be capable of filling deep holes and spreading to feather edge.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Abatron, Inc.
    b. Advanced Repair Technology, Inc.
    c. ConServ Epoxy LLC.
    d. Gougeon Brothers, Inc.

2.5 GLAZING MATERIALS

A. Glass: Uncoated clear safety glass units matching existing glass appearance.

B. Plastic Glazing: Abrasion- and UV-resistant monolithic polycarbonate sheet to be installed at exterior of window openings where indicated on drawings.

C. Glazing Systems:

1. Traditional Glazing Products: Glazing points and oil-based glazing putty or latex glazing compound. Tint to required color according to manufacturer's written instructions.

2. Modern Glazing Products: Glazing points and single-component polyurethane glazing compound; ASTM C920, Type S, Grade NS, Class 25, Use G; struck uniformly to match taper of existing glazing putty (removed); colored as required to match painted sash.
3. Primers and Cleaners for Glazing: As recommended in writing by glazing material manufacturer.

2.6 HARDWARE

A. Primary Door Hardware, General: Provide complete sets of door hardware consisting of hinges, pulls, locks, latches, and accessories indicated for each door or required for proper operation. Sets shall include replacement hardware to complement repaired and refinished, existing hardware. Door hardware shall smoothly operate, tightly close, and securely lock wood doors and be sized to accommodate frequency of use, glazing weight, and dimensions.

B. Replacement Hardware: Replace existing damaged or missing hardware with new hardware to match existing.

C. Material and Design:

1. Material: Match existing unless otherwise indicated.
2. Design: Match type and appearance of existing hardware.
3. Replacement Door Hardware: Regardless of mechanisms within, match existing, exposed door hardware of the following types:

    a. Door knobs, levers, and escutcheons.
    b. Door latches.
    c. Surface-mounted flush bolts.
    d. Handles.
    e. Projecting transom hinges and latch with pole ring.

4. Date Identification: Emboss on a concealed surface of the metal body of each new hardware item, in easily read characters, "MADE <**Insert year**>." Manufacturer's name may also be embossed.

D. Hardware Finishes: Comply with BHMA A156.18 for base material and finish requirements indicated by the following:
1. Match existing hardware finishes.

2.7 WEATHER STRIPPING

A. Compression-Type Weather Stripping: Compressible weather stripping designed for permanently resilient sealing under bumper or wiper action; completely concealed when door is closed.
1. Weather-Stripping Material: Match existing materials and profiles as much as possible unless otherwise indicated.

    a. Cellular Elastomeric Gaskets: Preformed; complying with ASTM C509.
    b. Dense Elastomeric Gaskets: Preformed; complying with ASTM C864.

B. Sliding-Type Weather Stripping: Woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric.

1. Weather Seals: Provide weather stripping with integral barrier fin or fins of semirigid, polypropylene sheet or polypropylene-coated material.

C. Metal Weather Stripping: Bronze weather stripping; designed either as one piece to seal door at head and jambs by door sliding against it or as two pieces that interlock; and completely concealed when door is closed.

2.8 MISCELLANEOUS MATERIALS

A. Cleaning Materials:

1. Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 1/2 cup of laundry detergent that contains no ammonia, 5 quarts of 5 percent sodium hypochlorite bleach, and 15 quarts of warm water for each 5 gal. of solution required.
2. Mildewcide: Commercial, proprietary mildewcide or a solution prepared by mixing 1/3 cup of household detergent that contains no ammonia, 1 quart of 5 percent sodium hypochlorite bleach, and 3 quarts of warm water.

B. Adhesives: Wood adhesives with minimum 15- to 45-minute cure at 70 deg F, in gunnable and liquid formulations as recommended in writing by adhesive manufacturer for each type of repair and exposure conditions.

C. Fasteners: Use fastener metals that are noncorrosive and compatible with each material joined.

1. Match existing fasteners in material and type of fastener unless otherwise indicated.
2. Use concealed fasteners for interconnecting wood components.
3. Use concealed fasteners for attaching items to other work unless exposed fasteners are unavoidable or the existing fastening method.
4. For fastening metals, use fasteners of same basic metal as fastened metal unless otherwise indicated.
5. For exposed fasteners, use Phillips-type machine screws of head profile flush with metal surface unless otherwise indicated.
6. Finish exposed fasteners to match finish of metal fastened unless otherwise indicated.

D. Anchors, Clips, and Accessories: Fabricate anchors, clips, and door accessories of aluminum, nonmagnetic stainless steel, or hot-dip zinc-coated steel complying with requirements in ASTM B633 for SC 3 (Severe) service condition.

2.9 WOOD DOOR FINISHES

A. Unfinished Replacement Units: Provide exposed exterior and interior wood surfaces of replacement units unfinished; smooth, filled, and suitably prepared for on-site priming and finishing.

B. Factory-Primed Replacement Units: Manufacturer's standard factory-prime coat on exposed exterior and interior wood surfaces; compatible with indicated finish coating.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect adjacent materials from damage by historic treatment of wood doors.

B. Clean wood doors of mildew, algae, moss, plant material, loose paint, grease, dirt, and other debris by scrubbing with bristle brush or sponge and detergent solution. Scrub mildewed areas with mildewcide. After cleaning, rinse thoroughly with fresh water. Allow to dry before repairing or painting.

C. Condition replacement wood members and replacement units to prevailing conditions at installation areas before installing.

3.2 HISTORIC TREATMENT OF WOOD DOORS, GENERAL

A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from the door interior at 10 feet away and from the door exterior at 20 feet away.

B. General: In treating historic items, disturb them as minimally as possible and as follows:

1. Stabilize and repair wood doors to reestablish structural integrity and weather resistance while maintaining the existing form of each item.
2. Remove coatings and apply borate preservative treatment before repair.
3. Repair items in place where possible.
4. Install temporary protective measures to protect wood door work that is indicated to be completed later.

C. Mechanical Abrasion: Where mechanical abrasion is needed for the work, use only the gentlest mechanical methods, such as scraping and natural-fiber bristle brushing, that will not abrade wood substrate, reducing clarity of detail. Do not use abrasive methods such as sanding, wire brushing, or power tools except as indicated as part of the historic treatment program and as approved by Architect.

D. Repair and Refinish Existing Hardware: Dismantle door hardware; strip paint, repair, and refinish it to match finish Samples; and lubricate moving parts just enough to function smoothly.

E. Repair Wood Doors: Match existing materials and features, retaining as much original material as possible to perform repairs.

1. Unless otherwise indicated, repair wood doors by consolidating, patching, splicing, or otherwise reinforcing wood with new wood matching existing wood or with salvaged, sound, original wood.
2. Where indicated, repair wood doors by limited replacement matching existing material.

F. Replace Wood Units: Where indicated, duplicate and replace units with units made from salvaged, sound, original wood or with new wood matching existing wood. Use surviving prototypes to create patterns for duplicate replacements.

1. Do not use substitute materials unless otherwise indicated.
2. Compatible substitute materials may be used.

G. Protection of Openings: Where doors are indicated for removal, cover resultant openings with temporary enclosures so that openings are weathertight during repair period.

H. Identify removed doors, frames, leaves, and members with numbering system corresponding to door locations to ensure reinstallation in same location. Key doors, leaves, and members to Drawings showing location of each removed unit. Permanently label units in a location that will be concealed after reinstallation.

3.3 WOOD DOOR PATCH-TYPE REPAIR

A. General: Patch wood members that exhibit depressions, holes, or similar voids and that have limited amounts of rotted or decayed wood.

1. Remove leaves from door frames before performing patch-type repairs at meeting or sliding surfaces unless otherwise indicated. Reglaze units prior to reinstallation.
2. Verify that surfaces are sufficiently clean and free of paint residue before patching.
3. Treat wood members with wood consolidant before applying patching compound. Coat wood surfaces by brushing, applying multiple coats until wood is saturated and unable to absorb more. Allow treatment to harden before filling void with patching compound.
4. Remove rotted or decayed wood down to sound wood.

B. Apply borate preservative treatment to accessible surfaces either before applying wood consolidant or after removing rotted or decayed wood. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom. Allow treatment to dry.

C. Apply wood-patching compound to fill depressions, nicks, cracks, and other voids created by removed or missing wood.

1. Prime patch area with application of wood consolidant or manufacturer's recommended primer.
2. Mix only as much patching compound as can be applied according to manufacturer's written instructions.
3. Apply patching compound in layers as recommended in writing by manufacturer until the void is completely filled.
4. Sand patch surface smooth and flush with adjacent wood, without voids in patch material, and matching contour of wood member.
5. Clean spilled compound from adjacent materials immediately.

3.4 WOOD DOOR MEMBER-REPLACEMENT REPAIR

A. General: Replace parts of or entire wood door members at locations indicated on Drawings.

1. Remove leaves from door openings before performing member-replacement repairs unless otherwise indicated.
2. Verify that surfaces are sufficiently clean and free of paint residue before repair.
3. Remove broken, rotted, and decayed wood down to sound wood.
4. Custom fabricate new wood to replace missing wood; either replace entire wood member or splice new wood part into existing member.
5. Secure new wood using finger joints, multiple dowels, or splines with adhesive and nailing to ensure maximum structural integrity at each splice. Use only concealed fasteners. Fill nail holes and patch surface to match surrounding sound wood.

B. Apply borate preservative treatment to accessible surfaces after replacements are made. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.

C. Repair remaining depressions, holes, or similar voids with patch-type repairs.

D. Clean spilled materials from adjacent surfaces immediately.

E. Glazing: Reglaze units before reinstallation.

1. Mill new and rout existing glazed members to accommodate new glass thickness.
2. Provide replacement glazing stops coordinated with glazing system indicated.
3. Provide glazing stops to match contour of door frames.

F. Reinstall units removed for repair into original openings.

G. Weather Stripping: Replace nonfunctioning and install missing weather stripping to ensure full-perimeter weather stripping for each exterior leaf.

3.5 GLAZING

A. Comply with combined written instructions of manufacturers of glass, glazing system, and glazing materials, unless more stringent requirements are indicated.

B. Remove cracked and damaged glass and glazing materials from openings and prepare surfaces for reglazing.

C. Remove existing glass and glazing where indicated on Drawings, and prepare surfaces for reglazing.

D. Remove glass and glazing from openings and prepare surfaces for reglazing.

E. Size glass as required by Project conditions to provide necessary bite on glass, minimum edge and face clearances, with reasonable tolerances.

F. Apply primers to joint surfaces where required for adhesion of glazing system, as determined by preconstruction testing.

G. Install setting bead, side beads, and back bead against stop in glazing rabbets before setting glass.

H. Install glass with proper orientation so that coatings, if any, face exterior or interior as required.

I. Install glazing points.

J. Disposal of Removed Glass: Remove from Owner's property and legally dispose of it unless otherwise indicated.

3.6 WOOD DOOR UNIT REPLACEMENT

A. General: Replace existing wood door frame and leaf with new custom-fabricated units to match existing at locations indicated on drawings.

B. Apply borate preservative treatment to accessible surfaces before finishing. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.

C. Mill glazed members to accommodate glass thickness. Glaze units before installation.

D. Install units, hardware, weather stripping, accessories, and other components.

E. Install units level, plumb, square, true to line, without distortion or impeding movement, anchored securely in place to structural support, and in proper relation to wall flashing, trim, and other adjacent construction.

F. Set threshold or sill members in bed of sealant for weathertight construction unless otherwise indicated.

G. Install door units with new anchors into existing openings.

H. Weather Stripping: Install full-perimeter weather stripping for each operable exterior leaf.

I. Metal Protection: Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

J. Disposal of Removed Units: Remove from Owner's property and legally dispose of them.

3.7 WEATHER STRIPPING INSTALLATION

A. Install weather stripping for tight seal of joints as determined by preconstruction testing and demonstrated in mockup.

3.8 FIELD QUALITY CONTROL

A. Manufacturers Field Service: Engage a factory-authorized, wood-repair-material service representative for consultation and Project-site inspection and to provide on-site assistance when requested by Architect.

3.9 ADJUSTING

A. Adjust existing and replacement operating leaves, hardware, weather stripping, and accessories for a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

3.10 CLEANING AND PROTECTION

A. Protect door surfaces from contact with contaminating substances resulting from construction operations. Monitor door surfaces adjacent to and below exterior concrete and masonry during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances contact door surfaces, remove contaminants immediately.

B. Clean exposed surfaces immediately after historic treatment of wood doors. Avoid damage to coatings and finishes. Remove excess sealants, glazing and patching materials, dirt, and other substances.

C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

END OF SECTION 08 0314

SECTION 08 0352 - HISTORIC TREATMENT OF WOOD WINDOWS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes historic treatment of wood windows in the form of the following:

1. Repairing wood windows and trim.
2. Reglazing.
3. Repairing, refinishing, and replacing hardware.
4. Replacing insect screen units.
5. Providing new storm window units.

1.2 DEFINITIONS

A. Glazing: Includes glass, glazing points, glazing tapes, glazing sealants, and glazing compounds.

B. Window: Includes window frame, sash, hardware, storm window, and exterior and interior shutters unless otherwise indicated by context.

C. Wood Window Component Terminology: Wood window components for historic treatment work include the following classifications:

1. Frame Components: Head, jambs, and sill.
2. Sash Components: Stiles and rails, parting bead, stop, and muntins.
3. Exterior Trim: Exterior casing, brick mold, and cornice or drip cap.
4. Interior Trim: Casing, stool, and apron.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to historic treatment of wood windows.
2. Review methods and procedures related to historic treatment of wood windows including, but not limited to, the following:

a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
b. Materials, material application, sequencing, tolerances, and required clearances.
c. Fire-protection plan.
d. Wood window historic treatment program.

1.4 SEQUENCING AND SCHEDULING

A. Perform historic treatment of wood windows in the following sequence, which includes work specified in this and other Sections:

1. Label each window frame with permanent opening-identification number in inconspicuous location.
2. Tag existing window sash with opening-identification numbers and remove for on-site or off-site repair. Indicate on tags the locations on window of each component.
3. Remove window, dismantle hardware, and tag hardware with opening-identification numbers.
4. Install temporary protection and security at window openings.
5. In the shop, label each sash unit with permanent opening-identification number in inconspicuous location and remove site-applied tags.
6. Sort units by condition, separating those that need extensive repair.
7. Clean surfaces.
8. General Wood-Repair Sequence:

    a. Remove paint to bare wood.
    b. Rack frames slightly to inject adhesive into mortise and tenon joints; square frames to proper fit before adhesive sets.
    c. If thicker than original glass is required, rout existing muntins to required rebate size.
    d. Repair wood by consolidation, member replacement, partial member replacement, and patching.
    e. Sand, prime, fill, sand again, and prime surfaces again for refinishing.

9. Repair, refinish, and replace hardware if required. Reinstall operating hardware.
10. Install glazing.
11. Remove temporary protection and security at window openings.
12. Reinstall units.
13. Apply finish coats.
14. Install remaining hardware and weather stripping.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.

B. Shop Drawings:

1. Include plans, elevations, and sections showing locations and extent of repair and replacement work, with enlarged details of replacement parts indicating materials, profiles, joinery, reinforcing, method of splicing into or attaching to existing wood window, accessory items, and finishes.
2. Include field-verified dimensions and the following:

a. Full-size shapes and profiles with complete dimensions for replacement components and their jointing, showing relation of existing to new components.
b. Templates and directions for installing hardware and anchorages.
c. Identification of each new unit and its corresponding window locations in the building on annotated plans and elevations.
d. Provisions for joint sealants as required for location.

C. Samples for Initial Selection: For each type of exposed wood and finish.

1. Identify wood species, cut, and other features.
2. Include Samples of hardware and accessories involving color selection.

D. Samples for Verification: For the following products in manufacturer's standard sizes unless otherwise indicated, finished as required for use in the Work:

1. Replacement Units: 12 inch long, full-size frame and sash sections with applied finish.
2. Replacement Members: 12 inch long for each replacement member, including parts of frame, sash, exterior trim, and interior trim.

a. Additional Samples of replacement members that show fabrication techniques, materials, and finishes as requested by Architect.

3. Repaired Wood Window Members: Prepare Samples using existing wood window members removed from site, repaired, and prepared for refinishing.
4. Refinished Wood Window Members: Prepare Samples using existing wood window members removed from site, repaired, and refinished.
5. Hardware: Full-size units with each factory-applied or restored finish.
6. Weather Stripping: 12 inch long sections.
7. Glass: Full size units of each type and appearance.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic wood window restoration specialist.

B. Wood Window Historic Treatment Program: Submit before work begins.

C. Preconstruction Test Reports: For historic treatment of wood windows.

1.7 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic wood window specialist, experienced in repairing, refinishing, and replacing wood windows in whole and in part. Experience only in fabricating and installing new wood windows is insufficient experience for wood-window historic treatment work.

B. Wood-Repair-Material Manufacturer Qualifications: A firm regularly engaged in producing wood consolidant and wood-patching compound that have been used for similar historic wood-treatment applications with successful results, and with factory-authorized service

representatives who are available for consultation and Project-site inspection and on-site assistance.

C. Wood Window Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic treatment work, including protection of surrounding materials and Project site.

1. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

D. Mockups: Prepare mockups of historic treatment repair processes to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation. Prepare mockups so they are as inconspicuous as practicable.

1. Locate mockups on existing windows where directed by Architect.
2. Wood Window Repair: Prepare one entire window unit to serve as mockup to demonstrate samples of each type of repair of wood window members including frame, sash, glazing, and hardware.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified historic treatment specialist to perform preconstruction testing on historic wood windows.

1. Provide test specimens representative of proposed materials and existing construction.
2. Test historic treatment products and methods for effectiveness and compliance with specified requirements.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Pack, deliver, and store products in suitable packs, heavy-duty cartons, or wooden crates; surround with sufficient packing material to ensure that products are not deformed, broken, or otherwise damaged.

B. Store products inside a well-ventilated area and protect from weather, moisture, soiling, abrasion, extreme temperatures, and humidity, and where environmental conditions comply with manufacturer's requirements.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with historic treatment of wood windows only when existing and forecasted weather conditions are within the environmental limits set by each manufacturer's written instructions and specified requirements.

PART 2 - PRODUCTS

2.1 HISTORIC TREATMENT OF WOOD WINDOWS, GENERAL

A. Quality Standard: Comply with applicable requirements in Section 12, "Historic Restoration Work," and related requirements in AWI/AWMAC/WI's "Architectural Woodwork Standards" for construction, finishes, grades of wood windows, and other requirements unless otherwise indicated.

1. Exception: Industry practices cited in Section 12, Article 1.5, Industry Practices, of the Architectural Woodwork Standards do not apply to the work of this Section.

2.2 STORM WINDOWS

A. General: Custom fabricated, tight fitting, and with operating and latching hardware.

1. Fabricate storm windows for installation where indicated on Drawings.
2. Make storm windows removable for cleaning and storage.

B. Wood Storm Windows:
1. Joint Construction: Joints matching existing.
2. Wood Species: Match wood species of exterior trim and sash parts.
3. Wood Cut: Match cut of existing exterior wood window trim and sash parts.
4. Wood Storm-Window Members: As indicated on Drawings.
5. Hardware: As indicated on Drawings.
6. Glazing Material: Uncoated clear float glass.
7. Date Identification: Emboss on a concealed surface of each storm window, in easily read characters, "STORM WINDOW MADE <Insert year>." Manufacturer's name may also be embossed.

2.3 WOOD-REPLACEMENT MATERIALS

A. Wood, General: Clear fine-grained lumber; kiln dried to a moisture content of 6 to 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide.

1. Species: Match species of each existing type of wood component or assembly unless otherwise indicated.

B. Frame Heads and Jambs and Exterior Trim: Match existing species.

C. Exterior Trim: Match existing species.

D. Sills: Match existing species.

E. Sash Components: Match existing species.

F. Interior Trim: Match existing species.

2.4 WOOD-REPAIR MATERIALS

A. Source Limitations: Obtain wood consolidant and wood-patching compound from single source from single manufacturer.

B. Wood Consolidant: Ready-to-use product designed to penetrate, consolidate, and strengthen soft fibers of wood materials that have deteriorated due to weathering and decay and designed specifically to enhance the bond of wood-patching compound to existing wood.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Abatron, Inc.
b. ConServ Epoxy LLC.
c. Gougeon Brothers, Inc.

C. Wood-Patching Compound: Two-part epoxy-resin wood-patching compound; knife-grade formulation as recommended in writing by manufacturer for type of wood repair indicated, tooling time required for the detail of work, and site conditions. Compound shall be designed for filling voids in damaged wood materials that have deteriorated due to weathering and decay. Compound shall be capable of filling deep holes and spreading to feather edge.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Abatron, Inc.
b. Advanced Repair Technology, Inc.
c. ConServ Epoxy LLC.
d. Gougeon Brothers, Inc.

2.5 GLAZING MATERIALS

A. Glass: Match Existing.

B. Glazing Systems:

1. Traditional Glazing Products: Glazing points and oil-based glazing putty or latex glazing compound. Tint to required color according to manufacturer's written instructions.

2. Modern Glazing Products: Glazing points and single-component polyurethane glazing compound; ASTM C920, Type S, Grade NS, Class 25, Use G; struck uniformly to match taper of existing glazing putty (removed); colored as required to match painted sash.

3. Primers and Cleaners for Glazing: As recommended in writing by glazing material manufacturer.

2.6 HARDWARE

A. Window Hardware: Provide complete sets of window hardware consisting of window cranks, hinges, pulls, latches, and accessories indicated for each window or required for proper operation. Sets shall include replacement hardware to complement repaired and refinished, existing hardware. Window hardware shall smoothly operate, tightly close, and securely lock wood windows and be sized to accommodate sash or ventilator weight and dimensions.

B. Other Hardware: Provide complete sets of hardware for each type of storm window consisting of hinges, pulls, latches, and accessories indicated or required for proper operation. Hardware shall smoothly operate, tightly close, and secure units appropriately for unit weight and dimensions.

C. Replacement Hardware: Replace existing damaged or missing hardware with new hardware matching existing.

D. Material and Design:

1. Material: Match existing unless otherwise indicated.
2. Design: Match type and appearance of existing hardware.
3. Replacement Window Hardware: Match existing window hardware of the following types:

    a. Projected window hinge.
    b. Window lock.
    c. Window latch.
    d. Handle.
    e. Hand crank.

4. Date Identification: Emboss on a concealed surface of the metal body of each new hardware item, in easily read characters, "MADE <Insert year>." Manufacturer's name may also be embossed.

E. Hardware Finishes: Comply with BHMA A156.18 for base material and finish requirements indicated by the following:
1. BHMA 613: Dark-oxidized satin bronze, oil-rubbed; bronze base metal.

2.7 WEATHER STRIPPING

A. Compression-Type Weather Stripping: Compressible weather stripping designed for permanently resilient sealing under bumper or wiper action; completely concealed when window is closed.
1. Weather-Stripping Material: Match existing materials and profiles as much as possible unless otherwise indicated.

    a. Cellular Elastomeric Gaskets: Preformed; complying with ASTM C509.

b. Dense Elastomeric Gaskets: Preformed; complying with ASTM C864.

B. Metal Weather Stripping: Bronze weather stripping; designed either as one piece to seal by sliding into a groove in the sash or as two pieces that interlock; and completely concealed when window is closed.

2.8 MISCELLANEOUS MATERIALS

A. Borate Preservative Treatment: Inorganic, borate-based solution, with disodium octaborate tetrahydrate as the primary ingredient; manufactured for preserving weathered and decayed wood from further damage by decay fungi and wood-boring insects; complying with AWPA P5; containing no boric acid.

B. Cleaning Materials:

1. Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 1/2 cup of laundry detergent that contains no ammonia, 5 quarts of 5 percent sodium hypochlorite bleach, and 15 quarts of warm water for each 5 gal. of solution required.
2. Mildewcide: Commercial, proprietary mildewcide or a solution prepared by mixing 1/3 cup of household detergent that contains no ammonia, 1 quart of 5 percent sodium hypochlorite bleach, and 3 quarts of warm water.

C. Adhesives: Wood adhesives for exterior exposure, with minimum 15- to 45-minute cure at 70 deg F, in gunnable and liquid formulations as recommended in writing by adhesive manufacturer for each type of repair.

D. Fasteners: Use fastener metals that are noncorrosive and compatible with each material joined.

1. Match existing fasteners in material and type of fastener unless otherwise indicated.
2. Use concealed fasteners for interconnecting wood components.
3. Use concealed fasteners for attaching items to other work unless exposed fasteners are unavoidable or the existing fastening method.
4. For fastening metals, use fasteners of same basic metal as fastened metal unless otherwise indicated.
5. For exposed fasteners, use Phillips-type machine screws of head profile flush with metal surface unless otherwise indicated.
6. Finish exposed fasteners to match finish of metal fastened unless otherwise indicated.

E. Anchors, Clips, and Accessories: Fabricate anchors, clips, and window accessories of aluminum, nonmagnetic stainless steel, or hot-dip zinc-coated steel complying with requirements in ASTM B633 for SC 3 (Severe) service condition.

2.9 WOOD WINDOW FINISHES

A. Unfinished Replacement Units: Provide exposed exterior and interior wood surfaces of replacement units unfinished; smooth, filled, and suitably prepared for on-site priming and finishing.

B. Factory-Primed Replacement Units: Manufacturer's standard factory-prime coat on exposed exterior and interior wood surfaces; compatible with indicated finish coating.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT SPECIALIST

A. Historic Treatment Specialist Firms: Subject to compliance with requirements, provide historic treatment of wood windows by one of the following:

1. Summit Sealants and Restoration Services 2000 W Quincy Avenue, Englewood, CO 80110 720-389-8633. http://www.summitsealants.com

2. Heritage Window Restoration 5800 East 58th Avenue, Unit K, Commerce City, CO 80022 303-482-7532. http://www.heritagewindowrestoration.com/

3.2 PREPARATION

A. Protect adjacent materials from damage by historic treatment of wood windows.

B. Clean wood windows of mildew, algae, moss, plant material, loose paint, grease, dirt, and other debris by scrubbing with bristle brush or sponge and detergent solution. Scrub mildewed areas with mildewcide. After cleaning, rinse thoroughly with fresh water. Allow to dry before repairing or painting.

C. Condition replacement wood members and replacement units to prevailing conditions at installation areas before installing.

3.3 HISTORIC TREATMENT OF WOOD WINDOWS, GENERAL

A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from the window interior at 10 feet away and from the window exterior at 20 feet away.

B. General: In treating historic items, disturb them as minimally as possible and as follows:

1. Stabilize and repair wood windows to reestablish structural integrity and weather resistance while maintaining the existing form of each item.
2. Remove coatings and apply borate preservative treatment before repair.
3. Repair items in place where possible.
4. Install temporary protective measures to protect wood window work that is indicated to be completed later.
5. Refinish historic wood windows unless otherwise indicated.

C. Mechanical Abrasion: Where mechanical abrasion is needed for the work, use only the gentlest mechanical methods, such as scraping and natural-fiber bristle brushing, that will not abrade wood substrate, reducing clarity of detail. Do not use abrasive methods such as sanding, wire

brushing, or power tools except as indicated as part of the historic treatment program and as approved by Architect.

D. Repair and Refinish Existing Hardware: Dismantle window hardware; strip paint, repair, and refinish it to match finish samples; and lubricate moving parts just enough to function smoothly.

E. Repair Wood Windows: Match existing materials and features, retaining as much original material as possible to perform repairs.

1. Unless otherwise indicated, repair wood windows by consolidating, patching, splicing, or otherwise reinforcing wood with new wood matching existing wood or with salvaged, sound, original wood.
2. Where indicated, repair wood windows by limited replacement matching existing material.
3. Sash Balance: Repair sash balances to function according to type as specified in "Hardware" Article" above. Provide missing sash balances.

F. Replace Wood Units: Where indicated, duplicate and replace units with units made from salvaged, sound, original wood or with new wood matching existing wood. Use surviving prototypes to create patterns for duplicate replacements.

1. Do not use substitute materials unless otherwise indicated.
2. Compatible substitute materials may be used.

G. Protection of Openings: Where sash or windows are indicated for removal, cover resultant openings with temporary enclosures so that openings are weathertight during repair period.

H. Identify removed windows, frames, sash, and members with numbering system corresponding to window locations to ensure reinstallation in same location. Key windows, sash, and members to Drawings showing location of each removed unit. Permanently label units in a location that will be concealed after reinstallation.

3.4 WOOD WINDOW PATCH-TYPE REPAIR

A. General: Patch wood members that exhibit depressions, holes, or similar voids, and that have limited amounts of rotted or decayed wood.

1. Remove sash from windows before performing patch-type repairs at meeting or sliding surfaces unless otherwise indicated. Reglaze units before reinstallation.
2. Verify that surfaces are sufficiently clean and free of paint residue before patching.
3. Treat wood members with wood consolidant before applying patching compound. Coat wood surfaces by brushing, applying multiple coats until wood is saturated and unable to absorb more. Allow treatment to harden before filling void with patching compound.
4. Remove rotted or decayed wood down to sound wood.

B. Apply borate preservative treatment to accessible surfaces either before applying wood consolidant or after removing rotted or decayed wood. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom. Allow treatment to dry.

C. Apply wood-patching compound to fill depressions, nicks, cracks, and other voids created by removed or missing wood.

1. Prime patch area with application of wood consolidant or manufacturer's recommended primer.
2. Mix only as much patching compound as can be applied according to manufacturer's written instructions.
3. Apply patching compound in layers as recommended in writing by manufacturer until the void is completely filled.
4. Sand patch surface smooth and flush with adjacent wood, without voids in patch material, and matching contour of wood member.
5. Clean spilled compound from adjacent materials immediately.

3.5 WOOD WINDOW MEMBER-REPLACEMENT REPAIR

A. General: Replace parts of or entire wood window members at locations indicated on Drawings and where damage is too extensive to patch.

1. Remove sash from windows before performing member-replacement repairs unless otherwise indicated.
2. Verify that surfaces are sufficiently clean and free of paint residue before repair.
3. Remove broken, rotted, and decayed wood down to sound wood.
4. Custom fabricate new wood to replace missing wood; either replace entire wood member or splice new wood part into existing member.
5. Secure new wood using finger joints, multiple dowels, or splines with adhesive and nailing to ensure maximum structural integrity at each splice. Use only concealed fasteners. Fill nail holes and patch surface to match surrounding sound wood.

B. Apply borate preservative treatment to accessible surfaces after replacements are made. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.

C. Repair remaining depressions, holes, or similar voids with patch-type repairs.

D. Clean spilled materials from adjacent surfaces immediately.

E. Glazing: Reglaze units before reinstallation.

1. Mill new and rout existing glazed members to accommodate new glass thickness.
2. Provide replacement glazing stops coordinated with glazing system indicated.
3. Provide glazing stops to match contour of sash frames.

F. Reinstall units removed for repair into original openings.

G. Weather Stripping: Replace nonfunctioning and install missing weather stripping to ensure full-perimeter and meeting rail weather stripping for each operable sash.

3.6 GLAZING

A. Comply with combined written instructions of manufacturers of glass, glazing systems, and glazing materials, unless more stringent requirements are indicated.

B. Remove cracked and damaged glass and glazing materials from openings and prepare surfaces for reglazing.

C. Remove existing glass and glazing where indicated on Drawings, and prepare surfaces for reglazing.

D. Remove glass and glazing from openings and prepare surfaces for reglazing.

E. Size glass as required by Project conditions to provide necessary bite on glass, minimum edge and face clearances, with reasonable tolerances.

F. Apply primers to joint surfaces where required for adhesion of glazing system, as determined by preconstruction testing.

G. Install setting bead, side beads, and back bead against stop in glazing rabbets before setting glass.

H. Install glass with proper orientation so that coatings, if any, face exterior or interior as required.

I. Install glazing points.

J. Disposal of Removed Glass: Remove from Owner's property and legally dispose of it unless otherwise indicated.

3.7 WEATHER STRIPPING INSTALLATION

A. Install weather stripping for tight seal of joints as determined by preconstruction testing and demonstrated in mockup.

3.8 FIELD QUALITY CONTROL

A. Manufacturers Field Service: Engage wood-repair-material manufacturers' factory-authorized service representatives for consultation and Project-site inspection and to provide on-site assistance when requested by Architect.

3.9 ADJUSTING

A. Adjust existing and replacement operating sash, screens, hardware, weather stripping, and accessories for a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

3.10 CLEANING AND PROTECTION

A. Protect window surfaces from contact with contaminating substances resulting from construction operations. Monitor window surfaces adjacent to and below exterior concrete and masonry during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances contact window surfaces, remove contaminants immediately.

B. Clean exposed surfaces immediately after historic treatment of wood windows. Avoid damage to coatings and finishes. Remove excess sealants, glazing and patching materials, dirt, and other substances.

C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction.

END OF SECTION 08 0352

SECTION 08 5200 - WOOD WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes wood windows.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project Site.

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Review, discuss, and coordinate the interrelationship of wood windows with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealing perimeters, and protecting finishes.
3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for wood windows.

B. Shop Drawings: For wood windows.

1. Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.

C. Samples: For each exposed product and for each color specified, 2 by 4 inches in size.

D. Samples for Initial Selection: For units with factory-applied finishes.

1. Include Samples of hardware and accessories involving color selection.

E. Samples for Verification: For wood windows and components required, prepared on Samples of size indicated below:

1. Exposed Finishes: 2 by 4 inches.
2. Exposed Hardware: Full-size units.

F. Product Schedule: For wood windows. Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Test Reports: For each type of wood window, for tests performed by a qualified testing agency.

C. Field quality-control reports.

D. Sample Warranties: For manufacturer's warranties.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An installer acceptable to wood window manufacturer for installation of units required for this Project.

B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Build mockup of typical wall area as shown on Drawings.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace wood windows that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure to meet performance requirements.
b. Structural failures including excessive deflection, water leakage, and air infiltration.
c. Faulty operation of movable sash and hardware.
d. Deterioration of materials and finishes beyond normal weathering.
e. Failure of insulating glass.

2. Warranty Period:

a. Window: 10 years from date of Substantial Completion.
b. Glazing Units: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain wood windows from single source from single manufacturer.

2.2 WINDOW PERFORMANCE REQUIREMENTS

A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.

1. Window Certification: WDMA certified with label attached to each window.

B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:

1. Minimum Performance Class: LC.
2. Minimum Performance Grade: 40.

C. Thermal Transmittance: NFRC 100 maximum whole-window U-factor of 0.30 Btu/sq. ft. x h x deg F.

D. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.40.

E. Windborne-Debris-Impact Resistance: Comply requirements of authorities having jurisdiction.

2.3 WOOD WINDOWS

A. Wood Windows:

1. Basis of Design: Marvin Ultimate Double Hung Wood Windows.

B. Operating Types: Provide the following operating types in locations indicated on Drawings:
1. Double hung.

C. Frames and Sashes: Fine-grained wood lumber complying with AAMA/WDMA/CSA 101/I.S.2/A440; kiln dried to a moisture content of not more than 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide; water-repellent preservative treated.

1. Exterior Finish: Manufacturer's standard factory-prime coat wood.
   a. Color: As selected by Architect from manufacturer's full range.

2. Interior Finish: Manufacturer's standard color-coated finish or Manufacturer's standard stain-and-varnish finish to match existing conditions.

a. Exposed Unfinished Wood Surfaces: Pine.
b. Color: As selected by Architect from manufacturer's full range.

D. Glass: Clear annealed glass, ASTM C 1036, Type 1, Class 1, q3.

1. Kind: Fully tempered where required by applicable building codes.

E. Insulating-Glass Units: ASTM E 2190.

1. Glass: ASTM C 1036, Type 1, Class 1, q3.

a. Tint: Clear.
b. Kind: Fully tempered where required by applicable building codes.

2. Lites: Two.
3. Filling: Fill space between glass lites with air.
4. Low-E Coating: Sputtered on second or third surface.

F. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

G. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.

1. Exposed Hardware Color and Finish: As selected by Architect from manufacturer's full range.

H. Hung Window Hardware:

1. Counterbalancing Mechanism: Complying with AAMA 902, concealed, of size and capacity to hold sash stationary at any open position.
2. Locks and Latches: Allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only.
3. Tilt Hardware: Releasing tilt latch allows sash to pivot about horizontal axis to facilitate cleaning exterior surfaces from the interior.

I. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.

J. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.

1. Exposed Fasteners: Do not use exposed fasteners to greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

2.4 INSECT SCREENS

A. General: Fabricate insect screens to integrate with window frame. Provide screen for each operable exterior sash. Screen wickets are not permitted.

1. Type and Location: Full, outside for double-hung sashes.

B. Aluminum Frames: Manufacturer's standard aluminum alloy complying with SMA 1004 or SMA 1201. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners, and removable PVC spline/anchor concealing edge of frame.

1. Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet.
2. Finish for Exterior Screens: Baked-on organic coating in color selected by Architect from manufacturer's full range.

C. Aluminum Wire Fabric: 18-by-16 mesh of 0.011-inch-diameter, coated aluminum wire.

1. Wire-Fabric Finish: Natural bright.

2.5 FABRICATION

A. Fabricate wood windows in sizes indicated. Include a complete system for installing and anchoring windows.

B. Glaze wood windows in the factory.

C. Weather strip each operable sash to provide weathertight installation.

D. Mullions: Provide mullions and cover plates, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units.

E. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.

C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.

B. Install windows level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

3.3 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.

B. Clean exposed surfaces immediately after installing windows. Remove excess sealants, glazing materials, dirt, and other substances.

1. Keep protective films and coverings in place until final cleaning.

C. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.

D. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 08 5200

SECTION 09 9100 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes surface preparation, painting, and finishing of exposed interior and exterior items and surfaces.

(1) Surface preparation, priming, and finish coats specified in this Section are in addition to shop-priming and surface treatment specified under other Sections.

B. Paint exposed surfaces whether or not colors are designated in schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Architect will select from standard colors or finishes available.

C. Painting is not required on prefinished items, finished metal surfaces, concealed surfaces, operating parts, and labels.

D. Painting is not required on interior and exterior surfaces that are not affected by the scope of work of this project.

E. Related Sections: The following Sections contain requirements that relate to this Section:

(1) Division 01 Section “Special Procedures for Historic Treatment” for general historic treatment requirements.

(2) Division 08 Section “Treatment of Historic Wood Windows” for repairs and surface preparation related to the rehabilitation of the existing historic wood windows.

(3) Division 08 Section “Treatment of Historic Wood Doors” for repairs and surface preparation related to the rehabilitation of the existing historic wood doors.

1.3 DEFINITIONS

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

B. Historic Paint Materials: Paint materials manufactured to match historic paint formulations but that may be required to match historic paint colors.

C. Modern Paint Materials: Paint materials not designated to match historic paint formulations but that may be required to match historic paint colors.

D. General: Standard coating terms defined in ASTM D 16 apply to this Section.

(1) Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.

(2) Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.

(3) Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.

(4) Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.

1.4 SUBMITTALS

E. General: Submit the following according to Conditions of the Contract and Division 01 Specification Sections.

F. Product data for each paint system specified, including block fillers and primers.

(1) Provide the manufacturer's technical information including label analysis and instructions for handling, storage, and application of each material proposed for use.

(2) List each material and cross-reference the specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.

(3) Printed Statement of Volatile Organic Compounds (VOC) content and chemical components and indicated compliance with Green Seal Standards GS-11.

G. Samples for initial color selection in the form of manufacturer's color charts.

(1) After color selection, the Architect will furnish color chips for surfaces to be coated.

H. Samples for Verification Purposes: Provide samples of each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate.

(1) Provide stepped samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing samples for review. Resubmit until required sheen, color, and texture are achieved.

(2) Provide a list of material and application for each coat of each sample. Label each sample as to location and application.

(3) Submit samples on the following substrates:
Provide two 12 inch square samples of each color and finish.

1.4 MOCK-UPS

A. Apply mock-ups of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic affects and set quality standards for materials and execution.

(1) Architect will select one window to represent surfaces and conditions for application of paint system.

(2) Approval of mock-ups does not constitute approval of deviations from the Contract Documents contained in mock-ups unless Architect specifically approves such deviations in writing.

(3) Subject to compliance with requirements, approved mock-ups may become part of the completed work if undisturbed at time of substantial completion.

1.5 QUALITY ASSURANCE

A. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to those indicated for the Project that have resulted in a construction record of successful in-service performance.

B. Single-Source Responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats.

C. Paints formulated with any of the following ingredients, in any amount, are prohibited:

(1) Lead, red lead.

(2) Basic lead silico chromate.

(3) Zinc chromate.

(4) Lead driers.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:

(1) Product name or title of material.

(2) Product description (generic classification or binder type).

(3) Manufacturer's stock number and date of manufacture.

(4) Contents by volume, for pigment and vehicle constituents.

(5) Thinning instructions.

(6) Application instructions.

(7) Color name and number.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.

(1) Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.7 JOB CONDITIONS

A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 deg F and 90 deg F.

B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 deg F and 95 deg F.

C. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

(1) Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.

1.8 EXTRA MATERIALS

A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.

(1) Quantity: Furnish Owner with two gallons of each opaque coating material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

(1) Benjamin Moore & Co. (Benjamin Moore).

(2) The Sherwin Williams Company (Sherwin-Williams).

(3) PPG Industries, Inc. (Pittsburgh Paints).

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, finish coat materials, and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.

B. Material Quality: Provide the manufacturer's best-quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.

C. Colors: Match color selections made by the Architect.

D. Paint VOC Limits: All interior paints, stains, and coatings shall comply with the requirements of Green Seal Standard GS-11. VOC weight in grams/liter of product minus water must not exceed 150 for non-flat coatings, or 50 for flat coatings. Refer to Green Seal Standard GS-11 for balance of requirements.

2.3 WOOD PRIMERS

A. Primers: Provide the manufacturer's recommended factory-formulated primers that are compatible with the substrate and finish coats indicated.

B. Alkyd Wood Primer: MPI #5.

(1) Benjamin Moore: Super Spec, Alkyd Exterior Primer, 176/K176.

(2) Benjamin Moore: Fresh Start Moorwhite Exterior Wood Primer 100.

(3) Pittsburgh Paints: Primz220 Exterior Alkyd Wood Primer/Sealer, DR1102N.

(4) Sherwin-Williams: Exterior Oil-Based Wood Primer, Y24W8020/Y24WQ8820.

2.4 WOOD FINISH PAINT MATERIAL

A. Finish Paint: Provide the manufacturer's recommended factory-formulated finish-coat materials that are compatible with the substrate and undercoats indicated.

B. Exterior Semi-Gloss Acrylic Enamel: Factory-formulated semi-gloss acrylic enamel for exterior application over wood.

(1) Benjamin Moore: Regal Select, Exterior Paint, High Build Soft, Gloss Finish, N403/K403.

(2) Pittsburgh Paints: Fortis 450 Exterior Premium 100% Acrylic Semi-Gloss, 6407G.

(3) Sherwin-Williams: A-100, Exterior Latex Gloss, A08W00151/A08WQ0151

2.5 INTERIOR WOOD FINISH PAINT MATERIAL

A. Finish Paint: Provide the manufacturer's recommended factory-formulated finish-coat materials that are compatible with the substrate and undercoats indicated.

B. Interior Low Odor, Low VOC Acrylic Enamel: Factory-formulated acrylic-latex interior enamel over interior gypsum board, plaster and wood surfaces.

(1) Prime previously uncoated surfaces with appropriate primer as recommended by top coat product manufacturer.

(2) Comply with MPI 143, 144, 145, 146, 147 or 148 as required to match existing interior conditions.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions under which painting will be performed for compliance with paint application requirements. Surfaces receiving paint must be thoroughly dry before paint is applied.

(1) Do not begin to apply paint until unsatisfactory conditions have been corrected.

(2) Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.

B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

(1) Notify the Architect about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items, if necessary, to completely paint the items and adjacent surfaces. Following completion of

painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.

(1) Completely remove areas of unsound, loose or peeling paint and prepare as for new work.

(2) Grind or sand shoulders between existing paint, patches and bare substrates smooth. Sand as necessary to prevent flaws from showing through new paint.

(3) Cleaning: Before starting painting, repainting, finishing, or refinishing in each area, broom-clean and remove excessive dust. After beginning operations in a given area, do not broom-clean; clean then only with commercial vacuum cleaning equipment.

(4) Surface to be painted or finished shall be clean, dry, smooth, and free from dust and foreign matter which will adversely affect adhesion or appearance.

B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease prior to cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

C. Surface Preparation: Clean and prepare surfaces to be painted according to the manufacturer's instructions for each particular substrate condition and as specified.

(1) Provide barrier coats over incompatible primers or remove and reprime. Notify Architect in writing about anticipated problems using the specified finish-coat material with substrates primed by others.

(2) Cementitious Materials: Prepare concrete, concrete masonry block, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen, as required, to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.

(a) Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

(3) Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.

D. Materials Preparation: Carefully mix and prepare paint materials according to manufacturer's directions.

(1) Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.

(2) Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

(3) Use only thinners approved by the paint manufacturer and only within recommended limits.

E. Tinting: Tint each undercoat a lighter shade to facilitate identification of each coat where multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

A. General: Apply paint according to manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

B. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.

(1) Paint colors, surface treatments, and finishes are indicated in the schedules.

(2) Provide finish coats that are compatible with primers used.

(3) The number of coats and the film thickness required are the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce a smooth even surface according to the manufacturer's directions.

(4) Apply additional coats if undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.

(5) Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.

(6) Sand lightly between each succeeding enamel or finish coat.

(7) Omit primer on metal surfaces that have been shop-primed and touch-up painted.

C. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

(1) Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky

under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.

D. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to the manufacturer's directions.

(1) Brushes: Use brushes best suited for the material applied.

(2) Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.

(3) Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

E. Minimum Coating Thickness: Apply materials no thinner than the manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

F. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime-coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.

G. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling such as laps, irregularity in texture, skid marks, or other surface imperfections.

H. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.

(1) Provide satin finish for final coats.

I. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with specified requirements.

3.4 CLEANING

A. Cleanup: At the end of each work day, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

(1) After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION

A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

(1) At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 PAINT SCHEDULE

A. General: Provide the following paint systems for the various substrates indicated.

B. Exterior Wood Doors, Frames, and Trim:

(1) Semi-Gloss Acrylic Enamel: 2 finish coats over primer.

(a) Primer: Alkyd Primer.

(b) First Finish Coat: Acrylic Semi-Gloss Enamel.

(c) Second Finish Coat: Acrylic Semi-Gloss Enamel.

3.7 INTERIOR PAINT SCHEDULE

A. General: Provide the following paint systems for the various substrates, as indicated.

A. Interior Wood Window Sash, Frames, and Trim and Interior Wood Doors, Frames, and Trim:

(1) Acrylic enamel as required to match existing conditions.

END OF SECTION 09 9100

BUDGET

ESTIMATES TOTAL	$	932,848
GRANT	$	(250,000)
Balance (City of Littleton funding)	$	682,848