TECHNICAL SPECIFICATIONS

HISTORIC TOWNHOUSES ENVELOPE REPAIRS – D. MADISON HOUSE, TAYLOE HOUSE, AND COSMO CLUB

FINAL CD SUBMISSION (100%)

PROJECT CONTROL NUMBER: RDC 04752, RDC 04736, RDC 04732

JANUARY 24TH, 2025

PREPARED FOR:
U.S. GENERAL SERVICES ADMINISTRATION
PUBLIC BUILDING SERVICE - NATIONAL CAPITAL REGION
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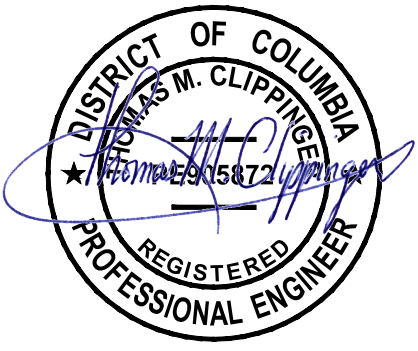





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SECTION 011000 – SUMMARY

PART 1 - GENERAL

1.1 PROJECT INFORMATION

A. Project Name and Location: Historic Townhouses Envelope Repairs, Dolley Madison House, ~~cosmos club, and Tayloe House~~; 717 Madison Place, NW, Washington DC, 20005-7700

B. Project Summary Description: Correct ~~structural~~, condition, ~~and code deficiencies~~ at exterior walls including cornices and balustrades; ~~provide roof drainage improvements~~; window and door conservation; ~~and provide ABA accessible route into building~~. Refer to Construction Drawings for comprehensive and detailed work requirements.

C. ~~Architect: The term Architect refers to the project designer. The Architect's status relative to the construction will be stated in writing by the Contracting Officer prior to the pre-construction conference.~~ The project was designed by: **architrave p.c.**, 420 10th Street SE, Washington DC 20003.

D. Project Delivery Method: ~~Design~~/Bid/Build

E. Key subconsultants McMullan and Associates – Structural engineers

F. The Contracting Officer for the project will be announced at the time of the bid award.

1.2 WORK SEQUENCE

A. ~~The work shall be conducted in phases across these buildings: Dolley Madison House, Cosmos Club, Tayloe House, in phases as defined by the bid solicitation.~~

B. Buildings will be occupied during performance of work under this Contract. Occupancy notifications will be posted on https://cafc.uscourts.gov/home/oral-argument/calendar-of-sessions/.

A. Before work is started, arrange with the COR a sequence of procedure, means of access, space for storage of materials and equipment, and use of approaches, corridors, and stairways that will minimize the disruption to the building's occupants

1. Include in the plan method to coordinate windows by building, elevation, and floor level. Anticipate and notify COR of disruption for abatement, temporary window installation, patching and painting, and reinstallation activities.
2. Typically there will no work on site during Court Week, the first full week of each month, unless specifically approved in writing by the COR.

3. Anticipate the Work will be stopped, and/or canceled, on short notice, for security reasons, for one day, twice a month for the duration of the Project. i.e. if the total project duration is twenty-four months there may be 24 work stoppages with no change in the Contract time or amount.

B. 1.5 MISCELLANEOUS PROVISIONS

A. Work in existing facilities shall correspond in all respects with the existing conditions to which it connects, or to similar existing conditions, in materials, workmanship and finish.

B. Alterations to Existing Conditions: Existing conditions shall be cut, drilled, removed, temporarily removed, or removed and replaced, as necessary for performance of Work under the Contract. Work out of alignment where exposed by removal of existing work shall be called to the attention of GSA. Necessary corrective work shall be as directed.
   1. Replacements of existing conditions that are removed shall match similar existing conditions.
   2. Unless otherwise indicated, existing structural members shall not be cut or altered without authorization by the Contracting Officer.
   3. Conditions remaining in place, which are damaged or defaced during the Work, shall be restored to the condition existing at time of award of Contract.
   4. Discolored or unfinished surfaces exposed by removal of existing conditions, that are indicated to be final exposed surfaces, shall be refinished or replaced as necessary to produce uniform and harmonious contiguous surfaces.

C. Existing structures will remain in place.

D. Existing utility services with related meters and equipment will remain in place.

E. Removed and/or Salvaged items indicated to remain the property of the Government shall be stored on site where directed by the Contracting Officer.

F. Buildings will remain occupied throughout the Work, ~~except during the Work at the 6th Floor of the Cosmos Club where entire building occupants must be vacated during work on roof and roof structure above.~~

PART 2 - PRODUCTS (Not Applicable)`

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 011000

SECTION 011400 - WORK RESTRICTIONS

PART 1 - GENERAL

1.1 CONTRACTOR USE OF PREMISES

A. Review and document the existing conditions surrounding the project premises. Provide documentation to the Government prior to the commencement of any construction activity.

B. Limit use of the premises to the work in areas indicated, and to allow for Government occupancy and public use.

1. Confine operations at the site to areas indicated. Do not disturb portions of the site beyond the areas in which Work is indicated.
2. Keep driveways and entrances serving the premises clear and available at all times to the Government, Government employees and to visitors. Do not use these areas for parking or storage of materials.
3. Schedule deliveries to minimize space and time requirements for storage of material and equipment on site.
4. Maintain existing building in a safe and weather-tight condition throughout the construction period. Repair damage caused by construction operations to the satisfaction of the government. Take precautions to protect the building, its occupants and the public during the construction period. A representative of the Contractor shall be available to arrive on site within one (1) hour of notice should an emergency occur. Provide full name and contact information.
5. Keep public areas, such as breezeway, arcade, courtyard, planting beds, hallways, stairs, lobbies and toilet rooms, free from accumulation of waste material, rubbish, construction debris and construction materials.
6. Space on the premises will be made available for the Contractor's storage and related activities, provided that its use will not interfere with operations of the Government. Arrange and gain approval for use of this space through the Contracting Officer.
7. Existing materials and equipment that are removed as part of the construction operations, and that are not reused or designated to be salvaged as Government property, shall become the property of the Contractor and shall be removed from the site. Storage or sale of excess salvageable materials and equipment is not permitted on site.
8. Pollution producing equipment shall not be located near air intakes where airborne smoke or fumes could be drawn into the building. When not required for powering unloading operations, turn off engines when docked.
9. Smoking is not permitted in or around the building, see Facilities Management Regulation (FMR) Case 2008-102—3. Also see Code of Federal Regulations (CFR) 41 CFR Part 102-74.
10. No parking will be available on site.
11. Cell Phones: Provide company cell phone during this Contract. All cell phones to be “on vibrate” at all times. If a telephone begins audibly ringing, the building guards will take the cell phone and hold until the end of the working day prior to the Contractor leaving the property. Cell phones are only permitted in the construction area and contractor’s office space.
12. No apparatus with an open flame is allowed to be used within the facility without the prior receipt of a burn permit. Contact the Field Office to obtain burn permits. Burn permits are required for each separate occurrence.
13. Permits: Refer to FAR 52.236-7

14. Sequence the Work to minimize disruption to building occupants, visitors, and maintenance activities. No demolition work shall take place until supplies are on hand to perform new work without the COR's written approval.
15. Coordinate with the GSA Building Manager and the COR for site access.
16. Coordinate with the GSA Building Manager and the COR on correct response procedures for any building system alarms occurring during or resulting from the construction process.
17. All building systems outside the immediate construction area shall be kept fully operational during normal working hours.
18. Protect building site from flying debris.

1.2 GOVERNMENT OCCUPANCY

A. The Government will occupy the site and the existing building during the entire period of construction. Cooperate with the Government's representatives during construction operations to minimize conflicts, mitigate noise, and facilitate Government usage. Perform the Work in a manner that does not interfere with the Government's operations.

1. The 6th Floor of the Cosmos Club will be vacated during Work on the roof structure and re-roofing above. Include the move out and move back in, in the project schedule, and coordinate with COR at least one month in advance of work. Document and protect and/or take to insured, off-site storage all furniture, fixtures, equipment, valuable art memorabilia, and nick knacks i.e. everything, that may be subject to possible damage from roofing and structural work. Assume, at a minimum, there will be water entering the interior from unanticipated events during the construction period. When there is no longer construction above the 6th floor and the new roofing has past all water testing, put everything back in its original location.

B. The Government reserves the right to occupy, place, and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the Work. The Government's installation of equipment and partial occupancy shall not constitute acceptance of the total Work.

1. Prior to partial Government occupancy, mechanical and electrical systems for the space shall be fully operational, and required inspections and tests shall be successfully completed. Upon occupancy, the Government will operate and maintain mechanical and electrical systems serving the occupied portions of the building.

2. Upon occupancy, the Government will assume responsibility for maintenance and custodial service for the occupied portions of the building.

1.3 WORKING HOURS

A. Government Occupied Hours: Government personnel are scheduled to occupy the building during the following hours on weekdays, Monday through Friday, except for established Government Holidays: 7:00 AM to 7:00 PM.

B. Contractor's General Working Hours: The Contractor working hours shall be generally established to occur during Government Occupied Hours.
1. The following work shall be performed during Government Unoccupied Hours:
   a. Noisy and/or odor-producing work that may disrupt tenant operations in adjacent spaces.
   b. While U.S. Courts are in session.

C. Work accomplished during Government Unoccupied Hours shall be performed at no additional cost to the Government. Contractor shall submit a proposed schedule and gain the Contracting Officer's approval at least 48 hours before proceeding with any work during Government Unoccupied Hours.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 011400

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Government is providing the references included in this sub-section for information purposes only and is not intended to provide a comprehensive, all-inclusive list of any and all potentially relevant portions of the Contract Documents. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

1.3 DEFINITIONS

A. Substitutions: Proposed changes to the Contract Documents by the Contractor for products, materials, equipment, and methods of construction.

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 Government that are not required in order to meet other Project requirements but may offer advantage to Contractor or Government.

1.4 SUBMITTALS for Cause or Convenience:

A. Substitution Requests: Per Submittal Procedures Section 013300 submit electronic copies through GSA EPMS 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. Substitution Request Form:
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
   a. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Government and separate contractors that will be necessary to accommodate proposed substitution.
   b. Detailed comparison of significant qualities of proposed substitution 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, energy and resource performance goals, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

c. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
d. Samples, where applicable or requested.
e. Certificates and qualification data, where applicable or requested.
f. List of similar installations for completed projects with project name, location and contact information of owner and architect/engineer of record.
g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
h. Research reports evidencing compliance with building code in effect for project, when applicable for the proposed substitution.
i. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work. 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. Provide a schedule fragnet with a time impact analysis to allow the Government to consider the proposed substitution.
j. Cost information, including a proposal of change, if any, in the Contract Sum.
k. 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.
l. The Contracting Officer may require the Contractor to provide a 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.

3. The Contracting Officer or Contracting Officer's Representative (COR) Action: If necessary, the Contracting Officer or COR will request additional information or documentation for evaluation. The Contractor shall be entitled to receive notice of action on submittals within a reasonable time, given the volume or complexity of the submittals and the criticality of the affected activities to Substantial Completion as may be indicated in the Project Schedule. The Contractor shall not be entitled to receive notice of action on submittals containing variations from Contract requirements in less than twenty working days

1.5 Failure by the Government to respond does not constitute acceptance of the proposed substitution.

1.6 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

1.7 PROCEDURES

A. Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than **15** days prior to time required for preparation and review of related submittals.

1. Conditions: The Contracting Officer (CO) will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, the Contracting Officer (CO) 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. If requested substitution involves schedule impact Contractor has identified time impact and a mitigation plan. .
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: The Contracting Officer (CO) will consider requests for substitution if received within 30 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of the Contracting Officer (CO) or the Contracting Officer Representative (COR).

1. Conditions: The Contracting Officer will consider Contractor's request for substitution when the following conditions are satisfied

a. Requested substitution offers the Government a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional obligations the Government incurs.
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.
If requested substitution involves schedule impact Contractor has identified time impact and a mitigation plan.
e. Requested substitution has received necessary approvals of authorities having jurisdiction.
f. Requested substitution is compatible with other portions of the Work.
g. Requested substitution has been coordinated with other portions of the Work.
h. Requested substitution provides specified warranty.
i. 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 3 EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and to process Requests for Payment.

1.2 DEFINITIONS

A. Schedule of Values: A detailed written statement (masterformat/uniformat) furnished by the Contractor outlining the portions of the contract sum, which allocates values (price & percentage) for the various parts of the work and used as the basis for payment application and reviewing progress payments. The Agreement provides further details.

B. Request for Payment: A Contractor's invoice and request for progress payment with substantiating information consistent with approved schedule of values.

1.3 SCHEDULE OF VALUES

A. Coordination: Submit completed Schedule of Values no later than 14 calendar days prior to scheduled date of initial Requests for Payment.

B. Schedules for Phased Work: Where the work is separated into phases, provide Schedules showing values correlated with each phase using the standard format referenced below.

C. Format and Content: Contractor shall be responsible to complete the GSA Schedule of Values Workbook and compile the values into GSA Electronic Project Management System (EPMS). Contractor will enter values into workbook prior to EPMS input and provide associated electronic baseline copy to contracting officer for record. Contractor will follow guidelines in the Schedule of Values workbook to support EPMS upload.

1. Identification: Complete the following Project Identification fields in the Schedule of Values:

    a. Project Name
    b. Project Number
    c. Project Location, City, State
    d. Base Contract Number
    e. Task Order Number
    f. Modification Number
    g. GSA Project Manager
    h. Contractor's Name and contact information
    i. Date of submittal

2. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Requests for Payment and progress reports.

    a. Work activity – (by division or specific work activity)
    b. Dollar value of each specific work activity – both with an amount in dollars and whole cents, and as a percentage of the Contract Sum to nearest one-hundredth percent. Adjust the amounts to total to the Contract Sum and the percentages to total 100 percent.

c. Each item in the schedule of values and Requests for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item. (i.e. no stand-alone item for Overhead, and Profit)
d. Modifications that affect value.
e. Update affected work branches and subordinate line items and
f. resubmit the schedule of values before the next Request for Payment when Modifications result in a change in the Contract Sum
g. Line item for mobilization and de-mobilization
h. Line item for close out (% to be negotiated with GSA COR)

3. Options: Provide a separate Schedule of Values for each exercised Option.

4. Each item in the Schedule of Values and Requests for Payment shall be complete. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at the government's option.

5. Revise and update workbook in ~~GSA EPMS~~ with all items affecting scope, schedule or cost and resubmit within 14 calendar days as coordinated with project manager or contracting officer. Contractor shall provide a final as-built schedule at project completion. Update affected work branches and subordinate line items and resubmit the schedule of values before the next Request for Payment when Modifications result in a change in the Contract Sum

1.4 REQUESTS FOR PAYMENT

A. Requirements for Requests for Payment are in Section III, Terms and Conditions of the Agreement.

B. Each Request for Payment following the initial Request for Payment shall be consistent with previous Requests.

1. Initial Request for Payment, Request for Payment at time of Substantial Completion, and final Request for Payment involve additional requirements.

C. Payment Request Times: Submit Request for Payment to ~~GSA~~ by the **12th** of the month. The period covered by each Request for Payment is one month, ending on the last day of the month

1. Submit one paper **draft** copy (aka pencil copy) of Request for Payment to the CO or ~~enter in EPMS~~ along with construction progress report **seven** days prior to due date for review ~~by GSA~~. Provide documentation evidencing the cost of work performed to be included in the Request for Payment. Resolve questions resulting from ~~GSA~~ review of draft Request for Payment and construction progress report prior to submitting Request for Payment.

D. Request Preparation: All payments must be executed by a person authorized to legally bind the Contractor.

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 effective date of previous Request for Payment, whether or not payment has been received. Include only amounts for work completed as of effective date of current Request for Payment.
3. Include amounts of Modifications issued before last day of construction period covered by Request.
4. Prior to Final payment, complete all items in Section 5.4 Project Closeout, and provide the Government with a release of all claims against the Government.

E. Stored Materials: Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, 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.
3. Provide summary documentation for stored materials indicating the following:

    a. Value of materials previously stored and remaining stored as of effective date of previous Request for Payment.
    b. Value of previously stored materials put in place after effective date of previous Request for Payment and on or before effective date of current Request for Payment.
    c. Value of materials stored since effective date of previous Request for Payment and remaining stored as of effective date of current Request for Payment.

F. Initial Request for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Request for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule per Agreement (startup if not final).
4. Products list (preliminary if not final).
5. Sustainable design submittal for project materials cost data.
6. Sustainable design action plans.
7. Schedule of unit prices.
8. Submittal schedule (preliminary if not final).
9. List of Contractor's staff assignments.
10. List of Contractor's principal consultants.
11. Copies of building permits.
12. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
13. Initial progress report.
14. Report of preconstruction conference.

G. Request for Payment at Substantial Completion: After ~~GSA~~ issues the Notice of Substantial Completion, submit a Request for Payment less previous payments made 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 Request shall reflect Notices of Substantial Completion issued previously for GSA occupancy of designated portions of the Work.

H. Final Payment Request: The Agreement provides further details

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013120 - CRITICAL PATH METHOD

PART 1 - GENERAL

1.01 SUMMARY

A. Develop a detailed Network Plan using electronic scheduling software, demonstrating complete fulfillment of all Work shown in the Contract Documents. Regularly update the Network Plan in accordance with the requirements of this Section, and use it in planning, coordinating, and performing all the Work under this Contract. Schedule activities shall accurately depict the entire scope of work to be performed to complete the project including, but not limited to, all activities of subcontractors, consultants, equipment vendors and suppliers, GSA, and others, as required. Provide two week look ahead schedules.

C. The purpose of the Project Schedule shall be to:

1. Plan the project and communicate that plan.
2. Provide the status and forecast the timely completion of the work.
3. Record the actual start dates, actual finish dates and actual sequence of the work.
4. Ensure adequate planning, staffing, scheduling and reporting during execution of the Work by the Contractor;
5. Ensure coordination of the Work among all affected parties;
6. Assist the Contractor and GSA in the preparation and evaluation of the Contractor's monthly progress payments; and
7. Assist the Contractor and GSA in monitoring the progress of the work, and evaluating proposed changes to the Contract and/or requests for additional time to Project Completion.

1.02 RELATED SECTIONS

A. The Government is providing the references included in this sub-section for information purposes only and is not intended to provide a comprehensive, all-inclusive list of any and all potentially relevant portions of the Contract Documents. Drawings and provisions of the Contract including General and Supplementary Conditions apply to this Section as if repeated herein.

B. Section 012900 – Payment Procedures
C. Section 013200 – Construction Progress Documentation

1.03 DEFINITIONS

A. Definitions applicable to this Section include the following:

1. Activity - An element of the Work or task performed during the course of the project. Each schedule activity shall be a clearly defined, manageable and monitorable task depicting an estimated duration and an estimated cost. Each activity shall be limited to one trade unless the GSA specifically approves otherwise on an exception basis.
2. Baseline Schedule - The original work plan approved by GSA as the Project Schedule depicting the contractor's plan to prosecute the work.
3. Constraint - A scheduling restriction imposed on the start, finish or float of an activity. No constraints will be allowed. Exception: for projects with limited or no storage areas requiring "just in time" deliveries, a zero free float may be acceptable.

4. Critical Path - The Project critical path is defined as the longest, continuous path of interrelated activities depicting project work from Notice To Proceed (NTP) to project completion. All reports and graphics indicating the Critical Path shall depict the longest path of interrelated activities. Unless otherwise approved by GSA, the Baseline Schedule Critical Path shall use all allotted Contract time. The contractor has the right to develop a schedule that forecasts an early finish. However, all time between the forecasted early finish of substantial completion and the contractual substantial completion date shall be shown as float and shall be available to the Project team.
5. Critical Path Method (CPM) - A scheduling technique using activities, durations, and interrelationships/dependencies (logic), such that all activities are interrelated with logic ties from the beginning of the project to the completion of the project. There shall be no open ended relationships in the schedule. All activities shall have at least one successor with a finish relationship ("finish to start" or "finish to finish") except the last activity in the network.
6. Data Date - The date to which progress is updated. In most scheduling software, the data date represents the next day of work and all progress is updated through the day prior to the data date.
7. Float – is the difference between the forecasted early dates and the forecasted late dates; the amount of time an activity can be delayed without delaying the Substantial Completion Date. Float is considered a project commodity jointly shared between GSA and the Contractor and shall be used in the best interest of completing the Project on time. The critical path is not dependent on float. Float is calculated after the critical (longest) path has been determined.
8. Float Suppression – the masking of available float through the use of constraints, unreasonable logical relationships or unreasonable durations. Float suppression techniques are not allowed. On an exception basis, the use of a zero free float constraint to depict "just in time" deliveries on projects with little or no storage might be acceptable.
9. Fragnet - A subset group of interrelated activities representing only a portion of the CPM schedule.
10. Network Plan - The Network Plan is the entire database of activities, logic, durations, and all items relating to any activity input into the scheduling software and is the complete representation of the Project Schedule prepared using the Critical Path Method and graphically shown in a time-scaled form. The network shows the sequence and interdependence of the activities, and planned and actual progress by activity, required for complete performance of the Work.
11. Project Schedule - The Project Schedule includes the Preliminary Schedule (submitted at bid or as determined by the CO), the approved Baseline Schedule (developed based on the Preliminary Schedule), and all subsequent Schedule Updates, Schedule Revisions, Recovery Schedules, and As-Built Schedule.
12. Recovery Schedule – A schedule depicting the Contractor's plan for recovery of time lost on the project.
13. Schedule Revision - A schedule in which the plan for the work is revised. A Schedule Revision is required when the current schedule no longer represents the actual or planned prosecution of the Work.
14. Schedule Update - A schedule in which only actual start dates, actual finish dates and duration percent complete is updated from the prior data date to the current data date. No revisions will be permitted in a Schedule Update (i.e. added activities, deleted activities, logical relationships, etc.).
15. Time Impact Analysis - A technique to demonstrate the effect of a schedule revision or proposed revision against the current approved Project Schedule.
16. Total Float - The amount of time an activity (or chain of activities) can be delayed without affecting the Project Substantial Completion Date.
17. Working Day - A Working Day is a calendar day scheduled for active prosecution of the work.

1.04 CRITICAL PATH METHOD SCHEDULE

A. Provide a detailed, time-scaled computer generated Project Schedule with activities representing each portion of the Work for the entire Contract Performance Period. The Project Schedule shall use the Critical Path Method (CPM) for the planning, scheduling and reporting of the work to be performed under the contract.

B. No unspecified constraints, float suppression techniques, or use of activity durations, logic ties and/or sequences deemed unreasonable by GSA shall be used in the Project Schedule.

C. As defined by the Contract, the entire project performance period shall establish the Project Substantial Completion Date which shall be used in the planning and presentation of the Contractor's Project Schedule. GSA reserves the right not to approve any schedule deemed to have an unrealistic forecasted Substantial Completion Date. Government approval of an early completion Project Schedule shall not modify the Contractual Substantial Completion Date or Project Completion Date. The time difference between the Contractor's planned Substantial Completion Date and the Contract directed Substantial Completion Date shall be considered Project Float, jointly owned and for the mutual use of both the Contractor and GSA.

D. The Contractor shall provide the computer processing of the CPM schedule, graphics, required under this Section or as requested by GSA in electronic format to GSA throughout the entire project performance period until Project completion is achieved.

1.05 SUBMITTALS and MEETINGS

A. Project Schedule Requirements Meeting:

1. The Contractor shall meet with GSA within 7 calendar days after Notice to Proceed to conduct a joint review of the Project Schedule requirements in this Section.

B. Preliminary Schedule:

1. Within 14 calendar days of Notice to Proceed, Contractor shall submit a Preliminary Schedule detailing the complete scope of work and proposed logical relationships. All Government furnished equipment and materials shall be identified with dates needed to be received by the Contractor.

2. Within 7 calendar days of receipt by the GSA of the Preliminary Schedule, the Contractor and GSA shall meet to discuss the results of GSA's schedule review. To the extent that revisions are required, the Contractor shall resubmit the Preliminary Schedule to the GSA for approval within [seven (7) calendars days of receipt of the GSA's comments.

C. Baseline Project Schedule

1. Schedule activities shall be cost loaded in whole dollars and the assigned dollar value (cost-loading) of each activity of the Network shall cumulatively equal the specified Bid Item Breakdown and Total Contract Amount

2. For any items that the Contractor intends to bill for stored materials (when allowed by contract), these items need to be shown as separate "material procurement" activities in the

schedule and the material dollars only placed on these activities. Billing for stored materials on any other schedule activities not broken out in this manner will not be allowed.

3. Include an activity code field “SOV” for the coding of each schedule activity with the schedule of value (SOV) line items; this is for the tabulation and summarization of contractor assigned cost-loading Schedule of Values for application of Progress Payment Request reporting.

D. Submit the Baseline Project Schedule within 7 calendar days after approval of the Preliminary Schedule. The Baseline Schedule shall be the Contractor's detailed plan for ALL work from NTP through contract completion. All punch list work shall be completed to, or prior to, the Contract Completion Date.

E. Unless otherwise approved by the GSA, the Project Schedule shall include, but is not limited to, the following items:

a. Activities necessary to depict time to prepare submittals, time for the GSA to review submittals, procurement, design, construction, third party inspections, close-out, start-up, testing and balancing, commissioning and turnover, and work by separate contractors.
b. The schedule shall include separate activities for the submittal, review, procurement or fabrication, and delivery of key and long-lead items. The Project Schedule shall indicate submittal dates, and depict the review period as defined in the Contract or Supplementary Provisions for A/E/GSA review. Procurement/submittal activities shall be assigned codes that will allow these activities to be sorted and printed separately from the construction/close-out/commissioning work activities.
c. The Baseline Schedule shall have a Data Date no later than NTP, and no activities shall be progressed to show work completed to date without prior acceptance of the GSA.
d. Activity descriptions of the work shall include area designators sufficient to identify where the Work will occur, and shall match the Key Plans. The work related to each Activity shall be limited to one work trade and one area.
e. Interrelationships (logic) and sequencing for ALL activities. Each activity shall have at least one successor (except for the last activity) relationship to form a logically connected Network Plan from NTP to the Contract Completion Date. Each activity shall have at least one successor with a finish relationship (finish-to-start or finish-to-finish relationship).
f. Activity durations shall be in units of whole work days. Except submittal and procurement activities, durations shall not exceed one reporting period [Team define i.e. month)]____ (User Defined #6) unless approved by the GSA. Durations for Government submittal reviews shall meet the requirements set forth in the Contract Documents. Activity durations shall not be overly short. One day durations shall not be assigned unless specifically requested by the contractor and specifically accepted by the GSA. Activity durations are expected to be between one week and one month, however shorter or longer durations can be assigned as needed to properly plan and coordinate the work.
g. Contractual milestone events as defined in the Contract Documents including, but not limited to, phased work, work restrictions/access/shift work, and work being performed by separate contractors shall be included in the schedule. The substantial completion and project completion tasks shall be assigned to a seven (7) day work week calendar.
h. ALL activities shall at a minimum be coded by Area, Responsibility (trade/ subcontractor), and Phase . Additional codes are allowed to sufficiently identify where work will occur. Codes shall be a maximum of six (6) characters and abbreviations shall be fully described in the Project Schedule narrative. The Contractor’s self-performed work shall be clearly identifiable.

F. Baseline Schedule Review Process and Submittal Requirements

1. The GSA will review the Baseline Schedule and provide comments to the Contractor within 7 calendar days of receipt of submittal and, if needed, will arrange for a Baseline Schedule Review Meeting with the Contractor for discussion of the schedule. The Baseline Schedule, when approved, shall become the basis for the next monthly Schedule Update submitted by the Contractor.

    a. Baseline Schedule Review Meeting. The Contractor shall present the Baseline Schedule to GSA at the review meeting, and describe the Contractor's means and methods for accomplishing the Work [include if required earlier: and the cost loading of the schedule.]

    b. In the event that GSA provides comments or the Baseline Schedule does NOT meet the requirements of this specification, the contractor shall, within [seven (7)] calendar days, revise the Project Schedule to bring it into compliance with these requirements, and Contractor shall make a full Baseline Schedule submission for GSA's review and approval.

    c. Upon approval of the Baseline Schedule by the GSA, the cost-loaded values shown in the Project Schedule and progress of activities will be used as a basis for determining progress payments. Monthly progress payments shall be based upon information developed using the current monthly Schedule Update. The computer generated cost report will be used by the GSA for verification of the Application for Payment submitted by the Contractor.

    d. GSA's approval of the Baseline Project Schedule does not relieve the Contractor of responsibility whatsoever for the accuracy or feasibility of the Project Schedule, or of the Contractor's ability to meet the Substantial Completion Date. Such acceptance does not create a warranty, expressed or implied, or acknowledge or admit the reasonableness of the activities, logic, durations, manpower, cost or equipment loading of the Contractor's Project Schedule.

    e. If the Contractor fails to timely submit the Baseline Schedule, the GSA may withhold approval of progress payments until the Contractor submits the required Project Schedule.

2. The Baseline Schedule submission shall be comprised of the following, unless otherwise requested by the GSA:

    a. One (1) electronic copy of the entire Project Schedule shall be uploaded into ePM and provided in native electronic format and a PDF. The electronic copy shall be in a compressed format. The electronic filename shall have a unique identifier. Hard copy prints and reports shall be generated from the same version of the Project Schedule that is provided in electronic form.
    b. Two (2) full-color prints of the Network Plan (in time-scaled form), unless otherwise designated by the Contacting Officer. Prints shall be standard size sheets. The following information shall be shown on the prints: Activity ID, Activity Description, Calendar ID, Original Duration, Remaining Duration, Percent Complete, Area Code, Responsibility Code, Early Start, Early Finish, Total Float, Budgeted Cost, and Budgeted Quantity (i.e., labor, materials, equipment, etc.). The prints shall include legends, dates and titles to sufficiently identify the Project Schedule A narrative providing additional clarification/explanation of items such that GSA is informed of the approach used to plan and sequence the work, coordinate with other separate contractors to the extent

applicable, and resource and cost load the Project Schedule.

G. Schedule Updates

1. Every two weeks submit a schedule Update that indicates the progress achieved since approval of the prior monthly Project Schedule update.

2. Every two weeks update the Project Schedule throughout the entire Project performance period until Project completion is achieved.

3. Meet with GSA each month at a Schedule Update Meeting to review the Contractor's requested percent complete for actual progress achieved over the past period, including actual start dates, actual finish dates, and duration percent complete for activities that were started and/or completed during the reporting period.

4. The Schedule Update submission shall be comprised of the following:

   a. One (1) electronic copy in native format and a PDF of the entire Project Schedule shall be uploaded into GSA PMS. The electronic copy shall be in a compressed format. The electronic filename shall have a unique identifier and shall include a sequential number for each update. Hard copy prints and reports shall be generated from the same version of the Project Schedule that is provided in electronic form.
   b. [GSA Team to decide if this is needed: One (1) full color time-scaled network prints. Prints shall be standard size sheets. The following information shall be shown on the prints: Activity ID, Activity Description, Calendar ID, Original Duration, Remaining Duration, Percent Complete, Area Code, Responsibility Code, Early Start, Early Finish, Late Start, Late Finish, and Total Float. The prints shall include legends, dates and titles to sufficiently identify the Project Schedule]
   c. Monthly narrative shall address the following:

      i. Discussion of the longest path in the previous schedule at the beginning of the period.
      ii. Discussion of progress achieved on the longest path.
      iii. Explanation of any variance between the progress planned on the longest path and the actual progress achieved on the longest path.
      iv. Same for near critical paths within two weeks of the longest path.
      v. Description of other Work performed during the reporting period
      vi. General description of the work on the forecasted longest path for the remainder of the project.
      vii. Identification and discussion of work on the longest path planned to be performed during the next reporting period.
      viii. Same for near critical paths within two weeks of the longest path.
      ix. Description of other Work anticipated to be performed during the next reporting period.
      x. Number of days ahead/behind the Substantial Completion Date
      xi. Discussion of changes to the longest Path since the prior month's update.
      xii. Description of problem areas and anticipated problem areas.
      xiii. Current and anticipated delays including cause of delay, corrective actions taken, and impact of the delay on other activities, milestones, and completion dates
      xiv. Pending items (Change Orders, requests for time-extensions, etc.), and status thereof.

xv. Identification and explanation of items or information required from the GSA or third parties to avoid schedule impacts.

5. GSA will review and provide comments on the Schedule Update within 7 calendar days of receipt of the Contractor's submission.

6. If the Contractor fails to timely submit the Schedule Update, the GSA may withhold approval of progress payments until the Contractor submits the required Project Schedule Update.

7. In the event of change modifications:

   a. As determined by CPM schedule analysis perform a time impact analysis during the project or as-built analysis after the project is substantially complete, only delays beyond the control of the Contractor which affect the Substantial Completion Date will be considered for a time extension.

   b. When change modifications are proposed, potential delays are anticipated, or delays are experienced, the Contractor shall submit to GSA a written Time Impact Analysis describing the affect of each modification, potential delay, delay, or Contractor request on the Substantial Completion Date. This analysis shall be developed and submitted at the earliest time the Contractor becomes aware of a delay or potential delay, or as requested by the GSA. The preparation of Time Impact Analyses is considered part of the construction process and will be performed at no additional cost to the Government.

   c. Failure of the Contractor to timely submit a Time Impact Analysis shall mean that it is mutually agreed that the particular modification, delay, or Contractor request does not require an extension of the contract time.

   d. Approval or rejection of each Time Impact Analysis by the GSA shall be made within 7 days after receipt of each Time Impact Analysis, unless subsequent meetings and negotiations are necessary. Upon approval, a copy of the Time Impact Analysis signed by the GSA shall be returned to the Contractor and incorporated into the Project Schedule, depicting a revised contractual substantial completion date at the next Schedule Revision which will be become the current approved Project Schedule.

   e. The Contractor shall submit a Time Impact Analysis as follows:

      i. Within five (5) work days after receipt of a written change modification.
      ii. Within five (5) work days after receipt of a written notice by the GSA.
      iii. Within five (5) work days from the beginning of a delay caused by unforeseeable circumstances.

   f. The Time Impact Analysis shall meet the requirements for submittal of a Schedule Revision including a Fragnet (see Section 1.05.F.3.c) with sufficient supporting documentation to enable the GSA to make a determination on the Contractor's request for time extension.

H. As-Built Schedule

1. Along with the final payment application the Contractor shall submit an As-Built Schedule documenting actual start and actual finish dates for all activities, and logic ties between all

activities to show the actual sequence in which the work was performed.

1.06 RESPONSIBILITY FOR COMPLETION

A. If, in the opinion of the GSA, the Contractor falls behind the planned progress as noted by negative float shown on the current monthly Schedule Update, the Contractor shall take any and all steps necessary to improve its progress at no additional cost to the Government. This shall not be construed as prohibiting the Contractor from increasing the number of working hours, shifts per day, working days per week, or the amount of construction equipment, or any combination of the foregoing, to eliminate the delay in the scheduled progress.

B. Failure of the Contractor to comply with the requirements of the GSA under Paragraph 1.06.A shall be grounds for determination by the GSA that the Contractor is not prosecuting the work with such diligence as will ensure completion within the contract time. Upon such determination, the GSA may terminate the Contractor's right to proceed with the work, or any separable part thereof, in accordance with the applicable provisions of the contract.

1.07 PAYMENTS TO CONTRACTOR

A. The GSA shall review the Contractor's monthly request for payment upon receipt and shall process the request for payment based upon the current approved Schedule Update. The GSA will consider the Contractor's overall progress toward Project Completion along with the progress for discrete activities to determine the amount to be approved for the monthly payment request.

1.08 PERFORMANCE MONITORING

A. The GSA may elect throughout, or at any time during, the Project to record the number of workers and construction equipment working on each construction schedule activity in each area of the Project. The GSA's request for this information will be without additional cost to the Government and shall be provided within five (5) work days of receipt of the GSA's written request. This information will be used by the GSA to evaluate the adequacy of the Contractor’s performance and project manpower staffing, as well as any Contractor claims.

B. The Contractor is required to attend bi weekly construction coordination meetings. As such, the Contractor shall present a copy of the current accepted schedule depicting the work planned for the next reporting period. The bar chart should be sorted as requested by the GSA. Information to be shown on the bar chart includes: Activity ID, Activity Description, Original Duration, Remaining Duration, Percent Complete, Area Code, Responsibility Code, Early Start/Actual Start, Early Finish, and Total Float.

1.09 SCHEDULER REQUIREMENTS/QUALIFICATIONS

A. Within five (5) work days after the date of Notice to Proceed, the Contractor shall designate in writing an authorized scheduler or scheduling representative in the Contractor’s organization who shall be responsible for coordinating with GSA during the preparation and maintenance of the Project Schedule. Contractor's scheduler shall possess demonstrated proficiency in CPM schedule methodology and utilization of the current version of the preferred scheduling software.

B. The Contractor’s project superintendent, and the scheduling representative and, to the extent applicable, the personnel responsible for developing and inputting information into the Project Schedule shall attend schedule related meetings and monthly update meetings throughout the

duration of the Project.

1.10 CPM SCHEDULING SOFTWARE

A copy of the scheduling software used by the Contractor shall be provided to the GSA at no additional cost for the GSA's use in reviewing and working with the schedule. The contractor shall provide technical software support services from the manufacturer on an as needed basis by the GSA.

END OF SECTION

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes certain schedules and reports required for documenting the progress of construction during performance of the Work.

B. Coordinate the timing for preparation and processing of schedules and reports with the performance of other construction activities, and maintain a consistent and logical correlation between updated schedules and reports.

C. All construction progress documentation should be created and transmitted electronically into GSA's Project Management System.

1.2 SCHEDULE OF INSPECTIONS AND TESTS

A. Prepare and submit a schedule of inspections, tests and similar services required by the Contract Documents within 14 calendar days after issuance of the Notice to Proceed.

B. Coordinate the schedule of inspections and tests with the Construction Schedule and other related documents. Prepare the schedule in tabular form, including but not limited to the following information:

1. Specification section number.
2. Description.
3. Identification of applicable standards.
4. Identification of methods to be used.
5. Number of inspections, tests or similar services.
6. Time schedule or time span.
7. Responsible entity.
8. Requirements for taking samples.
9. Unique characteristics.

C. Distribution: Submit in GSA PMS electronic copies of the schedule of inspection and tests to the Contracting Officer, entities designated by the Contracting Officer, and each party involved in performance of portions of the Work where inspections, tests and similar serviced are required.

1.3 SCHEDULE OF SUBMITTALS

A. Prepare and submit a schedule of submittal required by the Contract Documents within 14 calendar days after issuance of the Notice to Proceed.

B. Contractor shall create in GSA ePMS the schedule of submittals and other related documents. Prepare the schedule in tabular form, including but not limited to the following information:

1.4 REPORTS

A. Daily Construction Reports: Prepare electronic daily construction report recording the following information concerning but not limited to events at the site. All daily reports are to be uploaded to GSA's e-PM Include:

1. List of subcontractors at the site.
2. List of separate contractors at the site.
3. Count of personnel at the site.
4. High and low temperatures, general weather conditions.
5. Accidents.
6. Meetings and significant decisions.
7. Unusual events (see D. Unusual Event Reports below).
8. Stoppages, delays, shortages, and losses.
9. Meter readings and similar recordings.
10. Emergency procedures.
11. Orders and requests of governing authorities.
12. Change Orders received or implemented.
13. Services connected or disconnected.
14. Equipment or system tests and startups.
15. Partial completions or occupancies.
16. Summary of all work performed.

B. Material Location Reports: At not more than weekly intervals, prepare a comprehensive list of materials delivered to and stored at the site. The list shall be cumulative, showing materials previously reported plus items recently delivered. Include a statement of progress on and delivery dates for materials or items or equipment fabricated or stored away from the site. Within 7 Calendar days submit copies of the list to the Contracting Officer's Representative (COR).

C. Field Correction Reports: When the need to take corrective action requires a departure from the Contract Documents, prepare a detailed report. Include a statement describing the problem and recommended changes. Indicate reasons the Contract Documents cannot be followed. Within 7 Calendar days submit a copy to the Contracting Officer or Contracting Officer's representative for approval.

D. Unusual Event Reports: When an event of an unusual and significant nature occurs at the site, prepare a detailed report. List the chain of events, persons participating, response by the Contractor's personnel, evaluation of the results or effects, and similar pertinent information. Within 10 Calendar days submit a copy to the Contracting Officer or Contracting Officer's representative immediately. Advise the Contracting Officer or Contracting Officer's representative in advance when such events are known or predictable.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION (Not applicable)

END OF SECTION 013200

SECTION 013220 - PHOTOGRAPHIC DOCUMENTATION

1.1 GENERAL

PART 1 - Regular Construction Progress Photos. Contractor shall document on a daily basis key component of the contract document.

A. Project Photographer's Qualifications: a photographer experienced with architectural and/or construction photography. Submit portfolio for review and approval by GSA.

1.2 SUBMITTALS

A. Qualification Data: Submit within 14 calendar days of the NTP to COR or CO photographer's list of completed projects with project names and addresses, and names and addresses of owners and architects.

B. Key Plan: Submit within 21 calendar days of the NTP to COR: 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.

C. Digital Photographs Contractor shall submit and/or upload to GSA PMS electronic files of each view to the GSA. Submit image files within 1 calendar days of taking photographs.

1. Digital Camera: Minimum resolution of 12 megapixels.
2. Format: Minimum 4032 x 3024 HDR pixels, in unaltered original files, with same aspect ratio as the sensor, un-cropped, in folder named by date of photograph, accompanied by key plan file.
3. Identification: Provide the following information with each image description in file metadata tag:

    a. Name of Project.
    b. Project number.
    c. Building/facility name.
    d. Project region.
    e. Name and contact information for photographer.
    f. Name of Architect.
    g. Name of Contractor.
    h. Contract number.
    i. Date photographs were taken.
    j. Weather conditions.
    k. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    l. Unique sequential identifier keyed to accompanying key plan.

D. Construction Videos: upload to GSA ePMS one copy of each video to GSA within 7 days of recording.
1. Identify each video with the same identification information stated under Digital Photographs.

2. Transcript: Photographer shall upload on GSA ePMS an electronic narrative for each video with each video submission to GSA. Include the same label information as provided on the corresponding video.

1.3 USAGE RIGHTS

Comply with General Services Administration Acquisition Manual (GSAM) Clause 552.227-70, Government Rights (Unlimited). See the construction contract for more information.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. Digital Images: JPEG format with minimum sensor size of resolution minimum 4032 x 3024 HDR 12 megapixels or greater.]

B. Video Format: Standard definition DVDs or CDs.

1. Identification: Each copy shall have an applied label containing the same identification information stated under Digital Photographs

PART 3 - EXECUTION

3.1 COOPERATION WITH PHOTOGRAPHER NOT USED

3.2 CONSTRUCTION PHOTOGRAPHS

A. Preconstruction Photographs: Before construction is started, take photographs of the site and surrounding properties from different points of view selected by GSA. The contractor may choose to provide additional photographs.

1. Take not less than 30 photographs (10 per building) to show the context of the exterior work area, of existing buildings and conditions adjacent to the project in sufficient detail to record the physical conditions at the start of construction.

B. Construction Period Photographs: At intervals during construction, take photographs of the project's progress from different points of view. Vantage points shall be selected by the photographer unless otherwise directed by GSA.

1. Frequency: Take photographs weekly coinciding with the cutoff date associated with each application for payment.
2. Number: Take not less than 10 photographs each time, to best show the status of construction and progress since taking previous photographs.

C. Special Photographs: In addition to periodic photographs, photographer shall take special photographs of subject matter and from vantage points selected by GSA

1. Frequency: Take special photographs at least 6 times during construction. Take at least 8 photographs each time, for a cumulative total of not less than 48 special photographs.

2. At the completion of the project, when requested by GSA and working with GSA representatives, provide ~~35~~ exterior ~~and 20 interior~~ photographs as directed.

~~3.3~~ CONSTRUCTION VIDEOS

A. Video: Camera shall be mounted on a tripod before starting recording. At the start of each video, record weather conditions, including temperature reading at the project site.

1. Narration: Describe scenes on video by dubbing audio narration offsite after video is recorded. Include description of items being viewed, events that have recently happened, and activities that are planned. Describe vantage point.
2. Transcript: Provide an electronic transcript of the narration. Include images and running time captured from video, displayed opposite the corresponding narration segment.

B. Preconstruction Video: Before construction is started, photographer shall record video of the site and surrounding properties from different points of view selected by GSA.

1. Provide videos or time-lapse Sequence videos of specialized work on historic materials, as chosen by COR.

C. Construction Period Videos: At intervals during construction, photographer shall record video of the project's progress from different points of view. Vantage points shall be selected by the by GSA.

1. Frequency: Record videos of
   a. the demolition of the parapets and cornice of the Cosmos Club.
   b. A full window replacement, removal, restoration, and replacement
   c. A window repair. removal, restoration, and replacement.

2. Recording Time: Minimum recording time for each video session shall be one hour.

D. Time-Lapse Sequence Construction Video: Record video to best shows the treatment of the Historic building fabric.

E. END OF SECTION 013220

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes certain administrative and procedural requirements for shop drawings, coordination drawings, schedules, samples and certain other quality assurance submittals.

B. This section does not include requirements for the following submittals that are included in their specific sections:

1. Inspection and test reports specified in Division 1 Section "Quality Control."
2. Warranties specified in Division 1 Section "Product Requirements."
3. Closeout submittals specified in Division 1 Section "Closeout Procedures."
4. Record documents specified in Division 1 Section "Project Record Documents."
5. Reports, schedules and other submittals specified in Division 1 Section "Construction Progress Documentation".

C. Shop drawings, coordination drawings and schedules are further categorized and defined as follows:

1. Shop drawings include drawings and schedules prepared for specific parts of the project, except for coordination drawings.
2. Coordination drawings are specified in Division 1 Section "Project Management and Coordination."
3. Product data includes manufacturer's standard catalogs, pamphlets and other printed materials that show and describe materials and items, and includes but is not limited to the following:

a. Product specifications.
b. Installation instructions.
c. Color charts.
d. Catalog cuts.
e. Rough-in diagrams and templates.
f. Wiring diagrams.
g. Performance curves.
h. Operational range diagrams.
i. Mill reports.

D. Samples of actual materials and items shall be provided at such scale to allow delivery for review, as well as for field samples or mock-ups of full-size physical examples erected on-site or elsewhere, to establish a true-scale standard by which the corresponding work will be judged or a standard for compliance testing.

E. Other quality assurance submittals include materials specifically prepared for the project, except drawings and schedules, and include but are not limited to the following:

1. Design data and calculations.
2. Certifications of compliance or conformance.
3. Manufacturer's instructions and field reports.

F. Approvals do not supersede requirements of the Contract Documents.

1.2 GENERAL SUBMITTAL REQUIREMENTS

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities and with the Submittal Schedule specified in Division 1 Section "Construction Progress Documentation". Unless otherwise specified, submittals shall be transmitted via GSA Project Management System as PDF electronic files to GSA according to the contractor's approved construction schedule and submittal schedule. Transmit each submittal sufficiently in advance of the scheduled performance of related construction activities to avoid delaying the Work, allowing for the review times specified for submittals.

1. Coordinate each submittal with other submittals and related activities that require sequential scheduling, to allow for testing, purchase, fabrication and product delivery in a timely manner.
2. Schedule transmittal of different categories of submittals for the same element of Work and for different elements of related parts of the Work at the same time. Notwithstanding the foregoing sentence, provide a complete submittal package for each Division of the specification so as to enable GSA to review the related sections together. Coordinate submittals to enable approvals and acceptances so as not to inhibit orderly progress of the Work.
3. Post electronic submittals as PDF electronic files directly to the ePM system specifically established for the Project. GSA will return annotated file. Annotate and retain one copy of file as an electronic project record document file.
4. Allow sufficient time for submittal review, corrections following the initial review, and re-submittal review before activities scheduled after the submittal approval.
5. Failure on the part of the Contractor to indicate approval or acceptance on submittals prior to submission to Contracting Officer will result in their being returned to the Contractor without being acted upon.
6. Any resubmission required after GSA review shall be made within 10 calendar days after return of the submittal, unless specifically authorized otherwise by GSA.
7. Submittals which are determined to be incomplete or otherwise substandard will be returned to the Contractor with no further review. Delays due to incomplete or rejected submittals will not be excused.
8. Construction will not be allowed to proceed if submittals are not received in a timely manner, and will not result in an extension to the Contractor's Construction Schedule.
9. Failure by the Contractor to provide the required submittals in a timely manner may result in withheld payments until submittals are up-to-date.
10. Maintain one complete set of submittals at project site.
11. Maintain an organized submittal register at project site. This will be an agenda item for progress meetings.

12. Allow a minimum of ten working days for the Architect/Engineer submittal review. The comment period initiates upon the receipt of the submittal by the office performing the primary review. The period commences upon issue of the submittal by the office performing the primary review. In the event lengthy or complex submittals whose review may not be able to be accomplished within the stipulated submittal review period, within 3 working days of receipt of the submittal, GSA will notify the Contractor the submittal review period will be extended. Include anticipated review periods for complex systems in the Project Schedule.

B. Submittal Identification and Information: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble each submittal item into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each submittal item.
2. Name file with submittal number or other unique identifier, including revision identifier.

a. File name shall use Contract number and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Re-submittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).

3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by GSA.
4. Form for Electronic Submittals: Use software-generated form from electronic project management software acceptable to GSA.

a. Project name.
b. GSA project number.
c. Date.
d. Name and address of Architect.
e. Name of Contractor.
f. GSA contract number.
g. Name of firm or entity that prepared submittal.
h. Names of subcontractor, manufacturer, and supplier.
i. Category and type of submittal.
j. Submittal purpose and description.
k. Specification Section number and title.
l. Specification paragraph number or drawing designation and generic name for each of multiple items.
m. Drawing number and detail references, as appropriate.
n. Location(s) where product is to be installed, as appropriate.
o. Related physical samples submitted directly.
p. Indication of full or partial submittal.
q. Transmittal number, numbered consecutively.
r. Submittal and transmittal distribution record.
s. Other necessary identification.

5. Include the following information as keywords in the electronic file metadata:

a. Project name.
b. GSA project number.
c. Contract number.
d. Number and title of appropriate Specification Section.
e. Specification paragraph number and generic name of each item.
f. Manufacturer name.
g. Product name and model number.

1.3 SHOP DRAWINGS AND COORDINATION DRAWINGS

A. Submit originally prepared information, drawn accurately to scale. Do not reproduce Contract Documents or copy standard printed materials as the basis for Shop Drawings and Coordination Drawings.

B. Include at minimum the following information on Shop Drawings and Coordination Drawings:

1. Dimensions.
2. Identification of products and materials.
3. Compliance with specified standards.
4. Notation of coordination requirements.
5. Notation of dimensions established by field measurements.
6. Highlighted or encircled deviations from the Contract Documents.

C. Sheet size: Except for templates, patterns and similar full-size drawings, submit Shop Drawings and Coordination Drawings on sheets of at least 8-1/2 by 11 inches but no larger than 30 by 40 inches

D. Submittals: Unless otherwise indicated, submit one electronic file (.pdf) of each drawing submittal through GSA ePMS. The file will be marked with action taken and returned.

E. Distribution: When submittal is approved or accepted, Contractor shall prepare final electronic files, for the following purposes.

1. One file shall be marked and retained as a "Record Document."
2. Unless otherwise requested, one file shall be provided to the Contracting Officer.
3. Additional prints shall be provided to the entities involved in the construction.
4. Prints will be included in the Operation and Maintenance manuals.

1.4 PRODUCT DATA

A. Collect Product Data into a single submittal for each system or element of construction. Mark each copy to show specific product choices and options applicable to the project. Product Data shall include the following information, where applicable:

1. Manufacturer's printed recommendations.
2. Compliance with recognized trade association standards.
3. Compliance with recognized testing standards.
4. Applicability of testing agency labels and seals.
5. Notation of dimensions verified for fit by field measurements.
6. Notation of coordination requirements.

B. Preliminary Submittal: Prior to submittal of complete Product Data, submit a preliminary single copy of that part of Product Data when selection of options is required, such as for color charts. Preliminary submittal will be returned, with selection noted, for the Contractor's use in subsequent submittals.

C. Submittals: Unless otherwise indicated, submit one electronic copy of each Product Data submittal. One original copy will be retained and a copy will be marked with action taken and returned to the contractor.

D. Distribution: When submittal is approved or accepted, Contractor shall distribute copies for the following purposes:

1. One copy shall be marked and retained as a "Record Document."
2. Additional copies shall be provided to the manufacturers, subcontractors, suppliers, installers, governing authorities and others as required for performance of the applicable construction activities.
3. Copies required for operation and maintenance manuals

1.5 SAMPLES

A. Submit full-size, fully fabricated samples, cured and finished in the manner specified. Samples shall be physically identical to the material or product proposed for use.

B. Mount, display, or package samples to facilitate review of kind, color, pattern, texture and other qualities indicated, as a final check of these characteristics with other elements and for comparison of these characteristics with those of the actual component delivered and installed.

C. Where variation in color, pattern, texture or other characteristic is inherent in the material or product, submit at least 3 multiple units that show approximate limits of the variations.

D. Refer to other specification sections for requirements for samples that illustrate workmanship, fabrication techniques, and details of assembly, connections, operations and similar construction characteristics.

E. Refer to other specification sections for samples to be returned to the Contractor for incorporation in the Work. Such samples must be in undamaged condition at time of use.

F. Preliminary Submittal: Where color, pattern, texture or similar characteristics are specified to be selected from a manufacturer's range of standard choices, submit a preliminary single set sample of available choices prior to submittal of the complete sample. Preliminary submittal will be returned, with selection noted, for the Contractor's use in subsequent submittals.

G. Submittals: Unless otherwise indicated and except for field samples or mock-ups of full-size physical examples erected on-site or elsewhere, submit not less than 3 sets of each sample submittal. One copy will be marked with action taken and returned. Comply with requirements in the individual specification section for field samples and mockups.

H. Distribution: Except for field samples or mockups, when submittal is approved, Contractor shall distribute approved copies for the following purposes:

1. One copy shall be marked and retained as a "Record Document" at the Project Site, and shall be available for comparison throughout the course of construction activity.
2. Additional copies shall be provided to manufacturers, subcontractors, suppliers, installers, governing authorities and others as required for performance of the applicable construction activities.

1.6 OTHER QUALITY CONTROL SUBMITTALS

A. Submit other quality control submittals in compliance with requirements in the individual specification sections, including Division 1.

B. Certifications: Submit notarized certifications indicating compliance with specified requirements. Certifications shall be signed by an individual authorized to sign on behalf of the Contractor.

1.7 REVIEW ACTION ON SUBMITTALS

A. For electronic submittals,

1. Submit electronic submittals via ePM as PDF electronic files.

a. GSA will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

B. Compliance with specified characteristics is the Contractor's responsibility, and is not part of the Contracting Officer's review and indication of action taken.
The Contract Documents shall prevail in case of review action conflict.

C. Submittals without approval or acceptance shall not be used.

D. Action Stamp:
1. For paper or non-electronic submittal: Each submittal will be stamped with a uniform action stamp. The stamp shall be marked to indicate one of the following actions taken:
   a. For electronic submittal: Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated. For notarized signature if required, provide paper copies for signature.
   b. Final Unrestricted Release: Where marked "Approved" or "Accepted", the work covered by the submittal may proceed, provided it complies with the requirements of the Contract Documents.
   c. Final But Restricted Release: Where marked "Approved " or "Accepted" "As Noted", the work covered by the submittal may proceed, provided it complies with the notations or corrections on the submittal and with the requirements of the Contract Documents.
   d. Return for Re-submittal: Where marked "Not Approved" or "Not Accepted", Revise and Resubmit", do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery or any other activity. Revise or prepare a new submittal according to the notations on the submittal or on the return transmittal. Resubmit without delay, repeating as necessary to obtain a final release action mark.
   e. No Action: Where a submittal is for the record or for information or for another purpose not requiring review action, the submittal may not be returned or may be returned and marked "Action Not Required."

E. 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 not suitable 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 showing 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 or concurrent with Samples.
6. Submit Product Data in the following format:

   a. PDF electronic file.
   b. Submit hard copies of product data indicating colors for selection.

1.8 SUBSTITUTION REQUEST PROCEDURES

A. Substitution Requests: See section 012500 Substitution Procedures.

PART 2 - EXECUTION (Not Applicable)

END OF SECTION 013300

SECTION 013510 - HISTORIC BUILDING TREATMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Treatment procedures shall comply with the Department of the Interior's Standards for Rehabilitation. This section includes special procedures for historic treatment on Project including, but not limited to, the following:

1. Storage and protection of existing historic materials.
2. Temporary protection of historic materials during construction.
3. Protection during application of chemicals.
4. Protection during use of heat-generating equipment.
5. Removal of bird excrement.
6. Construction waste management.
7. Requirements for Historic Treatment Specialist

B. The Government is providing the references included in this sub-section for information purposes only and is not intended to provide a comprehensive, all-inclusive list of any and all potentially relevant portions of the Contract Documents. Related Sections:

1. Division 1 Section "Construction Progress Documentation" for preconstruction photographs taken before historic treatment.
2. Division 1 Section "Photographic Documentation" for preconstruction photographs taken before historic treatment.
3. Division 1 Section Cutting & Patching
4. Division 04 Section "Historic Nonhazardous Masonry Cleaning" for specific requirements for cleaning and repairing clay masonry.
5. Division 04 Section "Historic Brick Unit Masonry Repair" for specific requirements for repairing clay masonry
6. Division 04 Section "Historic Brick Unit Masonry Repointing" for specific requirements for repointing masonry
7. Division 04 Section "Historic Stone Masonry Repair" for specific requirements for repairing stone.
8. Division 04 Section "Historic Stone Masonry Repointing" for specific requirements for repointing stone masonry
9. Division 04 Historic Masonry Cleaning' for specific requirements for cleaning masonry
10. Division 05 Section "Historic Decorative Metal Cleaning" for specific requirements for cleaning ornamental metal.
11. Division 05 Section "Historic Cast and Wrought Iron Repair" for specific requirements for repairing cast and wrought iron.
12. Division 08 Section "Historic Treatment of Wood Doors" for specific requirements for cleaning and repairing wood doors.
13. Division 08 Section " Treatment of Historic Wood Windows" for specific requirements for cleaning and repairing wood windows.
14. Division 09 Section "Historic Treatment of Plain Painting" for specific requirements for stripping and repainting of decorative paint finishes.

1.2 DEFINITIONS

A. "Preservation": To apply measures necessary to sustain the existing form, integrity, and materials of a historic property. Work may include preliminary measures to protect and stabilize the property.

B. "Rehabilitation": To make possible a compatible use for a property through repair, alterations, or additions while preserving those portions or features that convey its historical or cultural values.

C. "Restoration": To accurately depict the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and the reconstruction of missing features from the restoration period.

D. "Reconstruction": To reproduce and match in the exact form and detail a building, structure, or artifact as it appeared at a specific period in time.

E. "Stabilize": To apply measures designed to reestablish a weather-resistant enclosure and the structural reinforcement of an item or portion of the building while maintaining the essential form as it exists at present.

F. "Protect and Maintain": To remove deteriorating corrosion, reapply protective coatings, and install protective measures such as temporary guards; to provide the least degree of intervention.

G. "Repair": To stabilize, consolidate, or conserve; to retain existing materials and features while employing as little new material as possible. Repair includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials. Repair includes limited replacement in kind, rehabilitation, and reconstruction, with compatible substitute materials for deteriorated or missing parts of features when there are surviving prototypes.

H. "Replace": To duplicate and replace entire features with new material in kind. Replacement includes the following conditions:

1. Duplication: Includes replacing elements damaged beyond repair or missing. Original material is indicated as the pattern for creating new duplicated elements.
2. Replacement with New Materials: Includes replacement with new material when original material is not available as patterns for creating new duplicated elements.
3. Replacement with Substitute Materials: Includes replacement with compatible substitute materials. Substitute materials are not allowed, unless otherwise indicated.

I. "Remove": To detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

J. "Remove and Salvage" or "Dismantle". To detach items from existing construction and deliver them to GSA ready for reuse. Items of interest or value to GSA that may be encountered during removal and dismantling work remain GSA's property. Carefully dismantle and salvage each item or object, and store in a manner that the items do not deteriorate.

K. "Remove and Reinstall": To detach items from existing construction, repair and clean them for reuse, and reinstall them where indicated.

L. "Existing to Remain" or "Retain": Existing items that are not to be removed.

M. “Match”: This means to blend with adjacent building fabric to appear identical to the original in terms of size, color, material, texture, finish, and if applicable method of attachment.

N. "Material in Kind": Material that matches existing materials, as much as possible, in species, cut, color, grain, finish and composition.

O. “Consolidate”: To strengthen loose or deteriorated materials in place.

P. “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.

Q. “Strip”: To remove existing finish strip down to base material unless otherwise indicated.

R. Historic Treatment “Specialists:” must meet the Secretary of Interiors Professional Qualifications Standards. Must meet the standards outlined in 1.4 QUALITY ASSURANCE below.

1.3 SUBMITTALS

A. Comply with applicable procedural requirements of Division 1

1. Contractor must provide documentation for all materials.
2. If one of the sustainable procedures conflicts with preserving or retaining historic elements, that conflict shall be brought to the attention of the Contracting Officer and the GSA Preservation Staff by the Contractor. Appropriate solutions shall be identified and an approach developed by relevant parties in order to meet both requirements as closely as possible.

B. Material Samples: For mock ups and in-kind repair or replication of historic materials. Submit material samples showing accurate replication of historic material color, finish, form, detailing, texture, and other visual qualities.

C. Historic Treatment Program: Submit a written plan for each phase or process including storage of restoration materials and protection of surrounding materials during operations. Describe in detail materials, methods, and equipment to be used for each phase of work. Provide sequencing of work, and how the Contractor will work with GSA to assure continuity of government operations and services during the work. Describe how the Contractor's Preservation Construction Manager and other supervisory personnel will minimize the risks of adverse effects on historic materials and project delays resulting from unforeseen conditions or execution challenges. Historic Treatment Program must be approved by the Contracting Officer in conjunction with the GSA Preservation and Project staff prior to construction commencement in historic areas.

D. Alternative Methods and Materials: Alternative methods and materials to those indicated must be approved by the Contracting Officer and the GSA Preservation Staff. For any phase of work, provide a written description including evidence of successful use on other, comparable projects, and program of testing to demonstrate effectiveness for use on this Project.

E. Qualification Data: For historic treatment Specialists, conservators, and supervisory personnel. Include photographs showing compatibility of new and old work and descriptions of completed projects with the scope of work, budget, references, and Specialist technicians who performed the work for each. All preservation specialists must meet the Secretary of Interiors Professional Qualifications Standards. Provide separate project documentation for proposed technicians who did not participate in the submitted projects.

F. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by historic treatment operations. Submit before work begins.

G. Record Documents: Include modifications to manufacturer's written instructions and procedures, as documented in the historic treatment preconstruction conference and as the Work progresses.

1.4 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: An experienced firm regularly engaged in historic treatments comparable in complexity and similar in nature, materials, design, and extent to this work as specified in each section, and has completed a minimum 3 recent projects with a record of successful in-service performance that demonstrate the Specialist'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 Project site during times that historic treatment work is in progress. Supervisors shall not be changed during Project except for causes beyond the control of the specialist firm.

B. Qualification:

1. Historic Treatment Specialist Firms: Firms that specialize in work on historic buildings and have a minimum of three successful projects, similar in scope to this project, in the last ten years.
2. Specialist Persons: For each specification section requiring a Specialist the Specialists is the person who is experienced in historic treatment work of types they will be performing.
   a. Provide name and address of three projects similar in size and scope to this project.
   b. Provide contact information for the architects and Owners of the projects.
3. Conservator: Person who is a Professional Associate of the American Institute for Conservation.

C. Historic Treatment Preconstruction Conference: Conduct conference at Project site to comply with requirements in Division 1

1. Review manufacturer's written instructions for precautions and effects of products and procedures on building materials, components, and vegetation.
   a. Record procedures established as a result of the review and distribute to affected parties.
2. Both field supervisor(s) and workers who will conduct the work will be present, and provide credentials to certify their qualifications to conduct the work

D. Mock Ups. Prepare mockups, by each specialist who is expected to be working on the project, to demonstrate historic treatment methods and/or cleaning procedures with respect to the compatibility of new work and quality standards of materials and execution. Prepare mockups so they are inconspicuous or reversible. Locate mockups on the building where directed by COR and GSA Preservation staff, in locations that enable viewing under same conditions as the completed Work. When mock-ups are not acceptable to the COR, prepare additional mockups until acceptable levels of quality are achieved.

1.5 STORAGE AND PROTECTION OF HISTORIC MATERIALS

A. Removed and Salvaged Historic Materials:

1. Clean salvaged historic items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to GSA.
4. Transport items to GSA's storage area designated by GSA.
5. Protect items from damage during transport and storage.
6. Do not dispose of items removed from existing construction without prior written consent of GSA.

B. Removed and Reinstalled Historic Materials:

1. Clean and repair historic items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify 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. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

C. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling during historic treatment. When permitted by GSA, items may be removed to a suitable, protected storage location during historic treatment [and cleaned] and reinstalled in their original locations after historic treatment operations are complete.

D. Storage and Protection: When removed from their existing location, store historic materials within a weather-tight enclosure where they are protected from wetting by rain, snow, or ground water, and temperature variations. Secure stored materials to protect from theft.

1. Identify removed items with an inconspicuous mark indicating their original location.

1.6 PROJECT-SITE CONDITIONS

A. Exterior Cleaning and Repairing:

1. Proceed with the work only when forecasted weather conditions are favorable.

a. Wet Weather: Do not attempt repairs during rainy or foggy weather. Do not apply primer, paint, putty, or epoxy when the relative humidity is above 80 percent. Do not remove exterior elements of structures when rain is forecast or in progress.
b. Do not perform exterior wet work when the air temperature is below 40 deg F.
c. Do not begin cleaning, patching, or repairing when there is any likelihood of frost or freezing.
d. Do not begin cleaning when either the air or the surface temperature is below 45 deg F unless approved means are provided for maintaining a 45 deg F temperature of the air and materials during, and for 48 hours subsequent to, cleaning. Commence cleaning only during a rising thermometer.

2. Perform cleaning and rinsing of the exterior only during daylight hours.

B. GSA may occupy portions of building adjacent to historic treatment area. Conduct historic treatment so GSA's operations will not be disrupted. Provide not less than 72 hours' notice to GSA of activities that will affect GSA's operations.

1. All buildings will be continuously occupied throughout the work period, except for the 6th floor of cosmos club that will be vacated during work or roof above.

2. Provide proposed schedule for window work 30 days before work is scheduled to proceed.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION

3.1 PROTECTION, GENERAL

A. Comply with manufacturer's written instructions for precautions and effects of products and procedures on adjacent building materials, components, and vegetation.

B. Ensure that supervisory personnel are present when work begins and during its progress.

C. Temporary Protection of Historic Materials during Construction:
1. Protect existing materials during installation of temporary protections and construction. Do not deface or remove existing materials.
2. Attachments of temporary protection to existing construction shall be approved by GSA prior to installation.

D. Protect landscape work adjacent to or within work areas.

E. Existing Drains: Prior to the start of work or any cleaning operations, test drains and other water removal systems to ensure that drains and systems are functioning properly. Notify GSA immediately of drains or systems that are stopped or blocked. Do not begin Work of this Section until the drains are in working order.

1. Provide a method to prevent solids including stone or mortar residue from entering the drains or drain lines. Clean out drains and drain lines that become blocked or filled by sand or any other solids because of work performed under this Contract.
2. Protect storm drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

3.2 PROTECTION DURING USE OF HEAT-GENERATING EQUIPMENT

1. Before work with heat-generating equipment commences in historic work areas, furnish qualified personnel to serve as fire watch (or watches) for location(s) where work is to be performed.

3.3 HISTORIC TREATMENT PROCEDURES

A. Historic Treatment Program: Prepare a written plan for approval by the Government of historic treatment throughout the performance of the Work, including each phase or process and protection of surrounding materials during operations. Describe in detail 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.

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.

B. Examination

1. Preparation for Removal and Dismantling: Examine construction to be removed or dismantled to determine best methods to safely and effectively perform removal and dismantling work. Examine adjacent work to determine what protective measures will be necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed or dismantled and location of utilities and services to remain that may be hidden by construction that is to be removed or dismantled.
2. Verify that affected utilities have been disconnected and capped.
3. Inventory and record the condition of items to be removed and dismantled for reinstallation or salvage.
4. Before removal or dismantling of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
5. Engage a professional structural engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures as a result of removal and dismantling work.

C. Survey of Existing Conditions: Record existing conditions by use of photographs videos, and LIDAR scans.

1. Comply with requirements specified in Division 01 Section "Photographic Documentation."
2. Perform surveys as the Work progresses to detect hazards resulting from historic treatment procedures

D. Mock-ups: Prepare mock-ups of specific historic treatment procedures specified in this Section to demonstrate the resulting appearance of treated areas and set quality standards for materials and execution.

1. Mock-ups shall include removal and dismantling work, bird excrement removal, and any of the restoration, preservation, reconstruction, and replacement efforts to be conducted for the project.

2. Ensure adequate curing time is allowed to show true finish condition prior to review. Comply with manufacturer’s recommendations.

E. The principal aim of preservation work is to halt the process of deterioration and stabilize the item's condition. Repair is required where specifically indicated. The following procedures shall be followed:

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. This means that the preservation treatment can be undone to return to the condition before treatment commenced.
4. Use traditional replacement materials and techniques.
5. Record the work before the procedure with preconstruction photos and during the work with periodic construction photos. Photographic documentation is specified in Division 1 Sections "Construction Progress Documentation and Photographic Documentation."

F. Ensure that supervisory personnel are on-site and on duty when historic treatment work begins and during its progress.

G. Prohibit smoking by personnel performing work on or near historic building fabric.

H. Obtain GSA's review and written approval in the form of a Constructive Change Directive or Supplemental Instruction before making changes or additions to construction or removing historic materials.

I. Notify GSA of visible changes in the integrity of material or components whether due to environmental causes including biological attack, UV degradation, freezing, or thawing; or due to structural defects including cracks, movement, or distortion.

1. Do not proceed with the work in question until directed by GSA.

J. Where missing features are indicated to be repaired or replaced, provide features whose designs are based on accurate duplications rather than on conjectural designs, subject to the approval of GSA.

K. Where Work requires existing features to be removed, cleaned, and reused, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

L. Identify new or replacement materials and features with inconspicuous, permanent marks to distinguish them from original materials. Record the legend of identification marks and the locations of these marks on Record Drawings.

M. When cleaning, match samples of existing materials that have been cleaned and identified for acceptable cleaning levels. Avoid over-cleaning to prevent damage to existing materials.

N. Rinse thoroughly to prevent formation of subsurface salts or surface residue. Test damp surface with pH strip before and after cleaning to confirm that rinsing is complete.

O. Approved preservation, restoration, maintenance and cleaning procedures, including approved chemicals and products, can be found online under "GSA Technical Preservation Guidelines" (https://www.gsa.gov/real-estate/historic-preservation/historic-preservation-policy-tools/preservation-tools-resources/technical-guidelines

3.4 PROTECTION DURING APPLICATION OF CHEMICALS

A. Comply with Division 1 requirements.

B. Protect motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm or damage resulting from applications of chemical cleaners and paint removers.

C. 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, UV-resistant, and 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 staining.

D. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.

E. Neutralize and collect alkaline and acid wastes and legally dispose of off GSA’s property.

F. 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.

3.5 BIRD EXCREMENT REMOVAL

A. General: Retain a qualified industrial hygienist to perform tests, make recommendations, and observe the work. Follow procedures required by authorities having jurisdiction and recommended by industrial hygienist.

B. Removing Bird and Other Excrement: Have excrement removal work performed by a qualified excrement removal specialist. Remove exterior bird-excrement accumulations with building windows and other openings in the building closed or sealed off. Remove interior bird excrement with other parts of the building sealed off from work area and with windows and other openings to exterior areas accessible to the public closed or sealed off.

1. Before removal, treat excrement to kill pathogens; dampen excrement to prevent particles becoming airborne.
2. Use only nonmetallic tools such as plastic spatulas and brushes with natural fiber or nylon bristles.
3. Collect, treat, and legally dispose of, off-site, all runoff from building cleaning.
4. Repeat removal procedure above where required to produce cleaning effect established by mock-up.

C. Removing Excrement Stain: Clean as required in Section pertaining to cleaning substrate material from which excrement was removed.

END OF SECTION 013510

SECTION 014000 - QUALITY ASSURANCE & CONTROL REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes administrative and procedural requirements for quality assurance and quality control services.
   1. See section 014100 Structural Inspection Services for additional Structural requirements
   2. See section 017310 Cutting and Patching for repair of work in place.

B. Quality Assurance & Control: The Contractor is solely responsible for developing, implementing, and providing for all quality control and related processes in the Contractor's Quality Control Plan to ensure that all parts of the project meet or exceed all of the requirements as set forth in the Contract Documents.
   1. The testing and inspections indicated in the Specifications (Testing) is a spot checking program identified by the AE per design or building code requirements, preformed by an Independent Testing Agency (Agency), and is not intended as a portion of the Contractor's Quality Control Plan.
   2. The presence of the Agency shall in no way relieve the Contractor of his obligation to perform the work in accordance with the Contract Documents.
   3. The Testing indicated in the Specifications cannot be used to refute conditions of suspected poor quality noticed in the field.
   4. In order to provide for a measure of the Contractor's quality control, the GSA, either with its own employees or contractors, may monitor the Contractor's quality control and related processes. This monitoring is not a part of the Contractor's Quality Control Plan.
   5. To the extent that the Contractor fails or otherwise refuses or neglects to develop, implement, or provide for all quality control and related processes, the GSA may, in addition to any other available remedies under the Contract, elect to perform quality assurance beyond that indicated in the Specifications and charge the Contractor for any and all costs related thereto.

C. Quality assurance and quality control include tests, inspections and related actions, including reports, performed by the Contractor, manufacturers, independent agencies or governing authorities.
   1. These testing and inspection services are required for, products, customized fabrication and installation procedures as well as for items to be professionally designed by the Contractor (delegated design).
   2. Product testing shall be done by a Nationally Recognized Testing Laboratory (NRTL) and National Voluntary Laboratory Accreditation Program (NVLAP), or other GSA approved testing facility.

D. The independent quality assurance testing and inspection (Testing) requirements for individual construction materials and activities are included in the Specification sections that specify those construction materials and activities.

E. Mock-ups: Full-size physical assemblies that are constructed on-site unless otherwise directed by GSA. Mock-ups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects as well as 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. Mock-ups may be done on the interior or exterior. Mock-ups are not Samples. Approved mock-ups establish the standard by which the Work will be judged.

F. Definitions

1. Source Quality Control Testing is done at the product source.
2. Field Quality Control Testing is done on site.

1.2 Testing and Inspection Reports: The Contractor the Contractor's testing agency(ies) and the Agency, where they perform the services, shall submit a certified written report in ePM of each test, inspection or other quality control service using the workflow process of ePM. Maintain a log both of accepted and rejected reports including corrective actions taken and date of retesting and compliance. Paper Copies: In addition to uploading report copies to ePM, the Agency shall also send certified copies of test and inspection reports as specified to the following parties:

a. 2 copies to the GSA
b. 2 copies to Contractor
c. 2 copies to the A/E

1. Testing and inspection reports shall include but not be limited to the following:

a. Date of issue.
b. Project title and number.
c. Name, address, and telephone number of testing agency.
d. Dates and locations of samples and tests or inspections.
e. Names of individuals making the test or inspection.
f. Designation of the work and test method.
g. Identifications of product and specification section.
h. Complete test or inspection data.
i. Test results and an interpretation of test results.
j. Ambient conditions at the time of sample taking and testing.
k. Certify whether tested or inspected Work complies with Contract Document requirements.
l. Name and signature of laboratory inspector.
m. Recommendations on retesting.

2. All quality operations shall within 24 hours notify, by personal contact and written notice, GSA's representative and the Contractor of irregularities or deficiencies observed in the Work during performance of their services.

3. All quality operations shall maintain a log of all their tests and inspections and a separate log of those that do not conform to the requirements of the Contract Documents. Both logs shall be published and reviewed weekly with the Contractor and the Government and/or at the weekly meeting.

1.3 RESPONSIBILITIES

A. Contractor Responsibilities: Unless specifically indicated otherwise, the Contractor shall provide the quality control services including those required by local jurisdictions.

1. Obtain copies of applicable codes, standards, procedures, regulations, etc. relative to materials, procedures, testing and inspection on the Project and make those available at the Project site for reference.

B. Contractor shall submit each testing agency's firm name, and credentials to perform the specified services, to the Government for GSA's approval at least 15 calendar days before scheduled inspections or tests.

C Retesting: The Contractor is responsible for retesting, including repeated inspections and other services, where results of the initial quality control services indicate noncompliance. The Contractor shall be responsible for the Agency or an equally qualified agency for these services. If the Agency does not provide the retesting or inspection, the Contractor shall be responsible for having the Agency observe the testing and inspection work.

1. Tests for Suspected Deficient Work: If in the opinion of the Government, any of the work of the Contractor that does not appear to conform to requirements, the Contractor shall make the tests that the Government deems advisable to determine its conformance to the Contract Documents.
2. The government shall pay the costs if the tests prove the suspected work to be satisfactory.

D Associated Services: The Contractor shall cooperate with others, including the Agency, performing tests, inspections and other quality services, and shall provide reasonable auxiliary services as requested. Contractor shall notify the testing and inspection entities sufficiently in advance of operations to permit their timely assignment of personnel. Auxiliary services include but are not limited to the following:

1. Provide access to the work and all documents (Contract documents, shop drawings, product data, Contractor and Sub-Contractor testing and inspections, etc.).
2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.
3. Provide adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
4. Provide facilities for storage and curing of test samples and equipment.
5. Deliver samples to testing laboratories.
6. Provide security and protection of samples and test equipment at the Project site.

E. Duties of the Independent Testing Agency (Agency): The Agency engaged to perform tests, inspections and other quality services shall cooperate with GSA's representative and the Contractor in performance of the Agency's duties.

1. The Agency shall provide qualified personnel to perform required inspections and tests.
2. The Agency shall provide certifications and a list of personnel assigned to each portion of the work.
3. The Agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.
4. The agency shall not perform any duties of the Contractor.
5. The Testing Agency’s proposal shall contain the outlined Testing based on a unit price basis for tests and inspections and on an hourly basis for personnel.
6. The Agency shall certify the test results and observations.
7. The Agency shall interpret whether or not their results and observations meet specified Project requirements.
8. The Agency shall submit reports per Section: Testing and Inspection Reports, above.
9. The Agency shall maintain logs per Section: Testing and Inspection Reports, above.
10. The Agency shall review the applicable certificates of the Contractor’s personnel to verify the validity and current status of the certificate.
11. For construction personnel without necessary certificates, the Agency shall oversee the certification process of construction personnel to ensure their qualifications to perform the specified duties. The Contractor shall be responsible to the Agency for these services.
12. The Agency shall obtain and review the project plans and specifications with the Government as soon as possible prior to the start of construction.
13. The Agency shall attend preconstruction conferences to coordinate materials inspection and testing requirements with the planned construction schedule. The Agency shall participate in such conferences where the Testing is indicated throughout the course of the project.

G. Independent Testing Agency Payment: The Contractor shall obtain and include the Agency’s cost in the Contract Sum.

1. The Contractor shall submit payments for the Agency, track the Agency's budget and keep the GSA informed on projected Agency costs and remaining budget.
2. Only the GSA can modify the Agency's scope.

H. Coordination: The Contractor shall coordinate the sequence of activities to accommodate required services with a minimum of delay.

1. Activities shall be coordinated to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
2. The Contractor shall be responsible for scheduling times for inspections, tests, taking samples and similar activities.

1.2 QUALIFICATIONS OF THE INDEPENDENT TESTING AGENCY (AGENCY) AND CONTRACTOR TESTING AGENCIES

A. A qualified independent testing agency shall be an accredited entity engaged to perform tests and inspections, both at the Project site or elsewhere and to report on and to interpret results of those tests or inspections. Testing agencies shall be acceptable to GSA and the Agency shall be authorized by authorities having jurisdiction to operate in jurisdiction where project is located.

B. Unless other accreditation is specifically specified in the applicable individual section, each testing agency shall be prequalified as complying with the American Council of Independent Laboratories "Recommended Requirements for Independent Laboratory Qualifications", or shall be recognized by the Occupational Safety and Health Administration (OSHA) in accordance with 29 CFR Part 1910.7 to test and approve equipment or materials for their safe intended use. Each testing agency shall specialize in the types of tests and inspections to be performed.

C. Testing agencies shall be authorized by authorities having jurisdiction to operate in the jurisdiction where the project is located. Testing agency qualifications: NRTL (Nationally Recognized Testing Laboratory) per 29 CFR 1910.7, and NVLAP (National Voluntary Laboratory Accreditation Program) per NIST., and documented per ASTM 329 and is acceptable to GSA

1.3 CONTRACTOR QUALITY CONTROL PLAN

A. Contractor's Quality-Control Plan: Submit within 5 days from NTP for quality-control activities and responsibilities. Submit in electronic format and upload to ePM. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-control responsibilities. Coordinate with the construction schedule. The procedures, controls, inspections, and tests shall be indicated by specification section and shall include the specific actions that the Contractor's QC team will take to verify compliance of the work with the specifications and drawings.

B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those indicated in the Specifications.

1. Provide a project quality-control manager, who may also serve as Project Superintendent.
2. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
3. Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship. Indicate types of corrective actions to be required to bring work

into compliance with standards established by the Contract requirements and approved mock-ups.

C. Provide reports per Section 1.2 Testing and Inspection Reports, above.

D. Other Reports

1. 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:

   a. Name, address, and telephone number of technical representative making report.
   b. Statement on condition of substrates and their acceptability for installation of product.
   c. Statement that products at Project site comply with requirements.
   d. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
   e. Results of operational and other tests and a statement of whether observed performance complies with requirements.
   f. Statement if conditions, products, and installation will affect warranty.
   g. Other required items indicated in individual Specification Sections.

2. 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:

   a. Name, address, and telephone number of factory-authorized service representative making report.
   b. Statement that equipment complies with requirements.
   c. Results of operational and other tests and a statement of whether observed performance complies with requirements.
   d. Statement if conditions, products, and installation will affect warranty.
   e. Other required items indicated in individual Specification Sections.

3. Permits, Licenses, and Certificates: For the GSA’s records, 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.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. Upon completion of testing, inspection, sample taking and other quality control services, repair damaged construction and restore substrates and finishes to like new conditions. Comply with the requirements of the Contract Document, including Division 1 Section "Cutting and Patching."

B. Protect construction exposed by or for quality control service activities, and protect repaired construction. Cleaning, repair and protection of testing areas is the Contractor's responsibility, regardless of the assignment of responsibility for testing, inspection or other quality control or assurance services.

END OF SECTION 014000

SECTION 01 51 00 – ARTWORK PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes requirements and special procedures for temporary protection and monitoring of the identified artwork during construction.

B. Description of Work

1. Item 1 - Eagle - Protect in place
   a. Artist: Lewis Iselin
   b. Date: 1954
   c. Classification: Sculpture
   d. Materials: Bronze
   e. Approx. Size: 11’2” × 12’ × 14’
   f. Location: Exterior - Cosmos Club courtyard
   g. Condition: Excellent
   h. Donated in 1968 Eagle is attached to the brick wall in a manner that makes removing it imposable without destroying the wall or artwork.

2. Item 2: Agnus Memorial (Unauthorized copy of "Grief" by Gaudens)-Protect in place.
   a. Eduard Ludwig Albert Pausch
   b. Date: 1906
   c. Classification: Sculpture
   d. Materials: Bronze
   e. Approx. Size: 69.5”x 42” x 48”
   f. Location: Exterior - Cosmos Club courtyard
   g. Condition: Excellent
   h. Transferred from the Smithsonian Institution in 1987 this is an unlicensed copy of the 1885 Henry Adams monument of the same name.

3. Related Sections
   a. GSA FY23 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION
   b. GSA FY23 01 33 00 SUBMITTAL PROCEDURES
   c. GSA FY23 01 32 20 PHOTOGRAPHIC DOCUMENTATIONS - for pre-construction photographs taken before start of construction shall apply to Artwork

C. References: In addition to publications referenced in the Construction Contract Clauses, the following Code of Federal Regulations (CFR) and publications apply to this work. State and local safety and health regulations that apply are not cited herein. Current editions at the date of the agreement apply. The more stringent requirements shall apply.

1. GSA PBS P-100 Facilities Standards for the Public Buildings Service

1.2 ARTWORK PROTECTION REQUIREMENTS

A. Prior to site mobilization provide a protection plan, prepared by a qualified art conservator, for the Government's review and comment.

B. Artwork protection must be self-supporting, must not touch the artwork and must provide means of accessing the artwork while in place; must protect artwork from construction related damage resulting from abrasion, impact/collision, dust/dirt, debris and must maintain and protect the stability of artwork from movement or vibration.

1.3 PROTECT ALL ARTWORK IN PLACE

Provide a qualified art conservator (specialist) to perform the following tasks:

A. Provide an emergency protocol for action and/or notifications should damage occur to the artwork.

B. Photographic Survey: Submit photographs of existing conditions prior to commencing protection to serve as a record of original conditions.

1. Photographs should be sharply focused and each should be at least 2mb in size.

2. Images must be submitted to GSA on CD/DVD prior to the start of construction.

3. Any/all existing damage to the artwork should be thoroughly documented and restored at no additional cost to the Government.

4. Views should provide both an overview of the artwork and detail shots of the artwork and surroundings.

5. Photograph the artwork during construction to document activities occurring adjacent to the art and any changes in its condition.

C. Monitoring Reports: Provide reports of accurate readings for temperature, relative humidity and movement/vibration collected on an hourly basis (24/7), submit in a separate folder with construction progress documentation.

1.4 QUALITY ASSURANCE

A. Art Conservator Qualifications: The conservator must meet one of the following minimum qualifications:

1. Master's degree in conservation from an accredited university graduate program and a minimum of five years' experience in specialized field of fine art conservation.

2. Ten years of experience in the field of fine art conservation.

3. Qualifications and experience equivalent to those required to be a Professional Associate or Fellow of the American Institute for Conservation of Historic and Artistic Works (AIC). – Go to: https://www.culturalheritage.org/

PART 2 PRODUCTS

2.1 MATERIALS

A. All materials utilized to construct artwork protection must be approved in advance by the Regional Fine Arts Officer (RFAO), through the COR, and are subject to mock ups and inspection.

B. 8’ high self-supporting solid construction barrier. Meeting the requirements of IBC 3306.6

C. Monitoring devices are also subject to approval in advance by the RFAO through the COR, and must be submitted for approval prior to installation.

PART 3 EXECUTION

3.1 Protect all artwork in place.

A. INSTALLATION

1. Install and support artwork protection without touching artwork or damaging artwork in any way.

2. All applicable protection measures, including physical protection, and environmental monitoring devices movement/vibration, must be installed and operational prior to the start of construction activities.

3. Protect adjacent surfaces from damage due to attachment of protection materials, including mechanical and adhesive attachments. Repair adjacent surfaces stained, marred, or otherwise damaged by protection materials.

4. Comply with manufacturer's written instructions for precautions and effects of products and procedures impacting Artwork and adjacent building materials and components.

5. During review of the descriptive protection plan, the RFAO may note that mock ups of certain protection measures are required prior to approval/installation. These mock ups must be completed and approved prior to full installation.

6. The conservation assessment and photography must also be completed prior to protection installation.

B. REMOVAL OF PROTECTION

1. Prior to the removal of any protection measures, the RFAO must inspect the site and determine that the area is clean, and the protection is ready for removal.

2. All construction activity in the vicinity of the artwork must be completed prior to protection removal.

3. Temporary protection of the artwork may be necessary during removal of long-

term protection. Discuss with RFAO during site visit prior to removal.

3.2 FIELD QUALITY CONTROL

A. Personnel Inspection: Inspect Art work daily by on-site personnel. Notify the COR of any changes.

B. Photo Documentation: Photograph Artwork during construction to document protection measures, changes in condition, adjacent activities, etc. Submit photographs to the COR daily when work is going on in the area of the art. As part of the closeout procedure, submit all photos individually and combined into a single file on CD/DVD.

END OF SECTION 01 51 00

SECTION 015639 - TREE AND PLANT PROTECTION

1.1 SUMMARY

A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.

1.2 DEFINITIONS GSA Project Manager (PM), Contracting Officer's Representative (COR) Architect/Engineer (A/E):

A. Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings. For trees, the locations of all Critical Root Zones (CRZs) are defined as the area for each tree which contains the estimated minimal amount of both structural and feeder roots that must be protected to minimize tree damage and retain structural stability. The CRZ for each tree is calculated based on the Tree Species Tolerance to construction impacts and age class, as outlined in the International Society of Arboriculture's Best Management Practices: Managing Trees During Construction (K. Fite, T. Smiley, 2008). Although CRZs will differ by species and tree age, zones range from ½ foot per one-inch DBH (diameter at breast height) to 1½ foot per one-inch DBH. For example: two foot (2)' DBH tree species deemed non-sensitive would have a 12' protection zone. A 2' DBH tree species deemed sensitive would have a 36' protection zone. Sensitivity is determined by species and as such protection requirements are outlined in the 'International Society of Arboriculture Best Management Practices: Managing Trees During Construction' (K. Fite, T. Smiley, 2008) If the species tolerance is unknown, then the 1½ foot per one-inch DBH standard is assumed. Mixed groupings of trees will base the required area of protection on that area which is required for maintaining the health of the most sensitive individual species composing the cluster. GSA will assume the 1½ foot standard applies unless sufficient information detailing the contrary is provided. For large shrubs and groups of shrubs a protection area shall be provided equivalent to 1.5 times the diameter of the massing itself, unless otherwise indicated.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples: For each type of product such as organic mulch in sealed plastic bags labeled with composition of materials by percentage of weight, or material data sheets when truck measured, protection-zone range/snow fencing, root zone plywood protection, and protection-zone signage.

C. Tree Pruning Schedule: Written schedule detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction. This detailed schedule shall identify both limb and root pruning activities and be provided to GSA representative 30-60 days prior to proposed activities.

D. Provide a Certified Arborist Report (CAR) and submit to the GSA along with the topographic survey that clearly demonstrates the size, species, and condition of all existing trees and shrubbery on site. Detailed plans should be provided for those plants that may be impacted. This includes identifying proposed the protection plan for existing plantings during the construction activity. Document existing conditions of trees and plantings, which establishes preconstruction conditions that might later be misconstrued as damage caused by construction activities.

E. Certification: From arborist, certifying that plantings indicated in the above Certified Arborist Report have in fact been protected and properly prepared for construction according to recognized standards.

1.4 INFORMATIONAL SUBMITTALS

A. Maintenance Recommendations: From arborist, for care and protection of plantings affected by construction during and after completing the Work.

1.5 QUALITY ASSURANCE

A. Arborist Qualifications: Certified Arborist as certified by ISA, licensed arborist in jurisdiction where Project is located, current member of ASCA, or registered Consulting Arborist as designated by ASCA.

B. Preconstruction Conference: Include as part of the project's overall preconstruction conference.

1.6 PROJECT CONDITIONS

A. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging

B. Do not direct vehicle or equipment exhaust toward protection zones.

C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Protection-Zone Fencing: Fencing fixed in position and meeting one of the following requirements. Previously used materials may be used when inspected for condition and approved in writing by the COR.

1. Chain-Link Protection-Zone Fencing: Galvanized-steel fencing fabricated from minimum 1-inch opening, 0.148-inch- diameter wire chain-link fabric; with 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 and 0.177-inch- diameter bottom tension wire; with tie wires, hog ring ties, and other accessories for a complete fence system.
2. Height of Fencing: Protective fencing shall be eight feet-(8') in height. The specific height of each area of protection should be indicated on the Certified Arborist Report with justification.

3. Gates: Swing access gates matching material and appearance of fencing, to allow for maintenance activities within protection zones.

B. Protection-Zone Signage: Shop-fabricated, rigid plastic or metal sheet with attachment holes pre-punched and reinforced; legibly printed with non-fading lettering.

PART 3 - EXECUTION

3.1 ESTABLISHING PROTECTION ZONES

A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones in a manner that will prevent people from easily entering protected area except by entrance gates.

1. Chain-Link Fencing: Install to comply with ASTM F 567 and with manufacturer's written instructions.
2. Posts: Provide appropriate means of post support acceptable to COR.
3. Access Gates: Install where indicated on drawing/Certified Arborist Report.

B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by COR.

C. Maintain protection-zone fencing and signage in good condition as acceptable to the GSA COR and remove when construction operations are complete and equipment has been removed from the site.

3.2 FIELD QUALITY CONTROL

A. Inspections: Engage a certified arborist to direct plant-protection measures in the vicinity of shrubs, and other vegetation and to prepare inspection reports.

3.3 REPAIR AND REPLACEMENT

A. General: Repair or replace shrubs, and other vegetation that are damaged by construction operations, in a manner approved by the GSA COR.

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1. Perform protection area repairs within 24 hours of incident.
2. Replace vegetation that cannot be repaired and restored to full-growth status, as determined by licensed landscape professional.

END OF SECTION 015639

SECTION 015930 - SECURITY REGULATIONS

PART 1 - GENERAL

1.1 Refer to the Construction Contract Agreement Section III, Terms and Conditions, for HSPD-12 suitability investigation requirements for Contract employees requiring access to the exterior of the facility. See http://www.GSA.gov/HSPD12 for more security suitability requirements.

A. All areas inside the building are classified areas. Provide an HSPD-12 badge for anyone who will be working inside the building or on the site for more the 15 working days.

1.2 GENERAL SECURITY REQUIREMENTS

A. Contractors and their staff will be required to comply with security regulations imposed by the occupying agency including any necessary clearances required for access to classified areas. Access to the project site will be limited to specific times established by the Government.

B. After award of the Contract, all Contractor employees requiring access to classified areas shall be required to furnish information for security clearances and shall comply with security regulations as imposed by the occupying agency and defined in this section.

C. Notification: For all contracting staff that has been successfully cleared, notify the COR, not less than 48 hours prior to performing work in a classified security area. Include the following:

1. Companies: Name of each company performing the work.
2. Employee names.
3. Time: The exact time, date, and hours of work.
4. Areas: Specific areas of the building in which work is to be performed.

1.3 GENERAL SECURITY REGULATIONS

A. Agency Security Regulations: All persons employed within the boundaries of the restricted-access areas therein, and all persons permitted to enter such property and areas shall comply with the security regulations that have been established for this Contract.

1. The Contractor agrees on behalf of themselves and all subcontractors that the following security regulations will be observed by Contractor and subcontractor personnel on the property. The Contractor shall make it a specific provision of his subcontracts that these regulations be accepted.
2. At the commencement of the work under this Contract, the following security facilities and procedures will apply for classified areas within the facility:

a. The Contractor shall provide information about all Contractor and subcontractor personnel and others who require continuing access to the site, before access is required and when access ceases.
b. Within 30 calendar days after the award of the Contract, the Contractor shall submit a list on the Contractor's letterhead stationery of all employees, subcontractors and their employees, and others who will perform work or otherwise require access to

the classified area. Personnel shall be listed in alphabetical order by company. The list shall include their full name, address, email and phone number.

c. Notify the Government in writing when personnel are no longer employed by the Contractor or a subcontractor that have been cleared.

d. In order to permit the Government to supply credentials, they shall follow the procedures for obtaining an HSPD-12 credential as outlined in the Construction Contract Agreement section of the solicitation.

e. The credential furnished by the Government to each Contractor employee or other person granted access to the classified area will serve to authorize the wearer to enter and leave the classified area. The credential must be worn so as to be clearly be visible at all times when on the work site. The credential will be retained by the individual as long as they require continued admittance to the classified area. The Contractor will arrange for the credentials immediate return to the Government when such need ceases. Temporary or visitor badges along with escorts will be provided for persons who are identified as having an infrequent or temporary legitimate business need for access to the classified area.

REFER TO NCB CONTRACTOR ACCESS REQUIREMENTS FOR SPECIFIC REQUIREMENTS FOR COMPLEX. THE COURT WILL NOT PROVIDE CREDENTIALS. THE CONTRACTOR MUST ALREADY HAVE THE APPROPRIATE HSPD-12 CREDENIALED STAFF PRIOR TO BIDDING THE JOB.

3. At the commencement of the work under this contract, the following security procedures shall apply to the Contractor and all subcontractors.
   a. Comply with the security regulations of the building.
   b. Cameras are not permitted without written permission from the Occupant Agency and the COR. If approved, permission will be granted in writing and will provide additional guidelines.
   c. Personnel may be subject to inspection of their personal effects when entering and leaving the facility. In addition, unscheduled inspections of personnel may be made while on site.
   d. If any work scheduled within the classified area is canceled, notify the COR.

4. The Occupant Agency reserves the right to close down the job site and order Contractor personnel off the premises in the event of a national emergency or a shut-down, for as long as security problems persist. The Contractor may only return to the site with verbal approval from the Occupant Agency and the COR.

5. The Government reserves the right to exclude or remove from the site or building any employee of the Contractor or a subcontractor whom the Government deems incompetent, careless, insubordinate or otherwise objectionable, or whose continued employment on the work is deemed by the Government to be contrary to the public interests. The Government further reserves the right to complete processing of the security documentation for personnel assigned to work within classified areas prior to access to such areas by the personnel.

6. For overtime work within the classified area, the Contractor shall give the COR at least 5 calendar days notice. This notice is required so that security escorts may be provided and is separate and distinct from any notices required for utility shutdown or other outages. Also, the Contractor shall notify the Government if personnel will not report to the job site on a particular day so that the security escort can be released for other duties.

7. A detailed weekly schedule shall be submitted once a week by the close of business on the last day of the previous week's work for work planned within classified areas. The schedule shall include the following:

   a. Specific location of work for each trade.
   b. Description of work for each trade.
   c. Number of persons who will be on site for each location and trade.
   d. Specific impacts required, such as equipment or utility shutdowns.
   e. Hours of operation.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION (Not used)

END OF SECTION 015930

SECTION 015950 - SAFETY AND HEALTH

PART 1 - GENERAL

1.1 SUMMARY

A. References: In addition to publications referenced in the Construction Contract Clauses, the following Code of Federal Regulations (CFR), publications apply to conduct of the work. State and local safety and health regulations that apply are not cited herein. Current editions at the date of the agreement apply. The more stringent requirements apply.

1. 29 CFR, Part 1910: Occupational Safety and Health Administration (OSHA) General Industry and Health Standards.
2. 29 CFR, Part 1926 " Safety and Health Regulations for Construction"
3. 40 CFR 260, "Hazardous Waste Management System"
4. 40 CFR 261, "Identification and Listing of Hazardous Waste."
5. 40 CFR, Part 761, EPA Polychlorinated Biphenyls (PCBs), Manufacturing, Processing, Distribution in Commerce and Use Prohibitions. [GSA Project Team: Check if any work involves sealant removal as PCBs may be present.]
6. National Fire Protection Association (NFPA) 70E Electrical Safety Requirements for Workplace Safety
7. U.S. Army Corps of Engineers (USCOE) Safety and Health Requirements Manual, EM 385-1-1, current edition.
8. Federal Standard: Fed. Std. 313A, Material Safety Data Sheets, Preparation and the Submission of.

B. Acquisition of Publications:
1. Codes of Federal Regulations (CFR) and the U.S. Army Corps of Engineers EM 385-1-1 may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
2. NFPA publications may be purchased from the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

1.2 SAFETY MEETING

A. Prior to commencing construction, representatives of the Contractor, including the principal on-site project representative and one or more safety representatives, shall meet with designated representatives of the government for the purpose of reviewing the Contract's safety and health requirements. The safety and health program shall be reviewed, and specific implementation of safety and health provisions pertinent to the Work shall be discussed.

B. **Safety Meetings shall be weekly**. Prepare meeting agendas, and meeting minutes for each meeting and load into ePM. Contractor’s project manager, safety officer, project superintendant and any other supervisors shall attend these meetings with the Government and its designated-on site representatives.

SAFETY AND HEALTH PROGRAM

C. Contractor Responsibility: Assume full responsibility and liability for compliance with applicable codes, standards and regulations pertaining to the health and safety of personnel during execution of the Work, and hold the Government harmless for any action on the Contractor's part, or that of the Contractor's employees or subcontractors, that results in illness, injury or death.

D. Site Safety and Health Officer: A trained and experienced individual shall be delegated in writing as the Site Safety and Health Officer (SSHO) The SSHO shall be responsible for the development, implementation, oversight and enforcement of the Contractor's Accident Prevention Plan (APP) on-site, which shall address all activities for which the Contractor is responsible. The Contractor may appoint as many individuals as appropriate to accomplish the provisions of this section. The SSHO shall typically remain on-site full-time during activities conducted under this Contract. The SSHO may be an individual with other responsibilities, already identified to be on site and who has the authority and appropriate knowledge to oversee and act on the provisions of this section.

E. First Aid and Emergency Response Requirements: Provide emergency first aid equipment. Additionally, a 20-pound ABC-rated fire extinguisher shall be maintained on-site as well as absorbent material of sufficient quantity to collect any spill which might occur during this project. A listing of emergency phone numbers and points of contact for fire, hospital, police, ambulance, and other necessary contacts shall be posted at the Contractor's site.

F. Provide for site visitor: Personal Protective Equipment (PPE) per OSHA for use during their visits. Provide a minimum of 10 sets with replacements for items not suitable for re-use.

1.3 SUBMITTALS

A. Submit for approval in ePM copies of the project safety and health programs, as applicable to the work scope or required as a result of the safety meeting.

1. Occupational Noise Exposure.
2. Fall Protection.
3. Personnel Protective Equipment.
4. Control of Hazardous Energy.
5. Electrical Safety Related Work Practices.
6. Lead. Refer to Division 02 spec section.
7. Asbestos. Refer to Division 02 spec section.
8. Polychorlinated Biphenyls (PCBs)
9. Respirator Protection.
10. Confined spaces.

B. Contractor's Safety Plan: In addition to specific safety and health programs applicable to the project, submit firm's general safety plan at the pre-construction conference listing emergency procedures and contact persons with home addresses and telephone numbers. The Safety Plan shall be posted on the ePM project site.

C. Permits: If hazardous materials are disposed of off-site, submit in ePM copies of shipping manifests and permits from applicable federal, state or local authorities and disposal facilities, and submit certificates that the material has been disposed of in accordance with regulations. obtain the Environmental Protection Agency's (EPA) Hazardous Waste Generator ID Number for disposal of contractor generated hazardous waste; submit in ePM within 7 days of receiving Generator ID Number from the EPA.

D. Accident Prevention Plan (APP): Submit an electronic copy of the APP in ePM.

E. Accident Reporting: Submit an electronic copy of each accident report in ePM that the Contractor or Subcontractors submits to their insurance carriers, within seven calendar days after the date of the accident.

F. Emergency call down tree: Include an emergency call down tree containing contact info for all team members as part of the Contractor's Safety Plan.

G. If the contractor brings hazardous materials onto the property, submit a hazardous material management plan which shall, at a minimum, identify and provide the Material Safety Data Sheet (MSDS) for each material, describe proper handling and storage procedures for each material, and describe the Contractor's plan for responding to a spill or release of the material(s).

PART 2 - PRODUCTS

2.1 PERSONNEL PROTECTIVE EQUIPMENT

A. Special facilities, devices, equipment and similar items used by the Contractor in execution of the Work shall comply with the applicable regulations.

PART 3 - EXECUTION

3.1 HAZARDOUS MATERIALS AND CONDITIONS

A. Advise GSA of any hazardous material and/or hazardous condition encountered during execution of the work. GSA shall determine if the Contractor must perform additional tests and if the work for the particular material or condition shall cease. Work shall recommence at the direction of GSA. The SSHO shall take measures to protect personnel until GSA has rendered its decision.

3.2 EMERGENCY SUSPENSION OF WORK

A. When the Contractor is notified by GSA of non-compliance with the safety or health provisions of the Contract, immediately cease work in the subject area unless otherwise instructed, and correct the unsafe or unhealthy condition.

1. If the Contractor fails to comply promptly, all or part of the Work will be stopped by notice from GSA.
2. When GSA determines that satisfactory corrective action has been taken by the Contractor, work shall resume.
3. The Contractor shall not be allowed any extension of time or compensation for damages in connection with a work stoppage for an unsafe or unhealthy condition.

3.3 PROTECTION OF PERSONNEL

A. Take necessary precautions to prevent injury to the public, occupants, and work forces. The public and occupants includes all persons not employed by the Contractor or a subcontractor.

B. The Work area shall be fenced, barricaded or otherwise blocked off from the public or occupants to prevent unauthorized entry into the Work area. Control by authorized personnel shall be done where passage through is necessary for the Work.

1. Provide traffic barricades and traffic control signage where construction activities occur in vehicular areas and/or pedestrian walkways.
2. Corridors, aisles, stairways, doors and exit ways shall not be obstructed or used in a manner to encroach upon routes of ingress or egress utilized by the public or occupants, or to present an unsafe or unhealthy condition to the public or occupants.
3. Store, position and use equipment, tools, materials, in a manner that does not present a hazard to the public or occupants
4. Store and transport refuse and debris in a manner to prevent unsafe and unhealthy conditions for the public and occupants. Cover refuse containers, and remove refuse on a frequent regular basis acceptable to GSA. Use tarpaulins or other means to prevent loose transported materials from dropping from trucks.

3.4 ENVIRONMENTAL PROTECTION

A. Dispose of solid, liquid and gaseous contaminants in accordance with applicable federal, state, and local codes, laws, ordinances and regulations.

B. Comply with applicable federal, state and local noise control laws, ordinances and regulations, including but not limited to 29 CFR 1910.95 and 29 CFR 1926.52.

END OF SECTION 015950

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 BUY AMERCAN REQUIREMENTS

A. Additional information on the Buy American requirements can be found in FAR Subpart 25.2 at the Federal Acquisition Regulation website and Section IV of the Contract Agreement.

1.2 SUMMARY.

A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project, including manufacturers' standard warranties on products and special warranties.

B. The following definitions are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms that are self-explanatory and have well-recognized meanings in the construction industry.

1. "Products" means items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and other terms of similar intent.
2. "Materials" means products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
3. "Equipment" means products with operational parts, whether motorized or manually operated, and products that require service connections, such as wiring or piping.

C. See 012500 Substitution Procedures for requests for substitutions.

D. Warranties: Standard, and special warranties required by the individual sections of the Specifications shall provide guarantees in terms of time limits or rights of the Government in addition to those contained in the Construction Contract Clauses.

1. Standard product warranties shall be preprinted written warranties published by individual manufacturers for particular products, and shall be specifically endorsed to the Government by the manufacturer.
2. Special warranties shall be specifically written to incorporate particular requirements of the Contract Documents, and shall be endorsed to the Government by the entities responsible for the work, as stated in the individual section.

1.3 SUBMITTALS

A. Submittals: See section 013300 Submittals Procedures

B. Substitutions: See section 012500 Substitution Procedures

C. Submit written warranties to the Government prior to the date for Project Completion, unless an earlier time of submission is specified elsewhere in the Contract Documents or requested by the Government. When a designated portion of the Work is completed and occupied or used by the

Government, by a separate agreement with the Contractor during the construction period, submit properly executed warranties within 15 days after completion of that designated portion of the Work. Identify and clearly label on the product the effective start time and end time for each warranty.

1. When the Contract Documents require the Contractor to execute a special warranty, provide a written document that contains the appropriate terms and identification, executed by the required parties.
2. See technical Specification divisions for other warranty language. .

1.4 QUALITY CONTROL

A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source. Equipment of the same function shall be manufactured by the same entity.

B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected.

C. Labels and nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on surfaces of products that will be exposed to view in occupied spaces or on the exterior.

1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous. Labels indicating compliance with recognized organizations require confirmation by submitted documents.
2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate nameplate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information:

    a. Name of product manufacturer.
    b. Model and serial numbers.
    c. Operating data such as capacity, speed and ratings.
    d. Name and phone number of Installer.

3. Protection: Labels and nameplates shall be protected from defacement and other damage during the remainder of the Work.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING [

A. Deliver, store and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.

1. Schedule product delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to provide minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
3. Deliver products to the site in an undamaged condition, in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected. Coordinate inspection with COR or designated representative (i.e. Bldg. Manager, CM, etc.).

5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
7. Store products subject to damage by the elements above ground, under cover in a weather-tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1 PRODUCT COMPLIANCE AND REQUIREMENTS

A. Provide products complete with accessories, trim, finish, safety guards, devices and other items needed for a complete installation and the intended use and effect. Where specified and available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

B. Product Selection Procedures: The Contract Documents, including the Construction Contract Clauses, govern product selection. Requirements for product selection include the following:

1. Where the Specifications lists manufacturers' names or product designations, the Contractor may provide any product that complies with the requirements, subject to the following conditions:

    a. Available Manufacturers: Where a Specification paragraph or subparagraph titled "Available Manufacturers" lists a minimum of three manufacturers' names, provide a compliant product by one of the manufacturers named or by another manufacturer.
    b. Available Products: Where a Specification paragraph or subparagraph titled "Available Products" lists minimum of three product designations, provide one of the products designated or another compliant product.
    c. Basis of Design: Where a Specification paragraph or subparagraph titled "Basis of Design" includes a product designation, provide the product designated, or request a Substitution of a compliant product by a named or other manufacturer.

2. Descriptive Requirements: Where Specifications describe a product or assembly, listing the characteristics required, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
3. Performance Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated. Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.
4. Prescriptive Requirements: Where Specifications require products that are produced using specified ingredients and components, including specific requirements for mixing, fabricating, curing, finishing, testing and similar operations in the manufacturing process, provide products produced in accordance with the prescriptive requirements that otherwise comply with Contract requirements.
5. Codes, Standards and Regulations: Where Specifications require compliance with an imposed code, standard or regulation, select a product that complies with these requirements.
6. Visual Matching: Where Specifications require matching an established Sample, the Government's decision will be final on whether a proposed product matches satisfactorily. Where no product available within the specified category matches satisfactorily and complies with other specified requirements, comply with provisions concerning "substitutions" for selections of a matching product in another product category.

7. Visual Selection: Where specified product requirements include the phrase "as selected from manufacturer's standard colors, patterns, textures" or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Government will select the color, pattern and texture from the manufacturer's product line.

C. The Contractor's submittal and the Government's acceptance of Shop Drawings, Product Data, or Samples for construction activities not complying with Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

2.2 WARRANTY REQUIREMENTS

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

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

C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work.

D. Rejection of Warranties: The Government reserves the right to reject warranties and to limit selection of products with warranties not in conflict with requirements of the Contract Documents.

E. Where the Contract Documents require a special warranty, or similar commitment for the Work or part of the Work, the Government reserves the right to refuse to accept the Work until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 016000

SECTION 017000 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes certain general procedural requirements governing the Contractor's execution of the Work, including, but not limited to laying out the work, general installation of products, correction of defective work, and cleaning.

B. Substitutions: Changes in methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract shall comply with the procedures and conditions specified for Substitutions in the Construction Contract Clauses and Division 1 Section 016000 "Product Requirements and Section 12500 Substitution Procedure".

1.2 SUBMITTALS

A. Field Correction Requests: Immediately upon discovery of the need to deviate from requirements of the Contract Documents, submit a field correction request to GSA for review. Include a detailed description of the problem encountered, together with recommended changes and detailing the reasons for deviating from the Contract Documents.

B. Manufacturer's Field Services Submissions: Where product manufacturers are required by the individual sections of the Specifications to provide qualified personnel to observe project conditions, installation or workmanship, start up or adjustment of equipment, tests or other activities, and to initiate instructions when necessary, the following shall be submitted to GSA:

1. Qualifications: For approval, submit qualifications of observer at least 30 calendar days in advance of scheduled activities.
2. Report: For information, submit report of activities and findings within 15 calendar days after the successful execution of the specified work. Include logs and other documented data where applicable.

C. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous and other waste disposal. Also submit electronic copies through ePM of receipts for any items recycled or salvaged.

1.3 QUALITY CONTROL

A. Workmanship Standards: Initiate and maintain procedures to ensure personnel performing the work are skilled and knowledgeable in the methods and craftsmanship needed to produce the required levels of workmanship. Remove and replace work that does not comply with workmanship specified and standards recognized in the construction industry for the applications indicated. Remove and replace work damaged or deteriorated by faulty workmanship or replacement of other work.

1. Manufacturer's Instructions: Where installations include manufactured products, comply with manufacturer's applicable installation instructions and recommendations to the extent

that those instructions and recommendations are more explicit or stringent than requirements contained in the Contract Documents.

2. Specialists: Where the individual sections of the specifications require specialists to perform the work, comply with the requirements specified in the Construction Contract Clauses. The assignment of a specialist shall not relieve the Contractor from complying with applicable regulations, union jurisdictional settlements or similar conventions, and the final responsibility for fulfillment of the entire requirements remains with the Contractor.
3. Conform with Historic building and materials specification sections for requirement for specialists performing work in the treatment of historic structure and materials.
4. Minimum Quality and Quantity: The quality level or quantity shown or specified shall be the minimum required for the work. Except as otherwise indicated, the actual work shall comply exactly with that minimum or may be superior to that minimum within limits acceptable to GSA. Specified numeric values are either minimums or maximums as indicated or as appropriate for the context of the requirements.
5. Availability of Tradespersons and Manufacturer's Field Services Representatives: At each progress or coordination meeting, review availability of tradespersons, qualified manufacturers' representatives required in the specifications, and projected needs to accomplish work as scheduled. Require each entity employing personnel to report on events which might affect progress of work. Where possible, consider alternatives and take actions to avoid disputes and delays. Show the items that require qualified manufacturers' representatives in the Project Schedule.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 LAYING OUT THE WORK

A. Identification: Establish control or reference points required to perform the specialized work on the building facades and roofs, and parapet walls, including all finished, fenestration, and decorative elements.

B. Reference Points: Locate existing permanent benchmarks, control points and similar reference points before beginning Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of GSA. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate benchmarks or control points to GSA before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original control points.

3.2 EXAMINATION

A. Examine applicable substrates and conditions under which the Work will be performed before starting construction operations.

B. If unsafe or otherwise unsatisfactory conditions are encountered take corrective action before proceeding. Provide GSA with a written report documenting the conditions with the corrective actions taken.

3.3 PREPARATION

A. Do not disturb existing utilities.

B. Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Confirm dimensional requirements of the Contract Documents can be met.

C. Verify space requirements of items shown diagrammatically on Drawings.

3.4 INSTALLATION

A. Locate the Work and components of the Work accurately.

1. Make vertical work plumb and horizontal work level, unless adjustment is required to due to localized shifts in historic buildings. .
2. Where space is limited, install components to maximize space available for maintenance and to maximize ease of removal for replacement.

B. Install products at the time and under conditions that will produce satisfactory results.

1. Maintain temperature, humidity and other weather controls for best performance.
2. Isolate units of non-compatible work to prevent deterioration.

C. Comply with manufacturer's written instructions and recommendations for installing products.

D. Conduct construction operations so that no part of the Work is subjected to damaging operations, or loading in excess of that structurally designed for the occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful or unacceptable levels of noise.

F. Odors and Fumes: Do not use products that produce harmful or noticeable odors or fumes. If necessary to use such products, coordinate ventilation requirements to produce the ambient condition required for the work and to minimize energy consumption, and to protect personnel from fumes and other harmful effects.

G. Anchors and Fasteners: Provide anchors and fasteners that will withstand stresses, vibration and physical distortion. Anchor each component securely in place, accurately located and aligned with other Work.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by GSA.
2. Allow for building movement, including thermal expansion and contraction.

H. Joints: Make like joints of uniform width within contiguous surfaces. Where joint locations in exposed work are not indicated, arrange joints for a uniform and balanced visual effect.

I. Adjust operating components for proper operation

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 INSTALLED DEFECTIVE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

B. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and proper adjustment of operating equipment.

C. Restore permanent facilities used during construction to their specified condition.

D. Remove and replace damaged surfaces that are exposed to view if the surfaces cannot be repaired without visible evidence of repair.

E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired to operate properly.

F. Remove and replace chipped, scratched or broken surfaces.

3.7 CLEANING

A. Maintain the project work areas free of waste material and debris. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.

B. 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- or vacuum-clean the entire work area.
3. Separate containers of hazardous materials from other waste, and mark containers to identify. Legally dispose of all waste in timely fashion.

C. Keep installed work clean. Clean installed surfaces in accordance with the recommendations of the manufacturer or fabricator of the product installed, using only the cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and will not damage exposed surfaces.

D. Remove debris from concealed spaces prior to enclosing.

E. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at the time of project completion.

3.8 PROTECTION

A. Protect installed work from soiling and damage.

B. Protective Coverings: Provide appropriate protective coverings for work that might be damaged by subsequent operations. Maintain protective coverings in place until project completion.

END OF SECTION 017000

SECTION 017310 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes procedural requirements for cutting and patching in existing work.

B. Definition: Cutting and patching includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and repair required to restore surfaces to their original condition. Drilling holes for fasteners and similar operations are not "cutting and patching".

C. Hazardous Materials: Hazardous materials are present. A Hazardous Materials Report is available through the COR. Prior to any Cutting and Patching work, examine the Report and Drawing to become aware of locations where hazardous materials are present. Where Hazardous Materials are part of any assembly to be cut and patched, provide all work as specified in the Hazardous Materials portions of these specifications.

D. Refer to other sections for other requirements and limitations applicable to cutting and patching individual parts of the Work.

E. Coordinate cutting and patching with demolition requirements as specified in section 017320 Selective Demolition.

F. Coordinate with section 017419 Construction Waste Management & Disposal requirements specified herein Division 1.

G. Coordinate with section 013510 Historic Building Treatment Procedures.

1.2 SUBMITTALS

A. Cutting and Patching Plan: In accordance with section 013300, submit a proposal to GSA's representative, describing procedures at least 14 calendar days in advance of the time cutting and patching will initially be performed.

1. Include the following information, as applicable:

a. Description of the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
b. Description of the anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in appearance and other significant visual elements.
c. List of products to be used and entities that will perform work.
d. Dates and hours of operation when cutting and patching will be performed.
e. List utilities that will be disturbed or otherwise be affected by work, including those that will be relocated and those that will be out-of-service temporarily. Indicate how long utility service will be disrupted.
f. Compatibility and cohesion characteristics of patching compounds with adjacent materials.

g. Details and engineering calculations showing integration of reinforcement with the original structure, where cutting and patching involve adding reinforcement to structural elements.
h. Temporary protection of existing structures, surfaces, finishes, equipment, etc. to remain in place during construction.

B. Approval by GSA to proceed with cutting and patching does not waive the right to later require complete removal and replacement of unsatisfactory work.

C. Samples: Provide cutting and patching samples for the following items within Insert 14 calendar days after notice to proceed in order that special reviews and coordination can be arranged with the COR.

1. Exterior stucco.
2. Interior plaster ceilings
3. Brick masonry.
4. Slate shingles.
5. Stucco coatings.
6. Paint.
7. Mortar for Madison,Tayloe, Cosmos Club, Breezeway, and Madison raised patio terrace pavers.
8. Roofing metals
9. Flashing and Trim metals.

1.3 QUALITY CONTROL

A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.

1. The cutting and patching plan shall include but not be necessarily be limited to work required at the following structural elements:
   a. Bearing and retaining walls.
   b. Structural steel.
   c. Lintels.
   d. Structural decking.
   e. Miscellaneous structural metals.

B. Operational Limitations: Do not cut and patch operating elements, safety related systems, or related components in a manner that would result in reducing their capacity to perform as intended, or that would result in increased maintenance or decreased operational life or safety.

1. The cutting and patching plan shall include but not be limited to work required on the following operating elements or safety related systems:

   a. Primary operational systems and equipment.
   b. Air or smoke barriers.
   c. Water, moisture, or vapor barriers.
   d. Membranes and flashings.
   e. Fire protection systems.
   f. Noise and vibration control elements and systems.
   g. Control systems.
   h. Communication systems.
   i. Conveying systems.
   j. Electrical wiring systems.

k. Operating systems of other construction.
l. Intrusion detection systems.
m. Automated access control systems.
n. Internet, data and telephone lines.

C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in GSA's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction that is cut and patched in a visually unsatisfactorily manner.
1. Engage a Specialist who is specifically experienced in the work.
2. The cutting and patching plan shall include but not be limited to work required at the following visual elements:
a. Stonework and stone masonry.
b. Fire-stopping.
c. Window wall system.
d. Stucco and interior plaster.
e. Historic building finishes.
f. Roof and gutter repairs.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Use materials identical to existing materials to the maximum extent available.

B. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.

C. Use materials whose installed performance will equal or surpass that of existing materials.

D. Materials and/or products used in historic buildings must be submitted to the COR and also approved by GSA Historic Preservation Staff.

PART 3 - EXECUTION

3.1 INSPECTION

A. Before cutting, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.

B. Before proceeding with cutting and patching involving two or more trades, meet at the Project site with the entities providing or affected by the cutting and patching. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

C. Notify COR 10 days prior to cutting areas of high historic integrity to seek approval by GSA Historic Preservation Staff.

3.2 PREPARATION

A. Provide temporary support of work to be cut.

B. Protect existing conditions during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations as specified in 013510 Historic Building Treatment Procedures

C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Bypass in-service existing pipe, conduit, or ductwork scheduled to be removed or relocated before cutting.

3.3 PERFORMANCE

A. Employ skilled works to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay. Any adverse noise or odor producing work must be performed in accordance with Section 011400 Work Restrictions. Cutting: Cut existing construction using methods least likely to damage elements retained and adjoining construction.

1. In general, use hand or small power tools designed for sawing or grinding, not for hammering and chopping.
2. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
3. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
4. Cut through concrete and masonry using silicon carbide or harder tipped tools.

B. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

1. Inspect and test patched areas to demonstrate integrity of the installation.
2. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction in a manner that will eliminate evidence of patching and refinishing.
3. Where removed walls or partitions extends one finished area into another finished area, patch and repair floor and wall surfaces to provide an even surface of uniform color and appearance. Reset existing brick and stone material for a smooth, level surface
4. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface that contains the patch.
5. Patch, repair or re-hang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

C. Perform cutting and patching work if listed in Division 1 "Work Restrictions" to be performed during Government Unoccupied Hours.

3.4 CLEANING

A. Clean areas and spaces where cutting and patching are performed. Completely remove all evidence of the Work.

END OF SECTION 017310

SECTION 017320 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the following:

1. Demolition and removal of selected portions of an existing building.
2. Repair procedures for selective demolition operations.

B. Definitions:

1. Remove: Detach items from existing construction and legally dispose of them.
2. Remove and Salvage or Recycling: Detach items from existing construction and deliver them to Government undamaged and ready for reuse or recycling
3. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
4. Existing to Remain: Existing items of construction that are not to be removed.

1.2 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be salvaged, reinstalled or otherwise indicated to remain the Government's property, demolished materials shall become the Contractor's property and shall be removed from the site.

1.3 SUBMITTALS

A. Qualification Data: List of demolition firm's completed projects with project addresses, and names and addresses of architects and owners.

B. Proposed dust-control measures.

C. Proposed noise-control measures.

D. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition work, with starting and ending dates for each activity.
2. Locations of temporary partitions and means of egress.
3. Procedures to ensure uninterrupted progress of Government's on-site operations.
4. Coordination of Government's continuing occupancy of portions of existing building and of Government's partial occupancy of completed Work.

E. Inventory: Items to be removed and salvaged.

1. In areas to be vacated during all or part of the Construction period, the Government will relocate all personal items and computers. Relocate and/or protect all furniture, fixtures and equipment. Return all items to their original position after the work is completed. Include dates of required vacation of each space on the Project Schedule.

F. Photographs or Videotape: Before work begins, submit sufficiently detailed digital photographs or videotapes showing existing conditions of adjoining construction and site improvements, including finish surfaces, to record preexisting damage.

G. Landfill Records: Indicate receipt and acceptance of all wastes, hazardous and otherwise. In accordance with EPA regulations hazardous materials must disposed of at a landfill facility licensed to accept hazardous wastes.

1.4 QUALITY CONTROL

A. Demolition Firm Qualifications: Firm shall be a Specialist in demolition work of similar materials and extent to that indicated for this Project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Standards: Comply with NFPA 241 and ANSI A10.6.

D. Pre-Demolition Conference: Conduct conference at Project site to comply with requirements in Division 1 section "Project Management and Coordination." Review methods and procedures related to selective demolition including, but not limited to, the following:

1. Inspect and discuss conditions of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by demolition operations.
5. Review procedures for abating and containing and safe disposal of stucco and paints containing lead and sealants containing asbestos.
6. Review procedures for when hazardous materials are encountered.

1.5 PROJECT CONDITIONS

A. Government will occupy portions of the building immediately adjacent (above, below, and beside) to selective demolition area.

1. Conduct selective demolition so Government operations will not be disrupted.
2. Provide GSA with not less than 72 hours' notice prior to activities that will affect Government operations.
3. The 6th Floor of the Cosmos Club will be vacated during work on roof and roof structure. Provide notice when project schedule is issued, and addition one month notification prior to commending work in this location.

B. 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 the COR.

C. Hazardous Materials: Hazardous materials are present. A Hazardous Materials Report is available through the COR. Prior to any Selective Demolition work examine the report and Drawing, to become aware of locations where hazardous materials are present. Where Hazardous Materials are part of any assembly to be selectively demolished provide all work as specified in the Hazardous Materials portions of these specifications.

1. Do not disturb any material suspected of containing hazardous materials except under the procedures specified elsewhere in the Contract Documents.

D. On-site storage or sale of removed items or materials is not permitted.

E. Utility Service: Maintain existing utilities and protect them against damage during selective demolition operations.

F. Fire Protection: Maintain fire-protection services during selective demolition operations.

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

A. Where available and appropriate for use, provide repair materials that are identical to existing materials.

B. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.

C. Use materials whose installed performance equal or surpasses that of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

B. Inventory and record the before and after condition of items to be removed and reinstalled, and items to be removed and salvaged. Protect any removed items during demolition.

C. When encountering unanticipated mechanical, electrical or structural elements that conflict with the intended function or design, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the COR.

D. Survey the condition of the building to determine whether removing any element might result in a structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during selective demolition. Report findings to the COR for determination.

E. Perform surveys as the selective demolition progresses to detect hazards resulting from the activities. Report findings to COR for determination.

3.2 UTILITY SERVICES

A. Existing Utilities: Maintain all services and protect them against damage during selective demolition operations.

3.3 PREPARATION

A. Hazardous Materials: Drain, purge or otherwise remove, collect and dispose of chemicals, gases, explosives, acids, flammables or other hazardous materials before proceeding with selective demolition operations. See section 15950 Safety & Health. Advise the Government immediately if suspected hazardous materials are encountered in the course of the Work.

B. Temporary Site Control: Remove debris and conduct demolition operations in a manner to ensure minimum interference with roads, streets, walks, walkways, corridors, and other adjacent occupied or used facilities.

1. Do not close or obstruct streets, walks, walkways, corridors, or other adjacent occupied or used facilities without permission from the COR.
2. Provide alternate routes around closed or obstructed traffic ways.

C. Temporary Facilities: Conduct demolition operations in a manner to prevent injury to people and damage to adjacent building and facilities to remain. Provide for safe passage of people around selective demolition area.

1. Erect temporary protection, such as walks, fences, railings, canopies and covered passageways, to separate the construction site from other areas and to provide safe and covered detour for pedestrians.

2. Protect existing site improvements, appurtenances and landscaping to remain.
3. Provide temporary facilities for tree and plant protection in accordance with specification 015639.
4. Provide temporary weather protection, during interval between demolition and removal of existing construction, on exterior surfaces and new construction to prevent water leakage or damage to structure or interior areas.
5. Protect walls, ceilings, floors and other existing finish work that are to remain and are exposed during selective demolition operations.
6. Cover and protect furniture, furnishings and equipment that have not been removed.

D. Temporary Enclosures: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.

E. Temporary Shoring: Provide and maintain shoring, bracing or other structural support to preserve stability and prevent movement, settlement or collapse of building to be selectively demolished. Strengthen or add new supports when required during the progress of selective demolition.

3.4 POLLUTION CONTROLS

A. Dust Control: Use temporary enclosures and other suitable methods complying with governing environmental protection regulations to limit the spread of dust and dirt.

1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding or pollution.
2. Wet mop floors to eliminate trackable dirt, and wipe down walls and doors of demolition enclosure.

B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

1. Remove debris from upper levels of building by chute, hoist, or other device that will convey debris to grade level.

C. Cleaning: Clean adjacent structures and site improvements of dust, dirt and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.

3.5 SELECTIVE DEMOLITION

A. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete selective demolition within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically. Conduct work in an order that avoids transporting removed items and debris through areas with completed selective demolition work, and that allows for removal of items before supports for those items are removed in another area.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage adjoining construction to remain. Use hand or small power tools designed for sawing or grinding, not for hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Before using cutting torches, obtain a burning permit from the Government at least 72 hours before performing the work. Clear work area of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations, and maintain adequate ventilation when using cutting torches.
5. Remove decayed, vermin-infested and other hazardous or unsuitable materials, and promptly dispose of these materials off-site.
6. Lower removed structural framing members to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
7. Locate selective demolition equipment throughout the structure and remove debris and materials so as not to impose excessive loads on supporting walls, floors or framing.
8. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.

B. Existing Facilities: Comply with GSA’s regulations for using and protecting elevators, stairs, walkways, loading docks, building entries and other building facilities during selective demolition operations.

C. Repair and Storage of Salvaged Items and Items to be Reinstalled:

1. Repair: Clean and repair the materials and equipment to functional condition adequate for intended reuse. Paint damaged or deteriorated painted surfaces of equipment to match new equipment.
2. Storage: Store the materials and equipment in a secure dry area until final reinstallation or disposal.

D. Salvaged Items and Items to be Reinstalled:

1. Reinstallation: Where items are indicated to be removed and reinstalled, install the materials and equipment in locations indicated. Comply with installation requirements for new and/or existing materials and equipment.

2. Delivery to GSA: Where items are indicated to be removed and salvaged, transport the materials and equipment to the area on-site designated GSA. Protect all salvaged items.

E. Protection of Salvaged Items: For items which must be reinstalled at the same removal site, mark each item indelibly in concealed fashion and codify and document such that the items can be placed back in to the place where they were removed. Pack or crate salvaged materials and equipment after removal. Identify contents of containers. Protect items from damage during transport and storage.

F. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by GSA, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.

G. Concrete and Masonry: Demolish concrete and masonry in small sections. At junctures with construction to remain, cut concrete and masonry using power-driven masonry saw or hand tools; do not use power-driven impact tools unless no damage will occur to materials to remain.

H. Resilient Floor Coverings: Remove floor coverings and adhesive, and prepare substrate for new

I. Roofing: Remove no more existing roofing than can be covered in one day by new roofing. Refer to applicable Division 7 Section for new roofing requirements.

J. Recycling: Remove all materials for recycling to an off-site location immediately after removal.

3.6 PATCHING AND REPAIRS

A. The COR will determine the acceptability of patch and repair work.

B. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.

C. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.

1. Completely fill holes and depressions in existing masonry walls to remain with salvaged brick from the project, new approved brick, repaired brick. On select areas and with GSA's approval use a masonry patching material applied according to the manufacturer's written recommendations.

D. Finishes: Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.

E. Floor and Wall Surfaces: Patch and repair floor and wall surfaces in each space where demolished walls or partitions result in extending one finished area into another. Provide a flush and even surface of uniform color and appearance.

1. Closely match texture and finish of existing adjacent surface.
2. Patch with durable, invisible seams. Comply with specified tolerances.
3. Where patching smooth painted surfaces, extend final paint coat over entire unbroken surface containing the patch after the patched surface has received primer and other specified undercoats. Painting shall be full panels to the point where material breaks or change of texture occur.

4. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.
5. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.

F. Ceilings: Patch, repair or rehang existing ceilings to provide an even-plane surface of uniform appearance.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Do not burn demolished materials.

C. Disposal: Transport demolished non-recyclable materials off Government property and legally dispose of them.

D. Disposal: Transport demolished materials to be recycled to a qualified recycling center for the specific material. Provide weight-ticket receipts for each load delivered.

END OF SECTION 017320

SECTION 017350 - FIRE PREVENTION PRECAUTIONS FOR HOT WORK

PART 1 - GENERAL

1.1 SUMMARY

A. This section applies to safeguards to be observed in performing hot work, including welding, soldering, brazing and other operations where open flames or implements utilizing heat are used.

B. Hot Work Permit: Comply with NFPA 51B. Do not conduct operations involving the use of open-flame, electrical arc equipment, or flammable substances until a permit for welding, cutting, and burning has been issued by the Government.

1. GSA will identify and delineate the responsibilities of the Government permit authorizing individual before or during the Preconstruction Meeting.

C. Hot work permit duration shall be one work shift for a specific location unless otherwise agreed to by the Government and Contractor.

1.2 SAFETY PRECAUTIONS

A. Prior to operations, visit the site and establish suitable locations for the portable equipment storage during non-working hours. Coordinate and designate such locations.

B. Ensure that operations involving the use of open-flame, electrical arc equipment or flammable substances are not conducted until a permit for welding, cutting, and burning has been completed, signed and issued by the GSA Building Manager.

C. Prior to commencing operations, a positive determination shall be made that it is impractical to conduct the hot work in a shop area or outside of the building. Coordinate suitable locations for hot equipment operations agreeable to the Contracting Officer’s Representative.

1.3 NOTIFICATON

A. Notify COR at least 72 hours in advance of the area of operations for each day and of all subsequent changes that occur.

B. Notify the COR of all locations where hot work has been performed not less than 30 minutes before the work or no more than 90 minutes after work is completed or stopped for the day.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 INSPECTION

A. Before starting operations, furnish trained personnel to provide fire watches for locations where hot work is to be performed. One fire watcher may observe no more than two (2) locations if in a relatively small contiguous area if approved by the Contracting Officer's Representative and in compliance with applicable fire codes. Furnish suitable type, fully-charged, operable portable fire extinguisher to each fire watcher.

1. Provide fire watchers who know how to operate the fire extinguisher, how to initiate a fire alarm and how to summon the fire department.

B. Before starting operations, take suitable precautions to minimize the hazard of a fire communicating to the opposite side of walls, floors, ceilings and roofs from the operations.

3.2 SAFETY MEASURES

A. Hot work shall not be done in or near rooms or areas where flammable liquids or explosive vapors are present or thought to be present. A combustible gas indicator (explosimeter) test shall be conducted to assure that each area is safe. Arrange and pay for each test.

B. Remove and keep the area free from all combustibles, including rubbish, paper and waste within a radius of 25 feet from hot operations.

1. If combustible material cannot be removed, furnish fireproof blankets to cover such materials. At the direction of the Contracting Officer's Representative, floors, walls, and ceilings of combustible material shall be wetted thoroughly with water before, during, and after operations sufficiently to afford adequate protection.
2. Provide baffles of metal or gypsum board to prevent the spraying of sparks, hot slag and other hot particles into surrounding combustible material.

C. Prevent the spread of sparks and particles of hot metal through open windows, doors, and holes and cracks in floors, walls, ceilings and roofs.

D. Cylinders of gas used in hot work shall be placed a safe distance from the work. Provide hoses and equipment free of deterioration, malfunction and leaks. Provide suitable supports to prevent accidental overturning of cylinders. All cylinder control valves shall be shut off while in use with the gas pressure regulator set at 15 psi or less.

E. When hot work operations are completed or ended for the day, each location of the day’s work inspect 60 minutes after completion of operations to detect for hidden or smoldering fires and to ensure that proper housekeeping is maintained. Cleanup the area of work at the end of each shift or workday. Provide a continuous fire watch at least 24 hours after the burning work has been completed.

F. Where sprinkler protection exists, maintain the sprinkler system without interruption while operations are being performed. If operations are performed close to automatic sprinkler heads, shield the individual heads temporarily. Immediately after hot work operations Inspect to assure all materials have been removed from the heads and that the heads have not been damaged.

G. Suitable type, fully-charged, operable portable fire extinguisher shall be available at all times during hot work operations.

H. If any of the above safeguards are not employed or are violated, the COR may verbally stop the Work followed by written notice until compliance is obtained. Such stoppage shall not relieve the Contractor form performing his work within the Contract period for the Contract price.

END OF SECTION 017350

SECTION 017410 - CONSTRUCTION INDOOR AIR QUALITY (IAQ) MANAGEMENT

PART 1 - GENERAL

ADD ALTERNATE ONE - IF NEEDED

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 requirements for the development of a Construction Indoor Air Quality Management Plan (alternately referred to as the Plan). The Plan shall be developed by the Contractor or other qualified party under contract to the Contractor as approved GSA. The Plan shall be implemented by the Contractor and the trade contractors throughout the duration of the project construction, and shall be documented per the Submittal Requirements of this Section.

1.3 RELATED SECTIONS

A. All sections of the Specifications related to interior construction, and items affecting indoor air quality.

1.4 REFERENCE STANDARDS

A. The Steel Metal and Air Conditioner National Contractors Association (SMACNA) IAQ guidelines for Occupied Buildings under Construction, 2nd Edition 2007, ANSI/SMACNA 008- 2008, www.smacna.org.

B. ANSI / ASHRAE 52.2-1999, “Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size”, www.ashrae.org

C. United States Environmental Protection Agency, “Compendium of Methods for the Determination of Air Pollutants in Indoor Air”

1.5 CONSTRUCTION IAQ MANAGEMENT PLAN - OVERVIEW

A. The General Contractor or other qualified party as noted in Section 1.2.A shall prepare and submit a Construction IAQ Management Plan to the COR for approval.

B.

1. Construction activities shall be planned to meet or exceed the standards included in Chapter 3 of the Sheet Metal and Air Conditioning National Contractors’ Association (SMACNA) “IAQ Guidelines for Occupied Buildings under Construction”, 2nd Edition 2007.

2. Absorptive materials shall be protected from moisture damage when stored on-site and after installation.

3. Filtration media shall be installed to protect ductwork and/or equipment used during the construction process.

4. A Sequence of Finish Installation Plan shall be developed, highlighting measures to reduce the absorption of VOCs by materials that act as ‘sinks’.

5. Immediately prior to occupancy, the building shall be subject to an outside air flush out, OR, shall be subject to pre-occupancy air quality testing.

1.6 SUBMITTALS

A. Prepare and submit a Construction IAQ Management Plan to the COR for approval.

1.7 DEFINITIONS

A. Type 1 Materials: Materials and finishes that act as sources of VOC or particulate contamination.

1. Type 1 materials can include "wet" products, such as paints, sealants, adhesives, caulks, sealers and fireproofing materials as well as “dry” products such floor coverings with plasticizers, and engineered wood with formaldehyde.

B. Type 2 Materials: Materials and finishes which are woven, fibrous, or porous in nature, and tend to absorb chemicals or particulates released by Type 1 materials. Examples include textiles, carpeting, acoustical ceiling tiles and gypsum board. Type 2 materials can become "sinks" for deleterious substances which may be released later, or collectors of contaminants that may promote subsequent bacterial growth.

PART 2 - PRODUCTS

2.1 FILTRATION MEDIA

A. If air handlers are used during construction, filtration media must be installed at the ends of return air ductwork, at return air grilles in an open plenum or chase, and at return air openings at mechanical rooms housing the air handling units. The filtration media shall have a Minimum Efficiency Reporting Value (MERV) of 8, as determined by ASHRAE 52.2-1999.

B. Filters at air handling units used during construction shall be MERV 10 or better.

C. Building flush-outs, as defined in article 3.3 below, shall be conducted with new MERV 13 filtration media installed at the air handling units used for the flush-outs. Upon completion of the flush-outs, the Construction Manager shall inspect the condition of the MERV 13 filters and replace any that have collected significant dust and particulates through the flush-out process.

PART 3 - EXECUTION

3.1 CONSTRUCTION IAQ MANAGEMENT PLAN – DETAILED REQUIREMENTS

A. Compliance with SMACNA Guidelines:

1. Chapter 3 of the referenced “IAQ Guidelines for Occupied Buildings under Construction” outlines IAQ measures in five categories as listed below. The Construction IAQ Management Plan shall be organized in accordance with the SMACNA format, and shall address measures to be implemented by the Contractor and/or Subcontractors in each of the five categories, including subsections. All Subsections shall be listed in the Plan; items that are not applicable for this project should be listed as such by the contractor.

    1. HVAC Protection
        - Return Side
        - Central Filtration
        - Supply Side
        - Duct Cleaning

    2. Source Control
        - Product Substitution
        - Modifying Equipment Operation
        - Changing Work Practices
        - Local Exhaust
        - Air Cleaning
        - Cover or Seal

    3. Pathway Interruption
        - Depressurize Work Area
        - Pressurize Occupied Space
        - Erect Barriers to Contain Construction Areas
        - Relocate Pollutant Sources
        - Temporarily Seal the Building

    4. Housekeeping
        - Routine Jobsite Cleaning
        - Protection of Stored Materials
        - Protection of Materials During and After Installation
        - Scheduling
        - Airing-Out of New Materials
        - Sequencing of Finish Applications
        - Proper Curing of Concrete before Covering
        - Installation During Unoccupied Periods
        - Avoidance of Building Occupancy While Pollutants Are Present

B. Protection of Materials from Moisture Damage:

    1. As part of the Housekeeping section of the Construction IAQ Management Plan, measures to prevent installed materials or material stored on-site from moisture damage shall be described. This section should also describe measures to be taken if moisture damage does occur to absorptive materials during the course of construction.

C. Installation and Replacement of Filtration Media:

    1. Under the HVAC Protection section of the Construction IAQ Management Plan, a description of the filtration media in all ventilation equipment shall be provided. The description shall include replacement criteria for filtration media during construction and

confirmation of filtration media replacement for all equipment immediately prior to occupancy. Filtration media shall meet the requirements of article 2.01 of this Section.

D. Sequence of Finish Installation for Materials:

1. Where feasible, absorptive materials (referred to herein as “Type 2” products) shall be installed after the installation of materials or finishes which have high short-term emissions of VOC’s, formaldehyde, particulates, or other air-borne compounds (referred to herein as “Type 1” products).

1. Type 2 materials include, but are not limited to: carpets; acoustical ceiling panels; fabric wall coverings; insulations (exposed to the airstream); upholstered furnishings; and other woven, fibrous or porous materials.

2. Type 1 materials include, but are not limited to: adhesives, sealants and glazing compounds (specifically those with petrochemical vehicles or carriers); paints, wood preservatives and finishes; control and /or expansion joint fillers; hard finishes requiring adhesive installation; gypsum board (with associated finish processes and products); and composite or engineered wood products with formaldehyde binders.

2. The Contractor shall develop a separate sequencing plan that identifies feasible opportunities to meet the above-stated goals for the project. The plan shall be submitted to the Architect and Owner in accordance with the Submittal Requirements of this specification.

3.2 IMPLEMENTATION AND COORDINATION

A. The Contractor shall be responsible for implementation of the Construction IAQ Management Plan, and for the coordination of the Plan with all affected trades. The Contractor shall designate one individual as their Construction IAQ Representative, who will be responsible for communicating the progress of the Plan with the Owner and Architect on regular basis, and for assembling the required documentation. The Contractor shall include provisions in the Construction IAQ Management Plan for addressing conditions in the field that do not adhere to the Plan, including provisions to implement a stop work order, or to rectify non-compliant conditions.

B. Sub-contractors shall be responsible for the implementation of specific control measures, as specified in the Construction IAQ Management Plan. Sub-contractors shall coordinate their responsibilities through the Contractor’s designated Construction IAQ Representative.

3.3 BUILDING FLUSH-OUTS AND PRE-OCCUPANCY INDOOR AIR QUALITY TESTING

A. All occupied spaces the building must undergo either a Flush-out or Air Quality Testing. Contractor shall submit a written request to the Contracting Officer for approval prior to conducting the Building Flush Out and/or Air Quality Testing. Any such requests shall not be submitted until all interior finishes have been installed. A combination of the two strategies can be used in the same building. The Contractor shall provide a:

1. Flush-out:

1. A total of 14,000 cubic feet of outside air per square foot of floor area must be supplied to all occupied spaces of the buildings. A total of 3,500 cubic feet

of outside air per square foot of floor area must be supplied to all spaces prior to occupancy.

2. A minimum of 0.30 cfm/sf of outside air, or the design minimum outside air rate, must be provided during the flush-out. Higher amounts of outside air may be provided to reduce the duration of the flush-out period.

3. During the flush-out, an internal temperature of at least 60 degrees F must be maintained, and the relative humidity can be no higher than 60%.

4. If a space is occupied prior to the completion of the flush-out (but after the initial 3,500 cubic feet of outside air per square foot of floor area is supplied), the flush- out ventilation rates shall begin at least three hours prior to occupancy each day, until the flush-out of the space is complete.

2. Air Quality Testing:

1. Conduct baseline IAQ testing using the protocols consistent with the United States Environmental Protection Agency, “Compendium of Methods for the Determination of Air Pollutants in Indoor Air”. Demonstrate that the following contaminant maximum concentrations are not exceeded:
Formaldehyde: 27 parts per billion
    1. Particulates (PM10): 50 micrograms per cubic meter
    2. Total Volatile Organic Compounds (TVOC): 500 micrograms per cubic meter
    3. 4-Phenylcyclohexene (4-PCH): 6.5 micrograms per cubic meter*
    4. Carbon Monoxide (CO): 9 parts per million and no greater than 2 parts per million above outdoor levels

    * This test is only required if carpets and fabrics with styrene butadiene rubber (SBR) latex backing material are installed.

2. For each sampling point where the maximum concentration limits are exceeded conduct additional flush-out with outside air and retest the specific parameter(s) exceeded to indicate the requirements are achieved. Repeat procedure until all requirements have been met. When retesting non-complying building areas, take samples from the same locations as in the first test.

3. The air sample testing shall be conducted as follows:
    1. All measurements shall be conducted prior to occupancy, but during normal occupied hours, and with the building ventilation system starting at the normal daily start time and operated at the minimum outside air flow rate for the occupied mode throughout the duration of the air testing.
    2. The building shall have all interior finishes installed, including but not limited to millwork, doors, paint, carpet and acoustic tiles. Non-fixed furnishings such as workstations and partitions are encouraged, but not required, to be in place for the testing.
    3. The number of sampling locations will vary depending upon the size of the building and number of ventilation systems. For each portion of the building served by a separate ventilation system, the number of sampling points shall not be less than one per 25,000 sq.ft., or for each contiguous floor area, whichever is larger, and include areas with the least ventilation and greatest presumed source strength.
    4. Air samples shall be collected between 3 feet and 6 feet from the floor

to represent the breathing zone of occupants, and over a minimum 4-hour period.

4. The flush-out and/or air quality testing shall be documented in accordance with part 1.6 Submittals of this Section.

017410 END OF SECTION

SECTION 017419 - CONSTRUCTION NONHAZARDOUS WASTE MANAGEMENT AND DISPOSAL

PART 1 -

1.1 GENERAL Drawings and general provisions of the Contract, including Federal Acquisition Regulation (FAR) and General Services Administration Acquisition Regulation (GSAR) contract clauses, and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous demolition and construction waste.
2. Recycling nonhazardous demolition and construction waste.
3. Disposing of nonhazardous demolition and construction waste.

B. Related Requirements:

1. Division 02 Section "Structure Demolition" for disposition of waste resulting from demolition of buildings, structures, and site improvements**.**
2. Division 02 Section "Selective Demolition" for disposition of waste resulting from partial demolition of buildings, and structures,

1.3 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

~~1.4~~ PERFORMANCE REQUIREMENTS

A. Practice efficient waste management in the use of materials in the course of the Work. Divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials.

1.5 ACTION SUBMITTALS

A. Waste Management Plan: Submit plan within 14 days of date established for the Notice to Proceed, prepare and submit a Waste Management Plan including, but not limited to, the following:

1. List of the recycling facilities, reuse facilities, municipal waste landfills and other disposal area(s) to be used. Include:
   a. Name, location, and phone number.
   b. Copy of permit or license for each facility.
2. Identify materials that cannot be recycled or reused. Provide explanation or justification.
3. Revise and resubmit Plan as required by COR.
   a. Approval of Contractor's Plan will not relieve the Contractor of responsibility for compliance with applicable environmental regulations.

1.6 INFORMATIONAL SUBMITTALS

A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, electronically submit reports in ePM for construction waste and for demolition waste. Include the following information:

1. Material category.
2. Generation point of waste. (Building address)
3. Total quantity of waste in tons.
4. Quantity of waste salvaged, both estimated and actual in tons.
5. Quantity of waste recycled, both estimated and actual in tons.
6. Total quantity of waste recovered (salvaged plus recycled) in tons.
7. List of Materials made from recycled materials/bio-based materials and their cost (not including installation costs) purchased for use on this project.
8. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing/salvaging facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

F. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.7 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:

1. Review and discuss waste management plan including responsibilities of waste management coordinator.
2. Review requirements for documenting quantities of each type of waste and its disposition.
3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.

1.8 WASTE MANAGEMENT PLAN

A. Divert a *minimum* of 50% of C&D waste from landfills and/or incinerators, with a higher reach goal of 70% diversion. Provide enough containers for collecting construction debris and construction materials to be recycled. At the beginning of the project, submit a waste management plan with monthly update reports on progress to the COR, as well as a final report documenting the total tons recycled, total tons reused, and total tons landfilled. The C&D Waste Management Plan and Report form is the required form for reporting.

B. Waste reports and associated documentation must be submitted with each invoice.

C. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

D. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. Prior to any demolition, verify if material is Hazardous or not.

B. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with Division 01 Section "Temporary Facilities and Controls" for operation, termination, and removal requirements.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1. Distribute waste management plan to everyone concerned within 3 days of submittal return.
2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.

E. Waste Management in Historic Zones or Areas: Hauling equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, by 12 inches or more.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
3. Store items in a secure area until installation.
4. Protect items from damage during transport and storage.
5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Sale and/or Donation is not permitted on Project site.

C. Salvaged Items for the Government's Use: Salvage items for the Government's use and handle as follows:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.

3. Store items in a secure area until delivery back to the Project site.

4. Protect items from damage during transport and storage.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper (bond or newsprint) and beverage containers (glass, plastic or aluminum) used by on-site workers.

B. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site according to approved construction waste management plan.

1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste from the Government's property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

A. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.

1. Crush masonry and screen for use as satisfactory soil for fill or subbase.

2. Clean and stack undamaged, whole masonry units on wood pallets.

B. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

C. Metals: Separate metals by type.

1. Structural Steel: Stack members according to size, type of member, and length.
2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

D. Roofing: Separate recyclable materials from non-recyclable materials

E. Plaster ceiling: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.

F. Metal Suspension System: Separate metal members including trim, and other metals from plaster and sort with other metals.

3.5 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

3.6 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to GSA.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Comply with DC requirements for construction vehicles entering and leaving the site.

B. Burning: Do not burn waste materials.

C. Disposal: Remove waste materials from the Government's property and legally dispose of them.

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. See section III of the Agreement for Definition of Substantial Completion.

B. All electronic record documents submittals shall be uploaded to GSA's electronic Project Management (ePM) system.

C. This Section includes administrative and procedural requirements for Contract closeout including, but not limited to, the following:

1. Substantial Completion procedures.
2. Project record document submittal.
3. Operation and maintenance manual submittal.
4. Final cleaning
5. Repair of the Work.

D. Closeout requirements for specific construction activities are included in the individual sections in Divisions 2 through 49.

1.2 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for Substantial Completion, complete the following.

1. Provide supporting documentation for completion as indicated elsewhere in the Contract Documents.
2. Submit a list to the Government, of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
3. Obtain and submit releases enabling the Government unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
4. Submit closeout submittals from other Division 1 sections, project record documents including electronic documents, operation and maintenance manuals, final project photographs, damage or settlement survey, and utility lines survey.
5. Warranties and guarantees shall not begin until substantial completion. Warranties and guarantees for any equipment that comes on line at a later date which is accepted by the Government shall commence on that date.
6. Make final changeover of permanent locks and transmit all keys (including duplicates) to GSA. Complete startup testing of systems and instruction of the Government operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements. Submit test/adjust/balance records.
7. Warranty of any systems or items being used during the occupancy period shall have been completed and submitted at the time of government's written acceptance including the date for Notice of Substantial Completion. The Authority Having Jurisdiction is the Government.
8. The punch list of non-completed work and items shall be entire, valued, and submitted.
9. Completion of punch list items must be completed within two weeks.

10. The electronic format for Operations and Maintenance materials must contain word search features.

B. Inspection Procedures: On receipt of a request for inspection, GSA will either proceed with inspection or advise the Contractor of unfulfilled requirements. GSA will notify the Contractor of Substantial Completion following the inspection or advise the Contractor of construction that must be completed or corrected before Substantial Completion.

1. GSA will repeat the inspection when requested and when assured that the Work is substantially complete.
2. Results of the completed inspection will form the basis of the requirements for Final Acceptance.
3. Items that are not included on the punch-list will not relieve the Contractor from performing all work required and in accordance with the construction documents.

1.3 FINAL ACCEPTANCE FOR CONTRACT COMPLETION

A. Preliminary Procedures: Before requesting re-inspection for Final Acceptance, complete the following:

1. Submit an updated final statement, accounting for final additional changes to the Contract price.
2. Submit a certified copy of the previous Substantial Completion inspection list of items to be completed or corrected. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance, and shall be endorsed and dated by the Contractor.
3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents, for the roof and hydraulic elevator. State warranty commencement dates.
4. Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item.
5. Scan warranties and bonds and assemble complete warranty and bond submittal package as individual electronic PDF files.
6. Submit record documents including and similar final record information.
7. Deliver tools, spare parts, extra stock and similar items.
8. Complete final clean-up requirements including touch-up painting of marred surfaces.
9. At the end of the acceptance submit final payment request with releases and supporting documentation not previously submitted and accepted.

B. Re-inspection Procedure: GSA will re-inspect the Work upon receipt of notice from the Contractor that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to GSA.

1. Upon completion of re-inspection, GSA will notify the Contractor of Final Acceptance or will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled and are required for Final Acceptance.
2. If necessary, re-inspection will be repeated.

C. Contractor's Responsibility for Re-Inspection Following Substantial Completion: If the final completion or acceptance is delayed for more than thirty (30) calendar days following substantial completion through no fault of GSA, or the A/E; the Contractor shall be responsible for the Government's additional costs associated with re-inspections. During this 30-day period, the CM and/or A/E will make only one (1) re-inspection to verify completion of the punch list. Any additional re-inspections, administrative services, or direct costs will be considered CM and/or A/E additional services. The Government's actual costs for CM and/or A/E additional re-inspections, administrative

services, or direct costs will be charged to the Contractor through an appropriate Contract modification in the form of a credit to the Government.

1.4 RECORD DOCUMENT SUBMITTALS

A. Certificates of Release: From subcontractors and major suppliers.

B. Certificate of Insurance: For continuing coverage.

C. Field Report: For pest control inspection.

D. Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for GSA's reference during normal working hours.

E. Record As-Built Drawings: Maintain both electronic media copies and a clean, undamaged set of blue or black line white-prints of all Contract Documents. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark the drawing that is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date. Electronic record copies showing changes shall be done clearly such that the changes are understood so that they can be constructed. Upload to ePM.

1. Mark record print sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.
2. Mark new information not shown on Contract Drawings or Shop Drawings.
3. Note related modification numbers where applicable.
4. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets. Print suitable titles, dates, and other identification on the cover of each set.

F. Record Specifications: Maintain one complete copy of the Specifications with addenda. Include one copy of other written construction documents, such as modifications issued in printed form during construction.

1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the original contract Specifications and modifications.
2. Give particular attention to substitutions and selection of options, and information about concealed construction that cannot otherwise be readily determined later by direct observation. Provide digital photos or videos of construction areas before being concealed.
3. Note related record drawing information and Product Data.

G. Record Product Data: Maintain one copy of each Product Data submittal. Note related modifications and markups of Record Drawings and Specifications.

1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.
2. Before concealing areas document with digital photos or video on a CD or DVD. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily determined later by direct observation.

H. Record Samples: Immediately prior to Substantial Completion, meet with GSA's Representative at the Project site to determine which samples are to be transmitted to the Government for record

purposes. Comply with GSA's instructions regarding delivery to the Government's Sample storage area.

I. Miscellaneous Record Submittals: Refer to other Specification sections for requirements for miscellaneous record keeping and submittals in connection with actual performance of the Work. Place miscellaneous records in good order. Identify records properly and bind or otherwise organize to allow for use and reference.

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.

B. Use cleaning products that comply with Green Seal GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable Volatile Organic Compounds (VOC) levels.

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

A. Operation and Maintenance Instructions for the Hydraulic Elevator: Arrange for each Installer of equipment that requires regular maintenance to meet with the Government's personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following:

1. Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package as individual electronic PDF files.
2. Operation and Maintenance manuals.
3. Material and Finishes Maintenance Manuals
4. Record documents.
5. Photo CDs or DVDs of any hidden or concealed construction areas.
6. Spare parts and materials.
7. Tools.
8. Lubricants.
9. Identification systems.,
10. Control sequences.
11. Hazards.
12. Cleaning.
13. Warranties and bonds for both the roof and the hydraulic elevator.
14. Maintenance agreements and similar continuing commitments
15. Keys, security hardware or security information.

B. As part of instruction for operating equipment, demonstrate the following procedures:

1. Startup.
2. Shutdown.
3. Emergency operations.
4. Noise and vibration adjustments.
5. Safety procedures.
6. Economy and efficiency adjustments.
7. Effective energy utilization.

3.2 FINAL CLEANING

A. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial cleaning and maintenance program. Comply with manufacturer's instructions.

B. Do not use caustic or acidic cleaning materials that will mar or etch finished work.

1. Complete the following cleaning operations before requesting inspection for Final Acceptance.

a. Remove labels that are not permanent labels.
b. Clean transparent materials, including mirrors and glass in doors and windows. Removing glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces on floors and soft surfaces in any other location.
d. Remove any dust protection or mechanical and electrical systems. Where dust has impacted systems, follow these procedures: Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills. Clean interiors of all ductwork to render facility safe for human occupancy.
e. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean, and remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.
f. Remove debris and surface dust from limited-access spaces including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.

C. Removal of Protection: Remove temporary protection and facilities installed for the protection of the Work during construction.

D. Compliance: Comply with GSA’s regulations with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Government property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of it lawfully.

E. Remaining Materials of value that remain after completion of associated work, become Government property. Dispose of or salvage/recycle these materials as directed by GSA.

3.3 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. All components of the construction including operational and material shall be in new condition and new working order at the completion of Repair of the Work.

END OF SECTION 017700

SECTION 017810 - PROJECT RECORD DOCUMENTS
PART 1 - GENERAL

1.1 SUMMARY

A. This section includes administrative and procedural requirements that the Contractor must perform with regards to Project Record Documents. These include but are not limited to those defined in Part B. Electronic records that show identifiable changes shall be done. Also show any other changes not listed below:

B. All electronic project record documents shall be uploaded to GSA's electronic Project Management (ePM) system.
1. Marked-up copies of Contract Drawings.
2. Marked-up copies of Shop Drawings.
3. Newly prepared record drawings.
4. Marked-up copies of Specifications, addenda, and Change Orders.
5. Marked-up Product Data submittals.
6. Record Samples.
7. Field records for variable and concealed conditions.
8. Record information on Work that is recorded only schematically.
9. Operating manuals with a schematic diagram, sequence of operation, and system operating criteria for the hydraulic elevator. Training materials and videos. Equipment maintenance manuals with complete information for all major components.
10. Computer Aided Design (CAD) drawings.

C. Maintenance of Documents and Samples: Store both electronic media and hard copy Record Documents and samples in the field office apart from the Contract Documents used for construction in clean, dry conditions. They shall be readily accessible. Do not use Project Record Documents for construction purposes. All electronic Project Record Documents should be uploaded to ePM.

1.3 RECORD DRAWINGS

A. Markup Procedure: During construction, the Contractor shall maintain a set of black-line white prints of Contract Drawings and Shop Drawings for Project Record Document purposes. Contractor shall mark these Drawings to show all changes that have been done. If BIM is not used, Contractor shall maintain a copy of the Contract Document CAD files showing these changes to the physical conditions.

1. Mark record prints of Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions sufficient to construct the changes. Where Shop Drawings are marked, show cross-reference on Contract Drawings location. Identify each change to coordinate with accompanying, if any, Record Documents.
2. Mark hard copy record sets with red erasable colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
3. Both the bound, organized, and labeled hard copies and the electronic media shall be submitted prior to Final Acceptance.
4. The Contractor is responsible for any printing costs associated with Project Record Drawings. The Contractor shall submit a preliminary set of record drawings (BIM or CAD) for review and acceptance. Before copying and distributing, submit corrected documents and the original marked-up prints to the Government for review and acceptance. If acceptable, the government will return the original marked-up prints to the Contractor for organizing into sets, printing, binding, and final submittal.

B. Copies Distribution: After completing the preparation of CAD Record Documents, the Contractor shall provide electronic media of each drawing, whether or not changes and additional information were recorded. These full sets will be the hard copy of record drawings for filing purposes; they are not intended for use in later maintenance on the facility. Organize the copies into manageable sets. Include appropriate identification, including titles, dates, and other information on the cover sheets.

5. Organize and bind original marked-up set of prints that were maintained during the construction period in the same manner.
6. Organize record into sets matching the print sets. Place these sets in durable tube-type drawing containers with end caps. Mark the end cap of each container with suitable identification.
7. Submit the marked-up record set, transparencies, and the copy sets to the Contracting Officer for the Government's records.

D. Newly Prepared Construction Drawings into Record Drawings: When neither the original Contract Drawings nor Shop Drawings are not suitable for converting into, record drawings prepare new drawings instead of following procedures specified in part A. These new drawings will be fully developed as contract drawings. New drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.

1. Provide Drawings in a scale that allows for the scope of detailing and notations required to record the actual physical installation and its relationship to other construction.
2. When completed and accepted, integrate newly prepared Drawings with procedures specified for organizing, copying, binding and submitting record drawings.

1.2 RECORD SPECIFICATIONS

A. During the construction period, the Contractor shall maintain the Project Specifications, including addenda and other modifications issued, for Project Record Document purposes.

1. Mark the Specifications or provide new or edited Specifications to indicate the actual installation where the installation varies from that indicated in Specifications. Provide dates and other identifying information to discriminate them from the existing Specifications. These shall be fully coordinated with the other contract documents.
   a. In each Specification section where products, materials or units of equipment are specified or scheduled, mark the copy with the proprietary name and model number of the product furnished.
   b. Record the name of the manufacturer, supplier, installer, and other information necessary to provide a record of selections made and to document coordination with record Product Data submittals and maintenance manuals.
   c. Give particular attention to substitutions, selection of product options, and information on concealed installations that would be difficult to identify or measure and record later.

2. Upon completion of markup, submit above mentioned Record Specifications to the Government in electronic mediums.

1.3 RECORD PRODUCT DATA

A. During the construction period, maintain one copy of each Product Data submittal.

1. Mark Product Data to indicate the actual product installation where the installation varies from that indicated in Product Data submitted. Include changes in the product delivered to the site and changes in manufacturer's instructions and recommendations for installation.

2. Give particular attention to information about concealed products and installations that cannot be readily identified and recorded later.
3. Note related Change Orders and markup of Record Drawings, where applicable.
4. Upon completion of markup, submit a complete set of record Product Data to the Government. Where record Product Data is required as part of maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as record Product Data.

1.4 RECORD SAMPLE SUBMITTAL

A. Immediately prior to the date of Substantial Completion, the Contractor shall meet with the Contracting Officer's Representative at the site who shall determine which of the Samples maintained during the construction period shall be transmitted to the Government for record purposes.
B. Comply with the Government's instructions for packaging, identification marking and delivery to the Government's sample storage space. Dispose of other samples in a manner specified for disposing of surplus and waste materials.

1.5 MISCELLANEOUS RECORD SUBMITTALS

A. Refer to other Specification sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Prior to Final Acceptance, complete Miscellaneous Records and place in good order, properly identified and bound or otherwise organized to allow for use and reference.
B. Miscellaneous Records include, but are not limited to, the following:
   1. Authorized measurements utilizing unit prices or allowances.
   2. Ambient and substrate condition tests.
   3. Certifications received in lieu of labels on bulk products.
   4. Batch mixing and bulk delivery records.
   5. Testing and qualification of tradespersons.
   6. Documented qualification of installation firms.
   7. Load and performance testing.
   8. Inspections and certifications by third party inspectors.
   9. Leakage and water-penetration tests.
   10. Final inspection and correction procedures.
   11. Waste management records.
C. Submit to the Government.

PART 2 - PRODUCTS (Not Applicable)
PART 3 - EXECUTION (Not Applicable)

END OF SECTION 017810

SECTION 020850 - ASBESTOS ABATEMENT PROCEDURES

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

A. General: This section includes all work necessary to reduce air concentrations of asbestos to the specified level and maintain the specified asbestos control limits during the life of the contract. It also includes removal, containment, and disposal of asbestos containing materials.

1. Work Area: The project comprises work described elsewhere within the Cutts-Madison (Dolley Madison) House, the former Cosmos Club (currently occupied, in part, by US Court of Appeals offices), and Benjamin Ogle Tayloe (Tayloe) House Buildings at the intersection of Madison Place, NW and 1520 H Street, NW in Washington, DC.

Disturbance of identified asbestos containing materials (ACM) by renovations within the Work Area may include the detailed below. Additionally, the potential for incidental disturbance of known, suspect, or newly discovered ACM may also occur. Specification Section 020850 is applicable to activities required by the project which will necessitate disturbance of ACM; in the event that disturbance or abatement of materials not identified herein is necessary, this specification will be equally applicable.

B. The Contractor shall reference an existing Limited Hazardous Materials Survey Report dated March 11, 2022 prepared by Froehling and Robertson (F&R, project 59Z-0509), either included in this bid package or available upon request. The F&R survey documents the following building materials in the areas of potential renovation which were documented as known or presumed ACM. Note, however, that, while these materials may be present in the work area, the project may not impact these materials. Further, comprehensive delineation/quantification was not performed; therefore, the tables below may not completely represent locations of identified ACMs. It is the responsibility of the contractor to verify material locations. Note that asbestos was not detected in the Dolley Madison House.

1. ACMs

HA #	Material Description	Sample or Material Location(s)	Result (Percent ACM)	EPA/NESHAP Category[1]	Condition[2]
Cosmos Club Building					
N/A[3]	Joint Compound Associated with Gypsum board Walls	Attic	3% Chrysotile	Category II Non-Friable	G
1	Joint Compound	Throughout	2% Chrysotile	Category II Non-Friable	G
4	Exterior Window Glazing	Upper Story Windows	2% Chrysotile	Category II Non-Friable	D
Tayloe House Building					
N/A[3]	Gray Spray-On Fireproofing	Basement	30% Chrysotile	Friable	Not Assessed[4]
N/A[3]	Plaster Walls	Basement, Elevator Pit Room, Attic	3% Chrysotile	Category II Non-Friable	Not Assessed[4]
N/A[3]	Joint Compound Associated with Gypsum board Walls	Throughout	2-3% Chrysotile	Category II Non-Friable	Not Assessed[4]
N/A[3]	Magnesia Duct Insulation	Attic	7-10% Chrysotile 25-30% Amosite	Category II Non-Friable	Not Assessed[4]

HA #	Material Description	Sample or Material Location(s)	Result (Percent ACM)	EPA/NESHAP Category[1]	Condition[2]
N/A[3]	Thermal Woven Fabric Barrier	Throughout	40% Chrysotile	Category II Non-Friable	Not Assessed[4]
2	Canvas Covering/Jacket and Mudded TSI Insulation	Attic	Trace <1% Chrysotile/Amosite 30% Chrysotile 15% Amosite	Category II Non-Friable	G
3	Beige Joint Compound associated with Gypsum board Walls	Attic	2% Chrysotile	Category II Non-Friable	G
4	White Thermal Insulation Fabric	Attic	65% Chrysotile	Category II Non-Friable	G
7	Thermal System Insulation Elbows[5]	Attic East Side	Trace <1% Chrysotile/Amosite 2% Chrysotile/4% Amosite	Category II Non-Friable	G
8	Joint Compound associated with Plaster Walls	North Side of Attic	2% Chrysotile	Category II Non-Friable	D

[1]EPA/NESHAP Category: See Section 3.5.1 for details.
[2]Condition: G: Good (No damage);
D: Damaged (<10% distributed or <25% localized);
SD: Significantly Damaged (>10% distributed or >25% localized)
[3]Material identified and confirmed as ACM in 2019 Operations and Maintenance Inspection Report for the Cosmos Club Building (DC0113ZZ) or the Tayloe House Building (DC0112ZZ); these are referenced in the March 11, 2022 survey report.
[4]This material was not identified during this evaluation and the condition was therefore not assessed.
[5]This material appears to comprise remnant insulation that may have been subjected to historical abatement efforts but which is present beneath newer insulation materials; the presence of this apparent remnant material was identified inconsistently in pipe TSI fitting. This material should be presumed as ACM in other locations within the work area.

2. Asbestos (Trace <1%) was detected in TSI elbows/coverings/jacket/mastic at the Tayloe House Building and in plaster at the former Cosmos Club Building. Through NESHAP Applicability Determinations, asbestos bulk samples of friable materials analyzed via PLM which indicate a result of asbestos content to be less than ten (10) percent, including trace amounts (<1%), the material in question shall either be assumed to be an ACM or further analyzed to verify asbestos content; this requirement is specifically applicable to friable materials. Although this concentration of asbestos would be below the regulatory threshold under EPA regulations, and additionally would not constitute ACM as per OSHA regulations, OSHA regulates the removal and disturbance of materials containing trace amounts of asbestos. These materials shall be treated as ACM.

3. Sampling of the following materials was excluded during the previous survey due to inaccessibility or inability to conduct sampling without damaging systems or structures; they should be presumed to constitute ACM if encountered in the work area and if subject to disturbance. Confirmation sampling and analysis may be performed.

    a. Based on the *2019 Operations and Maintenance Inspection Report Dolley Madison Building (DC0111ZZ)* the following materials are presumed ACM:
        a. Fire bricks on old fire places,
        b. Mudded Fittings,
        c. Plaster Walls,
        d. Fire Door(s),
        e. Canvas Pipe Wraps,

f. Seam Sealant associated with Canvas Pipe Wraps,
g. Drywall Ceiling,
h. Carpet Mastic,
i. Interior Window Glazing,
j. 12x12'' White Floor Tile with White and Gold Streaks with Mastic,
k. 12x12'' White Floor Tile with Black Streaks with Mastic,
l. Roofing components,
m. Et cetera.

Additionally, because F&R limited sampling to those materials areas designated by the Client, which were safely accessible, and which were able to be sampled without damaging systems or structures, the following materials should additionally be presumed:

a. Window caulks or glazing compounds which were not accessible during this survey, particularly on upper levels.

Note that suspect accessible materials were not observed in the crawl space area associated with the planned lift location; however, materials in the spaces which must be traversed to access the crawl space were observed which could constitute ACM.

b. Based on the *2019 Operations and Maintenance Inspection Report Cosmos Club Building (DC0113ZZ)* the following materials are presumed ACM:
   a. Plaster Ceiling,
   b. Door Glazing,
   c. Gray Seam Sealant on Bare Metal Duct,
   d. Fire Door(s),
   e. Sprayed-On Fireproofing,
   f. Mudded Pipe Fitting Insulation,
   g. Carpet Mastic,
   h. Fire Bricks,
   i. Interior Window Glazing,
   j. Drywall Ceiling with Joint Compound,
   k. White Sink Undercoating,
   l. 9x9'' Off-White Floor Tile with Red Streaks with Mastic,
   m. Pipe Seam Sealant associated with Canvas Pipe Wraps,
   n. Canvas Pipe Wraps,
   o. Skim Coat over Bricks,
   p. Roofing components,
   q. Et cetera.

   Additionally, because F&R limited sampling to those materials areas designated by the Client, which were safely accessible, and which were able to be sampled without damaging systems or structures, the following materials should additionally be presumed:

   a. Window caulks or glazing compounds which were not accessible during this survey, particularly on upper levels.

c. Based on the *2019 Operations and Maintenance Inspection Report Tayloe House Building (DC0112ZZ)* the following materials are presumed ACM:

   a. Mudded Pipe Fitting Insulations,
   b. Tank Insulation,
   c. Canvas Pipe Insulation Wrap,
   d. Fire Door(s),
   e. Tar Wrap on Pipe,

f. Fire Bricks,
g. Door Glazing,
h. Carpet Mastic,
i. Decorative Stucco Plaster,
j. 12x12" Gray Mottled Floor Tile,
k. Roofing components,
l. Et cetera.

Additionally, because F&R limited sampling to those materials areas designated by the Client, which were safely accessible, and which were able to be sampled without damaging systems or structures, the following materials should additionally be presumed:

a. Window caulks or glazing compounds which were not accessible during this survey, particularly on upper levels.

d. Other materials which constitute presumed materials at each of the buildings include:
a. Fire door interiors
b. Gaskets and packing materials in plumbing or hydraulic systems, where present; this is particularly true of the sump elements which were visually evaluated but which may involve concealed elements,
c. Vermiculite within masonry cells (note that CMU elements were visually reviewed and cells were found to be empty; however, F&R cannot preclude the potential for vermiculite to be present),
d. Woven wiring insulation or other live electrical system components including electrical panel backing/arc deflectors/spark arresters, which were not observed,
e. Materials concealed within HVAC equipment,
f. Materials which may be concealed beneath finishes or in inaccessible spaces throughout the structure which have not been previously represented in survey reports; if potential ACMs are discovered during renovation/demolition activities, they should be tested by appropriately qualified personnel prior to disturbance.

4. If, during renovation, work is performed that will impact suspect materials that have not been sampled, all work to shall cease. Samples of suspect materials should be collected and analyzed by an appropriately credentialed asbestos inspector and handled accordingly prior to disturbance.

5. ACMs which will be disturbed due to the renovations may be removed, encapsulated, or enclosed

C. Related Work Specified in Other Sections:
a. Section 015460, "Safety and Health," applies to all work covered by this section.
b. Section 020900 – Removal and Disposal of Lead-Based Paint

1.2 QUALITY ASSURANCE:

A. Contractor Qualifications: The Contractor shall be a firm of established reputation (or if newly organized, whose personnel have previously established a reputation in the same field), which is regularly engaged in, and which maintains a regular force of workmen skilled in asbestos abatement, and shall have performed this work on previous projects.

1. Contractors performing asbestos abatement work for GSA in the District of Columbia are required to be licensed to do asbestos work in the District of Columbia. The contractor shall comply with the licensing regulations of:

Government of the District of Columbia

Department of Energy and Environment
1200 First Street, NE
Washington, DC 20002
Phone: (202) 535-2600
Fax: (202) 535-2881
TTYL (800) 855-1000
Email: doee@dc.gov

2. Contractor employees assigned to active asbestos work areas in the District of Columbia must be licensed in the District of Columbia as trained asbestos worker. Workers performing work for GSA in the State of Maryland must be licensed in Maryland and workers performing work in Virginia must be licensed in Virginia.

3. Pursuant to NESHAP requirements the contractor should provide appropriate written notification at least 10 days prior to the start of asbestos abatement work to, if the work would be subject to notification requirements. However, based on the potential incidental disturbance and the likely quantity of material to be removed, notification would likely not be warranted.

Asbestos Contact
U. S. Environmental Protection Agency Region III
1650 Arch Street
Philadelphia, PA 19103

and to the appropriate local jurisdiction:

a. Government of the District of Columbia
Department of Energy and Environment
1200 First Street, NE
Washington, DC 20002

Phone: (202) 535-2600 FAX (202) 535-2881
TTY: (800) 855-1000 Email: doee@dc.gov

B. Laboratory Qualifications: Laboratory shall be regularly engaged in asbestos testing, and personnel used for monitoring airborne concentrations of asbestos fibers shall be proficient in this field. See "Submittals" paragraph for the specific information, which must be submitted for approval of the laboratory.

C. Asbestos Control Limits: The enclosed work areas shall be established as a regulated area in accordance with 29 CFR 1910.1001 and 29 CFR 1926.1101.

1. Inside Asbestos Work Area: For personnel wearing negative-pressure respirators, air concentrations of asbestos shall not exceed an 8-hour time weighted average of 0.1 fibers (longer than 5 microns), per cubic centimeter of air. Regardless of respiratory protection worn, air concentrations inside the work area will not exceed an 8-hour time weighted average of 0.1 fibers per cubic centimeter. It is the responsibility of the contractor to provide an independent industrial hygiene consultant to provide the required personal air monitoring and to assure that all safety and health procedures are followed.

2. Outside Asbestos Work Area: Air concentrations of asbestos shall be maintained at the lowest attainable level and shall not exceed an 8-hour time weighted average of 0.01 fibers (longer than 5 microns) per cubic centimeter of air. This applies to all areas in the building while work is in progress except for the asbestos work area, and to the entire building, including the former work area, after final cleanup. To assure compliance with these standards, the government will provide the required air monitoring outside the contractor's work area and the government's industrial

hygienist will have unrestricted access to the contractor's worksite. The asbestos abatement contractor may perform any air sampling he wishes to assure compliance and for comparison with this standard.

1.3 REFERENCES:

A. American National Standards Institute (ANSI) Publication:

Z9.2-79 Fundamentals Governing the Design and Operation of Local Exhaust Systems

B. American Society for Testing and Materials (ASTM) Publication:

E 849-82 Safety and Health Requirements relating to Occupational Exposure to Asbestos

C. Code of Federal Regulations (CFR):

29 CFR 1910.1001, Occupational Safety and Health Act (OSHA), INCLUDING Appendix A through I.

29 CFR 1910.20, Subpart C, General Safety and Health Provisions.

29 CFR 1910.134, OSHA General Industry Respirator Requirements.

29 CFR 1926.1101. Occupational Exposure to Asbestos, Construction Industry Standard, INCLUDING Appendix A through K.

40 CFR Part 61, Subpart M: U.S. Environmental Protection Agency, National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos.

D. State and Local Regulations:

1. Applicable state and local regulations shall apply.

1.4 SUBMITTALS:

A. Initial Submittals of Asbestos Abatement Contractor or Subcontractor Qualification Information: Items 1.4.A.1. through 1.4.A.5 below are to be submitted after the bid receipt, but are required to be approved by the contracting officer prior to award.

1. Five Projects: Name and location of at least 5 asbestos abatement projects performed by the Contractor, including name and telephone number of contract representative.

2. Five Air Tests: Copy of daily log and air monitoring reports including final decontamination levels of last five abatement projects.

3. Experience and Qualifications of Supervision: Name of and experience record of superintendent and foreman. Include evidence of knowledge of applicable regulations; evidence of participation and successful completion of EPA approved training course in asbestos removal and/or supervision of asbestos related work in accordance with the EPA Model Accreditation Program; and experience with asbestos related work in a supervisory position as evidenced through supervision of at least two asbestos abatement contracts where materials similar to those present on this project were addressed. Provide a current District of Columbia Asbestos Worker’s License for each supervisor to be present on site. Training documentation shall include the initial training course and all subsequent refresher courses with the most recent course having been completed within the previous 12 months. Furnish documentation of a respirator fit test in accordance with 29 CFR 1926.134 at the time of the initial fitting, when facial conditions change, and at least every twelve months thereafter for each employee wearing a negative-pressure respirator.

4. Experience and Qualifications of Workers: Name and experience record, if any, of workmen who will be assigned to this project. Include for each person evidence of successful completion of an EPA Approved training given by qualified personnel in accordance with the EPA Model Accreditation Program. Provide certification that employees meet the medical surveillance requirements as required by OSHA standards 29 CFR 1910.134 and 29 CFR 1926.1101. Provide a current District of Columbia Asbestos Worker's License for each individual to be engaged in the asbestos related work onsite. Training documentation shall include the initial training course and all subsequent refresher courses with the most recent course having been completed within the previous 12 months. Furnish documentation of a respirator fit test in accordance with 29 CFR 1926.134 at the time of the initial fitting, when facial conditions change, and at least every twelve months thereafter for each employee wearing a negative-pressure respirator.

5. License Information: Provide a copy of a current District of Columbia Asbestos Contractor's License for projects in the District of Columbia, a current Maryland License for Asbestos Removal or Encapsulation for projects in Maryland, or a copy of the Virginia Asbestos Contractor's License for projects in the Commonwealth of Virginia

6. Submit a copy of a Written Respiratory Protection Program that complies with OSHA regulation 29 CFR 1910.134.

B. Post-Award Asbestos Abatement Submittals: Items 1.4.B.1. through 1.4.B.8 below are to be submitted after the award, but are required to be approved by the contracting officer or his designated representative prior to starting work.

1. Plan of Action: Submit a detailed plan of the procedures proposed for use in complying with the requirement and regulations included in this specification. The plan shall include the location and layout of decontamination areas, extent and type of engineering controls to be used during work (including plastic sheeting, specific regulated areas, negative air machines, etc.), the sequencing of asbestos work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site. Expand upon the use of portable HEPA ventilation system, closing out of the building's HVAC system during removal, method of removal to prohibit emissions in work area, and packaging of removed asbestos debris.

2. Disposal Plan: A disposal plan including location of approved disposal site and the contractors method for documenting proper asbestos disposal to the contracting officer or his designated representative.

3. Environmental Protection Agency (EPA) Notification: Provide a copy of the NESHAPS Notification of Demolition Renovation Form sent to the Regional EPA Asbestos Regulation Office. (Paragraph 1.2)

4. Local Government Notification: Provide a copy of the notification sent to the appropriate State or Local Governmental Asbestos Regulation Office. (Paragraph 1.2)

5. GSA Asbestos Control Permit: Submit a GSA National Capital Region Asbestos Control Permit with lines one through nine filled out. Start and Finish dates may be left blank until project schedule is determined.
(A copy is attached to Page 020850-13)

6. Certificates of Compliance: Submit certification that vacuums, ventilation equipment, and other equipment required to contain airborne asbestos fibers conform to ANSI Z9.2.

7. Information on Encapsulating Material: Submit written evidence that material meets the latest requirements of the Environmental Protection Agency (EPA) and possesses the specified characteristics.

8. Laboratory Qualification Information: Submit proof of qualifications of testing laboratory and personnel. Accreditation by the American Industrial Hygiene Association (AIHA) for asbestos analysis and two most recent consecutive quarterly reports showing that the laboratory analyzing the samples has been judged proficient by successful participation in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing (PAT) Program, shall be considered sufficient proof of compliance. In addition to microscopists employed by AIHA accredited laboratories, microscopists who provide similar evidence of successful participation in the AIHA Asbestos Analyst's Registry may analyze the fibers-in-air on site, however, any samples which are sent to a laboratory for analysis must be analyzed by an AIHA accredited laboratory. This submittal must be approved by the Contracting Officer prior to beginning any testing.

C. During-Work Asbestos Abatement Submittals: Items 1.4.C.1. through 1.4.C.2. below are to be submitted to the contracting officer or his designated representative as work progresses at the time specified.

1. Air Monitoring and Work Area Information:

a. Air Monitoring Results: Results of all air monitoring conducted by the contractor shall be posted within 72 hours of collection and within 24 hours of analysis for all workers to see. A copy of the results shall be given to the contracting officer.

b. Differential Air Pressure Readings: Starting when a negative pressure containment is erected and approved by the contracting officer, a copy of the strip chart record of the work area relative pressure shall be submitted within 24 hours after the recording was made.

c. Work Area Inspections: The contracting officer's representative will perform visual inspections of the work area for the pre-removal, pre-final, and reoccupancy stages of the work. The contractor shall notify the contracting officer at least 14 hours in advance of each required inspection.

2. Transporting and Disposing of Asbestos Containing Materials (ACM):

a. Disposal Receipts: Receipts from the transporter, which acknowledge the contractor's shipment of ACM from the site (NESHAPS Waste Shipment Records) shall be submitted three days following removal of ACM from the premises. Each receipt shall provide date, quantity of material removed, and signature of an authorized representative of the transporter. A signed and dated copy to the Waste Shipment Record showing receipt at an authorized landfill must be received by GSA's designated representative within 30 calendar days of the date of the shipping receipt. If material is contains <1% asbestos, waste can be disposed of as non-ACM provided waste manifest and documentation that the disposal facility has been informed of the asbestos content are submitted within 30 calendar days of the date of the shipping receipt.

b. Transportation Vehicles: Transportation shall be in vehicles dedicated to asbestos transportation. Vehicles shall be marked in accordance with DOT and NESHAPS regulations, if rquired.

c. Shipping Manifest Forms: Signed and completed Shipping Manifest Forms (NESHAPS Waste Shipment Records) shall be used for the transportation of ACM. This form shall be signed by each party who has control over the asbestos waste, and a copy retained by each party as responsibility for the waste is transferred to the next party. An example Shipping Manifest Form is attached directly behind the GSA Asbestos Control Permit on Page 020850-14.

D. Final Submittals: Items 1.4.D.1. and 1.4.D.2. below are to be submitted to the contracting officer's designated representative at the completion of work for each containment.

1. Daily Log: Copies of a daily log showing the date(s) and time(s) of entrance to and exit from the work area(s) for all persons.

2. Reestablish Systems: Submit written certification:

a. Describing the type, application, and quantity of asbestos containing materials removed by the contractor.

b. That final inspection items were completed.

c. That mechanical and electrical systems disturbed by the contractor during work under the contract have been reinstalled and are in working order.

1.5 CONTRACTOR RESPONSIBILITY: The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, State, and local regulations pertaining to the protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations, and shall hold the government harmless for failure to comply with any applicable safety or health regulation on the part of himself, his employees, or his subcontractors.

The asbestos removal Contractor's Supervisor shall be on the job each day during removal and he shall be knowledgeable, experienced and competent in this type of work and shall enforce the use of all safety procedures and equipment. He shall be knowledgeable of all EPA, OSHA and NIOSH requirements and guidelines.

The asbestos removal Contractor shall be responsible for any damage to the building and its contents resulting from leakage or spillage of water.

1.6 PROJECT/SITE CONDITIONS:

A. Means of Egress: Establish and maintain emergency and fire exits from the work area.

B. Use of Existing Facilities: Use of existing toilets, showers, and/or other similar facilities as decontamination areas is prohibited.

C. Maintenance of Existing Equipment: See contract drawings for requirements.

D. Environmental Conditions to be Maintained: Normal environmental conditions (heat, light, air conditioning) must be maintained outside of the work area.

E. Decontamination Facility: Throughout the time that asbestos removal is taking place, the abatement contractor will maintain a working five-stage decontamination facility at the point of access to the containment. As a minimum, the decontamination facility will consist of a clean changing area, an air space, a shower, another air space, and a contaminated changing area. The size and location of this facility shall be approved by the contracting officer.

F. Access to Work Area: Access to work areas shall be through decontamination areas. The following shall have access to work area:

1) GSA Contracting Officer or Designated Representative
2) GSA Safety & Environment Personnel
3) GSA Contract Monitoring Personnel
4) GSA Authorized Inspection Personnel
5) OSHA Inspectors

6) EPA Inspectors
7) Local Building or Health Officials

1.7 SEQUENCING/SCHEDULING: Asbestos abatement work will be performed after normal working hours. Any exceptions will be noted on the contract drawings.

PART 2 – PRODUCTS

2.1 EQUIPMENT: Equipment, including protective clothing and respirators, used in the execution of this contract and provided to visitors to the site, shall comply with ASTM E 849 and with the applicable Federal, State, and local regulations. Respirators shall conform to the OSHA requirements in 29 CFR 1910.134 and 29 CFR 1926.1101, except that single use and disposable respirators shall not be used. Type of respirators required shall be as specified in 29 CFR 1926.1101. If any air sampling indicates levels above 0.1 fibers per cubic centimeter or "too dirty to count," powered air or supplied air (type "C") respirators will be required during actual removal operations.

2.2 ENCAPSULATING MATERIALS:

A. Encapsulating materials (sealants) shall meet the latest requirements of the Environmental Protection Agency (EPA) and shall possess the following characteristics:

1. Adherence. The sealant eliminates fiber dispersal by adhering to the fibrous substrate with sufficient penetration to prevent separation of the sealant from the sprayed asbestos material.

2. Impact Penetration. It withstands impact and penetration, protects the enclosed sprayed asbestos material, and it must not cause separation of sprayed asbestos material from its original substrate.

3. Flexibility. It possesses enough flexibility to accommodate atmospheric changes and settling of the structure over time.

4. Resistance to Smoke and Flame. It shall have high flame retardant characteristics and a low toxic fume and smoke emission rating.

5. Ease of Application. It must be easily applied with relative insensitivity to errors in preparation or application. Ease of repair by routine maintenance personnel is desirable.

6. Toxicity. The sealant must be neither noxious nor toxic to application workers and structure users thereafter.

7. Permeability. It should have some permeability to water vapor to prevent condensation accumulation be resistant to common cleaning agents.

8. Stability. It should have suitable stability to weathering and aging.

B. Guarantee. Guarantee encapsulating materials to perform for a period of 1 year, in accordance with "Guarantee" clause of the General Conditions.

2.3 PROTECTIVE PLASTIC (polyethylene) sheeting of minimum 6 mil thickness and size to provide protection to all equipment, floors, walls, and all other exposed areas, with minimum frequency of joints, where required. Plastic shall not be moved and reused between work areas but shall be containerized for disposal as ACM waste.

2.4 Seal tape shall be glass fiber reinforced or other type capable of sealing joints of adequate sheets of plastic for the attachment of plastic sheeting to finished or unfinished surfaces of dissimilar materials under either dry or wet conditions, including use of amended water.

2.5 Disposal Containers: Bags and drums to be used for disposal of asbestos waste shall be suitable to receive and retain any asbestos-containing or contaminated materials until disposal at an EPA approved and certified waste disposal site. Bags shall be 6 mil thicknesses. If using drums, the material must be double bagged or lined before being placed in the drum. Drums entering the work area must be covered with poly and upon exiting the work area to the load out area the poly is to be removed and the drum is to be wet-wiped.

Disposal bags – 2 layers of 6 mil poly for asbestos waste shall be pre-printed with labels, markings, and the Facility's address as required by OSHA, EPA and DOT regulations.

Note that the Contractor may use a burlap bag on the interior to reduce tears or breakage of outer bags but this does NOT preclude the need to double bag as noted above.

2.6 OSHA DANGER demarcation signs, as many and as required by OSHA 29 CFR 1926.1101(k)(7) shall be provided and placed by the Competent Person. All other posters and notices required by Federal and State regulations shall be posted in the Clean Room.

2.7 Adequate and appropriate PPE for the project and number of personnel/shifts shall be provided. All personal protective equipment issued must be based on a written hazard assessment conducted under 29 CFR 1910.132(d).

2.8 In compliance with the OSHA Asbestos Standard, 29 CFR 1926.1101, the OSHA Hazard Communication Standard, 29 CFR 1926.59, and the EPA NESHAP Standard, all of which require each employer to ensure that all containers of hazardous chemicals in the workplace are labeled, tagged, or marked with the identity of the hazardous chemical contained therein, and an appropriate warning of the hazards of the chemical, all asbestos-containing waste disposal bags utilized by the abatement contractor will be appropriately marked as follows:

DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

These labels must be at least three (3) inches high by five (5) inches wide and conform to the requirements specified in 29 CFR 1910.145 for danger labels or signs.

F&R acknowledges that section 1926.1101(k)(8)(vi) and 1926.1101(k)(8)(vi)(B) state that labeling is NOT required for concentrations of <1% asbestos. However, best practices would be to label the materials to inhibit unintentional exposure.

PART 3 – EXECUTION

3.1 PREPARATION:

A. Isolate the work area for the duration of the work by completely sealing off all openings and fixtures in the work area, including but not limited to, heating and ventilation ducts, doorways, corridors, windows, and lighting with plastic sheeting taped securely in place.

B. Build double barriers of plastic sheeting at all entrances and exits to the work area so that the work area is always closed off by one barrier when workers enter or exit.

C. Cover all floor and wall surfaces in the work area with plastic sheeting taped securely in place to protect from damage. Assure that two layers cover all floor areas.

D. Before the work is begun, clean all removable items and equipment. Remove them from the work area and store as directed.

E. Cover all nonremovable items and equipment in the work area with plastic sheeting taped securely in place.

F. Remove all heating, ventilation, and air conditioning system filters, pack them in sealable plastic bags (6-mil minimum) for disposal in the approved waste disposal site and replace them with new filters upon completion of abatement. Openings created by the removal of HVAC filters shall be sealed using 6 mil plastic sheeting taped securely in place, prior to start of work.

G. Post warning signs on the primary containment as required by 29 CFR 1910.1001, 29 CFR 1926.1101, ASTM E 849, and as directed by the Contracting Officer.

H. Obtain Written Approval of the Finished Primary Containment from the GSA Contracting Officer's Representative or a GSA Safety and Environmental Management representative prior to starting any actual asbestos removal work. (This approval authority may be delegated in writing to the Government's contract independent industrial hygienist.)

3.2 WORK PROCEDURE:

A. General Procedures: The enclosed work areas shall be defined as an asbestos regulated area and all asbestos worker protection and work practices not addressed in this specification shall be performed in conformance with the general safety and health provisions of 29 CFR 1910.1001, 29 CFR 1910.20, and 29 CFR 1926.1101, respectively. For asbestos abatement work, use general work practices, work practices for removal, and work practices for encapsulation as specified in ASTM E 849, and other appropriate work procedures approved by the Environmental Protection Agency (EPA). If a conflict arises, the more stringent application shall apply until a determination is made by the contracting officer or his designated representative.

B. Local Exhaust System: Provide a local exhaust system in the asbestos control area as required to meet the asbestos control limit and ceiling concentration. The local exhaust system shall be vented to the outside of the building. Equip exhaust openings with the necessary filters required to reduce the airborne asbestos concentration to below the asbestos control limit. Local exhaust equipment must be sufficient to maintain a negative air pressure of 0.02 inches of water in the asbestos control area. In no case shall the building ventilation system be used as the local exhaust system for asbestos control. Filtering in vacuums and exhaust equipment shall conform to ANSI Z9.2; HEPA filters shall be used in all vacuums and exhaust equipment. If the local exhaust system does not exhaust directly to the outside, the exhaust equipment shall be tested for integrity with a Dioctylphthalate (DOP) or Dioctylsubacate (DOS) smoke generator and particle counter each time a containment is erected.

C. Coordination of Work of all Trades: Coordinate the work of all trades to assure that their work is performed in accordance with the applicable regulations and that the asbestos control limits are maintained at all times both inside and outside the asbestos work area.

3.3 NEGATIVE PRESSURE GLOVEBAG METHOD OF ASBESTOS REMOVAL:

A. General: If the contract drawings specifically permit the glovebag method for removing pipe insulation, personnel decontamination procedures may not be required. However, respiratory protection and disposable clothing will be required. Discard the clothing in accordance with paragraph "Disposal of friable asbestos."

B. Procedure: Install the glovebag and negative pressure equipment according to manufacturer's recommendations. Cut covering on the insulation along the top seam to allow wetting of the insulation, and cut cover all around section to be removed. Remove in small sections. Lower the insulation material carefully inside the glovebag. Do not permit it to drop.

C. Removal of Glovebag and Disposal: Following removal of insulation, ensure that all visible material is inside the bag. Spray all tools in glovebag with amended water while it is still attached. Evacuate bag with portable HEPA vacuum and while the bag is collapsed, squeeze bag below tool pouch, and twist bag. Seal bag with tape or locking ties, separating the waste from the removal area. Vacuum the inside of the top of the glovebag and unsealed portion of the glovebag below. Keep HEPA vacuum connected until the glovebag is removed. Replace HEPA filters as recommended by manufacturer. Cut the glovebag along the top and sides, then remove it from the pipe. Wet wipe and wash all tools and removal area thoroughly. Dispose of glovebag, material, and contaminated equipment in accordance with paragraph "Disposal of Friable Asbestos."

3.4 QUALITY CONTROL:

A. Monitoring: Monitoring of airborne concentrations of asbestos shall be in accordance with 29 CFR 1910.1001, 29 CFR 1926.1101, and ASTM E 849. Monitor the airborne concentration of asbestos before starting work to obtain a baseline fiber concentration in the affected areas. Then monitor once every four hours, continuously during the course of the work inside the asbestos work area; one time daily outside the entrance to the asbestos work area and at the exhaust opening of the local exhaust system. If monitoring shows airborne concentrations greater than the asbestos control limits, stop all work, correct the conditions causing the excessive levels, and notify the Contracting Officer immediately. In addition, monitor the airborne concentrations of asbestos after final cleanup and removal of the enclosure of the asbestos control area in accordance with paragraph "Final cleanup and removal of enclosures."

B. Site Inspection and Stop Work Orders: While performing asbestos abatement work, the Contractor shall be subject to on site inspection by agency officials or agency contracted inspection services. Work shall also be subject to inspection by OSHA and EPA inspectors and/or local building or health officials. If found to be in violation by one of these officials, the Contractor shall cease all work immediately. Until the violation is resolved, standby time required to resolve the violation shall be at the Contractor's expense. One complete set of equipment (such as respirators and disposable clothing) required for entry to the asbestos control area shall be made available within 2 hours of request by the Contracting Officer for inspection of the asbestos control area. Such requests will only be made during the contractor's working hours.

3.5 CLEANUP AND DISPOSAL:

A. Permits and Notifications: Secure necessary permits in conjunction with asbestos removal, hauling and disposition and provide timely notification of such actions, as may be required by federal, state, regional, and local authorities. Notify the Regional Office of the United States Environmental Protection Agency and provide copies of the notification to the Contracting Officer 10 days prior to the commencement of the work. Provide notification in accordance with 40 CFR 61.22(d)(1). (See Paragraph 1.01)

B. Housekeeping: Essential parts of asbestos dust control are housekeeping and cleanup procedures. Maintain all surfaces throughout the building free of accumulations of asbestos fibers to prevent further dispersion. Give meticulous attention to restricting the spread of dust and debris, keep waste from being distributed over the general area or to lower floors. Use approved industrial vacuum cleaners with a HEPA filter to collect dust and small scrap. The blowing down of the space with compressed air is forbidden. Post appropriate asbestos hazard warning signs. In all possible instances workmen shall cleanup their own areas. Equip personnel engaged in cleaning up asbestos scrap and waste with necessary respiratory equipment and protective clothing.

C. Disposal of Friable Asbestos: Collect and dispose of friable asbestos waste, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing which may produce airborne concentrations of asbestos fibers in sealed impermeable bags. Prior to placing in bags, or containers, wet down asbestos wastes to reduce airborne concentrations. Waste asbestos

material shall be disposed of in accordance with all Federal regulations at a sanitary landfill that meets EPA requirements. The contractor will provide the Contracting Officer or his designated representative with a copy of all hazardous waste manifests, haulers receipts or landfill receiving tickets resulting from the disposal of the asbestos waste. Establishment of any on-site temporary holding area for properly packaged asbestos waste must be approved by the Contracting Officer or his designated representative.

D. Final Cleanup and Removal of Enclosure: The Contractor must notify the Contracting Officer that the work area is ready for final inspection. The Contracting Officer or his designated representative will inspect the work area prior to decontamination and removal of enclosure. Visual observation of asbestos materials, dust or debris is not permitted on any surface in or around the work area. Clean work area in accordance with EPA approved methods. The Contracting Officer's independent industrial hygienist will perform air sampling for clearance purposes. Perform sampling in an aggressive manner, using fans or similar equipment to create exaggerated air movement during the clearance air sampling. Repeat the decontamination and testing process until fiber concentration level reaches 0.01 f/cc or the level recommended by EPA. If fiber concentration does not exceed 0.01 f/cc or the level recommended by EPA, the Contracting Officer or a designated representative may authorize removal of the enclosure. Contracting Officer approval of final cleaning and restoration of the work area is required.

PERMIT NUMBER_____

GSA NATIONAL CAPITAL REGION ASBESTOS CONTROL PERMIT
(POST SIGNED COPY AT JOB SITE)

(1) BUILDING NAME: _____
GSA BUILDING NUMBER: _____
BUILDING STREET ADDRESS: _____
CITY, STATE, AND ZIP CODE: _____

(2) A. BRIEF DESCRIPTION (ATTACH DESCRIPTION OR FLOOR PLAN, AS NECESSARY AND AVAILABLE)_____

B.OSHA ACM ACTIVITY: CLASS I_____CLASS II_____CLASS III_____CLASS IV_____
C. ENVIRONMENTAL CONTROL METHOD? GLOVEBAG_____CONTAINMENT_____
D. LINEAR FEET PIPE:_____ SQUARE FEET INSULATION:_____

(3) WHEN IS THIS JOB TO START?_____FINISH?_____
(4) SCHEDULED WORKING HOURS OF ABATEMENT WORKERS:_____
(5) CONTACT REGARDING THE SPECIFICATION, NAME:_____
CONTRACT NUMBER:_____PHONE:_____
(6) ESTIMATED OR ACTUAL COST OF THIS ABATEMENT $_____
(7) CONTRACTORS:

GENERAL:_____	ASBESTOS:_____
ADDRESS:_____	ADDRESS:_____
_____	_____
PHONE:_____	PHONE:_____
SUPERVISOR:_____	SUPERVISOR:_____

(8) DEBRIS HAULED BY:_____ TO:_____
ADDRESS:_____ ADDRESS:_____
PHONE: _____ PHONE:_____
(9) AIR MONITORING

	CONTRACTOR'S MONITOR	GSA'S MONITOR
NAME OF FIRM:	_____	_____
PERSON TO CONTACT:	_____	_____
PHONE NUMBER:	_____	_____

(10) TENANT CONTACT'S NAME:_____
AGENCY:_____PHONE:_____

(11) ASBESTOS PROGRAM MANAGER (APM) REVIEW:
EMERGENCY (INITIAL):_____ PHONE:_____

SIGNATURE:_____DATE:_____

(12) GSA SAFETY, ENVIRONMENT AND FIRE PROTECTION BRANCH REVIEW (WPYG):

SIGNATURE:_____DATE:_____

(13) ASSISTANT REGIONAL ADMINISTRATOR, PUBLIC BUILDING SERVICES

(WP) APPROVAL SIGNATURE:_____DATE:_____

RETURN TO: GSA Safety, Environment and
Fire Protection Branch (WPYG)
ROB RM 2080
Washington, DC 20407

NOTIFICATION: EPA:_____
DEMO:_____ DC:_____
RENO: _____ MD:_____
LF____SF____ VA:_____

(FOR INFORMATION PHONE: 708-5236/FAX 708-6618 OR AFTER HOURS 708-1111)

SHIPPING MANIFEST

REPORTABLE QUANTITY, HAZARDOUS SUBSTANCE, SOLID, N.O.S.
ORM-E NA 9188 (ASBESTOS)

Total Quantity of Hazardous Substance:

_____ Bags
_____ Drums
_____ Cubic Yards
_____ _____(Other Unit)

Waste Generator:
(Building Name)
BLDG NO:_____
GSA Contract #:

Name:_____

Address:_____

_____

Waste Pickup Site:

Name:_____

Address:_____

_____

Waste Transporter:
(Prime Contractor)

Name:_____

Address:_____

_____

Disposal Facility:

Landfill Name:_____

Contact:_____

Address:_____

Phone:_____

_____ZIP_____

NOTE: THIS FORM SHALL BE SIGNED BY EACH PARTY AS CONTROL OF THE HAZARDOUS SUBSTANCE IS RELINQUISHED TO THE NEXT PARTY.

	RECEIVED FROM Name, Representing	DATE	RECEIVED BY Name, Representing	DATE
1.				
2.				
3.				
4.				
5.				

APPENDIX A GSA ASBESTOS ABATEMENT PROJECT CONTROL CHECKLIST
020850 Asbestos Contractor Submittal Punch List

PROJECT_____
PROJECT NUMBER_____
DATE REVIEWED_____
REVIEWER_____

____ABATEMENT___FLOORTILE__ROOFING__OTHER

A. Pre-Award Submittals**:** Items Submitted After Bid Receipt But Prior to Award:

Asbestos Contractor Qualification Information

	REVIEWED	APPROVED	IN FILE
*1. Record of firms experience, including names and addresses of purchasers of service, location of work, and dates of performance (Section 1.04.A.1.)	_____	_____	____
*2. Copy of daily log and air monitoring reports for last five jobs, (Section 1.04.A.2.)	_____	_____	____
*3. Name of Superintendent: (Section 1.04.A.3.)			
a. Record of experience	_____	_____	____
b. Record of training	_____	_____	____
*4. Names and experience record of employees: (Section 1.04.A.4.)			
a. Record of experience	_____	_____	____
b. Copy of successful completion record for required training.	_____	_____	____
*5. Current State License: (Section 1.04.A.5.)			
a. Maryland	_____	_____	_____
b. Virginia	_____	_____	_____
c. District of Columbia	_____	_____	_____
d. Other Jurisdiction	_____	_____	_____

B. Post-Award Asbestos Abatement Submittals: Items to be submitted after award, but prior to beginning work:

	REVIEWED	APPROVED	IN FILE
1. Plan of Action: (Section 1.04.B.1.)			
a. Work plan showing location and layout of decontamination areas	_____	_____	____
b. Notification of EPA (Section 1.04.B.3.)	_____	_____	____
c. Notification of Local jurisdiction (Section 1.04.B.4.) DC/VA/MD	_____	_____	____
d. Scheduling/sequencing of work	_____	_____	____
e. Interface of other trades in work schedule	_____	_____	____
f. Methods used to ensure safety of building occupants and visitors	_____	_____	____
>>>> Air to be monitored by GSA /Tenant /Contractor	_____	_____	____
g. Disposal of waste, location of site, and permit from Owner and regulatory authority (1.04.B.2.)	_____	_____	____
h. Type of HEPA ventilation system	_____	_____	____
i. How will contractor close off and ensure that there are no leaks in building's HVAC system in contractor's work area	_____	_____	____
j. Methods of removal to be utilized	_____	_____	____
k. GSA ASBESTOS CONTROL PERMIT (1.04.B.5.)	_____	_____	____
2. Certificates of Compliance: (Section 1.04.B.6.)			
a. HEPA Vacuums	_____	_____	____
b. HEPA Ventilation equipment	_____	_____	____
c. Respirators	_____	_____	____
d. Other information	_____	_____	____

3. Information on Encapsulants: (Section 1.04.B.7.)

Compliance with Specification EPA requirements		_____	_____ ____
USED AS ENCAPSULANT ___,	FLAMMABLE _____		
SPRAYBACK ___, OR	COMBUSTIBLE _____		
WETTING AGENT ___,	NONCOMBUSTIBLE _____		

4. Laboratory Qualification Information: (Section 1.04.B.8.)

a. Name and location of firm		_____	_____ ____
b. Proof of current accreditation		_____	_____ ____
c. Certification of Microscopist		_____	_____ ____

C. During-Work Asbestos Abatement Submittals: Items 1.04.C.1. through 1.04.C.2. below are to be submitted to the contracting officer or his designated representative as work progresses at the time specified:

	REVIEWED	APPROVED	IN FILE
1. Air Monitoring Results.(1.04.C.1.a.)	_____	_____	_____
2. Differential Air Pressure Readings. (Strip Charts) (1.04.1.b.)	_____	_____	_____
3. Work Area Inspections. (1.04.C.1.c.)	_____	_____	_____
4. Disposal Receipts. (1.04.C.2.a.) (NESHAPS Waste Shipment Records)	_____	_____	_____
a. Quantity of material listed. b. Receipt signed and dated.			
5. Transportation Vehicles(1.04.C.2.b.)	_____	_____	_____
a. Dedicated Asbestos Vehicle. b. Marked In Accordance With DOT and NESHAPS regulations.			
6. NESHAPS Waste Shipment Records.(1.04.C.2.c.)	_____	_____	_____

a. Quantity of material listed
b. Receipt dated
c. Receipt signed by authorized representative of landfill

D. Final Submittals: Items 1.04.D.1. and 1.04.D.2. below are to be submitted to the contracting officer's designated representative at the completion of work for each containment.

	REVIEWED	APPROVED	IN FILE
1. Daily Log (1.04.D.1.)	_____	_____	____
2. Removal and Reestablish Systems Certification. (1.04.D.2.)	_____	_____	____
a. Description of Materials Removed. (1.04.D.2.a.)	_____	_____	____
b. Final Inspection Completed. (1.04.D.2.b.)	_____	_____	____
c. Restoration of Systems. (1.04.D.2.c.)	_____	_____	____

E. GSA Asbestos Abatement Project Control and Close Out

	REVIEWED	APPROVED	IN FILE
a. COPY COMPLETED GSA ASBESTOS CONTROL PERMIT (1.04.B.5.)	_____	_____	____
b. Copy of EPA and Local Notifications	_____	_____	____
c. Copy of Project Specifications.	_____	_____	____
d. Independent Air Monitoring Report.	_____	_____	____

F. Notes: _____

_____

_____

_____

WPMOX: Air Monitoring Ordered.	_____	_____	____
WPMOX: Length of Job. (Scheduling)	_____	_____	____

END OF SECTION 020850 – ASBESTOS ABATEMENT PROCEDURES

SECTION 020900 - REMOVAL AND DISPOSAL OF LEAD-BASED PAINT

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

A. General: This section identifies the precautions and procedures required for lead contaminant control and lead waste disposal during the life of the contract. It applies to the removal, containment and disposal of lead containing paint, adhesives, residue and dust, scrap, and where applicable, soil.

1. Work Area: The project comprises work described elsewhere within the Cutts-Madison (Dolley Madison) House, the former Cosmos Club (currently occupied, in part, by US Court of Appeals offices), and Benjamin Ogle Tayloe (Tayloe) House Buildings at the intersection of Madison Place, NW and 1520 H Street, NW in Washington, DC.

B. The Contractor shall reference an existing Limited Hazardous Materials Survey Report dated March 11, 2022 prepared by Froehling and Robertson (F&R, project 59Z-0509), either included in this bid package or available upon request. The F&R survey documents the following additional instances of Lead-Based Paint (LBP) which may be subject to impact during the project.

Reading Number	Component	Substrate	Side	Color	Room	Floor
Dolley Madison House						
58	Window Well	Wood	North	White	Exterior	First
62	Window Casing	Wood	North	White	Exterior	First
63	Window Sash (narrow unit)	Wood	North end, West Face	White	Exterior	First
Cosmos Club Building						
7	Wall above chair rail	Plaster	North (perimeter wall)	Off-White	0511	Fifth
8	Wall above chair rail	Plaster	North (perimeter wall)	Off-White	0511	Fifth
15	Window Mullion	Wood	West	Off-White	0511	Fifth
16	Window Sash – narrow side	Wood	West	Off-White	0511	Fifth
18	Window Sash – narrow side	Wood	West	Off-White	0511	Fifth
21	Window Casing	Wood	West	Off-White	0509	Fifth
22	Window Mullion	Wood	West	Off-White	0509	Fifth
23	Window Sash	Wood	West	Off-White	0509	Fifth
36	Framing I Beam	Metal	East	Orange	0503	Fifth
41	Window Sash – narrow side	Wood	West	Off-White	0511 Exterior	Fifth
43	Window Casing	Wood	West	Off-White	0511 Exterior	Fifth
44	Window Well	Wood	West	Off-White	0511 Exterior	Fifth

Reading Number	Component	Substrate	Side	Color	Room	Floor
55	Window Sash	Wood	West	White	Exterior	First
56	Window Casing	Wood	West	White	Exterior	First
57	Window Well	Wood	West	White	Exterior	First
Tayloe House Building						
45	Window Sash	Wood	East	Off-White	Exterior	First
46	Window Casing	Wood	East	Off-White	Exterior	First
47	Window Well	Wood	East	Off-White	Exterior	First
49	Wall	Brick	East	Yellow	Exterior	First
50	Wall	Brick	West	Yellow	Exterior	First
51	Window Shutter	Wood	West	Green	Exterior	First
52	Window Well	Wood	West	White	Exterior	First
53	Window Sash	Wood	West	White	Exterior	First
54	Window Casing	Wood	West	White	Exterior	First

Based on the understanding of the scope at the time of the inspection, LBP coated materials in the Dolley Madison House or the Tayloe House Buildings will be identified by this project.

C. In situations where LBP surfaces will be disturbed, but not demolished (i.e., drilling, cutting, and scraping), utilize wet methods, HEPA vacuums and/or tools equipped with HEPA filtered vacuum collection systems.

Where LBP coated components will be subject to renovation efforts, contractor work shall include the following:

- Repair substrate where necessary, remove loose paint, prepare surface, and apply primer and top-coats in accordance with HUD Chapter 11.

- For window units which will remain in place and which will remain functional:

    - Rehabilitate: Remove interior window stops and discard or retain for reuse. Remove UPPER AND LOWER sash and strip paint from all surface areas of lower sash that come into contact with the window jamb, stops, parting beads, and sill through the normal operation of window and from window slides (jamb) with an approved chemical stripper, approved heat gun, or other method in accordance with HUD Regulation 24 CFR Part 35 Sec. 35.1330. Similarly strip any surfaces of upper sash (and stops, if retained for reuse) that may experience friction with lower sash during operation. Wet scrape loose paint from remaining areas of upper and lower sash (non-friction surfaces) and all window components, interior and exterior. Remove all loose glazing compound from window, replace missing, cracked, or broken glass panes, and reapply glazing compound as needed.

      And

      Reinstall: HEPA vacuum any paint chips, dust and debris from window and sashes before reinstalling. Prime all sides of upper and lower sashes and remaining parts of window inside and out. Seal upper sash to jamb with latex caulk. Reinstall lower sash with new sash cords (if needed) and new (ore reused) window stops, shaping sash to reduce friction with jambs, if sash still does not move freely in slides. Paint entire window inside and out with two coats

latex paint, ensuring that operation does not result in friction or impact between surfaces coated with LBP. Install new sash lock.

D. Related Work Specified in Other Sections: Section 015460, "Safety and Health," applies to all work covered by this section.

E. Note that other building materials were tested and found to contain detectable lead contents that are less than 1.0 milligrams per square centimeter (mg/cm2).

1.2 QUALITY ASSURANCE:

A. Contractor Qualifications: The Contractor shall be a firm of established reputation (or if newly organized, whose personnel have previously established a reputation in the same field), which is regularly engaged in, and which maintains a regular force of skilled employees, and shall have performed this work on previous projects.

1. Contractors performing lead abatement work for GSA in the District of Columbia may be required to be trained and licensed to do lead work in the District of Columbia. The contractor shall comply with the licensing requirements of D.C. Law 11-221 which have been Chapter 33 REGULATION OF LEAD-BASED PAINT ACTIVITIES of Title 20 of the DC Municipal Regulations as well as Chapter 2A. Subchapter I. Lead-hazard Prevention and Elimination of the Title 8 of the Code of DC. The contractor shall ensure compliance with applicable portions of these regulations.

2. Contractors performing on Federal contracts in the District of Columbia are not required to submit a lead project fee to the District of Columbia, but should submit project notification to the Mayor as indicated in D.C. Law 11-221.

3. Contractors performing Federal contracts in the State of Maryland or the Commonwealth of Virginia shall comply with the licensing requirements of the appropriate State Government.

1.3 SUBMITTALS: A submittal punch list (to be completed and submitted by the Contractor with the qualification package) is provided as Appendix A to this Specification Section.

A The following submittals are required to be approved by the Contracting Officer (CO) prior to bid award:

1. Provide a valid copy of the State or local Lead Paint Abatement License.

2. Three Projects: Name and location of at least 3 lead abatement projects performed by the Contractor, including names and telephone number of contract representatives.

3. Three Project Reports: Copy of daily log and air monitoring reports (including final wipe tests where applicable) of the last 3 abatement projects submitted above.

4. Names and qualifications (experience and training) of supervisor and personnel who will be working on-site.

5. Evidence of current training in LBP abatement by an EPA accredited State program, or equivalent. Evidence of successful completion of LBP Worker and Competent Person training, describing the training provider, subject matter, duration, and dates of the course.

6. Name and qualification of analytical laboratory to be used to analyze personal exposure samples ant to profile wastes.

7. Names and qualifications of each contractor that will be transporting, storing, treating, recycling, and/or disposing of the wastes. Include the facility location, phone number, and a 24-hour point of contact.

B. The following submittals are required to be approved after award, but prior to beginning work:

1. Detailed site-specific work plan to indicate the means for demarcating the work area and providing for decontamination by workers, protecting the occupants, general public and other trades, and adjacent building surfaces and furnishings from contamination.

2. Methods and materials for lead-based paint abatement and/or the engineering controls to be used when disturbing lead-based paint surfaces (enclosures, dust control and collection mechanisms, etc.). A safety data sheet (SDS) shall be provided for all chemical removers proposed for use.

3. Work plan for waste containment, removal, and disposal. Wastes shall be cleaned-up and containerized daily.

4. GSA Lead Control Permit: Submit a GSA - National Capital Region Lead Control Permit with lines one through nine completed. Start and Finish dates may be left blank until a project schedule is determined. A copy is attached at Page 020900-8.

C. The following submittals are required to be submitted to the CO or designated representative at the completion of work:

1. All Preconstruction LBP testing results.

2. Waste disposal receipts (Manifests and Certificates of Destruction).

3. All personal exposure and environmental sample results (upon request).

1.4 REFERENCES:

The Contractor is responsible for ensuring compliance with all applicable Federal, State, and local regulations including:

A. Code of Federal Regulations (CFR):

1. Occupational Safety and Health Act (OSHA):
29 CFR 1910, OSHA General Industry Standard
29 CFR 1910.1025, OSHA General Industry for Lead
29 CFR 1926, OSHA Construction Standard
29 CFR 1926.62, OSHA Lead in Construction with Maryland Amendments

2. Environmental Protection Agency (EPA):
40 CFR 260-299, EPA Resource Conservation and Recovery Act
40 CFR 300-399, EPA Comprehensive Environmental Response Compensation & Liability Act
40 CFR 745, EPA Toxic Substances Control Act; Lead-Based Paint Poisoning Prevention

3. Department of Transportation (DOT):
49 CFR 171-180, DOT Hazardous Material Regulations

B. Other Recognized Standards:

1. American National Standards Institute (ANSI) Publication:
Z9.2-79, Fundamentals Governing Design and Operation of Local Exhaust Systems

2. U.S. Department of Housing and Urban Development (HUD)
Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing

C. State and Local Regulations:

1. Applicable state and local regulations shall apply. However, a District of Columbia Permit Fee is not required of the Federal Government.

PART 2 - PRODUCTS

2.1 PAINT AND ADHESIVE REMOVER

A. Products containing Methylene Chloride are prohibited. Liquid paint/adhesive removers shall be a type recommended by the manufacturer for removing paint or adhesive from each substrate without causing undue damage to the substrate. Materials used are to be of limited toxicity, volatility, and flammability. A safety data sheet (SDS) and other appropriate product information for all chemicals proposed for use shall be submitted to the CO for approval (as required by 1.3.2 above).

2.2 VACUUMS

A. All vacuums used during paint and adhesive removal, disturbance, and clean up shall be equipped with HEPA filters conforming to current ANSI Z9.2 guidance.

2.3 RESPIRATORS AND PROTECTIVE CLOTHING

A. At a minimum, workers should wear disposable coveralls including shoe covering and respiratory protection appropriate for the hazard. Use special precautions if chemical strippers will be used (appropriate clothing, gloves, and face shields per SDS recommendations). The contractor shall containerize disposable coveralls as abatement waste on a daily basis. All workers shall be trained on the hazards of lead and proper personal hygiene, such as no eating/drinking/smoking in the work area, and washing when leaving the work area.

PART 3 - EXECUTION

3.1 GENERAL

A. For all regulated areas, and particularly during renovation activities in occupied buildings, precautions (i.e., air-tight barriers and signage) must be taken to protect building occupants and unaffected adjacent areas, surfaces, furnishings and stored items from exposure to lead-contaminated dust. A certified “Competent Person” (e.g., a Lead Abatement Supervisor) shall be on-site during all phases of work.

B. All work areas (interior and exterior) are to be pre-cleaned of dust, debris, and paint chip accumulation prior to establishing barriers.

C. Interior work resulting in minor impact to lead painted surfaces, using controlled work practices, and other activities that control the generation of lead dust shall be performed over a 6-mil. polyethylene drop cloth to protect adjacent/horizontal surfaces from the accumulation of lead dust and debris.

D. Aggressive demolition and disturbance activities of interior surfaces shall be conducted within a full-enclosure. Where uncontrolled dust will be generated, a negative pressure enclosure (NPE) exhausted via high efficiency particulate air (HEPA) filtration will be implemented.

E. Exterior demolition and disturbance shall be completed over 6-mil. polyethylene drop cloths that shall be containerized on a daily basis. For elevated work areas, additional precautions may be required to prevent the dispersion of lead dust and debris.

F. For exterior demolition and paint disturbance at windows, an airtight polyethylene barrier shall be placed over the interior side of window openings and wall penetrations, mechanical systems intakes and outlets, etc.

G. Wet methods using a TSP solution, a high-detergent cleanser or a product of proven equivalent effectiveness for cleaning and/or controlling lead dust shall be implemented for all lead paint disturbances unless proven infeasible. Alternative control methods and products must be submitted for approval prior to implementation.

3.2 PREPARATION

A. Before beginning lead paint removal in any area, pre-clean and cover all surfaces, furnishings and stored items which may accumulate dust and paint chips with 6-mil. plastic sheeting taped securely in place. Barriers shall be adequate to ensure that dust, debris, and fumes are contained within the work area and do not contaminate building systems or adjacent surfaces.

B. OSHA warning signs shall be placed at the entrance to LBP work control areas.

C. For exterior or open area work, provide construction tape barriers at an adequate distance around the work area for pedestrians to follow to alternate pathways.

D. Hallways, exits and stairwells and similar routes of egress shall not be blocked without the permission of the Contracting Officer.

E. Prior to initiating work, obtain from the building manager a secure waste storage area. Any waste storage area shall be locked and protected with 6-mil. poly sheeting on floors and partially up walls.

3.3 WORK PROCEDURES

A. The method of lead-based paint abatement removal chosen by the contractor must minimize the generation of lead dust. The following methods of paint removal will **not** be permitted: open-flame burning, dry scraping, uncontrolled blasting, uncontained hydroblasting, use of a volatile stripper, and machine sanding/grinding/cutting without HEPA attachments.

B. Coordinate work of all trades to ensure that their work is performed in accordance with applicable regulations and to ensure the integrity or isolation of the regulated area.

C. The Contractor is responsible for personal air monitoring under OSHA regulations and to document and control worker exposure. OSHA regulations include provisions for exposure monitoring, engineering and work practice controls, training, medical monitoring, record keeping, and job removal. The Contractors' "Competent Person" shall evaluate the data to determine the effectiveness of engineering controls, the adequacy of personal protective equipment, and to determine if proper work practices are being employed. The CO shall be notified if any air monitoring results equal or exceed 30 micrograms per cubic meter of air (ug/m^3).

D. In obtaining a negative exposure assessment (NEA), an employer may not project another employers' results to their personnel. Additional exposure monitoring is required when there is a change in equipment, processes, controls, or when personnel of varying training and/or experience are engaged in the process.

E. Government representatives may perform environmental testing prior to beginning work to demonstrate that there is no appreciable elevation of airborne or settled lead outside of the work area. Sampling may also be performed during the initial phase of removal to assure lead levels remain under the OSHA action level of 30 ug/m^3.

F. Upon exiting the removal area, personnel shall decontaminate by vacuuming gross debris from disposable clothing and thoroughly washing all exposed body surfaces. The contractor is responsible for supplying adequate washing facilities for their employees. Workers shall not leave the designated work area while wearing protective clothing.

3.4 CLEANUP AND DISPOSAL

A. Housekeeping: Surfaces in the LBP control area shall be maintained free of accumulations of paint chips and dust. The accumulation and spread of dust and debris shall be restricted. Dry sweeping or compressed air shall not be used for cleanup.

B. The General Contractor is responsible for ensuring that normal shop vacuums, or other vacuums without HEPA filtration, are not utilized in areas where an accumulation of lead dust or paint chips can reasonably be anticipated.

C. At the end of each work period, HEPA vacuum and collect all debris to maintain surfaces free of paint chips and dust accumulation. Seal debris in airtight containers and remove from work site. Materials being temporarily stored at the site must be transported and maintained in closed, airtight containers (drums) meeting the DOT requirements.

D. Final cleaning/approval: HEPA vacuum and damp clean areas and surfaces with an anionic solution such as trisodium phosphate (TSP), vinegar, or high detergent solutions. The area shall be visually clean of all debris and dust. If the CO or a designated representative (i.e., an IH firm) finds the area unacceptable, the contractor shall re-clean until acceptance is gained.

E. In accordance with 40 CFR 745, child-occupied facilities and target housing must follow the final clearance wipe testing protocols established therein. In all instances, the CO and/or a designated representative will make the determination of individual or composite sampling.

F. For facilities and/or projects not included under paragraph 3.3.E, the CO and/or a designated representative will determine if lead dust wipe samples will be collected to establish acceptance after final cleaning. When final wipe testing is utilized, the clearance criteria shall be as follows:

Surface	**Clearance Criteria**
Floors	10 micrograms lead per square foot
Window Sills	100 micrograms lead per square foot
Exterior and “Other” Surfaces	800 micrograms lead per square foot
Soil	1,200 micrograms lead per gram
Soil (Children’s Play Area)	400 micrograms lead per gram

G. Handling and disposal of all waste and debris is to be in compliance with OSHA, EPA, DOT, applicable state, and all other applicable regulations. The contractor is responsible for providing a waste profile and quantity report, and for providing TCLP (toxic characteristic leaching procedure) sampling to determine if the waste is hazardous.

H. A copy of each manifest is to be provided to the CO and designated facility contact at the time the shipment is made. Within 30 days of the time the Hazardous Waste Treatment Storage and Disposal Facility (TSDF) receives the waste a completed copy of the manifest is to be provided to the CO and facility contact. Certificates of Destruction or Disposal (CD) shall be provided to the same parties within 90 days of delivery of waste to the TSDF.

PERMIT NUMBER_____

GSA NATIONAL CAPITAL REGION LEAD CONTROL PERMIT

(POST SIGNED COPY AT JOB SITE)

(1) BUILDING NAME:_____ GSA BUILDING NUMBER:_____
BUILDING ADDRESS:_____ CITY, STATE, ZIP:_____

A. PROVIDE A BRIEF DESCRIPTION OF WORK (e.g., Indoor/Outdoor, Lead components - windows, doors, walls, etc., areas of work – attach drawings if available) _____

B. SQUARE FEET OF PAINT OR # OF COMPONENTS TO BE ABATED:_____

C. MEANS (DEMOLISH/DISPOSAL, CHEMICAL STRIPPING, ETC.):_____

D. ENVIRONMENTAL CONTROL METHODS*? HEPA VACCUMS_____ ENCLOSURE_____

6-MIL. DROP CLOTH_____ WARNING SIGNS_____ NEGATIVE PRESSURE_____

OTHER_____

* *POWER SANDING IS PROHIBITED UNLESS WORK IS CONDUCTED WITHIN A NEGATIVE PRESSURE CONTAINMENT AND WORKERS UTILIZE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT*

E. PERSONAL PROTECTIVE EQUIPMENT_____

F. WORKER CERTIFICATIONS ON-SITE? _____ CONTRACTOR'S LICENSE EXP.? ___/___/___

G. SDS SHEETS ON-SITE (List Chemicals)? _____

(2) WHEN IS THIS JOB TO START?_____ END?_____

(3) SCHEDULED WORKING HOURS OF ABATEMENT WORKERS:_____

(4) CONTACT REGARDING THE SPECIFICATION, NAME:_____
CONTRACT NUMBER:_____ PHONE:_____

(5) ESTIMATED OR ACTUAL COST OF THIS ABATEMENT $_____

(6) CONTRACTORS:

GENERAL:_____	LEAD BASED PAINT:_____
ADDRESS:_____	ADDRESS:_____
_____	_____
PHONE:_____	PHONE:_____
SUPERVISOR:_____	SUPERVISOR:_____

(7) DEBRIS HAULED BY:_____ TO:_____

ADDRESS:_____	ADDRESS:_____
PHONE:_____	PHONE:_____

(8)

	CONTRACTOR's MONITORING FIRM	GSA's MONITORING FIRM
NAME OF FIRM:	_____	_____
PERSON TO CONTACT:	_____	_____
PHONE NUMBER:	_____	_____

(9) TENANT AGENCY:_____ CONTACT:_____ PHONE #: _____

(10) SDT/SAFETY REPRESENTATIVE ACKNOWLEDGEMENT:
SIGNATURE:_____ DATE:_____

(11) GSA SAFETY & ENVIRONMENTAL MANAGEMENT BRANCH REVIEW (WPYG):
SIGNATURE:_____ DATE:_____

(12) GSA SAFETY & ENVIRONMENTAL MANAGEMENT BRANCH CONCURRENCE (WPYG):

APPROVAL SIGNATURE:_____ DATE:_____

RETURN TO: GSA Safety and Environmental (WPYG)
ROB – ROOM 2080
WASHINGTON, DC 20407

TESTING: WIPES _____ AIRS _____ SOIL _____ WASTE _____

DEMO_____
RENO_____
MD___DC___VA___

FOR INFORMATION **PHONE**: (202) 708-5236 **FAX**: (202) 708-6618

SHIPPING MANIFEST

REPORTABLE QUANTITY, HAZARDOUS SUBSTANCE, SOLID, N.O.S.
ORM-E NA 9188

Total Quantity of Hazardous Substance:

_____ Bags
_____ Drums
_____ Cubic Yards
_____ _____(Other Unit)

Waste Generator: _____ Building Name: _____

GSA BLDG #: _____ Address: _____

_____

GSA Contract #: _____ _____

Generation Site: Name:_____

Phone #:_____ Address:_____

_____

Waste Transporter: Name:_____

Phone #:_____ Address:_____

_____

Disposal Facility: Landfill Name:_____

Phone #:_____ Address:_____

_____

NOTE: THIS FORM SHALL BE SIGNED BY EACH PARTY AS CONTROL OF THE HAZARDOUS SUBSTANCE IS RELINQUISHED TO THE NEXT PARTY.

	RECEIVED FROM Name, Representing	DATE	RECEIVED BY Name, Representing	DATE
1.				
2.				
3.				
4.				
5.				

APPENDIX A GSA LEAD PAINT PROJECT CONTROL CHECKLIST

020900 Lead Abatement Contractor Submittal Punch List

PROJECT_____
PROJECT NUMBER_____
DATE REVIEWED_____
REVIEWER_____

Refinishing (No Disposal) _____ Component Removal/Disposal _____ Paint Stripping _____

A. Pre-Award Submittals**:** Items Submitted After Bid Receipt But Prior to Award:

Lead Contractor Qualification Information

	REVIEWED	APPROVED	IN FILE
*1. Record of firm's experience, including State/local license, names and addresses of purchasers of service, location of work, and dates of performance	_____	_____	_____
*2. Copy of daily log, air monitoring reports and final wipe results for last three jobs	_____	_____	_____
*3. Name of Superintendent:			
a. Record of experience	_____	_____	_____
b. Record of training	_____	_____	_____
*4. Names and experience record of employees:			
a. Record of experience	_____	_____	_____
b. Copy of successful completion record for required training.	_____	_____	_____
*5. Current State License:			
a. Maryland	_____	_____	_____
b. Virginia	_____	_____	_____
c. District of Columbia	_____	_____	_____
d. Other Jurisdiction	_____	_____	_____

B. Post-Award Lead Abatement Submittals: Items to be submitted after award, but prior to start of work:

	REVIEWED	APPROVED	IN FILE
1. Plan of Action:			
a. Work plan showing location and layout of work/decontamination areas	_____	_____	____
b. Notification of Local jurisdiction DC / VA / MD	_____	_____	____
c. Scheduling/sequencing of work	_____	_____	____
d. Interface of other trades in work schedule	_____	_____	____
e. Methods used to ensure safety of building occupants and visitors	_____	_____	____
Personals to be collected by: GSA /Tenant /Contractor	_____	_____	____
Environmentals to be collected by: GSA /Tenant /Contractor	_____	_____	____
Final wipes to be collected by: GSA /Tenant /Contractor	_____	_____	____
f. Disposal of waste, location of site, and permit from Owner and regulatory authority	_____	_____	____
g. Type of HEPA ventilation system	_____	_____	____
h. How will contractor close off and ensure that there are no leaks in building's HVAC system in contractor's work area	_____	_____	____
i. Methods of removal to be utilized	_____	_____	____
j. GSA LEAD CONTROL PERMIT	_____	_____	____
2. Certificates of Compliance:			
a. HEPA Vacuums	_____	_____	____
b. HEPA Ventilation equipment	_____	_____	____
c. Respirators	_____	_____	____
d. Other information	_____	_____	____

	REVIEWED	APPROVED	IN FILE
3. Contractor's selected laboratory information:			
a. Name and location of firm	_____	_____	____
b. Proof of current accreditation	_____	_____	____
c. Certification of Analysts	_____	_____	____

C. During-Work Lead Abatement Submittals: Items below are to be submitted to the contracting officer or his designated representative as work progresses and at the time specified:

	REVIEWED	APPROVED	IN FILE
1. Air Monitoring Results	_____	_____	_____
Waste Characterization Results	_____	_____	_____
2. Differential Air Pressure Readings. (Strip Charts)	_____	_____	_____
3. Work Area Inspections	_____	_____	_____
4. Disposal Receipts (NESHAPS Waste Shipment Records)	_____	_____	_____
a. Quantity of material listed b. Receipt signed and dated			
5. Transportation Vehicles	_____	_____	_____
a. Dedicated Waste Storage Vehicle b. Marked In Accordance With DOT and NESHAPS regulations			
6. NESHAPS Waste Shipment Records	_____	_____	_____
a. Quantity of material listed b. Receipt dated c. Receipt signed by authorized representative of TSDF			

D. Final Submittals: Items below are to be submitted to the contracting officer's designated representative at the completion of work for each work area.

	REVIEWED	APPROVED	IN FILE
1. Daily Log	_____	_____	____
2. Removal and Reestablish Systems Certification	_____	_____	____
a. Description of Materials Removed	_____	_____	____
b. Final Inspection Completed	_____	_____	____
c. Restoration of Systems	_____	_____	____

E. GSA Lead Paint Abatement Project Control and Close Out

	REVIEWED	APPROVED	IN FILE
a. COPY COMPLETED GSA LEAD CONTROL PERMIT	_____	_____	____
b. Copy of EPA and Local Notifications	_____	_____	____
c. Copy of Project Specifications	_____	_____	____
d. Independent Testing Reports	_____	_____	____

F. **Notes**: _____

_____

_____

_____

WPYG: Air Monitoring Ordered.	_____	_____	____
WPYG: Anticipated Duration of Job. (Scheduling)	_____	_____	____

END OF SECTION 020900 – REMOVAL AND DISPOSAL OF LEAD BASED PAINT

SECTION 02 2000 – PHOTOGRAPHS OF EXISTING CONDITIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

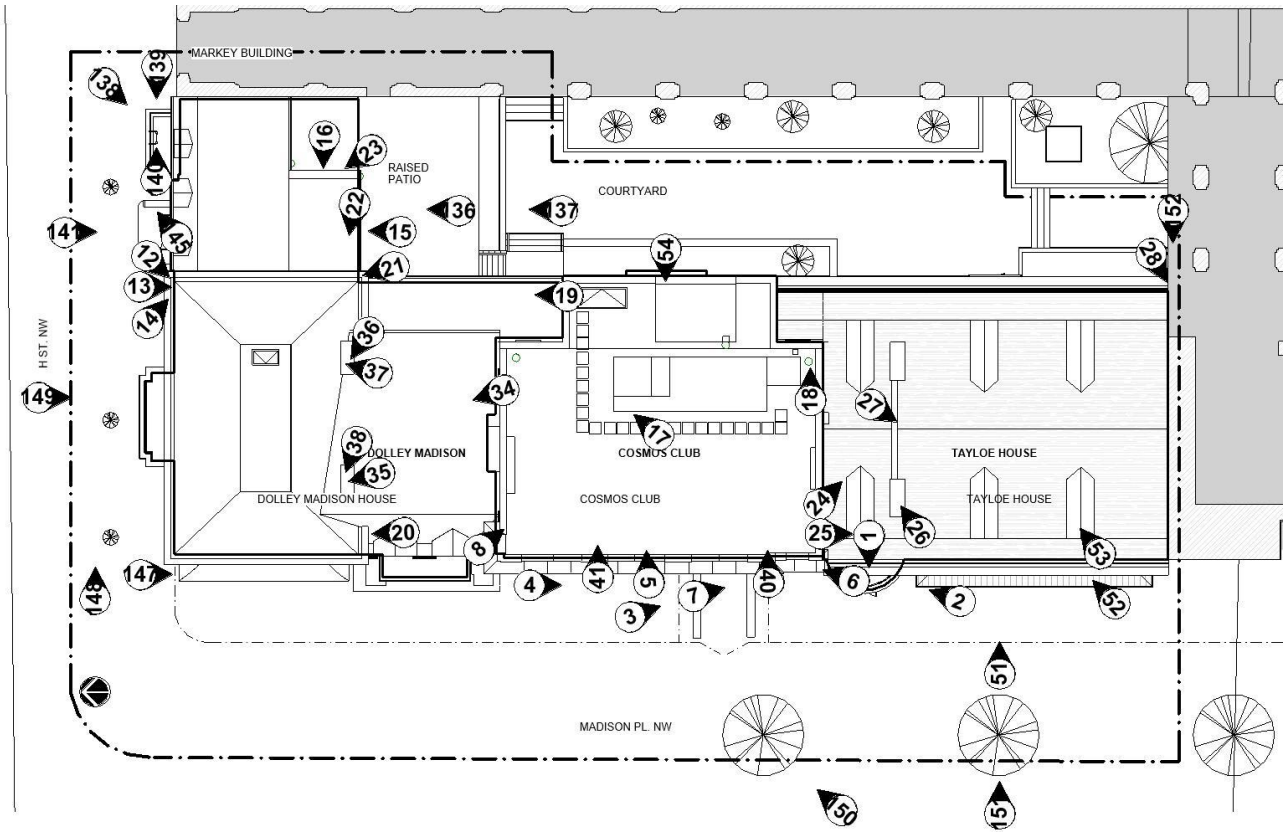
A. This Section includes the following:

1. Photographs of existing conditions

a. The following photographs were taken between 2021 and 2023. They show typical and special conditions at those times. Field verify locations of all objects and structures.
b. Photographs supplement the drawings in showing the nature and extent of existing conditions and describing the work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)



Overall Site Plan with Figure Locations

Figure 13 – Madison North Wall Upper-Level architrave p.c. 2022



Figure 14 – Madison North Wall Directly Beneath Cornice architrave p.c. 2022

Expected brick conditions after stucco removed on E and S walls



Figure 15 – Discoloration on Madison South Wall architrave p.c. 2024



Figure 16 – Discoloration on Madison East Wall architrave p.c. 2024

Madison COURTYARD



Figure 19 - Madison East Wing, Slate Roof, and Courtyard Elevations with Cement Plaster Stucco architrave p.c. 2023

~~**Dismantle broken shingles, provide and install new slate shingles where shingles are missing or have been damaged**~~



Figure 20 - Madison, West Elevation, Slate Roof and Built-In Gutter architrave 2023

~~**Dismantle broken shingles, provide and install new slate shingles where shingles are missing or have been damaged, provide lead coated copper cricket to eliminate ponding water in gutter**~~



Figure 21 – Madison East Built-in Gutter and Flashing architrave p.c. 2024

Remove lead-coated copper, repair wood framing, reinstall zinc-tinned copper gutter and flashing



Figure 22 – Madison East Cornice and Gutter architrave p.c. 2024



Figure 23 – Madison Coping architrave p.c. 2024

Remove coping along top of wall, provide tern coated stainless steel coping

p.c. 2023



Figure 29 – Chipping Paint on Madison Sill architrave p.c. 2023

Typical condition of exterior sills and jambs. sash was installed in 1997-2000 project.
ACM is in glazing putty, LBP is in painted surfaces



Figure 30 – Chipping Paint on Madison Sill architrave p.c. 2023

Typical condition of exterior sills and jambs. Sash was installed in 1997-2000 project.
ACM is in glazing putty, LBP is in painted surfaces



Madison House, 2022:
Example of north and west façade window shutters.

Figure 33 – Typical Madison Window Shutters architrave p.c. 2023

Typical shutters in good condition



Figure 34 – Madison Chimneys architrave p.c. 2022

Remove existing stucco and chimney cap, repoint brick joints, restucco, replace cap



Figure 35 – Madison Chimneys architrave p.c. 2023



Figure 36 – Madison Chimneys architrave p.c. 2024

Remove paint to stucco layer, repaint, remove existing chimney cap and install new



Figure 37 – Madison East Chimney architrave p.c. 2022

~~**Remove existing stucco and chimney cap, repoint brick joints, restucco, provide cap to match size and location of existing**~~



Figure 38 – Madison West Chimney architrave p.c. 2022

~~**Remove existing stucco and chimney cap, repoint brick joints, restucco, provide cap to match size and location of existing**~~

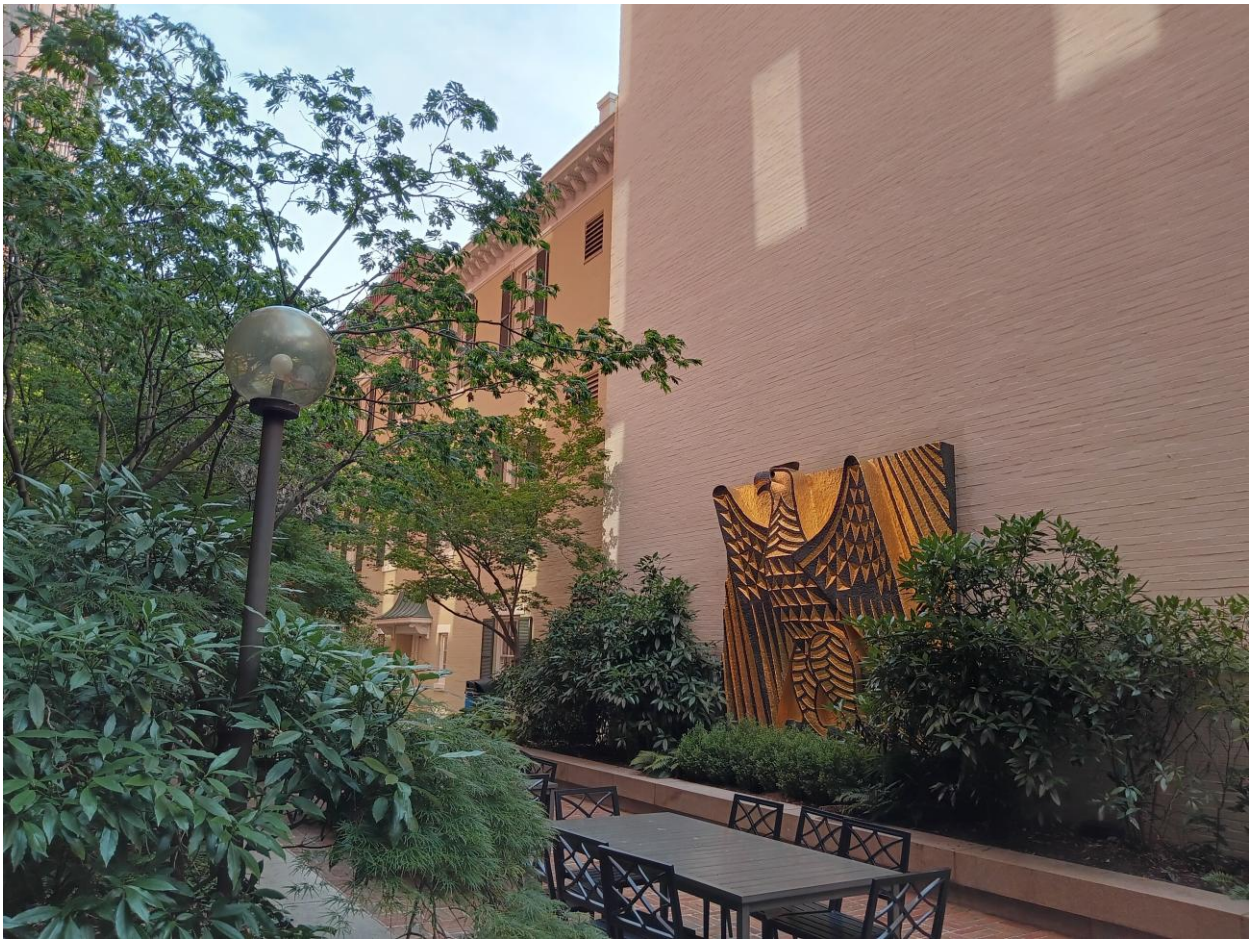


Figure 54 - Provide special protection for eagle art in courtyard architrave p.c. 2023

WINDOW PHOTOGRAPHY – DOLLEY MADISON HOUSE



Figure 55 - Exterior View of Window Type MA



Figure 56 - Interior View of Window Type MA



Figure 57 - Exterior View of Window Type MB



Figure 58 - Interior View of Window Type MB



Figure 59 - Exterior View of Window Type MC



Figure 60 - Exterior View of Window Type MD



Figure 61 - Interior View of Window Type MD



Figure 62 - Exterior View of Window Type ME



Figure 63 - Interior View of Window Type ME



Figure 64 - Exterior View of Window Type MF



Figure 65 - Interior View of Window Type MF



Figure 66 - Exterior View of Window Type MG

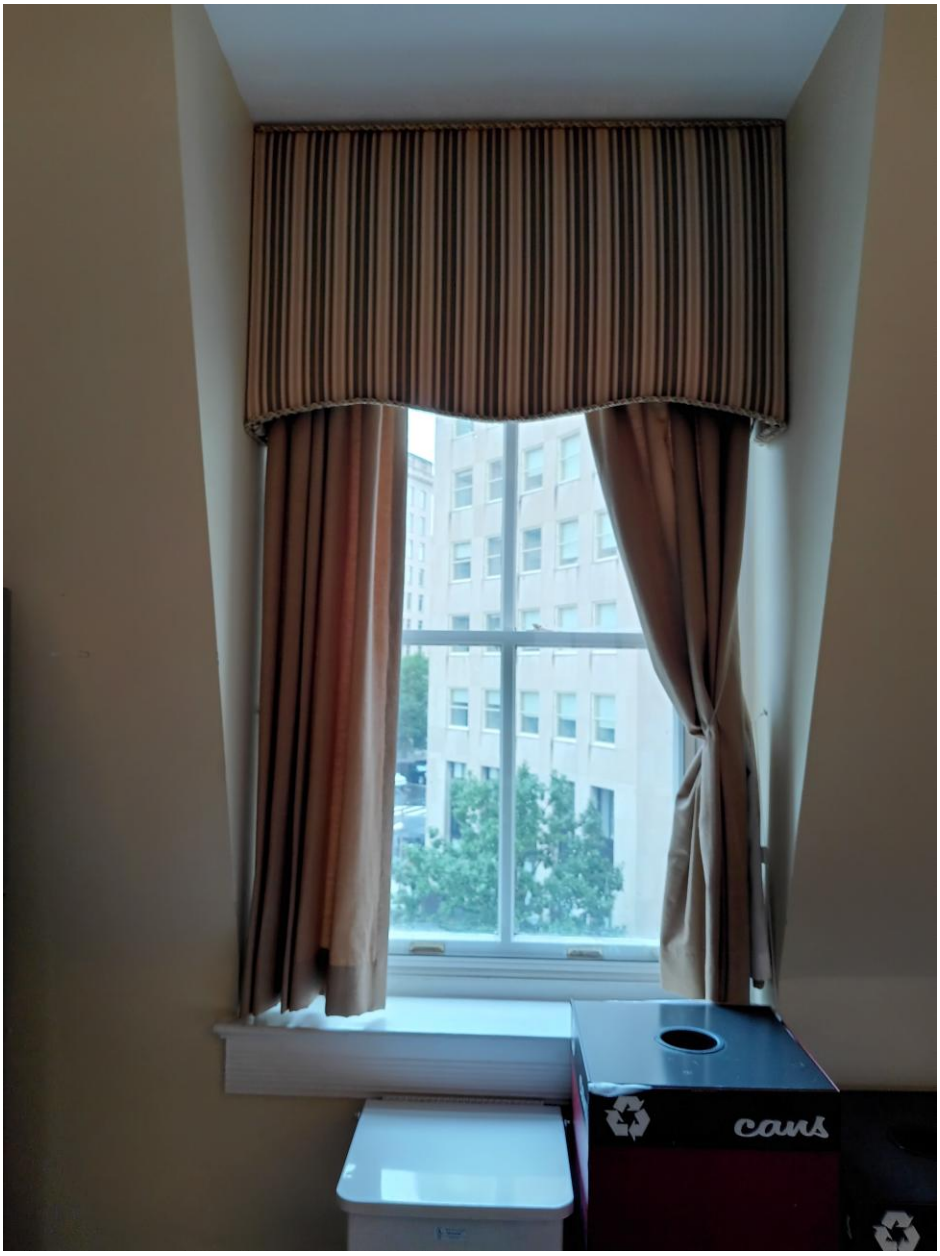


Figure 67 - Interior View of Window Type MG



Figure 68 - Exterior View of Window Type MH



Figure 69 - Interior View of Window Type MH



Figure 70 - Exterior View of Window Type MJ



Figure 71 - Interior View of Window Type MJ



Figure 72 - Exterior View of Window MK

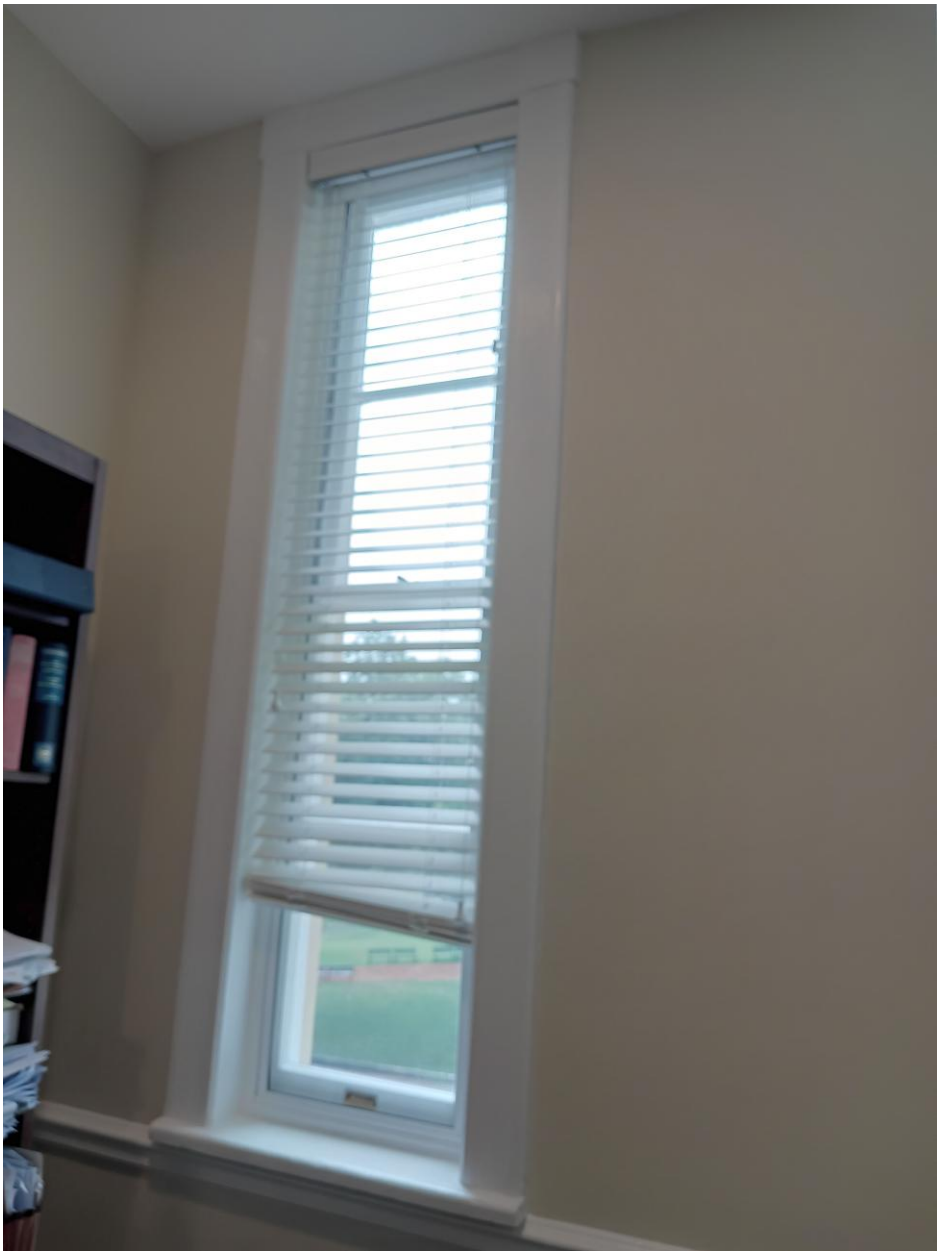


Figure 73 - Interior View of Window MK



Figure 74 - Exterior View of Window Type ML



Figure 75 - Exterior View of Window Type MM



Figure 76 - Interior View of Window Type MM



Figure 77 - Exterior View of Window Type MN



Figure 78 - Interior View of Window Type MN



Figure 79 - Exterior View of Window Type MO



Figure 80 - Exterior View of Window Type MP



Figure 81 - Interior View of Window Type MP



Figure 82 - Exterior View of Window Type MQ



Figure 83 - Interior View of Window Type MQ



Figure 84 - Exterior View of Window Type MR



Figure 85 - Interior View of Window Type MR



Figure 86 - Exterior View of Window Type MS



Figure 87 - Interior View of Window Type MS



Figure 88 - Exterior View of Window Type MT



Figure 89 - Interior View of Window Type MT

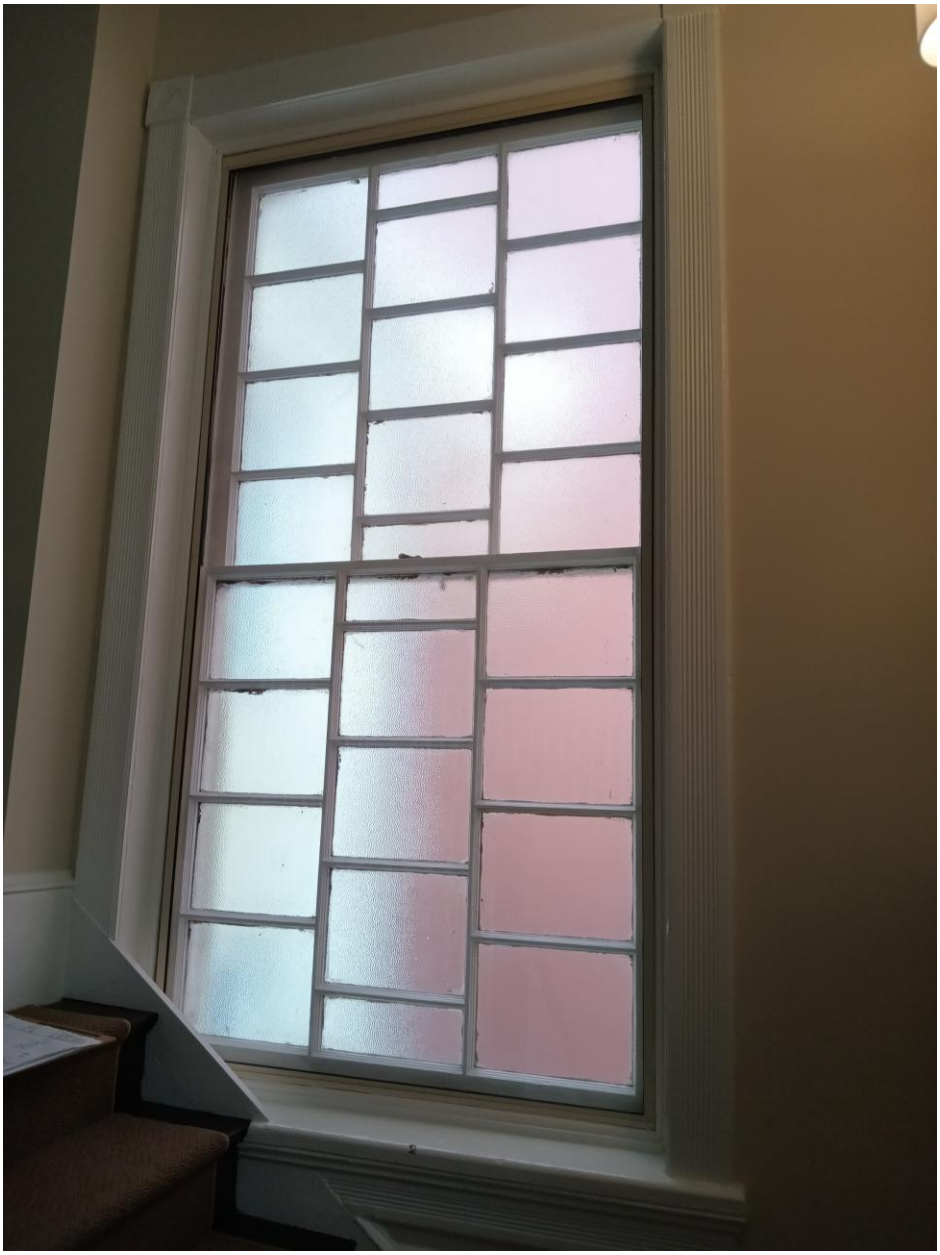


Figure 90 - Interior View of Window Type MV



Figure 91 - Interior View of Window Type MW



Figure 92 - Exterior View of Window Type MX



Figure 93 - Interior View of Window Type MX



Figure 94 - Exterior View of Window Type MY



Figure 95 - Interior View of Window Type MY



Figure 96 - Exterior View of Window Type MZ

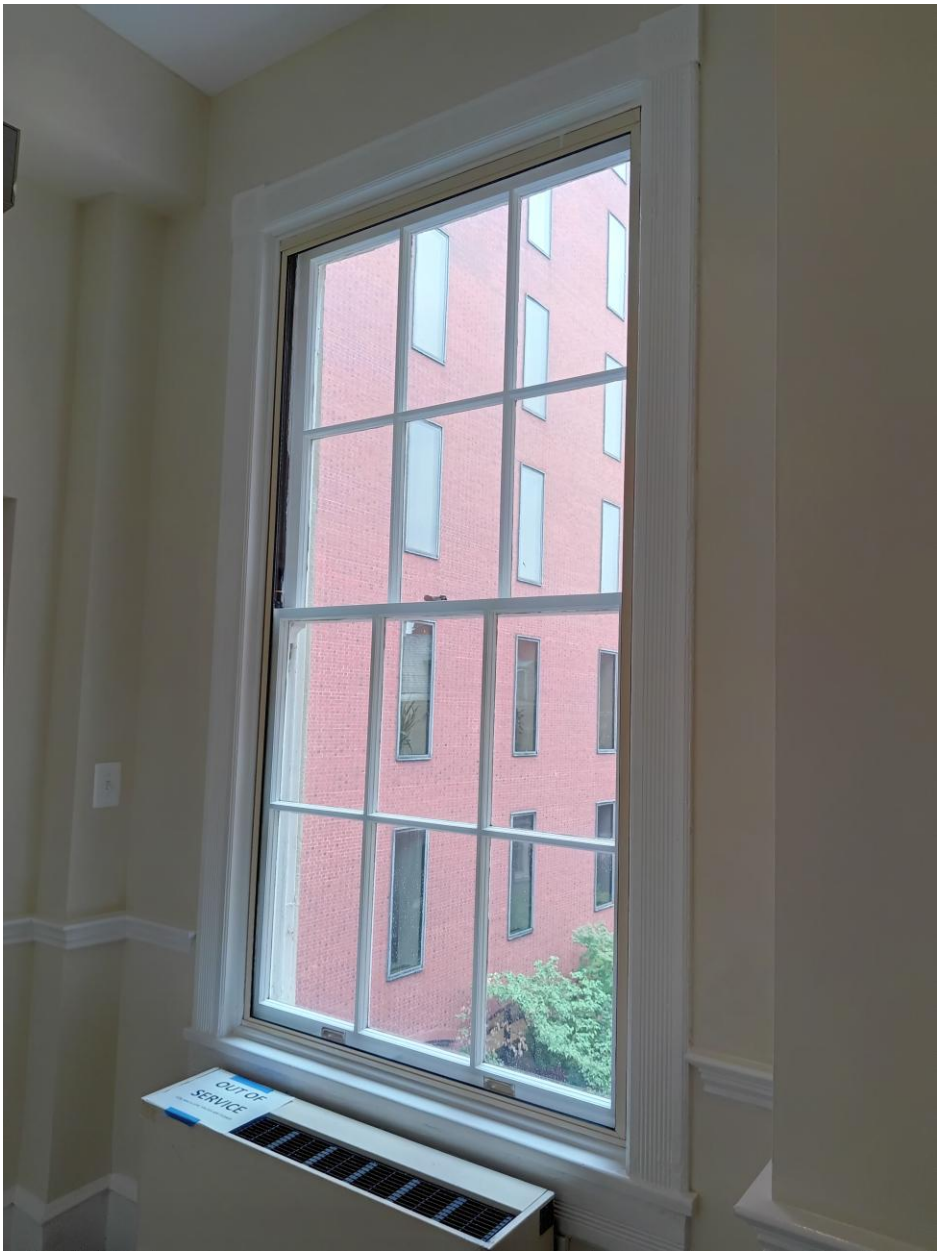


Figure 97 - Interior View of Window Type MZ



Figure 130 - Exterior View of Window Type TJ



Figure 136 – Mural on South Elevation of Dolley Madison

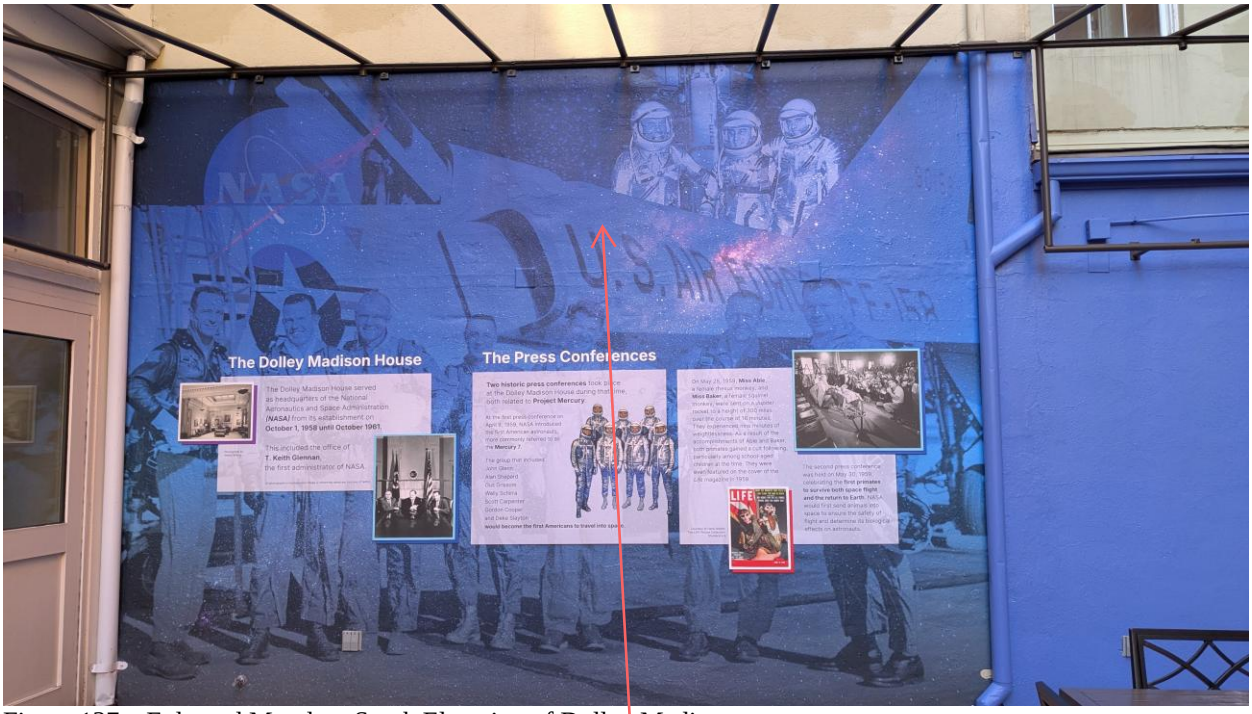


Figure 137 – Enlarged Mural on South Elevation of Dolley Madison



Figure 138 – H Street Door Well and Stair at Dolley Madison

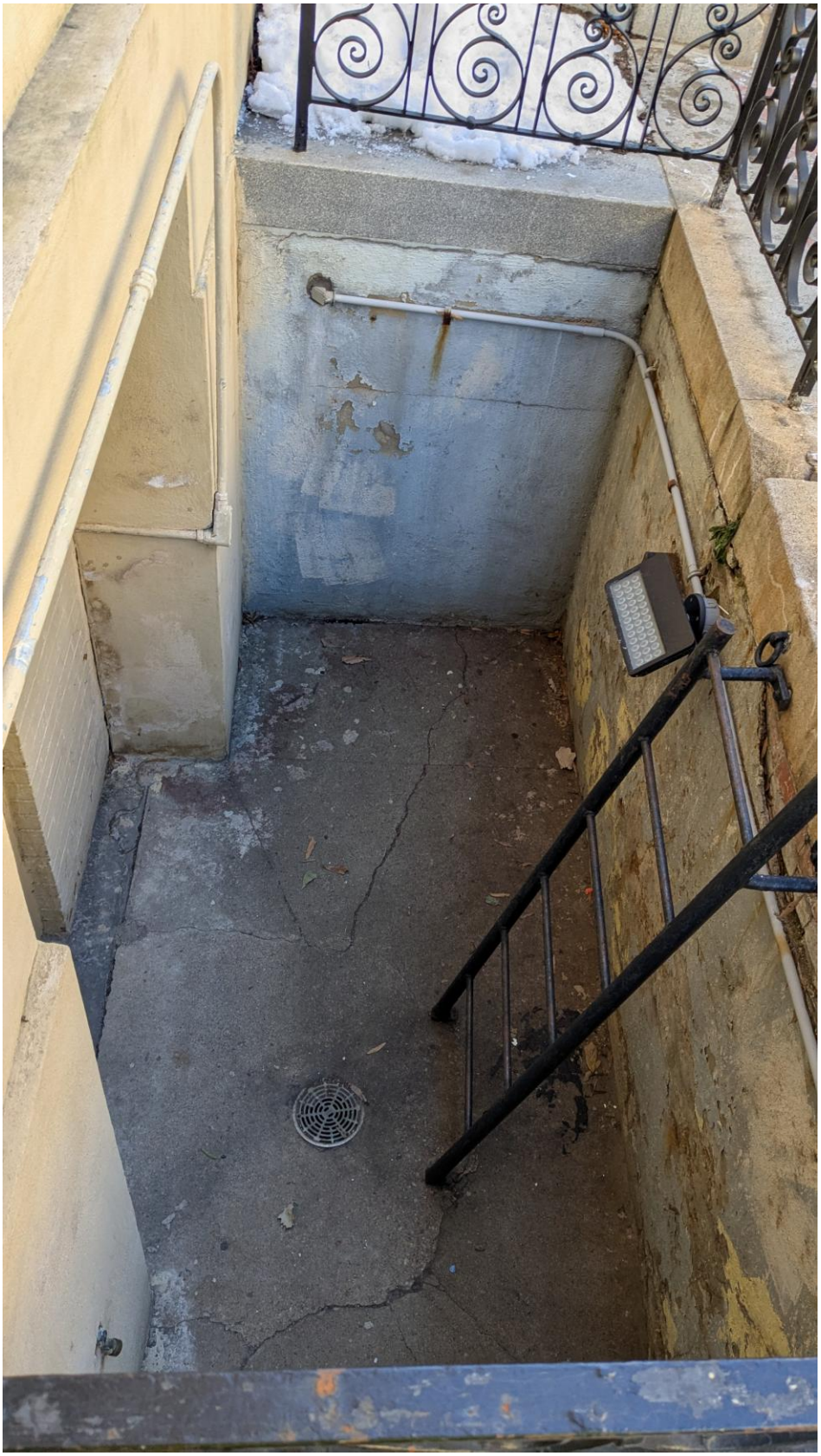


Figure 139 – West wall of Dolley Madison H Street Door Well



Figure 140 – East wall of Dolley Madison H Street Door Well



Figure 141 – Dolley Madison H Street Granite Stair



Figure 142 – West side of Dolley Madison H Street Granite Stair looking East



Figure 143 – West side of Dolley Madison H Street Granite Stair looking West



Figure 144 – East Side of Dolley Madison H Street Granite Stair looking West



Figure 145 – East Side of Dolley Madison H Street Granite Stair looking East



Figure 146 – East Side of Dolley Madison H Street Granite Sill looking South



Figure 147 – West Side of Dolley Madison Below Balcony Looking South



Figure 148 – North Side of Dolley Madison H Street looking East



Figure 149 - North Side of Dolley Madison H Street looking South



Figure 150 – West Elevation of Cosmos Club

SECTION 024296 - HISTORIC REMOVAL AND DISMANTLING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Historic treatment procedures for removal and dismantling work for designated historic spaces, areas, rooms, and surfaces and the following specific work:

   a. Removal and dismantling of indicated portions of building or structure and debris hauling.
   b. Removal and dismantling of indicated site elements and debris hauling.
   c. Salvage of existing items to be reused or recycled.

B. Related Requirements:

1. Section 013591 "Historic Building Treatment Procedures" for general historic treatment requirements.
2. Section 028716 "Bird Excrement Removal" for removing bird excrement from historic surfaces.
3. Section 020850 “Asbestos Abatement Procedures” for work on window glazing putty, sealants, building insulations and mechanical systems insulation.
4. Section 020900 “Removal and Disposal of Lead Based Paint” for work on stucco and paint removal.

1.2 DEFINITIONS

A. Dismantle: To disassemble or detach a historic item from a surface, or a nonhistoric 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.

B. Existing to Remain: Existing items that are not to be removed or dismantled, except to the degree indicated for performing required Work.

C. Remove: To take down or detach a nonhistoric 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.

D. Retain: To keep an element or detail secure and intact.

E. Salvage: To protect removed or dismantled items and deliver them to The Government.

1.3 PRECONSTRUCTION MEETINGS

A. Preconstruction Conference(s): Conduct conference(s) at the Project site

1. Review minutes of Preliminary Historic Treatment Conference that pertain to removal and dismantling procedures and protection of historic areas and surfaces.
2. Review list of items indicated to be salvaged.
3. Verify qualifications of personnel assigned to perform removal and dismantling.
4. Inspect and discuss condition of each construction type to be removed or dismantled.
5. Review requirements of other work that depends on condition of substrates exposed by removal and dismantling work.
6. Review methods and procedures related to removal and dismantling work, including, but not limited to, the following:

    a. Historic removal and dismantling specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
    b. Materials, material application, sequencing, tolerances, and required clearances.
    c. Fire prevention.
    d. Coordination with building occupants.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Statements: For historic removal and dismantling Specialist.

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 removal and dismantling operations.

C. Removal and Dismantling Historic Treatment Program: Submit 30 days before work begins.

D. List of Items to Be Salvaged: Prepare a list of items for The Government's use or for reinstallation. Submit 15 days before preconstruction conference.

E. Inventory of Salvaged Items: After removal or dismantling Work is complete, submit a list of items that have been salvaged.

1. Include item description, item condition, number of items if more than one of a type, and tag number. Include photo of item in original and stored locations.
2. As work proceeds, include on the inventory items of historic importance that were salvaged during the work.

1.5 QUALITY ASSURANCE

A. Historic Removal and Dismantling Specialist Qualifications: A qualified historic treatment Specialist with a minimum 7 years’ experience removing and dismantling historic construction. General selective demolition experience is insufficient experience for historic removal and dismantling work.

B. Removal and Dismantling Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of removal and dismantling work, including protection of surrounding and substrate materials and Project site.

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.

1.6 MOCKUPS

A. Prepare mockups of specific historic removal and dismantling procedures specified in this Section to demonstrate aesthetic effects and to set quality standards for materials and execution.
   1. Typical Removal Work, Limited Mockups: Remove an approximately 50 sq. ft. area of typical assembly, but not less than adjacent whole units.
   2. Typical Dismantling Work, Limited Mockups: Dismantle an approximately 50 sq. ft. area of typical, but not less than adjacent whole units.
   3. Exploratory Dismantling of the cornice and parapet wall: Perform exploratory dismantling in the presence of The COR.

   4. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless The COR specifically approves such deviations in writing.

B. Regulatory Requirements: Comply with GSA's notification regulations before beginning removal and dismantling work. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.7 FIELD CONDITION

A. Conditions existing at time of inspection for bidding purposes will be maintained by The Government as long as practicable.

B. Notify The COR of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.

C. Hazardous Materials:

   1. Hazardous materials are present in construction affected by removal and dismantling work. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
      a. Do not disturb hazardous materials or items suspected of containing hazardous materials, except under procedures specified.
      b. If unanticipated asbestos is suspected, stop work in the area of potential hazard, shut off fans and other air handlers ventilating the area, and rope off area until the questionable material is identified. Resume work in the area of concern after safe working conditions are verified.

D. Sale of removed or dismantled items on-site is not permitted.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT SPECIALISTS

A. Have historic removal and dismantling performed by a Historic Removal and Dismantling Specialist. Ensure that historic removal and dismantling specialist's field supervisors are present when removal and dismantling work begins and during its progress.

3.2 HISTORIC REMOVAL AND DISMANTLING EQUIPMENT

A. Removal Equipment: Use manual, handheld tools. Handheld power tools may be permitted on a case-by-case basis with approval by The COR.

B. Dismantling Equipment: Use manual, handheld tools, except as follows or otherwise approved by The COR on a case-by-case basis:

1. Handheld power tools are permitted only as submitted in the historic treatment program. They must be adjustable so as to penetrate or cut only the thickness of material being removed.
2. Pry bars more than 18 inches long and hammers weighing more than 2 lb are not permitted for dismantling work.

3.3 EXAMINATION

A. Preparation for Removal and Dismantling: Examine construction to be removed or dismantled to determine best methods to safely and effectively perform removal and dismantling work without damage to adjacent historic materials. Examine adjacent work to determine what protective measures are necessary. Make explorations, probes, and inquiries to determine condition of construction to be removed or dismantled and location of utilities and services to remain that may be hidden by construction that is to be removed or dismantled.
1. Verify that all effected utilities are disconnected and capped.
2. Inventory and record the condition of items to be removed and dismantled for reinstallation or salvage. Enter this information on the inventory of salvaged items.
3. Before removal or dismantling of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, profiles, materials, and construction details required to make exact reproduction.

Engineering Survey: Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures as a result of removal and dismantling work.

B. Survey of Existing Conditions: Record existing conditions by use of preconstruction drawings and photographs.

1. Comply with requirements specified in Section 013220 "Photographic Documentation."

C. Perform surveys as the Work progresses to detect hazards resulting from historic removal and dismantling procedures.

3.4 HISTORIC REMOVAL AND DISMANTLING

A. Comply with requirements in Section 013510 "Historic Treatment Procedures" for identifying and storing historic items.

B. Perform work according to the historic treatment program.

1. Perform removal and dismantling to the limits indicated and not further.
2. Provide supports or reinforcement for existing construction that becomes temporarily weakened by removal and dismantling work, until the Project Work is completed.
3. Perform cutting by hand or with small power tools as permitted by The COR wherever possible. Cut holes and slots neatly to size required, with minimum disturbance of adjacent work.
4. Do not operate air compressors inside building unless approved by The COR in each case.
5. Do not drill or cut columns, beams, joints, girders, structural slabs, or other structural supporting elements, without having Contractor's professional engineer's written approval for each location before such work is begun.
6. Dispose of removed and dismantled items off-site unless indicated to be salvaged or reinstalled.

C. Unacceptable Equipment: Keep equipment that is not permitted for historic removal or dismantling work away from the vicinity where such work is being performed.

D. Removing and Dismantling Items on or Near Historic Surfaces:

1. Use only dismantling equipment and procedures within 12 inches of historic surface. Protect historic surface from contact with or damage by tools.
2. Wherever possible, unfasten items in the opposite order from which they were installed.
3. Support each item as it becomes loosened to prevent stress and damage to the historic surface.
4. Dismantle anchorages.

E. Masonry Walls

1. Remove masonry carefully, and erect temporary bracing and supports as needed to prevent collapse of materials being removed.
2. Stop removal work and immediately inform The COR and Contractor's professional engineer if any structural elements above or adjacent to the work show signs of distress or dislocation during any phase of removal work.
3. Remove wall in easily managed pieces.
4. During removal, maintain the stability of the partially remaining wall.

F. Steelwork:

1. Expose structural steel for examination by The COR and Contractor's professional engineer before proceeding with removal or dismantling.
2. If distress in structure is apparent during performance of the work, stop removal or dismantling and take immediate precautionary measures to ensure safety of the structure. Inform The COR and Contractor's professional engineer of the problem, steps taken, and proposed corrective actions.
3. Brace and support structural steel being removed and remaining during removal and dismantling.
4. Concrete-Encased Steel: Where steel is known to be encased by concrete that is being removed, saw cut with blades that can cut no deeper than the thickness of the concrete

cover, with an adequate margin for error in the location of the steel. Isolate sections of concrete by saw cutting before beginning removal.

G. Loose Plaster:

1. Identify loose, nonhistoric plaster, and remove by separating it from its substrate by tapping with a hammer and prying with a chisel or screwdriver.
2. Do not use pry bars.
3. Do not damage, remove, or dismantle historic plasterwork, except where indicated or where it is an immediate hazard to personnel and as approved by The COR.

H. Concrete Floor Surface:

1. Remove floor surfaces, fill, and topping to the indicated lower elevations or cleavage planes as indicated on Drawings.
2. Use dismantling methods when removing floor surfaces 12 inches or less away from historic walls.
3. Take away material to a uniform surface at the indicated level.

END OF SECTION 024296

SECTION 028716.13 - BIRD EXCREMENT REMOVAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Requirements for bird-excrement removal.

B. Related Requirements:

1. Section 013510 "Historic Treatment Procedures" for general historic treatment requirements.
2. Section 024296 "Historic Removal and Dismantling" for special requirements related to removing items from historic surfaces.

1.2 PRECONSTRUCTION MEETINGS

A. Preconstruction Conference: Conduct conference at Project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to protection of historic areas and surfaces.
2. Review methods and procedures related to excrement removal, including, but not limited to, the following:

a. Bird-excrement-removal 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. Coordination with building occupants.
e. Dust and HVAC control.

1.3 INFORMATIONAL SUBMITTALS

A. Test and Evaluation Reports:

1. Preconstruction Test Reports: For removal materials and methods.

B. Qualification Statements: For bird-excrement-removal specialist and industrial hygienist.

1.4 QUALITY ASSURANCE

A. Bird-Excrement-Removal Specialist Qualifications: A firm that employs personnel experienced and skilled in the processes and operations indicated.

B. Industrial Hygienist Qualifications: Certified as Industrial Hygienist by the American Board of Industrial Hygiene; having Bachelor's degree in industrial hygiene, public health, biological science, occupational health, or environmental and safety discipline; and experienced in work of types specified.

C. Regulatory Requirements: Comply with notification regulations of authorities having jurisdiction before beginning excrement-removal work. Comply with collection and disposal regulations of authorities having jurisdiction.

1.5 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified bird-excrement-removal specialist to perform preconstruction testing on surfaces with accumulations of bird excrement.

1. Use test areas as indicated and representative of proposed materials and existing construction.
2. Propose changes to materials and methods to suit Project.

B. Preconstruction Testing: Performed by a qualified bird-excrement-removal specialist to demonstrate effects of removal work on substrate appearance and longevity and set quality standards for materials and execution.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Select materials and methods of use based on the following, subject to preconstruction testing:

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.

PART 3 - EXECUTION

3.1 PROTECTION

A. Comply with temporary barrier and air quality control requirements in Section 015000 "Temporary Facilities and Controls."

B. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from excrement-removal procedures.

1. Use only proven protection methods, appropriate to each area and surface being protected.
2. Provide barricades, dustproof partitions, and temporary directional signage to exclude public from work areas.
3. Contain dust and debris generated by excrement-removal work and prevent it from reaching the public or adjacent surfaces.

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.

3.2 BIRD-EXCREMENT REMOVAL

A. General: Have a qualified industrial hygienist to perform tests, make recommendations, and observe the Work. Follow procedures required by authorities having jurisdiction and recommended by industrial hygienist.

B. Removing Bird Excrement: Have bird-excrement-removal Work performed by a qualified bird-excrement-removal specialist. Remove all exterior bird-excrement accumulations under the deck roof and the deck of the Tayloe house, with building windows and other openings in the building closed or sealed off.

1. Use materials and follow procedures as determined by preconstruction testing.
2. Before removal, treat bird excrement to kill pathogens; dampen excrement to prevent particles becoming airborne.
3. Use only nonmetallic tools, such as plastic spatulas and brushes with natural fiber or nylon bristles.
4. Collect excrement as it is removed, seal it in durable plastic bags, and legally dispose of it off-site.
5. Repeat removal procedure above where required to produce cleaning effect established by preconstruction testing.

C. Removing Bird-Excrement Stain: Clean as required in Section pertaining to cleaning substrate material from which bird excrement was removed.

END OF SECTION 028716.13

SECTION 040310 - HISTORIC MASONRY CLEANING

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 historic treatment work consisting of cleaning the historic limestone elements on the Cosmos Club including, but not limited to, the cornice, parapet, window and door sills and lintels, water table, belt courses, the exposed granite basement of the Cosmos Club and limestone elements on the bay extension of Tayloe House including, but not limited to, the cornice, and headers.

B. Related Requirements:

1. Section 013510 "Historic Building Treatment Procedures" for general historic treatment requirements.

1.3 DEFINITIONS

A. Very Low-Pressure Spray: Less than 100 psi.

B. Low-Pressure Spray:

1. Pressure: 100 to 400 psi.
2. Flow Rate: 4 to 6 gpm.

C. Medium-Pressure Spray:

1. Pressure: 400 to 800 psi.
2. Flow Rate: 4 to 6 gpm.

D. High-Pressure Spray:

1. Pressure: 800 to 1200 psi.
2. Flow Rate: 4 to 6 gpm.

1.4 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 cleaning.

2. Review methods and procedures related to cleaning historic 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, and sequencing.
    c. Quality-control program.
    d. Fire-protection plan.
    e. Cleaning program.
    f. Coordination with building occupants.
    g. Conformance to governing code requirements.

1.5 SEQUENCING AND SCHEDULING

A. Work Sequence: Perform historic masonry cleaning work after the cornice and parapet are reinstalled.

B. Anchor scaffolding attachments only into mortar joints.

C. Patch anchor holes in mortar as scaffolding is removed.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include material descriptions and application instructions.
2. Include test data substantiating that products comply with requirements.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic treatment Specialists including field supervisors and workers.

B. Preconstruction Test Reports: For cleaning materials and methods.

C. Quality-control program.

D. Cleaning program.

1.8 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic masonry cleaning specialist. Experience cleaning historic masonry.

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 performance and preventing damage.

C. Cleaning Program: Prepare a written cleaning program that describes cleaning process in detail, including materials, methods, sequence, and equipment to be used; protection of surrounding materials; and control of runoff during operation.

1. If materials and methods other than those indicated are proposed for any phase of cleaning 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 cleaning on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Cleaning: Clean an area approximately 25 sq. ft.

a. Test cleaners and methods on samples of adjacent materials for possible adverse reactions. Do not test cleaners and methods known to have deleterious effect.
b. Allow a waiting period of not less than fourteen days after completion of sample cleaning to permit a study of sample panels for negative reactions.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless The COR specifically approves such deviations in writing.

1.9 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified historic treatment specialist or one or more manufacturers to perform preconstruction testing on masonry surfaces to determine the most appropriate cleaning methods and materials for this project.

1. Use test areas on the back side of the parapet.
2. Propose changes to materials and methods to suit Project.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with cleaning only when existing and forecasted weather conditions permit cleaning work to be performed according to product manufacturers' written instructions and specified requirements.

B. Clean masonry surfaces only when air temperature is 40 deg F and above and is predicted to remain so for at least seven days after completion of cleaning.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

A. Water: Potable.

B. Hot Water: Water heated to a temperature of 140 to 160 deg F.

C. Detergent Solution, Job Mixed: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 1/2 cup of laundry detergent, and 20 quarts of hot water for every 5 gal. of solution required.

D. Mold, Mildew, and Algae Remover, Job Mixed: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 5 quarts of 5 percent sodium hypochlorite (bleach), and 15 quarts of hot water for every 5 gal. of solution required.

E. Nonacidic Gel Cleaner: Manufacturer's standard gel formulation, with pH between 6 and 9, that contains detergents with chelating agents and is specifically formulated for cleaning masonry surfaces.

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. Cathedral Stone Products, Inc.
b. PROSOCO, Inc.
c. Price Research, Ltd. dba Charles Paint Research.

2.2 ACCESSORY MATERIALS

A. Liquid Strippable Masking Agent: Manufacturer's standard liquid, film-forming, strippable masking material for protecting all adjacent building materials.

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. American Building Restoration Products, Inc.
b. PROSOCO, Inc.
c. Price Research, Ltd. dba Charles Paint Research.

B. 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.

2.3 CHEMICAL-CLEANING SOLUTIONS

A. Dilute chemical cleaners with water to produce solutions not exceeding concentration recommended in writing by chemical-cleaner manufacturer.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT SPECIALIST

A. Historic Treatment Specialist Firms: Subject to compliance with requirements, firms that may provide historic masonry cleaning include, but are not limited to, those specializing in masonry cleaning and have a minimum of three successful projects, similar in scope to this project, in the last ten years.
   1. Provide name and address of project
   2. Provide contact information for the architect and Owner of the projects.

3.2 PROTECTION

A. Provide temporary rain drainage during work to direct water away from building.

3.3 CLEANING MASONRY, GENERAL

A. Have cleaning work performed only by qualified historic treatment specialist.

B. Cleaning Appearance Standard: Cleaned surfaces are to have a uniform appearance as viewed from 30 feet away by the COR.

C. Proceed with cleaning in an orderly manner; ensure that dirty residues and rinse water do not wash over dry, cleaned surfaces.

D. Use only those cleaning methods approved from the sample cleaning.

   1. Brushes: Do not use wire brushes or brushes that are not resistant to chemical cleaner being used.
   2. Spray Equipment: Use spray equipment that provides controlled application at volume and pressure indicated, measured at nozzle. Adjust pressure and volume to ensure that cleaning methods do not damage masonry.

      a. Equip units with pressure gauges.
      b. For water-spray application, use fan-shaped spray that disperses water at an angle of 25 to 50 degrees.
      c. For heated water-spray application, use equipment capable of maintaining temperature between 140 and 160 deg F at flow rates indicated.

E. Perform each cleaning method in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces.

   1. Keep wall wet below area being cleaned to prevent streaking from runoff.

F. Perform additional general cleaning, paint and stain removal, and spot cleaning of small areas that are noticeably different when viewed according to "Cleaning Appearance Standard" Paragraph, so that cleaned surfaces blend smoothly into surrounding areas.

G. Water-Spray Application Methods:

1. Water-Soak Application: Soak masonry surfaces by applying water continuously and uniformly to limited area for time indicated. Apply water at low pressures and low volumes in multiple fine sprays using perforated hoses or multiple spray nozzles. Erect a protective enclosure constructed of polyethylene sheeting to cover area being sprayed.
2. Water-Spray Applications: Unless otherwise indicated, hold spray nozzle at least 6 inches from masonry surface, and apply water in horizontal back-and-forth sweeping motion, overlapping previous strokes to produce uniform coverage.

H. Chemical-Cleaner Application Methods: Apply chemical cleaners to masonry surfaces according to chemical-cleaner manufacturer's written instructions; use brush or spray application. Do not spray apply at pressures exceeding 50 psi. Do not allow chemicals to remain on surface for periods longer than those indicated or recommended in writing by manufacturer.

I. Rinse off chemical residue and soil by working upward from bottom to top of each treated area at each stage or scaffold setting. Periodically during each rinse, test pH of rinse water running off of cleaned area to determine that chemical cleaner is completely removed.

1. Apply neutralizing agent and repeat rinse if necessary to produce tested pH of between 6.7 and 7.5.

J. After cleaning is complete, remove protection no longer required. Remove tape and adhesive marks.

3.4 PRELIMINARY CLEANING

A. Cold-Water Wash: Use cold water applied by low-pressure spray.

B. Hot-Water Wash: Use hot water applied by low-pressure spray.

C. Detergent Cleaning:

1. Wet surface with cold water applied by low-pressure spray.
2. Scrub surface with detergent solution using medium-soft brushes until soil is thoroughly dislodged and can be removed by rinsing. Use small brushes to remove soil from mortar joints and crevices. Dip brush in solution often to ensure that adequate fresh detergent is used and that surface remains wet.
3. Rinse with hot water applied by low-pressure spray to remove detergent solution and soil.
4. Repeat cleaning procedure, where needed to produce cleaning effect established by mockup.

D. Mold, Mildew, and Algae Removal:

1. Wet surface with cold or hot water applied by low-pressure spray.
2. Apply mold, mildew, and algae remover by brush or low-pressure spray.
3. Scrub surface with medium-soft brushes until mold, mildew, and algae are thoroughly dislodged and can be removed by rinsing. Use small brushes for mortar joints and crevices. Dip brush in mold, mildew, and algae remover often to ensure that adequate fresh cleaner is used and that surface remains wet.
4. Rinse with water applied by low-pressure spray to remove mold, mildew, and algae remover and soil.
5. Repeat cleaning procedure, where needed to produce cleaning effect established by mockup.

E. Nonacidic Gel Chemical Cleaning:

1. Wet surface with hot water applied by low-pressure spray.
2. Apply gel cleaner in 1/8-inch thickness by brush, working into joints and crevices. Apply quickly and do not brush out excessively, so area is uniformly covered with fresh cleaner and dwell time is uniform throughout area being cleaned.
3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer.
4. Remove bulk of gel cleaner.
5. Rinse with hot water applied by low-pressure spray to remove chemicals and soil.
6. Repeat cleaning procedure, where needed to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

F. Nonacidic Liquid Chemical Cleaning:

1. Wet surface with hot water applied by low-pressure spray.
2. Apply cleaner to surface by brush or low-pressure spray.
3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer.
4. Rinse with water applied by low-pressure spray to remove chemicals and soil.
5. Repeat cleaning procedure, where needed to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

3.5 CLEANING UNPOLISHED STONEWORK

A. Cold-Water Soak:

1. Apply cold water by intermittent spraying to keep surface moist.
2. Use perforated hoses or other means that will apply a fine water mist to entire surface being cleaned.
3. Apply water in cycles of five minutes on and 20 minutes off.
4. Continue spraying until surface encrustation has softened enough to permit its removal by water wash, as indicated by cleaning tests.
5. Remove soil and softened surface encrustation from surface with cold water applied by low-pressure spray.

B. Cold-Water Wash: Use cold water applied by medium-pressure spray.

C. Hot-Water Wash: Use hot water applied by low-pressure spray.

D. Detergent Cleaning:

1. Wet surface with hot water applied by low-pressure spray.
2. Scrub surface with detergent solution using medium-soft brushes until soil is thoroughly dislodged and can be removed by rinsing. Use small brushes to remove soil from mortar joints and crevices. Dip brush in solution often to ensure that adequate fresh detergent is used and that surface remains wet.
3. Rinse with cold water applied by medium-pressure spray to remove detergent solution and soil.
4. Repeat cleaning procedure, where needed to produce cleaning effect established by mockup.

E. Mold, Mildew, and Algae Removal:

1. Wet surface with cold water applied by low-pressure spray.
2. Apply mold, mildew, and algae remover by brush or low-pressure spray.
3. Scrub surface with medium-soft brushes until mold, mildew, and algae are thoroughly dislodged and can be removed by rinsing. Use small brushes for mortar joints and crevices. Dip brush in mold, mildew, and algae remover often to ensure that adequate fresh cleaner is used and that surface remains wet.
4. Rinse with hot water applied by low-pressure spray to remove mold, mildew, and algae remover and soil.
5. Repeat cleaning procedure, where needed to produce cleaning effect established by mockup.

F. Nonacidic Gel Chemical Cleaning:

1. Wet surface with hot water applied by low-pressure spray.
2. Apply gel cleaner in 1/8-inch thickness by brush, working into joints and crevices. Apply quickly and do not brush out excessively, so area is uniformly covered with fresh cleaner and dwell time is uniform throughout area being cleaned.
3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer.
4. Remove bulk of gel cleaner.
5. Rinse with hot water applied by low-pressure spray to remove chemicals and soil.
6. Repeat cleaning procedure, where needed to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

G. Nonacidic Liquid Chemical Cleaning:

1. Wet surface with hot water applied by low-pressure spray.
2. Apply cleaner to surface by brush or low-pressure spray.
3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer.
4. Rinse with hot water applied by low-pressure spray to remove chemicals and soil.
5. Repeat cleaning procedure, where needed to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

H. One-Part Limestone Chemical Cleaning:

1. Wet surface with cold water applied by low-pressure spray.
2. Apply cleaner to surface by brush or low-pressure spray.
3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer.
4. Immediately repeat application of one-part limestone cleaner as indicated above over the same area.
5. Rinse with hot water applied by medium-pressure spray to remove chemicals and soil.

I. Two-Part Chemical Cleaning:

1. Wet surface with hot water applied by low-pressure spray.
2. Apply alkaline prewash cleaner to surface by brush or roller.
3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer unless otherwise indicated.
4. Rinse with cold water applied by medium-pressure spray to remove chemicals and soil.
5. Apply acidic after wash cleaner to terra cotta, while surface is still wet, using low-pressure spray equipment, deep-nap roller or soft-fiber brush.

6. Let neutralizer remain on surface for period recommended in writing by manufacturer unless otherwise indicated.
7. Rinse with cold water applied by medium-pressure spray to remove chemicals and soil.
8. Repeat cleaning procedure, where needed to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

3.6 FINAL CLEANING

A. Clean adjacent non-masonry surfaces of spillage and debris. Use detergent and soft brushes or cloths.

B. Remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.

C. Remove masking materials, leaving no residues that could trap dirt.

3.7 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections. Provide inspectors with lift devices and scaffolding, as needed, to perform inspections.

B. The COR's Project Representatives: The COR will assign Project representatives to help carry out The COR's responsibilities at the site, including observing progress and quality of portion of the Work completed. Provide The COR's Project representatives with lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.

C. Notify inspectors and The COR's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until inspectors and The COR's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

D. Manufacturer's Field Service: Engage chemical-cleaner manufacturer's factory-authorized service representatives for consultation and Project-site inspection and provide on-site assistance when requested by The COR. Have paint-remover manufacturer's and chemical-cleaner manufacturer's factory-authorized service representatives visit Project site not less than twice to observe progress and quality of the Work.

END OF SECTION 040310

SECTION 050383 - HISTORIC CAST AND WROUGHT IRON REPAIR

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 historic treatment of cast and wrought iron in the form of repair as follows:

1. Repairing cast and wrought iron and replacing damaged and missing components.
2. Removing and dismantling cast and wrought iron for shop repair and replacement of components; reinstalling repaired cast and wrought iron.
3. Painting steel, cast iron and wrought iron.
4. Re-anchoring cast iron and steel to building structure.

B. Related Requirements:

1. Section 013510 "Historic Treatment Procedures" for general historic treatment requirements.

2. Section 090391 "Historic Treatment of Plain Painting" for general historic treatment of Plain Painting.

1.3 DEFINITIONS

A. Low-Pressure Spray: 100 to 400 psi

B. Medium-Pressure Spray: 400 to 800 psi

C. High-Pressure Spray: 800 to 1200 psi

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. minutes of Preliminary Historic Treatment Conference that pertain to historic treatment of decorative metal.
2. Review methods and procedures related to historic cast-iron 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. Cast-iron historic treatment program.
e. Coordination with building occupants.

1.5 SEQUENCING AND SCHEDULING

A. Perform cast-iron repair in the following sequence, which includes work specified in this and other Sections:

1. Identify the elements proposed to be repaired/restored in place and those to be dismantled and repaired/restore in the shop.. Tag items to be taken off site with location identification..
2. Verify that temporary protections have been installed.
3. Examine condition of cast iron, wrought iron, and steel.
4. Clean cast-iron surface, and remove paint and other finishes.
5. Repair and replace existing cast and wrought iron and supports for a uniform and sound surface on which to paint or apply other finishes.
6. Cure repaired surfaces and allow them to dry for proper finishing.
7. Paint and apply other finishes.
8. Reinstall dismantled surface-mounted objects and hardware...

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include recommendations for product application and use.

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, methods of attachment, accessory items, and finishes.
2. Include field-verified dimensions and the following:

a. Full-size patterns with complete dimensions for new cast-iron components and their jointing, showing relation of existing to new components.
b. Templates and directions for installing anchor bolts and other anchorages.
c. Identification of each new cast-iron item and component and its location on the structure in annotated plans and elevations.
d. Provisions for expansion, weep holes, and conduits as required for each location and exposure.

C. Samples for Initial Selection: For each type of cast-iron item and component with factory-applied finishes.

1. Include Samples of sealant materials, miscellaneous materials, and accessories involving size, color, or finish 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:
a. Casting Samples: For castings, provide one of each shape, of component, suitable and ready for installation.

2. Fittings and brackets.

3. Each type of exposed connection between components. Show method of finishing components at connections.
4. Each type of exposed finish; 6 inches long in least dimension.
5. Sealant materials.
6. Accessories: Each type of anchor, accessory, and miscellaneous support in required finishes.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic treatment specialist historic brazing-and-welding specialist and historic metal-stitching specialist.

B. Cast-Iron Historic Treatment Program: For repairing historic cast iron.

C. Wrought Iron Historic Treatment Program: For repairing historic wrought iron.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Molds for Castings: On completion of manufacturing of cast components, deliver one unused mold of each shape and size of component to Project site. Deliver to a location and at a time determined by The Government, to become property of The Government.

1. Deliver molds carefully packed, protected from dirt, moisture, and breakage so as to arrive in usable, undamaged condition and enable long-term storage and possible future use.

B. Historic Treatment Specialist Qualifications: A qualified historic cast-iron and wrought iron repair specialist. Experience in casting, repairing, brazing, and welding cast iron, wrought iron, steel, or cuprous metals and installing and finishing new cast and wrought iron.

C. Cast-Iron Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic cast-iron repair work, including each process or phase of repairing cast iron, related work, and the protection of surrounding materials and Project site.

D. Wrought Iron Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic wrought iron repair work, including each process or phase of repairing wrought iron, related work, and the protection of surrounding materials and Project site.

E. Mockups: Prepare mockups of historic treatment repair processes on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation. Prepare mockups so they are inconspicuous.

1. Repairing Metal Component:
   a. Two cast-iron repairs on sample pieces of cast iron.
   b. Two wrought iron repairs on sample pieces of wrought iron.
2. Replacing Metal Component:
   a. Two cast-iron replacement components.
   b. Two wrought iron replacement components.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with historic cast and wrought iron 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 METAL MATERIALS

A. Provide metal materials made of the alloys, forms, and types that match existing metals and that have the ability to receive finishes matching existing finishes.. Exposed-to-view surfaces exhibiting imperfections inconsistent with existing materials are unacceptable.

B. Cast Iron:

1. Gray-Iron Castings: ASTM A48/A48M, Class 30.
2. Malleable-Iron Castings: ASTM A47/A47M, grade as recommended in writing by fabricator for type of use indicated.

C. Wrought Iron:

1. Gray-Iron Castings: ASTM A48/A48M, Class 30.
2. Malleable-Iron Castings: ASTM A47/A47M, grade as recommended in writing by fabricator for type of use indicated.

D. Steel:

1. Tubing: Cold formed, ASTM A500/A500M.

2.2 PREPARATORY CLEANING MATERIALS

A. Hot Water: Water heated to a temperature of 140 to 160 deg F.

B. Detergent Solution, Job Mixed: Solution prepared by mixing 2 cupsof tetrasodium pyrophosphate (TSPP), 1/2 cupof laundry detergent, and 20 quartsof hot water for every 5 gal.of solution required.

C. Wash Cloths: Lint-free, absorbent, durable cloth without abrasives that can scratch metal.

D. Rust Remover: Manufacturer's standard phosphoric acid-based gel formulation, also called "naval jelly," for removing corrosion from iron and steel.

2.3 FASTENERS

A. Fasteners: Fasteners of the same basic metal as fastened metal. Use metals that are noncorrosive and compatible with each metal joined.

1. Match existing fasteners in material and in type of fastener unless otherwise indicated.

2. Use concealed fasteners for interconnecting cast and wrought iron components, and for attaching them to other work.

B. Post-Installed Structural Anchors: Fastener systems with bolts of same basic metal as fastened metal, if visible; with working capacity greater than or equal to the design load.

2.4 ACCESSORIES

A. Brazing Rods for Cast Iron: Type and alloy as recommended in writing by brazing-rod manufacturer and as required for strength and compatibility with cast-iron items.

B. Brazing Rods for Wrought Iron: Type and alloy as recommended in writing by brazing-rod manufacturer and as required for strength and compatibility with cast-iron items.

C. Welding Electrodes and Filler Metal: Select according to AWS specifications for welding cast-iron; use compatible metal type and alloy as required for strength, and compatibility with cast-iron items.

D. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout specifically recommended in writing by manufacturer for interior and exterior applications.

1. Water-Resistant Product: At exterior locations, provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended in writing by manufacturer for exterior use.

E. Sealant Materials:

1. Provide manufacturer's standard, elastomeric nonstaining, single-component, , nonsag urethane sealant complying with applicable requirements in Section 079200 "Joint Sealants."
2. Colors: Provide colors of exposed sealants to match colors of metals in which sealant is placed.

3. Surface Preparation: Use coating requiring no better than SSPC-SP 3, "Power Tool Cleaning," surface preparation according to manufacturer's literature or certified statement.
4. VOC Limit: Use coating with a VOC content of 400 g/L or less.

F. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.

G. Liquid Strippable Masking Agent: Manufacturer's standard liquid, film-forming, strippable masking material for protecting glass, metal, glazed masonry, and polished stone surfaces from damaging effects of acidic and alkaline cleaners.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. American Building Restoration Products, Inc.
b. Price Research, Ltd. dba Charles Paint Research.

H. Masking Tape: Nonstaining, nonabsorbent material; compatible with chemical solutions being used and substrate surfaces, and that will easily come off entirely, including adhesive.

I. Other Products: Select materials and methods for use based on the following, subject to approval of a mockup:

1. Previous effectiveness in performing the work involved.
2. Little 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 in any way harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in the Contract.
b. Leave an unintended residue on surfaces.

2.5 CAST AND WROUGHT IRON METAL FABRICATION

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Alloy Casting Co., Inc.
2. Historical Arts & Casting, Inc.
3. Robinson Iron.
4. Or approved equal.

B. Custom fabricate repairs of cast-iron items and components in sizes and profiles to match existing iron, with accurate curves, lines, and angles. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.

C. Provide uniform, neat seams with minimum exposure of welds, brazing, and sealant.

D. Provide rebates, lugs, and brackets necessary to assemble components and to attach to existing work. Drill and tap for fasteners. Use concealed fasteners.

E. Comply with AWS for recommended practices in welding and brazing. Clean exposed welded and brazed joints of flux, and dress exposed and contact surfaces.

1. Use materials and methods that minimize distortion, and develop maximum strength and corrosion resistance.
2. Remove flux immediately.
3. At exposed connections, match contours of adjoining surfaces, and finish exposed surfaces smooth and blended so no roughness shows after finishing.

F. Castings: Fabricate castings free of warp, cracks, blowholes, or other defects that impair strength or appearance. Grind, wire brush, sandblast, and buff castings to remove seams, gate marks, casting flash, and other casting marks.

1. Finish castings to match existing iron work.

G. Date Identification: Emboss on a concealed, interior surface of the metal body of each new component, in easily read characters, "MADE Insert current year." Manufacturer's name may also be embossed. Add the identification to the mold pattern before casting.

2.6 FINISHES, GENERAL

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: 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.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT SPECIALIST

A. Firms: Subject to compliance with requirements provide historic cast-iron repair by a Historic Treatment Specialist

3.2 PROTECTION

A. Comply with each manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent chemical solutions from coming into contact with people, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.

1. Cover adjacent surfaces with materials that are proved to resist chemical solutions being used unless products being used will not damage adjacent surfaces. Use protective materials that are waterproof.
2. Neutralize alkaline and acid wastes before disposal.
3. Dispose of runoff from operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

3.3 HISTORIC CAST-IRON REPAIR, GENERAL

A. Repair Appearance Standard: Repaired surfaces are to have a uniform appearance as viewed from 6 feetaway by The COR.

B. Execution of the Work: In repairing historic items, disturb remaining existing work as minimally as possible and as follows:

1. Stabilize cast and wrought iron to reestablish structural integrity and weather resistance while maintaining the existing form of each item.
2. Remove deteriorated coatings and corrosion.
3. Sequence work to minimize time before protective coatings are reapplied.
4. Repair items where stabilization is insufficient to stop progress of deterioration.
5. Repair items in place unless otherwise indicated and retain as much original material as possible.
6. Replace or reproduce historic items where indicated or scheduled.
7. Make historic treatment of materials reversible whenever possible.
8. Install temporary protective measures to stabilize cast and wrought iron that is indicated to be repaired later.

C. Mechanical Coating Removal: Use gentlest mechanical methods, such as scraping and wire brushing, that do not abrade metal substrate. Do not use abrasive methods, such as sanding, or power tools except as part of the historic treatment program and approved by The COR.

D. Repairing Cast and Wrought Iron Items: Match existing features, retaining as much original material as possible to complete the repair.

1. Repair cast and wrought iron by patching, filling, piecing-in, splicing, or otherwise reinforcing the existing cast iron with new material matching existing.
2. Where indicated, repair cast and wrought iron by limited replacement to the extent indicated, matching existing material.

E. Replacing Cast Iron and Wrought Iron Components: Where indicated, duplicate and replace items with new material matching existing.

1. Replace heavily deteriorated or missing parts or features of cast and iron with compatible materials, using surviving prototypes to create patterns or molds for duplicate replacements.
2. Do not use substitute materials.

3.4 PREPARATORY CLEANING

A. Perform preparatory cleaning before performing repair work.

1. Brushes: If using wire brushes, use steel or stainless-steel brushes that are resistant to chemicals being used.
2. Spray Equipment: Use spray equipment that provides controlled application at volume and pressure indicated, measured at nozzle. Adjust pressure and volume to ensure that spray methods do not damage surfaces.

    a. Equip units with pressure gages.
    b. For water-spray application, use fan-shaped spray that disperses water at an angle of 25 to 50 degrees.
    c. For high-pressure water-spray application, use fan-shaped spray that disperses water at an angle of at least 40 degrees.
    d. For heated water-spray application, use equipment capable of maintaining temperature between 140 and 160 deg Fat flow rates indicated.

3. Uniformity: Perform each cleaning method in a manner that results in uniform coverage of all surfaces, including corners, contours, and interstices, and that produces an even effect without streaks or damaging surfaces.
4. Protection: After cleaning is complete, remove protection no longer required. Remove tape and adhesive marks.

B. Water Cleaning: Clean with cold water applied with sponges or wash cloths low-pressure spray. Supplement with bristle brush. Use small brushes to remove soil and loose paint from joints and crevices.

C. Detergent Cleaning:

1. Wet surface with cold water applied with sponges or wash cloths low-pressure spray.
2. Scrub surface with detergent solution and natural-fiber or plastic bristle brush and abrasive pads until soil is thoroughly dislodged and can be removed by rinsing. Use small

brushes to remove soil from joints and crevices. Dip brush in solution often to ensure that adequate fresh detergent is used and that surface remains wet.

3. Rinse with cold water applied with sponges or wash cloths low-pressure spray to remove detergent solution, soil, and loose paint.

D. Cleaning by Abrasive Blasting: Clean surfaces to remove dirt and loose paint by dry blasting with specified blasting abrasive at pressure and distance from surface indicated below. Rinse with cold water, low-pressure spray to remove residue; wipe with cloths to remove water.

1. Pressure and Distance from Surface: As established by mockup.

E. Chemical Rust Removal:

1. Remove loose rust scale with approved, medium abrasives for ferrous metals.
2. Apply rust remover with brushes or as recommended in writing by manufacturer.
3. Allow rust remover to remain on surface for period recommended in writing by manufacturer or as determined by testing. Do not allow extended dwell time.
4. Wipe off residue with mineral spirits and either steel wool or soft rags, or clean with method recommended in writing by manufacturer to remove residue.
5. Dry immediately with clean, soft cloths. Follow direction of grain in metal.
6. Prime immediately to prevent rust. Do not touch cleaned metal surface until primed.

F. Mechanical Rust Removal:

1. Remove rust with approved, medium abrasives for ferrous metals.
2. Wipe off residue with mineral spirits and either steel wool or soft rags.
3. Dry immediately with clean, soft cloths. Follow direction of grain in metal.
4. Prime immediately to prevent rust. Do not touch cleaned metal surface until primed.

3.5 DISMANTLING, REPAIR, AND INSTALLATION

A. Repair cast iron and wrought iron in place insofar as practicable. Where necessary, dismantle components from their substrate and repair and reinstall according to approved historic treatment program.

B. Perform dismantling work as required in Section 024296 "Historic Removal and Dismantling."

C. Installation:

1. Locate and place cast-iron items level and plumb and in alignment with adjacent construction.

    a. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing, or provide new units as required.

2. Use concealed anchorages.
3. Form tight joints with exposed connections accurately fitted together.
4. Install concealed joint fillers, sealants, and flashings, as the Work progresses, to make exterior items weatherproof.
5. Corrosion Protection: Apply bituminous paint or other permanent separation materials on concealed surfaces where metals would otherwise be in direct contact with substrate materials that are incompatible or could result in corrosion or deterioration of either material or finish.

6. Touch Up: At completion of installation, touch up and restore damaged or defaced finish surfaces and fastener heads.

D. Sealant: Clean and prepare joint surfaces and apply and cure sealant according to Section 079200 "Joint Sealants."

1. Keep joint surfaces to receive sealant dry and free of debris.
2. Prime joint surfaces unless sealant manufacturer recommends against priming. Do not allow primer to spill or migrate onto adjoining surfaces.
3. Apply sealant on joint surfaces between abutting cast-iron components in a continuous application immediately before joining the components together. Remove excess after components are joined and tightened.
4. Fill sealant-type joints with specified joint sealant as recommended in writing by sealant manufacturer and the following:

a. Install sealant using only proved installation methods that ensure 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 metal.
b. Do not allow sealant to overflow or spill onto adjoining surfaces or to migrate into the voids of adjoining surfaces, particularly rough or sculptural textures. Promptly remove excess and spillage of sealant as the work progresses.

E. Repair non-load-bearing defects in existing metal surfaces, including dents and gouges more than 1/16 inch deep or 1/2 inch across and all holes and tears by filling with metal-patching compound. Remove burrs. Prime iron and steel surfaces immediately after repair to prevent flash rusting.

1. Apply metal-patching compound to fill depressions, nicks, cuts, and other voids created by rusted, removed, or missing metal.
2. Mix only as much patching compound as can be applied according to manufacturer's written instructions.
3. Apply patching compound in layers of maximum 1/8-inch thickness and as recommended in writing by manufacturer until the void is completely filled.
4. Finish patch surface smooth and shaped flush with adjacent contours, without voids in patch material.
5. Clean spilled compound from adjacent materials immediately.

3.6 PRIMING

A. Repair Primer: Apply immediately after completing a repair.

B. Finish Primer: Apply as soon after cleaning as possible.

3.7 PAINTING STEEL

1. Surface Preparation: Remove paint, rust, and other contaminants according to SSPC-SP 3, "Power 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, notify The COR before proceeding.

3.8 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections. Allow inspectors use of lift devices and scaffolding, as needed, to perform inspections.

B. Notify testing agency in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until inspectors have had reasonable opportunity to inspect work areas at locations of lift devices or scaffolding.

3.9 HISTORIC CAST IRON AND WROUGHT IRON REPAIR SCHEDULE

A. Treatment of Cast-Iron CIR-1.

1. Perform work in the field.
2. Repairs: Repair broken railings and replace missing components with custom, cast-iron components.
3. Painted Finish: As specified in Section 090391 "Historic Treatment of Plain Painting."

B. Treatment of Cast-Iron CIR-2.

1. Perform work in the shop or in the field.
2. Repair: Patch cast iron with new material by filling, metal stitching, or replacing cast-iron components with new castings and fasteners.

3. Painted Finish: As specified in Section 090391 "Historic Treatment of Plain Painting."

C. Treatment of Wrought Iron WIR-1.

1. Perform work in the field.
2. Repairs: Repair broken railings and replace missing components with custom, wrought iron components.
3. Painted Finish: As specified in Section 090391 "Historic Treatment of Plain Painting."

D. Treatment of Wrought Iron WIR-2.

1. Perform work in the shop or in the field.
2. Repair: Patch cast iron with new material by filling, metal stitching, or replacing cast-iron components with new castings and fasteners.

3. Painted Finish: As specified in Section 090391 "Historic Treatment of Plain Painting."

END OF SECTION 050383

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Nonstaining silicone joint sealants.

B. Related Requirements:

   1. Section 013591 "Historic Building Treatment Procedures" for general historic treatment requirements.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data:

   1. Silicone joint sealants.
   2. Nonstaining silicone joint sealants.

B. Samples for Initial Selection: Manufacturer's standard 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 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

D. Joint-Sealant Schedule: Include the following information:

   1. Joint-sealant application, joint location, and designation.
   2. Joint-sealant manufacturer and product name.
   3. Joint-sealant formulation.
   4. Joint-sealant color.

1.4 INFORMATIONAL SUBMITTALS

A. Preconstruction Laboratory Test Schedule: Include the following information for each joint sealant and substrate material to be tested:

   1. Joint-sealant location and designation.
   2. Manufacturer and product name.
   3. Type of substrate material.
   4. Proposed test.

5. Number of samples required.

B. Preconstruction Laboratory Test Reports: For each joint sealant and substrate material to be tested 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 are needed for adhesion.

C. Preconstruction Field-Adhesion-Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on testing specified in "Preconstruction Testing" Article.

D. Field Quality-Control Reports: For field-adhesion-test reports, for each sealant application tested.

E. Sample warranties.

1.5 CLOSEOUT SUBMITTALS

A. Manufacturers' special warranties.

B. Installer's special warranties.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Authorized representative who is trained and approved by manufacturer.

B. Testing Agency Qualifications: Qualified in accordance with ASTM C1021 to conduct the testing indicated.

1.7 MOCKUPS

A. Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.8 PRECONSTRUCTION TESTING

A. Preconstruction Laboratory Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.

1. Adhesion Testing: Use ASTM C794 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
2. Compatibility Testing: Use ASTM C1087 to determine sealant compatibility when in contact with glazing and gasket materials.
3. Stain Testing: Use ASTM C1248 to determine stain potential of sealant when in contact with stone and masonry substrates.

4. Submit manufacturer's recommended number of pieces of each type of material, including joint substrates, joint-sealant backings, and miscellaneous materials.
5. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
6. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures, including use of specially formulated primers.
7. Testing will not be required if joint-sealant manufacturers submit data that are based on previous testing, not older than 24 months, of sealant products for adhesion to, staining of, and compatibility with joint substrates and other materials matching those submitted.

B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:

1. Locate test joints, as directed by The COR.
2. Conduct field tests for each kind of sealant and joint substrate.
3. Notify The COR seven days in advance of dates and times when test joints will be erected.
4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
5. Test Method: Test joint sealants in accordance with Method A, Tail Procedure, in ASTM C1521.

    a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

6. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.

1.9 Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint.

1.10 FIELD CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.11 WARRANTY

A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: 5 years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: 10 years from date of Substantial Completion.

C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
2. Disintegration of joint substrates from causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain joint sealants from single manufacturer.

2.2 JOINT SEALANTS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: Match the COR's samples.

2.3 NONSTAINING SILICONE JOINT SEALANTS

A. Nonstaining Joint Sealants: No staining of substrates when tested in accordance with ASTM C1248.

B. Silicone, Nonstaining, S, NS, 100/50, NT: Nonstaining, single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Use NT.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Pecora Corporation; Pecora 890NST or 890FTS or comparable product by one of the following:
a. Sika Corporation - Building Components.
b. Tremco Incorporated.
c. Or approved equal.

2.4 JOINT-SEALANT BACKING

A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Adfast.
      b. Alcot Plastics Ltd.
      c. Backer Rod Mfg., Inc.
      d. Construction Foam Products; a division of Nomaco, Inc.
      e. Master Builders Solutions.
      f. Or approved equal.

B. 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.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.5 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

    a. Concrete.
    b. Masonry.
    c. Wood.
    d. Cast stone.
    e. Stucco.

3. Remove laitance and form-release agents from concrete.
4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

    a. Metal.
    b. Glass.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that 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 SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.

2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants in accordance with requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide tooled joint configuration to match existing joint tooling and in accordance with Figure 8C in ASTM C1193.

a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

3.4 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Tests and Inspections:

1. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

a. Extent of Testing: Test completed and cured sealant joints as follows:

1) Perform 10 tests for the first 1000 ft. of joint length for each kind of sealant and joint substrate.
2) Perform one test for each 500 ft. of joint length thereafter or one test per each floor per elevation.

b. Test Method: Test joint sealants in accordance with Method A, Tail Procedure, in ASTM C1521.

1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

c. Inspect tested joints and report on the following:

1) Whether sealants filled joint cavities and are free of voids.

2) Whether sealant dimensions and configurations comply with specified requirements.
3) Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion complies with sealant manufacturer's field-adhesion hand-pull test criteria.

d. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant material, sealant configuration, and sealant dimensions.
e. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

2. Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

C. Prepare test and inspection reports.

3.5 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 079200

SECTION 080314 - HISTORIC TREATMENT OF WOOD DOORS

REFER TO DRAWINGS FOR BASE BID AND ADD ALTERNATE ONE WORK

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. Historic treatment of wood doors in the form of the following:

a. Repairing wood doors and trim.
b. Repairing and cleaning existing hardware.
c. Replacing hardware no longer serviceable.

B. Related Requirements:

1. Section 013510 “Historic Building Treatment” for leaded glass tracery window treatment plan.
2. Section 013591 "Historic Treatment Procedures" for general historic treatment requirements.
3. Section 024296 "Historic Removal and Dismantling" for historic removal and dismantling work.
4. Section 09039 “Historic Treatment of Plain Painting” for general painting of historic substrates.

1.3 DEFINITIONS

A. Door: Generally, this term includes door frame, leaves, hardware, side panels or lights, fan light, transom, and storm vestibules.

B. Glazing: Includes glass, glazing points, glazing tapes, glazing sealants, and glazing compounds.

C. Storm Vestibule: Removable winter enclosure erected on a covered porch, which includes side panels or lights and door leaf and may include top panels.

D. Wood Door Component Terminology: Wood door components for historic treatment work include the following classifications:

1. Frame Components: Head, jambs, stops, 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, stool, apron.

1.4 REINSTALLATION 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-Egress plan.
    d. Wood door historic treatment program.
    e. Coordination with building occupants.

1.5 SEQUENCING AND SCHEDULING

A. Perform historic treatment of wood doors in the following sequence, which includes Work specified in this and other Sections:
1. Isolate and enclose work area to contain lead-based dust.
2. Provide protection for surrounding and adjacent site elements. Ensure no damage, marking, staining, or otherwise change occurs to historic fabric adjacent to the Work.
3. Label each door frame with permanent opening-identification number in inconspicuous location.
4. Tag existing door leaves, storm-vestibule panels, glazing units, and screen doors with opening-identification numbers matching those on the construction drawings and remove for cleaning and repairs off-site repair. Indicate on tags the locations of each component including glazing units, such as "north-hand door leaf," "south-hand reverse door leaf," "top dutch-door leaf," "bottom dutch-door leaf," "first north-side storm-vestibule panel," and "second south-side storm-vestibule panel."
5. Remove interior storm windows and metal attachment channels from door opening with storm windows for reinstallation.
6. Remove door, remove and tag hardware with door opening-identification numbers.
7. Install temporary protection and security at window openings.
8. Abate lead based paint on insitu frame components and interior and exterior trim.
9. Remove work enclosure.
10. In the shop, label each leaf, storm door, storm-vestibule panel, and screen door with permanent opening-identification number in inconspicuous location and remove site-applied tags.
11. Clean surfaces.
12. Remove glass and tag with identification numbers for reinstallation.
13. General Wood-Repair Sequence:
    a. Abate lead based paint to bare wood.
    b. Disassemble door leaf, if required for repair.
    c. Repair wood by consolidation, patching, member replacement, and partial member replacement.
    d. Sand, prime, fill, sand again, and prime surfaces again for refinishing.
14. Clean and repair operable hardware. Provide replacement is hardware is inoperable or broken.
15. Install and clean glazing.
16. Remove temporary protection and security at door openings.
17. Reinstall door.
18. Apply finish paint coats.

19. Reinstall hardware.
20. Install weather stripping.
21. Reinstall interior storm windows.
22. Remove protection for work areas and areas adjacent to the Work.
23. Clean and tidy site where Work occurred. Leave work area as clean or cleaner than it was prior to the Work.

1.6 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, flashing, and weatherstripping.

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: Actual sample of finished products for the following, in manufacturer's standard sizes:

1. Replacement Units: 12-inch-long, full-size frame leaf exterior trim and interior trim sections with applied finish.
2. Replacement Members: 12 incheslong 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 the COR.

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. Replacement Hardware: Full-size units with factory-applied and restored finish.
6. Weather Stripping: 12-inch-long sections.
7. Glazing: Full-size units of each type and appearance to be used for replacement of broken units.
8. Copper Screen for screen doors: 18 inch square sample.

1.7 INFORMATIONAL SUBMITTALS

A. Test and Evaluation Reports:

1. Preconstruction Test Reports: For historic treatment of wood doors.

B. specialist including workers.

C. Wood Door Historic Treatment Program: Submit before work begins.

1.8 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic wood door specialist with 10 years' experience in repairing, refinishing, and replacing wood doors in whole and in part. Provide documentation of a minimum of 3 recent projects of similar size and scope. 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 success.

1.9 MOCKUPS

A. Prepare mockups of each historic treatment repair process to demonstrate aesthetic effects, to set quality standards for materials and execution, and to set quality standards for fabrication and installation. Prepare mockups so they are inconspicuous.

1. Locate mockups on existing wood materials where directed by the COR.
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, trim, glazing, and hardware.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless the COR specifically approves such deviations in writing by Change Order.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.10 PRECONSTRUCTION SURVEY

A. Preconstruction Survey: Prior to the commencement of Work, conduct an independent survey of each door, noting serious deficiencies, and completed with photography according to Section 013220 “Photographic Documentation”.

1.11 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.

1.12 FIELD CONDITIONS

A. Weather Limitations: Proceed with historic treatment of wood doors only when existing and forecasted weather conditions are within environmental limits set by each manufacturer's written instructions and specified requirement.

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 AWMAC/WI's "North American Architectural Woodwork Standards" for construction, finishes, grades of wood doors, and other requirements.

1. Exception: Industry practices cited in Section 12, Paragraph 6, "Industry Practices," under Article 12.1, "Basic Considerations," of AWMAC/WI's "North American Architectural Woodwork Standards" do not apply to the Work of this Section.

2.2 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 inchdeep by 2 inches wide.

1. Species: Match species of each existing type of wood component or assembly.

2.3 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. Basis-of-Design Product: Subject to compliance with requirements, provide Abatron LiquidWood, or comparable product.

C. Epoxy Repair for Wood Patching: 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 to be designed for filling voids in damaged wood materials that have deteriorated because of weathering and decay. Compound to be capable of filling deep holes and spreading to feather edge.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Abatron WoodEpox, or comparable product.

2.4 STORM WINDOWS

A. Dismantle interior storm windows and reinstall.

2.5 GLAZING MATERIALS

A. Glass:

1. Remove and reinstall existing units.
2. Repair cracks and chips less than 2 inch. Cracks and breaks longer than 2 inches in existing glazing are considered broken glazing.
3. Replace broken glazing with units of the same thickness, size, shape, texture, and color (if the glazing is colored glass) to fit the opening.

B. Glazing Systems:

1. Traditional Glazing Products: Glazing points and oil-based glazing putty or latex glazing compound. Tint to required color in accordance with manufacturer's written instructions.

C. Primers and Cleaners for Glazing: As recommended in writing by glazing material manufacturer.

2.6 HARDWARE

A. Primary Door Hardware, General: Remove, clean, and reinstall existing door hardware sets. Provide complete sets of door hardware consisting of hinges, pulls, locks, latches, and accessories indicated for each door or required for proper operation. Sets to include replacement hardware to complement repaired and refinished, existing hardware. Door hardware to smoothly operate, tightly close, and securely lock wood doors and be sized to accommodate frequency of use, glazing weight, and dimensions.

B. Replacement Hardware: Provide hardware to replace damaged, inoperable, or missing hardware with new hardware to match existing in material, type, size, operation, and finish.

C. Material and Design:

1. Material: Match existing.

2. Design: Match material, type, size, appearance, and operation of existing hardware.

D. Hardware Finishes: Match existing 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. BHMA 630: Satin stainless steel; stainless steel base metal.

2.7 WEATHER STRIPPING

A. Metal Weather Stripping: Stainless steel 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. 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; containing no boric acid.

B. Cleaning Materials:

1. Detergent Solution: Solution prepared by mixing 2 cupsof tetrasodium pyrophosphate, 1/2 cupof laundry detergent that contains no ammonia, 5 quarts of 5 percent sodium hypochlorite bleach, and 15 quartsof warm water for each 5 gal.of solution required.
2. Mildewcide: Commercial, proprietary mildewcide or a solution prepared by mixing 1/3 cupof household detergent that contains no ammonia, 1 quartof 5 percent sodium hypochlorite bleach, and 3 quartsof warm water.
3. Biocide: D/2 biological solution by D/2 Biological Solutions, Inc., or approved equal.

C. Adhesives: Wood adhesives with minimum 15- to 45-minute cure at 70 deg Fin gunnable and liquid formulations as recommended in writing by adhesive manufacturer for each type of repair and exposure conditions.

D. Fasteners: Use fastener metals that are noncorrosive and compatible with each material joined.

1. Match existing fasteners in material and type of fastener.
2. Use concealed fasteners for interconnecting wood components.
3. Use concealed fasteners for attaching items to other work.
4. For fastening metals, use fasteners of same basic metal as fastened metal.
5. Exposed fasteners, use Phillips-type machine screws of head profile flush with metal surface.

E. Anchors, Clips, and Accessories: Fabricate anchors, clips, and door accessories of aluminum or nonmagnetic stainless-steel complying with requirements in ASTM B633 for SC 3 (Severe) service condition.

F. Sealant: Use exterior 100% silicone sealant for window-perimeter weather sealing.

1. Basis-of-Design: SILPRUF SCS2000, or approved equal.

2.9 WOOD DOOR FINISHES

A. : Reinstall exposed exterior and interior wood surfaces of existing doors with smooth, repaired, filled, primed with one finish coat and suitably for on-site finishing.

1. Prime Coat: Manufacturer’s standard.
2. Finish Coats: Manufacturer's standard.
3. Color and Gloss: Match existing as approved in writing by the COR.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT SPECIALIST

A. Provide historic treatment of wood doors by a Historic Treatment Specialist.

3.2 HISTORIC TREATMENT EXECUTION

A. Dismantling of door leaves shutters is necessary for off-site repair. Attempt complete dismantling only with the advice of a preservation specialist and under direct supervision of an historic treatment specialist. When removing doors, shutters, or other components that will be reinstalled, each piece should be durably tagged with a number and identified on a record set of Drawings for reinstallation.

3.3 PREPARATION

A. Protect adjacent materials from damage by historic treatment of wood doors.

B. Construct enclosure and/or containment for Work disturbing lead or hazardous materials.

C. Abate lead-based paint according to Section 020900 “Removal and disposal of Lead Based Paint”

D. 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.

E. Condition replacement wood members and replacement units to prevailing conditions at installation areas before installing.

3.4 HISTORIC TREATMENT OF WOOD DOORS, GENERAL

A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by the COR from the door interior at one footaway and from the door exterior at five feet away.

B. General: In treating historic items, disturb them as minimally as possible using he least aggressive means of intervention 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. Remove coatings in accordance with Section 090391 "Historic Treatment of Plain Painting".
3. Repair items in place where possible, except for items noted for repair off site.
4. Install temporary protective measures to protect wood door work that is indicated to be completed later.
5. Refinish historic wood doors in accordance with Section 090391 "Historic Treatment of Plain Painting".

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 the COR.

D. Steam Box/Heat: Removing glazing putty and existing paint by means of steam box, steam table, or steam heat and scaping. Use only the gentlest means possible, such as natural-fiber bristle brushing that will not abrade wood substrate or reduce clarity of detail. Do not expose window to more than 200 deg F of heat or steam.

E. Repair and Refinish Existing Hardware: Dismantle door hardware; remove paint, repair, and refinish it to match finish Samples; and lubricate moving parts just enough to function smoothly.

F. Repair Wood Doors: Match existing materials and features, retaining as much original material as possible to perform repairs.

1. Repair wood doors by consolidating, patching, splicing, or otherwise reinforcing wood with new wood matching existing wood species or with salvaged, sound, original wood.
2. Repair wood doors by limited replacement matching existing material, including hardware.

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, trim, and members with numbering system corresponding to door locations to ensure reinstallation in same location. Key doors, frames, leaves, trim, and members to Drawings showing location of each removed unit. Permanently label units in a location that will be concealed after reinstallation.

3.5 WOOD DOOR CONSOLIDATION-TYPE REPAIR

A. General: Apply wood consolidant to members that exhibit rot, checking, cracks, and decay; but are otherwise well attached to substrate.

1. Remove leaves from door frames before performing consolidation-type repairs at meeting or sliding surfaces. Reglaze units after patch-type or consolidation-type repair but prior to reinstallation.
2. Verify that surfaces are sufficiently clean and free of paint residue, dirt, grime, oil, and grease before patching.
3. Remove and dispose of areas of wood that are no longer soundly attached to the substrate. Rotted wood that is soundly attached may be left in place and used as a framework for consolidation and future patch repairs, compliant to manufacturer’s specifications.

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-consolidation compound to strengthen rotted and checked wood, and as a primer for future patch-type repairs.

1. 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.
2. Apply consolidation according to manufacturer’s specifications.

3.6 WOOD DOOR PATCH-TYPE REPAIR (EPOXY REPAIR)

A. General: Patch wood members that exhibit depressions, holes, missing parts, checks, cracks or similar voids and that have consolidated rotted or decayed wood.

1. Remove leaves from door frames before performing patch-type repairs at meeting or sliding surfaces. Reglaze units prior to reinstallation.
2. Verify that surfaces are sufficiently clean and free of paint residue before patching.
3. Remove rotted or decayed wood down to sound wood.
4. 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.

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, holes, 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 in accordance with commended in writing by manufacturer until the void is completely filled.
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.

D. Prime, refinish, and install window-perimeter sealant tooled to be as minimally visible as possible and to match color of adjacent window frame.

E. 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.

F. Repair remaining depressions, holes, or similar voids with consolidation and patch-type repairs.

G. Clean spilled materials from adjacent surfaces immediately.

3.7 WOOD DOOR MEMBER-REPLACEMENT REPAIR (DUTCHMAN REPAIR)

A. General: Replace parts of or entire wood window members at locations indicated in the drawings and where damage is too extensive to consolidate and patch. Replacement wood shall be in-kind to the existing wood.

1. Remove leaves from door frames before performing member-replacement repairs.
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. (Dutchman).
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 preservation treatment to accessible surfaces after replacements are made. Apply treatment liberally by brushing to joints, holes, edges, and ends: top, sides, and bottom.

C. Repair remaining depressions, holes, or similar voids with consolidation and patch-type repairs.

D. Clean spilled materials from adjacent surfaces immediately.

3.8 GLAZING

A. Remove existing glass and glazing, and prepare surfaces for reglazing.

B. Remove cracked and damaged glass and glazing materials from openings and prepare surfaces for reglazing.

C. Reglaze units before reinstallation in building.

D. Size glass used to replace broken units to provide necessary bite on glass, minimum edge and face clearances, with reasonable tolerances. If necessary, rout existing glazed members to accommodate new glass thickness.

E. Apply primers to joint surfaces where required for adhesion of glazing system.

F. Install setting bead, side beads, and back bead against stop in glazing rabbets before setting glass.

G. Reinstall glass removed for repair and replace glass in original openings and with proper orientation.

H. Install glazing points.

I. Reglaze glass in opening after wood is primed. Allow glazing compound to dry before painting.

J. Legal Disposal of Broken and Cracked Glass not reinstalled.

3.9 WEATHER STRIPPING

A. Provide weather stripping to match existing and to ensure a weather seal around full-perimeter for exterior leaves.

3.10 ADJUSTING

A. Adjust existing and replacement operating leaves, 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.

3.11 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.

3.12 HISTORIC WOOD DOOR SCHEDULE

A. Historic Wood Door: Single-leaf or Double-leaf Historic Wood including Screen Windows

1. General: Repair existing wood doors using indicated treatments. Repair leaves, storm doors off-site.
2. Removal of Existing Paint and Refinishing: See Section 090391 "Historic Treatment of Plain Painting" for paint removal, surface preparation for refinishing, and refinishing historic wood doors.
3. Door Frame Member Repair: Repair heads, jambs, and thresholds with wood consolidant, patch-type repairs, and whole or partial member-replacement repairs. Re-anchor and realign the head, jambs, and threshold.
4. Door Leaf Repair: Wood consolidant patch-type repairs or partial member-replacement with leaf removed from opening.
5. Door Leaf Member Repair: Repair stile rails stops and muntins with wood consolidant, patch-type repairs, and whole or partial member-replacement repairs. Realign stiles rails and stops.
6. Existing Hardware: Remove and reinstall as specified in Part II Products in Section 080314.
7. Replacement Hardware: Provide missing hardware to match existing hardware and as specified in Part II Products in Section 080314.

END OF SECTION 080314

SECTION 080352 - HISTORIC TREATMENT OF WOOD WINDOWS

REFER TO DRAWINGS FOR BASE BID AND ADD ALTERNATE ONE WORK

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 historic treatment of wood windows in the form of the following:
1. Remove and reinstall interior storm windows
2. Remove shutters and repair off site and reinstall.
3. Remove insect screens and frames, repair off site and reinstall.
4. Remove and provide weatherstripping.
5. Remove wood windows sash and trim and make repairs off site.
6. Provide temporary sashes.
7. Remove and reinstall sash glazing.
8. Repair wood window frames.
9. Remove, repair, clean, and refinish, and reinstall hardware.
10. Provide hardware to replace nonfunctional or missing hardware.
11. Reinstall interior storm windows.

B. Proof of Concept Window installed.
1. Window TW108 on the first floor of the Tayloe House was repaired and restored as part of the design process. It is the “approved sample” standard of Quality of what is required of the other windows.
    a. Sashes were removed, abated, repaired, reglazed, and repainted in the Contractor's shop
    b. Frames were abated and restored in place.
    c. All hardware was removed and reinstalled. Nonfunctional and missing hardware was provided.
2. A report titled *Window Mock-up approach* and dated 05/06/2024 was prepared that documented this process and is available to the Bidders by request to the COR.

C. Related Requirements:

1. Section 013510 “Historic Building Treatment” for leaded glass tracery window treatment plan.
2. Section 013591 "Historic Treatment Procedures" for general historic treatment requirements.
3. Section 024296 "Historic Removal and Dismantling" for historic removal and dismantling work.
4. Section 064013 "Exterior Architectural Woodwork" for new wood shutters not included in this Section.
5. Section 090391 “Historic Treatment of Plain Painting” for patching, surface preparation, and patching.

1.3 DEFINITIONS

A. Window: Includes window frame, sash, hardware, storm window, insect screen with frames and exterior shutters by context.

B. Glazing: Includes glass, glazing points, glazing tapes, glazing sealants, and glazing compounds.

C. Window: Includes window frame, sash, hardware, storm window, and exterior and interior shutters by context.

D. 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. Louvered Vents.
5. Interior Trim: Casing, stool, and apron.
    a. Arches
    b. Panels

1.4 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.
    e. Coordination with building occupants.

1.5 SEQUENCING AND SCHEDULING

A. Perform historic treatment of wood windows in the following sequence, which includes work specified in this and other Sections:

1. Isolate and enclose work area to contain lead-based dust.
2. Provide protection for surrounding and adjacent site elements. Ensure no damage, marking, staining, or otherwise change to historic fabric adjacent to the Work.
3. Label each window frame with permanent opening-identification number in inconspicuous location to match those on the drawings.
4. Tag existing window sash, storm windows, and shutters with opening-identification numbers and remove for off-site repair. Indicate on tags the locations on window of each component, such as "top sash," "bottom sash," "north shutter," and "south shutter."
5. Remove interior storm windows and metal attachment channels from opening with storm windows for reinstallation.

6. Remove window sash, dismantle hardware, and tag hardware with opening-identification numbers.
7. Install temporary protection and security at window openings.
8. Abate lead based paint on insitu frame components and interior and exterior trim.
9. Remove work enclosure.
10. In the shop, label each sash, storm window, shutter, insect screen and frame, and louvered blind unit with permanent opening-identification number in inconspicuous location and remove site-applied tags.
11. Clean surfaces.
12. Remove glass and tag with identification numbers for reinstallation.
13. General Wood-Repair Sequence:
    a. Abate lead based paint to bare wood.
    b. Disassemble sash and screen frame for repair.
    c. Repair wood by consolidation, patching, member replacement, and partial member replacement.
    d. Sand, prime, fill, sand again, and prime surfaces again for refinishing.
14. Clean and repair operatable hardware. Provide replacement is hardware is inoperable or broken.
15. Clean and install glazing.
16. Remove temporary protection and security at window openings.
17. Provide weather stripping.
18. Reinstall window sash.
19. Apply finish paint coats.
20. Reinstall hardware.
21. Install remaining weather stripping.
22. Reinstall shutters and it related hardware.
23. Reinstall insect screens.
24. Reinstall interior storm windows.
25. Remove protection for work areas and areas adjacent to the Work.
26. Clean and tidy work area. Leave it cleaner or as clean as found prior to work.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include recommendations for product application and use. Include test data substantiating that the 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 sealant joint flashing and weatherstripping for each location.

C. Samples for Initial Selection: For each type of wood and finish.

1. Identify wood species, cut, and other features for dutchman repairs and trim.
2. Include samples of hardware and accessories involving finish selection.

D. Samples for Verification: For the following products in manufacturer's standard sizes, finished for use in the Work:

1. Replacement Units: 12-inch-long, full-size frame and sash sections with applied finish.
2. Replacement Members: 12 inches 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 The COR.

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 to verify cleaning method and restored finish for reinstalled hardware. Full-size units for replacement units with each factory-applied.
6. Weather Stripping: 12-inch-long sections.
7. Glass: 8 1/2” x 11” units of each type and appearance.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic treatment specialist including workers. Submit qualification data before work begins.

B. Wood Window Historic Treatment Program: Submit before work begins.

C. Preconstruction Test Reports: For historic treatment of wood windows. Submit before work begins.

1.8 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic wood window specialist, with a minimum of 7 years’ experience in repairing, refinishing, and replacing wood windows in whole and in part. Specialist to provide examples of 3 recent projects (completed within the past 5 years) with similar scope. 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, Project site, and enclosure of work areas containing lead paint or other hazardous materials.

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.

1.9 MOCKUPS:

A. 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 the COR.
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 the COR 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.

1.10 PRECONSTRUCTION SURVEY

A. Preconstruction Survey: Prior to the commencement of Work, conduct an independent survey of each window, noting serious deficiencies, and completed with photography according to Section 013220 “Photographic Documentation”.

1.11 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.

1.12 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.

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 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. Replacement materials shall be in-kind and match the existing windows as much as possible in species, cut, grain, and finish.

1. Species: Match species of each existing type of wood component or assembly.

2.3 WOOD-REPAIR MATERIALS

A. Source Limitations: Obtain wood consolidant and wood-patching compound from single source from single manufacturer.

1. Basis-of-Design: Abatron Wood Restoration Kit: LiquidWood & WoodEpox, Abatron. Or approved equal.

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.

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.

2.4 REPLICATED WOOD WINDOW UNITS

A. Replicated Wood Window Frames and Sash: Custom-fabricated replacement wood units and trim, with operating and latching hardware. Replacement windows shall be in-kind and match the existing original windows in species, size, cut, grain, and finish.
1. Joint Construction: Joints matching existing.
2. Wood Species: Match wood species of exterior window trim and sash parts.
3. Wood Window Members and Trim: Match profiles and detail of existing window members and trim.
4. Exposed Hardware: Reinstall existing hardware. Provide hardware to match existing in style, size, type, and finish for inoperable or broken hardware, subject to approval by COR.
5. Weather Stripping: Full-perimeter and meeting rail weather stripping for each operable sash.
6. Date Identification: Emboss on a concealed surface of each replaced window frame and sash, in easily read characters, "WINDOW MADE Insert year" or "SASH MADE Insert year." Manufacturer's name may also be embossed.

2.5 STORM WINDOWS

A. Dismantle interior storm windows and reinstall.

2.6 SHUTTERS

A. Wood Replacement and Repair Materials for Shutters: As specified in Section 090352, paragraphs 2.1 to 2.4. If replacement components are required:
   1. Operation: Match existing species, cut, grain, and finish.
   2. Panel Configuration: Louvered.
   3. Joint Construction: Joints matching design reference sample.
   4. Louver-Slat Construction: Match existing.
   5. Wood Species: Match wood species of exterior trim and sash parts.
   6. Wood Shutter Members: Match wood profiles of existing shutters
   7. Wood Preservative: Apply borate preservative treatment to accessible surfaces of exterior wood shutters before finishing. Apply treatment liberally by brush to joints, edges, and ends; top, sides, and bottom.
   8. Hardware: Reuse existing. For new hardware, match existing hardware
   9. Drip Cap: Stainless steel drip cap fitted to window head; finished to match window trim.

2.7 GLAZING MATERIALS

A. Glass:

   1. Remove mantle and reuse existing glass as much as possible.
   2. Replace broken glazing with units of the same thickness, size, shape, texture, and color, (if the glazing is colored glass) to fit the opening.
   3. Repair cracks and chips less than 2 inch. Cracks and breaks longer than 2 inches in existing glazing are considered broken glazing.

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.

C. Primers and Cleaners for Glazing: As recommended in writing by glazing material manufacturer.

2.8 HARDWARE

A. Window Hardware General: Provide complete sets of window hardware consisting of sash weights and pulleys balance or tape sash balances, 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. Dismantle, salvage, and reuse hardware as much as possible. Clean and refinish existing hardware to match existing finish.

C. Replacement Hardware: Provide hardware to replace damaged, inoperable, or missing hardware with new hardware to match existing in material, type, style, size, operation, and finish.

D. Material and Design:

   1. Material: Match existing.
   2. Design: Match material, type, size, appearance, and operation of existing hardware.

3. Weight and Pulley Sash-Balance: Concealed weight and pulley balance system including steel or cast-iron weights, cast-bronze pulleys, bronze sash chain or cords to match existing; size and capacity to hold sash stationary at any open position,
4. Tape Sash Balances: Concealed in jambs, material to match existing and size and capacity to hold sash stationary at any open position.

E. Hardware Finishes: Comply with BHMA A156.18 for base material and finish to match existing based on location, subject to approval in mockup:

2.9 WEATHER STRIPPING

A. Metal Weather Stripping: Stainless steel 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.

2.10 SCREENING FOR SCREEN WINDOWS ON DOOR OPENINGS

A. Copper Bronze Screen: Mesh – 90% copper 10% zinc. Mesh 18 X 14 with a diameter of .011.

2.11 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.

3. Biocide: D/2 biological solution by D/2 Biological Solutions, Inc., or approved equal.

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.
2. Use concealed fasteners for interconnecting wood components.
3. Use concealed fasteners for attaching items to other work.
4. For fastening metals, use fasteners of same basic metal as fastened metal.
5. Exposed fasteners, use Phillips-type machine screws of head profile flush with metal surface.

E. Anchors, Clips, and Accessories: Fabricate anchors, clips, and door accessories of aluminum or nonmagnetic stainless-steel complying with requirements in ASTM B633 for SC 3 (Severe) service condition.

F. Sealant: Use exterior Sealant: Use exterior 100% silicone sealant for window-perimeter weather sealing.

1. Basis-of-Design: SILPRUF SCS2000, or approved equal.

2.12 WOOD WINDOW FINISHES

A. Reinstall exposed exterior and interior window and shutter surfaces of existing windows and shutters with smooth, repaired, filled, primed with one finish coat and suitably for on-site finishing.

1. Prime Coat: Manufacturer’s standard.
2. Finish Coats: Manufacturer's standard.
3. Color and Gloss: Match existing as approved in writing by the COR.

B. 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.

1. Finish Coats: As specified in Section 09039 “Historic Treatment of Plain Painting” for general painting of historic substrates.
2. Color and Gloss: Match existing, subject to approval by COR.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT SPECIALIST

A. Provide historic treatment of wood windows by a Historic Treatment Specialist Firm.

3.2 HISTORIC TREATMENT EXECUTION

A. Dismantling of window sash, shutter is necessary for off-site repair. Attempt complete dismantling only with the advice of a preservation specialist and under direct supervision of an historic treatment specialist. When removing window sash, whole window units, shutters, or other components that will be reinstalled, each piece should be durably tagged with a number and identified on a record set of Drawings for reinstallation.

3.3 PREPARATION

A. Protect adjacent materials from damage by historic treatment of wood windows.

B. Construct enclosure and/or containment for Work disturbing lead or hazardous materials.

C. Abate lead-based paint according to Section 020900 “Removal and Disposal of Lead Based Paint.”

D. 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.

E. Condition replacement wood members and replacement units to prevailing conditions at installation areas before installing.

3.4 HISTORIC TREATMENT OF WOOD WINDOWS, GENERAL

A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by the COR from the window interior at two feet away and from the window exterior at five feet away.

B. General: In treating historic items, disturb them as minimally as possible using the least aggressive means of intervention 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. Remove coatings according to Section 090391 "Historic Treatment of Plain Painting".
3. Repair items in place where possible, except for items noted for repair off-site.
4. Install temporary protective measures to protect wood window work that is indicated to be completed later.
5. Refinish historic wood windows according to Section 090391 "Historic Treatment of Plain Painting".

C. Mechanical Abrasion: Mechanical abrasion 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 approved historic treatment program and as approved by the COR.

D. Steam Box/Heat: Removing glazing putty and existing paint by means of steam box, steam table, or steam heat and scaping. Use only the gentlest means possible, such as natural-fiber bristle brushing that will not abrade wood substrate or reduce clarity of detail. Do not expose window to more than 200 deg F of heat or steam.

E. Repair and Refinish Existing Hardware: Dismantle window hardware; remove paint using the least aggressive means of intervention, repair, and clean to match finish samples; and lubricate moving parts just enough to function smoothly.

F. Repair Wood Windows: Match existing materials and features, retaining as much original material as possible to perform repairs.

1. Repair wood windows by consolidating, patching, splicing, or otherwise reinforcing wood with new wood matching existing wood or with salvaged, sound, original wood per manufacturer’s specifications. See drawings for percentage of deterioration to determine patching repairs and dutchman repairs.
2. Repair wood windows by limited replacement matching existing material.
3. Sash Balance: Reinstall sash balances to function according to type as specified in Hardware as specified. Provide missing sash balances.
4. Tape Sash Balances: Reinstall tape sash balances. Provide missing tape sash balances.

G. Replace Wood Units: Where indicated, duplicate and replace units in-kind 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.

H. 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.

I. 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.

3.5 WOOD WINDOW CONSOLIDATION-TYPE REPAIR

A. General: Apply wood consolidant to members that exhibit rot, checking, and decay; but are otherwise well attached to substrate.

1. Remove window sash before performing consolidation-type repairs at meeting or sliding surfaces. Reglaze units after patch-type or consolidation-type repair but prior to reinstallation.
2. Verify that surfaces are sufficiently clean and free of paint residue, dirt, grime, oil, and grease before patching.
3. Remove and dispose of areas of wood that are no longer soundly attached to the substrate. Rotted wood that is soundly attached may be left in place and used as a framework for consolidation and future patch repairs, compliant to manufacturer's specifications.

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-consolidation compound to strengthen rotted and checked wood, and as a primer for future patch-type repairs.

1. 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.
2. Apply consolidation according to manufacturer's specifications.

3.6 WOOD WINDOW PATCH-TYPE REPAIR (EPOXY REPAIR)

A. General: Patch wood members that exhibit depressions, holes, nicks, checks, cracks, or similar voids, and that have limited amounts of rotted or decayed wood.

1. Remove storm windows, sash, and shutters from windows openings before performing patch-type repairs at meeting or sliding surfaces.
2. Verify that surfaces are sufficiently clean and free of paint residue before patching.
3. Remove rotted or decayed wood down to sound wood.
4. 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.

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, holes, nicks, cracks, checks, 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.

D. Prime, refinish, and install window-perimeter sealant tooled to be as minimally visible as possible and to match color of adjacent window frame.

3.7 WOOD WINDOW MEMBER-REPLACEMENT REPAIR (DUTCHMAN REPAIR)

A. General: Replace parts of or entire wood window members at locations indicated in the drawings and where damage is too extensive to consolidate and patch. Replacement wood shall be in-kind to the existing wood.

1. Remove sash, storm windows and shutters from windows before performing member-replacement repairs.
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 (Dutchman).
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 preservation treatment to accessible surfaces after replacements are made. Apply treatment liberally by brushing to joints, holes, edges, and ends: top, sides, and bottom.

C. Repair remaining depressions, holes, or similar voids with consolidation and patch-type repairs.

D. Clean spilled materials from adjacent surfaces immediately.

3.8 WOOD WINDOW UNIT REPLACEMENT

A. General: Replace existing wood window frame sash and shutter units in-kind with new custom-fabricated units to match existing at locations indicated in the Window Schedule and where damage is too extensive to repair.

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 as indicated on the Window Schedule.

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. Install sill members for positive drainage and in bed of sealant for weathertight construction.

G. Install window units with new anchors into existing openings.

H. Weather Stripping: Install full-perimeter and meeting rail weather stripping for each operable sash.

I. Install window-perimeter sealant tooled to be as minimally visible as possible and to match color of adjacent window frame.

J. Metal Protection: Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

K. Legal Disposal of Removed Units not reinstalled in the building.

3.9 INSECT SCREENS AND FRAMES

A. Identify removed insect screen frames with numbering system corresponding to locations to ensure reinstallation in same location. Key members to Drawings showing location of each removed unit. Permanently label units in a location that will be concealed after reinstallation.

B. Repair frame as specified in “Repair Wood Windows”

C. Repair Hardware as specified.

D. Provide copper screening in insect screens. Attach screen to frame matching existing method.

E. Reinstall wood frames with insect screens in original opening.

3.10 GLAZING

A. Remove existing glass and glazing, and prepare surfaces for reglazing.

B. Remove cracked and damaged glass and glazing materials from openings and prepare surfaces for reglazing.

C. Reglaze units before reinstallation in building.

D. Size glass used to replace broken units to provide necessary bite on glass, minimum edge and face clearances, with reasonable tolerances. If necessary, rout existing glazed members to accommodate new glass thickness.

E. Apply primers to joint surfaces where required for adhesion of glazing system.

F. Install setting bead, side beads, and back bead against stop in glazing rabbets before setting glass.

G. Reinstall glass removed for repair and replace glass in original openings and with proper orientation.

H. Install glazing points.

I. Reglaze glass in opening after wood is primed. Allow glazing compound to dry before painting.

J. Legal Disposal of Broken and Cracked Glass not reinstalled.

3.11 SHUTTERS, GENERAL:

A. Dismantle Exterior Wood Shutters

B. Abate lead-based paint off site.

C. Repair shutters by consolidating, patching, splicing, or otherwise reinforcing wood with new wood matching existing wood or with salvaged, sound, original wood per manufacturer's specifications. Use surviving prototypes to create patterns for duplicate replacements.

D. Reinstall shutters in original location with cleaned and repaired hardware removed from existing shutters.

E. Install shutters level, plumb, square, true to line, without distortion or impeding movement; anchored securely in place to structural support.

3.12 WEATHER STRIPPING

A. Provide weather stripping to match existing and to ensure tight seal around full-perimeter of window and between meeting rail.

3.13 STORM WINDOW

A. Reinstall interior storm windows in original locations.

B. Install units level, plumb, square, true to line, without distortion or impeding movement; anchored securely in place to structural support.

3.14 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.

3.15 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 080352

SECTION 090391 - HISTORIC TREATMENT OF PLAIN 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. Section includes historic treatment of plain painting as follows:

1. Removing existing paint.
2. Repairing substrates.
3. Plain painting of historic and existing surfaces.

B. Related Requirements:

1. Section 013510 "Historic Building Treatment Procedures" for general historic treatment requirements.

1.3 DEFINITIONS

A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D523.

B. Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.

C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.

D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D523.

E. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D523.

F. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D523.

G. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D523.

H. Historic Paint Materials: Paint materials manufactured to match historic paint formulations; either custom-formulated products or standard products of manufacturers of historic paint materials.

I. Modern Paint Materials: Paint materials not designed to match historic paint formulations but that may be required to match historic paint colors.

J. Plain Painting: For historic treatment, this means painting that requires attention to historic treatment requirements, but no special, decorative or artistic painting skill.

K. Low-Pressure Spray: 100 to 250 psi; 4 to 6 gpm.

L. Medium-Pressure Spray: 250 to 400 psi; 4 to 6 gpm.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to historic treatment of painting.
2. Review methods and procedures related to historic treatment of painting including, but not limited to, the following:

a. Verify historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
b. Materials, material application, colors, patterns, and sequencing.
c. Fire-protection plan.
d. Plain painting historic treatment program.
e. Coordination with building occupants.

1.5 SEQUENCING AND SCHEDULING

A. Perform historic treatment of painting in the following sequence, which includes work specified in this and other Sections:

1. Dismantle existing surface-mounted objects and hardware except items indicated to remain in place. Tag items with location identification and protect.
2. Verify that temporary protections have been installed.
3. Examine condition of surfaces to be painted.
4. Remove existing paint to the degree required for each substrate and surface condition of existing paint.
5. Apply paint system.
6. Reinstall dismantled surface-mounted objects and hardware unless otherwise indicated.

1.6 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. Sustainable Design Submittals:

1. <Double click to insert sustainable design text for paints and coatings.>

C. Samples: For each type of paint system and each pattern, color, and gloss; in sizes indicated below.

1. Include stepped Samples defining each separate coat, including fillers and primers. Resubmit until each required sheen, color, and texture is achieved.
2. For each painted color being matched to a standardized color-coding system, include the color chips from the color-coding-system company with Samples.
3. Include a list of materials for each coat of each Sample.
4. Label each Sample for location and application.
5. Sample Size:

    a. Plain Painted Surfaces: (3) 12-by-12-inch Samples for each color and material, on hardboard.

D. Product List: For each paint product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. Printout of current MPI's "MPI Approved Products List" for each MPI-product category specified in paint systems, with the proposed product highlighted.
3. VOC content.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic treatment specialist(s) and paint-remover manufacturer.

B. Plain Painting Historic Treatment Program: Submit before work begins.

C. Color Matching Certificate: For computer color matching of historic colors.

D. Preconstruction Test Reports: For cleaning materials, paint removers and paint coatings and systems.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra paint materials, from the same production run, that match products applied and that are packaged with protective covering for storage and identified with labels describing contents, including material, finish, source, and location on building.

1. Quantity: Furnish The Government with an additional 10 percent, but not less than 1 gal. or one case, as appropriate, of each material and color applied.

1.9 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic painting specialist with expertise in matching and touching up existing painting. Experience only in new painting work is insufficient experience for historic treatment work.

B. Paint-Remover Manufacturer Qualifications: A firm regularly engaged in producing paint removers that have been used for similar historic painting applications with successful results, and with factory-authorized service representatives who are available for consultation and Project-site inspection and on-site assistance.

C. Color Matching: Custom computer-match paint colors to colors indicated by The COR. For colors indicated by a standardized coding system, obtain a color chip for each color indicated from the color-coding-system company; computer match paint colors to the color chips.

D. Plain Painting 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 and control of runoff during cleaning, paint removal, repainting, and other processes.

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.

A. Mockups: Prepare mockups of historic treatment processes for each type of coating system and substrate indicated and each color and finish required to demonstrate esthetic effects and to set quality standards for materials and execution. Duplicate appearance of approved Sample submittals.

1. Locate mockups on existing surfaces where directed by The COR and in locations that enable viewing under same conditions as the completed Work.

2. The COR will select one surface to represent surfaces and conditions for application of each paint system.

a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft..
b. Other Items: The COR will designate items or areas required.

3. Final approval of color selections will be based on mockups.

a. Provide (3) 1 ft^2 samples, on surface to be painted, for COR to approve color match.

b. If preliminary color selections are not approved, apply additional mockups of additional colors selected by The COR at no added cost to The Government.

4. Surface-Preparation Mockups: On existing surfaces using applicable specified methods of cleaning and other surface preparation, provide mockup sample of at least 100 sq. ft..
5. Coating Mockups: Two wall surfaces of at least 100 sq. ft. to represent surfaces and conditions for application of each type of coating system under same conditions as the completed Work.

a. Plain painted surfaces.

6. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless The COR specifically approves such deviations in writing.
7. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.10 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified historic treatment specialist to perform preconstruction testing of cleaning materials, paint removers and compatibility of paint coatings and systems for each indicated type of historic painted surface.

1. Use test areas as indicated and representative of proposed materials and existing construction.
2. Propose changes to materials and methods to suit Project.

1.11 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste daily.

1.12 FIELD CONDITIONS

A. Weather Limitations: Proceed with historic treatment of painting only when existing and forecasted weather conditions are within the environmental limits set by each manufacturer's written instructions and specified requirements, and will be for seven days after installation.

B. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

C. Do not apply paint in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; 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 manufacturer for surface preparation and during paint application and drying periods.

D. Concealed and undocumented historic items, sculptures, paintings, murals, and similar objects encountered during historic treatment remain The Government's property. Carefully protect each item or object.

1. Coordinate with The Government's historic preservation adviser, who will establish special procedures for protection.

E. Clean masonry surfaces only when air temperature is 40 deg F and above and is predicted to remain so for at least seven days after completion of cleaning.

PART 2 - PRODUCTS

2.1 PREPARATORY CLEANING MATERIALS

A. Water: Potable.

B. Hot Water: Water heated to a temperature of 140 to 160 deg F.

C. 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 every 5 gal. of solution required.

D. Mildewcide: Commercial proprietary mildewcide or a job-mixed 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.

E. Abrasives for Ferrous Metal Cleaning: Aluminum oxide paper, emery paper, fine steel wool, steel scrapers, and steel-wire brushes of various sizes.

F. Rust Remover: Manufacturer's standard phosphoric acid-based gel formulation, also called "naval jelly," for removing corrosion from iron and steel.

2.2 PAINT REMOVERS

A. Alkaline Paste Paint Remover: Manufacturer's standard alkaline paste or gel formulation for removing paint from masonry, stone, wood, plaster, or metal as required to suit Project; and containing no methylene chloride.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Cathedral Stone Products, Inc.,: Light Duty Paint Remover or comparable product by one of the following:
    a. Diedrich Technologies, Inc.; a Hohmann & Barnard company.
    b. Prosoco, Inc.
    c. Or approved equal.

B. Covered or Skin-Forming Alkaline Paint Remover: Manufacturer's standard covered or skin-forming alkaline paste or gel formulation for removing paint from masonry, stone, wood, plaster, or metal as required to suit Project; and containing no methylene chloride.
1. Basis-of-Design Product: Subject to compliance with requirements, provide; Enviro Klean Safety Peel 1 or comparable product by one of the following:
    a. Diedrich Technologies, Inc.; a Hohmann & Barnard company.
    b. Cathedral Stone Products, Inc
    c. Or approved equal.

C. Solvent-Type Paste Paint Remover: Manufacturer's standard water-rinsable, solvent-type paste or gel formulation for removing paint from masonry, stone, wood, plaster, or metal as required to suit Project.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Citritrip; CitriStrip Paint and Varnish Stripping Gel or comparable product by one of the following:
    a. Diedrich Technologies, Inc.; a Hohmann & Barnard company.
    b. Cathedral Stone Products, Inc
    c. Or approved equal.

D. Low-Odor, Solvent-Type Paste Paint Remover: Manufacturer's standard low-odor, water-rinsable, solvent-type paste, gel, or foamed emulsion formulation for removing paint from masonry, stone, wood, plaster, or metal as required to suit Project; and containing no methanol or methylene chloride.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Dumond; SmartStrip Advanced Paint Remover or comparable product by one of the following:
    a. Diedrich Technologies, Inc.; a Hohmann & Barnard company.
    b. Cathedral Stone Products, Inc

c. Prosoco, Inc.
d. Or approved equal.

E. Covered, Solvent-Type Paste Paint Remover: Manufacturer's standard, low-odor, covered, water-rinsable, solvent-type paste or gel formulation for removing paint from masonry, stone, wood, plaster, or metal as required to suit Project; and containing no methanol or methylene chloride.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Prosoco, Inc; Enviro Klean Safety Peel 1 or comparable product by one of the following:
a. Diedrich Technologies, Inc.; a Hohmann & Barnard company.
b. Cathedral Stone Products, Inc
c. Or approved equal.

F. Cast and Wrought Iron Surfaces: Manufacturer’s standard stripper rendering lead-based paints non-hazardous, for removing paint from steel, brick masonry, wood, and specially formulated for use on historic restorations to suit Project: and containing no methanol or methylene chloride.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Nextec, Inc.; PreTox 8000 Paint Stripper or comparable product by one of the following:
a. Diedrich Technologies, Inc.; a Hohmann & Barnard company.
b. Cathedral Stone Products, Inc
c. Prosoco, Inc.
d. Or approved equal.

2.3 PAINT, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. VOC Content: For field applications that are inside the weatherproofing system, paints and coatings to comply with VOC content limits of COR and the following VOC content limits exclusive of colorants added to a tint base, when calculated in accordance with 40 CFR 59, Subpart D (EPA Method 24):

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 50 g/L.
3. Dry-Fall Coatings: 150 g/L.
4. Primers, Sealers, and Undercoats: 100 g/L.
5. Rust-Preventive Coatings: 100 g/L.
6. Zinc-Rich Industrial Maintenance Primers: 100 g/L.
7. Pretreatment Wash Primers: 420 g/L.
8. Shellacs, Clear: 730 g/L.
9. Shellacs, Pigmented: 550 g/L.

C. Colors: As selected by The COR from manufacturer's full range and to match existing. Actual paint color selected by COR from (3) 1 sf samples on surface to be painted.

2.4 MODERN PAINT MATERIALS, GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

B. <Double click to insert sustainable design text for paint.>

C. Transition Coat: Paint manufacturer's recommended coating for use where a residual existing coating is incompatible with the paint system.

2.5 MODERN PAINT MATERIAL MANUFACTURERS

A. Mineral Silicate Paint - Basis-of-Design Product: Subject to compliance with requirements, provide Keim; products specified below or comparable product by one of the following:

1. Cathedral Stone Products, Inc.
2. LimeWorks.us.
3. Or approved equal.

Basis-of-Design Product: Subject to compliance with requirements, provide PPG Paints products specified below or comparable product by one of the following:

1. Benjamin Moore
2. Sherwin-Williams
3. Or approved equal.

B. Source Limitations: Obtain each paint product from single source from single manufacturer.

1. Manufacturer's designations listed on a separate color schedule are for color reference only and do not indicate prior approval.

C. Comparable Products: Comparable products of approved manufacturers will be considered in accordance with Section 016000 "Product Requirements," and the following:

1. Products are approved by manufacturer in writing for application specified.
2. Products meet performance and physical characteristics of basis-of-design product including published ratio of solids by volume, plus or minus two percent.

2.6 MODERN PAINT PRIMERS

A. Exterior Wood Preservative: Solvent-based, zinc or copper napthenate, penetrating antifungal treatment for exterior wood.

1. <Double click here to find, evaluate, and insert list of manufacturers and products.>

B. Exterior, Alkyd/Oil Wood Primer: Alkyd/oil-based primer that is resistant to extractive bleeding when applied to wood substrates with less than 15 percent moisture content; formulated for sag, mold, and microbial resistance; for hiding stains; and for use on exterior wood subject to extractive bleeding.

1. Basis-of-Design Product: Subject to compliance with requirements, provide PPG Paints; Seal Grip Interior/Exterior Universal Alkyd Primer/Sealer, 17-941NF; applied at 2.2 mils minimum DFT or comparable product.

C. Epoxy Zinc-Rich Primer: Multi-component, epoxy-type anti-corrosive primer; formulated for use on cleaned ferrous metal surfaces that will be exposed to moderate industrial or marine environments.

1. Basis-of-Design Product: Subject to compliance with requirements, provide PPG Paints; Amercoat 68 HS Zinc Rich Epoxy; applied at 2.0 to 5.0 mils DFT or comparable product.

D. Quick-Drying Aluminum Primer: Corrosion-resistant, solvent-based, alkyd or modified-alkyd primer formulated for quick-drying capabilities and for use on prepared exterior aluminum.

1. Basis-of-Design Product: Subject to compliance with requirements, provide PPG Paints; Multiprime Multi-Purpose Primer 4160 Series; applied at 2.0 mils minimum DFT or comparable product.

E. Exterior, Mineral Silicate Primer:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Keim; Fixativ + Consolidant or comparable product.

F. Metal Primers:

1. Primer, Alkyd, Anti-Corrosive for Metal: MPI #79.
   a. Basis-of-Design Product: Subject to compliance with requirements, provide PPG Paints; Multiprime Multi-Purpose Primer 4160 Series; applied at 2.0 mils minimum DFT or comparable product.

2. Primer, Bonding, Solvent Based, MPI #69.

   a. Basis-of-Design: S-W White Pigmented Shellac B49 Series.

3. Primer, Rust-Inhibitive, Water Based: MPI #107.
   a. Basis-of-Design: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series.

4. Primer, Galvanized, Water Based, MPI #134.

   a. Basis-of-Design: S-W Pro Industrial Pro-Cryl Universal Metal Primer B66.

5. Primer, Zinc-Rich, Epoxy: MPI #20.
   a. Basis-of-Design: Subject to compliance with requirements, provide PPG Paints; Amercoat 68 HS Zinc Rich Epoxy; applied at 2.0 to 5.0 mils DFT or comparable product.

6. Primer, Zinc-Rich, Solvent Based Urethane:
   a. Basis-of-Design: Subject to compliance with requirements, provide Tnemec; Tneme-Zinc Series 90-97 or comparable product.

G. Wood Primers:

1. Primer, Alkyd for Exterior Wood: MPI #5.

   a. Basis-of-Design Product: Subject to compliance with requirements, provide PPG Paints; Seal Grip Interior/Exterior Universal Alkyd Primer/Sealer, 17-941NF; applied at 2.2 mils minimum DFT or comparable product.

2. Primer, Latex for Interior Wood, MPI #39.

    a. S-W PrepRite ProBlock Primer Sealer, B51-620 Series.

3. Primer Sealer, Institutional Low Odor/VOC Latex, for Interior Plaster: MPI #149.

    a. S-W ProMar 200 Zero VOC Latex Primer, B28W2600.

H. Water-Based Paints:

1. Latex, Interior, (Gloss Level 3): MPI #52.

    a. S-W ProMar 200 Zero VOC Latex Eg-Shel, B20 Series.

2. Latex, Interior, Institutional Low Odor/VOC (Gloss Level 3): MPI #145.

    a. S1-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series.

3. Latex, Interior, Institutional Low Odor/VOC, Semigloss (Gloss Level 5): MPI #147.

I. S-W Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series.

2.7 MODERN FINISH COATINGS

A. Exterior Latex Paint, Semigloss: Water-based, pigmented emulsion coating formulated for alkali, mold, microbial, and water resistance and for use on exterior surfaces, such as masonry, Portland cement, and primed wood and metal.

1. Basis-of-Design Product: Subject to compliance with requirements, provide PPG Paints; Acri-Shield Max Exterior 100% Acrylic Latex Semi-Gloss, 649-10 Series; applied at 1.6 mils minimum DFT.
    a. Gloss and Sheen Level: Manufacturer's standard semi-gloss finish.

B. High-Build Epoxy Paint, Low Gloss: High-solids, two-component epoxy; formulated for use on exterior concrete, masonry, and primed-metal surfaces.

1. Basis-of-Design Product: Subject to compliance with requirements, provide PPG Paints; Amerlock 600 Multi-Purpose Epoxy; applied at 5.0 to 10.0 mils DFT or comparable product.
    a. Gloss and Sheen Level: Manufacturer's standard low-gloss finish.
2. Basis-of-Design: Subject to compliance with requirements, provide Tnemec; F.C. Typoxy Series 27 or comparable product.
    a. Gloss and Sheen Level: Manufacturer's standard gloss finish.

C. High-build Polyurethane Paint: High-solids, single coat application for use on primed steel and ferrous metals.
1. Basis-of-Design: Subject to compliance with requirements, provide Tnemec; Endura-Shield Series 73 or comparable product.
    a. Gloss and Sheen Level: Manufacturer's standard gloss finish.

D. Exterior, Water-Based, Light Industrial Coating, Semigloss: Corrosion-resistant, water-based, pigmented, emulsion coating formulated for resistance to blocking (sticking of two painted surfaces), water, alkalis, moderate abrasion, and mild chemical exposure and for use on exterior, primed, wood and metal surfaces.

1. Basis-of-Design Product: Subject to compliance with requirements, provide PPG Paints; Pitt-Tech Plus, Interior/Exterior Semi-Gloss DTM Industrial Enamel, 90-1610 Series; applied at 2.0 mils minimum DFT or comparable product.
   a. Gloss and Sheen Level: Manufacturer's standard semi-gloss finish.

E. Exterior, Mineral Silicate Paint: vapor permeable, freeze thaw resistant, UV resistant, low or no VOC content, and for use on exterior, brick, stone, and stucco substrates.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Keim; Soldalit Sol Silicate All Surface Paint or comparable product.
   a. Gloss and Sheen Level: Manufacturer's standard gloss finish.

2.8 MODERN FLOOR SEALERS AND PAINTS

A. Latex Deck Coating: Water-based, high-solids, acrylic-emulsion coating; formulated for use on exterior, concrete and wood-board traffic surfaces.

1. Basis-of-Design Product: Subject to compliance with requirements, provide PPG Paints; Flood Pro Series Resurfacer 100% Acrylic Stain, FLD 922 Series; applied at 75 sq. ft./gal. minimum coverage or comparable product.
2. Gloss Level: Flat.
3. Minimum Solids Content: Manufacturer's standard percentage solids by volume.
4. Surface Texture: Slip resistant.

2.9 PATCHING MATERIALS

A. 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. Basis-of-Design: Abatron Wood Restoration Kit: LiquidWood & WoodEpox, Abatron. Or approved equal.

B. Metal Patching Compound: Two-part, polyester-resin, metal patching compound; knife-grade formulation as recommended in writing by manufacturer for type of metal repair indicated, tooling time required for the detail of work, and site conditions. Compound shall be produced for filling metal that has deteriorated due to corrosion. Filler shall be capable of filling deep holes and spreading to feather edge.

C. Cementitious Patching Compounds: Cementitious patching compounds and repair materials specifically manufactured for filling cementitious substrates and for sanding or tooling prior to repainting; formulation as recommended in writing by manufacturer for type of cementitious substrate indicated, exposure to weather and traffic, the detail of work, and site conditions.

D. Gypsum-Plaster Patching Compound: Finish coat plaster and bonding compound according to ASTM C842 and manufacturer's written instructions.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT SPECIALIST

A. Historic Treatment Specialist Firms: Subject to compliance with requirements, firms that may provide historic treatment of plain painting include, but are not limited to, the following:

1. EverGreene Painting Studios, Inc., New York, NY.

2. Eight Brothers Company, Washington D.C.

3. John Canning & Co., Ltd., Cheshire, CT.

4. John W. Winterich & Associates, Inc.

3.2 PROTECTION

A. Comply with each manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent chemical solutions from coming into contact with people, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.

1. Cover adjacent surfaces with materials that are proven to resist chemical solutions being used unless the solutions will not damage adjacent surfaces. Use protective materials that are UV resistant and water

2. roof. Apply masking agents to comply with manufacturer's written instructions. Do not apply liquid masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.
3. Do not apply chemical solutions during winds of sufficient force to spread them to unprotected surfaces.
4. Neutralize and collect alkaline and acid wastes before disposal.
5. Dispose of runoff from operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

3.3 HISTORIC TREATMENT OF PAINTING, GENERAL

A. Historic Treatment Appearance Standard: Completed work is to have a uniform appearance as viewed by The COR from building interior at 5 feet away from painted surface and from building exterior at 10 feet away from painted surface.

B. Execution of the Work: In treating historic items, disturb them as minimally as possible and as follows:

1. Remove failed coatings and corrosion and repaint.
2. Verify that substrate surface conditions are suitable for painting.
3. Allow other trades to repair items in place and retain as much original material as possible before repainting.
4. Reproduce original, historic paint systems where indicated or scheduled.

5. Install temporary protective measures to protect historic painted surfaces that shall be treated later.

C. Mechanical Abrasion: Where mechanical abrasion is needed for the work, use only the gentlest mechanical methods, such as scraping and lightly hand sanding, that will not abrade softer substrates, reducing clarity of detail. Do not use abrasive methods such as rotary sanding, rotary wire brushing, or power tools except as indicated as part of the historic treatment program and as approved by The COR.

D. Heat Processes: Do not use torches, heat guns, or heat plates.

3.4 EXAMINATION

A. Examine substrates and conditions, with historic treatment specialist present, for compliance with requirements for maximum moisture content and other conditions affecting performance of painting work. Comply with paint manufacturer's written instructions for inspection.

B. Maximum Moisture Content of Substrates: Do not begin application of coatings unless moisture content of exposed surface is below the maximum value recommended in writing by paint manufacturer and not greater than the following maximum values when measured with an electronic moisture meter appropriate to the substrate material:

1. Concrete: 12 percent.
2. Gypsum Board: 12 percent.
3. Gypsum Plaster: 12 percent.
4. Masonry (Clay and CMU): 12 percent.
5. Lime Stucco and Plaster: 12 percent.
6. Wood: 15 percent.

C. Alkalinity: Do not begin application of coatings unless surface alkalinity is within range recommended in writing by paint manufacturer. Conduct alkali testing with litmus paper on exposed plaster, cementitious, and masonry surfaces. Conduct alkali testing with litmus paper on surfaces treated with paint stripper, or other chemicals that would alter the pH of a surface, before applying primers or finish coats.

D. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

1. If existing surfaces cannot be prepared to an acceptable condition for proper finishing by using specified surface-preparation methods, notify The COR in writing.

E. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.

1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.5 PREPARATORY CLEANING

A. General: Use only the gentlest, appropriate method necessary to clean surfaces in preparation for painting. Clean all surfaces, corners, contours, and interstices.

B. Detergent Cleaning: Wash surfaces by hand using clean rags, sponges, and bristle brushes. Scrub surface with detergent solution and bristle brush until soil is thoroughly dislodged and can be removed by rinsing. Use small brushes to remove soil from joints and crevices. Dip brush in solution often to ensure that adequate fresh detergent is used and that surface remains wet. Rinse with water applied by clean rags or sponges.

C. Solvent Cleaning: Use solvent cleaning to remove oil, grease, smoke, tar, and asphalt from painted or unpainted surfaces before other preparation work. Wipe surfaces with solvent using clean rags and sponges. If necessary, spot-solvent cleaning may be employed just prior to commencement of paint application, provided enough time is allowed for complete evaporation. Use clean solvent and clean rags for the final wash to ensure that all foreign materials have been removed. Do not use solvents, including primer thinner and turpentine, that leaves residue. Conduct alkali testing with litmus paper after solvent cleaning. Neutralize surfaces that are either too alkali or too acidic for the application of coatings as specified in coating manufacturer’s literature.

D. Mildew: Clean off existing 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. Rinse with water applied by clean rags or sponges.

E. Chemical Rust Removal:

1. Remove loose rust scale with approved abrasives for ferrous-metal cleaning.
2. Apply rust remover with brushes or as recommended in writing by manufacturer.
3. Allow rust remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing. Do not allow extended dwell time.
4. Wipe off residue with mineral spirits and either steel wool or soft rags, or clean with method recommended in writing by manufacturer to remove residue.
5. Dry immediately with clean, soft cloths. Follow direction of grain in metal.
6. Prime immediately to prevent rust. Do not touch cleaned metal surface until primed.

F. Mechanical Rust Removal:

1. Remove rust with approved abrasives for ferrous-metal cleaning. Clean to bright metal.
2. Wipe off residue with mineral spirits and either steel wool or soft rags.
3. Dry immediately with clean, soft cloths. Follow direction of grain in metal.
4. Prime immediately to prevent rust. Do not touch cleaned metal surface until primed.

3.6 PAINT REMOVAL

A. General: Remove paint where indicated. Where cleaning methods have been attempted and further removal of the paint is required because of incompatible or unsatisfactory surfaces for repainting, remove paint to extent required by conditions.

1. Application: Apply paint removers according to paint-remover manufacturer's written instructions. Do not allow paint removers to remain on surface for periods longer than those indicated or recommended in writing by manufacturer.

a. Apply materials to all surfaces, corners, contours, and interstices, to provide a uniform final appearance without streaks.
b. After work is complete, remove protection no longer required. Remove tape and adhesive marks. Conduct alkali testing with litmus paper on surfaces that have been treated.

2. Brushes: Use brushes that are resistant to chemicals being used.

    a. Metal Substrates: If using wire brushes on metal, use brushes of same metal composition as metal being treated.
    b. Wood Substrates: Do not use wire brushes.

3. Spray Equipment: Use spray equipment that provides controlled application at volume and pressure indicated, measured at nozzle. Adjust pressure and volume to ensure that spray methods do not damage surfaces.

    a. Equip units with pressure gages.
    b. Unless otherwise indicated, hold spray nozzle at least 6 inches from surface and apply material in horizontal, back-and-forth sweeping motion, overlapping previous strokes to produce uniform coverage.
    c. For chemical spray application, use low-pressure tank or chemical pump suitable for chemical indicated, equipped with nozzle having a cone-shaped spray.
    d. For water-spray application, use fan-shaped spray tip that disperses water at an angle of 25 to 50 degrees.
    e. For heated water-spray application, use equipment capable of maintaining temperature between 140 and 160 deg F at flow rates indicated.

B. Paint Removal with Hand Tools: Remove paint manually using hand-held scrapers, wire brushes, sandpaper, and metallic wool as appropriate for the substrate material. Do not use other methods except as indicated as part of the historic treatment program and as approved by The COR.

C. Paint Removal with Micro-Abrasion Blasting: Remove paint manually using micro-abrasive blasting techniques as appropriate for the substrate material. Directly after wet abrasive blasting, apply Hold Tight 102 in a 2% solution to prevent flash rusting for a period of 48-96 hours after wet blasting treatments. Do not use other methods except as indicated as part of the historic treatment program and as approved by The COR. Do not sandblast.

D. Paint Removal with Alkaline Paste Paint Remover:

1. Remove loose and peeling paint using scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
2. Apply paint remover to dry, painted surface with brushes.
3. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
4. Rinse with cold water applied by low-pressure spray to remove chemicals and paint residue.
5. Use mechanical methods recommended in writing by manufacturer to remove chemicals and paint residue.
6. Repeat process if necessary to remove all paint.
7. After paint removal, conduct alkali testing with litmus paper on surfaces that have been treated. Neutralize any surfaces that are too alkali or too acidic for future coatings.

E. Paint Removal with Covered or Skin-Forming Alkaline Paint Remover:

1. Remove loose and peeling paint using scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
2. Apply paint remover to dry, painted surface with brushes or as recommended in writing by manufacturer.
3. Apply cover according to manufacturer's written instructions.

4. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
5. Scrape off paint and remover.
6. Rinse with cold water applied by low-pressure spray to remove chemicals and paint residue.
7. Use mechanical methods recommended in writing by manufacturer to remove chemicals and paint residue.
8. For spots of remaining paint, apply alkaline paste paint remover according to "Paint Removal with Alkaline Paste Paint Remover" Paragraph.
9. After paint removal, conduct alkali testing with litmus paper on surfaces that have been treated. Neutralize any surfaces that are too alkali or too acidic for future coatings.

F. Paint Removal with Solvent-Type Paste Paint Remover:

1. Remove loose and peeling paint using scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
2. Apply thick coating of paint remover to dry, painted surface with natural-fiber cleaning brush, deep-nap roller, or large paintbrush. Apply in one or two coats according to manufacturer's written instructions.
3. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
4. Rinse with water applied by low-pressure spray to remove chemicals and paint residue.
5. Use mechanical methods recommended in writing by manufacturer to remove chemicals and paint residue.
6. Repeat process if necessary to remove all paint.
7. After paint removal, conduct alkali testing with litmus paper on surfaces that have been treated. Neutralize any surfaces that are too alkali or too acidic for future coatings.

G. Paint Removal with Covered, Solvent-Type Paste Paint Remover:

1. Remove loose and peeling paint using scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
2. Apply paint remover to dry, painted surface with natural-fiber cleaning brush, deep-nap roller, or large paint brush or as recommended in writing by manufacturer.
3. Apply cover according to manufacturer's written instructions.
4. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
5. Scrape off paint and remover.
6. Rinse with cold water applied by low-pressure spray to remove chemicals and paint residue.
7. Use mechanical methods recommended in writing by manufacturer to remove remaining chemicals and paint residue.
8. After paint removal, conduct alkali testing with litmus paper on surfaces that have been treated. Neutralize any surfaces that are too alkali or too acidic for future coatings.

3.7 SUBSTRATE REPAIR

A. General: Repair substrate surface defects that are inconsistent with the surface appearance of adjacent materials and finishes.

B. Wood Substrate:

1. Repair wood defects including dents and gouges more than 1/4 inch in size and all holes and cracks by filling with wood-patching compound and sanding smooth. Reset or remove protruding fasteners.
2. Where existing paint is allowed to remain, sand irregular buildup of paint, runs, and sags to achieve a uniformly smooth surface.

C. Cementitious Material Substrate:

1. General: Repair defects including dents and chips more than 1/2 inch in size and all holes and cracks by filling with cementitious patching compound and sanding smooth. Remove protruding fasteners.
2. New and Bare Plaster: Neutralize surface of plaster with mild acid solution as recommended in writing by paint manufacturer. In lieu of acid neutralization, follow manufacturer's written instruction for primer or transition coat over alkaline plaster surfaces.
3. Concrete, Cement Plaster, and Other Cementitious Products: Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. If surfaces are too alkaline to paint, correct this condition before painting.

D. Gypsum-Plaster and Gypsum-Board Substrates:

1. Repair defects including dents and chips more than 1/8 inch in size and all holes and cracks by filling with gypsum-plaster patching compound and sanding smooth. Remove protruding fasteners.
2. Rout out surface cracks to remove loose, unsound material; fill with patching compound and sand smooth.

E. Metal Substrate:

1. Preparation: Treat repair locations by wire-brushing and solvent cleaning. Use chemical or mechanical rust removal method to clean off rust.
2. Defects in Metal Surfaces: Repair non-load-bearing defects in existing metal surfaces, including dents and gouges more than 1/8 inch deep or 1/2 inch across and all holes and cracks by filling with metal patching compound and sanding smooth. Remove burrs and protruding fasteners.
3. Priming: Prime iron and steel surfaces immediately after repair to prevent flash rusting. Stripe paint corners, crevices, bolts, welds, and sharp edges. Apply two coats to surfaces that are inaccessible after completion of the Work.

3.8 PAINT APPLICATION, GENERAL

A. Comply with manufacturers' written instructions for application methods unless otherwise indicated in this Section.

B. Prepare surfaces to be painted according to the Surface-Preparation Schedule and with manufacturer's written instructions for each substrate condition.

C. Apply a transition coat over incompatible existing coatings.

D. Metal Substrate: Stripe paint corners, crevices, bolts, welds, and sharp edges before applying full coat. Apply two coats to surfaces that are inaccessible after completion of the Work. Tint stripe coat different than the main coating and apply with brush.

E. Blending Plain Painted Surfaces: When painting new substrates patched into existing surfaces or touching up missing or damaged finishes, apply coating system specified for the specific substrate. Apply final finish coat over entire surface from edge to edge and corner to corner.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: The Government will engage a testing agency to perform tests and inspections. Allow inspectors use of lift devices and scaffolding, as needed, to perform inspections.

B. Notify testing agency in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until testing agency has had reasonable opportunity to inspect work areas at lift device or scaffold location.

C. Manufacturer's Field Service: Engage paint-remover manufacturer's factory-authorized service representative for consultation and Project-site inspection, and provide on-site assistance when requested by The COR.

D. Paint Material Testing: Engage engage the services of a qualified testing and inspecting agency to inspect and test paint for composition and dry film thickness.

1. Paint Composition: The following procedure may be performed at any time and as often as The Government deems necessary during the period when paints are being applied:

    a. Testing agency will sample paint materials being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.
    b. Testing agency will perform tests for compliance of paint materials with product requirements.
    c. If test results show materials being used do not comply with product requirements, Contractor shall remove noncomplying-paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

2. Dry Film Thickness:

    a. Contractor shall touch up and restore painted surfaces damaged by testing.
    b. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written instructions, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written instructions.

3.10 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by The COR, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.11 SURFACE-PREPARATION SCHEDULE

A. General: Before painting, prepare surfaces for painting according to applicable requirements specified in this schedule.

1. Examine surfaces to evaluate each surface condition according to paragraphs below.
2. Where existing degree of soiling prevents examination, preclean surface and allow it to dry before making an evaluation.
3. Repair substrate defects according to "Substrate Repair" Article.

B. Surface Preparation for MPI DSD 0 Degree of Surface Degradation:

1. Surface Condition: Existing paint film in good condition and tightly adhered.
2. Paint Removal: Not required.
3. Preparation for Painting: Wash surface by detergent cleaning; use solvent cleaning where needed. Roughen or degloss cleaned surfaces to ensure paint adhesion according to paint manufacturer's written instructions.

C. Surface Preparation for MPI DSD 1 Degree of Surface Degradation:

1. Surface Condition: Paint film cracked or broken but adhered.
2. Paint Removal: Scrape by hand-tool cleaning methods to remove loose paint until only tightly adhered paint remains.
3. Preparation for Painting: Wash surface by detergent cleaning; use other cleaning methods for small areas of bare substrate if required. Roughen, degloss, and sand the cleaned surfaces to ensure paint adhesion and a smooth finish according to paint manufacturer's written instructions.

D. Surface Preparation for MPI DSD 2 Degree of Surface Degradation:

1. Surface Condition: Paint film loose, flaking, or peeling.
2. Paint Removal: Remove loose, flaking, or peeling paint film by hand-tool or chemical paint-removal methods.
3. Preparation for Painting: Wash surface by detergent cleaning; use solvent cleaning where needed. Use other cleaning methods for small areas of bare substrate if required. Sand surfaces to smooth remaining paint film edges. Prepare bare cleaned surface to be painted according to paint manufacturer's written instructions for substrate construction materials.

E. Surface Preparation for MPI DSD 3 Degree of Surface Degradation:

1. Surface Condition: Paint film severely deteriorated, obscuring fine architectural detail work because of paint-layer buildup, and surface indicated to have paint completely removed.
2. Paint Removal: Completely remove paint film by hand-tool or chemical paint-removal methods. Remove rust.

3. Preparation for Painting: Prepare bare cleaned surface according to paint manufacturer's written instructions for substrate construction materials.

F. Surface Preparation for MPI DSD 4 Degree of Surface Degradation:

1. Surface Condition: Missing material, small holes and openings, and deteriorated or corroded substrate.
2. Substrate Preparation: Repair, replace, and treat substrate according to "Substrate Repair" Article and requirements in other Specification Sections.
3. Preparation for Painting: Sand substrate surfaces to smooth remaining paint film edges and prepare according to paint manufacturer's written instructions for substrate construction materials. Remove rust.
4. Painting: Paint as required for MPI DSD 2 degree of surface degradation.

3.12 EXTERIOR HISTORIC PAINTING SCHEDULE

A. Clay Masonry Substrates:

1. Mineral Silicate System.

a. Prime Coat: Exterior, mineral silicate primer.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Exterior mineral silicate paint, flat.

B. Steel and Iron Substrates:

1. Water-Based, Light Industrial Coating over Epoxy System.

a. Prime Coat: Epoxy metal primer.
b. Intermediate Coat: High-build epoxy paint, low gloss.
c. Topcoat: Exterior, water-based, light industrial coating, semigloss.

C. Stainless Steel Substrates:

1. Latex System.

a. Prime Coat: Solvent-based bonding primer.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Exterior latex paint, semigloss.

D. Exposed Wood-Framing Substrates:

1. Latex over Alkyd Primer System.

a. Prime Coat: Exterior, alkyd/oil wood primer.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Exterior latex paint, semigloss.

E. Dressed-Lumber Substrates: Trim, Architectural woodwork, Doors, Windows.

1. Latex over Alkyd Primer System.

a. Prime Coat: Exterior, alkyd/oil wood primer.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Exterior latex paint, semigloss.

F. Wood-Board, Traffic-Surface Substrates:

1. Latex Floor Paint over Alkyd Primer System.

a. Prime Coat: Exterior, alkyd/oil wood primer.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Latex floor paint, low gloss.

G. Lime Stucco Substrates:

1. Mineral Silicate System.

a. Prime Coat: Exterior, mineral silicate primer.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Exterior mineral silicate paint, flat.

H. Ferrous Metal Substrates, Cast-iron facade and storefront Wrought-iron railing and gate:

1. Polyurethane over Epoxy System.

a. Prime Coat: Tneme-Zinc Series 90-97 or comparable product.
b. Intermediate Coat: Tnemec F.C. Typoxy Series 27 or comparable product.
c. Topcoat: TNEMIC ENDURA-SHIELD series 73 or comparable product.

3.13 INTERIOR HISTORIC PAINTING SCHEDULE

A. Steel Substrates:

1. Institutional Low-Odor/VOC Latex System, MPI INT 5.1S:

a. Prime Coat: Primer, rust inhibitive, water based MPI #107.

1) S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series.

b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.

c. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 3), MPI #145.

1) S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series.

d. Color: Match existing.

B. Galvanized-Metal Substrates:

1. Institutional Low-Odor/VOC Latex System, MPI INT 5.3N:

a. Prime Coat: Primer, galvanized, water based, MPI #134.

1) S-W Pro Industrial Pro-Cryl Universal Metal Primer B66.

b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.

c. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 3), MPI #145.

1) S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series.

d. Color: Match existing.

C. Stainless Steel Substrates:

1. Latex System, MPI INT 5.6H:

a. Prime Coat: Primer, bonding, solvent based, MPI #69.

1) S-W White Pigmented Shellac B49 Series.

b. Intermediate Coat: Latex, interior, matching topcoat.

c. Topcoat: Latex, interior (MPI Gloss Level 3), MPI #52.

1) S-W ProMar 200 Zero VOC Latex Eg-Shel, B20 Series.

d. Color: Match existing.

D. Wood Substrates: Wood trim, Architectural Woodwork, Doors, Windows, and Wood Board paneling.

1. Institutional Low-Odor/VOC Latex System, MPI INT 6.3V:

a. Prime Coat: Primer, latex, for interior wood, MPI #39.

1) S-W PrepRite ProBlock Primer Sealer, B51-620 Series.

b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.

c. Topcoat: Latex, interior, institutional low odor/VOC, semigloss (MPI Gloss Level 5), MPI #147.

1) S-W Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series.

d. Color: Match existing.

END OF SECTION 090391