



US Army Corps
of Engineers
Baltimore District

CONSTRUCTION SPECIFICATIONS

ROSS BUILDING WINDOW RESTORATION

USHMM, WASHINGTON, D.C.

REQUEST FOR PROPOSAL: **DACW31-03-R-0004**

CONTRACT NO.

DATE: **DEC 17, 2002**

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SECTION 01010

GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

1.1.1 Project Identification

Project consists of window restoration of United States Holocaust Memorial Museum, Ross Building.

1.1.2 Project Location

Ross Building, Washington, D.C.

1.2 DEFINITIONS

1.2.1 Owner

United States Holocaust Memorial Museum.

1.2.2 Contracting Officer (CO)

Authorized Representative of the Government and U. S. Army Corps of Engineers, Baltimore District.

1.2.3 Contracting Officer's Technical Representative (COTR)

Authorized Representative of the Contracting Officer.

1.2.4 Architect-Engineer (AE)

Einhorn Yaffee Prescott, NW Washington, D.C.

1.2.5 Basis-of-Design Product

Where specifications include "Basis-of-Design Product" and also introduce or refer to manufacturers name, provide either the specified product or a comparable product. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in "Comparable Product" definition to obtain approval for use of an unnamed product.

1.2.6 Comparable Product

Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

1.2.7 Or Approved Equal

Where products are specified by name and accompanied by the term "or

approved equal" comply with provisions in "Comparable Product" definition to obtain approval for use of an unnamed product.

1.3 ADMINISTRATIVE REQUIREMENTS

1.3.1 PROGRESS SCHEDULING AND REPORTING:

As specified in Section 01320, "PROJECT SCHEDULE."

1.3.2 PAYMENTS TO CONTRACTORS: (NOV 1976)

For payment purposes only, an allowance will be made by the Contracting Officer of 100 percent of the invoiced cost of materials or equipment delivered to the site but not incorporated into the construction, pursuant to the Contract Clause entitled "PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS". The Contracting Officer may also, at his discretion, take into consideration the cost of materials or equipment stored at locations other than the jobsite, when making progress payments under the contract. In order to be eligible for payment, the Contractor must provide satisfactory evidence that he has acquired title to such material or equipment, and that it will be utilized on the work covered by this contract. Further, all items must be properly stored and protected. Earnings will be computed using 100% of invoiced value. (CENAB-CO-E)

1.3.3 PURCHASE ORDER: (SEP 1975 REV JUN 1991)

One readable copy of all purchase orders for material showing firm names and addresses, and all shipping bills, or memoranda of shipment received regarding such material, shall be furnished to the appointed Contracting Officer's Representative as soon as issued. Such orders, shipping bills or memoranda shall be so worded or marked that all material can be definitely identified on the drawings. At the option of the Contractor, the copy of the purchase order may or may not indicate the purchase price. (CENAB-CO-E)

1.3.4 NEGOTIATED MODIFICATIONS: (OCT 84)

Whenever profit is negotiated as an element of price for any modification to this contract with either prime or subcontractor, a reasonable profit shall be negotiated or determined by using the OCE Weighted Guidelines method outlined in EFARS 15.902. (Sugg. NAB 84-232)

1.3.5 IDENTIFICATION OF EMPLOYEES: (OCT 1983)

Each employee assigned to this project by the Contractor and subcontractors shall be required to display at all times, while on the project site, an approved form of identification provided by the Contractor, as an authorized employee of the Contractor/subcontractor. In addition, on those projects where identification is prescribed and furnished by the Government, it shall be displayed as required and it shall immediately be returned to the Contracting Officer for cancellation upon release of the assigned employee and or completion of project. (CENAB)

1.3.5.1 Owner's Security Requirements

The Owner will furnish security requirements for employee identification badging.

1.3.6 O and M DATA: (JUL 1979)

The requirements for furnishing operating and maintenance data and field instruction are specified elsewhere in the specifications. The Contractor shall submit to the Contracting Officer, at a time prior to the 50% project completion time, a list of proposed maintenance and instruction manuals to be furnished the Government and the scheduled dates of all required field instructions to be provided by Contractor furnished personnel or manufacturer's representatives. All maintenance and instruction manuals must be furnished to the Contracting Officer at least 2 weeks prior to the scheduled dates of any required Contractor furnished field instructions or at least one month prior to project completion if no Contractor furnished field instructions are required. (CENAB)

1.3.7 HOT-WORK PERMIT

A hot-work permit, DA Form 5383-R (copy attached to the end of this section), must be submitted to the Owner before using heat-producing equipment.

1.3.8 PARTNERING: (NOV 92)

In order to most effectively accomplish this contract, the Government is willing to form a cohesive partnership with the Contractor and its subcontractors. This partnership would strive to draw on the strengths of each organization in an effort to achieve a quality project done right the first time, within budget and on schedule. This partnership would be bilateral in make-up and participation will be totally voluntary. Any cost associated with effectuating this partnership will be agreed to by both parties and will be shared equally with no change in contract price. (CENAB-EN-DT)

1.3.9 PERMITS

Contractor shall secure all necessary permits and coordinate with Park Police for work affecting the sidewalk along Raoul Wallenberg Place, SW, and the Metropolitan Police for work affecting the sidewalk along Independence Avenue, SW.

1.4 JOB CONDITIONS

1.4.1 LAYOUT OF WORK: (APR 1972)

The Contractor shall lay out his work and shall be responsible for all measurements in connection therewith. The Contractor shall furnish, at his own expense, all templates, platforms, equipment, tools and materials and labor as may be required in laying out any part of the work. The Contractor will be held responsible for the execution of the work to such lines and elevations shown on the drawings or indicated by the Contracting Officer. (CENAB)

1.4.2 TRANSPORTATION FACILITIES:

THE ROSS BUILDING, WASHINGTON, D.C.

Driving From Baltimore: MD 295 South to New York Ave, NE Washington, DC. New York Ave, NE turns into New York Ave, NW. Continue left on I-395 South. Take 12th St. towards Downtown/Maine Ave. Continue on Maine Ave. Turn right on Raoul Wallenberg PL SW.

Metro: The nearest Metro Station is Smithsonian on Orange Line or Blue

Line.

1.4.3 AVAILABILITY OF UTILITIES INCLUDING LAVATORY FACILITIES: (JUN 1980)

Building utilities shall be available at no cost to the Contractor. The Contractor shall make his own investigation and determinations as to the availability and adequacy of utilities for his use for construction purposes and building consumption. The Contractor shall coordinate availability and use of building utilities with the Contracting Officer. He shall install and maintain all necessary supply lines, connections, piping, and meters if required, but only at such locations and in such manner as approved by the Contracting Officer. Before final acceptance of work under this contract, all temporary supply lines, connections and piping installed by the Contractor shall be removed by him in a manner satisfactory to the Contracting Officer. (CENAB)

1.4.4 COMPLIANCE WITH DISTRICT OF COLUMBIA REGULATIONS: (JUL 1980)

The site of the work is at the corner of Independence Avenue and Raoul Wallenberg Place in Southwest Washington, D.C. and all rules and regulations issued by the Owner and District of Columbia covering general safety, security, sanitary requirements, pollution control, traffic regulations and parking, shall be observed by the Contractor. Information regarding these requirements may be obtained by contacting the Contracting Officer, who will provide such information or assist in obtaining same from appropriate authorities. (MEMO)

1.4.5 MAINTENANCE OF ACCESS: (DEC 1975)

The Contractor shall not block passage through sidewalks, roads, or entranceways to the building during performance of work under this contract. No construction materials are to be stored in the building at any time unless otherwise permitted by the Contracting Officer in writing. (CENAB)

1.4.6 PROTECTION OF GOVERNMENT PROPERTY AND PERSONNEL: (DEC 1975 REV JUN 1991)

1.4.6.1 Equipment Protection

All existing Owner and Government owned equipment within the work area shall be protected by the Contractor from damage caused by renovation operations. As a minimum, the Contractor shall cover all non-Contractor owned furniture, equipment, vehicles, etc., with dust barriers or other protective covers prior to commencement of construction or demolition operations.

1.4.6.2 Damaged Facilities

All existing facilities damaged as a result of the construction activities shall be restored to a condition equivalent to that prior to the start of work. Materials for replacement, repairing, patching, restoration, and similar type work shall match existing as approved by the Government and Architect.

1.4.6.3 Personnel Protection

The Contractor shall protect personnel by installing safety rails and/or barricades as applicable to prevent injury from unauthorized entry into

work areas. Warning signs shall be erected as necessary to indicate construction areas or hazardous zones. Work shall proceed in such manner as to prevent the undue spread of dust and flying particles.

1.4.6.4 Additional Measures

The Contractor shall take such additional measures as may be directed by the Contracting Officer to prevent damage or injury to Government and Owner's property or personnel. (CENAB)

1.4.7 HAZARDOUS MATERIALS

1.4.7.1 Lead-Based Paint

Lead-based paint has been identified on various components of the building. Lead-based paint related reports and documentation are included in the bidding documents. Contractor's Scope of Work includes lead-based paint survey, testing, abatement design, removal, containerization, and disposal work.

1.4.7.2 Lead-Based Paint, Survey, Testing and Abatement Design

The Contractor shall retain the services of qualified and licensed hazardous materials consultant and testing agency to perform the following functions:

Survey and conduct testing for identification and location of lead-based paint.

Prepare lead-paint abatement design and specifications, including procedures and methods for execution of removal and disposal work and submit to the COTR for approval, prior to commencement of removal work. Removal of lead-based paint on existing wood windows shall be accomplished by non-destructive methods as specified in Section 08591 "WOOD WINDOW RESTORATION."

1.4.7.3 Lead-Based Paint, Documentation

The Contractor shall provide lead-based paint abatement drawings, specifications, and subsequent submittals to the Contracting Officer's Technical Representative (COTR) for review and approval.

1.4.7.4 Lead Based Paint, Regulations

Work shall be done in strict accordance with all applicable Federal, State, and local regulations and the use of the best available technology, procedures, and methods for preparation, execution, cleanup, disposal, and safety are required. This compliance is the sole responsibility of the Contractor.

1.4.7.5 Asbestos

Through site investigations, friable or non-friable asbestos have not been found in the building, however, if asbestos is encountered on the site, its testing, removal and disposal is covered in "CHANGES" clause of the Contract Clauses.

1.4.7.6 Hazardous Materials Encountered During Construction

If hazardous materials not identified in the contract are encountered on the site, the Contractor shall stop work in the affected area and report the condition to the Contracting Officer or the COTR in writing.

1.4.8 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER:

1.4.8.1 Procedure for Time Extensions

This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance the contract clause entitled "Default: (Fixed Price Construction)". In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

- a. The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.
- b. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

1.4.8.2 Monthly Schedule

The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

WASHINGTON, D.C.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
7	6	6	7	7	6	4	5	3	5	4	4

1.4.8.3 Notice to Proceed (NTP)

Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph "Monthly Schedule", above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled "Default (Fixed Price Construction)".

1.4.9 BUILDING OCCUPANCY AND WORK SCHEDULE REQUIREMENTS

1.4.9.1 Building Occupancy

All interior spaces will be occupied throughout the duration of the project. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage.

1.4.9.2 Reinstallation Work, General

All window assemblies shall be reinstalled as a complete assembly at one time, including the blinds and interior storm windows.

1.4.9.3 Executive Office Area Requirements

Removal and reinstallation of windows in the Executive Office area shall be coordinated with the schedule of the staff in that area, in order to minimize disruption to their schedules. This affects four window openings at the southeast corner of the building's second floor. This shall be coordinated with the COTR and the Owner.

1.4.9.4 Schedule Coordination

In order to prevent and minimize disruption of Owner's activities, the entire project schedule and plan for interruption of activities in offices shall be coordinated with and approved by the Owner.

1.4.10 WORKING HOURS

All work shall be done between 5:30 p.m. and 9:30 a.m., Monday through Friday. Work on Saturdays and Sundays is permitted 24 hours a day unless otherwise required by Owner's Calendar of Events.

1.4.10.1 Work Restrictions

No work shall be done between the hours of 9:00 a.m. and 5:30 p.m., Monday through Friday. Access to the building for both staff and the public shall not be disrupted during these hours. The work shall also be coordinated so that it doesn't disrupt events listed on the Owner's (United States Holocaust Memorial Museum) Calendar of Events, which will be provided to the contractor by the COTR.

1.5 SAFETY

1.5.1 GENERAL

Worker safety is of paramount importance. The Contractor shall comply with the Contract Clause in the Solicitation entitled ACCIDENT PREVENTION, including the U.S. Army Corps of Engineers Safety and Health Requirements Manual referred to therein in addition to the provisions of this specification.

1.5.1.1 ACCIDENTS

Chargeable accidents are to be investigated by both Contractor personnel and the Contracting Officer.

1.5.1.2 ACCIDENT REPORTING, ENG FORM 3394

Section 1, Paragraph 01.D, of EM 385-1-1 (3 Sep 1996) "U.S. Army Corps of Engineers Safety and Health Requirements Manual" and the Contract Clause

entitled ACCIDENT PREVENTION are amended as follows: The prime Contractor shall report on Eng Form 3394, supplied by the Contracting Officer, all injuries to his employees or subcontractors that resulting lost time and all damage to property and/or equipment in excess of \$2,000 per incident. Verbal notification of such accident shall be made to the Contracting Officer within 24 hours. A written report on the above noted form shall be submitted to the Contracting Officer within 72 hours following such accidents. The written report shall include the following:

a. A description of the circumstances leading up to the accident, the cause of the accident, and corrective measures taken to prevent recurrence.

b. A description of the injury and name and location of the medical facility giving examination and treatment.

c. A statement as to whether or not the employee was permitted to return to work after examination and treatment by the doctor, and if not, an estimate or statement of the number of days lost from work. If there have been days lost from work, state whether or not the employee has been re-examined and declared fit to resume work as of the date of the report.

1.5.1.3 OSHA Requirements

1.5.1.4 OSHA Log

A copy of the Contractor's OSHA Log of Injuries shall be forwarded monthly to the Contracting Officer.

1.5.1.5 OSHA Inspections:

Contractors shall immediately notify the Contracting Officer when an OSHA Compliance official (Federal or State representative) presents his/her credentials and informs the Contractor that the workplace will be inspected for OSHA compliance. Contractors shall also notify the Contracting Officer upon determination that an exit interview will take place upon completion of the OSHA inspection. (NABSA OCT 05, 1976)

1.5.2 OTHER SAFETY REQUIREMENTS

Requirements of Owner's "Contractor Safety Plan" also apply. A copy of plan shall be provided by the Owner at Contractor's request.

1.6 CONTRACTOR QUALITY CONTROL

1.6.1 GENERAL

The Contractor shall provide and maintain an effective quality control program that complies with the Contract Clause entitled "Inspection of Construction." The CQC Program through inspection and reporting shall demonstrate and document the extent of compliance of all work with the standards and quality established by the contract document. The burden of proof of contract compliance is placed on the Contractor and not assumed by the Government. The Contractor's Quality Control will not be accepted without question

1.6.2 CONTROL

Contractor Quality Control (CQC) is the means by which the Contractor ensures that the construction, to include that of subcontractors and

suppliers, complies with the requirements of the contract. The controls shall be adequate to cover all construction operations, including both on-site and off-site fabrication, and will be keyed to the proposed construction sequence.

1.6.2.1 Physical Examination

A physical examination of required materials, equipment, and sample work to assure that they are on hand for the stage of work about to begin.

1.6.2.2 Physical Inspections

Daily checks shall be performed to assure continuing compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation.

1.6.3 WORK DEFICIENCIES

The Contractor shall not build upon or conceal non-conforming work. If deficiencies indicate that the Contractor's Quality Control is not adequate or does not produce the desired results, corrective actions shall be taken by the Contractor. If the Contractor does not promptly make the necessary corrections, the Contracting Officer may issue an order stopping all or any part of the work until satisfactory corrective action has been taken. Payment for deficient work will be withheld until work has been satisfactorily corrected or other action is taken pursuant to the Contract Clause entitled, "Inspection of Construction." If recurring deficiencies in an item or items indicated that the quality control is not adequate, such corrective actions shall be taken as directed by the Contracting Officer.

1.7 SUBMITTAL PROCEDURES

1.7.1 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers as follows:

SD-01 Data

SD-04 Drawings

SD-06 Instructions

SD-07 Schedules

SD-08 Statements

SD-09 Reports

SD-13 Certificates

SD-14 Samples

SD-18 Records

SD-19 Operation and Maintenance Manuals

1.7.2 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.7.2.1 Government Approved

Governmental approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specification and Drawings for Construction," they are considered to be "shop drawings."

1.7.2.2 Information Only

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referenced above.

1.7.3 APPROVED SUBMITTALS

The approval of submittals by the Contracting Officer shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailed and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the CQC requirements of this contract, is responsible for the dimensions and design of adequate connections, details and satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be given consideration unless accompanied by an explanation as to why a substitution is necessary.

1.7.4 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies as specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, notice as required under Contract Clause entitled "Changes" shall be given promptly to the Contracting Officer.

1.7.5 GENERAL

The Contractor shall submit all items listed on the Submittal Register (ENG Form 4288) or specified in the other sections of these specifications. The Contracting Officer may request submittals in addition to those listed when deemed necessary to adequately describe the work covered in the respective sections. Submittals shall be made in the respective number of copies and submitted to the Contracting Officer. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor and each respective transmittal form (ENG Form 4025) shall be stamped, signed and dated by the Contractor certifying that the accompanying submittal complies with the contract requirements. Proposed deviations from the contract requirements shall be clearly identified. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby.

1.7.6 SUBMITTAL REGISTER: (ENG FORM 4288)

At the end of this section is one set of ENG Forms 4288 listing each item of equipment and material for which submittals are required by the specifications. Columns "d" through "r" (abbreviations in column "p" are defined as follows: "AR" means Area Office; "AE" means architect-engineer; and "ED" means Engineering Division) have been completed by the Government. The Contractor shall complete columns "a", "b", "c", and "s" through "z" and return 2 completed copies to the Contractor Officer for approval within 30 calendar days after Notice to Proceed. The approved submittal register will become the scheduling document and will be used to control submittals throughout the life of the contract. This register and the progress schedules shall be coordinated.

1.7.7 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed on the register for review and approval. No delays, damages or time extensions will be allowed for time lost in late submittals.

1.7.8 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care will be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

1.7.9 SUBMITTAL PROCEDURE

Six (6) copies of submittals shall be made as follows:

1.7.9.1 Procedures

This paragraph is in addition to the requirements set forth in Contract Clause entitled "Specifications and Drawings for Construction" (ER 415-1-10). In the signature block provided on ENG Form 4025 the Contractor certifies that each item has been reviewed in detail and is correct and is in strict conformance with the contract drawings and specifications unless noted otherwise. The accuracy and completeness of submittals is the responsibility of the Contractor. Any costs due to resubmittal of documents caused by inaccuracy, lack of coordination, and/or checking shall be the responsibility of the Contractor. This shall include the handling and review time on the part of the Government. Each variation from the contract specifications and drawings shall be noted on the form; and, attached to the form, the Contractor shall set forth, in writing, the reason for and description of such variations. If these requirements are not met, the submittal may be returned for corrective action.

1.7.9.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variations" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and

annotate such deviations on the submittal. The government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.7.10 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being stamped and dated. Four (4) copies of the submittal will be retained by the Contracting Officer and two (2) copies of the submittal will be returned to the Contractor.

1.7.11 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will be returned. Approval of the Contracting Officer is not required on information only submittals. These submittals will be used for information purposes. The government reserves the right to require the Contractor to resubmit any item found not to comply with the contract.

1.7.12 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

(Firm Name)

_____ Approved

_____ Approved with corrections as noted on submittal data and/or attached sheet(s).

SIGNATURE: _____

TITLE: _____

DATE: _____

1.7.13 SUBMITTALS REQUIRED UNDER THIS SECTION

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. "AR" stands for review by "Area Office." The following shall be submitted in accordance with this section:

SD-01 Data

CQC Program; GA|AR.

SD-07 Schedules

Progress Schedule; GA|AR.

A schedule that shows the manner in which the Contractor intends to prosecute the work.

Modified Chart; GA|AR.

Prepared when changes are authorized that result in contract time

extensions.

SD-08 Statements

Change Notification; GA|AR.

Any changes made by the Contractor.

SD-09 Reports

OSHA Log; FIO.

A log shall be reported monthly for injuries.

SD-18 Records

Title Evidence; FIO.

Proof of purchase for equipment and/or materials.

Payment Evidence; FIO.

Proof of full payment.

1.8 ENVIRONMENTAL PROTECTION

1.8.1 APPLICABLE REGULATIONS

The Contractor and his subcontractors in the performance of this contract, shall comply with all applicable Federal, State, and local laws and regulations concerning environmental pollution control and abatement in effect on the date of this solicitation, as well as the specific requirements stated elsewhere in the contract specifications.

1.8.2 NOTIFICATION

The Contracting Officer will notify the Contractor of any non-compliance with the foregoing provisions and the action to be taken. The Contractor shall, after receipt of such notice, immediately take corrective action. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of time lost due to any such stop order shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it is later determined that the Contractor was in compliance.

1.8.3 PROTECTION OF WATER RESOURCES

The Contractor shall not pollute streams, lakes or reservoirs with fuels, oils, bitumens, calcium chloride, acid construction wastes or other harmful materials. All work under this contract shall be performed in such a manner that objectionable conditions will not be created in streams through or adjacent to the project areas.

1.8.4 BURNING

Burning will not be permitted.

1.8.5 DUST CONTROL

The Contractor shall maintain all work area free from dust which would contribute to air pollution. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs.

1.9 AS-BUILT (RECORD)DRAWINGS AND SPECIFICATIONS

1.9.1 PROGRESS MARKED UP AS-BUILT (RECORD)PRINTS

The Contractor shall mark up one set of paper prints to show the as-built conditions. These as-built marked prints shall be kept current and available on the jobsite at all times. All changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes. The as-built marked prints will be jointly inspected for accuracy and completeness by the Contracting Officer's representative and a responsible representative of the Construction Contractor prior to submission of each monthly pay estimate. The drawings shall show the following information, but not be limited thereto:

1.9.1.1 Final Revisions

When final revisions have been completed, each drawing shall be lettered or stamped with the words "RECORD DRAWING AS-BUILT" followed by the name of the General Contractor in letters at least 3/16" high.

1.9.2 DRAWING PREPARATION

Upon approval of the as-built prints submitted, the Contractor will be furnished the original set of contract drawings with all amendments incorporated and CAD Drawing files. These drawings (CAD Drawing files) shall be modified as may be necessary to correctly show all the features of the project as it has been constructed by bringing the contract set into agreement with the approved as-built prints, adding such additional drawings as may be necessary. These drawings are part of the permanent records of this project and the Contractor shall be responsible for the protection and safety thereof until returned to the Contracting Officer. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at his expense.

1.9.3 FINAL RECORD DRAWING SUBMITTAL

Submit one set of Record CAD Drawing files, on CD-ROM, one set of Record CAD Drawing plots (transparencies), and one copy printed from record plots. Plot and print each Drawing, whether or not changes and additional information were recorded.

1.9.4 RECORD SPECIFICATIONS

Submit one copy of Project's Specifications, including addenda and contract modifications.

PART 2 PRODUCT -- NOT APPLICABLE

PART 3 EXECUTION -- NOT APPLICABLE

ATTACHMENTS

Form 4025

Form 4288

-- End of Section --

INSTRUCTIONS

Section I will be initiated by the Contractor in the required number of copies.

2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288 for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

- | | | | |
|---|--|-------|--|
| A | Approved as submitted | E | Disapproved (See attached) |
| B | Approved, except as noted on drawings. | F | Receipt acknowledged |
| C | Approved, except as noted on drawings.
Refer to attached sheet resubmission required. | FX -- | Receipt acknowledged, does not comply
as noted with contract requirements |
| D | -- Will be returned by separate correspondence. | G | -- Other (Specify) |
10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

SUBMITTAL REGISTER

(ER 415-1-10)

CONTRACT NO.

TITLE AND LOCATION

ROSS BUILDING - WINDOW RESTORATION

CONTRACTOR

SPECIFICATION SECTION 08582

ACTIVITY NO.	TRANSMITTAL NO.	ITEM NO.	SPECIFICATION PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL													CLASSIFICATION	CONTRACTOR SCHEDULE DATES		CONTRACTOR ACTION		GOVERNMENT ACTION		REMARKS	
					DRAWINGS	INSTRUMENTS	STATEMENTS	CERTIFICATES	RECOMMENDATIONS	OTHER	INFORMATION	GOVERNMENT REVIEW	REVIEW	DATE	DATE	DATE	DATE		DATE	DATE						
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.	z.	aa.
			1.2	Storm Windows													X									
				Storm Windows	X												X									
				Warranty	X												X									5-Year
				Storm Windows													X	X								
				Storm Window, Metal Finish and Color									X				X									

SECTION 01070

CUTTING, PATCHING AND REPAIRING

PART 1 GENERAL

1.1 DESCRIPTION

This section pertains to the provision of all cutting, removing, replacing, patching, repairing, restoration, refinishing and similar type work as necessary to existing work scheduled to remain and to new work required to be cut or uncovered. All existing facilities damaged as a result of the construction activities shall be restored to a condition equivalent to that prior to the start of work, except where otherwise shown or specified.

1.2 WORK EXECUTION

Extent of work includes uncovering work to provide for installation of ill-timed work, removal and replacement of defective work or work that does not conform to the contract documents, installation of new work to be installed in existing construction, and as necessary to make several parts fit.

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation. "AR" stands for review by "Area Office." The following shall be submitted in accordance with Section 01010 GENERAL REQUIREMENTS:

SD-08 Statements

Procedures; GA|AR.

The accomplishment of cutting, patching, and repairing of the work.

PART 2 PRODUCTS

2.1 MATERIALS

Materials for replacement, repairing, patching, restoration, and similar type work shall conform to applicable sections of the specifications for new materials or work. Where existing materials and/or installations are not covered by the specifications, such materials shall match existing condition to the satisfaction of the Government. All excess materials resulting from cutting and removal work shall be removed from the job site.

PART 3 EXECUTION

3.1 INSPECTION AND PREPARATION

3.1.1 Inspection of Conditions of Work

Inspect all existing conditions of work, for possible movement or damage during cutting or uncovering procedures. After uncovering work, inspect conditions affecting installation of new products. Do not proceed with any further cutting, patching or repairing work if defects are observed; or if any unsafe condition exists. Report such defects in writing to the

Contracting Officer's Technical Representative (COTR) prior to proceeding with the work.

3.1.2 Preparation of the Work Site

Prior to cutting or uncovering work, provide all shoring, bracing and supports as required to maintain the structural integrity of the project. Prior to restoration work, properly prepare existing surfaces to receive new materials such as to provide a proper bond or joining.

3.2 CUTTING AND DRILLING

Contractor shall do all cutting and drilling of existing walls, partitions, floors, etc., as necessary for installation of the new work as shown, including cutting of holes and other openings for new work. Cutting shall be performed by hand or small power tools; holes and slots cut neat and to size required, with minimum disturbance of adjacent work. Openings shall be covered temporarily when not in use and patched as soon as work is installed.

3.3 PATCHING AND REPAIRS

3.3.1 Performance of Work

Existing work shall be cut, altered, removed, temporarily removed and replaced, or relocated as required for the performance of the work indicated on the drawings. Work remaining in place that is damaged or defaced by reason of alteration or demolition shall be restored to a condition equivalent to that prior to the start of work to the satisfaction of the Government. Contractor shall be responsible for coordinating all patching and repairing involving the various trades, whether or not specifically mentioned under the respective sections.

3.3.2 Alterations

Where alterations or removals exposes damaged or unfinished surfaces or materials, such surfaces or materials shall be refinished or replaced as necessary to make continuous areas uniform. Where such new work occurs in an existing unfinished area, the work shall be done to render the new work inconspicuous.

3.3.3 Utility Removal

Where utilities are removed, relocated, or abandoned, they shall be capped, valved or plugged to make a complete and working installation as required. Resulting holes and damaged surfaces shall be properly patched to match adjacent undisturbed surfaces or prepared to receive new finish as applicable.

3.3.4 Restoration of Existing Surfaces

All surfaces affected by patching and repairing work shall be restored to match existing adjacent surfaces to the satisfaction of the Government. Repainting of affected areas or surfaces shall match color and shade of existing painted surfaces.

3.4 PROCEDURES

3.4.1 Procedures

The procedures proposed for the accomplishment of cutting, patching, and repairing work shall be submitted when such work affects:

- a. Work of Government employees or Contractors working under separate contract.
- b. The structural value of or structural integrity of any element of the project.
- c. Integrity of effectiveness of weather-exposed or moisture-resistant elements or systems.
- d. Efficiency and operational life, maintenance or safety of operational elements.
- e. Visual qualities of sight-exposed elements.

3.4.2 Submittals

- a. Identification of the project.
- b. Description of affected work.
- c. The necessity for cutting, patching or alteration.
- d. The affect on work of the Government or any separate Contractor.
- e. The affect on the structural or weather proof integrity of the project.
- f. Description of proposed work:
 - 1. Scope of cutting, patching, alteration and repairing.
 - 2. Trades who will execute the work.
 - 3. Products proposed to be used.
 - 4. Schedule of work.
- g. Alternatives to cutting, patching and repairing.

-- End of Section --

*

SECTION 01320

PROJECT SCHEDULE

PART 1 GENERAL

1.1 REFERENCE

The publications listed below form a part of the specification to the extent referenced. The publications are referenced in the text by basic designation only.

ENGINEERING REGULATIONS (ER)

ER 1-1-11 (1995) Progress, Schedules, and Network Analysis Systems

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation "AR" stands for review by "Area Office." The following shall be submitted in accordance with Section 01010 "GENERAL REQUIREMENTS."

SD-07 Schedules

Initial Project Schedule; GA|AR.
Periodic Schedule Updates; GA|AR.

Three copies of the schedules showing codes, values, categories, numbers, items, etc., as required.

SD-09 Reports

Narrative Report; GA|AR.
Schedule Reports; GA|AR.

Three copies of the reports showing numbers, descriptions, dates, float, starts, finishes, durations, sequences, etc., as required.

1.3 QUALIFICATIONS

The Contractor shall designate an authorized representative who shall be responsible for the preparation of all required project schedule reports.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS, a Project Schedule as described below shall be prepared. The scheduling of construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate Project Schedule. The approved

Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

3.2 BASIS FOR PAYMENT

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel will result in an inability of the Contracting Officer to evaluate Contractor's progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer and those revisions have not been included in the Project Schedule, then the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

3.3 PROJECT SCHEDULE

The computer software system utilized by the Contractor to produce the Project Schedule shall be capable of providing all requirements of this specification. Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule. Manual methods used to produce any required information shall require approval by the Contracting Officer.

3.3.1 Use of the Critical Path Method

The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The Contractor shall provide the Project Schedule in the Precedence Diagram Method (PDM).

3.3.2 Level of Detail Required

The Project Schedule shall include an appropriate level of detail. Each window opening shall be listed in the schedule with appropriate details, to facilitate Owner in planning personnel movement for work area availability during the contract duration. Failure to develop or update the Project Schedule or provide data to the Contracting Officer at the appropriate level of detail, as specified by the Contracting Officer, shall result in the disapproval of the schedule. The Contracting Officer will use, but is not limited to, the following conditions to determine the appropriate level of detail to be used in the Project Schedule.

3.3.2.1 Activity Durations

Contractor submissions shall follow the direction of the Contracting Officer regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between payment periods (usually less than 2 percent of all non-procurement activities' Original Durations are greater than 20 days).

3.3.2.2 Procurement Activities

Tasks related to the procurement of long lead materials or equipment shall be included as separate activities in the project schedule. Long lead materials and equipment are those materials that have a procurement cycle

of over 90 days. Examples of procurement process activities include, but are not limited to: submittals, approvals, procurement, fabrication, and delivery.

3.3.2.3 Government Activities

Government and other agency activities that could impact progress shall be shown. These activities include, but are not limited to: approvals, inspections, utility tie-in, Government Furnished Equipment (GFE) and Notice to Proceed (NTP) for phasing requirements.

3.3.2.4 Responsibility

All activities shall be identified in the project schedule by the party responsible to perform the work. Responsibility includes, but is not limited to, the subcontracting firm, contractor work force, or government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by the Responsibility Code.

3.3.2.5 Work Areas

All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Work Area Code.

3.3.2.6 Modification or Claim Number

Any activity that is added or changed by contract modification or used to justify claimed time shall be identified by a mod or claim code that changed the activity. Activities shall not belong to more than one modification or claim item. The modification or claim number of each activity shall be identified by the Mod or Claim Number. Whenever possible, changes shall be added to the schedule by adding new activities. Existing activities shall not normally be changed to reflect modifications.

3.3.2.7 Bid Item

All activities shall be identified in the project schedule by the Bid Item to which the activity belongs. An activity shall not contain work in more than one bid item. The bid item for each appropriate activity shall be identified by the Bid Item Code.

3.3.2.8 Phase of Work

All activities shall be identified in the project schedule by the phases of work in which the activity occurs. Activities shall not contain work in more than one phase of work. The project phase of each activity shall be by the unique Phase of Work Code.

3.3.2.9 Category of Work

All Activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers, but is not limited, to the procurement chain of activities including such items as submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing. The category of work for each activity shall be identified by the Category of Work Code.

3.3.2.10 Feature of Work

All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers, but is not limited to a work breakdown structure for the project. The feature of work for each activity shall be identified by the Feature of Work Code.

3.3.3 Scheduled Project Completion

The schedule interval shall extend from Notice-to-Proceed to the contract completion date.

3.3.3.1 Project Start Date

The schedule shall start no earlier than the date on which the Notice to Proceed (NTP) was acknowledged. The Contractor shall include as the first activity in the project schedule an activity called "Start Project". The "Start Project" activity shall have: an "ES" constraint date equal to the date that the NTP was acknowledged, and a zero day duration.

3.3.3.2 Constraint of Last Activity

Completion of the last activity in the schedule shall be constrained by the contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. The Contractor shall include as the last activity in the project schedule an activity call "End Project". The "End Project" activity shall have: an "LF" constraint date equal to the completion date for the project, and a zero day duration.

3.3.3.3 Early Project Completion

In the event the project schedule shows completion of the project prior to the contract completion date, the Contractor shall identify those activities that have been accelerated and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. Contractor shall specifically address each of the activities noted in the narrative report at every project schedule update period to assist the Contracting Officer in evaluating the Contractor's ability to actually complete prior to the contract period.

3.3.4 Interim Completion Dates

Contractually specified interim completion dates shall also be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date.

3.3.4.1 Start Phase

The Contractor shall include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The "Start Phase X" activity shall have: an "ES" constraint date equal to the date on which NTP was acknowledged, and a zero day duration.

3.3.4.2 End Phase

The Contractor shall include as the last activity in a project phase an

activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have: an "LF" constraint date equal to the completion date for the project, and a zero day duration.

3.3.4.3 Phase X

The Contractor shall include a hammock type activity for each project phase called "Phase X" where "X" refers to the phase of work. The "Phase X" activity shall be logically tied to the earliest and latest activities in the phase.

3.3.5 Default Progress Data Disallowed

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports. Failure of the Contractor to document the Actual Start and Finish dates on the Daily Quality Control report for every in-progress or completed activity and failure to ensure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's schedule and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Program features which calculate one of these parameters from the other shall be disabled.

3.3.6 Out-of-Sequence Progress

Activities that have posted progress without all preceding logic being satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case approval of the Contracting Officer. The Contractor shall propose logic corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule.

3.3.7 Negative Lags

Lag durations contained in the project schedule shall not have a negative value.

3.4 PROJECT SCHEDULE SUBMISSIONS

The Contractor shall provide the submissions as described below. The data disk, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS.

3.4.1 Initial Project Schedule Submission

The Initial Project Schedule shall be submitted for approval within 40 calendar days after Notice to Proceed. The schedule shall provide a reasonable sequence of activities which represent work through the entire project and shall be at a reasonable level of detail.

3.4.2 Periodic Schedule Updates

Based on the result of progress meetings, specified in "Periodic Progress Meetings," the Contractor shall submit periodic schedule updates. These submissions shall enable the Contracting Officer or to assess Contractor's

progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgement of the Contracting Officer or authorized representative, is necessary for verifying the contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made.

3.4.3 Standard Activity Coding Dictionary

The Contractor shall use the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11, Appendix A. This exact structure is mandatory, even if some fields are not used.

3.5 SUBMISSION REQUIREMENTS

The following items shall be submitted by the Contractor for the preliminary submission, and every periodic project schedule update throughout the life of the project:

3.5.1 Data Disks

Two data disks containing the project schedule shall be provided. Data on the disks shall adhere to the SDEF format specified in ER 1-1-11, Appendix A.

3.5.1.1 File Medium

Required data shall be submitted on 3.5 disks, formatted to hold 1.44 MB of data, under "Windows 98," unless otherwise approved by the Contracting Officer.

3.5.1.2 Disk Label

A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the type of schedule (Preliminary, Initial, Update, or Change), full contract number, project name, project location, data date, name and telephone number or person responsible for the schedule, and the MS-DOS version used to format the disk.

3.5.1.3 File Name

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will ensure that the names of the files submitted are unique. The Contractor shall submit the file naming convention to the Contracting Officer for approval.

3.5.2 Narrative Report

A Narrative Report shall be provided with the preliminary, initial, and each update of the project schedule. This report shall be provided as the basis of the Contractor's progress payment request. The Narrative Report shall include: a description of activities along the 2 most critical paths, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to relay to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through that analysis.

3.5.3 Approved Changes Verification

Only project schedule changes that have been previously approved by the Contracting Officer shall be included in the schedule submission. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

3.5.4 Schedule Reports

The format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float. Actual Start and Actual Finish Dates shall be printed for those activities in progress or completed.

3.5.4.1 Activity Report

A list of all activities sorted according to activity number.

3.5.4.2 Logic Report

A list of Preceding and Succeeding activities for every activity in ascending order by activity number. Preceding and succeeding activities shall include all information listed above in paragraph Schedule Reports. A blank line shall be left between each activity grouping.

3.5.4.3 Total Float Report

A list of all incomplete activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates. Completed activities shall not be shown on this report.

3.5.4.4 Earnings Report

A compilation of the Contractor's Total Earnings on the project from the Notice to Proceed until the most recent Monthly Progress Meeting. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and Contracting Officer at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. Activities shall be grouped by bid item and sorted by activity numbers. This report shall: sum all activities in a bid item and provide a bid item percent; and complete and sum all bid items to provide a total project percent complete. The printed report shall contain, for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Total Quantity, Quantity to Date, Percent Complete (based on cost) and Earnings to Date.

3.5.5 Network Diagram

The network diagram shall be required on the initial schedule submission and on monthly schedule update submissions. The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.5.1 Continuous Flow

Diagrams shall show a continuous flow from left to right with no arrows from right to left. The activity number, description, duration, and estimated earned value shall be shown on the diagram.

3.5.5.2 Project Milestone Dates

Dates shall be shown on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.5.3 Critical Path

The critical path shall be clearly shown.

3.5.5.4 Banding

Activities shall be grouped to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

3.5.5.5 S-Curves

Earnings curves showing projected early and late earnings and earnings to date.

3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly onsite meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor shall describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

3.6.1 Meeting Attendance

The Contractor's Project Manager and Scheduler shall attend the regular progress meeting.

3.6.2 Update Submission Following Progress Meeting

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than 4 working days after the monthly progress meeting.

3.6.3 Progress Meeting Contents

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost-to-Date shall be subject to the approval of the Contracting Officer. As a minimum, the Contractor shall address the following items on an activity by activity basis, during each progress meeting.

3.6.3.1 Start and Finish Dates

The Actual Start and Actual Finish dates for each activity currently

in-progress or completed.

3.6.3.2 Time Completion

The estimated Remaining Duration for each activity in-progress. Time-based progress calculations must be based on Remaining Duration for each activity.

3.6.3.3 Cost Completion

The earnings for each activity started. Payment will be based on earnings for each in-progress or completed activity. Payment for individual activities will not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

3.6.3.4 Logic Changes

All logic changes pertaining to Notice to Proceed on change orders, change orders to be incorporated into the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, lag durations, and other changes that have been made pursuant to contract provisions shall be specifically identified and discussed.

3.6.3.5 Other Changes

Other changes required due to delays in completion of any activity or group of activities include: 1) delays beyond the Contractor's control, such as strikes and unusual weather. 2) delays encountered due to submittals, Government Activities, deliveries or work stoppages which make re-planning the work necessary. 3) Changes required to correct a schedule which does not represent the actual plan prosecution and progress of the work.

3.7 REQUESTS FOR TIME EXTENSIONS

In the event the Contractor requests an extension of the contract completion date, or any interim milestone date, the Contractor shall furnish the following for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract: justification, project schedule data, and supporting evidence as the Contracting Officer may deem necessary. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals.

3.7.1 Justification of Delay

The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with this request.

The Contracting Officer's determination as to the number of allowable days of contract extension shall be based upon the project schedule updates in effect for the time period in question, and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, will not be a cause for a time extension to the contract completion date.

3.7.2 Submission Requirements

The Contractor shall submit a justification for each request for a change in the contract completion date of under 2 weeks based upon the most recent schedule update at the time of the Notice to Proceed or constructive

direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

- a. A list of affected activities, with their associated project schedule activity number.
- b. A brief explanation of the causes of the change.
- c. An analysis of the overall impact of the changes proposed.
- d. A sub-network of the affected area.

Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

3.7.3 Additional Submission Requirements

For any requested time extension of over 2 weeks, the Contracting Officer may request an interim update with revised activities for a specific change request. The Contractor shall provide this disk within 4 days of the Contracting Officer's request.

3.8 DIRECTED CHANGES

If Notice to Proceed (NTP) is issued for changes prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting Officer within 2 weeks of the NTP being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor with suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until revisions are submitted, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, the Contractor shall advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer's revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

3.9 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

-- End of Section --

SECTION 01510

TEMPORARY CONSTRUCTION ITEMS

PART 1 GENERAL

1.1 GENERAL

The work covered by this section consists of furnishing all labor, materials, equipment, and services and performing all temporary work required for this Contract, and for or incidental to the items herein specified. Temporary construction items shall include shoring scaffolding, and temporary window enclosures, as required to accomplish work under this Contract. No separate payment will be made for the construction and services required by this section, and all costs in connection therewith shall be included in the overall cost of the work unless specifically stated otherwise.

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation. "AR" stands for review by "Area Office." The following shall be submitted in accordance with Section 01010 GENERAL REQUIREMENTS:

SD-01 Data

Project Construction Plan; GA|AR.

Weather Protection Plan (Temporary Window Enclosures, As Indicated); GA|AR

Submit plan for temporary weather protection of openings exposed to the exterior.

Coordinate shoring and scaffolding plan with the Owner to ensure physical security of the building.

1.3 CONSTRUCTION PLAN FOR TEMPORARY WORK

Prior to the start of work, submit a plan showing the locations of temporary facilities including layouts and details, and access and haul routes used for this contract. Show locations of safety barriers, temporary window opening protection, dust barriers, site trailers, construction entrances, trash collection/disposal.

1.4 WEATHER PROTECTION

Take necessary precautions to ensure that window openings and other critical openings in the building are monitored carefully. Provide weathertight temporary protection of openings between the time existing windows are removed and reinstalled or new windows are installed. Take immediate actions required to seal off such openings when rain or other detrimental weather is imminent, and at the end of each workday. Ensure that the openings are completely sealed off to protect materials and equipment in the building from damage.

1.4.1 Building Storm Protection

When a warning of gale force winds is issued by National Weather Service, take precautions to minimize danger to persons, and protect the work and nearby Government property. Precautions shall include, but are not limited to, closing openings; removing loose materials, tools and equipment from exposed locations; and removing or securing scaffolding and other temporary work. Close openings in the work when storms of lesser intensity pose a threat to the work or any nearby Government property.

1.5 BARRICADES

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazardous areas during both day and night. (CENAB)

PART 2 PRODUCT

NOT APPLICABLE

PART 3 EXECUTION

NOT APPLICABLE

-- End of Section --

SECTION 01732

SELECTIVE DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

1.1.1 This Section includes the following:

Demolition and removal of selected portions of a building or structure.

1.2 DEFINITIONS

1.2.1 Remove

Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

1.2.2 Remove and Salvage

Detach items from existing construction and deliver them to the Government.

1.2.3 Remove and Reinstall

Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

1.2.4 Existing to Remain

Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 GOVERNMENT POLICY

Government policy is to apply sound environmental principles in the design, construction and use of facilities. As part of the implementation of that policy the Contractor shall: (1) practice efficient waste management when sizing, cutting, and installing products and materials and (2) use all reasonable means to divert construction and demolition waste from landfills and incinerators and to facilitate their recycling or reuse.

1.4 MATERIALS OWNERSHIP

1.4.1 Historic Items

Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to the Government that may be encountered during selective demolition remain the Government's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to the Government.

When such items are discovered during execution of work under this

contract, the Contractor shall stop all work in that area, notify the Contracting Officer's Technical Representative (COTR) in writing, and proceed with work only upon receiving directions from the COTR.

1.4.2 Other Items

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

1.5 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having and "FIO" designation are for information only. "AR" stands for review by "Area Office." The following shall be submitted in accordance with Section 01010 "GENERAL REQUIREMENTS".

SD-01 Preconstruction Submittals

Schedule of Selective Demolition Activities; GA|AR: Indicate the following:

Proposed Dust-Control and Noise-Control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.

Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Government's building manager's and other tenants' on-site operations are uninterrupted.

Interruption of utility services.

Coordination for shutoff, capping, and continuation of utility services.

Use of elevator and stairs per applicable Code and per Owner requirements.

Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

Predemolition Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.

SD-07 Certificates

Qualification; FIO

For firms and persons specified in "Quality Assurance" paragraph to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and

addresses of architects and owners, and other information specified.

Landfill Records; FIO

Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

SD-11 Closeout Submittals

Inventory; FIO:

After selective demolition is complete, submit a list of items that have been removed and salvaged.

1.6 QUALITY ASSURANCE

1.6.1 Demolition Firm Qualifications

An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

1.6.2 Professional Engineer Qualifications

A professional engineer who is legally qualified to practice in jurisdiction where project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this project in material, design, and extent.

1.6.3 Regulatory Requirements

Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.6.4 Standards

Comply with ANSI A10.6 and NFPA 241.

1.6.5 Predemolition Conference

Conduct conference at project site. Review methods and procedures related to selective demolition including, but not limited to, the following:

Inspect and discuss condition of construction to be selectively demolished.

Review structural load limitations of existing structure.

Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.

Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

1.7 PROJECT CONDITIONS

1.7.1 Government Occupancy

Government will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Government's operations will not be disrupted. Provide not less than 72 hours' notice to Contracting Officer of activities that will affect Government's operations. Work restriction as specified in paragraph 1.4.9, Building Occupancy and Work Schedule Requirements, Section 01010 also apply.

1.7.2 Access

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 Contracting Officer.

1.7.3 Prohibitions

Storage or sale of removed items or materials on-site will not be permitted.

1.7.4 Utility Service

Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations. Maintain fire-protection facilities in service during selective demolition operations.

1.8 WARRANTY

1.8.1 Existing Warranties

Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 PRODUCTS

2.1 REPAIR MATERIALS

Use repair materials identical to existing materials. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible and as approved by COTR. Use materials whose installed performance equals or surpasses that of existing materials. Comply with material and installation requirements specified in individual Specification Sections.

PART 3 EXECUTION

3.1 EXAMINATION

Verify that utilities have been disconnected and capped. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to

Architect. 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 during selective demolition operations. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES

3.2.1 Existing Utilities

Maintain services indicated to remain and protect them against damage during selective demolition operations.

3.2.2 Utility Interruption

Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Contracting Officer. Provide temporary services during interruptions to existing utilities, as acceptable to Contracting Officer.

Provide at least 72 hours' notice to Contracting Officer if shutdown of service is required during changeover.

3.2.3 Utility Requirements

Locate, identify, disconnect, and seal or cap off indicated utilities serving areas to be selectively demolished. Contracting Officer will arrange to shut off indicated utilities when requested by Contractor. If utility services are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary utilities that bypass area of selective demolition and that maintain continuity of service to other parts of building. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.3 PREPARATION

3.3.1 Dangerous Materials

Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations

3.3.2 Site Access and Temporary Controls

Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Contracting Officer. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by Contracting Officer. Protect existing site improvements, appurtenances, and landscaping to remain. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.

3.3.3 Temporary Facilities

Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations. Cover and protect furniture, furnishings, and equipment that have not been removed.

3.3.4 Temporary Enclosures

Provide temporary enclosures for protection of existing building and construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.

3.3.5 Temporary Partitions

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

3.3.6 Temporary Shoring

Provide and maintain shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of construction to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished. Strengthen or add new supports when required during progress of selective demolition.

3.4 POLLUTION CONTROLS

3.4.1 Dust Control

Use water mist, temporary enclosures, and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution. Wet mop floors to eliminate trackable dirt and wipe down walls and doors of demolition enclosure. Vacuum carpeted areas.

3.4.2 Disposal

Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent, as approved by COTR.

3.4.3 Cleaning

Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition

existing before selective demolition operations began. Each completed area shall be cleaned prior to resumption of occupancy by the Owner's personnel.

3.5 SELECTIVE DEMOLITION

3.5.1 General

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

- a. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
- b. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
- c. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
- d. Do not use cutting torches until work area is cleared 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.
- e. Maintain adequate ventilation when using cutting torches.
- f. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
- g. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
- h. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- i. Dispose of demolished items and materials promptly.
- j. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.

3.5.2 Existing Facilities

Comply with building manager's requirements for using and protecting elevators, stairs, walkways, loading docks, building entries, and other building facilities during selective demolition operations.

3.5.3 Removed and Salvaged Items

Comply with the following:

- a. Clean salvaged items.
- b. Pack or crate items after cleaning. Identify contents of containers.
- c. Store items in a secure area until delivery to Government.
- d. Transport items to Owner's storage area designated by COTR.
- e. Protect items from damage during transport and storage.

3.5.4 Removed and Reinstalled Items

Comply with the following:

- a. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
- b. Pack or crate items after cleaning and repairing. Identify contents of containers.
- c. Protect items from damage during transport and storage.
- d. 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.

3.5.5 Existing Items to Remain

Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by contracting Officer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5.6 Masonry

Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.

3.6 CUTTING, PATCHING AND REPAIRS

3.6.1 General

Promptly repair damage to adjacent construction caused by selective demolition operations. Requirements of Section 01070, CUTTING, PATCHING AND REPAIRING also apply.

3.6.2 Patching

Comply with Section 01070 "CUTTING, PATCHING AND REPAIRING."

3.6.3 Repairs

Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials. Completely fill holes and depressions in existing masonry walls that are to remain with an approved masonry patching

material applied according to manufacturer's written recommendations.

3.6.4 Finishes

Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

3.6.5 Floors and Walls

Where walls or partitions that are demolished extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Where patching occurs in a painted surface, apply primer and intermediate paint coats over patch and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces. Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

3.7.1 General

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

3.7.2 Burning

Do not burn demolished materials.

3.7.3 Disposal

Transport demolished materials off Government's property and legally dispose of them. Disposal of lead-based paint materials shall conform to requirements specified in paragraph "Hazardous Materials," Section 01010 "GENERAL REQUIREMENTS."

3.7.3.1 Reuse

First consideration shall be given to salvage for reuse since little or no re-processing is necessary for this method, and less pollution is created when items are reused in their original form. Sale or donation of waste suitable for reuse shall be considered. Salvaged materials, other than those specified in this or other sections to be salvaged and reinstalled, shall not be used in this project.

3.7.3.2 Recycle

Waste materials not suitable for reuse, but having value as being recyclable, shall be made available for recycling whenever economically feasible.

3.7.3.3 Waste

Materials with no practical use of economic benefit shall be disposed at a

landfill or incinerator.

-- End of Section --

SECTION 05700

ORNAMENTAL SHEET METAL RESTORATION

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM B 32	(1996) Solder Metal
ASTM B 152	(1997a) Copper Sheet, Strip, Plate, and Rolled Bar
ASTM B 152M	(1997a) Copper Sheet, Strip, Plate, and Rolled Bar (Metric)
ASTM B 370	(1998) Copper Sheet and Strip for Building Construction
ASTM F 547	(1977; R 1995) Definitions of Terms Relating to Nails for Use with Wood and Wood-Based Materials

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-51145	(Rev C) Flux, Soldering, Non-Electronic, Paste and Liquid
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NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)

NAAMM AMP 500	(1988) Metal Finishes Manual
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COPPER DEVELOPMENT ASSOCIATION (CDA)

CDA Arch. Handbook	(1992; R 1998) Handbook: Copper in Architecture
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1.2 GENERAL REQUIREMENTS

This procedure includes guidance on repairing existing ornamental metal work by removing, repairing and reinstalling existing pieces, or installing new ornamental metal to match the existing condition. Sheet metalwork shall be accomplished to form shapes as indicated and as required to match the existing condition. Work shall be installed without waves, warps, buckles, fastening stresses or distortion. Cutting, fitting, drilling, and other operations in connection with sheet metal required to accommodate the work of other trades shall be performed by sheet metal mechanics. Accessories and other items essential to complete the sheet metal installation, though not specifically indicated or specified, shall be

provided. Factory-fabricated components shall be packed in cartons marked with the manufacturer's name or trademark to permit easy identification.

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. When used "AE" stands for "Review by Architect-Engineer." The following shall be submitted in accordance with Section 01010 "GENERAL REQUIREMENTS"

SD-02 Shop Drawings

Sheet Metal; GA/AE

Drawings showing weights, gauges, or thickness of sheet metal; type of material; joining, and fabrication details; and installation procedures. Materials shall not be delivered to the site until after the approved detail drawings have been returned to the Contractor.

SD-03 Product Data

Contractor Quality Control; FIO

Submit written plan for restoration work including methods and procedures for removal, repair, replacement, and reinstallation, and protection of surrounding materials during operations.

SD-04 Samples

Materials; GA/AE

Samples of materials proposed for use, upon request.

1.4 DELIVERY, STORAGE, AND HANDLING

Materials shall be adequately packaged and protected during shipment and shall be inspected for damage, dampness, and wet-storage stains upon delivery to the jobsite. Materials shall be clearly labeled as to type and manufacturer. Sheet metal items shall be carefully handled to avoid damage. Materials shall be stored in dry, weathertight, ventilated areas until installation.

1.5 QUALITY ASSURANCE

1.5.1 Mock-ups

Prepare sample panels for each type of ornamental metal material indicated to be repaired or replaced. Accepted mock-up may be incorporated in the work when approved by the Contracting Officer.

PART 2 PRODUCTS

2.1 MATERIALS

Provide sheet metal materials which have been selected from their surface flatness, smoothness and freedom from surface blemishes where exposed to view in the finished unit. Exposed-to-view surfaces which exhibit pitting, seam marks, roller marks, "oil-canning" stains,

discolorations or other imperfections on the finished units will not be acceptable. Materials shall conform to the requirements specified below.

2.1.1 Fasteners

Nails shall conform to ASTM F 547 or be as approved. Nails and rivets shall be copper. Fasteners shall be the best type for the application.

2.1.2 Flux

CID A-A-51145, Type I.

2.1.3 Sheet Metal

ASTM B 152, ASTM B 370, Light cold-rolled temper (H00) copper, unless otherwise required to match existing condition. The Contractor shall be responsible for matching of material to existing condition.

2.1.4 Solder

ASTM B 32 Sn50.

2.1.5 Bituminous Paint

SSPC - Paint 12 (cold-applied asphalt mastic).

2.1.6 Protective Lacquer

Clear, non-yellowing, for protection of the finished metal surfaces.

2.2 EXISTING COPPER SHEET METAL

Existing, original, historic copper sheet metal elements that are intact and serviceable shall be salvaged and reused whenever possible. This includes, but is not limited to, architectural sheet metal elements such as spandrels. When work involves repair and replacement of copper sheet metal elements, new elements shall match existing original elements as closely as possible.

2.2.1 Replacement Sheet Metal Elements

Form ornamental metal work to the required shapes and sizes, with true curves, lines and angles. Provide necessary rebates, lugs and brackets for assembly of units. Use concealed fasteners wherever possible.

2.2.2 Welding

Comply with AWS for recommended practices in shop welding. Provide welds behind finished surfaces without distortion or discoloration of the exposed side. Clean exposed welded joints of all welding flux, and dress on all exposed and contact surfaces.

2.2.3 Joints

Mill joints to a tight, hairline fit. Cope or miter corner joints. Form joints exposed to weather to exclude water penetration.

2.2.4 Finishes

Comply with NAAMM "Metal Finishes Manual" or CDA Architectural Handbook for finish designations and application recommendations as applicable to existing condition.

Match color, direction, and texture of existing ornamental metal work for new and replacement pieces.

2.2.5 Expansion and Contraction

Design components to allow for expansion and contraction for a minimum ambient temperature range of 100 F (37.8 C) without causing buckling, excessive opening of joint or over stressing of welds and fasteners.

PART 3 EXECUTION

3.1 GALVANIC ACTION

Galvanic action between copper and iron or steel shall be avoided by the use of proper insulation. Lead shall not be used.

3.2 SOLDERING

Edges of sheet metals shall be pretinned before soldering is begun. Soldering shall be done slowly with well heated soldering irons to thoroughly heat the seams and completely sweat the solder through the full width of the seam. Soldering shall follow immediately after application of the flux. Upon completion of soldering, the acid flux residue shall be thoroughly cleaned from the sheet metal with a solution of washing soda in water and rinsed with clean water.

3.3 PREPERATION

3.3.1 Finish Protection

Protect mechanical finish on exposed surfaces from damage by application of strippable temporary protective covering prior to shipment.

3.3.2 Surface Preparation

Coat concealed surface which will be in contact with concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint. Do not extend coating onto exposed surfaces.

3.3.3 Protection of Surrounding Surfaces

Protect surrounding surfaces of building from damage resulting from ornamental metal restoration work.

3.4 ERECTION, INSTALLATION, APPLICATION

Fabrication shall comply with applicable requirements of CDA Architectural Handbook. Coordinate and furnish anchorages and setting drawings, diagrams, templates, instructions and directions for the installation of ornamental sheet metal items. Coordinate delivery of such items to the project site.

Provide anchorage devices and fasteners where necessary for securing ornamental metal items to in-place construction; including, threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts,

lag bolts, wood screws and other connectors as required.

Perform all cutting, drilling and fitting required for the installation of the ornamental metal items. Set the work accurately in location, alignment and elevation, plumb, level and true, measured from established lines and levels.

Form tight joints with exposed connections accurately fitted with uniform reveals and specs for sealants and joint fillers. Where cutting, welding and grinding are required for proper shop fitting and jointing of the work, restore finishes to eliminate any evidence of such corrective work.

Do not cut or abrade finishes which 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 at Contractor's option.

-- End of Section --

SECTION 06100

ROUGH CARPENTRY

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN FOREST & PAPER ASSOCIATION (AF&PA)

AF&PA T01 (1991; Supple 1993; Addenda Apr 1997; Supple T02) National Design Specification for Wood Construction

AF&PA T11 (1988) Manual for Wood Frame Construction
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AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 307 (2000) Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength

ASTM F 547 (1977; R 1995) Definitions of Terms Relating to Nails for Use with Wood and Wood-Based Materials

AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)

AWPA C2 (2000) Lumber, Timber, Bridge Ties and Mine Ties - Preservative Treatment by Pressure Processes

AWPA C9 (1997) Plywood - Preservative Treatment by Pressure Processes

AWPA M4 (1999) Standard for the Care of Preservative-Treated Wood Products

AWPA P5 (2000) Standards for Waterborne Preservatives

APA - THE ENGINEERED WOOD ASSOCIATION (APA)

APA PRP-108 (1980; Rev Jan 1996) Performance Standards and Policies for Structural-Use Panels

NATIONAL HARDWOOD LUMBER ASSOCIATION (NHLA)

NHLA Rules (1994) Rules for the Measurement & Inspection of Hardwood & Cypress

NORTHEASTERN LUMBER MANUFACTURERS ASSOCIATION (NELMA)

NELMA Grading Rules (1997) Standard Grading Rules for
Northeastern Lumber

REDWOOD INSPECTION SERVICE (RIS)

RIS GCRL (1997) Grades of California Redwood Lumber

SOUTHERN CYPRESS MANUFACTURERS ASSOCIATION (SCMA)

SCMA Spec (1986; Supple No. 1, Aug 1993) Standard
Specifications for Grades of Southern
Cypress

SOUTHERN PINE INSPECTION BUREAU (SPIB)

SPIB Rules (1994; Supple 8 thru 11) Standard Grading
Rules for Southern Pine Lumber

U.S. DEPARTMENT OF COMMERCE (DOC)

PS-1 (1995) Construction and Industrial Plywood

PS-2 (1993) Wood-Base Structural-Use Panels

WEST COAST LUMBER INSPECTION BUREAU (WCLIB)

WCLIB 17 (1996; Supp. VII & VIII) Standard Grading
and Dressing Rules for Douglas Fir,
Western Hemlock, Western Red Cedar, White
Fir, Sitka Spruce Lumber

WESTERN WOOD PRODUCTS ASSOCIATION (WWPA)

WWPA Grading Rules (1999) Western Lumber Grading Rules 95

1.2 SUBMITTALS

Submittals having a "FIO" designation are for information only. The following shall be submitted in accordance with Section 01010 GENERAL REQUIREMENTS:

SD-07 Certificates

Grading and Marking; FIO

Manufacturer's certificates (approved by an American Lumber Standards approved agency) attesting that lumber and material not normally grade marked meet the specified requirements. Certificate of Inspection for grade marked material by an American Lumber Standards Committee (ALSC) recognized inspection agency prior to shipment.

1.3 DELIVERY AND STORAGE

Materials shall be delivered to the site in undamaged condition, stored off ground in fully covered, well ventilated areas, and protected from extreme changes in temperature and humidity.

PART 2 PRODUCTS

2.1 LUMBER

2.1.1 Grading and Marking

2.1.1.1 Lumber Products

Solid sawn and finger-jointed lumber shall bear an authorized gradestamp or grademark recognized by ALSC, or an ALSC recognized certification stamp, mark, or hammerbrand. Surfaces that are to be exposed to view shall not bear grademarks, stamps, or any type of identifying mark. Hammer marking will be permitted on timbers when all surfaces will be exposed to view.

2.1.1.2 Plywood

Materials shall bear the grademark or other identifying marks indicating grades of material and rules or standards under which produced, including requirements for qualifications and authority of the inspection organization. Surfaces that are to be exposed to view shall not bear grademarks or other types of identifying marks.

2.1.2 Sizes

Lumber and material sizes shall conform to requirements of the rules or standards under which produced. Unless otherwise specified, lumber shall be surfaced on four sides. Unless otherwise specified, sizes indicated are nominal sizes, and actual sizes shall be within manufacturing tolerances allowed by the standard under which the product is produced.

2.1.3 Treatment

Exposed areas of treated wood that are cut or drilled after treatment shall receive a field treatment in accordance with AWPA M4. Items of all-heart material of cedar, cypress, or redwood will not require preservative treatment, except when in direct contact with soil. Except as specified for all-heart material of the previously mentioned species, the following items shall be treated:

- a. Wood members set into concrete regardless of location.

2.1.3.1 Lumber

Lumber shall be treated in accordance with AWPA C2 with waterborne preservatives listed in AWPA P5 to a retention level as follows:

- a. 0.25 pcf intended for above ground use.

2.1.3.2 Plywood

Plywood shall be treated in accordance with AWPA C9 with waterborne preservatives listed in AWPA P5 to a retention level as follows:

- a. 0.25 pcf intended for above ground use.

2.1.4 Moisture Content

At the time lumber and other materials are delivered and when installed in the work their moisture content shall be as follows:

a. Treated and Untreated Lumber: 4 inches or less, nominal thickness, 19 percent maximum. 5 inches or more, nominal thickness, 23 percent maximum in a 3 inch perimeter of the timber cross-section.

b. Materials Other Than Lumber: In accordance with standard under which product is produced.

2.1.5 Plywood

Plywood shall conform to PS-1, APA PRP-108 or PS-2, Grade C-D or sheathing grade with exterior glue.

2.1.6 Miscellaneous Wood Members

2.1.6.1 Nonstress Graded Members

Members shall include blocking, nailers, and nailing strips. Members shall be in accordance with TABLE I for the species used. Sizes shall be as follows unless otherwise shown:

Member	Size (inch)
Nailing strips	1 x 3 or 1 x 4 when used as shingle base or interior finish, otherwise 2 inch stock.

2.1.6.2 Blocking

Blocking shall be standard or number 2 grade.

2.2 ACCESSORIES AND NAILS

Markings shall identify both the strength grade and the manufacturer. Accessories and nails shall conform to the following:

2.2.1 Anchor Bolts

ASTM A 307, size as indicated, complete with nuts and washers.

2.2.2 Bolts: Lag, Toggle, and Miscellaneous Bolts and Screws

Type, size, and finish best suited for intended use. Finish options include zinc compounds, cadmium, and aluminum paint impregnated finishes.

2.2.3 Clip Angles

Steel, 3/16 inch thick, size best suited for intended use; or zinc-coated steel or iron commercial clips designed for connecting wood members.

2.2.4 Expansion Shields

Type and size best suited for intended use.

2.2.5 Nails and Staples

ASTM F 547, size and type best suited for purpose; staples shall be as recommended by the manufacturer of the materials to be joined. In general,

8-penny or larger nails shall be used for nailing through 1 inch thick lumber and for toe nailing 2 inch thick lumber; 16-penny or larger nails shall be used for nailing through 2 inch thick lumber. Nails used with treated lumber shall be galvanized. Nailing shall be in accordance with the recommended nailing schedule contained in AF&PA T11. Where detailed nailing requirements are not specified, nail size and spacing shall be sufficient to develop an adequate strength for the connection. The connection's strength shall be verified against the nail capacity tables in AF&PA T01. Reasonable judgement backed by experience shall ensure that the designed connection will not cause the wood to split. If a load situation exceeds a reasonable limit for nails, a specialized connector shall be used.

PART 3 EXECUTION

3.1 INSTALLATION OF MISCELLANEOUS WOOD MEMBERS

3.1.1 Blocking

Blocking shall be provided as necessary for application of wallboard, and other materials or building items. Blocking shall be cut to fit between framing members and rigidly nailed thereto.

3.1.2 Nailers and Nailing Strips

Nailers and nailing strips shall be provided as necessary for the attachment of finish materials. Anchors shall extend through the entire thickness of the nailer. Strips shall be run in lengths as long as practicable, butt jointed, cut into wood framing members when necessary, and rigidly secured in place.

3.2 TABLES

TABLE I. SPECIES AND GRADE

Blocking, Nailers and Nailing Strips

Grading Rules	Species	Const Standard	No. 2 Comm	No. 2 Board Comm
NHLA Rules	Cypress			X
NELMA Grading Rules	Eastern White Pine	X		
	Northern Pine	X		
RIS GCRL	Redwood		X	
SCMA Spec	Cypress			X
SPIB Rules	Southern Pine		X	
WCLIB 17	Douglas Fir-Larch	X		

TABLE I. SPECIES AND GRADE

Blocking, Nailers and Nailing Strips

Grading Rules	Species	Const Standard	No. 2 Comm	No. 2 Board Comm
	Sitka Spruce	X		
	Mountain Hemlock	X		
	Western Cedar	X		
WWPA Grading Rules	Douglas Fir-Larch	X		
	Idaho White Pine	X		
	Lodgepole Pine			X
	Ponderosa Pine			X
	Sugar Pine			X
	Englemann Spruce			X
	Douglas Fir South			X
	Subalpine Fir			X
	Western Cedar			X

-- End of Section --

SECTION 08550

WOOD WINDOWS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA 701/702	(2000) Voluntary Specifications and Test Method for Sealants
AAMA 902	(1999) Voluntary Specifications for Sash Balances
AAMA 907	(1996) Voluntary Specifications for Corrosion Resistant Coatings on Carbon Steel Components

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM B 456	(1995) Specifications for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium
ASTM B 633	(1998) Standard Specifications for Electrodeposited Coatings of Zinc on Iron and Steel
ASTM C 920	(1998) Elastomeric Joint Sealants
ASTM C 1036	(1991; R1997) Flat Glass
ASTM C 1048	(1997; Rev. B) Heat-Treated Flat Glass 0 Kind HS, Kind FT Coated and Uncoated Glass
ASTM C 1172	(1996) Standard Specification for Laminated Architectural Flat Glass

WINDOW AND DOOR MANUFACTURERS ASSOCIATION (WDMA)

AAMA/NWWDA 101/I.S.2	(1997) Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors Introduction
NWWDA I.S. 4	(1994) Water-Repellent Preservative Non-Pressure Treatment for Millwork

ARCHITECTURAL WOODWORK INSTITUTE (AWI)

AWI Quality Standards	(1991) Architectural Woodwork Quality Standards
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GLASS ORGANIZATION OF NORTH AMERICA (GANA)

GANA Glazing Manual (1997) Glazing Manual

1.2 SUMMARY

This Section includes replicating existing historic windows by specially fabricating custom wood windows and related trim for the following window product types:

Double-hung windows.

Fixed windows.

1.3 PERFORMANCE REQUIREMENTS

General: Provide wood windows capable of complying with performance requirements indicated, based on testing manufacturer's windows that are representative of those specified and that are of test size indicated below:

Minimum size required by gateway performance requirements for determining compliance with AAMA/NWWDA 101/I.S.2 for both gateway performance requirements and optional performance grades.

AAMA/NWWDA Performance Requirements: Provide wood windows of the performance class and grade indicated that comply with AAMA/NWWDA 101/I.S.2:

Performance Class: LC.

Performance Grade: 25.

Exception to AAMA/NWWDA 101/I.S.2: In addition to requirements for performance class and performance grade, design glass framing system to limit lateral deflections of glass edges to less than 1/175 of glass-edge length at design pressure based on the following:

Testing performed according to AAMA/NWWDA 101/I.S.2, Uniform Load Deflection Test.

1.4 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. "AE" stands for review by "Architect-Engineer."

Submit the following in accordance with Section 01010, "GENERAL REQUIREMENTS."

SD-01 Data

Manufacturer's Qualifications; FIO

Manufacturer shall submit neutral Prequalification Form found in the Appendix in the AWI Quality Standards, current edition.

Maintenance Data; FIO

For operable window sash, operating hardware, weather stripping,

and finishes to include in maintenance manuals.

SD-02 Shop Drawings

Wood Windows; GA|AE

Include plans, elevations, sections, details, hardware, attachments to other Work, operational clearances, and the following. Prepare shop drawings at a minimum scale of 3 inches equals 1 foot, except that the following items shall be detailed full size or half size as necessary to fully illustrate the details. Provide shop drawings for each window type.

Mullion details, including reinforcement and stiffeners.

Joinery details.

Expansion provisions.

Flashing and drainage details.

Weather-stripping details.

Glazing details.

SD-03 Product Data

Wood Windows; GA|AE

Include construction details, material descriptions, fabrication methods, dimensions of individual components and profiles, hardware, finishes, and operating instructions for each type of wood window indicated.

Warranty; FIO

Manufacturer's standard warranty.

SD-14 Samples

Wood Window - Component; GA|AE

For wood window components required, prepared on Samples of size indicated below:

Glazing: 12 inch by 12 inch.

Hardware: Full-size units with factory-applied finish.

Weather Stripping: 12-inch long sections.

Factory-applied color finish on 12-inch length of typical window frame and sash frame for each required color.

The Contracting Officer (CO) reserves the right to require additional samples that show fabrication techniques, workmanship, and design of hardware and accessories.

1.5 QUALITY ASSURANCE

1.5.1 Installer Qualifications

An experienced installer who has completed architectural woodwork similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance for at least five similar projects.

1.5.2 Fabricator Qualifications

A firm experienced in producing architectural woodwork similar to that indicated for this Project and with a record of successful in-service performance, for at least five similar projects, as well a sufficient production capacity to produce required units.

1.5.3 Source Limitations

Obtain wood windows through one source from a single manufacturer.

1.5.4 Quality Standard

Work except materials shall comply with the Premium Grade of Section 1000 of the current edition of Architectural Woodwork Institute Quality Standards. Materials shall comply with Custom Grade as specified.

Woodwork manufacturers shall be certified by the AWI Quality Certification Program as competent to perform the work specified.

Certification shall be evident through the application of AWI Quality Certification labels.

1.5.5 Glazing Publications

Comply with published recommendations of glass manufacturers and GANA's "Glazing Manual" unless more stringent requirements are indicated.

1.5.6 Mockups

Before fabricating and installing wood windows, build a mockup for each window type and finish required to demonstrate aesthetic effects and qualities of materials and execution. Build mockups to comply with the following requirements, using materials indicated for the completed Work.

Build mockups in the locations directed by the Contracting Officer (CO).

Notify the CO seven days in advance of dates and times when mockups will be installed.

Demonstrate the proposed range of aesthetic effects and workmanship.

Obtain CO's approval of mockups before starting wood window fabrication.

Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5.7 Preinstallation Conference

Conduct conference at Project site attended by the Contractor, the Installer, and the Contracting Officer (CO) or COTR. Before beginning any work under this section, Contractor shall confirm in writing the resolution of conflicts among those attending the preinstallation conference.

1.6 PROJECT CONDITIONS

Field Measurements: Verify wood window openings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.7 DELIVERY, STORAGE AND HANDLING

Protect units from moisture damage according to AWI Quality Standards, Section 1700, Installation.

1.8 WARRANTY

1.8.1 Special Warranty

Manufacturer's standard form in which manufacturer agrees to repair or replace wood windows that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:

Failure to meet performance requirements.

Structural failures including excessive deflection.

Water leakage, and air infiltration.

Faulty operation of movable sash and hardware.

Deterioration of metals, metal finishes, and other materials beyond normal weathering.

Glass failure.

1.8.2 Warranty Period

Two years from date of Substantial Completion.

1.8.3 Warranty Period for Metal Finishes

Five years from date of Substantial Completion.

1.8.4 Warranty Period for Glass

Five years from date of Substantial Completion

PART 2 PRODUCTS

2.1 MANUFACTURER

Manufacturer shall be licensed by the AWI Quality Certification Program to perform work of the AWI Premium Grade.

2.2 MATERIALS, GENERAL

Wood: Species and grade in accordance with AWI Custom Grade, Section 1000 of AWI Quality Standards for opaque finish; vertical grain; including sills and exterior trim; kiln-dried to a moisture content of 6 to 12 percent at time of fabrication; preservative treated.

Wood Species: To match existing conditions.

Fasteners: Aluminum, nonmagnetic stainless steel, epoxy adhesive, or other materials warranted by manufacturer to be noncorrosive and compatible with wood window members, trim, hardware, anchors, and other components. Cadmium-plated steel fasteners are not permitted.

Exposed Fasteners: Unless unavoidable for applying hardware, do not use exposed fasteners. For application of hardware, use fasteners that match finish of member or hardware being fastened, as appropriate.

Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure of 40 lbf/sq. ft. (1920 Pa). Cadmium-plated steel anchors, clips, and accessories are not permitted.

Reinforcing Members: Aluminum, nonmagnetic stainless steel, nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated above. Cadmium-plated steel reinforcing members are not permitted.

Compression-Type Weather Stripping: Provide compressible weather stripping designed for permanently resilient sealing under bumper or wiper action, and completely concealed when wood window is closed.

Weather-Stripping Material: Manufacturer's standard system and materials complying with AAMA/NWWDA 101/I.S.2.

Glazing Sealants: Silicone sealants; comply with ASTM C 920.

Type and Grade: S (single component) and NS (non sag).

Class: 25.

2.3 GLAZING

2.3.1 Primary Float Glass

Uncoated Annealed Float Glass: ASTM C 1036, Type 1 (transparent glass, flat), Quality q3 (glazing select); Class 1 (clear); Condition A (uncoated).

Thickness: As indicated.

2.3.2 Tempered Float Glass

Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed, unless otherwise indicated.

Uncoated Tempered Float Glass: ASTM C 1048; Type 1 (transparent glass, flat); Quality q3 (glazing select); Class 1 (clear); kind FT (fully tempered).

Thickness: As indicated.

2.3.3 Glazing System

Provide weathertight glazing system. Finished appearance shall match the existing windows.

Glazing points shall be stainless steel.

2.4 HARDWARE, GENERAL

Reinstall existing window hardware on new wood windows. Where existing hardware is required to be reinstalled, remove and restore existing hardware prior to reinstallation. Restore existing hardware in accord with the requirements of Section 08591 "WOOD WINDOW RESTORATION."

2.5 NEW HARDWARE

General: All exposed hardware shall be solid brass as indicated on Drawings. Provide solid brass hardware to match the existing condition. Where metals other than brass have been used in concealed locations at existing windows, provide hardware of the type indicated, fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with wood; designed to smoothly operate, tightly close, and securely lock wood windows and sized to accommodate sash or ventilator weight and dimensions. Cadmium-plated hardware is not permitted. Do not use aluminum in frictional contact with other metals.

Counterbalancing Mechanism: Comply with AAMA 902.

Sash-Balance Type: Concealed type of size and capacity to hold sash stationary at any open position.

Locks and Latches: Designed to allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only.

2.6 FABRICATION

General: Fabricate wood windows, to fit existing openings, that comply with AWI Premium Grade. Include a complete system for assembling components and anchoring windows.

Fabricate each type window to exactly duplicate the window which it replaces. Measure existing windows to be replaced prior to selective demolition to ascertain required dimensions and profiles of window components, and to accurately record location of windows in adjacent construction.

Reinstall window hardware from existing windows that are demolished after hardware has been restored. Comply with Section 08591 "WOOD WINDOW RESTORATION" for restoration of window hardware.

Fabricate wood windows that are reglazable without dismantling sash or

ventilator framing.

Weather Stripping: Provide full-perimeter weather stripping for each operable sash and ventilator, unless otherwise indicated

Factory machine windows for openings and hardware that is not surface applied.

Mullions and Muntins: Provide mullions and muntins as shown, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions capable of withstanding design loads of window units.

Factory-Glazed Fabrication: Except for light sizes in excess of 100 united inches (2500 mm width plus length), glaze wood windows in the factory where practical and possible for applications indicated. Comply with requirements in AAMA/NWWDA 101/I.S.2.

Groove Glazing: Factory-glazed units without removable stops or other provision permitting convenient field disassembly to facilitate replacement of broken glass will not be accepted.

Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

2.7 WOOD FINISHING

Sand work smooth and set exposed nails and screws.

Apply wood filler in exposed nail and screw indentations.

Finish work in the factory in accordance with AWI Quality Standards, Section 1500.

Finish work with opaque OP-4 finish system.

Finish work to meet AWI Premium standards.

Color: Match existing window and trim colors.

PART 3 EXECUTION

3.1 EXAMINATION

Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances; rough opening dimensions; levelness of sill plate; coordination with wall flashings, vapor retarders, and other built-in components; and other conditions affecting performance of work.

Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.

Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at

joints.

Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

Install work in accordance with AWI Premium Quality Standards.

Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.

Set sill members in bed of sealant or with gaskets, for weathertight construction.

Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.3 ADJUSTING

Adjust operating sashes and ventilators, hardware, and accessories for a tight fit at contact points and weatherstripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

3.4 PROTECTION AND CLEANING

Protect window surfaces from contact with contaminating substances resulting from construction operations. In addition, monitor window surfaces adjacent to and below exterior concrete and masonry surfaces during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written recommendations.

Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

Clean factory-glazed glass immediately after installing windows. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels and clean surfaces.

Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

-- End of Section --

SECTION 08582

INTERIOR ALUMINUM STORM WINDOWS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA 603.8	(1992; Addendum 1993) Pigmented Organic Coatings on Extruded Aluminum
AAMA 1002.10	(1993) Aluminum Insulating Storm Products for Windows and Sliding Glass Doors

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having and "FIO" designation are for information only. "AE" stands for review by "Architect-Engineer."

Submit the following in accordance with Section 01010, "GENERAL REQUIREMENTS."

SD-02 Shop Drawings

Storm windows; GA|AE

Submit drawings showing elevations of units, full-sized section, thicknesses and gages of material, fastenings, methods of anchorage, size and spacing of anchors, and locations of operating hardware. Indicate method of glazing, method of attaching and operating louver blinds and method of attaching glass insert panels, and method and materials for weatherstripping. Include mullion details, details of installation, and connections with other work, including details of existing windows and adjacent construction. Storm window schedule shall show location of each unit.

SD-03 Product Data

Storm windows; GA|AE

Submit complete descriptive literature for each type of storm window and accessory. Clearly mark data to indicate which type, size, model, or item is to be provided. Data shall conform to specified requirements and shall include instructions for adjustments, cleaning, and maintenance.

Warranty; FIO

Manufacturer's 5 year warranty for materials and workmanship.

SD-10 Operation and Maintenance Data

Storm windows; FIO

SD-14 Samples

Storm window, metal finish and color; GA|AE

Factory-applied color finish on 12-inch length of typical window frame and sash frame, for each required color.

1.3 DELIVERY, STORAGE, AND HANDLING

Deliver products to the project site in undamaged condition. Store products out of contact with the ground under weathertight covering, and protect against damage. Do not install damaged units.

1.4 FIELD MEASUREMENT

Dimensions shown are nominal. Field measure openings to obtain exact dimensions needed for fabrication. Meeting rails or stiles of storm windows shall align with the meeting rails or stiles of the prime windows.

1.5 MOCK-UP

Before fabrication, full-size mock-up of aluminum storm window complete with glass will be required for review and approval of window construction and quality by Architect-Engineer (AE). Approved window unit shall serve as a bench mark for finished work. Approved, undamaged mock-up may remain a part of completed work.

1.6 WARRANTY

The Contractor shall provide to the Government the manufacturer's complete warranty for materials, workmanship, and installation. The warranty shall be for 5 years from the time of project completion and shall not be prorated.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Aluminum

AAMA 1002.10.

2.1.2 Interior Storm Windows

AAMA 1002.10, Specification FWE, except as otherwise specified herein. Windows shall have a Performance Class of 20 and shall be suitable for interior application at existing or new wood windows. Extrusions shall have a nominal wall thickness of not less than 0.045 inch.

2.1.2.1 Basis-of-Design Product

The design for interior aluminum storm windows is based on "Series 2000 Fixed (Picture)" by Therm-O-Lite, Inc., South Bend, IN, 574-234-4004; www.therm-o-lite-windows.com. Subject to compliance with requirements, provide the named product or a comparable product by Allied Storm Windows,

Cincinnati, OH, 800-443-5411, www.alliedwindow.com; or approved equal.

2.1.3 Glass

As specified in Section 08550 "WOOD WINDOWS."

2.2 FABRICATION

AAMA 1002.10.

2.2.1 Connections

Rigidly connect frames at corners so as to prevent racking during normal handling and installation.

2.2.2 Controllers

Provide controllers for louver blinds as indicated on Drawings and as standard with the manufacturer.

2.2.3 Access for Cleaning

Inserts, both operating and non-operating, shall be removable for cleaning. Where fixed sashes are indicated, the inserts shall be normally fixed but removable for cleaning.

2.3 FINISHES

Exposed aluminum surfaces shall be factory finished with organic coating. New storm windows shall have the same finish.

2.3.1 Organic Coating

Exposed surfaces of aluminum extrusions and sheet shall be cleaned, primed, and given a baked enamel finish in accordance with AAMA 603.8, with total dry film thickness not less than 0.8 mil. The finish color shall match existing window frame color, unless otherwise indicated on Drawings.

PART 3 EXECUTION

3.1 PREPARATION

Clean, repair, and paint existing prime windows which are to receive storm windows, as indicated on Drawings and as specified in other sections, before storm windows are installed. Clean glass, wood, and metal surfaces which will be between the storm and prime windows with appropriate detergents or cleaning agents. Leave free of dirt, streaks, fingerprints, and other soil.

3.2 INSTALLATION

Install square, in true plane, level, plumb, in alignment with adjacent construction, and in accordance with manufacturer's printed instructions to ensure proper fit.

3.2.1 Sealants

Make perimeter of storm windows weathertight, except at controllers.

3.2.2 Fastening

Holes in the main frame shall be oversized to allow for expansion and contraction. Attach units with panhead screws of adequate dimensions for the particular installation.

3.3 CLEANING

After installation, clean exposed surfaces to remove foreign matter and surface blemishes. Remove units which cannot be cleaned satisfactorily, and units which are damaged, and provide new units.

-- End of Section --

SECTION 08591

WOOD WINDOWS RESTORATION

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA 101 Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3274 (1995) Evaluating Degree of Surface Disfigurement of Paint Films by Microbial (Fungal or Algal) Growth or Soil and Dirt Accumulation

WOOD AND DOOR MANUFACTURERS ASSOCIATION (WDMA)

AAMA/WDMA 101/I.S.2 (1997) Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors Introduction

NWWDA I.S.4 (1994) Water-Repellent Preservative Non-Pressure Treatment for Millwork

ARCHITECTURAL WOODWORK INSTITUTE (AWI)

AWI Quality Standards (1997) Architectural Woodwork Quality Standards

1.2 SUMMARY

1.2.1 Work Includes

Repair of wood windows to return them to proper operation and sound condition.

Repair and reinstallation of certain existing window hardware.

Replacement of certain dysfunctional window hardware.

1.2.2 Related Work

Related Sections include the following:

Section 08550 "WOOD WINDOWS."

Section 09900 "PAINTING" for field finishing.

1.3 SUBMITTALS

Government approval is required for submittals with a "GA designation; submittals having an "FIO" designation are for information only. "AE" stands for "Review by Architect-Engineer."

Submit the following in accordance with Section 01010 "GENERAL REQUIREMENTS."

SD-01 Qualification Data

Woodworking Firms; F10

For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of A/E firms and the Government Organizations, and other information specified.

SD-02 Shop Drawings

Wood Windows; GA|AE

Prepare a window restoration schedule of each window similar to that of the contract documents. Indicate extent of repairs and rehabilitation and material proposed for restoration.

SD-03 Product Data

New window hardware and accessories; GA|AE

Provide manufacturers' instructions for installation of each type of hardware and weatherstripping.

SD-14 Samples

Hardware Items; GA|AE

Representative sample of each type of hardware with identifying tags.

A 12 inch long sample of each type of weatherstripping required with fasteners.

Representative wood sample, showing method of typical window repair, wood grain, and finish.

1.4 QUALITY ASSURANCE

Qualifications: Engage a qualified woodworking firm to assume undivided responsibility for fabrication and installation of wood window restoration. Firm shall have completed architectural woodwork similar to that indicated for this project and its work shall have resulted in construction with a record of successful in-service performance. Firm shall have sufficient capacity to produce required repairs like that indicated for this project.

Quality Standard: Except for materials, comply with AWI "Architectural Woodwork Quality Standards" Section 1000 for Premium Grade where

fabrication of new window components is required. Materials shall comply with Custom Grade as specified.

Mockups: Before restoring wood windows, build a mockup of each type of window repair and rehabilitation required to demonstrate aesthetic effects and qualities of materials and execution. Build mockups to comply with the following requirements using materials indicated for the completed Work.

Build mockups in the location directed by the Contracting Officer (CO).

Notify the CO seven days in advance of dates and times when mockups will be installed.

Demonstrate the proposed range of aesthetic effects and workmanship.

Obtain CO's approval of mockups before starting wood window restoration.

Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE AND HANDLING

If woodwork must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.

1.6 PROJECT CONDITIONS

Environmental Limitations: Install woodwork only when wet work is complete, and is between 60 and 90 deg F (16 and 32 deg C) and relative humidity between 25 and 55 percent during the construction period.

PART 2 PRODUCTS

2.1 MATERIALS

Reuse existing materials whenever possible in the repair and rehabilitation of wood windows. This includes wood elements and hardware that are determined to be of historic significance. Replace window elements with new material only when originals are so deteriorated as to prohibit their useful function.

Wood used to replace deteriorated window members shall be of the same species and grade as the original.

Wood Species: Southern Pine for sash and Oak for frame, free of finger-joints, and kiln-dried to a moisture content of 6 to 12 percent at the time of fabrication.

Reuse existing original hardware when it remains functional and can be reasonably restored to "like-new" condition. Replacement hardware shall match original in design, material, and finish.

Fasteners shall be stainless steel, or non-ferrous metal.

Glass: Comply with requirements of Section 08550 "WOOD WINDOWS."

Glazing points shall be stainless steel.

Epoxy Consolidants:

Liquid wood consolidant shall consist of a two-part, low-viscosity liquid epoxy that meets the criteria of Table A.

Epoxy paste shall consist of a two-part, thixotropic paste that meets the criteria of Table A.

TABLE A

	LIQUID CONSOLIDANT	EPOXY PASTE
	—————	—————
Properties	Low-Viscosity Liquid	No-Slump, Thixotropic Paste
Toxicity	Low	Very Low
Toxicity Cured	Non-Toxic	Non-Toxic
Ratios	1:1 by Volume	1:1 by Volume
Pot Life @ Room Temp.	30 min. minimum	50 min. minimum
Hardening @ Room Temp.	1 hr. or longer	1 hr. or longer
Hardening @ 60 deg. C	16 min. or less	18 min. or less
Viscosity Poises @ 22 deg. C	4.7 max.	Thixotropic paste
Solids	95% min.	98% min.
Tensile Strength	4000 psi	2500 psi
Elongation (%)	50	4

Water-Repellant Preservative: Material meeting requirements of NWWDA Industry Standard I.S. 4, latest edition.

Weatherstripping: Manufacturer's standard system and material, complying with AAMA/NWWDA 101/I.S.2 and matching weatherstripping at new windows. Type and size selected by fabricator to provide maximum enhanced performance values for preventing air and water infiltration, and maintain proper operation of ventilating sash. To maximize extent possible, provide weatherstripping that will be concealed when sash are closed.

PART 3 EXECUTION

3.1 PREPARATION

During preparation for window restoration, make a complete evaluation survey of the existing conditions of each wood window to verify the extent of repairs necessary.

Each window or portion thereof which remains to be restored, including related sills, mullions, and trim, shall be stripped of existing paint and finish coatings down to bare substrate and prepared for restoration and finish painting.

Methods used for preparation of wood surfaces for painting shall be the gentlest possible to achieve the desired results. Substrate materials shall not be damaged or marred in the process of surface preparations.

Prior to application of liquid wood consolidant or finish coatings, dry existing wood window components to a moisture content not greater than 10 percent. Test each part of each window component to assure that entire window is sufficiently dry for application of restorative and finishing products. Windows evidencing moisture content in excess of 10 percent shall be dried in-situ or in the shop at the Contractor's option provided the CO permits in-situ operations.

3.2 REPAIR OF EXISTING WINDOWS, GENERAL

Restore existing wood windows to extent indicated on Drawings using procedures indicated herein and in accord with quality standard.

3.3 SASH REMOVAL

Remove interior stops by a method that does not damage the wood. Then detach connecting hardware and operating mechanisms and remove the sash from the frame. Stamp removed sashes, frames and components as to location with a permanent mark on concealed surface to assure reinstallation in their original positions. Remove frame components as necessary to remove existing sash cords and counterweights in preparation for replacement. The lower sash can then be removed. Remove the parting bead so as to not damage the wood. Install temporary enclosure to cover the window opening during repairs.

3.4 CLEANING OF SURFACE CONTAMINANTS

Clean surfaces to be free of grease, dirt, dust and other foreign matter. Clean surface contaminants by brush with solutions of water and detergent or trisodium phosphate, then rinse clean with water and let dry. Surfaces on which mildew or other microbiological growth is present shall be cleaned with a detergent solution containing household bleach. Remove oil and grease with clean cloths and cleaning solvents prior to mechanical cleaning. Cleaning solvents shall be of low toxicity with a flashpoint in excess of 38 degrees C. Program cleaning so that dust and other contaminants will not fall on newly prepared or newly painted surfaces. After cleaning, surfaces shall exhibit a surface disfigurement rating of 7 or greater when evaluated in accordance with ASTM D 3274.

Perform cleaning in accord with requirements for lead-based paint abatement procedures specified in Section 01010 "GENERAL REQUIREMENTS".

3.5 GLASS REMOVAL

Remove existing glass, glazing materials and accessories from sash or

frames prior to repair or refinishing. Remove glazing materials down to bare wood without damaging the substrate

3.6 FINISH REMOVAL

Remove existing finish coatings to bare wood using non-destructive means in accord with requirements for lead-based paint abatement procedures specified in Section 01010 "GENERAL REQUIREMENTS." If chemical strippers are used, neutralize wood after stripping to a litmus pH of 5 to 8.5. Allow wood to dry to a moisture content of 10 percent before repainting.

3.7 WOOD REPAIR

General: Replace badly decayed wood components (with more than 30 percent wood decayed) from wood sash, sill, frame, and trim assemblies. Patch moderately decayed wood components (less than 30 percent decayed), weathered, or gouged wood with dutchman or epoxy paste, and sand smooth. Repair intact sash rails and stiles that are loose with new dowels to make joints tight.

Dutchman Repairs:

Repair existing solid wood with heavy gouges or decay limited in area and depth by "dutchman" repair technique, i.e., the replacement of damaged wood with matching solid wood. Wood for replacement shall be the same species and grade and have grain similar to that of the damaged wood.

Draw and cut a cardboard template or pattern of irregular shape large enough to extend beyond the damaged area on all sides. Trace the outline of the template over the damage surface. Chisel or rout the grave (bed) about 0.5 inch deep just inside the outline. Excavate the grave to uniform depth.

Trace the template outline on the patch wood, being sure that the grain will run parallel to that of the surface. Cut the patch with a saw. If it is slightly too large, sand to fit; if small, cut another patch. Glue down.

Fill hairline crevices with wood putty. Refinish the surface.

Epoxy Wood Repair: Apply epoxy wood repair materials in accordance with manufacturer's written instructions. Follow health and safety instructions in accordance with the manufacturer's instructions. Identify the source or cause of wood decay and correct prior to application of patching materials. Allow wet wood to completely dry to a moisture content of 10 percent to its full depth before patching. Wood that is to be patched shall be clean of dust, grease, and loose paint. Use clean mixing equipment to avoid contamination. Mix and proportion as directed by the manufacturer. Mix batches only large enough to complete the specific job intended. Patching materials shall be completely cured before painting or reinstallation of patched pieces.

Apply epoxy liquid wood consolidant to penetrate and impregnate deteriorated wood sections to reinforce wood fibers that have become softened or absorbant.

Apply epoxy paste to fill areas where portions of wood are missing such as holes, cracks, gaps, gouges, and other voids. Areas to

receive epoxy paste patching material shall be primed with compatible epoxy liquid wood consolidant or a primer recommended by the manufacturer.

Wood Replacement: Replace pieces decayed beyond repair with new pieces that match originals in all respects. Match existing joinery. Muntins shall have coped mortise and tenon joints. Molded members shall have mitered or coped joints.

3.8 HARDWARE AND ACCESSORIES

General: Hardware shall be compatible for use with new glazing and shall be suitable for additional weight.

Reuse existing hardware that remains in good, functional condition. To the extent practical, remove hardware from the unit and clean to bare metal. Refinish hardware that will be exposed in the finished work to "like-new" condition. Reinstall hardware prior to, or after final finishing of unit depending upon its need for reassembly of the unit.

Replace or repair dysfunctional items of hardware. Use the following means of replacement or repair in the order of priority listed

Replace dysfunctional hardware with matching hardware salvaged from materials removed by demolition. Refurbish hardware to "like new" condition or, at least, to a reasonable likeness of the original condition. Use only fully functional units.

Repair dysfunctional hardware by removing and disassembling hardware and replacing dysfunctional parts with fully functional parts of matching units salvaged from materials removed by demolition. Refurbish hardware as required above and assure that it is fully functional.

Repair dysfunctional hardware by removing and disassembling hardware and replacing dysfunctional parts with fully functional parts matching original parts. If necessary, machine or otherwise manufacture parts to match. Refurbish hardware as required above and assure that it is fully functional.

Replace dysfunctional hardware with matching, fully functional hardware removed from a less prominent location in the project. Provide the removal location with new hardware that matches as closely as possible the original hardware and is approved by the Contracting Officer (CO).

Provide new hardware that matches existing hardware in function, appearance, and finish, and, is approved by the CO.

Counterweights: Adjust existing or provide new counterweights and sash cords or chains as necessary to counterbalance reglazed sash and ensure proper operation.

Weatherstripping: Install weatherstripping on all operable windows. Weatherstripping shall consist of compression weather strips designed for permanent sealing under bumper or wiper action. Provide weatherstripping at the perimeter of each sash including meeting rails and install per manufacturer's instructions. Weatherstripping shall be completely concealed when sash is closed.

3.9 GLAZING

Glaze window lights in accord with requirements of Section 08550 "WOOD WINDOWS." Fabricate muntins, glass stops, and frame sections as necessary to accommodate new or existing reused glass in existing windows or repaired windows, as approved.

Rabbet sash stiles and rails to receive new glazing.

3.10 REASSEMBLY, REINSTALLATION AND FINISHING

Reassembly: After repairs are completed, reassemble window components with all parts tight, true and functioning properly. Wood surfaces shall be free of blemishes.

Examine existing window openings, frames, surfaces, anchorage, and other components for conditions that assure satisfactory operation and performance after reinstallation. Assure that components removed for restoration work are reinstalled at their original locations. Surfaces shall be clean, visibly dry, free of contaminating substances, and without damage, offset, or misalignment.

Proceed with re-installation only after unsatisfactory conditions have been corrected.

Install work in accordance with AWI Premium Quality Standards.

Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.

Set sill members in bed of sealant or with gaskets, for weathertight construction.

Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

Adjust operating sashes and ventilators, hardware, and accessories for a tight fit at contact points and weatherstripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

Consolidant Application: After all window surfaces have been cleaned, dried, and otherwise prepared for final finishing, apply liquid consolidant to all wood parts, exterior sills, transom bars, and trim from bottom of lowest wood member to a height of 8 inches above top of sill, and allow consolidant to penetrate and cure on wood members. Apply consolidant in accord with manufacturers printed instructions. After consolidant has fully cured, roughen surface of consolidated wood by light sanding in preparation for paint primer application.

Preservative Application: After consolidant application, apply liquid wood preservative to all wood window parts and trim not previously coated with liquid consolidant, except inside stops and trim. Comply with requirements of NWWDA Industry Standard I.S. 4, latest edition. Apply preservative in accord with manufacturer's written instructions.

Paint Priming: Apply prime coat of the specified paint system as soon as practical after consolidant and preservative applications have been completed, but prior to any deterioration of the prepared surface. Unless otherwise directed, the primer shall be applied within 48 hours of surface preparation.

Finish Painting: Comply with requirements of Section 09900 "PAINTING."

3.11 PROTECTION AND CLEANING

Protect window surfaces from contact with contaminating substances resulting from construction operations.

Clean glass immediately after re-installing windows and again after finish painting. Comply with industry standards for final cleaning and maintenance. Remove nonpermanent labels and clean surfaces.

Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

-- End of Section --

SECTION 08850

FRAGMENT RETENTION FILM FOR GLASS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z97.1 (1984; R 1994) Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 1036 (1991; R 1997) Flat Glass

ASTM D 882 (1997) Tensile Properties of Thin Plastic Sheeting

ASTM D 1044 (1994) Resistance of Transparent Plastics to Surface Abrasion

ASTM D 3330 (1996) Peel Adhesion of Pressure-Sensitive Tape at 180 Degree Angle

ASTM D 4830 (1998) Standard Test Methods for Characterizing Thermoplastic Fabrics Used in Roofing and Waterproofing

ASTM G 26 (1996) Operating Light-Exposure Apparatus (Xenon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

16 CFR 1201 Safety Standard for Architectural Glazing Materials

1.2 SUBMITTALS

Submittals with "FIO" designation are for information only. The following shall be submitted in accordance with Section 01010 "GENERAL REQUIREMENTS."

SD-03 Product Data

Fragment Retention Film; FIO

Cleaning; FIO

Manufacturer's data consisting of catalog cuts, brochures, circulars, and a list of glazing compounds and/or gaskets known to

be incompatible with the fragment retention film.

Manufacturer's application and cleaning instructions for fragment retention film.

A statement that the fragment retention film supplied was manufactured using the same materials and process as the material tested. A statement that the adhesive contains ultraviolet inhibitors which limit ultraviolet transmission to not more than 8 percent of the radiation between 300 and 380 nanometers. A statement that the film manufacturer or manufacturer's representative trained the personnel who will apply the film.

Warranty; FIO

Manufacturer's standard warranty.

SD-04 Samples

Fragment Retention Film; FIO

A sample consisting of a minimum 8 inch by 11 inch section of fragment retention film including the adhesive layer.

SD-06 Test Reports

Fragment Retention Film; FIO

Certified test reports covering tests specified in paragraph FRAGMENT RETENTION FILM including analysis and interpretation of test results. Each report shall identify the manufacturer, the specific product name, the film thickness, the adhesive type and thickness, and the glass type and thickness. Test reports shall clearly identify the methods used and shall include the results recorded.

SD-07 Certificates

Fragment Retention Film; FIO

On applications where the film will contact the glazing beads or gaskets, a certificate from the Contractor stating that the glazing compounds and gaskets are compatible with the fragment retention film and adhesive.

1.3 QUALIFICATIONS

The personnel applying the fragment retention film shall be trained by the film manufacturer or manufacturer's representative.

1.4 DELIVERY, STORAGE, AND HANDLING

Fragment retention film shall be delivered, stored, and handled in accordance with the manufacturer's recommendations. Glass that has the film factory applied shall be stored in a dry location free of dust, water, and other contaminants. Glass with factory applied film shall be delivered, stored, and handled so that the film is not damaged, scratched, or abraded and shall be stored in a manner which permits easy access for inspection and handling. Each roll of film must have a tamperproof label

containing full details of the roll, the batch number, and sufficient information to enable the Contracting Officer to ensure that the correct film is supplied.

1.5 WARRANTY

A 10 year warranty shall be furnished for fragment retention film material. The warranty shall provide for replacement of film if cracking, crazing, peeling, or inadequate adhesion occurs.

PART 2 PRODUCTS

2.1 STANDARD PRODUCTS

Fragment retention film shall be the standard product of a manufacturer regularly engaged in the manufacture of such products and shall essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening.

2.1.1 Basis-of-Design Product

The design for fragment retention film is based on "Armorgard" by Bekaert Specialty Films, LLC, Windsor, CT, 800-654-3456. Subject to the compliance with requirements, provide the named product or a comparable product, or approved equal.

2.1.2 Film Thickness

As indicated on the Drawings.

2.1.3 Film Location

Glass surfaces, as indicated on the Drawings.

2.2 FRAGMENT RETENTION FILM

Fragment retention film shall be polyester, polyethylene terephthalate, or a composite. Fragment retention film shall be optically clear and free of waves, distortions, impurities, and adhesive lines. The film may be a single layer or laminated. The film shall include an abrasion resistant coating on the surface that does not receive the film adhesive. Fragment retention film shall be a minimum thickness as indicated on Drawings and shall be clear. The film shall be supplied with an optically clear weatherable pressure sensitive adhesive. The adhesive shall contain ultraviolet inhibitors to protect the film for its required life and shall limit ultraviolet transmission to not more than 8 percent of the radiation between 300 and 380 nanometers. The adhesive shall not be water activated.

A water soluble detackifier and/or release liner may be incorporated over the adhesive to facilitate film application. The adhesive shall be 90 percent cured within 30 days of installation. Adhesives on film thicknesses of 0.010 and greater shall be a minimum of 0.0008 inch thick. The following tests to indicate compliance with specified requirements shall be performed by an independent testing laboratory, and the laboratory reports shall be signed by a responsible official of the laboratory.

2.2.1 Impact Performance

Fragment retention film shall be tested for impact in accordance with ANSI Z97.1 or 16 CFR 1201. Tests shall be conducted on fragment retention film

applied to 1/8 to 1/4 inch -thick annealed flat glass which conforms to the requirements of ASTM C 1036, Type I, Class 1, Quality q3. Sketches showing location and configuration of splice shall be included in submitted certified test reports. After the impact portion of the test is conducted, satisfactory performance of the test specimens shall be determined using ANSI Z97.1, paragraph 5.1.3 or 16 CFR 1201, paragraph 1201.4

(e)--INTERPRETATION OF RESULTS. To be qualified for use under this specification, the manufacturer shall provide a report that the fragment retention film satisfactorily performed in accordance with ANSI Z97.1, paragraph 5.1.3 (1), (3), or (4) or with 16 CFR 1201, paragraph 1204.4 (e) (1) (i), (iv), or (v). ANSI Z97.1, paragraph 5.1.3 (2) or 16 CFR 1201, paragraph 1204.4 (e) (1) (ii) shall not constitute passing criteria.

2.2.2 Tensile Strength

The fragment retention film samples tested shall exhibit a minimum tensile strength at break of 28,000 pounds per square inch when tested in accordance with ASTM D 882. Method A, Static Weighing, Constant Rate of Grip Separation Test, shall be used to conduct this test. The rate of grip separation shall not exceed 1/2 inch per minute.

2.2.3 Peel Strength

Testing shall be conducted following 1,200 hours accelerated weathering exposure per ASTM G 26 Procedure B. The fragment retention film shall exhibit a minimum peel strength of 5.3 pounds/inch for 0.004 inch thick film and 4.5 pounds/inch for 0.007 inch thick and thicker film when tested in accordance with ASTM D 3330. Method A shall be used to conduct the tests. A glass substrate shall be used and a maximum dwell time of 45 days is permitted.

2.2.4 Surface Abrasion

The fragment retention film shall exhibit a change in haze not to exceed 3.2 percent following 100 turns, using 500-gram weights on a CS 10F abrasive wheel when tested in accordance with ASTM D 1044.

2.2.5 Puncture Resistance

ASTM D 4830; 70 lbs for 4 mil thickness and 141 lbs for 8 mil thickness.

2.2.6 Break Strength

112 lbs/inch.

2.2.7 Elongation at Break

160% for 4 mil thickness and 170% for 8 mil thickness.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

The glass surface to which the fragment retention film is to be applied shall be cleaned of paint, foreign compounds, smears, and spatters. After the initial cleaning, the surface to receive the film shall be further cleaned in accordance with the film manufacturer's instructions.

3.2 APPLICATION

Fragment retention film shall be provided on window glass where indicated. Apply film at new windows in the shop. After surface preparation, the fragment retention film shall be applied in accordance with the manufacturer's recommendations and instructions. Film shall be applied to the interior (room) side of the glass for both single and double glazed sheets, unless otherwise indicated. Multiple applications of film to achieve specified thicknesses is not allowed. The film shall not be applied if there are visible dust particles in the air, if there is frost on the glazing, or if any room condition such as temperature and humidity do not meet the manufacturer's instructions. After film application, room conditions shall be maintained as required by the manufacturer's instructions to allow for proper curing of the adhesive.

3.2.1 Application to New Glass Before Glazing

Fragment retention film shall be applied so that it extends edge to edge of the glass sheet. The film reinforced glass shall then be set into the frame with glazing compounds or gaskets as specified in Section 08582 "INTERIOR ALUMINUM STORM WINDOWS". When contact between the glazing compounds and/or gaskets and the film occurs, the Contractor shall ensure compatibility. The Contractor shall be responsible for delivery of the fragment retention film to the appropriate location for application. Fragment retention film application and curing shall be coordinated with the glass supplier and window manufacturer prior to glazing installation.

3.3 CLEANING

Cleaning of the fragment retention film shall be in accordance with the manufacturer's instructions.

3.4 FIELD INSPECTION

The applied fragment retention film shall be clean and free of peeling, splitting, scratches, creases, wrinkles, discoloration, and foreign particles. The film application shall be free of air bubbles after 30 days. Fragment retention film shall not show signs of waviness and distortion at the time the work is accepted. This determination shall be made by the unaided eye (except for corrective prescription glasses), when the film is viewed from a distance of 10 feet from the interior room side at angles up to 45 degrees when looking at a clear or uniformly overcast sky. Unacceptable fragment retention film applications shall be removed in accordance with manufacturer's instructions and new film applied.

-- End of Section --

SECTION 09100

METAL SUPPORT ASSEMBLIES

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 463/A 463M	(1997; Rev. A) Steel Sheet, Aluminum-Coated, by the Hot-Dip Process
ASTM A 653/A 653M	(1998) Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM C 645	(1998) Nonstructural Steel Framing Members
ASTM C 754	(1997) Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products
ASTM C 841	(1997) Installation of Interior Lathing and Furring

UNDERWRITERS LABORATORIES (UL)

UL Fire Resist Dir	(1997) Fire Resistance Directory
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1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation. "AE" stands for review by "Architect-Engineer."

Submit the following in accordance with Section 01010, "GENERAL REQUIREMENTS."

SD-02 Shop Drawings

Metal support systems; GA|AE

Submit for the erection of metal framing, and furring. Indicate materials, sizes, thicknesses, and fastenings.

1.3 DELIVERY, STORAGE, AND HANDLING

Deliver materials to the job site and store in ventilated dry locations. Storage area shall permit easy access for inspection and handling. If materials are stored outdoors, stack materials off the ground, supported on a level platform, and fully protected from the weather. Handle materials carefully to prevent damage. Remove damaged items and provide new items.

PART 2 PRODUCTS

2.1 MATERIALS

Provide steel materials for metal support systems with galvanized coating ASTM A 653/A 653M, (G-60); aluminum coating ASTM A 463/A 463M, T1-25; or a 55-percent aluminum-zinc coating.

2.1.1 Materials for Attachment of Gypsum Wallboard

2.1.1.1 Nonload-Bearing Wall Framing and Furring

ASTM C 645, but not thinner than (0.0329 inch) thickness.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Systems for Attachment of Gypsum Wallboard

3.1.1.1 Nonload-Bearing Wall Framing and Furring

ASTM C 754, except as indicated otherwise.

3.2 ERECTION TOLERANCES

Framing members which will be covered by finish materials such as gypsum wallboard, shall be within the following limits:

- a. Layout of walls and partitions: 1/4 inch from intended position;
- b. Plates and runners: 1/4 inch in 8 feet from a straight line;
- c. Studs: 1/4 inch in 8 feet out of plumb, not cumulative; and
- d. Face of framing members: 1/4 inch in 8 feet from a true plane.

-- End of Section --

SECTION 09250

GYPSUM BOARD

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 36/C 36M	(1999) Gypsum Wallboard
ASTM C 475	(1994) Joint Compound and Joint Tape for Finishing Gypsum Board
ASTM C 840	(2001) Application and Finishing of Gypsum Board
ASTM C 954	(2000) Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases to Steel Studs from 0.033 in. to 0.112 in. in Thickness
ASTM C 1002	(2000) Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases
ASTM C 1047	(1999) Accessories for Gypsum Wallboard and Gypsum Veneer Base
ASTM C 1396/C 1396M	(2000) Standard Specification for Gypsum Board

GYPSUM ASSOCIATION (GA)

GA 214	(1996) Recommended Levels of Gypsum Board Finish
GA 216	(2000) Application and Finishing of Gypsum Board

1.2 SUBMITTALS

Submittals having an "FIO" designation are for information only. Submit the following in accordance with Section 01010, "GENERAL REQUIREMENTS."

SD-07 Certificates

Asbestos Free Materials; FIO

Certify that gypsum board and joint treating materials do not contain asbestos.

1.3 DELIVERY, STORAGE, AND HANDLING

1.3.1 Delivery

Deliver materials in the original packages, containers, or bundles with each bearing the brand name, applicable standard designation, and name of manufacturer, or supplier.

1.3.2 Storage

Keep materials dry by storing inside a sheltered building. Where necessary to store gypsum board outside, store off the ground, properly supported on a level platform, and protected from direct exposure to rain, snow, sunlight, and other extreme weather conditions. Provide adequate ventilation to prevent condensation.

1.3.3 Handling

Neatly stack gypsum board flat to prevent sagging or damage to the edges, ends, and surfaces.

1.4 ENVIRONMENTAL CONDITIONS

1.4.1 Temperature

Maintain a uniform temperature of not less than 50 degrees F in the structure for at least 48 hours prior to, during, and following the application of gypsum board, and joint treatment materials.

1.4.2 Exposure to Weather

Protect gypsum board products from direct exposure to rain, snow, sunlight, and other extreme weather conditions.

1.5 QUALIFICATIONS

Manufacturer shall specialize in manufacturing the types of material specified and shall have a minimum of 5 years of documented successful experience. Installer shall specialize in the type of gypsum board work required and shall have a minimum of 3 years of documented successful experience.

PART 2 PRODUCTS

2.1 MATERIALS

Conform to specifications, standards and requirements specified herein. Provide gypsum board types, gypsum backing board types, and joint treating materials manufactured from asbestos free materials only.

2.1.1 Gypsum Board

ASTM C 36/C 36M and ASTM C 1396/C 1396M.

2.1.1.1 Regular

48 inches wide, thickness to match existing condition, tapered edges.

2.1.2 Joint Treatment Materials

ASTM C 475.

2.1.2.1 Embedding Compound

Specifically formulated and manufactured for use in embedding tape at gypsum board joints and compatible with tape, substrate and fasteners.

2.1.2.2 Finishing or Topping Compound

Specifically formulated and manufactured for use as a finishing compound.

2.1.2.3 All-Purpose Compound

Specifically formulated and manufactured to serve as both a taping and a finishing compound and compatible with tape, substrate and fasteners.

2.1.2.4 Setting or Hardening Type Compound

Specifically formulated and manufactured for use with fiber glass mesh tape.

2.1.2.5 Joint Tape

Cross-laminated, tapered edge, reinforced paper, or fiber glass mesh tape recommended by the manufacturer.

2.1.3 Fasteners

2.1.3.1 Screws

ASTM C 1002, Type "G" or Type "S" steel drill screws for fastening gypsum board to gypsum board and steel framing members less than 0.033 inch thick. ASTM C 954 steel drill screws for fastening gypsum board to steel framing members 0.033 to 0.112 inch thick.

2.1.4 Accessories

ASTM C 1047. Fabricate from corrosion protected steel or plastic designed for intended use. Accessories manufactured with paper flanges are not acceptable. Flanges shall be free of dirt, grease, and other materials that may adversely affect bond of joint treatment.

2.1.5 Water

Clean, fresh, and potable.

PART 3 EXECUTION

3.1 EXAMINATION

3.1.1 Framing and Furring

Verify that framing and furring are securely attached and of sizes and spacing to provide a suitable substrate to receive gypsum board.

3.2 APPLICATION OF GYPSUM BOARD

Apply gypsum board to framing and furring members in accordance with ASTM C 840 or GA 216 and the requirements specified herein. Apply gypsum board with separate panels in moderate contact; do not force in place. Stagger

end joints of adjoining panels. Neatly fit abutting end and edge joints. Use gypsum board of maximum practical length. Cut out gypsum board as required to make neat close joints around openings. In vertical application of gypsum board, provide panels in lengths required to reach full height of vertical surfaces in one continuous piece. Provide type of gypsum board for use in each system specified herein as indicated.

3.2.1 Application of Gypsum Board to Steel Framing and Furring

Apply in accordance with ASTM C 840, System VIII or GA 216.

3.2.2 Control Joints

Install expansion and contraction joints in walls in accordance with ASTM C 840, System XIII or GA 216, unless indicated otherwise.

3.3 FINISHING OF GYPSUM BOARD

Tape and finish gypsum board in accordance with ASTM C 840, GA 214 and GA 216. Unless otherwise specified or required to match existing condition, all gypsum board walls and partitions shall be finished to Level 5 in accordance with GA 214. Provide joint, fastener depression, and corner treatment. Do not use fiber glass mesh tape with conventional drying type joint compounds; use setting or hardening type compounds only.

3.4 PATCHING

Patch surface defects in gypsum board to a smooth, uniform appearance, ready to receive finish as specified.

-- End of Section --

SECTION 09900

PAINTING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)

ACGIH Limit Values (1991-1992) Threshold Limit Values (TLVs) for Chemical Substances and Physical Agents and Biological Exposure Indices (BEIs)

ACGIH TLV-DOC Documentation of Threshold Limit Values and Biological Exposure Indices

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 16 (2000) Standard Technology for Paint, Related Coatings, Materials and Applications

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910.1000 Air Contaminants

FEDERAL STANDARDS (FED-STD)

FED-STD-313 (Rev. C) Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities

PAINTING AND DECORATING CONTRACTORS OF AMERICA

PDCA P1 (1992) Touch-Up Painting and Damage Repair Financial Responsibility

PDCA P4 (1994) Responsibilities for Inspection and Acceptance of Surfaces Prior to Painting and Decorating

PDCA P5 Benchmark Sample Procedures for Paint and Other Decorative Coating Systems

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS-EPP-SP01-01 (2001) Environmentally Preferable Product Specification for Architectural and Anti-Corrosive Paints

STEEL STRUCTURES PAINTING COUNCIL (SSPC)

SSPC PA 3

(1995) Safety in Paint Application

1.2 SUMMARY

1.2.1 Painting Work

This Section includes field painting of exposed interior and exterior items and surfaces.

- a. Priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.
- b. Owner-Furnished Materials: Materials for painting interior gypsum board surfaces shall be furnished by the Owner and installed by the Contractor. Incidental materials required in conjunction with Owner-furnished materials shall be provided by the Contractor and shall be compatible with Owner-furnished materials.

1.2.2 Surfaces to be Painted

Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. Where colors are not indicated, the Contracting Officer will designate the Government standard colors and finishes to be used.

1.2.3 Items Not Requiring Painting

Do not paint prefinished items such as storm panels and storm panel channels, concealed surfaces, finished metal surfaces, operating parts, and labels.

- a. Prefinished items include the following factory-finished components:
 - 1) Window hardware.
- b. Operating parts include moving parts of operating equipment and the following:
 - 1) Operating hardware.
- c. Labels: Do not paint over certification labels.

1.2.4 Related Work

Related Sections include the following:

- a. Section 08591 "WOOD WINDOW RESTORATION" for surface preparation and shop priming wood windows.

1.3 DEFINITIONS

1.3.1 General

Standard coating terms defined in ASTM D 16 apply to this Section.

- a. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
- b. Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.
- c. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.
- d. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.

1.4 SUBMITTALS

Submittals having an "FIO" designation are for information only.

Submit the following in accordance with Section 01010, "GENERAL REQUIREMENTS".

The current MPI, "Approved Product List" which lists paint by brand, label, product name and product code as of the date of contract award, will be used to determine compliance with the submittal requirements of this specification. The Contractor may choose to use a subsequent MPI "Approved Product List", however, only one list may be used for the entire contract and each coating system is to be from a single manufacturer. All coats on a particular substrate must be from a single manufacturer. No variation from the MPI Approved Products List is acceptable.

Samples of specified materials may be taken and tested for compliance with specification requirements.

In keeping with the intent of Executive Order 13101, "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition", products certified by SCS as meeting SCS-EPP-SP01-01 shall be given preferential consideration over registered products. Products that are registered shall be given preferential consideration over products not carrying any EPP designation.

SD-03 Product Data

For each paint system indicated. Include primers.

Material List; FIO

An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.

Manufacturer's Information; FIO

Manufacturer's technical information, including label analysis and instructions for handling, and storing, each coating material.

Qualification Data for Application; FIO

SD-04 Paint Samples, FIO

For each color and material to be applied, with texture to

simulate actual conditions, on representative Samples of the actual substrate.

Provide stepped Samples, defining each separate coat, including primers. Use representative colors when preparing Samples for review. Resubmit until required sheen, color, and texture are achieved.

Provide a list of materials and applications for each coat of each Sample. Label each Sample for location and application.

Submit Samples on the following substrates for the Contracting Officer's review of color and texture only:

Painted Wood: 12-inch- square Samples for each color and material on hardboard.

SD-08 Statements

Manufacturer's Instructions; FIO

Application instructions; FIO

Mixing; FIO

Detailed mixing instructions, minimum and maximum application temperature and humidity, potlife, and curing and drying times between coats.

Manufacturer's Material Safety Data Sheets; FIO

Submit manufacturer's Material Safety Data Sheets for coatings, solvents, and other potentially hazardous materials, as defined in FED-STD-313.

1.5 QUALITY ASSURANCE

1.5.1 Applicator Qualifications

A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

1.5.2 Source Limitations

Obtain primers for each coating system from the same manufacturer as the finish coats.

1.5.3 Benchmark Samples (Mockups)

Provide a full-coat benchmark finish sample for each type of coating and substrate required. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample Submittals.

- a. Contracting Officer will select one wood replacement window and one restored wood window to represent surfaces and conditions for application of each type of coating and substrate.
- b. Apply benchmark samples, according to requirements for the completed Work. Provide required sheen, color, and texture on

each surface.

- c. After finishes are accepted, the Contracting Officer will use the mock-ups to evaluate coating systems of a similar nature.

1.6 REGULATORY REQUIREMENTS

1.6.1 Environmental Protection

In addition to requirements specified elsewhere for environmental protection, provide coating materials that conform to the restrictions of the local Air Pollution Control District and regional jurisdiction. Notify Contracting Officer of any paint specified herein which fails to conform.

1.6.2 Lead Content

Do not use coatings having a lead content over 0.06 percent by weight of nonvolatile content.

1.6.3 Chromate Content

Do not use coatings containing zinc-chromate or strontium-chromate.

1.6.4 Asbestos Content

Materials shall not contain asbestos.

1.6.5 Mercury Content

Materials shall not contain mercury or mercury compounds.

1.6.6 Silica

Abrasive blast media shall not contain free crystalline silica.

1.6.7 Human Carcinogens

Materials shall not contain ACGIH Limit Values and ACGIH TLV-DOC confirmed human carcinogens (A1) or suspected human carcinogens (A2).

1.7 SAFETY AND HEALTH

Apply coating materials using safety methods and equipment in accordance with the following:

Work shall comply with applicable Federal, State, and local laws and regulations, and with the ACCIDENT PREVENTION PLAN, including the Activity Hazard Analysis as specified in Section 01010, "GENERAL REQUIREMENTS" and in Appendix A of EM 385-1-1. The Activity Hazard Analysis shall include analyses of the potential impact of painting operations on painting personnel and on others involved in and adjacent to the work zone.

1.7.1 Safety Methods Used During Coating Application

Comply with the requirements of SSPC PA 3.

1.7.2 Toxic Materials

To protect personnel from overexposure to toxic materials, conform to the most stringent guidance of:

- a. The applicable manufacturer's Material Safety Data Sheets (MSDS) or local regulation.
- b. 29 CFR 1910.1000.
- c. ACGIH Limit Values, threshold limit values.

1.8 DELIVERY, STORAGE, AND HANDLING

1.8.1 Project Site Delivery

Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:

- a. Product name or title of material.
- b. Product description (generic classification or binder type).
- c. Manufacturer's stock number and date of manufacture.
- d. Contents by volume, for pigment and vehicle constituents.
- e. Thinning instructions.
- f. Application instructions.
- g. Color name and number.
- h. VOC content.
- i. Contract specification number.

1.8.2 Material Storage

Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain storage containers in a clean condition, free of foreign materials and residue.

- a. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

1.9 PROJECT CONDITIONS

1.9.1 Field Application Requirements

- a. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F (10 and 32 deg C).
- b. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F (7 and 35 deg C).
- c. Do not apply paint in snow, rain, fog, or mist; or when relative

humidity exceeds 85 percent; or at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

- d. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

PART 2 PRODUCTS

2.1 MANUFACTURERS

2.1.1 Available Products

Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.

- a. Benjamin Moore & Co. (Benjamin Moore).
- b. Coronado Paint Company (Coronado).
- c. Duron Paints/Duron, Inc. (Duron).
- d. ICI Paint Stores, Inc. (Dulux Paint).
- e. Kelly-Moore Paint Co. (Kelly-Moore).
- f. M. A. Bruder & Sons, Inc. (M. A. B. Paint).
- g. PPG Industries, Inc. (Pittsburgh Paints).
- h. Sherwin-Williams Co. (Sherwin-Williams).

2.1.2 Materials for Gypsum Board Surfaces

Owner-furnished materials shall be used for gypsum board surfaces.

2.2 PAINT MATERIALS, GENERAL

2.2.1 Material Compatibility

Provide primers and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

2.2.2 Material Quality

Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

- a. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for

proposed substitutions.

2.2.3 Colors and Gloss Level

Match the colors and gloss level as indicated on the Drawings.

2.3 EXTERIOR PRIMERS

2.3.1 Exterior Wood Primer for Acrylic Enamels

Factory-formulated alkyd or latex wood primer for exterior application.

- a. Benjamin Moore; Moorwhite Primer No. 100: Applied at a dry film thickness of not less than 2.1 mils (0.053 mm).
- b. Coronado; 410-11 Crylicote Gold Exterior Acrylic House Paint Primer: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).
- c. Dulux Paint; 2001-1200 Dulux Exterior Latex Primer: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- d. Duron; Bond-N-Seal Exterior Acrylic Latex Primer 08-124: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).
- e. Kelly-Moore; 255 Stain--Lock II Stain Resistant Acrylic Primer: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
- f. M. A. B. Paint; Sea Shore/Four Seasons Latex Primer Coat 056-958: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
- g. Pittsburgh Paints; 72-1 Sun-Proof Exterior House & Trim Wood Primer Flat--Latex: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- h. Sherwin-Williams; A-100 Exterior Latex Wood Primer B42W41: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).

2.3.2 Exterior Ferrous-Metal Primer

Factory-formulated rust-inhibitive metal primer for exterior application.

- a. Benjamin Moore; IronClad Alkyd Low Lustre Metal & Wood Enamel No. 163: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).
- b. Coronado; 35-147 Rust Scat Alkyd Metal Primer: Applied at a dry film thickness of not less than 1.8 mils (0.046 mm).
- c. Dulux Paint; 4160-XXXX Devguard Multi-Purpose Tank & Structural Primer: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
- d. Duron; Dura Clad Universal Phenolic Alkyd Metal Primer 33-042: Applied at a dry film thickness of not less than 2.4 mils (0.061 mm).

- e. Kelly-Moore; 1711 Kel-Guard Alkyd White Rust Inhibitive Primer: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
- f. M. A. B. Paint; Rust-O-Lastic Anti-Corrosive Primer 073-132: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
- g. Pittsburgh Paints; 7-858 Pittsburgh Paints Industrial Rust Inhibitive Steel Primer: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
- h. Sherwin-Williams; Kem Kromik Universal Metal Primer B50NZ6/B50WZ1: Applied at a dry film thickness of not less than 3.0 mils (0.076 mm).

2.3.3 Exterior Galvanized Metal Primer

Factory-formulated galvanized metal primer for exterior application.

- a. Benjamin Moore; IronClad Latex Low-Lustre Metal & Wood Enamel No. 363: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- b. Coronado; 36-11 Rust Scat Latex Metal Primer: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).
- c. Dulux Paint; 4020-XXXX Devflex DTM Flat Interior/Exterior Waterborne Primer & Finish: Applied at a dry film thickness of not less than 2.2 mils (0.056 mm).
- d. Duron; Dura Clad Acrylic Galvanized Metal Primer 33-100: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).
- e. Kelly-Moore; 1722 Kel-Guard Acrylic Galvanized Iron Primer: Applied at a dry film thickness of not less than 1.8 mils (0.046 mm).
- f. M. A. B. Paint; Rust-O-Lastic Hydro-Prime II Acrylic (DTM) Maintenance Primer 073-189: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
- g. Pittsburgh Paints; 90-709 Pitt-Tech One Pack Interior/Exterior Primer/Finish DTM Industrial Enamel: Applied at a dry film thickness of not less than 3.0 mils (0.076 mm).
- h. Sherwin-Williams; primer not required over this substrate

2.4 INTERIOR PRIMERS

2.4.1 Interior Gypsum Board Primer

Factory-formulated latex-based primer for interior application.

- a. Benjamin Moore; Moorcraft Super Spec Latex Enamel Undercoater & Primer Sealer No. 253: Applied at a dry film thickness of not less than 1.2 mils (0.030 mm)

- b. Coronado; 40-11 Super Kote 5000 Latex Primer-Sealer: Applied at a dry film thickness of not less than 1.2 mils (0.030 mm).
- c. Dulux Paint; 1000-1200 Dulux Ultra Basecoat Interior Latex Wall Primer: Applied at a dry film thickness of not less than 1.2 mils (0.031 mm).
- d. Duron; Interior Latex Drywall Primer 04-124: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- e. Kelly-Moore; 971 Acry-Prime Interior Latex Primer/Sealer: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- f. M. A. B. Paint; Fresh Kote Vinyl Primer 037-100: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
- g. Pittsburgh Paints; 6-2 SpeedHide Interior Quick-Drying Latex Sealer: Applied at a dry film thickness of not less than 1.0 mil (0.025 mm).
- h. Sherwin-Williams; PrepRite 200 Latex Wall Primer B28W200 Series: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).

2.4.2 Interior Wood Primer for Acrylic-Enamel

Factory-formulated alkyd- or acrylic-latex-based interior wood primer.

- a. Benjamin Moore; Moore's Alkyd Enamel Underbody No. 217: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).
- b. Coronado; 78-11 Super Kote 5000 Acrylic Enamel Undercoat: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- c. Dulux Paint; 1000-1200 Dulux Ultra Basecoat Interior Latex Wall Primer: Applied at a dry film thickness of not less than 1.2 mils (0.031 mm).
- d. Duron; Interior Acrylic Enamel Undercoater 04-123: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- e. Kelly-Moore; 975 Acry Plex Interior Latex Enamel Undercoat: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- f. M. A. B. Paint; Rich Lux Latex Undercoat 037-154: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
- g. Pittsburgh Paints; 6-855 SpeedHide Latex Enamel Undercoater: Applied at a dry film thickness of not less than 1.0 mil (0.025 mm).
- h. Sherwin-Williams; PrepRite Classic Interior Primer B28W101 Series: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).

2.4.3 Interior Ferrous-Metal Primer

Factory-formulated quick-drying rust-inhibitive alkyd-based metal primer.

- a. Benjamin Moore; IronClad Alkyd Low Lustre Medal and Wood Enamel No. 163: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).
- b. Coronado; 35-147 Rust Scat Alkyd Metal Primer: Applied at a dry film thickness of not less than 1.8 mils (0.046 mm).
- c. Dulux Paint; 4130-6130 Devshield Rust Penetrating Metal Primer: Applied at a dry film thickness of not less than 2.2 mils (0.056 mm).
- d. Duron; Dura Clad Universal Phenolic Alkyd Metal Primer 33-042: Applied at a dry film thickness of not less than 2.4 mils (0.061 mm).
- e. Kelly-Moore; 1711 Kel-Guard Alkyd White Rust Inhibitive Primer: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
- f. M. A. B. Paint; Rust-O-Lastic Anti-Corrosive Primer 073-132: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
- g. Pittsburgh Paints; 7-858 Pittsburgh Paints Industrial Rust Inhibitive Steel Primer: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
- h. Sherwin-Williams; Kem Kromik Universal Metal Primer B50NZ6/B50WZ1: Applied at a dry film thickness of not less than 3.0 mils (0.076 mm).

2.4.4 Interior Zinc-Coated Metal Primer

Factory-formulated galvanized metal primer.

- a. Benjamin Moore; IronClad Latex Low Lustre Metal and Wood Enamel No. 363: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- b. Coronado; 36-11 Rust Scat Latex Metal Primer: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).
- c. Dulux Paint; 4160-6130 Devguard Multi-Purpose Tank & Structural Primer: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
- d. Duron; Dura Clad Acrylic Galvanized Metal Primer 33-100: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).
- e. Kelly-Moore; 1722 Kel-Guard Acrylic Galvanized Iron Primer: Applied at a dry film thickness of not less than 1.8 mils (0.046 mm).
- f. M. A. B. Paint; Rust-O-Lastic Hydro-Prime II Acrylic (DTM) Maintenance Primer 073-189: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
- g. Pittsburgh Paints; 90-709 Pitt-Tech One Pack Interior/Exterior

Primer/Finish DTM Industrial Enamel: Applied at a dry film thickness of not less than 3.0 mils (0.076 mm).

- h. Sherwin-Williams; primer not required over this substrate.

2.5 EXTERIOR FINISH COATS

2.6 Exterior Semigloss Acrylic Enamel Finishes

Factory-formulated semigloss waterborne acrylic-latex enamel for exterior application.

- a. Benjamin Moore; MoorGlo Latex House & Trim Paint No. 096: Applied at a dry film thickness of not less than 1.2 mils (0.031 mm).
- b. Coronado; 2 Line Crylicote Gold Collection Gloss Acrylic House & Trim Enamel: Applied at a dry film thickness of not less than 1.2 mils (0.031 mm).
- c. Dulux Paint; 2407-XXXX Dulux Exterior Latex Semi-Gloss Finish: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).
- d. Duron; Weathershield Exterior 100 Percent Acrylic Latex Semi-Gloss 03-Series: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).
- e. Kelly-Moore; 1250 Acry-Lustre Exterior Semi-Gloss Acrylic Finish: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- f. M. A. B. Paint; Sea Shore/Four Seasons Acrylic Latex Trim Enamel 024 Line: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
- g. Pittsburgh Paints; 78 Line Sun-Proof Semi-Gloss Acrylic Latex House and Trim Paint: Applied at a dry film thickness of not less than 1.2 mils (0.031 mm).
- h. Sherwin-Williams; SuperPaint Exterior Gloss Latex A-84 Series: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).

2.7 INTERIOR FINISH COATS

2.7.1 Interior Low-Luster Acrylic Enamel

Factory-formulated eggshell acrylic-latex interior enamel.

- a. Benjamin Moore; Moorcraft Super Spec Latex Eggshell Enamel No. 274: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).
- b. Coronado; 30-Line Super Kote 5000 Latex Eggshell Enamel: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).
- c. Dulux Paint; 1402-XXXX Dulux Professional Acrylic Eggshell Interior Wall & Trim Enamel: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).

- d. Duron; Ultra Deluxe Interior Acrylic Latex Low Sheen Enamel 36-Series: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).
- e. Kelly-Moore; 1610 Sat-N-Sheen Interior Latex Low Sheen Wall and Trim Finish: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- f. Kelly-Moore; 1686 Dura-Poxy Eggshell Acrylic Enamel: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- g. M. A. B. Paint; Fresh Kote Latex Satin Eggshell Enamel 405 Line: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
- h. Pittsburgh Paints; 6-400 Series SpeedHide Eggshell Acrylic Latex Enamel: Applied at a dry film thickness of not less than 1.25 mils (0.032 mm).
- i. Sherwin-Williams; ProMar 200 Interior Latex Egg-Shell Enamel B20W200 Series: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).

2.7.2 Interior Semigloss Acrylic Enamel

Factory-formulated semigloss acrylic-latex enamel for interior application.

- a. Benjamin Moore; Regal AquaGlo No. 333 Premium Interior Finishes Latex Semi-Gloss: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).
- b. Coronado; 22 Line Tough Walls Acrylic Semi-Gloss Enamel: Applied at a dry film thickness of not less than 1.1 mils (0.028 mm).
- c. Dulux Paint; 1407-XXXX Dulux Ultra Semi-Gloss Interior Acrylic Wall & Trim Enamel: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- d. Duron; Plastic Kote Interior Acrylic Latex Semi-Gloss Enamel 22-Series: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- e. Kelly-Moore; 1685 Dura-Poxy Semi-Gloss Acrylic Enamel: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
- f. M. A. B. Paint; Rich Lux Semi-Gloss Latex Enamel 023 Line: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
- g. Pittsburgh Paints; 88-110 Satinhide Interior Enamel Wall & Trim Lo-Lustre Semi-Gloss Latex: Applied at a dry film thickness of not less than 1.1 mils (0.028 mm).
- h. Sherwin-Williams; SuperPaint Interior Latex Semi-Gloss Enamel A88 Series: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm.)

PART 3 EXECUTION

3.1 EXAMINATION

3.1.1 General

Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application. Comply with procedures specified in PDCA P4.

- a. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
- b. Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.

3.1.2 Coordination of Work

Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. Ensure use of compatible primers.

3.2 PREPARATION

3.2.1 Cleaning

Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.

- a. Perform cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

3.2.2 Surface Preparation

Assure that surfaces to be painted have been properly prepared according to manufacturer's written instructions for each particular substrate condition and as specified.

- a. Wood: Clean surfaces of dirt, oil, and other foreign substances. Sand surfaces exposed to view smooth and dust off.
- b. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations.
- c. Galvanized Surfaces: Clean galvanized surfaces with nonpertroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

3.2.3 Material Preparation

Mix and prepare paint materials according to manufacturer's written instructions.

- a. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.

- b. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
- c. Use only thinners approved by paint manufacturer and only within recommended limits.

3.3 APPLICATION

3.3.1 General

Apply paint according to manufacturer's written instructions.

- a. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
- b. Provide finish coats that are compatible with primers used.
- c. The term "exposed surfaces" includes areas visible when permanent or built-in components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection
- d. Sand lightly between each succeeding enamel coat.

3.3.2 Scheduling Painting

Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

- a. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
- b. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
- c. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.

3.3.3 Application Procedures

Apply paints and coatings only by brush according to manufacturer's written instructions. Spray painting is not permitted at the jobsite. Spray painting may be used for shop applied primer and first finish coat.

- a. Brushes: Use brushes best suited for type of material applied.

Use brush of appropriate size for surface or item being painted.

3.3.4 Minimum Coating Thickness

Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.

3.3.5 Prime Coats

Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.

3.3.6 Pigmented (Opaque) Finishes

Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

3.3.7 Completed Work

Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 FIELD QUALITY CONTROL

3.4.1 Government Test Procedures

The Government reserves the right to invoke the following test procedure at any time and as often as the Government deems necessary during the period when paint is being applied:

- a. The Government may engage a qualified independent testing agency to sample paint material being used. Samples of material delivered to Project will be taken, identified, sealed, and certified in the presence of the Contractor.
- b. Testing agency will perform appropriate tests for salient characteristics as required by the Government:
- c. The Government may direct Contractor to stop painting if test results show material being used does not comply with specified requirements. Contractor shall remove noncomplying paint from Project site, pay for testing, and repaint surfaces previously coated with the noncomplying paint. If necessary, Contractor may be required to remove noncomplying paint from previously painted surfaces if, on repainting with specified paint, the two coatings are incompatible.

3.5 CLEANING

3.5.1 Cleanup

At the end of each workday, remove empty cans, rags, rubbish, and other

discarded paint materials from Project site.

- a. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

3.6 PROTECTION

3.6.1 General

Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by the Contracting Officer.

3.6.2 Temporary Procedures

Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.

- a. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.7 EXTERIOR PAINT SCHEDULE

3.7.1 Wood

Provide the following paint finish system over exterior of wood windows and trim:

- a. Semigloss Acrylic-Enamel Finish: Two finish coats over a primer.

- 1) Primer: Exterior wood primer for acrylic enamel.

- 2) Finish Coats: Exterior semigloss acrylic enamel.

3.7.2 Ferrous Metal

Provide the following finish systems over exterior over exterior ferrous metal. Primer is not required on shop-primed items.

- a. Semigloss Acrylic-Enamel Finish: Two finish coats over a rust-inhibitive primer.

- 1) Primer: Exterior ferrous-metal primer.

- 2) Finish Coats: Exterior semigloss acrylic enamel.

3.7.3 Zinc-Coated Metal

Provide the following finish systems over exterior zinc-coated metal surfaces:

- a. Semigloss Acrylic-Enamel Finish: Two finish coats over a

galvanized metal primer.

- 1) Primer: Exterior galvanized metal primer.
- 2) Finish Coats: Exterior semigloss acrylic enamel.

3.8 INTERIOR PAINT SCHEDULE

3.8.1 Gypsum Board

Owner-furnished paint materials shall be used for application at interior gypsum board surfaces. Unless otherwise directed by the Owner, provide applicable finish systems as follows:

- a. Low-Luster Acrylic-Enamel Finish: Two finish coats over a primer.
 - 1) Primer: Interior gypsum board primer.
 - 2) Finish Coats: Interior low-luster acrylic enamel.
- b. Semigloss Acrylic-Enamel Finish: Two finish coats over a primer.
 - 1) Primer: Interior gypsum board primer.
 - 2) Finish Coats: Interior semigloss acrylic enamel.

3.8.2 Wood

Provide the following paint finish system over wood windows and trim (interior):

- a. Semigloss Acrylic-Enamel Finish: Two finish coats over a wood undercoater.
 - 1) Primer: Interior wood primer for acrylic-enamel finishes.
 - 2) Finish Coats: Interior semigloss acrylic enamel.

3.8.3 Ferrous Metal

Provide the following finish systems over ferrous metal.

- a. Semigloss Acrylic-Enamel Finish: Two finish coats over a primer.
 - 1) Primer: Interior ferrous-metal primer.
 - 2) Finish Coats: Interior semigloss acrylic enamel.

-- End of Section --

SECTION 12490

BLINDS, VENETIAN

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FS AA-V-00200

(Rev. B) Venetian Blinds

1.2 SUBMITTALS

Submittals having an "FIO" designation are for information only.

Submit the following in accordance with Section 01010, "GENERAL REQUIREMENTS."

SD-03 Product Data

Blinds; FIO

SD-04 Samples

Blinds; FIO

Submit one complete unit of each type specified, labeled for identification. The Contracting Officer will deliver approved samples to the site; if in good condition and otherwise suitable, the samples may be installed in the work. Identification and approval marks shall remain undisturbed until final acceptance. Colors shall be as specified in paragraph entitled "Colors for Slats, Tape, Cords, and Exposed Metal."

1.3 DELIVERY AND STORAGE

Deliver the blinds to the site in the manufacturer's original containers with the manufacturer's name and container contents clearly labeled. Store in a safe, dry, clean, and well-ventilated area. Do not open containers until needed for installation unless verification inspection is required.

PART 2 PRODUCTS

2.1 BLINDS

2.1.1 Blind Units

FS AA-V-00200, Type II, one inch slats, except as modified herein.

2.1.2 Size

As indicated.

2.1.3 Slats

Aluminum for Type II venetian blinds. Slat thickness shall be a nominal .0085 inch.

2.1.4 Ladders

Unless otherwise required to match the existing condition, ladder cords for Type II blinds, with one inch aluminum slats shall be polyester cables with 27/32 inch vertical rung spacing.

2.1.5 Cords

Braided polyester or synthetic fiber, ends heat-fused, terminated with a plastic tassel, or continuous.

2.1.6 Tilting Device

Locate on the opposite side of lifting cord.

2.1.7 Lifting Cord Locks

Locate on the side opposite the tilting device enabling the blind to stop at any height or only at completely raised position of window opening as approved by the Owner.

2.1.8 Holddown or Sway-Stop Brackets

Provide where indicated.

2.1.9 Controllers

Controllers for operation of venetian blinds through interior storm windows shall be provided by window manufacturer as specified in Section 08582 "INTERIOR ALUMINUM STORM WINDOWS."

2.1.10 Color for Slats, Tape, Cords, and Exposed Metal

As shown and as required to match the existing condition.

2.1.11 Existing Conditions

Horizontal blinds, Model "Sheerview Riviera", Color #864 Flint Grey, by Levelor.

PART 3 EXECUTION

3.1 INSTALLATION

Install blinds after the work of other trades, including painting, is substantially done. Install blinds level and in accordance with manufacturer's recommended installation instructions as approved. Isolate metal parts from direct contact with concrete, mortar, or dissimilar metals. Ensure blinds installed in recessed pockets can be removable without disturbing the pocket. The entire blind, when retracted, shall be contained behind the pocket. For blinds installed outside the jambs and mullions, overlap each jamb and mullion 0.75 inch or more when the jamb and mullion sizes permit. Include all hardware, brackets, anchors, fasteners,

and accessories necessary for a complete, finished installation.

3.2 LOCATION

Install blinds at locations as indicated. Provide the required quantity of blinds and carefully check the dimensions of all openings in the facility for exact sizing of the blinds to be provided.

-- End of Section --