



**US Army Corps  
of Engineers®**  
New England District

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## **Replace Windows**

**Veterans Affairs Medical Center  
Providence, Rhode Island**

**Construction Solicitation  
and Specifications**

**February 2010**

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SECTION 00 41 00

BIDDING SCHEDULE

Refer to Section 01 22 00 MEASUREMENT AND PAYMENT

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
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BASE BID

0001	All Work Complete	1	Job	LS	\$ _____
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ALTERNATES

0002	Alternate 1 (Deduct)	1	Job	LS	\$ _____
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0003	Alternate 2 (Deduct)	1	Job	LS	\$ _____
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OPTIONAL ITEMS

0004	Typical Window Single Hung 42 x 72 inches; Work during Normal Hours; Removal of existing window; Complete Installation including sealants, and finish repairs.	ADD	EA	\$ _____
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0005	Typical Window Single Hung 42 x 72 inches; Work during Normal Hours; Removal of existing window; Complete Installation including sealants and finish repairs.	DEDUCT	EA	\$ _____
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0006	Typical Window Single Hung 42 x 72 inches; Work during Premium Hours; Removal of existing window; Complete Installation including sealants and finish repairs.	ADD	EA	\$ _____
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0007	Typical Window Single Hung 42 x 72 inches; Work during Premium Hours; Removal of existing window; Complete Installation including sealants and finish repairs.	DEDUCT	EA	\$ _____
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0008	Joint Sealant Perimeter Exterior Sealant around Existing Windows to remain including removal of old sealant.	ADD	LF	\$ _____
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0009	Joint Sealant	DEDUCT	LF	\$ _____
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Replace Windows, VA Medical Center, Providence, RI

Perimeter Exterior Sealant  
around Existing Windows to remain  
including removal of old sealant.

Note 1: Bid Item Numbers 0004 through 0009 above are Optional Items. Options may be exercised at the time of award or prior to final approval of window shop drawings by the Contracting Officer. A firm fixed bid price is required for the option.

The General Contractor shall, at the option of the government, execute Add or Deduct Change Orders at the price listed on the Bid Items Form and submitted as part of the Bid.

If any windows are added to the contract, then an equitable adjustment in time shall be made for installation; no adjustment in time will be made for windows deducted from contract.

Note 2: "EA" = Each, "LF" = Linear Foot.

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DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

SECTION 00 80 00

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SECTION 00 80 00

SPECIAL CONTRACT REQUIREMENTS

1.1 COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK (APR 1984) FAR 52.211-10

The Contractor shall be required to;

- (1) commence work under this contract within 15 calendar days after the date the Contractor receives the notice to proceed,
- (2) prosecute the work diligently, and
- (3) complete the entire work ready for use not later than 270 calendar days after the date the Contractor receives notice to proceed. The time stated for completion shall include final cleanup of the premises. See Subpart "Work Sequence" in Section 01 11 00 SUMMARY OF WORK.

1.2 LIQUIDATED DAMAGES - CONSTRUCTION (Sept 2000) FAR 52.211-12

- (a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amounts specified below until the work is completed or accepted.
- (b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.
- (c) Entire Work: For failure to complete the entire work until the work is completed or accepted, the sum of \$\_\_\_\_.00 for each calendar day of delay.
- (d) Punchlist Items: At a time before the project is physically complete but is functionally complete to the satisfaction of the Government, the Government at its sole discretion may agree to accept transfer of the facility or project provided that the remaining work to be done ("punchlist items") is completed no later than 30 days from the date of transfer. In this case the Contractor shall pay liquidated damages for punchlist items not completed in the daily amount of \$\_\_\_\_.00 per day commencing after 30 days of project transfer or after date required for project completion (including all extensions), whichever occurs later.

1.3 TIME EXTENSIONS (Sept 2000) FAR 52.211-13

Time extensions for contract changes will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the contract completion date will be extended only for those specific elements related to the changed work and that the remaining contract completion dates for all other portions of the work will not be altered. The change order also may provide an equitable readjustment of liquidated damages under the new completion schedule.

1.4 CONTRACT DRAWINGS AND SPECIFICATIONS (AUG 2000) DFARS 252.236-7001

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference. The drawings will be provided to the Contractor in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall-

- (1) Check all drawings furnished immediately upon receipt;
- (2) Compare all drawings and verify the figures before laying out the work;
- (3) Promptly notify the Contracting Officer of any discrepancies;
- (4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and
- (5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

- (1) Large-scale drawings shall govern small-scale drawings; and
- (2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and to the contract drawings. The Contract Drawings are identified on the "Index to Drawings" found on Sheet G-001 of the set of Contract Drawings.

1.5 DESIGNATED BILLING OFFICE

Reference Contract Clause titled "PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS" located in SECTION 00700, CONTRACT CLAUSES. The "designated billing office" will be the Construction Area Engineer, Resident Engineer or project office where the Contracting Officer Representative for this contract is located. The Contractor will be notified of the exact location of this office at the project preconstruction conference specified in Section 01 11 00 SUMMARY OF WORK.

1.6 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (OCT 1989) ER 415-1-15

(a) This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with 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.

(1) 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.

(2) 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.

(b) 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

<u>JAN</u> (6)	<u>FEB</u> (5)	<u>MAR</u> (2)	<u>APR</u> (2)	<u>MAY</u> (1)	<u>JUN</u> (1)
<u>JUL</u> (1)	<u>AUG</u> (2)	<u>SEP</u> (1)	<u>OCT</u> (1)	<u>NOV</u> (2)	<u>DEC</u> (4)

(c) 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 b, 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)".

1.7 BID GUARANTEE (SEP 1996) FAR 52.228-1

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.

(c) The amount of the bid guarantee shall be twenty percent of the bid price or \$3,000,000, whichever is less.



(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

#### 1.8 INSURANCE REQUIRED

In accordance with CONTRACT CLAUSE titled "INSURANCE - WORK ON A GOVERNMENT INSTALLATION" the Contractor shall procure and maintain during the entire period of his performance under this contract the following kinds and minimum amounts of insurance:

<u>Type</u>	<u>Amount</u>
<u>Workmen's Compensation and Employers' Liability Insurance.</u> The Contractor shall comply with all applicable Workmen's Compensation Statutes and shall furnish evidence of Employers' Liability Insurance.	Not less than \$100,000
<u>General Liability Insurance</u> Bodily injury liability insurance on the comprehensive form of policy.	Minimum limits of \$500,000 per accident
<u>Automobile Liability Insurance</u> Bodily injury liability and property damage liability insurance on the comprehensive form of policy and shall cover the operation of all automobiles used in performance of the contract.	Minimum limits of \$200,000 per person and \$500,000 per accident for bodily injury and \$20,000 per accident for property damage.

#### 1.9 WARRANTY OF CONSTRUCTION (MAR 1994) FAR 52.246-21 Alternate I

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(k) Defects in design or manufacture of equipment specified by the Government on a 'brand name and model' basis, shall not be included in this warranty. In this event, the Contractor shall require any subcontractors, manufacturers, or suppliers thereof to execute their warranties, in writing, directly to the Government.

#### 1.10 CONTRACTOR PERFORMANCE EVALUATIONS

In accordance with the provisions of Subpart 36.201 (Evaluation of Contractor Performance) of the Federal Acquisition Regulation (FAR), construction Contractor's performance shall be evaluated throughout the performance of the contract. The United States Army Corps of Engineers (USACE) follows the procedures outlined in Engineering Regulation 415-1-17 to fulfill this FAR requirement. For construction contracts awarded at or above \$100,000.00, the USACE will evaluate contractor's performance and prepare a performance report using the Construction Contractor Appraisal Support System (CCASS), which is now a web-based system. After an evaluation (interim or final) is written up by the USACE, the Contractor

will have the ability to access, review and comment on the evaluation for a period of 30 days. Accessing and using CCASS typically requires specific software, called PKI certification, which is installed on the user's computer. However, although users are encouraged to use PKI certificates whenever possible, a recent temporary waiver has been approved to allow industry users to access the system without a PKI certificate. Contractors wishing to log on without a PKI certificate should select the "Contractor (pending PKI)" logon option. The certification is a Department of Defense requirement and was implemented to provide security in electronic transactions. The certification software could cost approximately \$110 - \$125 per certificate per year and is purchased from an External Certificate Authorities (ECA) vendor. Current information about the PKI certification process and for contacting vendors can be found on the web site: <http://www.cpars.navy.mil/>. If the Contractor wishes to participate in the performance evaluation process, access to CCASS and PKI certification is the sole responsibility of the Contractor.

#### 1.11 PERFORMANCE BOND

The Contractor's Performance Bond (if required) shall remain effective throughout the construction period.

a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

b. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Contracting Officer will have the right to recoup expenses from the bonding company.

c. Following oral or written notification of required construction warranty repair work, the Contractor shall respond in a timely manner. Written verification will follow oral instructions. Failure of the Contractor to respond will be cause for the Contracting Officer to proceed against the Contractor.

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SECTION 01 11 00

SUMMARY OF WORK

PART 1 GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

The general description below is given to indicate the approximate scope of this project only. It does not limit the work required under the project drawings and specifications.

The work shall be located at the VA Medical Center (VAMC), 830 Chaulkstone Avenue, Providence, RI 02908.

The work includes:

1. Replacement of windows in Buildings 1, 2, 3, 9, 10, & 14 as shown and scheduled and incidental related work.
2. The re-sealing of windows in the same buildings as shown and scheduled.
3. Removal of all window treatments from same windows as above.
4. DEDUCT ALTERNATE #1: Omit all window blinds as specified in Section 12 21 00 Window Blinds, and as scheduled on the drawings.
5. DEDUCT ALTERNATE #2: Omit replacement of the windows on the second floor Operating Suite Recovery Room as shown and scheduled on the drawings and as described in Section 08 51 13 Aluminum Windows.

1.2 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.

ASTM INTERNATIONAL (ASTM)

ASTM E 84	(2008a) Standard Test Method for Surface Burning Characteristics of Building Materials
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NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(2006; Errata 2006) Standard for Portable Fire Extinguishers
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NFPA 241	(2004) Safeguarding Construction, Alteration, and Demolition Operations
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NFPA 30	(2008) Flammable and Combustible Liquids Code
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Replace Windows, VA Medical Center, Providence, RI

NFPA 51B (2003) Fire Prevention During Welding,  
Cutting, and Other Hot Work

NFPA 70 (2007; AMD 1 2008) National Electrical  
Code - 2008 Edition

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

29 CFR 1926 Safety and Health Regulations for  
Construction

### 1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

#### SD-01 Preconstruction Submittals

##### Progress Schedule; G, RO

In accordance with the contract clauses, the Contractor shall, within five (5) days after receipt of notice to proceed or as otherwise determined by the Contracting Officer, submit for approval a practicable progress schedule. When changes are authorized that result in contract time extensions, Contractor shall submit a modified chart for approval by the Contracting Officer.

##### Electronic Security Memorandum; G, RO

##### Utility Outage Requests; G, RO

##### Utility Connection Requests; G, RO

### 1.4 PROJECT/SITE CONDITIONS

#### 1.4.1 Site Security

The Contractor shall report any vandalism, suspicious activities or devices to the Contracting Officer or local police as soon as possible. The Contracting Officer will notify the Contractor of any heightened security measures and will expect vigilant monitoring of equipment, grounds and security fencing while working. At a heightened security posture, there may be work areas that are restricted. The Contracting Officer will notify the Contractor of these restricted areas, and work may be delayed or restricted or will be performed in these areas under the direct supervision of U.S. Army Corps of Engineers personnel.

### 1.5 WORK SEQUENCE AND SCHEDULING

#### 1.5.1 Hours of Operations

Normal work hours are from 7:30 a.m. through 4:30 p.m., Monday through Friday. The Contractor will not be permitted to work on Saturday, Sunday or legal holidays unless otherwise authorized by the Contracting Officer. The exclusion of work on Saturday, Sunday and legal holidays has been

considered in computing the performance time of this contract. The following legal holidays are observed:

January 1st  
Third Monday in January  
Third Monday in February  
Last Monday of May  
July 4th  
1st Monday of September  
2nd Monday of October  
11th of November  
Fourth Thursday of November  
25th of December

When one of the above designated legal holidays falls on a Sunday, the following Monday will be observed as a legal holiday. When a legal holiday falls on a Saturday, the preceding Friday is observed as a holiday. Requests to perform work at other times shall be made in writing to the Contracting Officer 7 days in advance of the proposed work period. Every effort will be made to accommodate such requests.

#### 1.5.2 Work Sequence

##### 1.5.2.1 General

There are certain essential criteria relative to the preparation of a work sequence and time schedule which the Contractor will be required to implement and follow during the prosecution of the work. Minor variations in the sequence of the items of work as specified may be made by the Contractor, provided such variations do not conflict with critical elements of the schedule. Proposed minor variations shall be noted on the progress charts submittal required by CONTRACT CLAUSE, entitled "SCHEDULES FOR CONSTRUCTION CONTRACTS". Variations shall be approved by the Contracting Officer prior to implementation.

##### 1.5.2.2 Progress Schedule

The progress schedule shall be in the form of a chart graphically indicating the sequence proposed to accomplish each work feature or operation. The chart shall be prepared to show the starting and completion dates of all work features on a linear horizontal time scale beginning with date of Notice to Proceed and indicating calendar days to completion. Contractor shall indicate on the chart the important work features or operations that are critical to the timely overall completion of the project. Key dates for such important work features and portions of work features are milestone dates and shall be so indicated on the chart. This schedule will be the medium through which the timeliness of the Contractor's construction effort is appraised.

##### 1.5.2.3 Special Scheduling Requirements

a. The Veterans Affairs Medical Center will remain in operation during the entire construction period. The Contractor shall conduct his operations and phase work as necessary, so as to cause the least possible interference with normal operations of the activity.

b. The work under this contract requires special attention to the scheduling and conduct of the work in the connection with existing operations. Identify on the construction schedule each factor which

constitutes a potential interruption to operations.

### 1.5.3 Organization at the Site

#### 1.5.3.1 General

The Contractor shall employ ample personnel and sufficient equipment to accomplish the work of this contract in the least amount of time, within the prosecution period specified in SPECIAL CONTRACT REQUIREMENTS, Clause 1.

#### 1.5.3.2 Rate of Progress

Should the Contractor fail to maintain a satisfactory rate of progress in accordance with the Contractor's approved progress schedule, the Contracting Officer may require that additional personnel and equipment be placed on the work and weekend and overtime work be performed, in order that the work be brought up to schedule and maintained.

### 1.6 CONTRACTOR USE OF PREMISES

#### 1.6.1 Storage Areas

See Section 01 50 00 TEMPORARY CONSTRUCTION FACILITIES for information on storage areas available for use by the Contractor.

#### 1.6.2 Work Limits

Work shall be restricted to the areas shown on the contract drawings in addition to storage areas assigned to this Contractor. Travel through any other parts of the building by Contractor personnel will not be permitted unless under escort by a Government employee.

#### 1.6.3 Contractor's Receipt of Supplies

The Contractor shall be responsible for all arrangements for the receipt of materials and supplies at the job site. Government personnel are not permitted to receive or sign for items delivered to the site.

#### 1.6.4 Access to Work Site

Access to the project site is currently available for construction traffic. The Contractor shall be responsible for providing and maintaining access necessary for his equipment and materials to and from the work site.

#### 1.6.5 Occupancy of Premises

Buildings will be occupied during performance of work under this Contract.

Before work is started, the Contractor shall arrange with the Contracting Officer a sequence of procedure, means of access, space for storage of materials and equipment, and use of approaches, corridors, and stairways.

#### 1.6.6 Utility Cutovers and Interruptions

a. Make utility cutovers and interruptions after normal working hours or on Saturdays, Sundays, and Government holidays. Coordinate all utility cutovers and interruptions with the Contracting Officer. Permission to interrupt any utility services shall be requested in writing a minimum of 15 calendar days prior to the desired date of interruption.



b. Ensure that new utility lines are complete, except for the connection, before interrupting existing service.

c. Interruption to water, sanitary sewer, telephone service, electric service, air conditioning, heating, and fire alarm shall be considered utility cutovers. Interruption of service shall be limited to 12 hours. This time limit includes time for deactivation and reactivation.

#### 1.7 EXISTING WORK

In addition to "FAR 52.236-9, Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements":

a. Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work which remain.

b. Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the Contracting Officer. At the completion of operations, existing work shall be in a condition equal to or better than that which existed before new work started.

#### 1.8 PRECONSTRUCTION CONFERENCE

The Contracting Officer will conduct a preconstruction conference with key Contractor personnel. The purpose of the conference is to review contract requirements and to establish a working relationship between the Contractor's Staff and the Corps of Engineers personnel who will be closely associated with the project. During the conference, the Contracting Officer will inform the Contractor concerning Job Safety, Quality Control, Labor Relations, and Environmental Protection. The Contractor's Superintendent, Quality Control Representative, and Site Safety and Health Officer (SSHO) shall attend this conference. All submittals which are ready for submission prior to start of work may be brought to the conference for distribution to the participating reviewers.

#### 1.9 SALVAGE MATERIAL AND EQUIPMENT

Items designated by the Contract Drawings to be removed shall be completely removed by the contractor shall remain the property of the contractor, with the exception of the window air conditioning units which shall be turned over to the VAMC.

Contractor shall maintain property control records for material or equipment designated as demolished. Contractor shall be responsible for removal and disposal of demolished materials and equipment.

#### 1.10 ON-SITE PERMITS

##### 1.10.1 Utility Outage Requests and Utility Connection Requests

Notify the Contracting Officer at least 48 hours prior to starting excavation work. Contractor is responsible for marking and verifying all utilities not marked.

Work shall be scheduled to hold outages to a minimum.

Utility outages and connections required during the prosecution of work

that affect existing systems shall be arranged for at the convenience of the Government and shall be scheduled outside the regular working hours or on weekends.

Contractor shall not be entitled to additional payment for utility outages and connections required to be performed outside the regular work hours.

Requests for utility outages and connections shall be made in writing to the Contracting Officer at least 15 calendar days in advance of the time required. Each request shall state the system involved, area involved, approximate duration of outage, and the nature of work involved.

#### 1.10.2 Hot Work Permit

Notify the Contracting Officer at least 48 hours prior to burning, welding, cutting, soldering or other hot work. Contractor is responsible for obtaining approval daily from the VAMC Project Manager and Facilities Maintenance. See SECTION 01 35 27 for additional information.

#### 1.10.3 Penetration Permit

Notify the Contracting Officer at least 48 hours prior to penetrating a smoke or fire barrier wall. Contractor is responsible for obtaining approval from the VAMC Project Manager and Facilities Maintenance. See SECTION 01 35 27 for additional information.

### 1.11 CONSTRUCTION SECURITY REQUIREMENTS

#### A. Security Plan:

1. The security plan defined below identifies both physical and administrative security procedures that will remain effective for the entire duration of the project.
2. The General Contractor is responsible for assuring that all sub-contractors working on the project and their employees also comply with these regulations.

#### B. Security Procedures:

1. The General Contractor's employees shall not enter the project site without appropriate badge. They may also be subject to inspection of their personal effects when entering or leaving the project site.
2. For working outside the "regular hours" as defined in the contract, the General Contractor shall give 3 days notice to the Contracting Officer so that security arrangements can be provided for the employees. This notice is separate from any notices required for utility shutdown described later in this section.
3. No photography of VA premises is allowed without written permission of the Contracting Officer.
4. VA reserves the right to close down or shut down the project site and order General Contractor's employees off the premises in the event of a national emergency. The General Contractor may return to the site only with the written approval of the Contracting Officer.

#### C. Guards:

1. The General Contractor shall provide unarmed guards at the project site after construction hours.
2. The guard shall have communication devices to report events as directed by VA police.
3. The general Contractor shall install equipment for recording guard rounds to ensure systematic checking of the premises.

D. Key Control:

1. The General Contractor shall provide duplicate keys and lock combinations to the Resident Engineer for the purpose of security inspections of every area of project including tool boxes and parked machines and take any emergency action.
2. The General Contractor shall turn over all permanent lock cylinders to the VA locksmith for permanent installation.

E. Document Control:

1. Before starting any work, the General Contractor/Sub Contractors shall submit an [electronic security memorandum](#) describing the approach to following goals and maintaining confidentiality of "sensitive information".
2. The General Contractor is responsible for safekeeping of all drawings, project manual and other project information. This information shall be shared only with those with a specific need to accomplish the project.
3. Certain documents, sketches, videos or photographs and drawings may be marked "Law Enforcement Sensitive" or "Sensitive Unclassified". Secure such information in separate containers and limit the access to only those who will need it for the project. Return the information to the Contracting Officer upon request.
4. These security documents shall not be removed or transmitted from the project site without the written approval of Contracting Officer.
5. All paper waste or electronic media such as CD's and diskettes shall be shredded and destroyed in a manner acceptable to the VA.
6. Notify Contracting Officer and Site Security Officer immediately when there is a loss or compromise of "sensitive information".
7. All electronic information shall be stored in specified location following VA standards and procedures using an Engineering Document Management Software (EDMS).
  - a. Security, access and maintenance of all project drawings, both scanned and electronic shall be performed and tracked through the EDMS system.
  - b. "Sensitive information" including drawings and other documents may be attached to e-mail provided all VA encryption procedures are followed.

F. Motor Vehicle Restrictions

1. Vehicle authorization request shall be required for any vehicle entering the site and such request shall be submitted 24 hours before the date and time of access. Access shall be restricted to picking up and dropping off materials and supplies.
2. Separate permits shall be issued for the General Contractor and its employees for parking in designated areas only.

1.12 FIRE SAFETY

- A. Fire Safety Plan: Establish and maintain a fire protection program in accordance with 29 CFR 1926. Prior to start of work, prepare a plan detailing project specific fire safety measures, including periodic status reports, and submit to the Contracting Officer for review for compliance with contract requirements in accordance with Section 01 33 00 SUBMITTALS. Prior to any worker for the General Contractor or subcontractors beginning work, they shall undergo a safety briefing provided by the general contractor's competent person per OSHA requirements. This briefing shall include information on the construction limits, VAMC safety guidelines, means of egress, break areas, work hours, locations of restrooms, use of VAMC equipment, etc. Documentation shall be provided to the Resident Engineer that individuals have undergone the General Contractor's safety briefing.
- B. Site and Building Access: Maintain free and unobstructed access to facility emergency services for fire, police and other emergency response forces in accordance with NFPA 241.
- C. Separate temporary facilities, such as trailers, storage sheds, and dumpsters, from existing buildings and new construction by distances in accordance with NFPA 241. For small facilities with less than 6 m (20 feet) exposing overall length, separate by 3m (10 feet).
- D. Temporary Construction Partitions:
1. Install and maintain temporary construction partitions to provide smoke-tight separations between construction areas and adjoining areas. Construct partitions of gypsum board or treated plywood (flame spread rating of 25 or less in accordance with ASTM E 84) on both sides of fire retardant treated wood or metal steel studs. Extend the partitions through suspended ceilings to floor slab deck or roof. Seal joints and penetrations. At door openings, install Class C, 3/4 hour fire rated doors with self-closing devices.
  2. Install two-hour fire-rated temporary construction partitions as shown on drawings to maintain integrity of existing exit stair enclosures, exit passageways, fire-rated enclosures of hazardous areas, horizontal exits, smoke barriers, vertical shafts and openings enclosures.
  3. Close openings in smoke barriers and fire-rated construction to maintain fire ratings. Seal penetrations with listed through penetration firestop materials.
- E. Temporary Heating and Electrical: Install, use and maintain installations in accordance with 29 CFR 1926, NFPA 241 and NFPA 70.

F. Means of Egress: Do not block exiting for occupied buildings, including paths from exits to roads.

G. Egress Routes for Construction Workers: Maintain free and unobstructed egress. Inspect daily. Report findings and corrective actions weekly to the Contracting Officer.

H. Fire Extinguishers: Provide and maintain extinguishers in construction areas and temporary storage areas in accordance with 29 CFR 1926, NFPA 241 and NFPA 10.

I. Flammable and Combustible Liquids: Store, dispense and use liquids in accordance with 29 CFR 1926, NFPA 241 and NFPA 30.

J. Existing Fire Protection: Do not impair automatic sprinklers, smoke and heat detection, and fire alarm systems, except for portions immediately under construction, and temporarily for connections. Provide fire watch for impairments more than 4 hours in a 24-hour period. All existing or temporary fire protection systems (fire alarms, sprinklers) located in construction areas shall be tested as coordinated with the medical center. Parameters for the testing and results of any tests performed shall be recorded by the medical center and copies provided to the Contracting Officer.

K. Smoke Detectors: Prevent accidental operation. Remove temporary covers at end of work operations each day.

L. Hot Work: Perform and safeguard hot work operations in accordance with NFPA 241 and NFPA 51B.

M. Fire Hazard Prevention and Safety Inspections: Inspect entire construction areas weekly. Coordinate with, and report findings and corrective actions weekly to the Contracting Officer.

N. Smoking: Smoking is prohibited in and adjacent to construction areas inside existing buildings and additions under construction. In separate and detached buildings under construction, smoking is prohibited except in designated smoking rest areas.

O. Dispose of waste and debris in accordance with NFPA 241. Remove from buildings daily.

P. Perform other construction, alteration and demolition operations in accordance with 29 CFR 1926.

#### 1.13 ALTERATIONS

A. Survey: Before any work is started, the Contractor shall make a thorough survey with the Contracting Officer and a representative of the VA of areas of buildings in which alterations occur and areas which are anticipated routes of access, and furnish a report, signed by all three to the Contracting Officer. This report shall list by rooms and spaces:

1. Existing condition and types of resilient flooring, doors, windows, walls and other surfaces not required to be altered throughout affected areas of buildings.

2. Existence and conditions of items such as plumbing fixtures and accessories, electrical fixtures, equipment, venetian blinds, shades,

etc., required by drawings to be either reused or relocated, or both.

3. Shall note any discrepancies between drawings and existing conditions at site.

4. Shall designate areas for working space, materials storage and routes of access to areas within buildings where alterations occur and which have been agreed upon by the Contractor and Contracting Officer.

B. Any items required by drawings to be either reused or relocated or both, found during this survey to be nonexistent, or in opinion of the Contracting Officer, to be in such condition that their use is impossible or impractical, shall be furnished and/or replaced by Contractor with new items in accordance with specifications which will be furnished by Government. Provided the contract work is changed by reason of this subparagraph B, the contract will be modified accordingly.

C. Re Survey: Thirty days before expected partial or final inspection date, the Contractor and Contracting Officer together shall make a thorough re survey of the areas of buildings involved. The Contractor shall furnish a report on conditions then existing, of resilient flooring, doors, windows, walls and other surfaces as compared with conditions of same as noted in first condition survey report:

1. Re survey report shall also list any damage caused by Contractor to such flooring and other surfaces, despite protection measures; and, will form basis for determining extent of repair work required of Contractor to restore damage caused by Contractor's workmen in executing work of this contract.

D. Protection: Provide the following protective measures:

1. Wherever existing roof surfaces are disturbed they shall be protected against water infiltration. In case of leaks, they shall be repaired immediately upon discovery.

2. Temporary protection against damage for portions of existing structures and grounds where work is to be done, materials handled and equipment moved and/or relocated.

3. Protection of interior of existing structures at all times, from damage, dust and weather inclemency. Wherever work is performed, floor surfaces that are to remain in place shall be adequately protected prior to starting work, and this protection shall be maintained intact until all work in the area is completed.

#### 1.14 TEMPORARY USE OF EXISTING ELEVATORS

The Contractor will not be allowed the use of existing elevators. Outside type hoist shall be used by Contractor for transporting materials and equipment.

#### 1.15 ROOM RISK CLASS SCHEDULE

Attachment: Room Risk Class Schedule.

Schedule attached is for information only. Actual Risk class must be determined in accordance with SECTION 01 35 27 INFECTION CONTROL.

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Contractor is responsible for determining the labor required for work in all spaces; the schedule is only to be used as a guide to assist in preparing bid and work plan.

Note: Risk Class could change at any time due to ongoing construction and conditions within the VAMC.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section --

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PART 3 EXECUTION (Not Applicable)

-- End of Section Table of Contents --



SECTION 01 22 00

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-05 Design Data

Quantity Surveys

Submit originals of all field notes and all other records relating to quantity surveys.

1.2 LUMP SUM PAYMENT ITEMS

Payment items for the work of this contract for which contract lump sum payments will be made are listed in the BIDDING SCHEDULE and described below. The lump sum price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

1.3 UNIT PRICE PAYMENT ITEMS

Payment items for the work of this contract on which the contract unit price payments will be made are listed in the BIDDING SCHEDULE and described below. The unit price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for each of the unit price items. Submit originals of all field notes and all other records relating to Quantity Surveys.

1.4 BIDDING SCHEDULE - PAYMENT ITEMS

Payment items for the work of this contract on which the contract progress payments will be based are listed in the BIDDING SCHEDULE and are described below. All costs for items of work which are not specifically mentioned to be included in a particular Bidding Schedule lump sum or unit price payment item shall be included in the listed lump sum item most closely associated with the work involved.

BASE BID

a. Item Number 0001, "All Work Complete".

All costs for labor, equipment, and materials for all work, complete, as shown on the contract drawings and in accordance with the specifications.

Unit of Measure: Lump Sum (LS).

ALTERNATE ITEMS

- b. Item Number 0002, "Alternate 1 (Deduct)".

All costs for labor, equipment, and materials for Alternate 1 (Deduct), as shown on the contract drawings and in accordance with the specifications.

Unit of Measure: Lump Sum (LS).

- c. Item Number 0003, "Alternate 2 (Deduct)".

All costs for labor, equipment, and materials for Alternate 2 (Deduct), as shown on the contract drawings and in accordance with the specifications.

Unit of Measure: Lump Sum (LS).

OPTIONAL ITEMS

- d. Item Number 0004, "Typical Window Single Hung 42 x 72 inches; Work during Normal Hours; Removal of existing window; Complete Installation including sealants, and finish repairs (ADD)."

- e. Item Number 0005, "Typical Window Single Hung 42 x 72 inches; Work during Normal Hours; Removal of existing window; Complete Installation including sealants, and finish repairs (DEDUCT)."

- f. Item Number 0006, "Typical Window Single Hung 42 x 72 inches; Work during Premium Hours; Removal of existing window; Complete Installation including sealants and finish repairs (ADD)."

- g. Item Number 0007, "Typical Window Single Hung 42 x 72 inches; Work during Premium Hours; Removal of existing window; Complete Installation including sealants and finish repairs (DEDUCT)."

For Items 0004 through 0007, all costs for labor, equipment, and materials for windows, as shown and scheduled on the contract drawings and as specified in Sections 08 51 13 ALUMINUM WINDOWS, 08 80 00 GLAZING and other appropriate sections of the specifications. This item includes 02 41 00 DEMOLITION for the existing windows. Cost per each window shall be used as a basis of payment for these items.

Unit of Measure: Each (Ea).

- h. Item Number 0008, "Joint Sealant, Perimeter Exterior Sealant around Existing Windows to remain including removal of old sealant (ADD)."

- i. Item Number 0009, "Joint Sealant, Perimeter Exterior Sealant around

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Existing Windows to remain including removal of old sealant (DEDUCT)."

For Items 0008 and 0009, all costs for labor, equipment, and materials for Perimeter Exterior Joint Sealant, as shown and scheduled on the contract drawings and as specified in Section 07 92 00 JOINT SEALANTS and other appropriate sections of the specifications. This item includes removal of old sealant. Linear Feet of sealant shall be used as a basis of payment for these items.

Unit of Measure: Linear Foot (LF).

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

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PART 2 MATERIALS (Not Used)

PART 3 PROCEDURES (Not Used)

-- End of Section Table of Contents --

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 DEFINITIONS

1.1.1 Submittal

Contract Clauses "FAR 52.236-5, Material and Workmanship", paragraph (b) and "FAR 52.236-21, Specifications and Drawings for Construction", paragraphs (d), (e), and (f) apply to all "submittals".

1.1.2 Submittal Descriptions (SD)

Submittals requirements are specified in the technical sections. Submittals are identified by SD numbers and titles as follows.

[SD-01 Preconstruction Submittals](#)

- Certificates of insurance.
- Surety bonds.
- List of proposed subcontractors.
- List of proposed products.
- Construction Progress Schedule.
- Submittal register.
- Schedule of prices.
- Health and safety plan.
- Work plan.
- Quality control plan.
- Environmental protection plan.

[SD-02 Shop Drawings](#)

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project.

Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

[SD-03 Product Data](#)

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

#### SD-04 Samples

Physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion of the work.

#### SD-05 Design Data

Calculations, mix designs, analyses or other data pertaining to a part of work.

#### SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. (Testing must have been within three years of date of contract award for the project.)

Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports.

Daily checklists.

Final acceptance test and operational test procedure.

#### SD-07 Certificates

Statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of Contractor, or of a supplier, installer or subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.

Confined space entry permits.

Text of posted operating instructions.

#### SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and Material Safety Data sheets concerning impedances, hazards and safety precautions.

#### SD-10 Operation and Maintenance Data

Data that is furnished by the manufacturer, or the system provider, to the equipment operating and maintenance personnel. This data is needed by operating and maintenance personnel for the safe and efficient operation, maintenance and repair of the item.

#### SD-11 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

##### 1.1.3 Approving Authority

Office authorized to approve submittal.

##### 1.1.4 Work

As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction.

#### 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

##### SD-01 Preconstruction Submittals

Submittal Register; G, RO

#### 1.3 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

##### 1.3.1 Government Approved

Government 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 "Specifications and Drawings for Construction", they are considered to be "shop drawings".

##### 1.3.2 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 referred to above.

#### 1.4 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing 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 Contractor Quality Control (CQC) requirements of this contract is responsible for design, dimensions, all design extensions, such as the design of adequate connections and details, etc., and the 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 considered unless accompanied by an explanation of why a substitution is necessary.

#### 1.5 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 specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

#### 1.6 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

#### 1.7 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. 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's Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

#### 1.8 SUBMITTAL REGISTER

At the end of this section is a submittal register showing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional



submittals may be required. The Contractor shall maintain a submittal register for the project.

#### 1.9 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 21 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

#### 1.10 TRANSMITTAL FORM (VA MATERIAL APPROVAL SUBMITTAL FORM)

The sample transmittal form (VA Material Approval Submittal Form) attached to this section shall be used for submitting both Government approved and information only submittals. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall 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. This form will be provided electronically by the Government and its use by the Contractor is required for this contract.

#### 1.11 SUBMITTAL PROCEDURES

Submittals shall be made as follows:

##### 1.11.1 Procedures

Submit seven (7) copies of each submittal item with an attached VA Material Approval Submittal Form.

a. Construction/Operations Division {"AO" (Area Office), "RO" (Resident Office), or "PO" (Project Office) Reviewer}: An "AO", "RO", or "PO" in column "f" indicates that the submittal review action is by New England District Construction/Operations Division. Send all such submittals to the project Resident or Area Engineer, as applicable.

b. Engineering/Planning Division {"DO" (District Office) Reviewer}: A "DO" on the attached submittal register, column "f" indicates that the submittal review action is by the New England District, Engineering/Planning Division, or other organization in the District Office. Send all such submittals to the U.S. Army Corps of Engineers, New England District 696 Virginia Road, Concord, Massachusetts 01742-2751.

c. Architect-Engineer Firm {"AE" reviewer}: An "AE" on the attached submittal register, column "f" indicates that the submittal review action is by the Architect-Engineer firm associated with the project.

d. Government acceptance is required for submittals with a "G, A" designation.

##### 1.11.2 Information on Submittal Status

All Contractor requests for current status of submittal reviews shall be made through the Resident Engineer.

#### 1.11.3 Deviations

For submittals which include proposed deviations requested by the Contractor, 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.

#### 1.12 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register".

#### 1.13 GOVERNMENT APPROVED SUBMITTALS

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

#### 1.14 INFORMATION ONLY SUBMITTALS

Normally, submittals designated as "For Information Only" will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

#### 1.15 STAMPS

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

CONTRACTOR	
(Firm Name)	
_____	Approved
_____	Approved with corrections as noted on submittal data and/or attached sheets(s).
SIGNATURE:	_____
TITLE:	_____
DATE:	_____

PART 2 MATERIALS (Not Used)

PART 3 PROCEDURES (Not Used)

-- End of Section --

SUBMITTAL REGISTER												CONTRACT NO.					
TITLE AND LOCATION						CONTRACTOR											
Replace Windows, VA Medical Center, Providence, RI																	
ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASSIFICATION OR REVIEW	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/  DATE RCD FROM CONTR	APPROVING AUTHORITY				MAILED TO CONTR/  DATE RCD FRM APPR AUTH	REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 11 00	SD-01 Preconstruction Submittals														
			Progress Schedule	1.5.2.2	G RO												
			Electronic Security Memorandum	1.11	G RO												
			Utility Outage Requests	1.10.1	G RO												
			Utility Connection Requests	1.10.1	G RO												
		01 22 00	SD-05 Design Data														
			Quantity Surveys	1.3													
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			Submittal Register	1.8	G RO												
		01 35 27	SD-01 Preconstruction Submittals														
			Construction Safety Plan	1.5.2	G RO												
			Construction Safety Plan	1.5.2	G RO												
			Work Plan	1.6.1	G RO												
			Quality Control Plan	1.5.1	G RO												
			Quality Control Plan	1.5.1	G RO												
			Infection Control Plan	1.6	G RO												
			ILSM	3.5	G RO												
			SD-03 Product Data														
			Plastic Sheet Barrier	2.1	G RO												
			Plastic Sheet Barrier	3.5	G RO												
			Plastic Sheet Barrier	3.6	G RO												
			HEPA Filters	3.6	G RO												
			Sticky Walk-off Mats	2.1	G RO												
			Sticky Walk-off Mats	3.5	G RO												
			Sticky Walk-off Mats	3.6	G RO												
			SD-06 Test Reports														

# SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION						CONTRACTOR											
Replace Windows, VA Medical Center, Providence, RI																	
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		01 35 27	Negative Pressure Test Reports	3.2													
			Negative Pressure Test Reports	3.5													
			Infection Control Compliance	3.2													
			Daily Checklist														
			Infection Control Compliance	3.10													
			Daily Checklist														
			Infection Control Compliance	3.10													
			Daily Checklist														
		01 35 29	SD-01 Preconstruction Submittals														
			Accident Prevention Plan (APP)	1.7	G A												
			Activity Hazard Analysis (AHA)	1.8	G A												
			Crane Critical Lift Plan	1.7.1	G A												
			Crane Operators	1.5.1.2	G A												
			SD-06 Test Reports														
			Reports	1.12													
			Accident Reports	1.12.1	G RO												
			Monthly Work-hour Reports	1.12.3													
			Crane Reports	1.12.4													
			Regulatory Citations and		G RO												
			Violations														
			SD-07 Certificates														
			Confined Space Entry Permit	1.9													
			Hot work permit	1.9													
			Certificate of Compliance	1.12.5													
		01 57 20	SD-01 Preconstruction Submittals														
			Environmental Protection Plan	1.7	G RO												

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		01 78 00	SD-11 Closeout Submittals														
			As-Built Drawings	1.2.1	G AE												
			Final Clean-Up	1.3													
		02 41 00	SD-01 Preconstruction Submittals														
			Demolition Plan	1.9	G RO												
			ICRA	1.9	G RO												
			ILSM	1.9	G RO												
			Notifications	1.4.1	G RO												
			Existing Conditions	1.6.2	G RO												
			Waste Management Plan	1.9	G RO												
			SD-11 Closeout Submittals														
			Receipts	1.4.2													
		02 82 11	SD-01 Preconstruction Submittals														
			Asbestos Abatement Plan	1.6.1	G RO												
			Work Schedule	1.6.1	G RO												
			Staff Organization Chart	1.6.1	G RO												
			Standard Operating Procedures	1.6.1	G RO												
			Approved Landfill	1.6.1	G RO												
			Required Notifications	1.6.1	G RO												
			Emergency Arrangements	1.6.1	G RO												
			Laboratory Qualifications	1.6.1	G RO												
			Qualifications Verification	1.6.1	G RO												
			Personnel	1.6.1	G RO												
			State License	1.6.1	G RO												
			Insurance Policy	1.6.1	G RO												
			Air Monitoring Results	1.6.1	G RO												

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		02 82 11	SD-03 Product Data														
			Specifics Of The Materials And Equipment	1.6.1	G RO												
			Encapsulants	1.6.1	G RO												
			MSDS	1.6.1	G RO												
			SD-06 Test Reports														
			Daily Log	1.6.2	G RO												
			Project Report	1.6.3	G RO												
			SD-07 Certificates														
			Certificate of Worker's Acknowledgment	1.6.1	G RO												
			Affidavit of Medical Surveillance and Respiratory Protection	1.6.1	G RO												
			Medical Records Affidavit	1.6.1	G RO												
			SD-08 Manufacturer's Instructions														
			Application Instructions	1.6.1	G RO												
			SD-11 Closeout Submittals														
			Certificate Of Completion	1.6.3	G RO												
		02 83 33	SD-01 Preconstruction Submittals														
			Qualifications of CIH	1.5.1	G RO												
			Testing Laboratory	1.5.2	G RO												
			Lead-Containing Paint Removal Plan	1.5.3	G RO												
			Hazardous Waste Management Plan	1.6.7	G RO												
			SD-03 Product Data														

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		02 83 33	Filters	3.1.7	G RO												
			Respirators	1.4	G RO												
			SD-06 Test Reports														
			Field Test Reports	3.2.2	G RO												
			SD-07 Certificates														
			Medical Examination	1.6	G RO												
			Training Certification	1.6.4	G RO												
			Hazardous Waste Manifest	3.5.5	G RO												
			SD-08 Manufacturer's Instructions														
			Paint Removal Products	2.1	G RO												
			Material Safety Data Sheets	2.1	G RO												
		06 20 00	SD-03 Product Data														
			Wood Items, and Trim														
			SD-07 Certificates														
			Certificates of Grade	1.4													
			Certificates of Compliance	1.4													
		07 92 00	SD-03 Product Data														
			Sealants	1.5.3	G RO												
			Sealants	2.1	G RO												
			Primers	2.2	G RO												
			Bond breakers	2.3	G AE												
			Backstops	2.4	G AE												
			SD-07 Certificates														
			Sealant	1.4	G RO												
			Sealant	2.1	G RO												
			Sealant	3.3.6	G RO												



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		08 51 13	SD-02 Shop Drawings														
			Shop Drawings	2.1	G AE												
			SD-03 Product Data														
			Manufacturer's Literature and Data	2.1	G RO												
			SD-04 Samples														
			Samples	2.2	G RO												
			Mock-ups	1.7	G RO												
			SD-06 Test Reports														
			Test Report	1.7	G RO												
			SD-07 Certificates														
			Certification	1.7	G RO												
			Certified Labels	1.7	G RO												
			Certificates	1.7	G RO												
		08 56 66	SD-01 Preconstruction Submittals														
			Manufacturer's Qualifications	1.4	G RO												
			SD-02 Shop Drawings														
			Shop Drawings	2.4	G AE												
			SD-03 Product Data														
			Manufacturer's literature	2.4	G RO												
			SD-04 Samples														
			Samples	2.4	G RO												
			SD-07 Certificates														
			Manufacturer's Certification	2.1	G RO												
		08 80 00	SD-03 Product Data														
			Glass	2.1	G AE												

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		08 80 00	Insulating glass units	2.5	G AE												
			Glazing Accessories	2.6	G RO												
			Sealants	2.6	G RO												
			Insulated Panel	2.2	G AE												
			SD-04 Samples														
			Obscure glass	2.3	G RO												
			Insulated Panel	2.2	G RO												
			Spandrel Glass	2.4	G RO												
			SD-07 Certificates														
			Shading Coefficient	2.5	G RO												
			'R' Value	2.5	G RO												
			'R' Value	2.5	G RO												
			'R' Value	2.5	G RO												
			Warranty	1.8	G RO												
		08 82 00	SD-02 Shop Drawings														
			Existing Conditions Survey	3.1.2	G RO												
			Installation Details	3.1.3	G AE												
			SD-03 Product Data														
			Glazing Materials	2.2.1	G AE												
			Glazing Accessories	1.4	G RO												
			Glazing Accessories	2.2.5	G RO												
			SD-04 Samples														
			Glazing Materials	2.2.1	G RO												
			Tape	2.2.3	G RO												
			Sealant	2.2.2	G RO												
			Mock-up	1.5.3	G RO												

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		08 82 00	SD-07 Certificates														
			SGAA Certification	1.5.1	G RO												
			SD-08 Manufacturer's Instructions														
			Setting and sealing materials	2.2	G RO												
			Glass setting	3.2	G RO												
			SD-11 Closeout Submittals														
			Manufacturer's Warranty	1.8	G RO												
			Installer's Warranty	1.8	G RO												
		09 26 00	SD-03 Product Data														
			Gypsum veneer plaster	2.2	G RO												
			Gypsum Base for Veneer Plaster	2.1	G RO												
			Accessories	2.3	G RO												
			Joint reinforcing materials	2.4	G AE												
			Laminating adhesive	2.5	G RO												
		09 29 00	SD-03 Product Data														
			Gypsum board	2.1	G RO												
			Accessories	2.2	G RO												
			Finishing materials	2.4	G RO												
			Laminating adhesive	2.4	G RO												
			SD-04 Samples														
			Corner bead	2.2.1	G RO												
			Edge trim	2.2.1	G RO												
		09 91 00	SD-03 Product Data														
			Manufacturer's Literature and Data	2.1	G RO												
			SD-04 Samples														

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		09 91 00	Sample Panels	3.2	G RO												
			Sample Panels	3.2	G RO												
			SD-07 Certificates														
			Manufacturers' Certificates	2.1	G RO												
		12 21 00	SD-02 Shop Drawings														
			Hardware	2.1	G AE												
			Installation	3.3													
			SD-03 Product Data														
			Window Blinds	2.1	G RO												
			Hardware	2.1	G RO												
			Installation	3.3	G RO												
			SD-04 Samples														
			Window Blinds	2.1	G RO												
			Hardware	2.1	G RO												
			Valance	2.1.1.5	G RO												
			SD-06 Test Reports														
			Window Blinds	2.1													
			SD-08 Manufacturer's Instructions														
			Window Blinds	2.1	G RO												
			SD-10 Operation and Maintenance														
			Data														
			Window Blinds	2.1	G RO												

MATERIAL APPROVAL SUBMITTAL						
TO: (Contracting Officer)			FROM: (Contractor)		DATE	
CONTRACT NUMBER			SUBMISSION NUMBER		SUBMITTAL <input type="checkbox"/> NEW <input type="checkbox"/> RESUBMITTAL	
PREVIOUS SUBMISSION NUMBER			PROJECT NUMBER			
TO BE COMPLETED BY CONTRACTOR				FOR GOVERNMENT USE ONLY		
ITEM NO.	SPECIFICATION SECTION/ PARA NO./DRAWING NO.	DESCRIPTION OF MATERIAL <i>(Include Type, Model Number, Mfg., etc. &amp; file name of attachments)</i>		AP- PROVED	DISAP- PROVED	SEE REVERSE
BY COMPLETING THIS FORM, THE UNDERSIGNED CONTRACTOR CERTIFIES THAT THE MATERIAL COMPLIES WITH ALL SPECIFICATIONS OF SUBJECT CONTRACT.						
DATE		TYPE OR PRINT NAME AND TITLE		SIGNATURE		
FOR GOVERNMENT USE ONLY						
TO:		A-E				
For Evaluation and Action						
DATE		TYPE OR PRINT NAME AND GRADE		SIGNATURE		
TO:		VA Engineer/COTR				
RECOMMEND		APPROVAL		DISAPPROVAL AS INDICATED ABOVE AND SUBJECT TO ANY APPLICABLE COMMENTS ON THE REVERSE		
DATE		TYPE OR PRINT NAME AND GRADE		SIGNATURE		
TO:		Contracting				
<input type="checkbox"/> APPROVED		<input type="checkbox"/> DISAPPROVED AS INDICATED ABOVE AND SUBJECT TO ANY APPLICABLE COMMENTS ON THE REVERSE SIDE. REQUEST RESUBMITTAL ON DISAPPROVED ITEMS WITHIN _____ DAYS OF DATE SHOWN BELOW.				
DATE		TYPE OR PRINT NAME AND GRADE		SIGNATURE		

**COMMENTS**  
*(Number to correspond with applicable Item Number on reverse)*

**INSTRUCTIONS TO CONTRACTORS**

1. The term "material" is defined as articles, supplies, raw materials, equipment, parts, components, and end items that are to be incorporated into the work required by the contract.
2. This form is to be used by contractors for submitting Shop Drawings (\*.DWG or \*.PDF format), Manufacturer's Literature and Certificates (scanned as \*.PDF) to the Government for approval in accordance with the provisions of this contract. Unless otherwise specified, it is to be prepared, signed, and E-mailed to the contracting officer with appropriate attachments. One paper format copy is to be submitted also.
3. Item(s) to be approved will be clearly tabbed or identified. Data pertaining to item(s) to be approved will be clearly identified or tabbed, particularly where documents are voluminous, in order to properly evaluate the materials or articles to be incorporated in the work. Each attachment will be numbered to correspond with the item number shown on the face of this form.
4. Requests submitted shall be numbered consecutively, by contract, in the space entitled "Submission No.". This number, in addition to the Contract No., will be used to identify each Material Approval Submittal. Resubmissions will be indicated in the appropriate block and the insertion of previous submission number and data in addition to a new submission number. A single submission should be used for all work of a section of the specifications, but in NO instance should the submission include work for more than one (1) contract. Submittals requiring priority handling will be submitted by separate submittal using the form and so marked across the face of the form.
5. This Material Approval Submittal is not valid unless it is signed by the contracting officer. This approval is required as called for by the contracting officer under the terms of this contract. One paper copy of the submittal is to be hand signed for Contracting Officers records.

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 35 27

INFECTION CONTROL

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- 1.2 AUTHORITY
- 1.3 REFERENCES
- 1.4 SUBMITTALS
- 1.5 QUALITY ASSURANCE
  - 1.5.1 Quality Control Plan
  - 1.5.2 Construction Safety Plan
- 1.6 INFECTION CONTROL PLAN
  - 1.6.1 Work Plan
  - 1.6.2 Infection Control Risk Assessment
  - 1.6.3 Dust Control Program
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PART 2 PRODUCTS

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-- End of Section Table of Contents --

SECTION 01 35 27

INFECTION CONTROL

PART 1 GENERAL

1.1 PURPOSE

To minimize the risk of infection during construction by maintaining the integrity of the environment.

1.2 AUTHORITY

Application of the provisions of this section will be determined by Veterans Affairs Medical Center (VAMC) Chief of Facilities Management Service and Nurse Epidemiologist, Head of Infection Control. Contractor shall prepare all plans and programs as specified below.

1.3 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 SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING  
ENGINEERS (ASHRAE)

ASHRAE 85 Standard for Filters

VHA CENTER FOR ENGINEERING AND OCCUPATIONAL SAFETY AND HEALTH  
(CEOSH)

CEOSH Guidebook (April 2005) Construction Safety Guidebook

ASSOCIATION FOR PROFESSIONALS IN INFECTION CONTROL AND  
EPIDEMIOLOGY, INC. (APIC)

APIC Toolkit Construction and Renovation, 3rd Edition:  
Toolkit for Professionals in Infection  
Prevention and Control

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Construction Safety Plan; G, RO

Work Plan; G, RO

Quality Control Plan; G, RO



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Infection Control Plan; G, RO

ILSM; G, RO

Interim Life Safety Measures (ILSM).

#### SD-03 Product Data

Plastic Sheet Barrier; G, RO

HEPA Filters; G, RO

Sticky Walk-off Mats; G, RO

#### SD-06 Test Reports

Negative Pressure Test Reports

Infection Control Compliance Daily Checklist

### 1.5 QUALITY ASSURANCE

#### 1.5.1 Quality Control Plan

Prepare a [Quality Control Plan](#) to track the implementation of the requirements of VAMC Infection Control Risk Assessment (ICRA) team. Follow procedures described in [APIC Toolkit](#) and [CEOSH Guidebook](#). VAMC ICRA Team may monitor dust in the vicinity of the construction work and require the General Contractor to take corrective action immediately at Contractor's expense if safe levels are exceeded.

#### 1.5.2 Construction Safety Plan

Prepare a [Construction Safety Plan](#) in accordance with Providence VAMC Construction Safety Manual and Providence Interim Life Safety Measures (ILSM). (See attached.)

### 1.6 INFECTION CONTROL PLAN

Prepare a written Infection Control Plan to identify the proposed work areas (Work Plan), to complete an Infection Control Risk Assessment, and to establish a Dust Control Program.

#### 1.6.1 Work Plan

Prepare a proposed [Work Plan](#) that shows on the floor plans provided each discrete construction area to be isolated for infection control and dust control. Include all areas where construction will occur.

#### 1.6.2 Infection Control Risk Assessment

Classify each construction area using the ICRA matrix in accordance with the APIC Toolkit and under the direction of the VAMC ICRA team. Refer to Section 01 11 00 Scope of Work for identification of the classification of each space. (See ICRA MATRIX below).

1. All clinical spaces shall be considered a minimum of Class III.

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2. High risk areas such as an Operating Room (OR) and an Intensive Care Unit (ICU) shall be considered Class IV.

3. Non-clinical, utilitarian spaces may be Class II at the discretion of the VAMC ICRA team.

#### 1.6.3 Dust Control Program

Establish and maintain a dust control program in accordance with the guidelines provided by VAMC ICRA Team and as specified herein. Detail project-specific dust protection measures, including daily status reports.

#### 1.6.4 Approval

Submit Plan, prior to start of work, to Resident Engineer and VAMC ICRA team for review for compliance with contract requirements in accordance with Section 01 33 00, SUBMITTAL PROCEDURES. No work shall begin until Plan is approved.

### 1.7 QUALIFICATIONS

All personnel involved in the construction or renovation activity shall be educated and trained in infection prevention measures established by the VAMC.

### 1.8 COMMUNICATIONS

A. Notify the following prior to the start of work (including pre-construction meetings): The manager of the department where the work will take place, Facilities Management Services, Police and Security Service, and Office of Safety and Infection Control Department.

B. Report problems relating to infection control that arise, at any time, to the Resident Engineer as soon as identified.

## PART 2 PRODUCTS

### 2.1 MATERIALS

A. Fire retardant reinforced polyethylene, 6-mil thick or greater Plastic Sheet Barrier meeting local fire codes with zipper door access.

B. Provide duct tape, velcro seals, framing, clips, and all accessories required to construct dust barriers as specified.

C. Air moving and filtration devices and High Efficiency Particulate Accumulator (HEPA) Filters.

D. Sanders, power saws, etc. will have and will use built in dust collections systems.

E. Sticky Walk-off Mats: A stack of tear-off polyethylene sheets with specially treated, pressure-sensitive adhesive that will remove contaminants from shoes and wheels. Size: 24 x 36 inches, minimum.

## PART 3 EXECUTION

### 3.1 EXAMINATION

VAMC ICRA Team shall monitor for airborne disease (e.g., aspergillosis), as appropriate, during construction. A baseline of conditions may be established by the VAMC prior to the start of work and periodically during the construction stage to determine impact of construction activities on indoor air quality.

### 3.2 MONITORING

The Resident Engineer and VAMC ICRA Team shall review [Negative Pressure Test Reports](#) to verify that pressure differentials in the construction zone and in the patient-care rooms are appropriate for their settings. The requirement for negative air pressure in the construction zone shall depend on the location and type of activity (see ICRA Matrix below). VAMC staff will inspect and monitor compliance with all requirements for infection control on a daily basis. (See [INFECTION CONTROL COMPLIANCE DAILY CHECKLIST](#) attached)

### 3.3 CORRECTION

Upon notification, the General Contractor shall implement corrective measures at his expense to maintain compliance with the requirements of the Infection Control Plan (i.e., restore proper pressure differentials). In case of any problem, the VAMC ICRA Team, along with assistance from the General Contractor, shall conduct an environmental assessment of the impact of construction activities on indoor air quality.

### 3.4 PROCEDURES - GENERAL

In general, the following preventive measures shall be adopted during construction to keep down dust and prevent mold.

1. Dampen debris to keep down dust and provide temporary construction partitions in existing structures where directed by Resident Engineer.
2. Blank off ducts and diffusers to prevent circulation of dust into occupied areas during construction.
3. Do not perform dust producing tasks within occupied areas without the approval of the Resident Engineer.

### 3.5 PROCEDURES - CONSTRUCTION

The area in which the construction will occur shall be isolated from the adjacent areas in the following manner unless an exception is authorized by the Resident Engineer, VAMC ICRA Team and the Department Head of the area under construction.

1. Determine if the HVAC system includes return air from the construction area. If so, divert to exhaust if possible. If exhaust is not possible, then add filtering to remove dust before it enters the return air system, or block off supply and exhaust grills (closed and covered).
2. Install impervious barriers from floor to underside of floor slab above and wall to wall using framing, clips, and duct tape, as

required, to maintain and secure the barrier seal.

3. When work is in an extremely sensitive area such as the OR, double impervious barriers shall be used.
4. Install barriers to contain movement of air and debris when ceiling envelopes, chases, and/or spaces are penetrated.
5. Close windows, seal window air conditioner (A/C) units airtight with plastic sheeting, and cap or shut down air ducts, when appropriate.
6. Provide anterooms (consisting of confined space beyond the barrier) at entrances to work areas to contain debris and provide workers an area to remove protective clothing or vacuum off clothing except when workers exit directly to the outside of the building. Compressed air shall not be used to remove dust from clothing.
7. Provide [sticky walk-off mats](#) at the entrance to work areas during construction.
8. Minimize traffic to and from the construction areas at the direction of the Resident Engineer.
9. Install proper barriers for elevators and/or stairways within the field of construction. Work in stairways will require [ILSM](#), approved by VAMC Safety Officer
10. Demolish water damaged areas first. Use HEPA filter exhaust and containment. Bag waste to reduce aerosol of microbial agent/fungi/spore escaping during the demolition and transport of this material out of constructions site.
11. Install the air moving and filtration device(s) into the construction/containment area and operate to remove dust particles from air and exhaust to the outside.
12. Maintain negative pressure in the construction site, and file [Negative Pressure Test Reports](#) daily during construction.
13. Before any construction begins, instruct workers on mandatory infection control; provide copies of handout for training and instructions as provided by office of VAMC ICRA Team.
14. Report disruption, violation of barrier integrity, or loss of negative air to the Resident Engineer, VAMC ICRA Team, and Department Head immediately.
15. Cover all furniture and equipment left in construction area with 6 mil [Plastic Sheet Barrier](#).

### 3.6 PROCEDURES - OCCUPIED AREAS

For construction in any areas that will remain jointly occupied by the VAMC and construction personnel, the General Contractor shall:

1. Maintain negative air at all times. A fire retardant reinforced polyethylene, 6-mil thick or greater [plastic sheet barrier](#) meeting local fire codes with zipper door access shall be used where dust control is the only hazard, subject to approval by the Resident

Engineer and VAMC ICRA Team.

2. HEPA filtration is required where the exhaust dust may reenter the breathing zone. Verify that construction exhaust to exterior is not reintroduced to the VAMC through intake vents, or building openings. Install HEPA filter vacuum system rated at 95% capture of 0.3 microns including pollen, mold spores and dust particles. Ensure continuous negative air pressures occurring within the work area. HEPA filters should have ASHRAE 85 or other prefilter to extend the useful life of the HEPA. Provide both primary and secondary filtrations units. Exhaust hoses shall be heavy duty, flexible steel reinforced and exhausted so that dust is not reintroduced to the VAMC.

3. Sticky Walk-off Mats shall be used at all interior transitions from the construction area to occupied VAMC area. These mats shall be changed as often as required to maintain clean work areas directly outside construction area at all times.

4. Vacuum and wet mop all transition areas from construction to the occupied VAMC at the end of each workday. Vacuum shall utilize HEPA filtration. Maintain surrounding area frequently. Remove debris as it is created. Transport debris outside the construction area in containers with tightly fitting lids.

5. Do not haul debris through patient-care areas without prior approval of the Resident Engineer and the VAMC ICRA Team. When approved, debris shall be hauled in enclosed dust proof containers or wrapped in plastic and sealed with duct tape. No sharp objects should be allowed to cut through the plastic. Wipe down the exterior of the containers with a damp rag to remove dust. All equipment, tools, material, etc. transported through occupied areas shall be made free from dust and moisture by vacuuming and wipe down.

6. Using a HEPA vacuum, clean inside the barrier and vacuum ceiling tile prior to replacement. Any ceiling access panels opened for investigation beyond sealed areas shall be sealed immediately when unattended. Only one tile may be removed without a permit. Removing more than one tile requires a permit from VAMC.

7. There shall be no standing water during construction. This includes water in equipment drip pans and open containers within the construction areas. All accidental spills must be cleaned up and dried within 12 hours. Remove and dispose of porous materials that remain damp for more than 72 hours.

### 3.7 PROCEDURES - OTHER

Provide the following procedures as determined by the Resident Engineer and VAMC ICRA team as appropriate to specific tasks and circumstances:

1. Water mist work surfaces to control dust during cutting, sweeping, and tasks which generate dust.

2. Shut down or cover air vents to construction areas during demolition activities prior to the beginning of construction and for the duration of the project.

3. Ceiling access procedure: Implement control cube method (cart with plastic covering and sealed connection to work area with HEPA vacuum

for vacuuming prior to exit) around the work area when construction activities are required in patient care areas outside of the designated construction area. Only one ceiling tile may be removed without a permit. Removing more than one ceiling tile requires a permit from VAMC.

4. Seal all construction, holes, pipes, conduits, punctures, and/or exposures with appropriate fire stopping assemblies.

5. Vacuum off clothes with a HEPA filtered vacuum cleaner prior to exiting the work site.

6. Require workers to wear clean shoe covers each time they exit the work site when they travel to another area of the facility.

### 3.8 CLEANING

#### A. Environmental Cleaning:

1. Remove any dust tracked outside of the barrier immediately and as it accumulates.

2. Clean in construction areas so as to minimize aerosolizing dust particles. Use resin control, damp mop, moist broom and/or HEPA filtered vacuum cleaner. Shovels and broader methods may be used to remove large debris.

3. Remove debris from construction sites by a pre-determined and approved route.

4. Transport debris in clean containers with tight fitting covers.

5. When construction is complete, thoroughly clean the area prior to turnover to Facilities Management Services.

6. Ensure that gross soiling is removed prior to removal of barriers.

7. Treat barriers as debris and remove them in a manner designed to minimize distribution of particles.

#### B. Final Cleaning:

1. Upon completion of project, or as work progresses, remove all construction debris from above ceiling, vertical shafts and utility chases that have been part of the construction.

2. Perform HEPA vacuum cleaning of all surfaces in the construction area. This includes walls, ceilings, cabinets, furniture (built-in or free standing), partitions, flooring, etc.

3. At completion, vacuum and wash down construction side of barriers and then remove construction barriers and ceiling protection carefully, outside of normal work hours. Vacuum and clean all surfaces free of dust after the removal.

4. Notify VAMC Housekeeping 24 hours in advance of barrier removal so that they may clean completed construction area after construction is finished, but before staff and patients re-occupy area.

### 3.9 ICRA MATRIX

Patient Risk	Type of Construction			
	TYPE A	TYPE B	TYPE C	TYPE D
LOW	CLASS I	CLASS II	CLASS II	CLASS III/IV
MEDIUM	CLASS I	CLASS II	CLASS III	CLASS IV
HIGH	CLASS II	CLASS II	CLASS III/IV	CLASS IV
HIGHEST	CLASS II	CLASS III/IV	CLASS III/IV	CLASS IV

Refer to the [CEOSH Guidebook](#) or [APIC Toolkit](#) for a description of the patient risk categories (low to highest) and Type of Construction (Type A, B, C, D).

#### CLASS I

1. Execute work by methods to minimize raising dust from construction operations.
2. Immediately replace a ceiling tile displaced for visual inspection.

CLASS II - All Class I requirements plus the following:

1. Provide active means to prevent airborne dust from dispersing into atmosphere.
2. Water mist work surfaces to control dust while cutting.
3. Seal unused doors with duct tape.
4. Block off and seal air vents.
5. Place dust mat at entrance and exit of work area.
6. Remove or isolate HVAC system in areas where work is being performed.

CLASS III - All Class I and II requirements plus the following:

1. Remove or isolate HVAC system in area where work is being done to prevent contamination of duct system.
2. Complete all critical barriers (i.e. sheetrock, plywood, plastic) to seal area from non work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins.
3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.
4. Contain construction waste before transport in tightly covered containers.
5. Cover transport receptacles or carts. Tape covering unless solid lid.

CLASS IV - All Class I, II, and III requirements plus the following:

1. Seal holes, pipes, conduits, and punctures appropriately.
2. Construct anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or they can wear cloth or paper coveralls that are removed each time they leave the work site.
3. All personnel entering work site are required to wear shoe covers. Shoe covers must be changed each time the worker exits the work area.
4. Do not remove barriers from work area until completed project is inspected by the VAMC Safety Department and ICRA Team.

Replace Windows, VA Medical Center, Providence, RI

3.10 ATTACHMENTS

- A. [Infection Control Compliance Daily Checklist](#)
- B. Providence VAMC Construction Safety Manual
- C. Providence VAMC Interim Life Safety Measures (ILSM)



ATTACHMENT A

VA MEDICAL CENTER  
INFECTION CONTROL PROGRAM  
INFECTION CONTROL COMPLIANCE DAILY CHECKLIST

Project: \_\_\_\_\_ Date: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time End: \_\_\_\_\_

The following are checked at least daily during demolition and/or construction:

1. Barrier containment completed before construction began.
2. Negative air pressure at construction site was monitored and recorded, at least daily, during construction work.
3. Construction area air exhausted directly outside or HEPA filtered to remove dust before the return to the HVAC system.
4. Air moving and HEPA filtration device placed into the construction area to remove and prevent the escape of dust and fungal particles.
5. All construction holes, pipes, conduits, punctures and/or exposures appropriately sealed.
6. Construction workers put on coveralls for entering the work site or vacuum off work clothes with a HEPA vacuum cleaner prior to exiting the work area.
7. Work surfaces water-misted to control dust while cutting.
8. Dust mats placed at entrance to work area at all times.
9. Workers wore clean shoe covers each time they exited the work area to travel to other areas of the facility (or no travel to other areas was necessary).
10. Dust tracked outside the barrier was removed immediately by damp-mop method or with HEPA filtered vacuum cleaners.
11. Debris was transported from the construction area by the pre-determined route in clean containers with tight-fitting covers.
12. Designated debris routes were cleaned by damp-mop method or with HEPA filtered vacuum cleaners prior to being returned to patient or staff use.
13. Any disruption or violation of the containment barrier integrity was immediately reported to the Resident Engineer, VAMC ICRA Team, and Department Manager.
14. The freight elevator should not transport supplies or Contractor's personnel to the 7th floor of Building #1. All Contractor's personnel will exit on the 6th floor to minimize traffic going to the 7th floor.

Above items checked (by initials) at the following times:

\_\_\_\_\_  
\_\_\_\_\_

Compliance Checklist Submitted By: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

-- End of Section --

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SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS

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 SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)

- |                  |  |
|------------------|--|
| ASSE/SAFE A10.32 | (2004) Fall Protection   |
| ASSE/SAFE A10.34 | (2001; R 2005) Protection of the Public on<br>or Adjacent to Construction Sites              |
| ASSE/SAFE Z359.1 | (2007) Safety Requirements for Personal<br>Fall Arrest Systems, Subsystems and<br>Components |

ASME INTERNATIONAL (ASME)

- |             |   |
|-------------|---|
| ASME B30.22 | (2005) Articulating Boom Cranes                 |
| ASME B30.3  | (2004) Construction Tower Cranes                |
| ASME B30.5  | (2004) Mobile and Locomotive Cranes             |
| ASME B30.8  | (2004) Floating Cranes and Floating<br>Derricks |

ASTM INTERNATIONAL (ASTM)

- |            |   |
|------------|---|
| ASTM F 855 | (2004) Standard Specification for<br>Temporary Protective Grounds to be used on<br>De-energized Electric Power Lines and<br>Equipment |
|------------|---|

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

- |           |   |
|-----------|---|
| IEEE 1048 | (2003) Guide for Protective Grounding of<br>Power Lines |
|-----------|---|

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- |          |   |
|----------|---|
| NFPA 10  | (2006; Errata 2006) Standard for Portable<br>Fire Extinguishers       |
| NFPA 51B | (2003) Fire Prevention During Welding,<br>Cutting, and Other Hot Work |
| NFPA 70  | (2007; AMD 1 2008) National Electrical<br>Code - 2008 Edition         |

NFPA 70E (2008) Electrical Safety in the Workplace

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2008) Safety and Health Requirements Manual

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

29 CFR 1910.146 Permit-required Confined Spaces

29 CFR 1926 Safety and Health Regulations for Construction

29 CFR 1926.500 Fall Protection

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

Government acceptance is required for submittals with a "G, A" designation.

### SD-01 Preconstruction Submittals

Accident Prevention Plan (APP); G, A

Activity Hazard Analysis (AHA); G, A

Crane Critical Lift Plan; G, A

Crane Operators; G, A

Proof of qualification for crane operators.

### SD-06 Test Reports

#### Reports

Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports".

Accident Reports; G, RO

Monthly Work-hour Reports

Crane Reports

Regulatory Citations and Violations; G, RO

### SD-07 Certificates

Confined Space Entry Permit

Hot work permit

Certificate of Compliance (Crane)

Submit one copy of each permit/certificate attached to each Daily Quality Control Report.

1.3 DEFINITIONS

- a. High Visibility Accident. Any mishap which may generate publicity and/or high visibility.
- b. Medical Treatment. Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even though provided by a physician or registered personnel.
- c. Recordable Injuries or Illnesses. Any work-related injury or illness that results in:
  - (1) Death, regardless of the time between the injury and death, or the length of the illness;
  - (2) Days away from work (any time lost after day of injury/illness onset);
  - (3) Restricted work;
  - (4) Transfer to another job;
  - (5) Medical treatment beyond first aid;
  - (6) Loss of consciousness; or
  - (7) A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.
- d. "USACE" property and equipment specified in USACE EM 385-1-1 should be interpreted as Government property and equipment.
- e. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and/or collision, including unplanned contact between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.).

1.4 REGULATORY REQUIREMENTS

In addition to the detailed requirements included in the provisions of this contract, work performed shall comply with USACE EM 385-1-1. Submit matters of interpretation of standards to the appropriate administrative

agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

## 1.5 SITE QUALIFICATIONS, DUTIES AND MEETINGS

### 1.5.1 Personnel Qualifications

#### 1.5.1.1 Site Safety and Health Officer (SSHO)

Site Safety and Health Officer (SSHO) shall be provided at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The Contractor Quality Control (QC) person cannot be the SSHO on this project, even though the QC has safety inspection responsibilities as part of the QC duties. The SSHO shall meet the following requirements:

##### Level 2:

- A minimum of 3 years safety work on similar project.
- 30-hour OSHA construction safety class or equivalent within last 3 years.
- Competent person training as needed.

#### 1.5.1.2 Crane Operators

Crane operators shall meet the requirements in USACE EM 385-1-1, Section B. In addition, for mobile cranes with Original Equipment Manufacturer (OEM) rated capacities of 50,000 pounds or greater, crane operators shall be designated as qualified by a source that qualifies crane operators (i.e., union, a government agency, or and organization that tests and qualifies crane operators). Proof of current qualification shall be provided.

### 1.5.2 Personnel Duties

#### 1.5.2.1 Site Safety and Health Officer (SSHO)/Superintendent

- a. Conduct daily safety and health inspections and maintain a written deficiency tracking log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Safety inspection logs shall be attached to the Contractors' daily quality control report and posted at the site.
- b. Conduct mishap investigations and complete required reports. Maintain the OSHA Form 300 and Daily Production reports for prime and sub-contractors.
- c. Maintain applicable safety reference material on the job site.
- d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.
- e. Implement and enforce accepted APPS and AHAs.
- f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. A list of unresolved safety and health deficiencies shall be posted on the safety bulletin board.

- g. Ensure sub-contractor compliance with safety and health requirements.

Failure to perform the above duties will result in dismissal of the superintendent and/or SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

### 1.5.3 Meetings

#### 1.5.3.1 Preconstruction Conference

- a. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, quality control supervisor, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).
- b. The Contractor shall discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer's representative as to which phases will require an analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of AHAs shall be established to preclude project delays.
- c. Deficiencies in the submitted APP will be brought to the attention of the Contractor at the preconstruction conference, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Work shall not begin until there is an accepted APP.

#### 1.5.3.2 Weekly Safety Meetings

Conduct weekly safety meetings at the project site for all employees. The Contracting Officer will be informed of the meeting in advance and be allowed attendance. Minutes showing contract title, signatures of attendees and a list of topics discussed shall be attached to the Contractors' daily quality control report. A copy of a suggested weekly safety meeting form is attached at the end of this section.

#### 1.5.3.3 Work Phase Meetings

The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection. The analysis should be used during daily inspections to ensure the implementation and effectiveness of safety and health controls.

### 1.6 TRAINING

#### 1.6.1 New Employee Indoctrination

New employees (prime and sub-contractor) will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.



#### 1.6.2 Periodic Training

Provide Safety and Health Training in accordance with EM 385-1-1 and the accepted APP. Ensure all required training has been accomplished for all onsite employees.

#### 1.6.3 Training on Activity Hazard Analysis (AHA)

Prior to beginning a new phase, training will be provided to all affected employees to include a review of the AHA to be implemented.

#### 1.7 ACCIDENT PREVENTION PLAN (APP)

The Contractor shall use a qualified person to prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of USACE EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in USACE EM 385-1-1, Appendix A, "Minimum Basic Outline for Accident Prevention Plan". Specific requirements for some of the APP elements are described below. The APP shall be job-specific and shall address any unusual or unique aspects of the project or activity for which it is written. The APP shall interface with the Contractor's overall safety and health program. Any portions of the Contractor's overall safety and health program referenced in the APP shall be included in the applicable APP element and made site-specific. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP shall be signed by the person and firm (senior person) preparing the APP, the Contractor, the on-site superintendent, the designated site safety and health officer and any designated CSP and/or CIH.

Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP.

Once accepted by the Contracting Officer, the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

Once work begins, changes to the accepted APP shall be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and quality control manager. Should any hazard become evident, stop work in the area, secure the area, and develop a plan to remove the hazard. Notify the Contracting Officer within 24 hours of discovery. Eliminate/remove the hazard. In the interim, all necessary action shall be taken to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by ASSE/SAFE A10.34,) and the environment.

Copies of the accepted plan will be maintained at the Contracting Officer's office and at the job site. The APP shall be continuously reviewed and amended, as necessary, throughout the life of the contract. Unusual or high-hazard activities not identified in the original APP shall be

incorporated in the plan as they are discovered.

#### 1.7.1 EM 385-1-1 Contents

In addition to the requirements outlines in Appendix A of USACE EM 385-1-1, the following is required:

a. **Crane Critical Lift Plan.** Prepare and sign weight handling critical lift plans for lifts over 75 percent of the capacity of the crane or hoist (or lifts over 50 percent of the capacity of a barge mounted mobile crane's hoists) at any radius of lift; lifts involving more than one crane or hoist; lifts of personnel; and lifts involving non-routine rigging or operation, sensitive equipment, or unusual safety risks. The plan shall be submitted 15 calendar days prior to on-site work and include the requirements of USACE EM 385-1-1, paragraph 16.H. For lifts of personnel, the plan shall demonstrate compliance with the requirements of 29 CFR 1926.550(g)

#### 1.8 ACTIVITY HAZARD ANALYSIS (AHA)

The Activity Hazard Analysis (AHA) format shall be in accordance with USACE EM 385-1-1. Submit the AHA for review at least 15 calendar days prior to the start of each phase. Format subsequent AHAs as amendments to the APP. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.

The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change.

The activity hazard analyses shall be developed using the project schedule as the basis for the activities performed. Any activities listed on the project schedule will require an AHA. The AHAs will be developed by the contractor, supplier or subcontractor and provided to the prime contractor for submittal to the Contracting Officer.

#### 1.9 DISPLAY OF SAFETY INFORMATION

Within 1 calendar day after commencement of work, erect a safety bulletin board at the job site. The safety bulletin board shall include information and be maintained as required by EM 385-1-1, Section 01.A.06. Additional items required to be posted include:

- a. **Confined space entry permit**, (if required).
- b. **Hot work permit**.

#### 1.10 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "References". Maintain applicable equipment manufacturer's manuals.

#### 1.11 EMERGENCY MEDICAL TREATMENT

Contractors shall arrange for their own emergency medical treatment. The Government has no responsibility to provide emergency medical treatment.

## 1.12 REPORTS

### 1.12.1 Accident Reports

a. For recordable injuries and illnesses, and property damage accidents resulting in at least \$2,000 in damages, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the USACE Accident Report Form 3394 and provide the report to the Contracting Officer within 5 calendar days of the accident. The Contracting Officer will provide copies of any required or special forms.

b. For any weight handling equipment accident (including rigging gear accidents) the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the WHE Accident Report (Crane and Rigging Gear) form and provide the report to the Contracting Officer within 30 calendar days of the accident. Crane operations shall not proceed until cause is determined and corrective actions have been implemented to the satisfaction of the contracting officer. The Contracting Officer will provide a blank copy of the accident report form.

### 1.12.2 Accident Notification

Notify the Contracting Officer as soon as practical, but not later than four hours, after any accident meeting the definition of Recordable Injuries or Illnesses or High Visibility Accidents, property damage equal to or greater than \$2,000, or any weight handling equipment accident. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted.

### 1.12.3 Monthly Work-hour Reports

Monthly exposure reporting to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. The Contracting Officer will provide copies of any special forms.

### 1.12.4 Crane Reports

Submit crane inspection reports required in accordance with USACE EM 385-1-1, Section 16.D and as specified herein with Daily Reports of Inspections.

### 1.12.5 Certificate of Compliance

The Contractor shall provide a Certificate of Compliance for each crane entering an activity under this contract (see Contracting Officer for a blank certificate). Certificate shall state that the crane and rigging gear meet applicable OSHA regulations (with the Contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance shall comply with 29 CFR 1926 and USACE EM 385-1-1, Section 16. Certify on the Certificate of Compliance that the

crane operator(s) is qualified and trained in the operation of the crane to be used. The Contractor shall also certify that all of its crane operators working on the DOD activity have been trained in the proper use of all safety devices (e.g., anti-two block devices). These certifications shall be posted on the crane.

#### 1.13 HOT WORK

Prior to performing "Hot Work" (welding, cutting, etc.) or operating other flame-producing/spark producing devices, a written permit shall be requested from the local Fire Department. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. The Contractor will provide at least two (2) twenty (20) pound 4A:20 BC rated extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch shall be trained in accordance with NFPA 51B and remain on-site for a minimum of 30 minutes after completion of the task or as specified on the hot work permit.

When starting work in the facility, Contractors shall require their personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency Fire Department phone number. ANY FIRE, NO MATTER HOW SMALL, SHALL BE REPORTED TO THE RESPONSIBLE FIRE DEPARTMENT IMMEDIATELY.

#### PART 2 PRODUCTS (Not Used)

#### PART 3 EXECUTION

##### 3.1 CONSTRUCTION AND/OR OTHER WORK

###### 3.1.1 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with USACE EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials.

###### 3.1.2 Unforeseen Hazardous Material

The design should have identified materials such as PCB, lead paint, and friable and non-friable asbestos. If additional material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions".

### 3.2 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages at least 15 days in advance. As a minimum, the request should include the location of the outage, utilities being affected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved, and prior to beginning work on the utility system requiring shut down, the Contractor shall attend a pre-outage coordination meeting with the Contracting Officer and the Public Utilities representative to review the scope of work and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits unless proof is provided that no other means exist.

### 3.3 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

The Contractor shall establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. The program shall include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures.

#### 3.3.1 Training

The Contractor shall institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, the Contractor shall provide training for each employee who might be exposed to fall hazards. A competent person for fall protection shall provide the training. Training requirements shall be in accordance with USACE EM 385-1-1, Section 21.B.

#### 3.3.2 Fall Protection Equipment and Systems

The Contractor shall enforce use of the fall protection equipment and systems designated for each specific work activity in the Fall Protection and Prevention Program and/or AHA at all times when an employee is exposed to a fall hazard. Employees shall be protected from fall hazards as specified in EM 385-1-1, Section 21. In addition to the required fall protection systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with USACE EM 385-1-1, Section 21.N. Personal fall arrest systems are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems are required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, or travel. Fall protection must comply with 29 CFR 1926.500, Subpart M, USACE EM 385-1-1 and ASSE/SAFE A10.32.

##### 3.3.2.1 Personal Fall Arrest Equipment

Personal fall arrest equipment, systems, subsystems, and components shall meet ASSE/SAFE Z359.1. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). Harnesses shall have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Only locking snap

hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment shall not exceed 1.8 m (6 feet). The total fall distance and any swinging of the worker (pendulum-like motion) that can occur during a fall shall always be taken into consideration when attaching a person to a fall arrest system.

#### 3.3.3 Existing Anchorage

Existing anchorages, to be used for attachment of personal fall arrest equipment, shall be certified (or re-certified) by a qualified person for fall protection in accordance with ASSE/SAFE Z359.1. Existing horizontal lifeline anchorages shall be certified (or re-certified) by a registered professional engineer with experience in designing horizontal lifeline systems.

#### 3.3.4 Horizontal Lifelines

Horizontal lifelines shall be designed, installed, certified and used under the supervision of a qualified person for fall protection as part of a complete fall arrest system which maintains a safety factor of 2 (29 CFR 1926.500).

#### 3.3.5 Guardrails and Safety Nets

Guardrails and safety nets shall be designed, installed and used in accordance with EM 385-1-1 and 29 CFR 1926 Subpart M.

#### 3.3.6 Rescue and Evacuation Procedures

When personal fall arrest systems are used, the contractor must ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. A Rescue and Evacuation Plan shall be prepared by the contractor and include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. The Rescue and Evacuation Plan shall be included in the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP).

### 3.4 SCAFFOLDING

#### 3.4.1 Stilts

The use of stilts for gaining additional height in construction, renovation, repair or maintenance work is prohibited.

### 3.5 EQUIPMENT

#### 3.5.1 Material Handling Equipment

a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.

b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions.

c. Operators of forklifts or power industrial trucks shall be licensed in accordance with OSHA.

### 3.5.2 Weight Handling Equipment

a. Cranes and derricks shall be equipped as specified in EM 385-1-1, Section 16.

b. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturer's recommended procedures.

c. The Contractor shall comply with ASME B30.5 for mobile and locomotive cranes, ASME B30.22 for articulating boom cranes, ASME B30.3 for construction tower cranes, and ASME B30.8 for floating cranes and floating derricks.

d. Under no circumstance shall a Contractor make a lift at or above 90% of the cranes rated capacity in any configuration.

e. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of USACE EM 385-1-1, Section 11 and ASME B30.5 or ASME B30.22 as applicable.

f. Crane suspended personnel work platforms (baskets) shall not be used unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Personnel shall not be lifted with a line hoist or friction crane.

g. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.

h. All employees shall be kept clear of loads about to be lifted and of suspended loads.

i. The Contractor shall use cribbing when performing lifts on outriggers.

j. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.

k. A physical barricade must be positioned to prevent personnel from entering the counterweight swing (tail swing) area of the crane.

l. Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected shall always be available for review by Contracting Officer personnel.

m. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by Contracting Officer personnel.

n. Certify that all crane operators have been trained in proper use of all safety devices (e.g. anti-two block devices).

### 3.6 EXCAVATIONS

The competent person shall perform soil classification in accordance with 29 CFR 1926.

#### 3.6.1 Utility Locations

Prior to digging, the appropriate digging permit must be obtained. All underground utilities in the work area must be positively identified by a private utility locating service in addition to any station locating service and coordinated with the station utility department. Any markings made during the utility investigation must be maintained throughout the contract.

#### 3.6.2 Utility Location Verification

The Contractor must physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system. Digging within 0.061 m (2 feet) of a known utility shall not be performed by means of mechanical equipment; hand digging shall be used. If construction is parallel to an existing utility the utility shall be exposed by hand digging every 30.5 m (100 feet) if parallel within 1.5 m (5 feet) of the excavation.

#### 3.6.3 Shoring Systems

Trench and shoring systems shall be identified in the accepted safety plan and AHA. Manufacture tabulated data and specifications or registered engineer tabulated data for shoring or benching systems shall be readily available on-site for review. Job-made shoring or shielding shall have the registered professional engineer stamp, specifications, and tabulated data. Extreme care must be used when excavating near direct burial electric underground cables.

#### 3.6.4 Trenching Machinery

Trenching machines with digging chain drives shall be operated only when the spotters/laborers are in plain view of the operator. Operator and spotters/laborers shall be provided training on the hazards of the digging chain drives with emphasis on the distance that needs to be maintained when the digging chain is operating. Documentation of the training shall be kept on file at the project site.

### 3.7 UTILITIES WITHIN CONCRETE SLABS

Utilities located within concrete slabs or pier structures, bridges, and the like, are extremely difficult to identify due to the reinforcing steel used in the construction of these structures. Whenever contract work involves concrete chipping, saw cutting, or core drilling, the existing utility location must be coordinated with station utility departments in addition to a private locating service. Outages to isolate utility systems shall be used in circumstances where utilities are unable to be positively identified. The use of historical drawings does not alleviate the contractor from meeting this requirement.



### 3.8 ELECTRICAL

#### 3.8.1 Conduct of Electrical Work

Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Contracting Officer and Station Utilities for identification. The Contracting Officer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Attachment of temporary grounds should be in accordance with [ASTM F 855](#) and [IEEE 1048](#). Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the [NFPA 70](#), high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. In addition, provide electrical arc flash protection for personnel as required by [NFPA 70E](#). Insulating blankets, hearing protection, and switching suits may also be required, depending on the specific job and as delineated in the Contractor's AHA.

#### 3.8.2 Portable Extension Cords

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered and protected from damage. All damaged extension cords shall be immediately removed from service. Portable extension cords shall meet the requirements of [NFPA 70](#).

### 3.9 WORK IN CONFINED SPACES

The Contractor shall comply with the requirements in Section 06.I of USACE [EM 385-1-1](#), OSHA [29 CFR 1910.146](#) and OSHA [29 CFR 1926.21\(b\)\(6\)](#). Any potential for a hazard in the confined space requires a permit system to be used.

### 3.10 HOUSEKEEPING

All debris in work areas shall be cleaned up daily or more frequently if necessary. Construction debris may be temporarily located in an approved location, however garbage accumulation must be removed each day.

WEEKLY SAFETY MEETING

CENAE

Date Held \_\_\_\_\_  
Time \_\_\_\_\_

SUBJECT: CONTRACT NO. DACW33-99-C-00\_\_\_\_ - WEEKLY SAFETY MEETING

CONTRACTOR \_\_\_\_\_

PERSONNEL PRESENT

| Contr. | Sub. | Govt. |

Date and Time Held: \_\_\_\_\_

Conducted By: \_\_\_\_\_

-----  
| | | |  
| | | |

All persons attending the meeting must sign the bottom or back of this form.

Subjects discussed (Note, delete, or add):

EM 385-1-1, Section: \_\_\_\_\_

Accident Prevention Plan \_\_\_\_\_ Individual Protective Equipment \_\_\_\_\_

Prevention of Falls \_\_\_\_\_ Back Injury/Safe Lifting Techniques \_\_\_\_\_

Fire Prevention \_\_\_\_\_ Sanitation, First Aid, Waste Disposal \_\_\_\_\_

Tripping Hazards \_\_\_\_\_ Clean-up - trash, nails in lumber \_\_\_\_\_

Staging, Ladders, Concrete Forms, Safety Nets \_\_\_\_\_

Hand Tools, Power Tools, Machinery, Chain Saws \_\_\_\_\_

Equipment Inspection & Maintenance (Zero Defects) \_\_\_\_\_

Hoisting Equipment, Winch and Crane Safety \_\_\_\_\_

Ropes, Hooks, Chains and Slings \_\_\_\_\_

Vehicle Operation Safety \_\_\_\_\_

Electrical Grounding, Temporary Wiring, GFCI \_\_\_\_\_

Lockouts/Safe clearance procedures  
(electrical, pressure, moving parts) \_\_\_\_\_

Welding, Cutting \_\_\_\_\_ Excavation Hazard/Rescue \_\_\_\_\_

Loose Rock/Steep Slopes \_\_\_\_\_ Explosives \_\_\_\_\_

Water Safety \_\_\_\_\_ Boat Safety \_\_\_\_\_

HAZMAT, Toxic hazards, MSDS, respiratory, ventilation \_\_\_\_\_

Other Items of concern specific to this contract:

CQC Rep. Signature \_\_\_\_\_ CE Inspector \_\_\_\_\_

CF:

-- End of Section --

Replace Windows, VA Medical Center, Providence, RI

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SECTION 01 42 00

SOURCES FOR REFERENCE PUBLICATIONS

PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization, (e.g. ASTM B 564 Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the standards producing organization should be ordered from the source by title rather than by number.

ALUMINUM ASSOCIATION (AA)  
National Headquarters  
1525 Wilson Boulevard, Suite 600  
Arlington, VA 22209  
Ph: 703-358-2960  
Fax: 703-358-2961  
Internet: <http://www.aluminum.org>

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)  
1827 Walden Office Square  
Suite 550  
Schaumburg, IL 60173-4268  
Ph: 847-303-5664  
Fax: 847-303-5774  
E-mail: [webmaster@aamanet.org](mailto:webmaster@aamanet.org)  
Internet: <http://www.aamanet.org>

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)  
1330 Kemper Meadow Drive  
Cincinnati, OH 45240  
Ph: 513-742-2020  
Fax: 513-742-3355  
E-mail: [mail@acgih.org](mailto:mail@acgih.org)  
Internet: <http://www.acgih.org>

AMERICAN LUMBER STANDARDS COMMITTEE (ALSC)  
P.O. Box 210  
Germantown, MD 20875-0210  
Ph: 301-972-1700

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Fax: 301-540-8004  
E-mail: [alsc@alsc.org](mailto:alsc@alsc.org)  
Internet: <http://www.alsc.org>

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)  
1819 L Street, NW, 6th Floor  
Washington, DC 20036  
Ph: 202-293-8020  
Fax: 202-293-9287  
E-mail: [info@ansi.org](mailto:info@ansi.org)  
Internet: <http://www.ansi.org/>

--- ANSI documents beginning with the letter "S" can be ordered from:

Acoustical Society of America (ASA)  
2 Huntington Quadrangle, Suite 1N01  
Melville, NY 11747-4502  
Ph: 516-576-2360  
Fax: 516-576-2377  
E-mail: [asa@aip.org](mailto:asa@aip.org)  
Internet: <http://asa.aip.org>

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)  
1791 Tullie Circle, NE  
Atlanta, GA 30329  
Ph: 800-527-4723 or 404-636-8400  
Fax: 404-321-5478  
E-mail: [ashrae@ashrae.org](mailto:ashrae@ashrae.org)  
Internet: <http://www.ashrae.org>

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)  
1800 East Oakton Street  
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Fax: 847-768-3434  
E-mail: [customerservice@asse.org](mailto:customerservice@asse.org)  
Internet: <http://www.asse.org>

AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)  
P.O. Box 361784  
Birmingham, AL 35236-1784  
Ph: 205-733-4077  
Fax: 205-733-4075  
E-mail: [email@awpa.com](mailto:email@awpa.com)  
Internet: <http://www.awpa.com>

ARCHITECTURAL WOODWORK INSTITUTE (AWI)  
146179 Westlake Drive, Suite 120  
Potomac Falls, VA 20165  
Ph: 571-323-3636  
Fax: 571-323-3630  
Internet: <http://www.awinet.org>

ASME INTERNATIONAL (ASME)  
Three Park Avenue, M/S 10E  
New York, NY 10016

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Ph: 212-591-7722 or 800-843-2763  
Fax: 212-591-7674  
E-mail: [infocentral@asme.org](mailto:infocentral@asme.org)  
Internet: <http://www.asme.org>

ASTM INTERNATIONAL (ASTM)  
100 Barr Harbor Drive, P.O. Box C700  
West Conshohocken, PA 19428-2959  
Ph: 610-832-9500  
Fax: 610-832-9555  
E-mail: [service@astm.org](mailto:service@astm.org)  
Internet: <http://www.astm.org>

GLASS ASSOCIATION OF NORTH AMERICA (GANA)  
2945 SW Wanamaker Drive, Suite A  
Topeka, KS 66614  
Ph: 785-271-0208  
Fax: 785-271-0166  
E-mail: [gana@glasswebsite.com](mailto:gana@glasswebsite.com)  
Internet: <http://www.glasswebsite.com>

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)  
445 Hoes Lane  
Piscataway, NJ 08855-1331  
Ph: 732-981-0060  
Fax: 732-981-1712  
E-mail: [customer-services@ieee.org](mailto:customer-services@ieee.org)  
Internet: <http://www.ieee.org>

MASTER PAINTERS INSTITUTE (MPI)  
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Burnaby, BC CANADA V5C 3T6  
Ph: 888-674-8937  
Fax: 888-211-8708  
E-mail: [info@paintinfo.com](mailto:info@paintinfo.com)  
Internet: <http://www.paintinfo.com/mpi>

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)  
1300 North 17th Street, Suite 1752  
Rosslyn, VA 22209  
Ph: 703-841-3200  
Fax: 703-841-5900  
E-mail: [webmaster@nema.org](mailto:webmaster@nema.org)  
Internet: <http://www.nema.org/>

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)  
1 Batterymarch Park  
Quincy, MA 02169-7471  
Ph: 617-770-3000  
Fax: 617-770-0700  
E-mail: [webmaster@nfpa.org](mailto:webmaster@nfpa.org)  
Internet: <http://www.nfpa.org>

UNDERWRITERS LABORATORIES (UL)  
333 Pfingsten Road  
Northbrook, IL 60062-2096  
Ph: 847-272-8800  
Fax: 847-272-8129  
E-mail: [customerexperiencecenter@us.ul.com](mailto:customerexperiencecenter@us.ul.com)

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Internet: <http://www.ul.com/>

U.S. ARMY CORPS OF ENGINEERS (USACE)  
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Fax: 601-634-2388  
E-mail: [mtc-info@erdc.usace.army.mil](mailto:mtc-info@erdc.usace.army.mil)  
Internet: <http://www.wes.army.mil/SL/MTC/handbook.htm>

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Internet: <http://www.usace.army.mil/publications>  
or <http://www.hnd.usace.army.mil/techinfo/engpubs.htm>

U.S. DEPARTMENT OF DEFENSE (DOD)  
Directorate for Public Inquiry and Analysis  
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E-mail: [pia@hq.afis.asd.mil](mailto:pia@hq.afis.asd.mil)  
Internet: <http://www.dod.gov>

Order DOD Documents from:  
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Springfield, VA 22161  
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FAX: 703-605-6900  
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Internet: <http://www.dodssp.daps.mil>  
[www.daps.dla.mil](http://www.daps.dla.mil)

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400 7th Street, SW  
Washington, DC 20590  
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SECTION 01 45 02

QUALITY CONTROL SYSTEM (QCS)

PART 1 GENERAL

1.1 QCS SYSTEM

The Contractor shall provide a QCS approved by the Government to assist in monitoring administration of this contract throughout the contract period. Information shall include data on:

- Administration
- Finances
- Quality Control
- Submittal Monitoring Scheduling

1.1.1 Correspondence and Electronic Communications

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.1.2 Other Factors

Particular attention is directed to Contract Clause "Schedules for Construction Contracts", Contract Clause "Payments", Section 01 33 00 SUBMITTAL PROCEDURES, and Section 01 45 04 CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished. All costs associated therewith shall be included in the contract pricing for the work.

1.2 CONTRACT DATABASE

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

1.3 DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. The Contractor shall establish and maintain the QCS data at the Contractor's site office. Data updates to the Government shall be submitted to the Government electronically, e.g., daily reports, schedule updates, payment requests. If permitted by the Contracting Officer, a CD-ROM may be used (see Paragraph DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM). The QCS data typically shall include current data on the following items:

### 1.3.1 Administration

#### 1.3.1.1 Contractor Information

The submitted data shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Upon NTP from the Government, the Contractor shall deliver Contractor administrative data in electronic format.

#### 1.3.1.2 Subcontractor Information

The data shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Upon NTP from the Government, the Contractor shall deliver subcontractor administrative data in electronic format.

#### 1.3.1.3 Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

#### 1.3.1.4 Equipment

The Contractor's QCS data shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

#### 1.3.1.5 Management Reporting

The QCS shall include a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

### 1.3.2 Finances

#### 1.3.2.1 Pay Activity Data

The QCS data shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

#### 1.3.2.2 Payment Requests

The Contractor shall complete a payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report. The Contractor shall submit the payment requests with supporting data. If permitted by the Contracting Officer, a CD-ROM may be used. A signed paper

copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

#### 1.3.3 Quality Control (QC)

The Contractor shall track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and other contractor QC requirements. The Contractor shall maintain this data on a daily basis. The Contractor shall provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01 45 04 CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a CD-ROM reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

##### 1.3.3.1 Daily Contractor Quality Control (CQC) Reports.

The Contractor shall use the VA approved Daily Report Form to record basic QC data. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the Daily VA CQC Report. Daily CQC Reports shall be submitted as required by Section 01 45 04 CONTRACTOR QUALITY CONTROL. Reports shall be submitted electronically to the Government within 24 hours after the date covered by the report. Mode of submittal shall be coordinated with the Government representative. The Contractor shall also provide the Government a signed, printed copy of the daily CQC report.

##### 1.3.3.2 Deficiency Tracking.

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. The Contractor shall maintain a current log of its QC punch list items. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be provided to the Contractor. The Contractor shall regularly update the correction status of both QC and QA punch list items.

##### 1.3.3.3 Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings.

##### 1.3.3.4 Accident/Safety Tracking

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be provided to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall advise the Government of any accidents occurring on the jobsite. This brief report is not to be considered as a substitute for completion of mandatory reports, e.g., ENG Form 3394 and OSHA Form 300.

##### 1.3.3.5 Features of Work

The Contractor shall include a complete list of the features of work QCS. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

#### 1.3.3.6 QC Requirements

The Contractor shall develop and maintain a complete list of QC testing, transferred and installed property, and user training requirements. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government.

#### 1.3.4 Submittal Management

The Government will provide the initial submittal register in electronic format. Thereafter, the Contractor shall maintain a complete list of all submittals, including completion of all data columns on the submittal register provided. The transmittal number on the submittal register shall match the submission number on the VA Material Approval Submittal Form. Dates on which submittals are received and returned by the Government will be provided to the Contractor. The Contractor shall track and transmit all submittals using the VA Material Approval Submittal Form and use the submittal register provided. The Contractor shall provide an updated submittal register to the Government on a weekly basis.

#### 1.3.5 Schedule

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Contract Clause "Schedules for Construction Contracts". The updated schedule data shall be included with each pay request submitted by the Contractor.

#### 1.4 DATA SUBMISSION VIA CD-ROM

The Government-preferred method for Contractor's submission of updates, payment requests, correspondence and other data is electronically. For locations where this is not feasible, the Contracting Officer may permit use of CD-ROM for data transfer. If used, CD-ROMs will be submitted in accordance with the following:

##### 1.4.1 File Medium

The Contractor shall submit required data on CD-ROMs. They shall conform to industry standards used in the United States. All data shall be provided in English.

##### 1.4.2 CD-ROM Labels

The Contractor shall affix a permanent exterior label to each CD-ROM submitted. The label shall indicate in English, the QCS file name, full contract number, the VA Project Number, contract name, project location, data date, name and telephone number of person responsible for the data.

##### 1.4.3 File Names

The Government will provide the file names to be used by the Contractor with the QCS software.

#### 1.5 MONTHLY COORDINATION MEETING

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the

Contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions. The Contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

#### 1.6 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

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SECTION 01 45 04

CONTRACTOR QUALITY CONTROL

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.

ASTM INTERNATIONAL (ASTM)

ASTM D 3740 (2004a) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM E 329 (2008) Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the total project costs.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction". The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.



### 3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than 15 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 14 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

#### 3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified

deficiencies have been corrected.

- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

### 3.2.2 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

### 3.2.3 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

## 3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 14 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

## 3.4 QUALITY CONTROL ORGANIZATION

### 3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The

Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, show drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

#### 3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a construction person with a minimum of five years in related work. This CQC System Manager must be on the site at all times during construction, shall be employed by the prime Contractor, and must be assigned no other duties. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

#### 3.4.3 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

#### 3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01 33 00 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

#### 3.6 CONTROL

Contractor Quality Control 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. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

##### 3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be

maintained in the field and available for use by Government personnel until final acceptance of the work.

- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 24 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

### 3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.

- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.
- g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

### 3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued 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. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

### 3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

## 3.7 TESTS

### 3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

### 3.7.2 Testing Laboratories

#### 3.7.2.1 General

Laboratories utilized by the Contractor for testing soils, aggregates, rock, concrete, and asphalt shall be inspected and validated by the Corps. The Contractor shall procure the services of a Corps validated commercial laboratory or submit the Contractor's proposed laboratory for Corps approval and validation in accordance with section "Submittals". A list of Corps validated testing laboratories and the tests for which they are approved can be viewed at the Corps' Material Testing Center web site at: <http://www.wes.army.mil/SL/MTC/mtc.htm>.

#### 3.7.2.2 Validation and Capability Check

If the Contractor wishes to use a testing laboratory that is not currently validated, the proposed laboratory will be inspected by the USACE Materials Testing Center (MTC) at the Government's expense. MTC lead times to complete the inspection and validation process can range from 60-90 days or more depending on the situation. The Contractor shall be advised that project delays resulting from the inspection process shall not be allowed to delay the construction schedule. The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in [ASTM D 3740](#) and [ASTM E 329](#).

#### 3.7.2.3 Validation and Capability Recheck

If the selected laboratory fails the MTC capability check, the Contractor will be assessed a charge to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Charges will be based on the price schedule located at <http://www.wes.army.mil/SL/MTC/mtc.htm>. Such costs will be deducted from the contract amount due the Contractor.

#### 3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

#### 3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be

borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers, 696 Virginia Road, Concord, Massachusetts 01742-2751. Coordination for each specific test, exact delivery location, and dates will be made through the Area Office.

### 3.8 COMPLETION INSPECTION

#### 3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the Special Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

#### 3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

#### 3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

### 3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

### 3.10 SAMPLE FORMS

A sample blank "Daily Construction Quality Control Report is attached at



the end of this section. This form should be completed daily as required by Section 01 45 02 QUALITY CONTROL SYSTEM (QCS) of these specifications.

### 3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. 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 the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

-- End of Section --

<b>CONTRACTORS QUALITY CONTROL REPORT (QCR)</b> <b>DAILY LOG OF CONSTRUCTION - CIVIL</b>		REPORT NUMBER _____ Page 1 of 1																					
PROJECT _____		DATE _____																					
CONTRACTOR _____		CONTRACT NUMBER _____																					
WEATHER _____																							
<b>QC NARRATIVES</b> <b>WORK PERFORMED TODAY</b>																							
<b>PREP/INITIAL DATES</b> (Preparatory and initial dates held and advance notice)																							
<b>ACTIVITY START/FINISH</b>																							
<b>QC REQUIREMENTS</b>																							
<b>QA/QC PUNCH LIST</b> (Describe QC Punch List items issued, Report QC and QA Punch List items corrected)																							
<b>CONTRACTORS ON SITE</b> (Report first and/or last day contractors were on site) No contractors had their first or last day on site today																							
<b>LABOR HOURS</b> The following labor hours were Reported today: <table style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="text-align: left;">Employer</th> <th style="text-align: left;">Labor Classification</th> <th style="text-align: right;">Number of Employees</th> <th style="text-align: right;">Hours Worked</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td colspan="2">Total hours worked to date:</td> <td style="text-align: right;">Total</td> <td> </td> </tr> </tbody> </table>				Employer	Labor Classification	Number of Employees	Hours Worked													Total hours worked to date:		Total	
Employer	Labor Classification	Number of Employees	Hours Worked																				
Total hours worked to date:		Total																					
<b>EQUIPMENT HOURS</b> The following equipment hours were Reported today: <table style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="text-align: left;">Serial Number</th> <th style="text-align: left;">Description</th> <th style="text-align: right;">Standby Hours</th> <th style="text-align: right;">Operating Hours</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td colspan="2">Total operating hours to date:</td> <td style="text-align: right;">Total</td> <td> </td> </tr> </tbody> </table>				Serial Number	Description	Standby Hours	Operating Hours													Total operating hours to date:		Total	
Serial Number	Description	Standby Hours	Operating Hours																				
Total operating hours to date:		Total																					
<b>ACCIDENT REPORTING</b> (Describe accidents) No accidents reported today																							
<b>CONTRACTOR CERTIFICATION</b> On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this Reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.																							
QC REPRESENTATIVE'S SIGNATURE _____		DATE _____	SUPERINTENDENT'S INITIALS _____ DATE _____																				

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SECTION 01 50 00

TEMPORARY CONSTRUCTION FACILITIES

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.

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2008) Safety and Health Requirements Manual

1.2 GENERAL REQUIREMENTS

1.2.1 Employee Parking

Contractor employees shall park privately owned vehicles in an area designated by the Contracting Officer. This area will be within reasonable walking distance of the construction site. Contractor employee parking shall not interfere with existing and established parking requirements of the installation.

1.3 AVAILABILITY OF WATER AND ELECTRICITY

Water and electricity is available at the project site for the Contractor's use from existing points of supply. The Contractor shall make his own investigations as to the suitability of these supplies for use on this project. Water and electricity required in the prosecution of the work in excess of that available from existing points of supply shall be furnished by the Contractor at his own expense. The Contractor shall conserve Government furnished water and electricity.

1.3.1 Temporary Electrical Equipment and Connections

The Contractor, at his own expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and he shall remove them prior to final acceptance of the construction. All required temporary electrical equipment and lines shall be furnished, installed, connected, and maintained by the Contractor according to the EM 385-1-1, Section 11.D and shall be removed prior to final acceptance of the work. Materials and equipment need not be new, but must be in good repair and serviceable condition. Periodic inspections of systems and devices will be made by the Contractor at intervals not to exceed one week.

1.3.2 Sanitation

Adequate field-type sanitary conveniences of a type approved for the use of persons employed on the work shall be provided in a convenient location, properly secluded from public observation, and maintained by the Contractor

in such a manner as required or approved by the Contracting Officer. These conveniences shall be maintained at all times without nuisance. Upon completion of the work, the conveniences shall be removed by the Contractor from the premises, leaving the premises clean and free from nuisance. Government sanitary facilities will not be available to Contractor's personnel.

#### 1.3.3 Telephone

The Contractor shall make arrangements and pay all costs for telephone facilities desired.

#### 1.4 PROTECTION AND MAINTENANCE OF TRAFFIC

The Contractor shall maintain and protect traffic on all affected roads, both within the installation and on public roads, during the construction period, except as otherwise specifically directed by the Contracting Officer. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with installation and public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

##### 1.4.1 Barricades

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe 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 hazard during both day and night.

#### 1.5 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. The devices shall be made available for use by Government personnel.

#### 1.6 CONTRACTOR'S TEMPORARY FACILITIES

##### 1.6.1 Administrative Field Offices

The Contractor shall locate and maintain his administrative field office facilities within the limits of the installation as directed by the Contracting Officer.

##### 1.6.2 Storage Area

A storage area site within the installation shall be identified at the Preconstruction Conference. Trailers, materials, or equipment shall not be placed or stored outside the storage area unless such trailers, materials, or equipment are assigned a separate and distinct storage area by the Contracting Officer. Materials shall not be stockpiled outside the storage area in preparation for the next day's work. Mobile equipment, such as

tractors, wheeled lifting equipment, cranes, trucks, and like equipment, shall be parked within the storage area at the end of each work day. Fencing, if used, shall be kept in a state of good repair and proper alignment. The Contractor shall prevent the rutting of and tracking of mud from non-construction areas. Grass and vegetation along fences, buildings, under trailers, and in areas not accessible shall be mowed, edged, and trimmed neatly.

#### 1.6.3 Appearance of Trailers

Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the project site.

#### 1.6.4 Security Provisions

The Contractor shall be responsible for the security of its own equipment.

#### 1.7 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Stored material not in trailers shall be neatly stacked.

#### 1.8 RESTORATION OF STORAGE AREA

Remove temporary materials, equipment, services, and construction prior to completion of work. Clean and repair damage caused by installation or use of temporary facilities. Return site to pre-construction or better condition.

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SECTION 01 57 20

ENVIRONMENTAL PROTECTION

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.

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

40 CFR 68	Chemical Accident Prevention Provisions
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 279	Standards for the Management of Used Oil
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
49 CFR 171 - 178	Hazardous Materials Regulations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2008) Safety and Health Requirements Manual
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1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.



### 1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners, excess paints, excess solvents, and waste solvents.

### 1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

### 1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

### 1.5 PAYMENT

No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. All costs associated with this section shall be included in the contract price. The Contractor shall be responsible for payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

### 1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

#### SD-01 Preconstruction Submittals

##### Environmental Protection Plan; G, RO

The Contractor shall submit the Environmental Protection Plan.

### 1.7 ENVIRONMENTAL PROTECTION PLAN

Prior to commencing construction activities or delivery of materials to the site, the Contractor shall submit an Environmental Protection Plan for review and approval by the Contracting Officer. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Issues of concern shall be defined within the Environmental Protection Plan as outlined in this section. The Contractor shall address each topic at a level of detail commensurate with the

environmental issue and required construction task(s). Topics or issues which are not identified in this section, but which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. The Environmental Protection Plan shall be current and maintained onsite by the Contractor.

#### 1.7.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

#### 1.7.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

- a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.
- b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.
- c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.
- d. Description of the Contractor's environmental protection personnel training program.
- e. Drawings showing locations of proposed temporary material storage areas, structures, and sanitary facilities.
- f. Traffic control plans.
- g. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:
  1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer and Facility Environmental Office in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.

2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.
  3. Training requirements for Contractor's personnel and methods of accomplishing the training.
  4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.
  5. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.
  6. The methods and procedures to be used for expeditious contaminant cleanup.
- k. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal. The plan shall include schedules for disposal. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction.
- l. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.
- m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.
- n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with [EM 385-1-1](#), a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.
- o. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities.

#### 1.7.3 Appendix

Copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached, as an appendix, to the Environmental

Protection Plan.

#### 1.8 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

#### 1.9 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the contract drawings and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

#### 1.10 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

### PART 2 PRODUCTS (NOT USED)

### PART 3 EXECUTION

#### 3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

The Contractor shall be responsible for obtaining and complying with all environmental permits and commitments required by Federal, State, Regional, and local environmental laws and regulations.

#### 3.2 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the

contract drawings and specifications. The Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. The Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs.

#### 3.2.1 Landscape

The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

#### 3.2.2 Contractor Facilities and Work Areas

The Contractor's field offices and storage/staging areas shall be placed in areas as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved.

### 3.3 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation.

### 3.4 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

#### 3.4.1 Particulates

Dust particles, aerosols and gaseous by-products from construction activities and processing and preparation of materials shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance.

#### 3.4.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

#### 3.4.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. Minimize noise using every action possible. Perform noise-producing work in less sensitive hours of the day. Maintain noise-produced work at or below the decibel levels and within the time periods specified.

1. Perform construction activities involving repetitive, high-level impact noise only between 8:00 a.m. and 6:00 p.m unless otherwise permitted by local ordinance or the Contracting Officer. Repetitive impact noise on the property shall not exceed the following decibel (dB) limitations:

<u>Time Duration of Impact Noise</u>	<u>Sound Level in Decibels (dB)</u>
More than 12 minutes in any hour	70
Less than 30 seconds of any hour	85
Less than three minutes of any hour	80
Less than 12 minutes of any hour	75

2. Provide sound deadening devices on equipment and take noise abatement measures that are necessary to comply with the requirements of this contract, consisting of, but not limited to, the following:

a. Maintain maximum permissible construction equipment noise levels at 15 m (50 feet) (dBA):

EARTHMOVING

FRONT LOADERS	75
BACKHOES	75
DOZERS	75
TRACTORS	75
SCAPERS	80
GRADERS	75
TRUCKS	75
PAVERS, STATIONARY	80
PUMPS	75
GENERATORS	75
COMPRESSORS	75

MATERIALS HANDLING

CONCRETE MIXERS	75
CONCRETE PUMPS	75
CRANES	75
DERRICKS IMPACT	75
PILE DRIVERS	95
JACK HAMMERS	75
ROCK DRILLS	80
PNEUMATIC TOOLS	80
SAWS	75
VIBRATORS	75

b. Use shields or other physical barriers to restrict noise transmission.

c. Provide soundproof housings or enclosures for noise producing machinery.

d. Use efficient silencers on equipment air intakes.

e. Use efficient intake and exhaust mufflers on internal combustion engines that are maintained so equipment performs below noise levels specified.

f. Line hoppers and storage bins with sound deadening material.

g. Conduct truck loading, unloading, and hauling operations so that noise is kept to a minimum.

3. Measure sound level for noise exposure due to the construction at least once every five successive working days while work is being performed above 55 dB(A) noise level. Measure noise exposure at the property line or 15 m (50 feet) from the noise source, whichever is greater. Measure the sound levels on the A weighing network of a General Purpose sound level meter at slow response. To minimize the effect of reflective sound waves at buildings, take measurements at 900 to 1800 mm (three to six feet) in front of any building face. Submit the recorded information to the Resident Engineer noting any problems and the alternatives for mitigating actions.

3.4.4 Burning

Burning is prohibited on Government premises.

### 3.5 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the contract drawings.

#### 3.5.1 Solid Wastes

Solid wastes shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill shall be the minimum acceptable off-site solid waste disposal option. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate.

#### 3.5.2 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 6 inches of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations.

#### 3.5.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262 and shall manage and store hazardous waste in accordance with the Installation hazardous waste management plan. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The Contractor shall be responsible for storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations. The Contractor shall transport Contractor generated hazardous waste off Government property within 30 days in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer and the Facility Environmental Office. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility.

#### 3.5.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations. There shall be no storage of fuel on the project site. Fuel must be brought to the project site each day that work is performed.

#### 3.6 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project.

#### 3.7 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

If, during excavation or other construction activities, any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

#### 3.8 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

#### 3.9 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

#### 3.10 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual



pollution standards; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of endangered species and their habitat that are known to be in the area.

### 3.11 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work.

-- End of Section --

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SECTION 01 58 16

TEMPORARY INTERIOR SIGNAGE

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PART 2 PRODUCTS

2.1 TEMPORARY SIGNS

PART 3 EXECUTION

3.1 INSTALLATION

3.2 LOCATION

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SECTION 01 58 16

TEMPORARY INTERIOR SIGNAGE

PART 1 GENERAL

1.1 SUMMARY

This section specifies temporary interior signs.

PART 2 PRODUCTS

2.1 TEMPORARY SIGNS

- A. Fabricate from 110 pound (50 Kg) mat finish white paper.
- B. Cut to 4-inch (100 mm) wide by 12-inch (300 mm) long size tag.
- C. Punch 1/8-inch (3 mm) diameter hole centered on 4-inch (100 mm) dimension of tag. Edge of hole spaced approximately 1/2-inch (13 mm) from one end on tag.
- D. Reinforce hole on both sides with gummed cloth washer or other suitable material capable of preventing tie pulling through paper edge.
- E. Ties: Steel wire 0.0120-inch (0.3 mm) thick, attach to tag with twist tie, leaving 6-inch (150 mm) long free ends.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install temporary signs attached to room door frame or room door knob, lever, or pull for doors on corridor openings.
- B. Mark on signs with felt tip marker having approximately 1/8-inch (3 mm) wide stroke for clearly legible numbers or letters.
- C. Identify room with numbers as designated on floor plans.

3.2 LOCATION

- A. Install on doors that have room, corridor, and space numbers shown.
- B. Doors that do not require signs are as follows:
  - 1. Corridor barrier doors (cross-corridor) in corridor with same number.
  - 2. Folding doors or partitions.
  - 3. Toilet or bathroom doors within and between rooms.
  - 4. Communicating doors in partitions between rooms with corridor entrance doors.

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5. Closet doors within rooms.

C. Replace missing, damaged, or illegible signs.

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SECTION 01 62 35

RECYCLED/RECOVERED MATERIALS

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PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

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SECTION 01 62 35

RECYCLED/RECOVERED MATERIALS

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.

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

40 CFR 247

Comprehensive Procurement Guideline for  
Products Containing Recovered Materials

1.2 OBJECTIVES

Government procurement policy is to acquire, in a cost effective manner, items containing the highest percentage of recycled and recovered materials practicable consistent with maintaining a satisfactory level of competition without adversely affecting performance requirements or exposing suppliers' employees to undue hazards from the recovered materials. The Environmental Protection Agency (EPA) has designated certain items which must contain a specified percent range of recovered or recycled materials. EPA designated products specified in this contract comply with the stated policy and with the EPA guidelines. The Contractor shall make all reasonable efforts to use recycled and recovered materials in providing the EPA designated products and in otherwise utilizing recycled and recovered materials in the execution of the work.

1.3 EPA DESIGNATED ITEMS INCORPORATED IN THE WORK

Materials have been designated by EPA as being products which are or can be made with recovered or recycled materials. These items, when incorporated into the work under this contract, shall contain at least the specified percentage of recycled or recovered materials unless adequate justification (non-availability) for non-use is provided. When a designated item is specified as an option to a non-designated item, the designated item requirements apply only if the designated item is used in the work.

1.4 EPA PROPOSED ITEMS INCORPORATED IN THE WORK

Products other than those designated by EPA are still being researched and are being considered for future Comprehensive Procurement Guideline (CPG) designation. It is recommended that these items, when incorporated in the work under this contract, contain the highest practicable percentage of recycled or recovered materials, provided specified requirements are also met.

1.5 EPA LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK

There are many products listed in 40 CFR 247 which have been designated or

proposed by EPA to include recycled or recovered materials that may be used by the Contractor in performing the work but will not be incorporated into the work. These products include office products, temporary traffic control products, and pallets. It is recommended that these non-construction products, when used in the conduct of the work, contain the highest practicable percentage of recycled or recovered materials and that these products be recycled when no longer needed.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

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SECTION 01 74 19

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT

PART 1 GENERAL

1.1 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.

1.2 MANAGEMENT

The Contractor shall take a pro-active, responsible role in the management of construction and demolition waste and require all subcontractors, vendors, and suppliers to participate in the effort. Construction and demolition waste includes products of demolition or removal, excess or unusable construction materials, packaging materials for construction products, and other materials generated during the construction process but not incorporated into the work. In the management of waste consideration shall be given to the availability of viable markets, the condition of the material, the ability to provide the material in suitable condition and in a quantity acceptable to available markets, and time constraints imposed by internal project completion mandates. The Contractor shall be responsible for implementation of any special programs involving rebates or similar incentives related to recycling of waste. Revenues or other savings obtained for salvage, or recycling shall accrue to the Contractor. Firms and facilities used for recycling, reuse, and disposal shall be appropriately permitted for the intended use to the extent required by federal, state, and local regulations.

1.3 RECORDS

Records shall be maintained to document the quantity of waste generated; the quantity of waste diverted through sale, reuse, or recycling; and the quantity of waste disposed by landfill or incineration. The records shall be made available to the Contracting Officer during construction, and a copy of the records shall be delivered to the Contracting Officer upon completion of the construction.

1.4 COLLECTION

The necessary containers, bins and storage areas to facilitate effective waste management shall be provided and shall be clearly and appropriately identified. Recyclable materials shall be handled to prevent contamination of materials from incompatible products and materials and separated by one of the following methods:

1.4.1 Source Separated Method

Waste products and materials that are recyclable shall be separated from trash and sorted into appropriately marked separate containers and then

transported to the respective recycling facility for further processing.

#### 1.4.2 Co-Mingled Method

Waste products and recyclable materials shall be placed into a single container and then transported to a recycling facility where the recyclable materials are sorted and processed.

#### 1.4.3 Other Methods

Other methods proposed by the Contractor may be used when approved by the Contracting Officer.

### 1.5 DISPOSAL

Except as otherwise specified in other sections of the specifications, disposal shall be in accordance with the following:

#### 1.5.1 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 other sections to be salvaged and reinstalled, shall not be used in this project.

#### 1.5.2 Recycle

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

#### 1.5.3 Waste

Materials with no practical use or economic benefit shall be disposed at a landfill or incinerator.

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PART 3 EXECUTION (NOT USED)

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SECTION 01 78 00

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-11 Closeout Submittals

As-Built Drawings; G, AE

Drawings showing final as-built conditions of the project. The final CADD as-built drawings shall consist of one set of electronic CADD drawing files in the specified format, one set of mylar drawings, 2 sets of blue-line prints of the mylars, and one set of the approved working as-built drawings.

Final Clean-Up.

Two copies of the listing of completed final clean-up items.

1.2 PROJECT RECORD DOCUMENTS

1.2.1 As-Built Drawings

This paragraph covers as-built drawings complete, as a requirement of the contract. The terms "drawings", "contract drawings", "drawing files", "working as-built drawings" and "final as-built drawings" refer to contract drawings which are revised to be used for final as-built drawings.

1.2.1.1 Government Furnished Materials

One set of electronic CADD files in the specified software and format revised to reflect all bid amendments will be provided by the Government at the preconstruction conference.

1.2.1.2 Working As-Built and Final As-Built Drawings

The Contractor shall revise 2 sets of paper drawings by red-line process to show the as-built conditions during the prosecution of the project. These working as-built marked drawings shall be kept current on a weekly basis and at least one set shall be available on the jobsite at all times. 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. Final as-built drawings shall be prepared after the completion of each definable feature of work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). The working as-built marked prints and final as-built

drawings will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the working and final as-built drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the as-built drawings. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of updated drawings. The working and final as-built drawings shall show, but shall not be limited to, the following information, as appropriate:

- a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Valves, splice boxes and similar appurtenances shall be located by dimensioning along the utility run from a reference point. The average depth below the surface of each run shall also be recorded.
- b. The location and dimensions of any changes within the building structure.
- c. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.
- d. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.
- e. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.
- f. Changes or modifications which result from the final inspection.
- g. Where contract drawings or specifications present options, only the option selected for construction shall be shown on the final as-built prints.
- h. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, the Contractor shall furnish a contour map of the final borrow pit/spoil area elevations.
- i. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.
- j. Modifications (change order price shall include the Contractor's cost to change working and final as-built drawings to reflect modifications) and compliance with the following procedures.

- (1) Directions in the modification for posting descriptive changes shall be followed.

- (2) A Modification Circle shall be placed at the location of each

deletion.

(3) For new details or sections which are added to a drawing, a Modification Circle shall be placed by the detail or section title.

(4) For minor changes, a Modification Circle shall be placed by the area changed on the drawing (each location).

(5) For major changes to a drawing, a Modification Circle shall be placed by the title of the affected plan, section, or detail at each location.

(6) For changes to schedules or drawings, a Modification Circle shall be placed either by the schedule heading or by the change in the schedule.

(7) The Modification Circle size shall be 1/2 inch diameter unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

#### 1.2.1.3 Drawing Preparation

The as-built drawings shall be modified as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, and adding such additional drawings as may be necessary. These working as-built marked prints shall be neat, legible and accurate. These drawings are part of the permanent records of this project and shall be returned to the Contracting Officer after approval by the Government. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

#### 1.2.1.4 Computer Aided Design and Drafting (CADD) Drawings

Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare additional new drawings. Additions and corrections to the contract drawings shall be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols shall be the same as the original line colors, line weights, lettering, layering conventions, and symbols. If additional drawings are required, they shall be prepared using the specified electronic file format applying the same graphic standards specified for original drawings. The title block and drawing border to be used for any new final as-built drawings shall be identical to that used on the contract drawings. Additions and corrections to the contract drawings shall be accomplished using CADD files in Autocad 2004, or more recent, format. The Contractor will be furnished CADD drawing files in electronic digital Autocad 2004 format. The Contractor shall be responsible for providing all program files and hardware necessary to prepare final as-built drawings in Autocad 2004 format. The Contracting Officer will review final as-built drawings for accuracy and the Contractor shall make required corrections, changes, additions, and deletions.

a. CADD colors shall be the "base" colors of red, green, and blue. Color code for changes shall be as follows:

(1) Deletions (red) - Deleted graphic items (lines) shall be colored red with red lettering in notes and leaders.

(2) Additions (Green) - Added items shall be drawn in green with green lettering in notes and leaders.

(3) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes shall be in blue.

b. The Contract Drawing files shall be renamed in a manner related to the contract number (i.e., 98-C-10.DGN) as instructed in the Pre-Construction conference. Marked-up changes shall be made only to those renamed files. All changes shall be made on the layer/level as the original item. There shall be no deletions of existing lines; existing lines shall be over struck in red. Additions shall be in green with line weights the same as the drawing. Special notes shall be on a unique level.

c. When final revisions have been completed, the cover sheet drawing shall show the wording "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in letters at least 3/16 inch high. All other contract drawings shall be marked either "AS-Built" drawing denoting no revisions on the sheet or "Revised As-Built" denoting one or more revisions. Original contract drawings shall be dated in the revision block.

d. After receipt by the Contractor of the approved working as-built prints and approval of completed sections of final as-builts the Contractor shall, within 20 workdays, make the final as-built submittal. This submittal shall consist of 2 sets of electronic files on 3-1/2 inch high density floppy disks (the use of other media must be approved by the Contracting Officer), one set of mylars, and two sets of prints of these drawings and the return of the approved marked working as-built prints. They shall be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CADD system. Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final as-built drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor.

#### 1.2.1.5 Payment

No separate payment will be made for as-built drawings required under this contract, and all costs accrued in connection with such drawings shall be considered a subsidiary obligation of the Contractor.

#### 1.2.2 Final Approved Shop Drawings

The Contractor shall furnish final approved project shop drawings 30 days after transfer of the completed facility.

#### 1.3 FINAL CLEAN-UP

The premises shall be left broom clean. Stains, foreign substances, and temporary labels shall be removed from surfaces. Carpet and soft surfaces

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shall be vacuumed. Equipment and fixtures shall be cleaned to a sanitary condition. Filters of operating equipment shall be cleaned or replaced. Debris shall be removed from roofs, drainage systems, gutters, and downspouts. Paved areas shall be swept and landscaped areas shall be raked clean. The site shall have waste, surplus materials, and rubbish removed. The project area shall have temporary structures, barricades, project signs, and construction facilities removed. A list of completed clean-up items shall be submitted on the day of final inspection.

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PART 3 EXECUTION (NOT USED)

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SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.1 SUBMISSION OF OPERATION AND MAINTENANCE DATA

Submit Operation and Maintenance (O&M) Data specifically applicable to this contract and a complete and concise depiction of the provided equipment, product, or system. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. Include an index preceding each submittal. Submit in accordance with this section and Section 01 33 00 SUBMITTAL PROCEDURES.

1.1.1 Package Quality

Documents must be fully legible. Poor quality copies and material with hole punches obliterating the text or drawings will not be accepted.

1.1.2 Package Content

Data package content shall be as shown in the paragraph titled "Schedule of Operation and Maintenance Data Packages." Comply with the data package requirements specified in the individual technical sections, including the content of the packages and addressing each product, component, and system designated for data package submission.

1.1.3 Changes to Submittals

Manufacturer-originated changes or revisions to submitted data shall be furnished by the Contractor if a component of an item is so affected subsequent to acceptance of the O&M Data. Changes, additions, or revisions required by the Contracting Officer for final acceptance of submitted data, shall be submitted by the Contractor within 30 calendar days of the notification of this change requirement.

1.2 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES

1.2.1 Operating Instructions

Include specific instructions, procedures, and illustrations for the following phases of operation:

1.2.1.1 Safety Precautions

List personnel hazards and equipment or product safety precautions for all operating conditions.

1.2.1.2 Operator Prestart

Include procedures required to set up and prepare each system for use.

1.2.1.3 Startup, Shutdown, and Post-Shutdown Procedures

Provide narrative description for Startup, Shutdown and Post-shutdown

operating procedures including the control sequence for each procedure.

#### 1.2.1.4 Normal Operations

Provide narrative description of Normal Operating Procedures. Include Control Diagrams with data to explain operation and control of systems and specific equipment.

#### 1.2.1.5 Emergency Operations

Include Emergency Procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Include Emergency Shutdown Instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance and procedures for emergency operation of all utility systems including required valve positions, valve locations and zones or portions of systems controlled.

#### 1.2.1.6 Operator Service Requirements

Include instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gage readings.

#### 1.2.1.7 Environmental Conditions

Include a list of Environmental Conditions (temperature, humidity, and other relevant data) that are best suited for the operation of each product, component or system. Describe conditions under which the item equipment should not be allowed to run.

#### 1.2.2 Preventive Maintenance

Include the following information for preventive and scheduled maintenance to minimize corrective maintenance and repair.

##### 1.2.2.1 Lubrication Data

Include preventative maintenance lubrication data, in addition to instructions for lubrication provided under paragraph titled "Operator Service Requirements":

- a. A table showing recommended lubricants for specific temperature ranges and applications.
- b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities.
- c. A Lubrication Schedule showing service interval frequency.

##### 1.2.2.2 Preventive Maintenance Plan and Schedule

Include manufacturer's schedule for routine preventive maintenance, inspections, tests and adjustments required to ensure proper and economical operation and to minimize corrective maintenance. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation.

### 1.2.3 Corrective Maintenance (Repair)

Include manufacturer's recommended procedures and instructions for correcting problems and making repairs.

#### 1.2.3.1 Troubleshooting Guides and Diagnostic Techniques

Include step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

#### 1.2.3.2 Wiring Diagrams and Control Diagrams

Wiring diagrams and control diagrams shall be point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation configuration and numbering.

#### 1.2.3.3 Maintenance and Repair Procedures

Include instructions and a list of tools required to repair or restore the product or equipment to proper condition or operating standards.

#### 1.2.3.4 Removal and Replacement Instructions

Include step-by-step procedures and a list required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Instructions shall include a combination of text and illustrations.

#### 1.2.3.5 Spare Parts and Supply Lists

Include lists of spare parts and supplies required for maintenance and repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead-time to obtain.

### 1.2.4 Corrective Maintenance Work-Hours

Include manufacturer's projection of corrective maintenance work-hours including requirements by type of craft. Corrective maintenance that requires completion or participation of the equipment manufacturer shall be identified and tabulated separately.

### 1.2.5 Appendices

Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:

#### 1.2.6 Parts Identification

Provide identification and coverage for all parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing shall show the index, reference, or key number that will cross-reference the illustrated part to the listed part. Parts shown in the listings shall be grouped by components, assemblies, and subassemblies in accordance with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master parts catalog

##### 1.2.6.1 Warranty Information

List and explain the various warranties and include the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Include warranty information for primary components such as the compressor of air conditioning system.

##### 1.2.6.2 Personnel Training Requirements

Provide information available from the manufacturers that is needed for use in training designated personnel to properly operate and maintain the equipment and systems.

##### 1.2.6.3 Testing Equipment and Special Tool Information

Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components.

##### 1.2.6.4 Contractor Information

Provide a list that includes the name, address, and telephone number of the General Contractor and each Subcontractor who installed the product or equipment, or system. For each item, also provide the name address and telephone number of the manufacturer's representative and service organization most convenient to the project site. Provide the name, address, and telephone number of the product, equipment, and system manufacturers.

#### 1.3 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Furnish the O&M data packages specified in individual technical sections. The required information for each O&M data package is as follows:

##### 1.3.1 Data Package 1

- a. Safety precautions
- b. Maintenance and repair procedures
- c. Warranty information

- d. Contractor information
- e. Spare parts and supply list

1.3.2 Data Package 2

- a. Safety precautions
- b. Normal operations
- c. Environmental conditions
- d. Lubrication data
- e. Preventive maintenance plan and schedule
- f. Maintenance and repair procedures
- g. Removal and replacement instructions
- h. Spare parts and supply list
- i. Parts identification
- j. Warranty information
- k. Contractor information

1.3.3 Data Package 3

- a. Safety precautions
- b. Normal operations
- c. Emergency operations
- d. Environmental conditions
- e. Lubrication data
- f. Preventive maintenance plan and schedule
- g. Troubleshooting guides and diagnostic techniques
- h. Wiring diagrams and control diagrams
- i. Maintenance and repair procedures
- j. Removal and replacement instructions
- k. Spare parts and supply list
- l. Parts identification
- m. Warranty information
- n. Testing equipment and special tool information

- o. Contractor information

#### 1.3.4 Data Package 4

- a. Safety precautions
- b. Operator prestart
- c. Startup, shutdown, and post-shutdown procedures
- d. Normal operations
- e. Emergency operations
- f. Operator service requirements
- g. Environmental conditions
- h. Lubrication data
- i. Preventive maintenance plan and schedule
- j. Cleaning recommendations
- k. Troubleshooting guides and diagnostic techniques
- l. Wiring diagrams and control diagrams
- m. Maintenance and repair procedures
- n. Removal and replacement instructions
- o. Spare parts and supply list
- p. Corrective maintenance man-hours
- q. Product submittal data
- r. O&M submittal data
- s. Parts identification
- t. Warranty information
- u. Personnel training requirements
- v. Testing equipment and special tool information
- w. Testing and performance data
- x. Contractor information

#### PART 2 PRODUCTS

Not used.

#### PART 3 EXECUTION

Not used.

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3.5 DEMOLITION SCHEDULE

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DEMOLITION

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 SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)

ASSE/SAFE A10.6 (2006) Safety Requirements for Demolition Operations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2008) Safety and Health Requirements Manual

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

40 CFR 61 National Emission Standards for Hazardous Air Pollutants

1.2 GENERAL REQUIREMENTS

Do not begin demolition or deconstruction until Notice to Proceed in writing is received from the Contracting Officer. Remove rubbish and debris from the project site; do not allow accumulations inside or outside the buildings. The work includes demolition, salvage of identified items and materials, and removal of resulting rubbish and debris. Remove rubbish and debris from Government property daily, unless otherwise directed. Store materials that cannot be removed daily in areas specified by the Contracting Officer. In the interest of occupational safety and health, perform the work in accordance with USACE EM 385-1-1, Section 23, Demolition, and other applicable Sections.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Demolition Plan; G, RO

Proposed salvage, demolition, and removal procedures for approval before work is started.

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ICRA; G, RO

Infection Control Risk Assessment (ICRA).

ILSM; G, RO

Interim Life Safety Management (ILSM)

Notifications; G, RO

Existing Conditions; G, RO

Existing conditions survey.

Waste Management Plan; G, RO

SD-11 Closeout Submittals

Receipts

Receipts or bills of lading, as specified.

#### 1.4 REGULATORY AND SAFETY REQUIREMENTS

Comply with federal, state, and local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses," conform to the safety requirements contained in [ASSE/SAFE A10.6](#).

##### 1.4.1 Notifications

##### 1.4.1.1 General Requirements

Furnish timely notification of demolition projects to Federal, State, regional, and local authorities in accordance with [40 CFR 61](#), Subpart M. Notify the Regional Office of the United States Environmental Protection Agency (USEPA) and the Contracting Officer in writing 10 working days prior to the commencement of work in accordance with [40 CFR 61](#), Subpart M.

##### 1.4.2 Receipts

Submit a shipping receipt or bill of lading for all containers of ozone depleting substance (ODS) shipped to the Defense Depot, Richmond, Virginia.

#### 1.5 DUST AND DEBRIS CONTROL

Prevent the spread of dust and debris to occupied portions of the building and avoid the creation of a nuisance or hazard in the surrounding area. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution. Vacuum and dust the work area daily. Sweep pavements as often as necessary to control the spread of debris that may result in foreign object damage potential.

#### 1.6 PROTECTION

##### 1.6.1 Traffic Control Signs

Where pedestrian and driver safety is endangered in the area of removal work, use traffic barricades with flashing lights. Notify the Contracting Officer 48 hours prior to beginning such work.

#### 1.6.2 Existing Conditions Documentation

Before beginning any demolition or deconstruction work, survey the site and examine the drawings and specifications to determine the extent of the work. Record existing conditions in the presence of the Contracting Officer showing the condition of structures and other facilities adjacent to areas of alteration or removal. Photographs sized 3 x 5 inches will be acceptable as a record of existing conditions. Include in the record the location and extent of existing cracks and other damage and description of surface conditions that exist prior to before starting work. It is the Contractor's responsibility to verify and document all required outages which will be required during the course of work, and to note these outages on the record document.

#### 1.6.3 Items to Remain in Place

Take necessary precautions to avoid damage to existing items to remain in place, to be reused, or to remain the property of the Government. Repair or replace damaged items as approved by the Contracting Officer. Coordinate the work of this section with all other work indicated. Construct and maintain shoring, bracing, and supports as required. Ensure that structural elements are not overloaded. Increase structural supports or add new supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract. Do not overload structural elements and pavements to remain. Provide new supports and reinforcement for existing construction weakened by demolition, deconstruction, or removal work. Repairs, reinforcement, or structural replacement require approval by the Contracting Officer prior to performing such work.

#### 1.6.4 Existing Construction Limits and Protection

Do not disturb existing construction beyond the extent indicated or necessary for installation of new construction. Provide temporary shoring and bracing for support of building components to prevent settlement or other movement. Provide protective measures to control accumulation and migration of dust and dirt in all work areas. Remove snow, dust, dirt, and debris from work areas daily.

#### 1.6.5 Weather Protection

For portions of the building to remain, protect building interior and materials and equipment from the weather at all times.

#### 1.6.6 Trees

Protect trees within the project site which might be damaged during demolition or deconstruction, and which are indicated to be left in place, by a 6 foot high fence. Erect and secure fence a minimum of 5 feet from the trunk of individual trees or follow the outer perimeter of branches or clumps of trees. Replace any tree designated to remain that is damaged during the work under this contract with like-kind or as approved by the Contracting Officer.

#### 1.6.7 Utility Service

Maintain existing utilities indicated to stay in service and protect against damage during demolition and deconstruction operations. Prior to

start of work, the Government will disconnect and seal utilities serving each area of alteration or removal upon written request from the Contractor. The contractor is fully responsible for making such requests with adequate advance notice; any damages caused by not adequately disconnecting and/or sealing any utilities is the responsibility of the Contractor.

#### 1.6.8 Facilities

Protect electrical and mechanical services and utilities. Where removal of existing utilities is specified or indicated, provide approved barricades, temporary covering of exposed areas, and temporary services or connections for electrical and mechanical utilities.

#### 1.6.9 Protection of Personnel

Before, during and after the demolition work the Contractor shall continuously evaluate the condition of the area being demolished and take immediate action to protect all personnel working in and around the project site.

#### 1.7 BURNING

The use of burning at the project site for the disposal of refuse and debris will not be permitted.

#### 1.8 RELOCATIONS

Perform the removal and reinstallation of relocated items as indicated with workmen skilled in the trades involved. Items to be relocated which are damaged by the Contractor shall be repaired or replaced with new undamaged items as approved by the Contracting Officer.

#### 1.9 REQUIRED DATA

Prepare a [Demolition Plan](#). Include in the plan procedures for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, a disconnection schedule of utility services, and a detailed description of methods and equipment to be used for each operation and of the sequence of operations. Also include in Plan [ICRA](#) and [ILSM](#). Coordinate with [Waste Management Plan](#). Provide procedures for safe conduct of the work in accordance with [EM 385-1-1](#). Plan shall be approved by Contracting Officer prior to work beginning.

#### 1.10 ENVIRONMENTAL PROTECTION

Comply with the Environmental Protection Agency requirements specified.

#### 1.11 AVAILABILITY OF WORK AREAS

The medical center must remain fully operational 24/7. Areas in which the work is to be accomplished will be available only in specific restricted areas at a given time. Several areas may be worked on at the same time which may not be contiguous. The contractor shall adjust its schedule and workforce to accommodate the needs and mission of the medical center. In addition, the demolition shall be scheduled to occur just before the new construction is ready to begin to minimize down-time for the medical center. No demolition shall occur that would leave areas unusable over weekends or holidays. Coordination of demolition and new work shall be

approved by the Resident Engineer in advance.

## PART 2 PRODUCTS

NOT USED

## PART 3 EXECUTION

### 3.1 EXISTING FACILITIES TO BE REMOVED

#### 3.1.1 General

Inspect and evaluate existing structures on site for reuse. Existing construction scheduled to be removed for reuse shall be disassembled. Dismantled and removed materials are to be separated, set aside, and prepared as specified, and stored or delivered to a collection point for reuse, remanufacture, recycling, or other disposal, as specified. Materials shall be designated for reuse on site whenever possible.

#### 3.1.2 Protection

Provide temporary weathertight solid plywood or OSB enclosures in addition to plastic sheeting dust protection over window opening after removal of window if new window is not to be installed the same day.

#### 3.1.3 Utilities and Related Equipment

Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by the Contracting Officer. Do not interrupt existing utilities serving facilities occupied and used by the Government except when approved in writing and then only after temporary utility services have been approved and provided. Do not begin demolition or deconstruction work until all utility disconnections have been made. Shut off and cap utilities for future use, as indicated.

#### 3.1.4 Carpentry

Salvage windows, frames, and hardware for recycling to the extent practicable. Security screens shall be salvaged for reuse; remove, store, and re-install as directed by Resident Engineer.

#### 3.1.5 Acoustic Ceiling Tile

Remove, store and re-install acoustic ceiling tiles and grid where it is necessary to remove ceilings to complete demolition. Ceiling grids and tiles damaged in the process of demolition, disassembly, re-installation, and/or storage shall be replaced in-kind at the Contractor's expense.

#### 3.1.6 Patching

Where removals leave holes and damaged surfaces exposed in the finished work, patch and repair these holes and damaged surfaces to match adjacent finished surfaces, using on-site materials when available. Where new work is to be applied to existing surfaces, perform removals and patching in a manner to produce surfaces suitable for receiving new work. Finished surfaces of patched area shall be flush with the adjacent existing surface and shall match the existing adjacent surface as closely as possible as to texture and finish. Patching shall be as specified and indicated, and shall include all finishes, specifically:

## Replace Windows, VA Medical Center, Providence, RI

- a. Concrete and Masonry: Completely fill holes and depressions, left as a result of demolition activity in existing masonry walls with an approved masonry patching material, applied in accordance with the manufacturer's printed instructions.
- b. Plaster, Gypsum Wallboard, Wood: Completely repair any damage left as a result of demolition activity in existing walls with like material or an approved patching material, applied in accordance with the manufacturer's printed instructions.

### 3.1.7 Air Conditioning Equipment

Remove window air conditioning equipment containing refrigerants without releasing chlorofluorocarbon refrigerants to the atmosphere in accordance with the Clean Air Act Amendment of 1990. Store units in location designated by Resident Engineer.

### 3.1.8 Fixtures, Motors, and Machines

Remove and salvage fixtures, motors, ductwork, and machines associated with plumbing, heating, air conditioning, refrigeration, and other mechanical system installations. Salvage, box and store auxiliary units and accessories with the main motor and machines. Tag salvaged items for identification, storage, and protection from damage. Items shall be reinstalled after window replacement by General Contractor.

## 3.2 DISPOSITION OF MATERIAL

### 3.2.1 Title to Materials

Except for salvaged items specified in related Sections, and for materials or equipment scheduled for salvage, all materials and equipment removed and not reused or salvaged, shall become the property of the Contractor and shall be removed from Government property. Title to materials resulting from demolition and deconstruction, and materials and equipment to be removed, is vested in the Contractor upon approval by the Contracting Officer of the Contractor's demolition, deconstruction, and removal procedures, and authorization by the Contracting Officer to begin demolition and deconstruction. The Government will not be responsible for the condition or loss of, or damage to, such property after contract award. Showing for sale or selling materials and equipment on site is prohibited.

### 3.2.2 Salvaged Materials and Equipment

Remove materials and equipment that are listed and specified to be removed by the Contractor and that are to remain the property of the Government, and deliver to a storage site as directed.

- b. Store all materials salvaged for the Contractor as approved by the Contracting Officer and remove from Government property before completion of the contract. Material salvaged for the Contractor shall not be sold on the site.
- c. Remove salvaged items to remain the property of the Government in a manner to prevent damage, and packed or crated to protect the items from damage while in storage or during shipment. Items damaged during removal or storage must be repaired or replaced to match existing



items. Properly identify the contents of containers. Deliver the following items reserved as property of the Government to the areas designated: 50% of window treatments. The 50% salvaged shall be those units determined to be in the best condition as judged by the Resident Engineer. The remaining 50% shall be disposed of.

### 3.3 DISPOSAL OF REMOVED MATERIALS

#### 3.3.1 Regulation of Removed Materials

Dispose of debris, rubbish, scrap, and other non-salvageable materials resulting from removal operations in accordance with with all applicable federal, state and local regulations off the medical center property. Storage of removed materials on the project site is prohibited.

### 3.4 REUSE OF SALVAGED ITEMS

Salvaged materials and equipment shall not be used in new work unless specifically called out on the drawings.

### 3.5 DEMOLITION SCHEDULE

1. Demolish and completely remove all windows shown and scheduled to be replaced down to the structural substrate of the opening. Work must be scheduled and progress in a methodical fashion such that no window shall be removed that cannot be closed-up in the same day.
2. Remove all water damaged interior finishes adjacent to the windows: head, jamb, and sill or stool and leave in condition to accept new work.
3. Chapel Windows: Do Not demolish or remove until all stained art glass has first been removed by specialty subcontractor under SECTION 08 82 00 DECORATIVE GLAZING. After removal of art glass, demolish remainder of windows.
4. Remove all window treatments and dispose of 50% and salvage 50% as described under DISPOSITION OF MATERIAL above.
5. Security Screens: Existing security screens shall be salvaged for reuse.

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TRADITIONAL ASBESTOS ABATEMENT

PART 1 GENERAL

1.1 SUMMARY OF THE WORK

1.1.1 Contract Documents And Related Requirements

Drawings, general provisions of the contract, including general and supplementary conditions and other Division 01 specifications, shall apply to the work of this section. The contract documents show the work to be done under the contract and related requirements and conditions impacting the project. Related requirements and conditions include applicable codes and regulations, notices and permits, existing site conditions and restrictions on use of the site, requirements for partial owner occupancy during the work, coordination with other work and the phasing of the work. In the event the Asbestos Abatement subcontractor discovers a conflict in the contract documents and/or requirements or codes, the conflict must be brought to the immediate attention of the Contracting Officer for resolution. Whenever there is a conflict or overlap in the requirements, the most stringent shall apply. Any actions taken by the subcontractor without obtaining guidance from the Contracting Officer shall become the sole risk and responsibility of the Asbestos Abatement subcontractor. All costs incurred due to such action are also the responsibility of the Asbestos Abatement subcontractor.

1.1.2 Extent Of Work

A description of the estimated quantities of asbestos containing materials to be abated is contained in the document "Limited Asbestos Containing Materials & Lead Containing Paint Survey Report" by Axiom Partners, Inc. incorporated herein by reference and attached as an appendix. These quantities are for informational purposes only and are based on the best information available at the time of the specification preparation. The Asbestos Abatement subcontractor shall satisfy himself as the actual quantities to be abated. Nothing in this section may be interpreted as limiting the extent of work otherwise required by this contract and related documents.

1.1.3 Related Work

Section 02 41 00, DEMOLITION. Division 09, FINISHES.

1.1.4 Tasks

The work tasks are summarized briefly as follows:

A. Pre-abatement activities including pre-abatement meeting(s), inspection(s), notifications, permits, submittal approvals, regulated area preparations, emergency procedures arrangements, and standard operating procedures for asbestos abatement work.

B. Abatement activities including removal, encapsulation, enclosure, clean-up and disposal of Asbestos Containing Material (ACM) waste, record

keeping, security, monitoring, and inspections.

C. Cleaning and decontamination activities including final visual inspection, air monitoring and certification of decontamination.

#### 1.1.5 Contractors Use Of Premises

A. The Contractor and Contractor's personnel shall cooperate fully with the VA Resident Engineer to facilitate efficient use of buildings and areas within buildings. Asbestos removal shall precede window removal at the same rate as window removal and installation. The Contractor shall perform the work in accordance with the VA specifications, drawings, phasing plan and in compliance with any/all applicable Federal, State and Local regulations and requirements.

B. The Contractor shall use the existing facilities in the building strictly within the limits indicated in contract documents as well as the approved pre-abatement Work Plan. Show the limits of regulated areas; the placement of decontamination facilities; the temporary location of bagged waste ACM; the path of transport to outside the building; and the temporary waste storage area for each building/regulated area on drawings as part of the Work Plan. Any variation from the arrangements shown on drawings shall be secured in writing from the VA Resident Engineer through the pre-abatement plan of action. The following limitations of use shall apply to existing facilities shown on drawings:

1. Abatement of ACM shall be performed from outside the buildings wherever possible.

2. Refer to Division 1, General Requirements and Section 01 35 27 INFECTION CONTROL for additional restrictions.

#### 1.2 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 NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z9.2 (2001) Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems

ANSI Z88.2 (1992) Respiratory Protection

##### ASTM INTERNATIONAL (ASTM)

ASTM E 814 (2002) Fire Tests of Through-Penetration Fire Stops

ASTM E 84 (2008a) Standard Test Method for Surface Burning Characteristics of Building Materials

ASTM C 732 (2001) Aging Effects of Artificial Weathering on Latex Sealants

ASTM E 96 (2005) Water Vapor Transmission of

Materials

ASTM E 736	(2000) Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members
ASTM E 119	(2008a) Standard Test Methods for Fire Tests of Building Construction and Materials
ASTM D 2794	(1993; R 2004) Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
ASTM D 522	(1993a; R 2001) Mandrel Bend Test of Attached Organic Coatings

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 560/5-85-024	(1985) Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book)
EPA 530-SW-85-007	Asbestos Waste Management Guidance
EPA-560-OPTS-86-001	A Guide to Respiratory Protection for the Asbestos Abatement Industry
TS 799 20T	Guide to Managing Asbestos in Place (Green Book)
40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 763	Asbestos Hazard Emergency Response Act (AHERA)

U.S. DEPARTMENT OF DEFENSE (DOD)

MIL-STD 282	Military Standard 282
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NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 241	(2004) Safeguarding Construction, Alteration, and Demolition Operations
NFPA 701	(2004) Fire Tests for Flame Propagation of Textiles and Films
NFPA 101	(2006) Life Safety Code

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

29 CFR 1926.1101	Construction Standard for Asbestos
29 CFR 1910.132	Personal Protective Equipment
29 CFR 1910.134	Respiratory Protection

29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1910.20	Access to Employee Exposure and Medical Records
29 CFR 1910.1200	Hazard Communication
29 CFR 1910.151	Medical and First Aid

UNDERWRITERS LABORATORIES (UL)

UL 586	(1996; Rev thru Apr 2000) High-Efficiency, Particulate, Air Filter Units
UL 1479	(2003) Fire Tests of Through-Penetration Firestops

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

49 CFR 100 - 185	Transportation
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1.3 VARIATIONS IN QUANTITY

The quantities and locations of ACM as indicated on the drawings and the extent of work included in this section are estimated which are limited by the physical constraints imposed by occupancy of the buildings. Accordingly, minor variations (+/- 5%) in quantities of ACM within the regulated area are considered as having no impact on contract price and time requirements of this contract. Where additional work is required beyond the above variation, the contractor shall provide unit prices for newly discovered materials and those prices shall be used for additional work required under the contract.

1.4 STOP ASBESTOS REMOVAL

If the Contracting Officer; Resident Engineer; or the VPIH/CIH presents a written Stop Asbestos Removal Order, the Contractor/Personnel shall immediately stop all asbestos removal and maintain HEPA filtered air flow and adequately wet any exposed ACM. The Contractor shall not resume any asbestos removal activity until authorized to do so by the VA. A stop asbestos removal order may be issued at any time the VA determines abatement conditions/activities are not within specification requirements. Work stoppage will continue until conditions have been corrected to the satisfaction of the VA. Standby time and costs for corrective actions will be borne by the Contractor, including the industrial hygienist's time. The occurrence of any of the following events shall be reported immediately by the Contractor's competent person in writing to the Resident Engineer and VA Industrial Hygienist (VPIH) and shall require the Contractor to immediately stop asbestos removal/disturbance activities and initiate fiber reduction activities:

- A. Equal to, or greater than 0.01 f/cc outside a regulated area or greater than 0.05 f/cc inside a regulated area;
- B. breach/break in regulated area barrier(s);
- C. less than -0.02" WCG pressure in the regulated area;
- D. serious injury/death at the site;
- E. fire/safety emergency at the site;



- F. respiratory protection system failure;
- G. power failure or loss of wetting agent; or
- H. any visible emissions observed outside the regulated area.

#### 1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

##### SD-01 Preconstruction Submittals

- Asbestos Abatement Plan; G, RO
- Work Schedule; G, RO
- Staff Organization Chart; G, RO
- Standard Operating Procedures; G, RO
- Approved Landfill; G, RO
- Required Notifications; G, RO
- Emergency Arrangements; G, RO
- Laboratory Qualifications; G, RO
- Qualifications Verification; G, RO
- Personnel; G, RO
- State License; G, RO
- Insurance Policy; G, RO
- Air Monitoring Results; G, RO

##### SD-03 Product Data

- Specifics Of The Materials And Equipment; G, RO
- Encapsulants; G, RO
- MSDS; G, RO

##### SD-06 Test Reports

- Daily Log; G, RO
- Project Report; G, RO

##### SD-07 Certificates

- Certificate of Worker's Acknowledgment; G, RO
- Affidavit of Medical Surveillance and Respiratory Protection; G, RO
- Medical Records Affidavit; G, RO

##### SD-08 Manufacturer's Instructions

- Application Instructions; G, RO

##### SD-11 Closeout Submittals

- Certificate Of Completion; G, RO

#### 1.6 SUBMITTAL REQUIREMENTS

##### 1.6.1 Pre-Start Meeting Submittals

Submit to the VA a minimum of 14 days prior to the pre-start meeting the following [Asbestos Abatement Plan](#) prepared and certified in conformance

with regulations by a Rhode Island licensed industrial hygienist for review and approval. Meeting this requirement is a prerequisite for the pre-start meeting for this project:

- A. Submit a detailed [work schedule](#) for the entire project reflecting contract documents and the phasing/schedule requirements from the CPM chart.
- B. Submit a [staff organization chart](#) showing all personnel who will be working on the project and their capacity/function. Provide their qualifications, training, accreditations, and licenses, as appropriate. Provide a copy of the "[Certificate of Worker's Acknowledgment](#)" and the "[Affidavit of Medical Surveillance and Respiratory Protection](#)" for each person.
- C. Submit [Standard Operating Procedures](#) developed specifically for this project, incorporating the requirements of the specifications, prepared, signed and dated by the CPIH.
- D. Submit the [specifics of the materials and equipment](#) to be used for this project with brand names, model numbers, performance characteristics, pictures/diagrams, and number available for the following:
  - 1. Supplied air system, if used, negative air machines, HEPA vacuums, air monitoring pumps, calibration devices, pressure differential monitoring device and emergency power generating system.
  - 2. Waste water filtration system, shower system, containment barriers.
  - 3. Encapsulants, surfactants, hand held sprayers, airless sprayers, glovebags, fire extinguishers.
  - 4. Respirators, protective clothing, personal protective equipment.
  - 5. Fire safety equipment to be used in the regulated area.
- E. Submit the name, location, and phone number of the [approved landfill](#); proof/verification the landfill is approved for ACM disposal; the landfill's requirements for ACM waste; the type of vehicle to be used for transportation; and name, address, and phone number of subcontractor, if used. Proof of asbestos training for transportation personnel shall be provided.
- F. Submit [required notifications](#) and arrangements made with regulatory agencies having regulatory jurisdiction and the specific contingency/[emergency arrangements](#) made with local health, fire, ambulance, hospital authorities and any other notifications/arrangements.
- G. Submit the name, location and verification of the [laboratory qualifications](#) and/or personnel to be used for analysis of air and/or bulk samples. Air monitoring must be done in accordance with OSHA [29 CFR 1926.1101\(f\)](#) and Appendix A.
- H. Submit [qualifications verification](#): Submit the following evidence of qualifications. Make sure that all references are current and verifiable by providing current phone numbers and documentation.
  - 1. Asbestos Abatement Company: Project experience within the past 3 years; listing projects first most similar to this project: Project Name; Type of Abatement; Duration; Cost; Reference Name/Phone Number; Final Clearance; Completion Date

2. List of project(s) halted by owner, A/E, IH, regulatory agency in the last 3 years: Project Name; Reason; Date; Reference Name/Number; Resolution
3. List asbestos regulatory citations, penalties, damages paid and legal actions taken against the company in the last 3 years. Provide copies and all information needed for verification.

I. Submit information on [personnel](#): Provide a resume; address each item completely; copies of certificates, accreditations, and licenses. Submit an [medical records affidavit](#) signed by the CPIH stating that all personnel submitted below have medical records in accordance with OSHA [29 CFR 1926.1101](#)(m) and 29 CFR 1910.20 and that the company has implemented a medical surveillance program and maintains record keeping in accordance with the above regulations. Submit the phone number and doctor/clinic/hospital used for medical evaluations.

1. CPIH: Name; years of abatement experience; list of projects similar to this one; certificates, licenses, accreditations for proof of AHERA/OSHA specialized asbestos training; professional affiliations; number of workers trained; samples of training materials; samples of SOP's developed; medical opinion; current respirator fit test.
2. Competent Person(s)/Supervisor(s): Number; names; social security numbers; years of abatement experience as Competent Person/Supervisor; list of similar projects as Competent Person/Supervisor; as a worker; certificates, licenses, accreditations; proof of AHERA/OSHA specialized asbestos training; maximum number of personnel supervised on a project; medical opinion; current respirator fit test.
3. Workers: Numbers; names; social security numbers; years of abatement experience; certificates, licenses, accreditations; training courses in asbestos abatement and respiratory protection; medical opinion; current respirator fit test.

J. Submit copies of [State license](#) for asbestos abatement; copy of [insurance policy](#), including exclusions with a letter from agent stating in plain English the coverage provided and the fact that asbestos abatement activities are covered by the policy; copy of SOP's incorporating the requirements of this specification; information on who provides your training, how often; who provides medical surveillance, how often; who does and how is air monitoring conducted; a list of references of independent laboratories/IH's familiar with your air monitoring and standard operating procedures; copies of [air monitoring results](#) of the five referenced projects listed and analytical method(s) used.

K. Rented equipment must be decontaminated prior to returning to the rental agency.

L. Submit, before the start of work, the manufacturer's technical data for all types of [encapsulants](#) and the [MSDS](#). Provide [application instructions](#) also.

#### 1.6.2 Submittals During Abatement

A. The Competent Person shall maintain and submit a [daily log](#) at the regulated area documenting the dates and times of the following: purpose, attendees and summary of meetings; all personnel entering/exiting the regulated area; document and discuss the resolution of unusual events such as barrier breeching, equipment

failures, emergencies, and any cause for stopping work; representative air monitoring and results/TWA's/EL's. Submit this information daily to the VPIH/CIH.

B. The CPIH shall document and maintain the inspection and approval of the regulated area preparation prior to start of work and daily during work.

1. Removal of any poly barriers.
2. Visual inspection/testing by the CPIH prior to application of lockdown.
3. Packaging and removal of ACM waste from regulated area.
4. Disposal of ACM waste materials; copies of Waste Shipment Records/landfill receipts to the VA's representative on a weekly basis.

#### 1.6.3 Submittals At Completion Of Abatement

The CPIH shall submit a [project report](#) consisting of the daily log book requirements and documentation of events during the abatement project including Waste Shipment Records signed by the landfill's agent. The report shall include a [certificate of completion](#), signed and dated by the CPIH, in accordance with Attachment #1. All clearance and perimeter samples must be submitted. The Resident Engineer will retain the abatement report after completion of the project.

### 1.7 DEFINITIONS

#### 1.7.1 General

Definitions and explanations here are neither complete nor exclusive of all terms used in the contract documents, but are general for the work to the extent they are not stated more explicitly in another element of the contract documents. Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated therein.

#### 1.7.2 Glossary

**Abatement** - Procedures to control fiber release from asbestos-containing materials, typically during removal. Includes removal, encapsulation, enclosure, demolition and renovation activities related to asbestos.

**ACE** - Asbestos contaminated elements.

**ACM** - Asbestos containing material.

**Aerosol** - Solid or liquid particulate suspended in air.

**Adequately wet** - Sufficiently mixed or penetrated with liquid to prevent the release of particulates. If visible emissions are observed coming from the ACM, then that material has not been adequately wetted.

**Aggressive method** - Removal or disturbance of building material by sanding, abrading, grinding, or other method that breaks, crumbles, or disintegrates intact ACM.

**Aggressive sampling** - EPA AHERA defined clearance sampling method using air moving equipment such as fans and leaf blowers to aggressively disturb and maintain in the air residual fibers after abatement.

**AHERA** - Asbestos Hazard Emergency Response Act. Asbestos regulations for schools issued in 1987.

**Aircell** - Pipe or duct insulation made of corrugated cardboard which contains asbestos.

**Air monitoring** - The process of measuring the fiber content of a known volume of air collected over a specified period of time. The NIOSH 7400 Method, Issue 2 is used to determine the fiber levels in air.

**Air sample filter** - The filter used to collect fibers which are then counted. The filter is made of mixed cellulose ester membrane for PCM (Phase Contrast Microscopy) and polycarbonate for TEM (Transmission Electron Microscopy)

**Amended water** - Water to which a surfactant (wetting agent) has been added to increase the penetrating ability of the liquid.

**Asbestos** - Includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated or altered. Asbestos also includes PACM, as defined below.

**Asbestos-containing material (ACM)** - Any material containing more than one percent of asbestos.

**Asbestos contaminated elements (ACE)** - Building elements such as ceilings, walls, lights, or ductwork that are contaminated with asbestos.

**Asbestos-containing waste material** - Asbestos-containing material or asbestos contaminated objects requiring disposal.

**Asbestos waste decontamination facility** - A system consisting of drum/bag washing facilities and a temporary storage area for cleaned containers of asbestos waste. Used as the exit for waste and equipment leaving the regulated area. In an emergency, it may be used to evacuate personnel.

**Authorized person** - Any person authorized by the VA, the Contractor, or government agency and required by work duties to be present in regulated areas.

**Authorized visitor** - Any person approved by the VA; the contractor; or any government agency having jurisdiction over the regulated area.

**Barrier** - Any surface that isolates the regulated area and inhibits fiber migration from the regulated area.

**Containment Barrier** - An airtight barrier consisting of walls, floors, and/or ceilings of sealed plastic sheeting which surrounds and seals the outer perimeter of the regulated area.

**Critical Barrier** - The barrier responsible for isolating the regulated area from adjacent spaces, typically constructed of plastic sheeting secured in place at openings such as doors, windows, or any other opening into the regulated area.

**Primary Barrier** - Barriers placed over critical barriers and exposed directly to abatement work.

**Secondary Barrier** - Any additional sheeting used to isolate and provide protection from debris during abatement work.

**Breathing zone** - The hemisphere forward of the shoulders with a radius of about 150 - 225 mm (6 - 9 inches) from the worker's nose.

**Bridging encapsulant** - An encapsulant that forms a layer on the surface of the ACM.

**Building/facility owner** - The legal entity, including a lessee, which exercises control over management and record keeping functions relating to a building and/or facility in which asbestos activities take place.

**Bulk testing** - The collection and analysis of suspect asbestos containing materials.

**Certified Industrial Hygienist (CIH)** - One certified in practice of industrial hygiene by the American Board of Industrial Hygiene. An industrial hygienist Certified in Comprehensive Practice by the American Board of Industrial Hygiene.

**Class I asbestos work** - Activities involving the removal of Thermal System Insulation (TSI) and surfacing ACM and Presumed Asbestos Containing Material (PACM).

**Class II asbestos work** - Activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic.

**Clean room/Changing room** - An uncontaminated room having facilities for the

storage of employee's street clothing and uncontaminated materials and equipment.

**Clearance sample** - The final air sample taken after all asbestos work has been done and visually inspected. Performed by the VA's industrial hygiene consultant (VPIH/CIH).

**Closely resemble** - The major workplace conditions which have contributed to the levels of historic asbestos exposure, are no more protective than conditions of the current workplace.

**Competent person** - In addition to the definition in 29 CFR 1926.32(f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f); in addition, for Class I and II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor.

**Contractor's Professional Industrial Hygienist (CPIH)** - The asbestos abatement contractor's industrial hygienist. The industrial hygienist must meet the qualification requirements of the PIH.

**Count** - Refers to the fiber count or the average number of fibers greater than five microns in length per cubic centimeter of air.

**Decontamination area/unit** - An enclosed area adjacent to and connected to the regulated area and consisting of an equipment room, shower room, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.

**Demolition** - The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.

**Disposal bag** - Typically 6 mil thick siftproof, dustproof, leaktight container used to package and transport asbestos waste from regulated areas to the approved landfill. Each bag/container must be labeled/marked in accordance with EPA, OSHA and DOT requirements.

**Disturbance** - Activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM.

Disturbance includes cutting away small amounts of ACM or PACM, no greater than the amount that can be contained in one standard sized glove bag or waste bag in order to access a building component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or disposal bag which shall not exceed 60 inches in length or width.

**Drum** - A rigid, impermeable container made of cardboard fiber, plastic, or metal which can be sealed in order to be siftproof, dustproof, and leaktight.

**Employee exposure** - The exposure to airborne asbestos that would occur if the employee were not wearing respiratory protection equipment.

**Encapsulant** - A material that surrounds or embeds asbestos fibers in an adhesive matrix and prevents the release of fibers.

**Encapsulation** - Treating ACM with an encapsulant.

**Enclosure** - The construction of an air tight, impermeable, permanent barrier around ACM to control the release of asbestos fibers from the material and also eliminate access to the material.

**Equipment room** - A contaminated room located within the decontamination area that is supplied with impermeable bags or containers for the disposal of contaminated protective clothing and equipment.

**Fiber** - A particulate form of asbestos, 5 microns or longer, with a length to width ratio of at least 3 to 1.

**Fibers per cubic centimeter (f/cc)** - Abbreviation for fibers per cubic centimeter, used to describe the level of asbestos fibers in air.

**Filter** - Media used in respirators, vacuums, or other machines to remove particulate from air.

**Firestopping** - Material used to close the open parts of a structure in

order to prevent a fire from spreading.

**Friable asbestos containing material** - Any material containing more than 1 percent asbestos as determined using the method specified in appendix A, Subpart F, 40 CFR 763, section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

**Glovebag** - Not more than a 60 x 60 inch impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which materials and tools may be handled.

**High efficiency particulate air (HEPA) filter** - A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 microns or greater in diameter.

**HEPA vacuum** - Vacuum collection equipment equipped with a HEPA filter system capable of collecting and retaining asbestos fibers.

**Homogeneous area** - An area of surfacing, thermal system insulation or miscellaneous ACM that is uniform in color, texture and date of application.

**HVAC** - Heating, Ventilation and Air Conditioning Industrial hygienist - A professional qualified by education, training, and experience to anticipate, recognize, evaluate and develop controls for occupational health hazards. Meets definition requirements of the American Industrial Hygiene Association (AIHA).

**Industrial hygienist technician** - A person working under the direction of an IH or CIH who has special training, experience, certifications and licenses required for the industrial hygiene work assigned.

**Intact** - The ACM has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

**Lockdown** - Applying encapsulant, after a final visual inspection, on all abated surfaces at the conclusion of ACM removal prior to removal of critical barriers.

**National Emission Standards for Hazardous Air Pollutants (NESHAP's)** - EPA's rule to control emissions of asbestos to the environment.

**Negative initial exposure assessment** - A demonstration by the employer which complies with the criteria in 29 CFR 1926.1101 (f)(2)(iii), that employee exposure during an operation is expected to be consistently below the PEL's.

**Negative pressure** - Air pressure which is lower than the surrounding area, created by exhausting air from a sealed regulated area through HEPA equipped filtration units. OSHA requires maintaining -0.02" water column gauge inside the negative pressure enclosure.

**Negative pressure respirator** - A respirator in which the air pressure inside the facepiece is negative during inhalation relative to the air outside the respirator.

**Non-friable ACM** - Material that contains more than 1 percent asbestos but cannot be crumbled, pulverized, or reduced to powder by hand pressure.

**Organic vapor cartridge** - The type of cartridge used on air purifying respirators for organic vapor exposures.

**Outside air** - The air outside buildings and structures, including, but not limited to, the air under a bridge or in an open ferry dock.

**Owner/operator** - Any person who owns, leases, operates, controls, or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls, or supervises the demolition or renovation operation, or both.

**Penetrating encapsulant** - Encapsulant that is absorbed into the ACM matrix without leaving a surface layer.

**Personal sampling/monitoring** - Representative air samples obtained in the breathing zone of the person using a cassette and battery operated pump to determine asbestos exposure.

**Permissible exposure limit (PEL)** - The level of exposure OSHA allows for an 8 hour time weighted average. For asbestos fibers, the PEL is 0.1 fibers

per cc.

**Polarized light microscopy (PLM)** - Light microscopy using dispersion staining techniques and refractive indices to identify and quantify the type(s) of asbestos present in a bulk sample.

**Polyethylene sheeting** - Strong plastic barrier material 4 to 6 mils thick, semi-transparent, sometimes flame retardant in compliance with NFPA 241.

**Positive/negative fit check** - A method of verifying the fit of a respirator by closing off the filters and breathing in or closing off the exhalation valve and breathing out while detecting leakage of the respirator.

**Presumed ACM (PACM)** - Thermal system insulation, surfacing, and flooring material installed in buildings prior to 1981. If the building owner has actual knowledge, or should have known through the exercise of due diligence that other materials are ACM, they too must be treated as PACM. The designation of PACM may be rebutted pursuant to 29 CFR 1926.1101 (k)(5).

**Professional IH** - An IH who meets the definition requirements of AIHA; meets the definition requirements of OSHA as a "Competent Person" at 29 CFR 1926.1101 (b); has completed two specialized EPA approved courses on management and supervision of asbestos abatement projects; has formal training in respiratory protection and waste disposal; and has a minimum of four projects of similar complexity with this project of which at least three projects serving as the supervisory IH.

**Project designer** - A person who has successfully completed the training requirements for an asbestos abatement project designer as required by 40 CFR 763 Appendix C, Part I; (B)(5).

**Protection factor** - A value assigned by OSHA/NIOSH to indicate the assigned protection a respirator should provide if worn properly. The number indicates the reduction of exposure level from outside to inside the respirator.

**Qualitative fit test (QLFT)** - A fit test using a challenge material that can be sensed by the wearer if leakage in the respirator occurs.

**Quantitative fit test (QNFT)** - A fit test using a challenge material which is quantified outside and inside the respirator thus allowing the determination of the actual fit factor.

**Regulated area** - An area established by the employer to demarcate where Class I, II, III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work may accumulate; and a work area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed the PEL.

**Regulated ACM (RACM)** - Friable ACM; Category I nonfriable ACM that has become friable; Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading or; Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of the demolition or renovation operation.

**Removal** - All operations where ACM, PACM and/or RACM is taken out or stripped from structures or substrates, including demolition operations.

**Renovation** - Altering a facility or one or more facility components in any way, including the stripping or removal of asbestos from a facility component which does not involve demolition activity.

**Repair** - Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM or PACM attached to structures or substrates.

**Shower room** - The portion of the PDF where personnel shower before leaving the regulated area. Also used for bag/drum decontamination in the EDF.

**Standard operating procedures (SOP's)** - Asbestos work procedures required to be submitted by the contractor before work begins.

**Supplied air respirator (SAR)** - A respirator that utilizes an air supply separate from the air in the regulated area.

**Surfacing ACM** - A material containing more than 1 percent asbestos that is



sprayed, troweled on or otherwise applied to surfaces for acoustical, fireproofing and other purposes.

**Surfactant** - A chemical added to water to decrease water's surface tension thus making it more penetrating into ACM.

**Thermal system ACM** - A material containing more than 1 percent asbestos applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain.

**Transmission electron microscopy (TEM)** - A microscopy method that can identify and count asbestos fibers.

**VA Industrial Hygienist (VPIH)** - Department of Veterans Affairs Professional Industrial Hygienist.

**VA Certified Industrial Hygienist (VPCIH)** - Department of Veteran's Affairs Professional Certified Industrial Hygienist.

**Resident Engineer** - The VA official responsible for on-going project work.

**Visible emissions** - Any emissions, which are visually detectable without the aid of instruments, coming from ACM/PACM/RACM or ACM waste material.

**Waste/Equipment** decontamination facility (W/EDF) - The area in which equipment is decontaminated before removal from the regulated area.

**Waste generator** - Any owner or operator whose act or process produces asbestos-containing waste material.

**Waste shipment record** - The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.

**Wet cleaning** - The process of thoroughly eliminating, by wet methods, any asbestos contamination from surfaces or objects.

## 1.8 APPLICABLE CODES AND REGULATIONS

### 1.8.1 General Applicability Of Codes, Regulations, And Standards

A. All work under this contract shall be done in strict accordance with all applicable Federal, State, and local regulations, standards and codes governing asbestos abatement, and any other trade work done in conjunction with the abatement. All applicable codes, regulations and standards are adopted into this specification and will have the same force and effect as this specification.

B. The most recent edition of any relevant regulation, standard, document or code shall be in effect. Where conflict among the requirements or with these specification exists, the most stringent requirement(s) shall be utilized.

C. Copies of all standards, regulations, codes and other applicable documents, including this specification and those listed in 1.2 REFERENCES shall be available at the worksite in the clean change area of the worker decontamination system.

### 1.8.2 Asbestos Abatement Contractor Responsibility

The Asbestos Abatement Contractor (Contractor) shall assume full responsibility and liability for compliance with all applicable Federal, State and Local regulations related to any and all aspects of the abatement project. The Contractor is responsible for providing and maintaining training, accreditations, medical exams, medical records, personal protective equipment as required by applicable Federal, State and Local regulations. The Contractor shall hold the VA and VPIH/CIH consultants harmless for any Contractor's failure to comply with any applicable work, packaging, transporting, disposal, safety, health, or environmental requirement on the part of himself, his employees, or his subcontractors.

The Contractor will incur all costs of the CPIH, including all sampling/analytical costs to assure compliance with OSHA/EPA/State requirements related to failure to comply with the regulations applicable to the work.

#### 1.8.3 Federal Requirements

Federal requirements which govern asbestos abatement include, but are not limited to, the following regulations.

- A. Occupational Safety and Health Administration (OSHA):
  - 1. Title 29 CFR 1926.1101 - Construction Standard for Asbestos
  - 2. Title 29 CFR 1910.132 - Personal Protective Equipment
  - 3. Title 29 CFR 1910.134 - Respiratory Protection
  - 4. Title 29 CFR 1926 - Construction Industry Standards
  - 5. Title 29 CFR 1910.20 - Access to Employee Exposure and Medical Records
  - 6. Title 29 CFR 1910.1200 - Hazard Communication
  - 7. Title 29 CFR 1910.151 - Medical and First Aid
- B. Environmental Protection Agency (EPA):
  - 1. 40 CFR 61 Subpart A and M (Revised Subpart B) - National Emission Standard for Hazardous Air Pollutants - Asbestos.
  - 2. 40 CFR 763 - Asbestos Hazard Emergency Response Act (AHERA)
- C. Department of Transportation (DOT):
  - 1. 49 CFR 100 - 185 - Transportation

#### 1.8.4 State Requirements

State requirements that apply to the asbestos abatement work, disposal, clearance, etc., include, but are not limited to, the following: All applicable codes and regulations of the State of Rhode Island.

#### 1.8.5 Local Requirements

If local requirements are more stringent than federal or state standards, the local standards are to be followed.

#### 1.8.6 Standards

- A. Standards which govern asbestos abatement activities include, but are not limited to, the following:
  - 1. American National Standards Institute ANSI Z9.2 - Fundamentals Governing the Design and Operation of Local Exhaust Systems ANSI Z88.2 - Practices for Respiratory Protection.
  - 2. Underwriters Laboratories UL 586 - UL Standard for Safety of HEPA Filter Units, 7th Edition.
- B. Standards which govern encapsulation work include, but are not limited to the following:
  - 1. American Society for Testing and Materials (ASTM).
- C. Standards which govern the fire and safety concerns in abatement work include, but are not limited to the following:
  - 1. National Fire Protection Association NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.
  - 2. NFPA 701 - Standard Methods for Fire Tests for Flame Resistant Textiles and Film.

3. NFPA 101 - Life Safety Code

1.8.7 EPA Guidance Documents

A. EPA guidance documents which discuss asbestos abatement work activities are listed below. These documents are made part of this section by reference. EPA publications can be ordered from (800) 424-9065.

B. Guidance for Controlling ACM in Buildings (Purple Book)  
EPA 560/5-85-024

C. Asbestos Waste Management Guidance EPA 530-SW-85-007

D. A Guide to Respiratory Protection for the Asbestos Abatement Industry EPA-560-OPTS-86-001

E. Guide to Managing Asbestos in Place (Green Book) TS 799 20T July 1990

1.8.8 Notices

A. State and Local agencies: Send written notification as required by state and local regulations including the local fire department prior to beginning any work on ACM.

B. Copies of notifications shall be submitted to the VA for the facility's records in the same time frame notification is given to EPA, State, and Local authorities.

1.8.9 Permits/Licenses

A. The contractor shall apply for and have all required permits and licenses to perform asbestos abatement work as required by Federal, State, and Local regulations.

1.8.10 Posting And Filing Of Regulations

A. Maintain two (2) copies of applicable federal, state, and local regulations. Post one copy of each in the clean room at the regulated area where workers will have daily access to the regulations and keep another copy in the Contractor's office.

1.8.11 VA Responsibilities

Prior to commencement of work:

A. Notify occupants adjacent to regulated areas of project dates and requirements for relocation, if needed. Arrangements must be made prior to starting work for relocation of desks, files, equipment and personal possessions to avoid unauthorized access into the regulated area. **Note: Notification of adjacent personnel is required by OSHA in 29 CFR 1926.1101 (k) to prevent unnecessary or unauthorized access to the regulated area.**

B. Submit to the Contractor results of background air sampling; including location of samples, person who collected the samples, equipment utilized and method of analysis. During abatement, submit to the Contractor, results of bulk material analysis and air sampling data collected during the course of the abatement. This information shall

not release the Contractor from any responsibility for OSHA compliance.

#### 1.8.12 Site Security

A. Regulated area access is to be restricted only to authorized, trained/accredited and protected personnel. These may include the Contractor's employees, employees of Subcontractors, VA employees and representatives, State and local inspectors, and any other designated individuals. A list of authorized personnel shall be established prior to commencing the project and be posted in the clean room of the decontamination unit.

B. Entry into the regulated area by unauthorized individuals shall be reported immediately to the Competent Person by anyone observing the entry. The Competent Person shall immediately notify the VA.

C. A log book shall be maintained in the clean room of the decontamination unit. Anyone who enters the regulated area must record their name, affiliation, time in, and time out for each entry.

D. Access to the regulated area shall be through a single decontamination unit. All other access (doors, windows, hallways, etc.) shall be sealed or locked to prevent entry to or exit from the regulated area. The only exceptions for this requirement are the waste/equipment load-out area which shall be sealed except during the removal of containerized asbestos waste from the regulated area, and emergency exits. Emergency exits shall not be locked from the inside, however, they shall be sealed with poly sheeting and taped until needed.

E. The Contractor's Competent Person shall control site security during abatement operations in order to isolate work in progress and protect adjacent personnel. A 24 hour security system shall be provided at the entrance to the regulated area to assure that all entrants are logged in/out and that only authorized personnel are allowed entrance.

F. The Contractor will have the VA's assistance in notifying adjacent personnel of the presence, location and quantity of ACM in the regulated area and enforcement of restricted access by the VA's employees.

G. The regulated area shall be locked during non-working hours and secured by VA security/police guards.

#### 1.8.13 Emergency Action Plan And Arrangements

A. An Emergency Action Plan shall be developed by the Contractor's CIH prior to commencing abatement activities and shall be agreed to by the Contractor and the VA. The Plan shall meet the requirements of 29 CFR 1910.38 (a); (b).

B. Emergency procedures shall be in written form and prominently posted in the clean room and equipment room of the decontamination unit. Everyone, prior to entering the regulated area, must read and sign these procedures to acknowledge understanding of the regulated area layout, location of emergency exits and emergency procedures.

C. Emergency planning shall include written notification of police, fire, and emergency medical personnel of planned abatement activities; work schedule; layout of regulated area; and access to the regulated

area, particularly barriers that may affect response capabilities.

D. Emergency planning shall include consideration of fire, explosion, hazardous atmospheres, electrical hazards, slips/trips and falls, confined spaces, and heat stress illness. Written procedures for response to emergency situations shall be developed and employee training in procedures shall be provided.

E. Employees shall be trained in regulated area/site evacuation procedures in the event of workplace emergencies.

1. For non life-threatening situations, employees injured or otherwise incapacitated shall decontaminate following normal procedures with assistance from fellow workers, if necessary, before exiting the regulated area to obtain proper medical treatment.

2. For life-threatening injury or illness, worker decontamination shall take least priority after measures to stabilize the injured worker, remove them from the regulated area, and secure proper medical treatment.

F. Telephone numbers of any/all emergency response personnel shall be prominently posted in the clean room, along with the location of the nearest telephone.

G. The Contractor shall provide verification of first aid/CPR training for personnel responsible for providing first aid/CPR. OSHA requires medical assistance within 3-4 minutes of a life-threatening injury/illness. Bloodborne Pathogen training shall also be verified for those personnel required to provide first aid/CPR.

H. The Emergency Action Plan shall provide for a Contingency Plan in the event that an incident occurs that may require the modification of the standard operating procedures during abatement. Such incidents include, but are not limited to, fire; accident; power failure; negative pressure failure; and supplied air system failure. The Contractor shall detail procedures to be followed in the event of an incident assuring that asbestos abatement work is stopped and wetting is continued until correction of the problem.

#### 1.8.14 Pre-Construction Meeting

Prior to commencing the work, the Contractor shall meet with the VA Industrial Hygienist (VPIH) to present and review, as appropriate, the items following this paragraph. The Contractor's Competent Person(s) who will be on-site shall participate in the pre-start meeting. The pre-start meeting is to discuss and determine procedures to be used during the project. At this meeting, the Contractor shall provide:

A. Proof of Contractor licensing.

B. Proof the Competent Person(s) is trained and accredited and approved for working in this State. Verification of the experience of the Competent Person(s) shall also be presented.

C. A list of all workers who will participate in the project, including experience and verification of training and accreditation.

D. A list of and verification of training for all personnel who have current first-aid/CPR training. A minimum of one person per shift must have adequate training.

E. Current medical written opinions for all personnel working on-site meeting the requirements of 29 CFR 1926.1101 (m).

F. Current fit-tests for all personnel wearing respirators on-site meeting the requirements of 29 CFR 1926.1101 (h) and Appendix C.

G. A copy of the Contractor's Standard Operating Procedures for Asbestos Abatement. In these procedures, the following information must be detailed, specific for this project.

1. Regulated area preparation procedures;
2. Notification requirements procedure of Contractor as required in 29 CFR 1926.1101 (d);
3. Decontamination area set-up/layout and decontamination procedures for employees;
4. Abatement methods/procedures and equipment to be used;
5. Personal protective equipment to be used;

H. At this meeting the Contractor shall provide all submittals as required.

I. Procedures for handling, packaging and disposal of asbestos waste.

J. Emergency Action Plan and Contingency Plan Procedures.

K. All Federal, State, and Local permits required.

#### 1.9 PROJECT COORDINATION

The following are the minimum administrative and supervisory personnel necessary for coordination of the work.

##### 1.9.1 Personnel

A. Administrative and supervisory personnel shall consist of a qualified Competent Person(s) as defined by OSHA in the Construction Standards and the Asbestos Construction Standard; Contractor Professional Industrial Hygienist and Industrial Hygiene Technicians. These employees are the Contractor's representatives responsible for compliance with these specifications and all other applicable requirements.

B. Non-supervisory personnel shall consist of an adequate number of qualified personnel to meet the schedule requirements of the project. Personnel shall meet required qualifications. Personnel utilized on-site shall be pre-approved by the Resident Engineer. A request for approval shall be submitted for any person to be employed during the project giving the person's name; social security number; qualifications; accreditation card with color picture; Certificate of Worker's Acknowledgment; and Affidavit of Medical Surveillance and Respiratory Protection and current Respirator Fit Test.

C. Minimum qualifications for Contractor and assigned personnel are:

1. The Contractor has conducted within the last three (3) years,

three (3) projects of similar complexity and dollar value as this project; has not been cited and penalized for serious violations of asbestos regulations in the past three (3) years; has adequate liability/occurrence insurance for asbestos work; is licensed in applicable states; has adequate and qualified personnel available to complete the work; has comprehensive standard operating procedures for asbestos work; has adequate materials, equipment and supplies to perform the work.

2. The Competent Person has four (4) years of abatement experience of which two (2) years were as the Competent Person on the project; meets the OSHA definition of a Competent Person; has been the Competent Person on two (2) projects of similar size and complexity as this project; has completed EPA AHERA/OSHA/State/Local training requirements/accreditation(s) and refreshers; and has all required OSHA documentation related to medical and respiratory protection.

3. The Contractor Professional Industrial Hygienist (CPIH) shall have five (5) years of monitoring experience and supervision of asbestos abatement projects; has participated as senior IH on five (5) abatement projects, three (3) of which are similar in size and complexity as this project; has developed at least one complete standard operating procedure for asbestos abatement; has trained abatement personnel for three (3) years; has specialized EPA AHERA/OSHA training in asbestos abatement management, respiratory protection, waste disposal and asbestos inspection; has completed the NIOSH 582 Course, Contractor/Supervisor course; and has appropriate medical/respiratory protection records/documentation.

4. The Abatement Personnel shall have completed the EPA AHERA/OSHA abatement worker course; have training on the standard operating procedures of the Contractor; has one year of asbestos abatement experience; has applicable medical and respiratory protection documentation; has certificate of training/current refresher and State accreditation/license.

#### 1.10 RESPIRATORY PROTECTION

##### 1.10.1 General - Respiratory Protection Program

The Contractor shall develop and implement a Respiratory Protection Program (RPP) which is in compliance with the January 8, 1998 OSHA requirements found at [29 CFR 1926.1101](#) and [29 CFR 1910.132](#); [29 CFR 1910.134](#) . ANSI Standard [ANSI Z88.2-1992](#) provides excellent guidance for developing a respiratory protection program. All respirators used must be NIOSH approved for asbestos abatement activities. The written respiratory protection shall, at a minimum, contain the basic requirements found at [29 CFR 1910.134](#) (c)(1)(i - ix) - Respiratory Protection Program.

##### 1.10.2 Respiratory Protection Program Coordinator

The Respiratory Protection Program Coordinator (RPPC) must be identified and shall have two (2) years experience coordinating the program. The RPPC must submit a signed statement attesting to the fact that the program meets the above requirements.

#### 1.10.3 Selection And Use Of Respirators

The procedure for the selection and use of respirators must be submitted to the VA as part of the Contractor's qualification. The procedure must be written clearly enough for workers to understand. A copy of the Respiratory Protection Program must be available in the clean room of the decontamination unit for reference by employees or authorized visitors.

#### 1.10.4 Minimum Respiratory Protection

Minimum respiratory protection shall be a full face Powered Air Purifying Respirator (PAPR) when fiber levels are maintained consistently at or below 0.5 f/cc. A higher level of respiratory protection may be provided or required, depending on fiber levels. Respirator selection shall meet the requirements of 29 CFR 1926.1101 (h); Table 1, except as indicated in this paragraph. Abatement personnel must have a respirator for their exclusive use.

#### 1.10.5 Medical Written Opinion

No employee shall be allowed to wear a respirator unless a physician has determined they are capable of doing so and has issued a current written opinion for that person.

#### 1.10.6 Respirator Fit Test

All personnel wearing respirators shall have a current qualitative/quantitative fit test which was conducted in accordance with 29 CFR 1910.134 (f) and Appendix A. Quantitative fit tests shall be done for PAPR's which have been put into a failure mode.

#### 1.10.7 Respirator Fit Check

The Competent Person shall assure that the positive/negative fit check is done each time the respirator is donned by an employee. Head coverings must cover respirator head straps. Any situation that prevents an effective facepiece to face seal as evidenced by failure of a fit check shall preclude that person from wearing a respirator until resolution of the problem.

#### 1.10.8 Maintenance And Care Of Respirators

The Respiratory Protection Program Coordinator shall submit evidence and documentation showing compliance with 29 CFR 1910.134 (h) Maintenance and care of respirators.

#### 1.10.9 Supplied Air Systems

If a supplied air system is used, the system shall meet all requirements of 29 CFR 1910.134 and the ANSI/Compressed Gas Association (CGA) Commodity Specification for Air current requirements for Type 1 - Grade D breathing air. Low pressure systems are not allowed to be used on asbestos abatement projects. Supplied Air respirator use shall be in accordance with EPA/NIOSH publication EPA-560-OPTS-86-001 "A Guide to Respiratory Protection for the Asbestos Abatement Industry".



## 1.11 WORKER PROTECTION

### 1.11.1 Training Of Abatement Personnel

Prior to beginning any abatement activity, all personnel shall be trained in accordance with OSHA 29 CFR 1926.1101 (k)(9) and any additional State/Local requirements. Training must include, at a minimum, the elements listed at 29 CFR 1926.1101 (k)(9)(viii). Training shall have been conducted by a third party, EPA/State approved trainer meeting the requirements of EPA 40 CFR 763 Appendix C (AHERA MAP). Initial training certificates and current refresher and accreditation proof must be submitted for each person working at the site.

### 1.11.2 Medical Examinations

Medical examinations meeting the requirements of 29 CFR 1926.1101 (m) shall be provided for all personnel working in the regulated area, regardless of exposure levels. A current physician's written opinion as required by 29 CFR 1926.1101 (m)(4) shall be provided for each person and shall include in the opinion the person has been evaluated for working in a heat stress environment while wearing personal protective equipment and is able to perform the work.

### 1.11.3 Personal Protective Equipment

Provide whole body clothing, head coverings, gloves and foot coverings and any other personal protective equipment as determined by conducting the hazard assessment required by OSHA at 29 CFR 1910.132 (d). The Competent Person shall ensure the integrity of personal protective equipment worn for the duration of the project. Duct tape shall be used to secure all suit sleeves to wrists and to secure foot coverings at the ankle.

### 1.11.4 Regulated Area Entry Procedure

The Competent Person shall ensure that each time workers enter the regulated area, they remove ALL street clothes in the clean room of the decontamination unit and put on new disposable coveralls, head coverings, a clean respirator, and then proceed through the shower room to the equipment room where they put on non-disposable required personal protective equipment.

### 1.11.5 Decontamination Procedure

The Competent Person shall require all personnel to adhere to following decontamination procedures whenever they leave the regulated area.

A. When exiting the regulated area, remove disposable coveralls, and ALL other clothes, disposable head coverings, and foot coverings or boots in the equipment room.

B. Still wearing the respirator and completely naked, proceed to the shower. Showering is MANDATORY. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos fibers while showering. The following procedure is required as a minimum:

1. Thoroughly wet body including hair and face. If using a PAPR hold blower above head to keep filters dry.
2. With respirator still in place, thoroughly decontaminate

body, hair, respirator face piece, and all other parts of the respirator except the blower and battery pack on a PAPR. Pay particular attention to cleaning the seal between the face and respirator facepiece and under the respirator straps.

3. Take a deep breath, hold it and/or exhale slowly, completely wetting hair, face, and respirator. While still holding breath, remove the respirator and hold it away from the face before starting to breathe.

C. Carefully decontaminate the facepiece of the respirator inside and out. If using a PAPR, shut down using the following sequence: a) first cap inlets to filters; b) turn blower off to keep debris collected on the inlet side of the filter from dislodging and contaminating the outside of the unit; c) thoroughly decontaminate blower and hoses; d) carefully decontaminate battery pack with a wet rag being cautious of getting water in the battery pack thus preventing destruction. **(THIS PROCEDURE IS NOT A SUBSTITUTE FOR RESPIRATOR CLEANING!)**.

D. Shower and wash body completely with soap and water. Rinse thoroughly.

E. Rinse shower room walls and floor to drain prior to exiting.

F. Proceed from shower to clean room; dry off and change into street clothes or into new disposable work clothing.

#### 1.11.6 Regulated Area Requirements

The Competent Person shall meet all requirements of 29 CFR 1926.1101 (o) and assure that all requirements for regulated areas at 29 CFR 1926.1101 (e) are met. All personnel in the regulated area shall not be allowed to eat, drink, smoke, chew tobacco or gum, apply cosmetics, or in any way interfere with the fit of their respirator.

#### 1.12 DECONTAMINATION FACILITIES

##### 1.12.1 Description

Provide each regulated area with separate Personnel Decontamination Facilities (PDF) and Waste/Equipment Decontamination Facilities (W/EDF). Ensure that the PDF are the only means of ingress and egress to the regulated area and that all equipment, bagged waste, and other material exit the regulated area only through the W/EDF.

##### 1.12.2 General Requirements

All personnel entering or exiting a regulated area must go through the PDF and shall follow the requirements at 29 CFR 1926.1101 (j)(1) and these specifications. All waste, equipment and contaminated materials must exit the regulated area through the W/EDF and be decontaminated in accordance with these specifications. Walls and ceilings of the PDF and W/EDF must be constructed of a minimum of 3 layers of 6 mil opaque fire retardant polyethylene sheeting and be securely attached to existing building components and/or an adequate temporary framework. A minimum of 3 layers of 6 mil poly shall also be used to cover the floor under the PDF and W/EDF units. Construct doors so that they overlap and secure to adjacent surfaces. Weight inner doorway sheets with layers of duct tape so that they close quickly after release. Put arrows on sheets so they show direction of

travel and overlap. If the building adjacent area is occupied, construct a solid barrier on the occupied side(s) to protect the sheeting and reduce potential for non-authorized personnel entering the regulated area.

#### 1.12.3 Temporary Facilities To The PDF And W/EDF

The Competent Person shall provide temporary water service connections to the PDF and W/EDF. Backflow prevention must be provided at the point of connection to the VA system. Water supply must be of adequate pressure and meet requirements of 29 CFR 1910.141(d)(3). Provide adequate temporary overhead electric power with ground fault circuit interruption (GFCI) protection. Provide a sub-panel for all temporary power in the clean room. Provide adequate lighting to provide a minimum of 50 foot candles in the PDF and W/EDF. Provide temporary heat, if needed, to maintain 70oF throughout the PDF and W/EDF.

#### 1.12.4 Personnel Decontamination Facility (PDF)

The Competent Person shall provide a PDF consisting of shower room which is contiguous to a clean room and equipment room which is connected to the regulated area. The PDF must be sized to accommodate the number of personnel scheduled for the project. The shower room, located in the center of the PDF, shall be fitted with as many portable showers as necessary to insure all employees can complete the entire decontamination procedure within 15 minutes. The PDF shall be constructed of opaque poly for privacy. The PDF shall be constructed to eliminate any parallel routes of egress without showering.

1. Clean Room: The clean room must be physically and visually separated from the rest of the building to protect the privacy of personnel changing clothes. The clean room shall be constructed of at least 3 layers of 6 mil opaque fire retardant poly to provide an air tight room. Provide a minimum of 2 - 900 mm (3 foot) wide 6 mil poly opaque fire retardant doorways. One doorway shall be the entry from outside the PDF and the second doorway shall be to the shower room of the PDF. The floor of the clean room shall be maintained in a clean, dry condition. Shower overflow shall not be allowed into the clean room. Provide 1 storage locker per person. A portable fire extinguisher, Type ABC, shall be provided in accordance with OSHA and NFPA Standard 10. All persons entering the regulated area shall remove all street clothing in the clean room and dress in disposable protective clothing and respiratory protection. Any person entering the clean room does so either from the outside with street clothing on or is coming from the shower room completely naked and thoroughly washed. Females required to enter the regulated area shall be ensured of their privacy throughout the entry/exit process by posting guards at both entry points to the PDF so no male can enter or exit the PDF during her stay in the PDF.

2. Shower Room: The Competent Person shall assure that the shower room is a completely water tight compartment to be used for the movement of all personnel from the clean room to the equipment room and for the showering of all personnel going from the equipment room to the clean room. Each shower shall be constructed so water runs down the walls of the shower and into a drip pan. Install a freely draining smooth floor on top of the shower pan. The shower room shall be separated from the rest of the building and from the clean room and equipment room using air tight walls made from at least 3 layers of 6 mil opaque fire retardant poly. The shower shall be equipped with a

shower head and controls, hot and cold water, drainage, soap dish and continuous supply of soap, and shall be maintained in a sanitary condition throughout its use. The controls shall be arranged so an individual can shower without assistance. Provide a flexible hose shower head, hose bibs and all other items shown on Shower Schematic. Waste water will be pumped to a drain after being filtered through a minimum of a 100 micron sock in the shower drain; a 20 micron filter; and a final 5 micron filter. Filters will be changed a minimum of daily or more often as needed. Filter changes must be done in the shower to prevent loss of contaminated water. Hose down all shower surfaces after each shift and clean any debris from the shower pan. Residue is to be disposed of as asbestos waste.

3. Equipment Room: The Competent Person shall provide an equipment room which shall be an air tight compartment for the storage of work equipment/tools, reusable personal protective equipment, except for a respirator and for use as a gross decontamination area for personnel exiting the regulated area. The equipment room shall be separated from the regulated area by a minimum 3 foot wide door made with 2 layers of 6 mil opaque fire retardant poly. The equipment room shall be separated from the regulated area, the shower room and the rest of the building by air tight walls and ceiling constructed of a minimum of 3 layers of 6 mil opaque fire retardant poly. Damp wipe all surfaces of the equipment room after each shift change. Provide an additional loose layer of 6 mil fire retardant poly per shift change and remove this layer after each shift. If needed, provide a temporary electrical sub-panel equipped with GFCI in the equipment room to accommodate any equipment required in the regulated area.

4. The PDF shall look like as follows: Clean room at the entrance followed by a shower room followed by an equipment room leading to the regulated area. Each doorway in the PDF is minimum of 2 layers of 6 mil opaque fire retardant poly.

SEE DIAGRAM 1 AT END OF SECTION.

#### 1.12.5 Waste/Equipment Decontamination Facility (W/EDF)

The Competent Person shall provide an W/EDF consisting of a wash room, holding room, and clean room for removal of waste, equipment and contaminated material from the regulated area. Personnel shall not enter or exit the W/EDF except in the event of an emergency. Clean debris and residue in the W/EDF daily. All surfaces in the W/EDF shall be wiped/hosed down after each shift and all debris shall be cleaned from the shower pan. The W/EDF shall consist of the following:

1. Wash Down Station: Provide an enclosed shower unit in the regulated area just outside the Wash Room as an equipment bag and container cleaning station.

2. Wash Room: Provide a wash room for cleaning of bagged or containerized asbestos containing waste materials passed from the regulated area. Construct the wash room using 50 x 100 mm (2" x 4") wood framing and 3 layers of 6 mil fire retardant poly. Locate the wash room so that packaged materials, after being wiped clean, can be passed to the Holding Room. Doorways in the wash room shall be constructed of 2 layers of 6 mil fire retardant poly.

3. Holding Room: Provide a holding room as a drop location for bagged materials passed from the wash room. Construct the holding room using

50 x 100 mm (2" x 4") wood framing and 3 layers of 6 mil fire retardant poly. The holding room shall be located so that bagged material cannot be passed from the wash room to the clean room unless it goes through the holding room. Doorways in the holding room shall be constructed of 2 layers of 6 mil fire retardant poly.

4. Clean Room: Provide a clean room to isolate the holding room from the exterior of the regulated area. Construct the clean room using 2 x 4 wood framing and 2 layers of 6 mil fire retardant poly. The clean room shall be located so as to provide access to the holding room from the building exterior. Doorways to the clean room shall be constructed of 2 layers of 6 mil fire retardant poly. When a negative pressure differential system is used, a rigid enclosure separation between the W/EDF clean room and the adjacent areas shall be provided.

5. The W/EDF shall be provided as follows: Wash Room leading to a Holding Room followed by a Clean Room leading to outside the regulated area.

SEE DIAGRAM 2 AT END OF SECTION.

#### 1.12.6 WASTE/EQUIPMENT DECONTAMINATION PROCEDURES

At washdown station in the regulated area, thoroughly wet clean contaminated equipment and/or sealed polyethylene bags and pass into Wash Room after visual inspection. When passing anything into the Wash Room, close all doorways of the W/EDF, other than the doorway between the washdown station and the Wash Room. Keep all outside personnel clear of the W/EDF. Once inside the Wash Room, wet clean the equipment and/or bags. After cleaning and inspection, pass items into the Holding Room. Close all doorways except the doorway between the Holding Room and the Clean Room. Workers from the Clean Room/Exterior shall enter the Holding Room and remove the decontaminated/cleaned equipment/bags for removal and disposal. These personnel will not be required to wear PPE. At no time shall personnel from the clean side be allowed to enter the Wash Room.

### PART 2 PRODUCTS

#### 2.1 MATERIALS AND EQUIPMENT

##### 2.1.1 General Requirements

Prior to the start of work, the contractor shall provide and maintain a sufficient quantity of materials and equipment to assure continuous and efficient work throughout the duration of the project. Work shall not start unless the following items have been delivered to the site and the CPIH has submitted verification to the VA's representative.

A. All materials shall be delivered in their original package, container or bundle bearing the name of the manufacturer and the brand name (where applicable).

B. Store all materials subject to damage off the ground, away from wet or damp surfaces and under cover sufficient enough to prevent damage or contamination. Flammable materials cannot be stored inside buildings. Replacement materials shall be stored outside of the regulated area until abatement is completed.

C. The Contractor shall not block or hinder use of buildings by

patients, staff, and visitors to the VA in partially occupied buildings by placing materials/equipment in any unauthorized place.

D. The Competent Person shall inspect for damaged, deteriorating or previously used materials. Such materials shall not be used and shall be removed from the worksite and disposed of properly.

E. Polyethylene sheeting for walls in the regulated area shall be a minimum of 4-mils. For floors and all other uses, sheeting of at least 6-mils shall be used in widths selected to minimize the frequency of joints. Fire retardant poly shall be used throughout.

F. The method of attaching polyethylene sheeting shall be agreed upon in advance by the Contractor and the VA and selected to minimize damage to equipment and surfaces. Method of attachment may include any combination of moisture resistant duct tape furring strips, spray glue, staples, nails, screws, lumber and plywood for enclosures or other effective procedures capable of sealing polyethylene to dissimilar finished or unfinished surfaces under both wet and dry conditions.

G. Polyethylene sheeting utilized for the PDF shall be opaque white or black in color, 6 mil fire retardant poly.

H. Installation and plumbing hardware, showers, hoses, drain pans, sump pumps and waste water filtration system shall be provided by the Contractor.

I. An adequate number of HEPA vacuums, scrapers, sprayers, nylon brushes, brooms, disposable mops, rags, sponges, staple guns, shovels, ladders and scaffolding of suitable height and length as well as meeting OSHA requirements, fall protection devices, water hose to reach all areas in the regulated area, airless spray equipment, and any other tools, materials or equipment required to conduct the abatement project. All electrically operated hand tools, equipment, electric cords shall be connected to GFCI protection.

J. Special protection for objects in the regulated area shall be detailed (e.g., plywood over carpeting or hardwood floors to prevent damage from scaffolds, water and falling material).

K. Disposal bags - 2 layers of 6 mil, for asbestos waste shall be pre-printed with labels, markings and address as required by OSHA, EPA and DOT regulations.

L. The VA shall be provided a copy of the MSDS as required for all hazardous chemicals under OSHA 29 CFR 1910.1200 - Hazard Communication. Chlorinated compounds shall not be used with any spray adhesive or other product. Appropriate encapsulant(s) shall be provided.

M. OSHA DANGER demarcation signs, as many and as required by OSHA 29 CFR 1926.1101(k)(7) shall be provided and placed by the Competent Person. All other posters and notices required by Federal and State regulations shall be posted in the Clean Room.

N. Adequate and appropriate PPE for the project and number of personnel/shifts shall be provided. All personal protective equipment issued must be based on a hazard assessment conducted under 29 CFR 1910.132(d).

#### 2.1.2 Negative Pressure Filtration System

A. The Contractor shall provide enough HEPA negative air machines to completely exchange the regulated area air volume 4 times per hour. The Competent Person shall determine the number of units needed for the regulated area by dividing the cubic feet in the regulated area by 15 and then dividing that result by the cubic feet per minute (CFM) for each unit to determine the number of units needed to effect 4 air changes per hour. Provide a standby unit in the event of machine failure and/or emergency in an adjacent area.

B. NIOSH has done extensive studies and has determined that negative air machines typically operate at ~50% efficiency. The contractor shall consider this in their determination of number of units needed to provide 4 air changes per hour. The contractor shall use 8 air changes per hour or double the number of machines based on their calculations or submit proof their machines operate at stated capacities at a 2" pressure drop across the filters.

#### 2.1.3 Design And Layout

A. Before start of work submit the design and layout of the regulated area and the negative air machines. The submittal shall indicate the number of, location of and size of negative air machines. The point(s) of exhaust, air flow within the regulated area, anticipated negative pressure differential, and supporting calculations for sizing shall be provided. In addition, submit the following:

1. Method of supplying power to the units and designation/location of the panels.
2. Description of testing method(s) for correct air volume and pressure differential.
3. If auxiliary power supply is to be provided for the negative air machines, provide a schematic diagram of the power supply and manufacturer's data on the generator and switch.

#### 2.1.4 Negative Air Machines (HEPA Units)

A. Negative Air Machine Cabinet: The cabinet shall be constructed of steel or other durable material capable of withstanding potential damage from rough handling and transportation. The width of the cabinet shall be less than 30" in order to fit in standard doorways. The cabinet must be factory sealed to prevent asbestos fibers from being released during use, transport, or maintenance. Any access to and replacement of filters shall be from the inlet end. The unit must be on casters or wheels.

B. Negative Air Machine Fan: The rating capacity of the fan must indicate the CFM under actual operating conditions. Manufacturer's typically use "free-air" (no resistance) conditions when rating fans. The fan must be a centrifugal type fan.

C. Negative Air Machine Final Filter: The final filter shall be a HEPA filter. The filter media must be completely sealed on all edges within a structurally rigid frame. The filter shall align with a continuous flexible gasket material in the negative air machine housing to form an air tight seal. Each HEPA filter shall be certified by the manufacturer to have an efficiency of not less than 99.97% when challenged with 0.3 mm dioctylphthalate (DOP) particles. Testing shall have been done in accordance with Military Standard MIL-STD 282 and Army Instruction

Manual 136-300-175A. Each filter must bear a [UL 586](#) label to indicate ability to perform under specified conditions. Each filter shall be marked with the name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test air flow.

D. Negative Air Machine Pre-filters: The pre-filters, which protect the final HEPA filter by removing larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required. A first stage pre-filter shall be a low efficiency type for particles 10 mm or larger. A second stage pre-filter shall have a medium efficiency effective for particles down to 5 mm or larger. Pre-filters shall be installed either on or in the intake opening of the NAM and the second stage filter must be held in place with a special housing or clamps.

E. Negative Air Machine Instrumentation: Each unit must be equipped with a gauge to measure the pressure drop across the filters and to indicate when filters have become loaded and need to be changed. A table indicating the cfm for various pressure readings on the gauge shall be affixed near the gauge for reference or the reading shall indicate at what point the filters shall be changed, noting cfm delivery. The unit must have an elapsed time meter to show total hours of operation.

F. Negative Air Machine Safety and Warning Devices: An electrical/mechanical lockout must be provide to prevent the fan from being operated without a HEPA filter. Units must be equipped with an automatic shutdown device to stop the fan in the event of a rupture in the HEPA filter or blockage in the discharge of the fan. Warning lights are required to indicate normal operation; too high a pressure drop across filters; or too low of a pressure drop across filters.

G. Negative Air Machine Electrical: All electrical components shall be approved by the National Electrical Manufacturer's Association (NEMA) and Underwriter's Laboratories (UL). Each unit must be provided with overload protection and the motor, fan, fan housing, and cabinet must be grounded.

#### 2.1.5 Pressure Differential

The fully operational negative air system within the regulated area shall continuously maintain a pressure differential of -0.02" water column gauge. Before any disturbance of any asbestos material, this shall be demonstrated to the VA by use of a pressure differential meter/manometer as required by OSHA [29 CFR 1926.1101](#)(e)(5)(i). The Competent Person shall be responsible for providing, maintaining, and documenting the negative pressure and air changes as required by OSHA and this specification.

#### 2.1.6 Monitoring

The pressure differential shall be continuously monitored and recorded between the regulated area and the area outside the regulated area with a monitoring device that incorporates a strip chart recorder. The strip chart recorder shall become part of the project log and shall indicate at least -0.02" water column gauge for the duration of the project.

#### 2.1.7 Auxiliary Generator

If the building is occupied during abatement, provide an auxiliary



gasoline/diesel generator located outside the building in an area protected from the weather. In the event of a power failure, the generator must automatically start and supply power to a minimum of 50% of the negative air machines in operation.

#### 2.1.1.8 Supplemental Make-Up Air Inlets

Provide, as needed for proper air flow in the regulated area, in a location approved by the VA, openings in the plastic sheeting to allow outside air to flow into the regulated area. Auxiliary makeup air inlets must be located as far from the negative air machines as possible, off the floor near the ceiling, and away from the barriers that separate the regulated area from the occupied clean areas. Cover the inlets with weighted flaps which will seal in the event of failure of the negative pressure system.

#### 2.1.1.9 Testing The System

The negative pressure system must be tested before any ACM is disturbed in any way. After the regulated area has been completely prepared, the decontamination units set up, and the negative air machines installed, start the units up one at a time. Demonstrate and document the operation and testing of the negative pressure system to the VA using smoke tubes and a negative pressure gauge. Testing must also be done at the start of each work shift.

#### 2.1.1.10 Demonstration Of The Negative Air Pressure System

The demonstration of the operation of the negative pressure system to the VA shall include, but not be limited to, the following:

- A. Plastic barriers and sheeting move lightly in toward the regulated area.
- B. Curtains of the decontamination units move in toward regulated area.
- C. There is a noticeable movement of air through the decontamination units. Use the smoke tube to demonstrate air movement from the clean room to the shower room to the equipment room to the regulated area.
- D. Use smoke tubes to demonstrate air is moving across all areas in which work is to be done. Use a differential pressure gauge to indicate a negative pressure of at least  $-0.02''$  across every barrier separating the regulated area from the rest of the building. Modify the system as necessary to meet the above requirements.

#### 2.1.1.11 Use Of System During Abatement Operations

- A. Start units before beginning any disturbance of ACM occurs. After work begins, the units shall run continuously, maintaining 4 actual air changes per hour at a negative pressure differential of  $-0.02''$  water column gauge, for the duration of the work until a final visual clearance and final air clearance has been completed. The negative air machines shall not be shut down for the duration of the project unless authorized by the VA, in writing.
- B. Abatement work shall begin at a location farthest from the units and proceed towards them. If an electric failure occurs, the Competent Person shall stop all abatement work and immediately begin wetting all exposed asbestos materials for the duration of the power outage.

Abatement work shall not resume until power is restored and all units are operating properly again.

C. The negative air machines shall continue to run after all work is completed and until a final visual clearance and a final air clearance has been completed for that regulated area.

#### 2.1.12 Dismantling The System

After completion of the final visual and final air clearance has been obtained by the VPIH/CIH, the units may be shut down. The units shall have been **completely decontaminated**, all pre-filters removed and disposed of as asbestos waste, asbestos labels attached and the units inlet/outlet sealed with 2 layers of 6 mil poly.

### 2.2 CONTAINMENT BARRIERS AND COVERINGS IN THE REGULATED AREA

#### 2.2.1 General

Seal off the perimeter to the regulated area to completely isolate the regulated area from adjacent spaces. All surfaces in the regulated area must be covered to prevent contamination and to facilitate clean-up. Should adjacent areas become contaminated as a result of the work, shall immediately stop work and clean up the contamination at no additional cost to the VA. Provide firestopping and identify all fire barrier penetrations due to abatement work as specified in 2.2.8 Firestopping.

#### 2.2.2 Preparation Prior To Sealing The Regulated Area

Place all tools, scaffolding, materials and equipment needed for working in the regulated area prior to erecting any plastic sheeting. All uncontaminated removable furniture, equipment and/or supplies shall be removed by the VA from the regulated area before commencing work. Any objects remaining in the regulated area shall be completely covered with 2 layers of 6-mil fire retardant poly sheeting and secured with duct tape. Lock out and tag out any HVAC/electrical systems in the regulated area.

#### 2.2.3 Controlling Access To The Regulated Area

Access to the regulated area is allowed only through the personnel decontamination facility (PDF). All other means of access shall be eliminated and OSHA DANGER demarcation signs posted as required by OSHA. If the regulated area is adjacent to or within view of an occupied area, provide a visual barrier of 6 mil opaque fire retardant poly to prevent building occupant observation. If the adjacent area is accessible to the public, the barrier must be solid and capable of withstanding the negative pressure.

#### 2.2.4 Critical Barriers

Completely separate any operations in the regulated area from adjacent areas using 2 layers of 6 mil fire retardant poly and duct tape. Individually seal with 2 layers of 6 mil poly and duct tape all HVAC openings into the regulated area. Individually seal all lighting fixtures, clocks, doors, windows, convectors, speakers, or any other objects/openings in the regulated area. Heat must be shut off any objects covered with poly.

#### 2.2.5 Primary Barriers

A. Cover the regulated area with two layers of 6 mil fire retardant poly on the floors and two layers of 4 mil fire retardant poly on the walls, unless otherwise directed in writing by the Resident Engineer. Floor layers must form a right angle with the wall and turn up the wall at least 300 mm (12"). Seams must overlap at least 1800 mm (6') and must be spray glued and taped. Install sheeting so that layers can be removed independently from each other. Carpeting shall be covered with three layers of 6 mil poly. Corrugated cardboard sheets must be placed between the bottom and middle layers of poly. Mechanically support and seal with duct tape and glue all wall layers.

B. If stairs and ramps are covered with 6 mil plastic, two layers must be used. Provide 19 mm (3/4") exterior grade plywood treads held in place with duct tape/glue on the plastic. Do not cover rungs or rails with any isolation materials.

#### 2.2.6 Secondary Barriers

A loose layer of 6 mil shall be used as a drop cloth to protect the primary layers from debris generated during the abatement. This layer shall be replaced as needed during the work minimally once per work day.

#### 2.2.7 Extension Of The Regulated Area

If the enclosure of the regulated area is breached in any way that could allow contamination to occur, the affected area shall be included in the regulated area and constructed as per this section. Decontamination measures must be started immediately and continue until air monitoring indicates background levels are met.

#### 2.2.8 Firestopping

A. Through penetrations caused by cables, cable trays, pipes, sleeves must be firestopped with a fire-rated firestop system providing an air tight seal.

B. Firestop materials that are not equal to the wall or ceiling penetrated shall be brought to the attention of the Resident Engineer. The contractor shall list all areas of penetration, the type of sealant used, and whether or not the location is fire rated. Any discovery of penetrations during abatement shall be brought to the attention of the Resident Engineer immediately. All walls, floors and ceilings are considered fire rated unless otherwise determined by the Resident Engineer or Fire Marshall.

C. Any visible openings whether or not caused by a penetration shall be reported by the Contractor to the Resident Engineer for a sealant system determination. Firestops shall meet [ASTM E 814](#) and [UL 1479](#) requirements for the opening size, penetrant, and fire rating needed.

### 2.3 MONITORING, INSPECTION AND TESTING

#### 2.3.1 General

A. Perform throughout abatement work monitoring, inspection and testing inside and around the regulated area in accordance with the OSHA requirements and these specifications. The CPIH shall is responsible

for and shall inspect and oversee the performance of the Contractor IH Technician. The IH Technician shall continuously inspect and monitor conditions inside the regulated area to ensure compliance with these specifications. In addition, the CPIH shall personally manage air sample collection, analysis, and evaluation for personnel, regulated area, and adjacent area samples to satisfy OSHA requirements. Additional inspection and testing requirements are also indicated in other parts of this specification.

B. The VA will employ an independent industrial hygienist (VPIH/CIH) consultant and/or use its own IH to perform various services on behalf of the VA. The VPIH/CIH will perform the necessary monitoring, inspection, testing, and other support services to ensure that VA patients, employees, and visitors will not be adversely affected by the abatement work, and that the abatement work proceeds in accordance with these specifications, that the abated areas or abated buildings have been successfully decontaminated. The work of the VPIH/CIH consultant in no way relieves the Contractor from their responsibility to perform the work in accordance with contract/specification requirements, to perform continuous inspection, monitoring and testing for the safety of their employees, and to perform other such services as specified. The cost of the VPIH/CIH and their services will be borne by the VA except for any repeat of final inspection and testing that may be required due to unsatisfactory initial results. Any repeated final inspections and/or testing, if required, will be paid for by the Contractor.

C. If fibers counted by the VPIH/CIH during abatement work, either inside or outside the regulated area, utilizing the NIOSH 7400 air monitoring method, exceed the specified respective limits, the Contractor shall stop work. The Contractor may request confirmation of the results by analysis of the samples by TEM. Request must be in writing and submitted to the VA's representative. Cost for the confirmation of results will be borne by the Contractor for both the collection and analysis of samples and for the time delay that may/does result for this confirmation. Confirmation sampling and analysis will be the responsibility of the CPIH with review and approval of the VPIH/CIH. An agreement between the CPIH and the VPIH/CIH shall be reached on the exact details of the confirmation effort, in writing, including such things as the number of samples, location, collection, quality control on-site, analytical laboratory, interpretation of results and any follow-up actions. This written agreement shall be co-signed by the IH's and delivered to the VA's representative.

#### 2.3.2 Scope of Services of the VPIH/CIH Consultant

A. The purpose of the work of the VPIH/CIH is to: write an Asbestos Abatement Plan, assure quality; adherence to the specification; resolve problems; prevent the spread of contamination beyond the regulated area; and assure clearance at the end of the project. In addition, their work includes performing the final inspection and testing to determine whether the regulated area or building has been adequately decontaminated. All air monitoring is to be done utilizing PCM/TEM. The VPIH/CIH will perform the following tasks:

1. Task 1: Establish background levels before abatement begins by collecting background samples. Retain samples for possible TEM analysis.
2. Task 2: Perform continuous air monitoring, inspection, and testing outside the regulated area during actual abatement work to detect any faults in the regulated area isolation and any adverse

impact on the surroundings from regulated area activities.

3. Task 3: Perform unannounced visits to spot check overall compliance of work with contract/specifications. These visits may include any inspection, monitoring, and testing inside and outside the regulated area and all aspects of the operation except personnel monitoring.

4. Task 4: Provide support to the Resident Engineer such as evaluation of submittals from the Contractor, resolution of conflicts, interpret data, etc.

5. Task 5: Perform, in the presence of the Resident Engineer, final inspection and testing of a decontaminated regulated area at the conclusion of the abatement to certify compliance with all regulations and VA requirements/specifications.

6. Task 6: Issue certificate of decontamination for each regulated area and project report.

B. All documentation, inspection results and testing results generated by the VPIH/CIH will be available to the Contractor for information and consideration. The Contractor shall cooperate with and support the VPIH/CIH for efficient and smooth performance of their work.

C. The monitoring and inspection results of the VPIH/CIH will be used by the VA to issue any Stop Removal orders to the Contractor during abatement work and to accept or reject a regulated area or building as decontaminated.

#### 2.3.3 Monitoring, Inspection And Testing By Contractor CPIH

The Contractor's CPIH is responsible for managing all monitoring, inspections, and testing required by these specifications, as well as any and all regulatory requirements adopted by these specifications. The CPIH is responsible for the continuous monitoring of all subsystems and procedures which could affect the health and safety of the Contractor's personnel. Safety and health conditions and the provision of those conditions inside the regulated area for all persons entering the regulated area is the exclusive responsibility of the Contractor/Competent Person. The person performing the personnel and area air monitoring inside the regulated area shall be an IH Technician, who shall be trained and shall have specialized field experience in air sampling and analysis. The IH Technician shall have a NIOSH 582 Course or equivalent and show proof. The IH Technician shall participate in the AIHA Asbestos Analysis Registry or participate in the Proficiency Analytic Testing program of AIHA for fiber counting quality control assurance. The IH Technician shall also be an accredited EPA/State Contractor/Supervisor and Building Inspector. The IH Technician shall have participated in five abatement projects collecting personal and area samples as well as responsibility for documentation. The analytic laboratory used by the Contractor to analyze the samples shall be AIHA accredited for asbestos PAT. A daily log documenting all OSHA requirements for air monitoring for asbestos in 29 CFR 1926.1101(f), (g) and Appendix A. This log shall be made available to the Resident Engineer and the VPIH/CIH. The log will contain, at a minimum, information on personnel or area sampled, other persons represented by the sample, the date of sample collection, start and stop times for sampling, sample volume, flow rate, and fibers/cc. The CPIH shall collect and analyze samples for each representative job being done in the regulated area, i.e., removal, wetting, clean-up, and load-out. No fewer than two personal samples per shift shall be collected and one area sample per 1,000 square feet of regulated area where abatement is taking place and one sample per shift in the clean room area shall be collected. In addition to the

continuous monitoring required, the CPIH will perform inspection and testing at the final stages of abatement for each regulated area as specified in the CPIH responsibilities.

## 2.4 STANDARD OPERATING PROCEDURES

The Contractor shall have established Standard Operating Procedures (SOP's) in printed form and loose leaf folder consisting of simplified text, diagrams, sketches, and pictures that establish and explain clearly the procedures to be followed during all phases of the work by the Contractor's personnel. The SOP's must be modified as needed to address specific requirements of this project and the specifications. The SOP's shall be submitted for review and approval prior to the start of any abatement work. The minimum topics and areas to be covered by the SOP's are:

- A. Minimum Personnel Qualifications
- B. Emergency Action Plan/Contingency Plans and Arrangements
- C. Security and Safety Procedures
- D. Respiratory Protection/Personal Protective Equipment Program and Training
- E. Medical Surveillance Program and Record keeping
- F. Regulated Area Requirements - Containment Barriers/Isolation of Regulated Area
- G. Decontamination Facilities and Entry/Exit Procedures (PDF and W/EDF)
- H. Negative Pressure Systems Requirements
- I. Monitoring, Inspections, and Testing
- J. Removal Procedures for ACM
- K. Removal of Contaminated Soil (if applicable)
- L. Encapsulation Procedures for ACM
- M. Disposal of ACM waste/equipment
- N. Regulated Area Decontamination/Clean-up
- O. Regulated Area Visual and Air Clearance
- P. Project Completion/Closeout

## 2.5 ENCAPSULANTS

### 2.5.1 Types Of Encapsulants

A. The following four types of encapsulants, if used, must comply with performance requirements as stated in paragraph 2.5.2:

- 1. Removal encapsulant - used as a wetting agent to remove ACM.
- 2. Bridging encapsulant - provides a tough, durable coating on ACM.
- 3. Penetrating encapsulant - penetrates/encapsulates ACM at least 13 mm (1/2").
- 4. Lockdown encapsulant - seals microscopic fibers on surfaces after ACM removal.

### 2.5.2 Performance Requirements

Encapsulants shall meet the latest requirements of EPA; shall not contain toxic or hazardous substances; or solvents; and shall comply with the following performance requirements:

- A. General Requirements for all Encapsulants:
  - 1. **ASTM E 84**: Flame spread of 25; smoke emission of 50.
  - 2. University of Pittsburgh Protocol: Combustion Toxicity; zero mortality.
  - 3. **ASTM C 732**: Accelerated Aging Test; Life Expectancy - 20

years.

4. **ASTM E 96**: Permeability - minimum of 0.4 perms.

B. Bridging/Penetrating Encapsulants:

1. **ASTM E 736**: Cohesion/Adhesion Test - 24 kPa (50 lbs/ft<sup>2</sup>).
2. **ASTM E 119**: Fire Resistance - 3 hours (Classified by UL for use on fibrous/cementitious fireproofing).
3. **ASTM D 2794**: Gardner Impact Test; Impact Resistance - minimum 11.5 kg-mm (43 in/lb).
4. **ASTM D 522**: Mandrel Bend Test; Flexibility - no rupture or cracking.

C. Lockdown Encapsulants:

1. **ASTM E 119**: Fire resistance - 3 hours (tested with fireproofing over encapsulant applied directly to steel member).
2. **ASTM E 736**: Bond Strength - 48 kPa (100 lbs/ft<sup>2</sup>) (test compatibility with cementitious and fibrous fireproofing).
3. In certain situations, encapsulants may have to be applied to hot pipes/equipment. The encapsulant must be able to withstand high temperatures without cracking or off-gassing any noxious vapors during application.

2.5.3 Certificates Of Compliance

The Contractor shall submit to the Resident Engineer and VA Industrial Hygienist (VPIH) certification from the manufacturer indicating compliance with performance requirements for encapsulants when applied according to manufacturer recommendations.

PART 3 EXECUTION

3.1 PRE-ABATEMENT ACTIVITIES

3.1.1 Pre-Abatement Meeting

The Resident Engineer, upon receipt, review, and substantial approval of all pre-abatement submittals and verification by the CPIH that all materials and equipment required for the project are on the site, will arrange for a pre-abatement meeting between the Contractor, the CPIH, Competent Person(s), the Resident Engineer(s), and the VPIH/CIH. The purpose of the meeting is to discuss any aspect of the submittals needing clarification or amplification and to discuss any aspect of the project execution and the sequence of the operation. The Contractor shall be prepared to provide any supplemental information/documentation to the VA's representative regarding any submittals, documentation, materials or equipment. Upon satisfactory resolution of any outstanding issues, the VA's representative will issue a written order to proceed to the Contractor. No abatement work of any kind described in the following provisions shall be initiated prior to the VA written order to proceed.

3.1.2 Pre-Abatement Inspections And Preparations

Before any work begins on the construction of the regulated area, the Contractor will:

- A. Conduct a space-by-space inspection with an authorized Resident Engineer and prepare a written inventory of all existing damage in those spaces where asbestos abatement will occur. Still or video photography may be used to supplement the written damage inventory.

Document will be signed and certified as accurate by both parties.

B. The Resident Engineer, the Contractor, and the VPIH/CIH must be aware of 10/95 A/E Quality Alert indicating the failure to identify asbestos in the areas listed. Make sure these areas are looked at/reviewed on the project: Lay-in ceilings concealing ACM; ACM behind walls/windows from previous renovations; inside chases/walls; transite piping/ductwork/sheets; behind radiators; roofing materials; below window sills; water/sewer lines; electrical conduit coverings; crawl spaces( previous abatement contamination); flooring/mastic covered by carpeting/new flooring; exterior insulated wall panels; on underground fuel tanks; steam line trench coverings.

C. Ensure that all furniture, machinery, equipment, curtains, drapes, blinds, and other movable objects required to be removed from the regulated area have been cleaned and removed or properly protected from contamination. The Resident Engineer shall determine which items are to be removed by the VA. All items not removed by the VA shall be properly protected by the Contractor.

D. If present and required, remove and dispose of carpeting from floors in the regulated area.

E. Inspect existing firestopping in the regulated area. Correct as needed.

### 3.1.3 Pre-Abatement Construction And Operations

A. Perform all preparatory work for the first regulated area in accordance with the approved work schedule and with this specification.

B. Upon completion of all preparatory work, the CPIH will inspect the work and systems and will notify the VA's representative when the work is completed in accordance with this specification. The VA's representative may inspect the regulated area and the systems with the VPIH/CIH and may require that upon satisfactory inspection, the Contractor's employees perform all major aspects of the approved SOP's, especially worker protection, respiratory systems, contingency plans, decontamination procedures, and monitoring to demonstrate satisfactory operation. The operational systems for respiratory protection and the negative pressure system shall be demonstrated for proper performance.

C. The CPIH shall document the pre-abatement activities described above and deliver a copy to the VA's representative.

D. Upon satisfactory inspection of the installation of and operation of systems the VA's representative will notify the Contractor in writing to proceed with the asbestos abatement work in accordance with this specification and all applicable regulations.

### 3.2 REGULATED AREA PREPARATIONS

A. Post OSHA DANGER signs meeting the specifications of OSHA 29 CFR 1926.1101 at any location and approaches to the regulated area where airborne concentrations of asbestos may exceed ambient background levels. Signs shall be posted at a distance sufficiently far enough away from the regulated area to permit any personnel to read the sign and take the necessary measures to avoid exposure. Additional signs will be posted following construction of the regulated area enclosure.



B. Shut down and lock out electric power to the regulated area. Provide temporary power and lighting. Insure safe installation including GFCI of temporary power sources and equipment by compliance with all applicable electrical code requirements and OSHA requirements for temporary electrical systems. Electricity shall be provided by the VA.

C. Shut down and lock out heating, cooling, and air conditioning system (HVAC) components that are in, supply or pass through the regulated area. Investigate the regulated area and agree on pre-abatement condition with the VA's representative. Seal all intake and exhaust vents in the regulated area with duct tape and 2 layers of 6-mil poly. Also, seal any seams in system components that pass through the regulated area. Remove all contaminated HVAC system filters and place in labeled 6-mil polyethylene disposal bags for staging and eventual disposal as asbestos waste.

D. The Contractor shall provide sanitary facilities for abatement personnel and maintain them in a clean and sanitary condition throughout the abatement project.

E. The VA will provide water for abatement purposes. The Contractor shall connect to the existing VA system. The service to the shower(s) shall be supplied with backflow prevention.

F. Pre-clean all movable objects within the regulated area using a HEPA filtered vacuum and/or wet cleaning methods as appropriate. After cleaning, these objects shall be removed from the regulated area and carefully stored in an uncontaminated location. If contaminated, Drapes, clothing, upholstered furniture and other fabric items should be disposed of as asbestos contaminated waste. Cleaning these asbestos contaminated items utilizing HEPA vacuum techniques and off-premises steam cleaning is very difficult and cannot guarantee decontamination. Since adequate cleaning of contaminated fabrics is difficult, the VA Resident Engineer will determine whether this option is an appropriate one. Carpeting will be disposed of prior to abatement if in the regulated area.

G. Pre-clean all fixed objects in the regulated area using HEPA filtered vacuums and/or wet cleaning techniques as appropriate. Careful attention must be paid to machinery behind grills or gratings where access may be difficult but contamination may be significant. Also, pay particular attention to wall, floor and ceiling penetration behind fixed items. After precleaning, enclose fixed objects with 2 layers of 6-mil poly and seal securely in place with duct tape. Objects (e.g., permanent fixtures, shelves, electronic equipment, laboratory tables, sprinklers, alarm systems, closed circuit TV equipment and computer cables) which must remain in the regulated area and that require special ventilation or enclosure requirements should be designated here along with specified means of protection. Contact the manufacturer for special protection.

H. Pre-clean all surfaces in the regulated area using HEPA filtered vacuums and/or wet cleaning methods as appropriate. Do not use any methods that would raise dust such as dry sweeping or vacuuming with equipment not equipped with HEPA filters. Do not disturb asbestos-containing materials during this pre-cleaning phase.

### 3.3 CONTAINMENT BARRIERS AND COVERINGS FOR THE REGULATED AREA GENERAL

Follow requirements of 2.2 CONTAINMENT BARRIERS AND COVERINGS IN THE REGULATED AREA.

### 3.4 REMOVAL OF ACM

#### 3.4.1 Wetting ACM

A. Use amended water for the wetting of ACM prior to removal. The Competent Person shall assure the wetting of ACM meets the definition of "adequately wet" in the EPA NESHAP's regulation and OSHA's "wet methods" for the duration of the project. A removal encapsulant may be used instead of amended water with written approval of the VA's representative.

B. Amended Water: Provide water to which a surfactant has been added shall be used to wet the ACM and reduce the potential for fiber release during disturbance of ACM. The mixture must be equal to or greater than the wetting provided by water amended by a surfactant consisting one ounce of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with 5 gallons (19L) of water.

C. Removal Encapsulant: Provide a penetrating encapsulant designed specifically for the removal of ACM. The material must, when used, result in adequate wetting of the ACM and retard fiber release during removal.

#### 3.4.2 Secondary Barrier And Walkways

A. Install as a drop cloth a 6 mil poly sheet at the beginning of each work shift where removal is to be done during that shift. Completely cover floors and any walls within 10 feet (3M) of the area where work is to be done. Secure the secondary barrier with duct tape to prevent debris from getting behind it. Remove the secondary barrier at the end of the shift or as work in the area is completed. Keep residue on the secondary barrier wetted. When removing, fold inward to prevent spillage and place in a disposal bag.

B. Install walkways using 6 mil black poly between the regulated area and the decontamination facilities (PDF and W/EDF) to protect the primary layers from contamination and damage. Install the walkways at the beginning of each shift and remove at the end of each shift.

#### 3.4.3 Wet Removal Of ACM

A. Adequately and thoroughly wet the ACM to be removed prior to removal to reduce/prevent fiber release to the air. Adequate time must be allowed for the amended water to saturate the ACM. Abatement personnel must not disturb dry ACM. Use a fine spray of amended water or removal encapsulant. Saturate the material sufficiently to wet to the substrate without causing excessive dripping. The material must be sprayed repeatedly/continuously during the removal process in order to maintain adequately wet conditions. Removal encapsulants must be applied in accordance with the manufacturer's written instructions. Perforate or carefully separate, using wet methods, an outer covering that is painted or jacketed in order to allow penetration and wetting of the material. Where necessary, carefully remove covering while wetting to minimize fiber release. **In no event shall dry removal occur except in**

**the case of electrical hazards or where a greater safety issue is possible!**

B. If ACM does not wet well with amended water due to coating or jacketing, remove as follows:

1. Mist work area continuously with amended water whenever necessary to reduce airborne fiber levels.
2. Remove saturated ACM in small sections. Do not allow material to dry out. As material is removed, bag material while still wet into disposal bags. Twist tightly the bag neck, bend over (gooseneck) and seal with a minimum of three tight wraps of duct tape. Clean /decontaminate the outside of any residue and move to washdown station adjacent to W/EDF.
3. Fireproofing or Architectural Finish on Scratch Coat: Spray with a fine mist of amended water or removal encapsulant. Allow time for saturation to the substrate. Do not oversaturate causing excess dripping. Scrape material from substrate. Remove material in manageable quantities and control falling to staging or floor. If the falling distance is over 20 feet (6M), use a drop chute to contain material through descent. Remove residue remaining on the scratch coat after scraping is done using a stiff bristle hand brush. If a removal encapsulant is used, remove residue completely before the encapsulant dries. Re-wet the substrate as needed to prevent drying before the residue is removed.
4. Fireproofing or Architectural Finish on Wire Lath: Spray with a fine mist of amended water or removal encapsulant. Allow time to completely saturate the material. Do not oversaturate causing excess dripping. If the surface has been painted or otherwise coated, cut small holes as needed and apply amended water or removal encapsulant from above. Cut saturated wire lath into 2' x 6' (50mm x 150mm) sections and cut hanger wires. Roll up complete with ACM, cover in burlap and hand place in disposal bag. Do not drop to floor. After removal of lath/ACM, remove any overspray on decking and structure using stiff bristle nylon brushes. Depending on hardness of overspray, scrapers may be needed for removal.
5. Pipe/Tank/Vessel/Boiler Insulation: Remove the outer layer of wrap while spraying with amended water in order to saturate the ACM. Spray ACM with a fine mist of amended water or removal encapsulant. Allow time to saturate the material to the substrate. Cut bands holding pre-formed pipe insulation sections. Slit jacketing at the seams, remove and hand place in a disposal bag. Do not allow dropping to the floor. Remove molded fitting insulation/mud in large pieces and hand place in a disposal bag. Remove any residue on pipe or fitting with a stiff bristle nylon brush. In locations where pipe fitting insulation is removed from fibrous glass or other non-asbestos insulated straight runs of pipe, remove fibrous material at least 6" from the point it contacts the ACM.

#### 3.4.4 Wet Removal Of Amosite

A. Amosite ACM (if any) will require local exhaust ventilation and collection as described below, in addition to wet removal.

B. Provide local exhaust ventilation and collection systems to assure collection of amosite fibers at the point of generation. A 300 mm (12") flexible rigid non-collapsing duct shall be located no more than 600 mm (2') from any scraping/brushing activity. Primary filters must be replaced every 30 minutes on the negative air machines. Each scraping/brushing activity must have a negative air machine devoted to it. For pre-molded pipe insulation or cutting wire lathe attach a 1200 mm (4') square flared end piece on the intake of the duct. Support the duct horizontally at a point 600 mm (2') below the work to effect capture. One person in the crew shall be assigned to operate the duct collection system on a continual basis.

C. Amosite does not wet well with amended water. Submit full information/documentation on the wetting agent proposed prior to start for review and approval by the Resident Engineer. Insure that the material is worked on in small sections and is thoroughly and continuously wetted. Package as soon as possible while wet. Remove as required.

### 3.5 LOCKDOWN ENCAPSULATION

#### 3.5.1 General

Lockdown encapsulation is an integral part of the ACM removal. At the conclusion of ACM removal and before removal of the primary barriers, all surfaces shall be encapsulated with a bridging encapsulant.

#### 3.5.2 Delivery And Storage

Deliver materials to the job site in original, new and unopened containers bearing the manufacturer's name and label as well as the following information: name of material, manufacturer's stock number, date of manufacture, thinning instructions, application instructions and the MSDS for the material.

#### 3.5.3 Worker Protection

Before beginning work with any material for which an MSDS has been submitted, provide workers with any required personal protective equipment. The required personal protective equipment shall be used whenever exposure to the material might occur. In addition to OSHA/specification requirements for respiratory protection, a paint pre-filter and an organic vapor cartridge, at a minimum, shall be used in addition to the HEPA filter when a solvent based encapsulant is used. The CPIH shall be responsible for provision of adequate respiratory protection.

#### 3.5.4 Encapsulation Of Scratch Coat Plaster Or Piping

A. Apply two coats of encapsulant to the scratch coat plaster or piping after all ACM has been removed. Apply in strict accordance with the manufacturer's instructions. Any deviation from the instructions must be approved by the VA's representative in writing prior to commencing the work.

B. Apply the encapsulant with an airless sprayer at a pressure and using a nozzle orifice as recommended by the manufacturer. Apply the first coat while the scratch coat is still damp from the asbestos removal process, after passing the visual inspection. If the surface has been allowed to dry, wet wipe or HEPA vacuum prior to

spraying with encapsulant. Apply a second coat over the first coat in strict conformance with the manufacturer's instructions. Color the encapsulant and contrast the color in the second coat so that visual confirmation of completeness and uniform coverage of each coat is possible. Adhere to the manufacturer's instructions for coloring. At the completion of the encapsulation, the surface must be a uniform third color produced by the mixture.

### 3.5.5 Sealing Exposed Edges

Seal edges of ACM exposed by removal work which is inaccessible, such as a sleeve, wall penetration, etc., with two coats of encapsulant. Prior to sealing, permit the exposed edges to dry completely to permit penetration of the encapsulant. Apply in accordance with 3.5.4 (B).

## 3.6 DISPOSAL OF ACM WASTE MATERIALS

### 3.6.1 General

Dispose of waste ACM and debris which is packaged in accordance with these specifications, OSHA, EPA and DOT. The landfill requirements for packaging must also be met. Disposal shall be done at an approved landfill. Disposal of non-friable ACM shall be done in accordance with applicable regulations.

### 3.6.2 Procedures

A. Asbestos waste shall be packaged and moved through the W/EDF into a covered transport container in accordance with procedures in this specification. Waste shall be double-bagged prior to disposal. Wetted waste can be very heavy. Bags shall not be overfilled. Bags shall securely sealed to prevent accidental opening and/or leakage. The top shall be tightly twisted and goosenecked prior to tightly sealing with at least three wraps of duct tape. Ensure that unauthorized persons do not have access to the waste material once it is outside the regulated area. All transport containers must be covered at all times when not in use. NESHAP's signs must be on containers during loading and unloading. Material shall not be transported in open vehicles. If drums are used for packaging, the drums shall be labeled properly and shall not be re-used.

B. Waste Load Out: Waste load out shall be done in accordance with the procedures in W/EDF Decontamination Procedures. Bags shall be decontaminated on exterior surfaces by wet cleaning and/or HEPA vacuuming before being placed in the second bag.

C. Asbestos waste with sharp edged components, i.e., nails, screws, lath, strapping, tin sheeting, jacketing, metal mesh, etc., which might tear poly bags shall be wrapped securely in burlap before packaging and, if needed, use a poly lined fiber drum as the second container, prior to disposal.

## 3.7 PROJECT DECONTAMINATION

### 3.7.1 General

A. The entire work related to project decontamination shall be performed under the close supervision and monitoring of the CPIH.

B. If the asbestos abatement work is in an area which was contaminated

prior to the start of abatement, the decontamination will be done by cleaning the primary barrier poly prior to its removal and cleanings of the surfaces of the regulated area after the primary barrier removal.

C. If the asbestos abatement work is in an area which was uncontaminated prior to the start of abatement, the decontamination will be done by cleaning the primary barrier poly prior to its removal, thus preventing contamination of the building when the regulated area critical barriers are removed.

### 3.7.2 Regulated Area Clearance

Air testing and other requirements which must be met before release of the Contractor and re-occupancy of the regulated area space are specified in Final Testing Procedures.

### 3.7.3 Work Description

Decontamination includes the clearance of the air in the regulated area and the decontamination and removal of the enclosures/facilities installed prior to the abatement work including primary/critical barriers, PDF and W/EDF facilities, and negative pressure systems.

### 3.7.4 Pre-Decontamination Conditions

A. Before decontamination starts, all ACM waste from the regulated area shall be removed, all waste collected and removed, and the loose 6 mil layer of poly removed and disposed of along with any gross debris generated by the work.

B. At the start of decontamination, the following shall be in place:

1. Primary barriers consisting of 2 layers of 6 mil poly on the floor and 4 mil poly on the walls.
2. Critical barriers consisting of 2 layers of 6 mil poly which is the sole barrier between the regulated area and openings to the rest of the building or outside.
3. Decontamination facilities for personnel and equipment in operating condition and the negative pressure system in operation.

### 3.7.5 First Cleaning

Carry out a first cleaning of all surfaces of the regulated area including items of remaining poly sheeting, tools, scaffolding, ladders/staging by wet methods and/or HEPA vacuuming. Do not use dry dusting/sweeping methods. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible residue from abated surfaces or poly or other surfaces. Remove all filters in the air handling system and dispose of as ACM waste in accordance with these specifications. The negative pressure system shall remain in operation during this time. If determined by the CPIH/VPIH/CIH additional cleaning(s) may be needed.

### 3.7.6 Pre-Clearance Inspection And Testing

The CPIH and VPIH/CIH will perform a thorough and detailed visual inspection at the end of the cleaning to determine whether there is any visible residue in the regulated area. If the visual inspection is acceptable, the CPIH will perform pre-clearance sampling using aggressive clearance as detailed in 40 CFR 763 Subpart E (AHERA) Appendix A

(III) (B) (7) (d). If the sampling results show values below 0.01 f/cc, then the Contractor shall notify the VA's representative of the results with a brief report from the CPIH documenting the inspection and sampling results and a statement verifying that the regulated area is ready for lockdown encapsulation. The VA reserves the right to utilize their own VPIH/CIH to perform a pre-clearance inspection and testing for verification.

### 3.7.7 Lockdown Encapsulation Of Abated Surfaces

With the express written permission of the VA's representative, perform lockdown encapsulation of all surfaces from which asbestos was abated in accordance with the procedures in this specification. Negative pressure shall be maintained in the regulated area during the lockdown application.

## 3.8 FINAL VISUAL INSPECTION AND AIR CLEARANCE TESTING

### 3.8.1 General

Notify the Resident Engineer 24 hours in advance for the performance of the final visual inspection and testing. The final visual inspection and testing will be performed by the VPIH/CIH starting after the final cleaning.

### 3.8.2 Final Visual Inspection

Final visual inspection will include the entire regulated area, the PDF, all poly sheeting, seals over HVAC openings, doorways, windows, and any other openings. If any debris, residue, dust or any other suspect material is detected, the final cleaning shall be repeated at no cost to the VA. Dust/material samples may be collected and analyzed at no cost to the VA at the discretion of the VPIH/CIH to confirm visual findings. When the regulated area is visually clean the final testing can be done.

### 3.8.3 Final Air Clearance Testing

A. After an acceptable final visual inspection by the VPIH/CIH and Resident Engineer, the VPIH/CIH will perform the final testing. Air samples will be collected and analyzed in accordance with procedures for AHERA in this specification. If work is less than 260 lf/160 sf, 5 PCM samples may be collected for clearance. If work is equal to or more than 260 lf/160 sf, TEM sampling shall be done for clearance. TEM analysis shall be done in accordance with procedures in this specification. If the release criteria are not met, the Contractor shall repeat the final cleaning and continue decontamination procedures until clearance is achieved. All Additional inspection and testing costs will be borne by the Contractor.

B. If release criteria are met, proceed to perform the abatement closeout and to issue the certificate of completion in accordance with these specifications.

### 3.8.4 Final Air Clearance Procedures

A. Contractor's Release Criteria: Work in a regulated area is complete when the regulated area is visually clean and airborne fiber levels have been reduced to or below 0.01 f/cc as measured with PCM/TEM methods.

B. Air Monitoring and Final Clearance Sampling: To determine if the elevated airborne fiber counts encountered during abatement operations

have been reduced to the specified level, the VPIH/CIH will secure samples and analyze them according to the following procedures:

1. Fibers Counted: "Fibers" referred to in this section shall be either all fibers regardless of composition as counted in the NIOSH 7400 PCM method or asbestos fibers counted using the AHERA TEM method.

2. Aggressive Sampling: All final air testing samples shall be collected using aggressive sampling techniques except where soil is not encapsulated or enclosed. Samples will be collected on 0.8m MCE filters for PCM analysis and 0.45m Polycarbonate filters for TEM. A minimum of 1200 Liters of air shall be collected for clearance samples. Before pumps are started, initiate aggressive sampling as detailed in 40 CFR 763 Subpart E (AHERA) Appendix A (III) (B) (7) (d). Air samples will be collected in areas subject to normal air circulation away from corners, obstructed locations, and locations near windows, doors, or vents. After air sampling pumps have been shut off, circulating fans shall be shut off. The negative pressure system shall continue to operate.

#### 3.8.5 Clearance Sampling Using PCM - Less Than 260LF/160SF:

- A. The VPIH/CIH will perform clearance samples as indicated by the specification.

- B. The NIOSH 7400 PCM method will be used for clearance sampling with a minimum collection volume of 1200 Liters of air. A minimum of 5 PCM clearance samples shall be collected. All samples must be equal to or less than 0.01 f/cc to clear the regulated area.

#### 3.8.6 Clearance Sampling Using TEM - Equal To Or More Than 260LF/160SF: TEM

Clearance requires 13 samples be collected; 5 inside the regulated area; 5 outside the regulated area; and 3 field blanks.

#### 3.8.7 Laboratory Testing Of PCM Clearance Samples

The services of an AIHA accredited laboratory will be employed by the VA to perform analysis for the air samples. Samples will be sent daily by the VPIH/CIH so that verbal/faxed reports can be received within 24 hours. A complete record, certified by the laboratory, of all air monitoring tests and results will be furnished to the VA's representative and the Contractor.

#### 3.8.8 Laboratory Testing Of TEM Samples

Samples shall be sent by the VPIH/CIH to an accredited laboratory for analysis by TEM. Verbal/faxed results from the laboratory shall be available within 24 hours after receipt of the samples. A complete record, certified by the laboratory, of all TEM results shall be furnished to the VA's representative and the Contractor.

### 3.9 ABATEMENT CLOSEOUT AND CERTIFICATE OF COMPLIANCE

#### 3.9.1 Completion Of Abatement Work

After thorough decontamination, seal negative air machines with 2 layers of 6 mil poly and duct tape to form a tight seal at the intake/outlet ends before removal from the regulated area. Complete asbestos abatement work



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upon meeting the regulated area visual and air clearance criteria and fulfilling the following:

- A. Remove all equipment and materials from the project area.
- B. Dispose of all packaged ACM waste as required.
- C. Repair or replace all interior finishes damaged during the abatement work, as required.
- D. Fulfill other project closeout requirements as required in this specification.

### 3.9.2 Certificate Of Completion By Contractor

The CPIH shall complete and sign the "Certificate of Completion" in accordance with Attachment 1 at the completion of the abatement and decontamination of the regulated area.

### 3.9.3 Work Shifts

All work shall be done during administrative hours (8:00 AM to 4:30 PM) Monday -Friday excluding Federal Holidays. Any change in the work schedule must be approved in writing by the Resident Engineer. Operating Room Suite work can be done only during O.R. shutdown which occurs on one Friday every other month or by special arrangements for weekend work. Other special equipment containing rooms and/or medical procedure rooms will require overnight work hours as arranged by Resident Engineer and Hospital Staff.

### 3.10 ATTACHMENTS

- ATTACHMENT #1 Certificate of Completion
- ATTACHMENT #2 Certificate of Worker's Acknowledgement
- ATTACHMENT #3 Affidavit of Medical Surveillance, Respiratory Protection and Training/Accreditation
- ATTACHMENT #4 Abatement Contractor/Competent Person(s) Review and Acceptance of the VA's Asbestos Specification
- ATTACHMENT #5 Diagrams 1 & 2

**ATTACHMENT #1**

**CERTIFICATE OF COMPLETION**

DATE:

PROJECT NAME:

VAMC/ADDRESS:

1. I certify that I have personally inspected, monitored and supervised the abatement work of \_\_\_\_\_: which took place from \_\_\_\_\_ to \_\_\_\_\_.
2. That throughout the work all applicable requirements/regulations and the VA's specifications were met.
3. That any person who entered the regulated area was protected with the appropriate personal protective equipment and respirator and that they followed the proper entry and exit procedures and the proper operating procedures for the duration of the work.
4. That all employees of the Contractor engaged in this work were trained in respiratory protection, were experienced with abatement work, had proper medical surveillance documentation, were fit-tested for their respirator, and were not exposed at any time during the work to asbestos without the benefit of appropriate respiratory protection.
5. That I performed and supervised all inspection and testing specified and required by applicable regulations and VA specifications.
6. That the conditions inside the regulated area were always maintained in a safe and healthy condition and the maximum fiber count never exceeded 0.5 f/cc, except as described below.
7. That the negative pressure system was installed, operated and maintained in order to provide a minimum of 4 actual air changes per hour with a continuous -0.02" of water column pressure.

Signature/Date: \_\_\_\_\_

Signature/Date: \_\_\_\_\_

**ATTACHMENT #2**

**CERTIFICATE OF WORKER'S ACKNOWLEDGMENT**

PROJECT NAME:

DATE:

PROJECT ADDRESS:

ABATEMENT CONTRACTOR'S NAME:

WORKING WITH ASBESTOS CAN BE HAZARDOUS TO YOUR HEALTH. INHALING ASBESTOS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCERS. IF YOU SMOKE AND INHALE ASBESTOS FIBERS YOUR CHANCES OF DEVELOPING LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with the owner for the above project requires that: You must be supplied with the proper personal protective equipment including an adequate respirator and be trained in its use. You must be trained in safe and healthy work practices and in the use of the equipment found at an asbestos abatement project. You must receive/have a current medical examination for working with asbestos. These things shall be provided at no cost to you. By signing this certificate you are indicating to the owner that your employer has met these obligations.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators and have been informed of the type of respirator to be used on the above indicated project. I have a copy of the written Respiratory Protection Program issued by my employer. I have been provided for my exclusive use, at no cost, with a respirator to be used on the above indicated project.

TRAINING COURSE: I have been trained by a third party, State/EPA accredited trainer in the requirements for an AHERA/OSHA Asbestos Abatement Worker training course, 32 hours minimum duration. I currently have a valid State accreditation certificate. The topics covered in the course include, as a minimum, the following:

- Physical Characteristics and Background Information on Asbestos
- Potential Health Effects Related to Exposure to Asbestos
- Employee Personal Protective Equipment
- Establishment of a Respiratory Protection Program
- State of the Art Work Practices
- Personal Hygiene
- Additional Safety Hazards
- Medical Monitoring
- Air Monitoring
- Relevant Federal, State and Local Regulatory Requirements, Procedures, and Standards
- Asbestos Waste Disposal

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months which was paid for by my employer. This examination included: health history, occupational history, pulmonary function test, and may have included a chest x-ray evaluation. The physician issued a positive written opinion after the examination.

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Social Security Number: \_\_\_\_\_

Witness: \_\_\_\_\_

**ATTACHMENT #3**

**AFFIDAVIT OF MEDICAL SURVEILLANCE, RESPIRATORY PROTECTION AND  
TRAINING/ACCREDITATION**

VA PROJECT NAME AND NUMBER:

VA MEDICAL FACILITY:

ABATEMENT CONTRACTOR'S NAME AND ADDRESS:

1. I verify that the following individual

Name: \_\_\_\_\_ Social Security Number: \_\_\_\_\_

who is proposed to be employed in asbestos abatement work associated with the above project by the named. Contractor, is included in a medical surveillance program in accordance with 29 CFR 1926.1101(m), and that complete records of the medical surveillance program as required by 29 CFR 1926.1101(m) (n) and 29 CFR 1910.20 are kept at the offices of the Contractor at the following address.

Address:

2. I verify that this individual has been trained, fit-tested and instructed in the use of all appropriate respiratory protection systems and that the person is capable of working in safe and healthy manner as expected and required in the expected work environment of this project.

3. I verify that this individual has been trained as required by 29 CFR 1926.1101(k). This individual has also obtained a valid State accreditation certificate. Documentation will be kept on-site.

4. I verify that I meet the minimum qualifications criteria of the VA specifications for a CPIH.

Signature of CPIH: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name of CPIH: \_\_\_\_\_

Signature of Contractor: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name of Contractor: \_\_\_\_\_

**ATTACHMENT #4**

**ABATEMENT CONTRACTOR/COMPETENT PERSON(S)  
REVIEW AND ACCEPTANCE OF THE VA'S ASBESTOS SPECIFICATIONS**

VA Project Location: \_\_\_\_\_

VA Project #: \_\_\_\_\_

VA Project Description: \_\_\_\_\_

This form shall be signed by the Asbestos Abatement Contractor Owner and the Asbestos Abatement Contractor's Competent Person(s) prior to any start of work at the VA related to this Specification. If the Asbestos Abatement Contractor's/Competent Person(s) has not signed this form, they shall not be allowed to work on-site.

I, the undersigned, have read VA's Asbestos Specification regarding the asbestos abatement requirements. I understand the requirements of the VA's Asbestos Specification and agree to follow these requirements as well as all required rules and regulations of OSHA/EPA/DOT and State/Local requirements. I have been given ample opportunity to read the VA's Asbestos Specification and have been given an opportunity to ask any questions regarding the content and have received a response related to those questions. I do not have any further questions regarding the content, intent and requirements of the VA's Asbestos Specification.

At the conclusion of the asbestos abatement, I will certify that all asbestos abatement work was done in accordance with the VA's Asbestos Specification and all ACM was removed properly and no fibrous residue remains on any abated surfaces.

Abatement Contractor Owner's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Abatement Contractor Competent Person(s): \_\_\_\_\_ Date: \_\_\_\_\_

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SECTION 02 83 33.13

LEAD-BASED PAINT REMOVAL AND DISPOSAL

PART 1 GENERAL

1.1 DESCRIPTION

This section specifies abatement and disposal of lead-based paint (LBP) and controls needed to limit occupational and environmental exposure to lead hazards.

Follow all requirements as specified in "Limited Asbestos Containing Materials & Lead Containing Paint Survey Report" prepared by Axiom Partners, Inc. incorporated herein by reference and attached as an appendix.

1.2 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.

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

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulations for Construction
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 268	Land Disposal Restrictions

UNDERWRITERS LABORATORIES (UL)

UL 586	(1996; Rev thru Apr 2000) High-Efficiency, Particulate, Air Filter Units
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AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z9.2

(2001) Fundamentals Governing the Design  
and Operation of Local Exhaust Ventilation  
Systems

1.3 RELATED WORK

Section 02 82 11, TRADITIONAL ASBESTOS ABATEMENT.

Section 02 41 00, DEMOLITION.

Section 09 91 00, PAINTING.

1.4 DEFINITIONS

A. Action Level: Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air averaged over an 8-hour period. As used in this section, "30 micrograms per cubic meter of air" refers to the action level.

B. Area Monitoring: Sampling of lead concentrations within the lead control area and inside the physical boundaries which is representative of the airborne lead concentrations which may reach the breathing zone of personnel potentially exposed to lead.

C. Physical Boundary: Area physically roped or partitioned off around an enclosed lead control area to limit unauthorized entry of personnel. As used in this section, "inside boundary" shall mean the same as "outside lead control area."

D. Certified Industrial Hygienist (CIH): As used in this section, refers to an Industrial Hygienist employed by the Contractor and is certified by the American Board of Industrial Hygiene in comprehensive practice.

E. Change Rooms and Shower Facilities: Rooms within the designated physical boundary around the lead control area equipped with separate storage facilities for clean protective work clothing and equipment and for street clothes which prevent cross- contamination.

F. Competent Person: A person capable of identifying lead hazards in the work area and is authorized by the contractor to take corrective action.

G. Decontamination Room: Room for removal of contaminated personal protective equipment (PPE).

H. Eight-Hour Time Weighted Average (TWA): Airborne concentration of lead averaged over an 8-hour workday to which an employee is exposed.

I. High Efficiency Particulate Air (HEPA) Filter Equipment: HEPA filtered vacuuming equipment with a UL 586 filter system capable of collecting and retaining lead-contaminated paint dust. A high efficiency particulate filter means 99.97 percent efficient against 0.3 micron size particles.

J. Lead: Metallic lead, inorganic lead compounds, and organic lead soaps. Excluded from this definition are other organic lead compounds.

K. Lead Control Area: An enclosed area or structure with full containment to prevent the spread of lead dust, paint chips, or debris of

lead-containing paint removal operations. The lead control area is isolated by physical boundaries to prevent unauthorized entry of personnel.

L. Lead Permissible Exposure Limit (PEL): Fifty micrograms per cubic meter of air as an 8-hour time weighted average as determined by 29 CFR 1910.1025. If an employee is exposed for more than 8 hours in a work day, the PEL shall be determined by the following formula:  $PEL \text{ (micrograms/cubic meter of air)} = 400 / \text{No. of hrs worked per day}$ .

M. Personnel Monitoring: Sampling of lead concentrations within the breathing zone of an employee to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1910.1025. Samples shall be representative of the employee's work tasks. Breathing zone shall be considered an area within a hemisphere, forward of the shoulders, with a radius of 150 mm to 225 mm (6 to 9 inches) and the center at the nose or mouth of an employee.

#### 1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

##### SD-01 Preconstruction Submittals

Qualifications of CIH; G, RO;

Testing Laboratory; G, RO

Lead-Containing Paint Removal Plan; G, RO

Hazardous Waste Management Plan; G, RO

##### SD-03 Product Data

Filters; G, RO

Vacuum filters.

Respirators; G, RO

##### SD-06 Test Reports

Field Test Reports; G, RO

Submit monitoring results to the Contracting Officer within 3 working days, signed by the testing laboratory employee performing the air monitoring, the employee that analyzed the sample, and the CIH.

##### SD-07 Certificates

Medical Examination; G, RO

Certification of medical examinations.

Training Certification; G, RO

Employee training certification.

Hazardous Waste Manifest; G, RO.

Completed and signed hazardous waste manifest from treatment or disposal facility.

SD-08 Manufacturer's Instructions

Paint Removal Products; G, RO

Material Safety Data Sheets; G, RO

#### 1.5.1 Qualifications of CIH

Submit name, address, and telephone number of the CIH selected to perform responsibilities in paragraph entitled "CIH Responsibilities." Provide previous experience of the CIH. Submit proper documentation that the Industrial Hygienist is certified by the American Board of Industrial Hygiene in comprehensive practice, including certification number and date of certification/recertification.

#### 1.5.2 Testing Laboratory

Submit the name, address, and telephone number of the testing laboratory selected to perform the monitoring, testing, and reporting of airborne concentrations of lead. Provide proper documentation that persons performing the analysis have been judged proficient by successful participation within the last year in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing (PAT) Program. The laboratory shall be accredited by the American Industrial Hygiene Association (AIHA). Provide AIHA documentation along with date of accreditation/reaccreditation.

#### 1.5.3 Lead-Containing Paint Removal Plan

a. Submit a detailed job-specific plan of the work procedures to be used in the removal of lead-containing paint. The plan shall include a sketch showing the location, size, and details of lead control areas, location and details of decontamination rooms, change rooms, shower facilities, and mechanical ventilation system.

b. Include in the plan, eating, drinking, smoking and restroom procedures, interface of trades, sequencing of lead related work, collected wastewater and paint debris disposal plan, air sampling plan, respirators, protective equipment, and a detailed description of the method of containment of the operation to ensure that airborne lead concentrations of 30 micrograms per cubic meter of air are not exceeded outside of the lead control area.

c. Include air sampling, training and strategy, sampling methodology, frequency, duration of sampling, and qualifications of air monitoring personnel in the air sampling portion on the plan.

d. Include a method to contain obnoxious fumes and odors from dispersal into the occupied patient and staff areas of the hospital.

## 1.6 QUALITY ASSURANCE

Before exposure to lead-contaminated dust, provide workers with a comprehensive [medical examination](#) as required by [29 CFR 1926.62 \(I\) \(1\) \(i\) & \(ii\)](#). The examination shall not be required if adequate records show that employees have been examined as required by [29 CFR 1926.62\(I\)](#) within the last year.

### 1.6.1 Medical Records:

Maintain complete and accurate medical records of employees in accordance with [29 CFR 1910.20](#).

### 1.6.2 CIH Responsibilities:

The Contractor shall employ a certified Industrial Hygienist who will be responsible for the following:

1. Certify Training.
2. Review and approve lead-containing paint removal plan for conformance to the applicable referenced standards.
3. Inspect lead-containing paint removal work for conformance with the approved plan.
4. Direct monitoring.
5. Ensure work is performed in strict accordance with specifications at all times.
6. Ensure hazardous exposure to personnel and to the environment are adequately controlled at all times.

### 1.6.3 Training:

Train each employee performing paint removal, disposal, and air sampling operations prior to the time of initial job assignment, in accordance with [29 CFR 1926.62](#).

### 1.6.4 [Training Certification](#):

Submit certificates signed and dated by the CIH and by each employee stating that the employee has received training.

### 1.6.5 Respiratory Protection Program:

Furnish each employee required to wear a negative pressure respirator or other appropriate type with a respirator fit test at the time of initial fitting and at least every 6 months thereafter as required by [29 CFR 1926.62](#).

Establish and implement a respiratory protection program as required by [29 CFR 1910.134](#), [29 CFR 1910.1025](#), and [29 CFR 1926.62](#).

### 1.6.6 Hazard Communication Program:

Establish and implement a Hazard Communication Program as required by [29 CFR 1910.1200](#).

#### 1.6.7 Hazardous Waste Management:

The [Hazardous Waste Management Plan](#) shall comply with applicable requirements of Federal, State, and local hazardous waste regulations and address:

1. Identification of hazardous wastes associated with the work.
2. Estimated quantities of wastes to be generated and disposed of.
3. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location and a 24-hour point of contact. Furnish two copies of EPA, state, and local hazardous waste permit permits and EPA Identification numbers.
4. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.
5. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.
6. Spill prevention, containment, and cleanup contingency measures to be implemented.
7. Work plan and schedule for waste containment, removal and disposal. Wastes shall be cleaned up and containerized daily.
8. Cost for hazardous waste disposal according to this plan.

#### 1.6.8 Safety and Health Compliance:

1. In addition to the detailed requirements of this specification, comply with laws, ordinances, criteria, rules, and regulations of federal, state, and local authorities regarding removing, handling, storing, transporting, and disposing of lead waste materials. Comply with the applicable requirements of the current issue of [29 CFR 1910.1025](#). Submit matters regarding interpretation of standards to the Contracting Officer for resolution before starting work.
2. Where specification requirements and the referenced documents vary, the most stringent requirements shall apply.

#### 1.6.9 Pre-Construction Conference:

Along with the CIH, meet with the Contracting Officer to discuss in detail the lead-containing paint removal work plan, including work procedures and precautions for the work plan.

## PART 2 PRODUCTS

### 2.1 [PAINT REMOVAL PRODUCTS](#)

Submit manufacturers' instructions and applicable [Material Safety Data Sheets](#) for all paint removal products used in paint removal work. Use the least toxic product, suitable for the job and acceptable to the Industrial Hygienist.

## PART 3 EXECUTION

### 3.1 PROTECTION

#### 3.1.1 Notification:

Notify the Contracting Officer 20 calendar days prior to the start of any paint removal work.

#### 3.1.2 Lead Control Area Requirements:

1. Establish a lead control area by completely enclosing with containment screens the area or structure where lead-containing paint removal operations will be performed.
2. Contain removal operations by the use of a negative pressure full containment system with at least one change room and with HEPA filtered exhaust.

#### 3.1.3 Protection of Existing Work to Remain:

Perform paint removal work without damage or contamination of adjacent areas. Where existing work is damaged or contaminated, restore work to its original condition.

#### 3.1.4 Boundary Requirements:

Provide physical boundaries around the lead control area by roping off the area or providing curtains, portable partitions or other enclosures to ensure that airborne concentrations of lead will not reach 30 micrograms per cubic meter of air outside of the lead control area.

#### 3.1.5 Heating, Ventilating and Air Conditioning (HVAC) Systems:

Shut down, lock out, and isolate HVAC systems that supply, exhaust, or pass through the lead control areas. Seal intake and exhaust vents in the lead control area with 6-mil plastic sheet and tape. Seal seams in HVAC components that pass through the lead control area.

#### 3.1.6 Change Room and Shower Facilities:

Provide clean change rooms and shower facilities within the physical boundary around the designated lead control area in accordance with requirements of 29 CFR 1926.62.

#### 3.1.7 Mechanical Ventilation System:

1. Use adequate ventilation to control personnel exposure to lead in accordance with 29 CFR 1926.57.
2. To the extent feasible, use fixed local exhaust ventilation connected to HEPA filters or other collection systems, approved by the industrial hygienist. Local exhaust ventilation systems shall be designed, constructed, installed, and maintained in accordance with ANSI Z9.2.
3. If air from exhaust ventilation is recirculated into the work place, the system shall have a high efficiency filter with reliable back-up filter and controls to monitor the concentration of lead in the return air and to bypass the recirculation system automatically if it fails. Air may be recirculated only where exhaust to the outside is not feasible.

### 3.1.8 Personnel Protection:

Personnel shall wear and use protective clothing and equipment as specified herein. Eating, smoking, or drinking is not permitted in the lead control area. No one will be permitted in the lead control area unless they have been given appropriate training and protective equipment.

### 3.1.9 Warning Signs:

Provide warning signs at approaches to lead control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Signs shall comply with the requirements of 29 CFR 1926.62.

## 3.2 WORK PROCEDURES

Perform removal of lead-containing paint in accordance with approved Lead-Containing Paint Removal Plan. Use procedures and equipment required to limit occupational and environmental exposure to lead when lead-containing paint is removed in accordance with 29 CFR 1926.62, except as specified herein. Dispose of removed paint chips and associated waste in compliance with Environmental Protection Agency (EPA), federal, state, and local requirements.

### 3.2.1 Personnel Exiting Procedures:

1. Whenever personnel exit the lead-controlled area, they shall perform the following procedures and shall not leave the work place wearing any clothing or equipment worn during the work day:

- a. Vacuum themselves off.
- b. Remove protective clothing in the decontamination room, and place them in an approved impermeable disposal bag.
- c. Shower.
- d. Change to clean clothes prior to leaving the physical boundary designated around the lead-contaminated job site.

### 3.2.2 Field Test Reports (Monitoring Results):

Monitoring of airborne concentrations of lead shall be in accordance with 29 CFR 1910.1025 and as specified herein. Air monitoring, testing, and reporting shall be performed by a CIH or an Industrial Hygiene (IH) Technician who is under the direction of the CIH.

1. The CIH or the IH Technician under the direction of the CIH shall be on the job site directing the monitoring, and inspecting the lead-containing paint removal work to ensure that the requirements of the Contract have been satisfied during the entire lead-containing paint removal operation.
2. Take personal air monitoring samples on employees who are anticipated to have the greatest risk of exposure as determined by the CIH. In addition, take air monitoring samples on at least 25 percent of the work crew or a minimum of two employees, whichever is greater, during each work shift.

3. Submit results of air monitoring samples, signed by the CIH, within 24 hours after the air samples are taken. Notify the Contracting Officer immediately of exposure to lead at or in excess of the action level of 30 micrograms per cubic meter of air outside of the lead control area.

### 3.2.3 Monitoring During Paint Removal Work:

1. Perform personal and area monitoring during the entire paint removal operation. Sufficient area monitoring shall be conducted at the physical boundary to ensure unprotected personnel are not exposed above 30 micrograms per cubic meter of air at all times. If the outside boundary lead levels are at or exceed 30 micrograms per cubic meter of air, work shall be stopped and the CIH shall immediately correct the condition(s) causing the increased levels and notify the Contracting Officer immediately.

2. The CIH shall review the sampling data collected on that day to determine if condition(s) requires any further change in work methods. Removal work shall resume when approval is given by the CIH. The Contractor shall control the lead level outside of the work boundary to less than 30 micrograms per cubic meter of air at all times. As a minimum, conduct area monitoring daily on each shift in which lead paint removal operations are performed in areas immediately adjacent to the lead control area.

3. For outdoor operations, at least one sample on each shift shall be taken on the downwind side of the lead control area. If adjacent areas are contaminated, clean and visually inspect contaminated areas. The CIH shall certify that the area has been cleaned of lead contamination.

### 3.3 LEAD-CONTAINING PAINT REMOVAL

Remove paint within the areas designated on the drawings in order to completely expose the substrate. Take whatever precautions are necessary to minimize damage to the underlying substrate.

#### 3.3.1 Indoor Lead Paint Removal:

Select paint removal processes to minimize contamination of work areas with lead-contaminated dust or other lead-contaminated debris/waste. This paint removal process should be described in the lead-containing paint removal plan. Perform manual sanding and scraping to the maximum extent feasible.

#### 3.3.2 Mechanical Paint Removal and Blast Cleaning:

Perform mechanical paint removal and blast cleaning in lead control areas using negative pressure full containments with HEPA filtered exhaust. Collect paint residue and spent grit (used abrasive) from blasting operations for disposal in accordance with EPA, state and local requirements.

#### 3.3.3 Outside Lead Paint Removal:

Select removal processes to minimize contamination of work areas with lead-contaminated dust or other lead-contaminated debris/waste. This paint removal process should be described in the lead-containing paint removal plan. Perform manual sanding and scraping to the maximum extent feasible.



### 3.4 SURFACE PREPARATIONS

Avoid flash rusting or other deterioration of the substrate. Provide surface preparations for painting in accordance with Section 09 91 00, PAINTING.

### 3.5 CLEANUP AND DISPOSAL

#### 3.5.1 Cleanup:

Maintain surfaces of the lead control area free of accumulations of paint chips and dust. Restrict the spread of dust and debris; keep waste from being distributed over the work area. Do not dry sweep or use compressed air to clean up the area. At the end of each shift and when the paint removal operation has been completed, clean the area of visible lead paint contamination by vacuuming with a HEPA filtered vacuum cleaner and wet mopping the area.

#### 3.5.2 Certification:

The CIH shall certify in writing that the inside and outside the lead control area air monitoring samples are less than 30 micrograms per cubic meter of air, the respiratory protection for the employees was adequate, the work procedures were performed in accordance with 29 CFR 1926.62, and that there were no visible accumulations of lead-contaminated paint and dust on the worksite. Do not remove the lead control area or roped-off boundary and warning signs prior to the Contracting Officer's receipt of the CIH's certification. Re-clean areas showing dust or residual paint chips.

#### 3.5.3 Testing of Lead-Containing Paint Residue and Used Abrasive:

Testing of Lead-Containing Paint Residue and Used Abrasive:

#### 3.5.4 Disposal:

1. Collect lead-contaminated waste, scrap, debris, bags, containers, equipment, and lead-contaminated clothing which may produce airborne concentrations of lead particles. Label the containers in accordance with 29 CFR 1926.62. Dispose of lead-contaminated waste material at a EPA approved hazardous waste treatment, storage, or disposal facility off Government property.

2. Handle, store, transport, and dispose lead or lead-contaminated waste in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, and 40 CFR 265. Comply with land disposal restriction notification requirements as required by 40 CFR 268.

#### 3.5.5 Disposal Documentation:

Submit written evidence that the hazardous waste treatment, storage, or disposal facility (TSD) is approved for lead disposal by the EPA and state or local regulatory agencies. Submit one copy of the completed hazardous waste manifest, signed and dated by the initial transporter in accordance with 40 CFR 262.

-- End of Section --

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-- End of Section Table of Contents --

SECTION 06 20 00

FINISH CARPENTRY

PART 1 GENERAL

1.1 SCOPE OF WORK

Provide all rough and finish carpentry required to finish around the window openings including, but not limited to: blocking and shimming; wood casings, trim, and returns; plastic laminate stools, and paneling. The intent is to repair and/or restore the finishes around the windows to like-new condition with materials to match existing after the installation of the replacement windows.

1.2 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 WOOD-PRESERVERS' ASSOCIATION (AWPA)

AWPA M2 (2001) Standard for Inspection of Treated Wood Products

AWPA P5 (2005) Standard for Waterborne Preservatives

AWPA C20 (2003) Structural Lumber Fire-Retardant Treatment by Pressure Processes

AWPA C27 (2002) Plywood - Fire-Retardant Treatment by Pressure Processes

ASME INTERNATIONAL (ASME)

ASME B18.2.1 (1996; R 2005) Square and Hex Bolts and Screws (Inch Series)

ASME B18.2.2 (1987; R 2005) Square and Hex Nuts

ASME B18.6.1 (1981; R 1997) Wood Screws (Inch Series)

ASTM INTERNATIONAL (ASTM)

ASTM F 547 (2001) Nails for Use with Wood and Wood-Base Materials

WINDOW AND DOOR MANUFACTURERS ASSOCIATION (WDMA)

WDMA I.S. 4 (2000) Water-Repellent Preservative Non-Pressure Treatment for Millwork

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AMERICAN LUMBER STANDARDS COMMITTEE (ALSC)

ALSC PS 20 (1970) American Softwood Lumber Standard

ARCHITECTURAL WOODWORK INSTITUTE (AWI)

AWI Qual Stds (8th Edition) AWI Quality Standards

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA LD 3 (2005) Standard for High-Pressure  
Decorative Laminates

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Wood Items, and Trim

Manufacturer's printed data indicating the usage of engineered or recycled wood products, and environmentally safe preservatives.

SD-07 Certificates

Certificates of Grade

Certificates of Compliance

1.4 CERTIFICATES

Provide certificates of grade from the grading agency on graded but unmarked lumber or plywood attesting that materials meet the grade requirements specified herein.

Provide certificates of compliance unless materials bear certification markings or statements.

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver lumber, plywood, trim, and millwork to job site in an undamaged condition. Stack materials to ensure ventilation and drainage. Protect against dampness before and after delivery. Store materials under cover in a well-ventilated enclosure and protect against extreme changes in temperature and humidity. Do not store products in building until wet trade materials are dry.

1.6 QUALITY ASSURANCE

1.6.1 Lumber

Identify each piece or each bundle of lumber, millwork, and trim by the grade mark of a recognized association or independent inspection agency that is certified by the Board of Review, American Lumber Standards

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Committee, to grade the species.

#### 1.6.2 Plywood

Each sheet of plywood shall bear the mark of a recognized association or independent inspection agency that maintains continuing control over quality of the plywood. Mark shall identify plywood by species group or span rating, and shall show exposure durability classification, grade, and compliance with APA Standards.

#### 1.6.3 Pressure-Treated Lumber and Plywood

Each treated piece shall be inspected in accordance with [AWPA M2](#).

#### 1.6.4 Nonpressure-Treated Woodwork and Millwork

Mark, stamp, or label, indicating compliance with [WDMA I.S. 4](#).

#### 1.6.5 Fire-Retardant Treated Lumber

Each piece to bear Underwriters Laboratories label or the label of another nationally recognized independent testing laboratory.

### PART 2 PRODUCTS

#### 2.1 WOOD

##### 2.1.1 Sizes and Patterns of Wood Products

Yard and board lumber sizes shall conform to [ALSC PS 20](#). Provide shaped lumber and millwork in the patterns indicated and standard patterns of the association covering the species. Size references, unless otherwise specified, are nominal sizes, and actual sizes shall be within manufacturing tolerances allowed by the applicable standard.

##### 2.1.2 Trim, Finish, and Frames

Provide species and grades listed below for materials to be paint or transparent finished. Run trim, except window stools and aprons with hollow backs.

1. Painted Finish: Poplar, clear, C or better.
2. Transparent Finish: Red Oak, clear, select.

##### 2.1.3 Softwood Plywood

APA Standard, thicknesses as indicated.

- a. Plywood for finish work: Exterior type, A-C Grade.

#### 2.2 PLASTIC LAMINATE SURFACES

##### 2.2.1 Laminated Plastic

[NEMA LD 3](#).

##### 2.2.1.1 Finish

Grade GP 50 or PF 42, satin finish. Color and pattern shall be to match existing.

#### 2.2.1.2 Backing Sheet

BK 20.

### 2.3 MOISTURE CONTENT OF WOOD PRODUCTS

Air-dry or kiln-dry lumber. Kiln-dry treated lumber after treatment. Maximum moisture content of wood products at time of delivery to the job site, and when installed, shall be as follows:

- a. Interior Finish Lumber, Trim, and Millwork 1 1/4 Inches Nominal or Less in Thickness: 6 percent on 85 percent of the pieces and 8 percent on remainder.
- b. Treated and Untreated Rough Lumber and Blocking 4 Inches Nominal or Less in Thickness: 19 percent.
- c. Moisture content of other materials shall be in accordance with the applicable standards.

### 2.4 PRESERVATIVE TREATMENT OF WOOD PRODUCTS

Lumber and plywood used in contact with masonry or concrete shall be treated with water-borne preservative listed in AWP A P5 as applicable, and inspected in accordance with AWP A M2. Identify treatment on each piece of material by the quality mark of an agency accredited by the Board of Review of the American Lumber Standards Committee.

### 2.5 FIRE-RETARDANT TREATMENT

#### 2.5.1 Wood Products

Fire-retardant treated lumber shall be pressure treated in accordance with AWP A C20. Fire-retardant treated plywood shall be pressure treated in accordance with AWP A C27. Material use shall be defined in AWP A C20 and AWP A C27 for Interior Type A and B and Exterior Type. Treatment and performance inspection shall be by a qualified independent testing agency that establishes performance ratings. Each piece or bundle of treated material shall bear identification of the testing agency to indicate performance with such rating.

Treat the following items:

- a. Any wood that will be exposed to occupied spaces in the final work.
- b. Any wood that will be exposed above suspended ceilings.
- c. Any wood that will not be enclosed in non-combustible materials.

### 2.6 HARDWARE

Provide sizes, types, and spacings of manufactured building materials recommended by the product manufacturer except as otherwise indicated or specified.

#### 2.6.1 Wood Screws

ASME B18.6.1.

#### 2.6.2 Bolts, Nuts, Lag Screws, and Studs

ASME B18.2.1 and ASME B18.2.2.

#### 2.6.3 Nails

Nails shall be the size and type best suited for the purpose and shall conform to ASTM F 547. Nails shall be hot-dip galvanized or aluminum when used on exterior work. For siding, length of nails shall be sufficient to extend 1-1/2 inches into supports, including wood sheathing over framing. Screws for use where nailing is impractical shall be size best suited for purpose.

### 2.7 FABRICATION

#### 2.7.1 Quality Standards (QS)

The terms "Premium", "Custom", and "Economy" refer to the quality grades defined in "AWI Qual Stds" (Quality Standards). Items not specified to be of a specific grade shall be Custom grade. The AWI QS is superseded by all contract document requirements indicated or stated herein.

## PART 3 EXECUTION

### 3.1 FINISH WORK

Provide sizes, materials, and designs as indicated and as specified. Apply primer to finish work before installing. Where practicable, shop assemble and finish items of built-up millwork. Joints shall be tight and constructed in a manner to conceal shrinkage. Miter trim and moldings at exterior angles and cope at interior angles and at returns. Material shall show no warp after installation. Install millwork and trim in maximum practical lengths. Fasten finish work with finish nails. Provide blind nailing where practicable. Set face nails for putty stopping.

#### 3.1.1 Interior Finish Work

After installation, sand exposed surfaces smooth. Provide window and door trim in single lengths.

#### 3.1.2 Window Stools and Aprons

Provide stools with rabbet over window sill. Provide aprons with returns cut accurately to profile of member.

### 3.2 MOLDING AND INTERIOR TRIM

Molding and interior trim shall be installed straight, plumb, level and with closely fitted joints. Exposed surfaces shall be machine sanded at the mill. Molded work shall be coped at returns and interior angles and mitered at external corners. Intersections of flatwork shall be shouldered to ease any inherent changes in plane. Window and door trim shall be provided in single lengths. Blind nailing shall be used to the extent practicable, and face nailing shall be set and stopped with a nonstaining putty to match the finish applied. Screws shall be used for attachment to metal; setting and stopping of screws shall be of the same quality as required where nails are used.

-- End of Section --

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SECTION 07 92 00

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SECTION 07 92 00

JOINT SEALANTS

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.

ASTM INTERNATIONAL (ASTM)

ASTM C 920 (2008) Standard Specification for  
Elastomeric Joint Sealants

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Sealants; G, RO

Primers; G, RO

Bond breakers; G, AE

Backstops; G, AE

Manufacturer's descriptive data including storage requirements, shelf life, curing time, instructions for mixing and application, and primer data (if required). Provide a copy of the Material. Provide manufacturer's standard color chart or sealant material.

SD-07 Certificates

Sealant; G, RO

Certificates of compliance stating that the materials conform to the specified requirements.

1.3 ENVIRONMENTAL CONDITIONS

Apply sealant when the ambient temperature is between 40 and 90 degrees F.

1.4 DELIVERY AND STORAGE

Deliver materials to the job site in unopened manufacturers' external shipping containers, with brand names, date of manufacture, color, and material designation clearly marked thereon. Label elastomeric sealant

containers to identify type, class, grade, and use. Carefully handle and store materials to prevent inclusion of foreign materials or subjection to sustained temperatures exceeding 90 degrees F or less than 0 degrees F.

## 1.5 QUALITY ASSURANCE

### 1.5.1 Compatibility with Substrate

Verify that each of the sealants are compatible for use with joint substrates.

### 1.5.2 Joint Tolerance

Provide joint tolerances in accordance with manufacturer's printed instructions.

### 1.5.3 Mock-Up

Project personnel is responsible for installing sealants in mock-up, using materials and techniques approved for use on the project.

## 1.6 SPECIAL WARRANTY

Guarantee sealant joint against failure of sealant and against water penetration through each sealed joint for 20 years.

## PART 2 PRODUCTS

### 2.1 SEALANTS

Provide sealant that has been tested and found suitable for the substrates to which it will be applied.

#### 2.1.1 Interior Sealant

Provide ASTM C 920, Type S or M, Grade NS, Class 12.5, Use NT. Colors of all sealants shall be as selected by Resident Engineer from Manufacturer's standards. Provide locations of sealant as follows:

##### LOCATION

- a. Small voids between walls or partitions and adjacent work.
- b. Perimeter of frames at windows.
- c. Joints between edge members for acoustical ceiling grid, tile and adjoining vertical surfaces.
- d. Interior locations, not otherwise indicated, shown, or specified, where small voids exist between materials specified to be painted.

#### 2.1.2 Exterior Sealant

For joints in vertical surfaces, provide ASTM C 920, Type S or M, Grade NS, Class 25, Use NT. For joints in horizontal surfaces, provide ASTM C 920, Type S or M, Grade P, Class 25, Use T. Colors of all sealants shall be as selected by Resident Engineer from Manufacturer's standards. Provide

locations of sealant as follows:

#### LOCATION

- a. Joints and recesses formed where frames and vents adjoin masonry, concrete, or metal frames. Use sealant at both exterior and interior surfaces of exterior wall penetrations.
- b. Expansion and control joints.

#### 2.1.3 Preformed Sealant

Provide preformed sealant of polybutylene or isoprene-butylene based pressure sensitive weather resistant tape or bead sealant capable of sealing out moisture, air and dust when installed as recommended by the manufacturer. At temperatures from minus 30 to plus 160 degrees F, the sealant must be non-bleeding and no loss of adhesion.

Tape sealant: Provide cross-section dimensions as required to provide watertight seal. Use as gasket at joints between window A/C units and panels.

#### 2.2 PRIMERS

Provide a non-staining, quick-drying type and consistency recommended by the sealant manufacturer for the particular application.

#### 2.3 BOND BREAKERS

Provide the type and consistency recommended by the sealant manufacturer to prevent adhesion of the sealant to backing or to bottom of the joint.

#### 2.4 BACKSTOPS

Provide closed-cell polyethylene foams free from oil or other staining elements as recommended by sealant manufacturer. Provide 25 to 33 percent oversized backing for closed cell unless otherwise indicated. Make backstop material compatible with sealant. Do not use oakum and other types of absorptive materials as backstops.

#### 2.5 CLEANING SOLVENTS

Provide type(s) recommended by the sealant manufacturer except for aluminum and bronze surfaces that will be in contact with sealant.

### PART 3 EXECUTION

#### 3.1 SURFACE PREPARATION

Clean surfaces from dirt frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion. Remove oil and grease with solvent. Surfaces must be wiped dry with clean cloths. When resealing an existing joint, remove existing calk or sealant prior to applying new sealant. For surface types not listed below, contact sealant manufacturer for specific recommendations.

### 3.1.1 Steel Surfaces

Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finish work, scraping and wire brushing. Remove protective coatings by sandblasting or using a residue-free solvent.

### 3.1.2 Aluminum or Bronze Surfaces

Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating, remove tape and any residual adhesive just prior to sealant application. For removing protective coatings and final cleaning, use non-staining solvents recommended by the manufacturer of the item(s) containing aluminum or bronze surfaces.

### 3.1.3 Concrete and Masonry Surfaces

Where surfaces have been treated with curing compounds, oil, or other such materials, remove materials by sandblasting or wire brushing. Remove laitance, efflorescence and loose mortar from the joint cavity.

### 3.1.4 Wood Surfaces

Keep wood surfaces to be in contact with sealants free of splinters and sawdust or other loose particles.

## 3.2 SEALANT PREPARATION

Do not add liquids, solvents, or powders to the sealant. Mix multi-component elastomeric sealants in accordance with manufacturer's instructions.

## 3.3 APPLICATION

### 3.3.1 Joint Width-To-Depth Ratios

#### a. Acceptable Ratios:

<u>JOINT WIDTH</u>	<u>JOINT DEPTH</u>	
	Minimum	Maximum
For metal, glass, or other nonporous surfaces:		
1/4 inch (minimum)	1/4 inch	1/4 inch
over 1/4 inch	1/2 of width	Equal to width
For wood, concrete, masonry, stone:		
1/4 inch (minimum)	1/4 inch	1/4 inch
Over 1/4 inch to 1/2 inch	1/4 inch	Equal to width
Over 1/2 inch to 2 inch	1/2 inch	5/8 inch
Over 2 inch.	(As recommended by sealant manufacturer)	

- b. Unacceptable Ratios: Where joints of acceptable width-to-depth ratios have not been provided, clean out joints to acceptable depths and grind or cut to acceptable widths without damage to the adjoining work. Do not grind metal surfaces.

### 3.3.2 Masking Tape

Place masking tape on the finish surface on one or both sides of a joint cavity to protect adjacent finish surfaces from primer or sealant smears. Remove masking tape within 10 minutes after joint has been filled and tooled.

### 3.3.3 Backstops

Install backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide a joint of the depth specified. Install backstops in the following locations:

- a. Where indicated and shown.
- b. Where backstop is not indicated but joint cavities exceed the acceptable maximum depths specified in paragraph entitled, "Joint Width-to-Depth Ratios".

### 3.3.4 Primer

Immediately prior to application of the sealant, clean out loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's instructions. Do not apply primer to exposed finish surfaces.

### 3.3.5 Bond Breaker

Provide bond breakers to the back or bottom of joint cavities, as recommended by the sealant manufacturer for each type of joint and sealant used, to prevent sealant from adhering to these surfaces. Carefully apply the bond breaker to avoid contamination of adjoining surfaces or breaking bond with surfaces other than those covered by the bond breaker.

### 3.3.6 Sealants

Provide a sealant compatible with the material(s) to which it is applied. Do not use a sealant that has exceeded shelf life or has jelled and cannot be discharged in a continuous flow from the gun. Apply the sealant in accordance with the manufacturer's printed instructions with a gun having a nozzle that fits the joint width. Force sealant into joints to fill the joints solidly without air pockets. Tool sealant after application to ensure adhesion. Make [sealant](#) uniformly smooth and free of wrinkles. Upon completion of first sealant application, roughen partially filled or unfilled joints, re-apply sealant, and tool smooth as specified. Apply sealer over the sealant when and as specified by the sealant manufacturer.

## 3.4 PROTECTION AND CLEANING

### 3.4.1 Protection

Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled.

#### 3.4.2 Final Cleaning

Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.

- a. Masonry and Other Porous Surfaces: Immediately scrape off fresh sealant that has been smeared on masonry and rub clean with a solvent as recommended by the sealant manufacturer. Allow excess sealant to cure for 24 hour then remove by wire brushing or sanding.
- b. Metal and Other Non-Porous Surfaces: Remove excess sealant with a solvent-moistened cloth.

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SECTION 08 51 13

ALUMINUM WINDOWS (Including ALTERNATE #2)

PART 1 GENERAL

1.1 DESCRIPTION

A. Aluminum windows and glazing of type and size shown, complete with hardware, related components and accessories.

B. Types:

1. Single Hung, Double Insulated Glazed.
2. Double Hung, Decorative Glazed (Chapel) windows.
3. Projected, Single Glazed (Building #10 Boiler Plant).
4. Fixed Dummy Windows, Double Glazed, (spandrel on inside lite).
5. Fixed Modified Single Hung, Opaque Glazed with Insulated Panel (for window A/C units or other mechanical penetrations).
6. Obscure Glazed windows (privacy).

C. Opaque composite panels for glazing at window A/C units and other mechanical penetrations.

D. DEDUCT ALTERNATE #2: Omit replacement of the windows on the second floor Building 1, Wing A, Operating Suite Recovery Room as shown and scheduled on Drawings (7 total):

Room 211C Window B  
Room 212 Window A  
Room 213 Windows A, B, C  
Room 214 Window A  
Room 215 Window A

1.2 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.

ALUMINUM ASSOCIATION (AA)

AA DAF-45 (2003) Designation System for Aluminum Finishes

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA 101 (2005) Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors

AAMA 505-98 Dry Shrinkage and Composite Performance Thermal Cycling Test Procedures

AAMA 902 (1999) Voluntary Specification for Sash Balances

AAMA TIR-A8-04

Structural Performance of Poured and  
Debridged Framing Systems

ASTM INTERNATIONAL (ASTM)

ASTM B 584

(2004) Copper Alloy Sand Castings for  
General Applications

ASTM A 653/A 653M

(2004a) Steel Sheet, Zinc-Coated  
(Galvanized) or Zinc-Iron Alloy-Coated  
(Galvannealed) by the Hot-Dip Process

### 1.3 DEFINITIONS

A. Accessories: Mullions, staff beads, casings, closures, trim, moldings, panning systems, sub-sills, clips anchors, fasteners, weather-stripping, insect screens, mechanical operators, and other necessary components required for fabrication and installation of window units.

B. Uncontrolled Water: Water not drained to the exterior, or water appearing on the room side of the window.

### 1.4 RELATED WORK

A. Section 08 56 66 DETENTION WINDOW SCREENS.

B. Re-installation of existing stained glass windows under Section 08 82 00 DECORATIVE GLAZING in new double hung sash and frames specified herein.

C. Section 07 92 00 JOINT SEALANTS.

### 1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

#### SD-02 Shop Drawings

Shop Drawings; G, AE

#### SD-03 Product Data

Manufacturer's Literature and Data; G, RO

#### SD-04 Samples

Samples; G, RO

Mock-ups; G, RO

#### SD-06 Test Reports

Test Report; G, RO

Copy of test report as specified in paragraph QUALITY ASSURANCE.

SD-07 Certificates

Certification; G, RO

Certificates as specified in paragraph QUALITY ASSURANCE  
Indicating manufacturers and installers qualifications.

Certified Labels; G, RO

- or -

Certificates; G, RO

Manufacturer's Certification that windows delivered to project  
are identical to windows tested.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Protect windows from damage during handling and construction operations before, during and after installation.
- B. Store windows under cover, setting upright.
- C. Do not stack windows flat.
- D. Do not lay building materials or equipment on windows.

1.7 QUALITY ASSURANCE

- A. Approval by contracting officer is required of products and proposed manufacturers and installers.
- B. **Certification:** Submit evidence and certification that:
  - 1. Manufacturer regularly and presently manufactures the specified windows as one of its principal products. Manufacturer shall have minimum ten years experience in manufacturing same or similar windows.
  - 2. Installer has technical qualifications, experience, trained personnel and facilities to install specified items. Installer shall have a minimum of five years demonstrable experience in comparable work.
- C. Provide all types of windows produced from one source of manufacture.
- D. Quality **Certified Labels** or **Certificates:**
  - 1. Architectural Aluminum Manufacturers Association, "AAMA label" affixed to each window indicating compliance with specification.
  - 2. Certificates in lieu of label with copy of recent **test report** (not more than 4 years old) from an independent testing laboratory and certificate signed by window manufacturer stating that windows provided comply with specified requirements and **AAMA 101/I.S.2** for type of window specified.
- E. **Mock-ups:** Provide one full size mock-up of each type of window. Each

mock-up shall be installed in an actual window opening and be complete including all finishes. Mock-ups shall be modified or replaced until approved by the Resident Engineer. Upon approval by the Resident Engineer, a mock-up shall become the project standard level of quality against which all remaining windows shall be measured. The approved mock-ups shall remain as part of the completed Work. Mock-ups shall be completed and approved prior to installation of other windows.

#### 1.8 WARRANTY

A. Warrant windows against malfunctions due to defects in thermal breaks, hardware, materials and workmanship, subject to the terms of Article "WARRANTY OF CONSTRUCTION", FAR clause 52.246-21, except provide 10 year warranty period.

B. Provide 10 year warranty for double insulated glazing against loss of seal.

#### PART 2 PRODUCTS

##### 2.1 WINDOWS - GENERAL

A. All windows except decorative glazed and projected are to be thermally broken, heavy duty commercial grade, aluminum single hung windows with insect screens except as noted otherwise. Decorative glazed and projected windows do not require thermal break.

B. [Shop Drawings](#):

1. Minimum of 1/2 full scale details for each type of window on project.

2. Identifying parts of window units by name and kind of metal or material, show construction, locking systems, mechanical operators, trim, installation and anchorages.

3. Include glazing details and standards for factory glazed units.

C. Manufacturers: For the purpose of establishing a standard of quality, the following manufacturers are acceptable.

1. Efco, a Pella Company, Series 660.
2. Graham Architectural Products Corp, Series 2200.
3. Kawneer, an Alcoa Company, Series 8400.
4. Peerless Products, Inc, Series 9150.
5. Winco Window Company, Series 4410.

D. Contractors proposing a different manufacturer must prove that the alternate selection is equal to or better than those listed and meets all requirements of the Contract Documents.

E. Submit [Manufacturer's Literature and Data](#) for window frame, sash, glazing, balances, sash locks, keepers, key, screens, and accessories.

##### 2.2 MATERIALS

[Samples](#): Provide a 150 mm (six-inch) length sample showing each finish specified.

Replace Windows, VA Medical Center, Providence, RI

2.2.1 Aluminum Extrusions; Sheet and Plate:

AAMA 101/I.S.2.

2.2.2 Sheet Steel, Galvanized:

ASTM A 653/A 653M; G90 galvanized coating.

2.2.3 Weather-strips:

AAMA 101/I.S.2; except leaf type weather-stripping is not permitted.

2.2.4 Insect Screening:

1. Regular mesh, 18 by 18, AAMA 101/I.S.2.
2. Aluminum with clear anodized finish unless specified otherwise.

2.2.5 Fasteners:

AAMA 101/I.S.2. Screws, bolts, nuts, rivets and other fastening devices to be non-magnetic stainless steel.

1. Fasteners to be concealed when window is closed. Where wall thickness is less than 3 mm (0.125 inch) thick, provide backup plates or similar reinforcements for fasteners.
2. Stainless steel self tapping screws may be used to secure Venetian blind hanger clips, vent guide blocks, friction adjuster, and limit opening device.
3. Attach locking and hold-open devices to windows with concealed fasteners. Provide reinforcing plates where wall thickness is less than 3 mm (0.125 inch) thick.

2.2.6 Hardware for Projected Windows:

1. Fabricate hinges of noncorrosive metal. Hinges shall be fully concealed when window is closed. Surface mounted hinges will not be accepted.
2. Guide Blocks: Fabricate guide blocks of injection molded nylon. Install guide block fully concealed in vent/frame sill.
3. Operating hardware must be nickel-silver castings conforming to ASTM B 584, Alloy C97600, or AISI Series 18-8 corrosion-resistant steel. Hardware will be a modern design, smoothly finished, free of defects, and suitable for the intended purpose.
4. Provide cam-action locking handles and strikes for projected-out vents; cam-action locks and provide keepers for projected-in vents. Equip pole-operated projected-in vents with suitable design cam-action locks or spring-catch fasteners.
5. Strikes and contact surfaces for lock fasteners must be corrosion-resistant steel, nickel silver, or a similar abrasion-resistant metal.
6. Projected-type ventilators 1070 millimeter (42 inches) and wider

and not pole operated must be furnished with two sets of cam-action locking handles.

7. Provide pole operators for projected-type ventilators located 1800 millimeter (6 feet) or higher above the finished floor.

#### 2.2.7 Hardware for Single or Double-Hung Windows:

1. Locking hardware must be nickel-silver castings conforming to [ASTM B 584](#), Alloy C97600, or AISI Series 300, 18-8 corrosion-resistant steel, or a combination of the two, furnished in contemporary design, smoothly finished, free of defects, and suitable for the intended purpose.

2. Sash lifts must be continuous extrusions, integral with sash frames. Upper sashes (double-hung only) will have matching continuous-extrusion pulls.

3. Provide windows with two locks and keepers.

4. Each sash must operate on two adjustable, replaceable Level 5 high performance balances meeting the requirements of [AAMA 902](#). Balances must be enclosed in aluminum cases and will be adjustable without removal of the sash from the frame and without the use of special tools.

5. Furnish meeting rails, 800 millimeter (6 feet) or higher above the finished floor, with pulldown sockets and pole-operated sash locks.

#### 2.2.8 Pole Operators:

1. Provide pole operator and pole hanger where operable windows have hardware more than 1500 mm (five feet) above the floor, but not over 3000 mm (10 feet) above floor.

2. Fabricate pole of tubular anodized aluminum with rubber cap at lower end and standard push-pull hook at top end to match hardware design.

3. Provide sufficient length for window operation without reaching more than 1500 mm (five feet) above floor.

#### 2.3 THERMAL AND CONDENSATION PERFORMANCE

A. Condensation Resistance Factor (CRF): Glass, Minimum CRF of C 55.

B. Thermal Transmittance: Maximum U value class for insulating glass windows: 50 (U=0.32).

C. Solar Heat Gain Coefficient (SHGC): 0.59 maximum for tinted double insulated; 0.67 maximum for tinted single glazed. SHGC shall comply with State or local energy code requirement.

D. Air Infiltration: Less than 0.10 CFM per square foot at 6.24 PSF.

E. Water Penetration: Zero at 12 PSF.

#### 2.4 FABRICATION

A. Fabrication to exceed or meet requirements of Physical Load Tests, Air

Infiltration Test, and Water Resistance Test of AAMA 101/I.S.2.

B. Glazing:

1. Factory glazing required.
2. Windows re-glazable from interior without dismantling sash framing except for dummy windows which shall be exterior glazed.
3. Design rabbet to suit glass thickness and glazing method specified.
4. Glaze from interior except where not accessible.
5. Provide removable fin type glazing beads.

C. Trim:

1. Trim includes casings, closures, and panning.
2. Fabricate to shapes shown of aluminum not less than 1.6 mm (0.062 inch) thick.
3. Extruded or formed sections, straight, true, and smooth on exposed surfaces.
4. Exposed external corners mitered and internal corners coped; fitted with hairline joints.
5. Reinforce 1.6 mm (0.062 inch) thick members with not less than 3 mm (1/8-inch) thick aluminum.
6. Except for strap anchors, provide reinforcing for fastening near ends and at intervals not more than 305 mm (12 inches) between ends.
7. Design to allow unrestricted expansion and contraction of members and window frames.
8. Secure to window frames with machine screws or expansion rivets.
9. Exposed screws, fasteners or pop rivets are not acceptable on exterior of the casing or trim cover system.
10. Seal all concealed joints behind trim and joints between trim and exposed finished surfaces.

D. Thermal-Break Construction:

1. Manufacturer's Standard.
2. Low conductance thermal barrier.
3. Capable of structurally holding sash in position and together.
4. All Thermal Break Assemblies (Pour & Debridge, Insulbar or others) shall be tested as per AAMA TIR-A8-04 and AAMA 505-98 for Dry Shrinkage and Composite Performance.
5. Location of thermal barrier and design of window shall be such that, in closed position, outside air shall not come in direct contact

with interior frame of the window.

E. Mullions: AAMA 101.

F. Subsills and Stools:

1. Fabricate to shapes shown of not less than 2 mm (0.080 inch) thick extruded aluminum.
2. One piece full length of opening with concealed anchors.
3. Sills turned up back edge not less than 6 mm (1/4 inch). Front edge provide with drip.
4. Sill back edge behind face of window frame. Do not extend to interior surface or bridge thermal breaks.
5. Do not perforate for anchorage, clip screws, or other requirements.
6. Provide weeps and drainage channels to ensure positive drainage.

G. Frames for Decorative Glazing (Chapel)

1. Provide slotted vents at bottom and top of frame for ventilation.
2. Vents shall be concealed and shall operate to provide air circulation through window even with both sash closed and locked.
3. Glaze window as specified under Section 08 82 00 Decorative Glazing.

H. Insect Screens:

1. AAMA 101/I.S.2.
2. Aluminum screen cloth.

I. Receptors:

1. Provide sub-frame receptors for all replacement windows. Secure to building structure and seal watertight.
2. Receptors shall be designed to provide a solid backing for sealant between window frame and receptor.
3. Receptors shall be thermally broken and not bridge thermal break.

## 2.5 HUNG WINDOWS

- A. AAMA 101/I.S.2. Single and Double Hung Type, H-HC50 Heavy Commercial.
- B. AAMA certified product to the AAMA 101/I.S.2.-97 standard.

## 2.6 PROJECTED WINDOWS

- A. AAMA 101/I.S.2; Type: C-H65 Heavy Commercial.
- B. AAMA certified product to the AAMA 101/I.S.2.-97 standard.



Replace Windows, VA Medical Center, Providence, RI

C. Operation:

1. Hopper vents: Project-in from top and slide up from bottom.

2.7 FIXED WINDOWS

- A. AAMA 101/I.S.2; Type HC25, Heavy Commercial.
- B. AAMA certified product to the AAMA 101/I.S.2.-97 standard.

2.8 FINISH

- A. Finish in accordance with AA DAF-45. Finish exposed aluminum surfaces with high quality anodized finish that will closely match the existing windows: AA-M10-C22-A41, Class 1, Clear (Natural) anodized finish.
- B. Stainless steel: NAAMM AMP 503.
  1. Concealed: 2B or 2D.
  2. Exposed: No. 4 unless specified otherwise.
- C. Hardware: Finish hardware that is exposed when window is in the closed position: Stainless steel or nickel-silver.

PART 3 EXECUTION

3.1 PROTECTION (DISSIMILAR MATERIALS)

AAMA 101/I.S.2.

3.2 INSTALLATION, GENERAL

- A. Install window units in accordance with manufacturer's specifications and recommendations for installation of window units, hardware, operators and other components of work.
- B. Where type, size or spacing of fastenings for securing window accessories or equipment to building construction is not shown or specified, use expansion or toggle bolts or screws, as best suited to construction material.
  1. Provide bolts or screws minimum 6 mm (1/4-inch) in diameter.
  2. Sized and spaced to resist the tensile and shear loads imposed.
  3. Do not use exposed fasteners on exterior, except when unavoidable for application of hardware.
  4. Provide non-magnetic stainless steel Phillips flat-head machine screws for exposed fasteners, where required, or special tamper-proof fasteners.
  5. Locate fasteners to not disturb the thermal break construction of windows.
- C. Set windows plumb, level, true, and in alignment; without warp or rack of frames or sash.

- D. Anchor windows on four sides with anchor clips or fin trim.
  - 1. Do not allow anchor clips to bridge thermal breaks.
  - 2. Use separate clips for each side of thermal breaks.
  - 3. Make connections to allow for thermal and other movements.
  - 4. Do not allow building load to bear on windows.
  - 5. Use manufacturer's standard clips at corners and not over 600 mm (24 inches) on center.
  - 6. Where fin trim anchorage is shown build into adjacent construction, anchoring at corners and not over 600 mm (24 inches) on center.
- E. Receptors, Sills and Stools:
  - 1. Set in bed of sealant or other compound to fully support, true to line shown.
  - 2. Do not extend sill to inside window surface or past thermal break.
  - 3. Leave space for sealants at ends and to window frame unless shown otherwise.
  - 4. Provide flashing under sill, turned up and sealed at both ends to form a watertight pan. Any penetrations of flashing to be sealed watertight.
- F. Replacement Windows:
  - 1. Do not remove existing windows until new replacement is available, ready for immediate installation.
  - 2. Schedule work so as to remove old window(s) and install new window(s) within the same work day.
  - 3. Remove existing work carefully; avoid damage to existing work to remain.
  - 4. Perform all other operations as necessary to prepare openings for proper installation and operation of new units.
  - 5. Do not leave openings uncovered at end of working day, during precipitation or temperatures below 16 degrees C (60 degrees F). Secure openings with solid plywood or OSB and seal against weather and dust infiltration.

### 3.3 GLAZING

- A. For glazing of chapel stained glass windows see Section 08 82 00 DECORATIVE GLAZING.
- B. All double insulated single hung windows shall be factory or shop glazed. Units to be glazed with opaque panel shall be factory or shop glazed and delivered to site ready for field modification.

- C. For additional glazing requirements see Section 08 80 00 GLAZING.

#### 3.4 MULLIONS CLOSURES, TRIM, AND PANNING

- A. Cut mullion full height of opening and anchor directly to window frame on each side.
- B. Closures, Trim, and Panning: External corners mitered and internal corners coped, fitted with hairline, tightly closed joints.
- C. Secure to concrete or solid masonry with expansion bolts, expansion rivets, split shank drive bolts, or powder actuated drive pins.
- D. Toggle bolt to hollow masonry units. Screwed to wood or metal.
- E. Fasten except for strap anchors, near ends and corners and at intervals not more than 300 mm (12 inches) between.
- F. Seal units following installation to provide weathertight system.

#### 3.5 ADJUST AND CLEAN

- A. Adjust ventilating sash and hardware to provide tight fit at contact points, and at weather-stripping for smooth operation and weathertight closure.
- B. Clean aluminum surfaces promptly after installation of windows, exercising care to avoid damage to protective coatings and finishes.
- C. Remove excess glazing and sealant compounds, dirt, and other substances.
- D. Lubricate hardware and moving parts.
- E. Clean glass promptly after installation of windows. Remove glazing and sealant compound, dirt and other substances.
- F. Except when a window is being adjusted or tested, keep locked in the closed position during the progress of work on the project.

#### 3.6 OPERATION DEVICES

- A. Provide wrenches, keys, or removable locking operating handles, as specified to operate windows.
- B. Provide one operating pole and one pole hanger in a room or space where pole operation of windows is required.

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-- End of Section Table of Contents --

SECTION 08 56 66

DETENTION WINDOW SCREENS

PART 1 GENERAL

1.1 DESCRIPTION

A. Detention/protection screens consist of a sub-frame, main frame with wire cloth and support assembly, detention lock and bolt, hinges and all fittings and anchors required.

B. Provide screens as shown and scheduled on Drawings in Pharmacy high security area.

1.2 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.

ASTM INTERNATIONAL (ASTM)

ASTM A 653/A 653M (2004a) Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

1.3 RELATED WORK

Section 08 51 13, ALUMINUM WINDOWS.

1.4 MANUFACTURER'S QUALIFICATIONS

A. Approval by Resident Engineer is required of products of proposed manufacturer or supplier, and will be based upon submission by Contractor of certification.

B. Contractor certifies that the manufacturer regularly and presently manufactures detention and protection screens as one of his principal products.

C. Contractor certifies that the manufacturer's product submitted has been in satisfactory and efficient operation on three installations similar or equivalent to this project for three years. Submit list of installations. List shall include name of project and owner and location of project.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Manufacturer's Qualifications; G, RO

SD-02 Shop Drawings

Shop Drawings; G, AE

SD-03 Product Data

Manufacturer's literature; G, RO

Product data for Screen.

SD-04 Samples

Samples; G, RO

SD-07 Certificates

Manufacturer's Certification; G, RO

Indicating wire screen cloth meets the requirements specified.

PART 2 PRODUCTS

2.1 WIRE CLOTH

A. Stainless steel wire cloth woven from 0.7 mm (0.028-inch) diameter Type 302 or 304 stainless steel wire, woven 12 mesh, double crimped.

B. Provide [Manufacturer's Certification](#) indicating wire screen cloth meets the requirements specified.

2.2 SHEET STEEL

[ASTM A 653/A 653M](#).

2.3 FABRICATION

A. Make screens units without muntins and design to be mounted flush with trim, frame or wall face.

B. Fabricate scribe members from 1.5 mm (0.0598-inch) thick sheet steel and install at head and jambs of openings.

C. Frames: Weld corners of fixed and hinged frames continuously. Outside reinforcements or projections will not be permitted. Dress weld smooth so as to be inconspicuous. Round exposed edges and corners.

D. Reinforce frames lighter than 2.5 mm (0.105-inch) thick steel at locks and hinges with steel plates not less than 5 mm (3/16-inch) thick.

E. Provide rubber cushion plugs (bumpers) on lock between fixed and hinged frames. Locate bumpers 150 mm (6-inches) from top and bottom on side of frame where lock bolts or slides occur.

2.4 DETENTION/PROTECTION WINDOW SCREENS

A. Provide [shop drawings](#) showing complete details (1/2 full scale), including details of construction and anchorage, relation to details of the

windows and clearances required and window operators.

B. Submit [Manufacturer's literature](#) on features and materials of detention screens.

C. [Samples](#): One completely finished screen as specified. Upon approval, screen may be installed as part of the Work.

D. Provide wire screen retainer-clevises or coil compression spring shock absorbers approximately 200 mm (8 inches) on centers on four edges of wire cloth panel. Position screen panels within assembled hinged frame to provide a minimum of 8 mm (5/16-inch) free movement space at each edge. Adjust leaf-spring main clevis or coil-spring shock absorbers to permit a minimum over all screen panel movement of 16 mm (5/8-inch) in both width and height.

E. Reinforce hinged frames over four feet in height horizontally or vertically, or both if width exceeds five feet.

F. Screen unit consists of fixed sub-frame of 2.5 mm (0.105-inch) thick steel channels with a "Z" (zee) shaped sill and a hinged main frame. Design frames to form supplemental cover totally concealing hinges and lock when unit is closed.

1. Fabricate hinged frames of not less than 2.5 mm (0.105-inch) thick channel shaped members having an extended inner flange. Form flange edge with a right angle return forming a channel to receive wire cloth retaining strip.

2. Screening Attachment: Bend screening to fit over the screen frame and attach using a 1.5 mm (0.060-inch) thick retaining angle, continuous on all four sides. Clamp screening between retaining angle and return edge of hinged frame with hardened steel machine screws spaced approximately 125 mm (5 inches) on center.

## 2.5 HARDWARE

A. Operating hardware shall be extra heavy duty type.

B. Locks for Window Screens: Provide concealed locking system for each screen consisting of one, bit-key operated locking mechanism having a minimum of two operable, concealed 13 mm (1/2-inch) diameter case-hardened steel bolts. Locate bolts near the top and bottom of screen. Design bolts to engage adjustable strike or keepers in the sub-frame when bit key is rotated in lock.

C. Construct bit key lock of steel construction with three brass tumblers having beryllium copper springs. Fabricate lock case from steel using two piece construction having three brass pedestal bearing supports attached to the lower half of the case to support the slide bar, tumblers, case and cover. Fabricate slide bar of lock from steel with hardened steel guide tumbler block.

D. Make provisions to ensure that the bit key can not be removed except when the bolts are in a locked (extended) position. Locks shall be keyed alike. Design locks so as to be operated by existing attendant's key established for the VA Medical Center. Furnish 5 bit keys. Make keys from forged steel or solid bronze with chromium or cadmium plated finish.

## 2.6 FINISH

After surface treatment of the frame, provide hot dipped galvanized finish to all surfaces before the wire cloth is installed and secured into the frame.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Drill, tap or cut metal window trim and other materials as required for proper installation of screen units.
- B. Install screen units that can be readily removed without damage to new or existing work and to effectively exclude insects.
- C. Secure screen units to metal window with stainless steel machine screws, spaced at approximately 375 mm (15 inches) on centers.
- D. Provide screw fastenings of type, size and head as recommended by manufacturer of screen units to achieve the level of security equal to or exceeding the unit itself.

-- End of Section --



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SECTION 08 80 00

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-- End of Section Table of Contents --

SECTION 08 80 00

GLAZING

PART 1 GENERAL

1.1 DESCRIPTION

A. This section specifies glass, panels, related glazing materials and accessories. Glazing products specified apply to factory or field glazed items.

B. Provide all labor and materials required to achieve a complete installation of all windows shown and scheduled.

1. Include modifications to insulating panels for the installation of window A/C units and all other penetrations.

2. Include the installation of the window A/C units, louvers, fans, and all other penetrations through the panels.

3. All existing window A/C units and all other existing fans, louvers, and other penetrations shall be included whether shown or not.

1.2 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.

ASTM INTERNATIONAL (ASTM)

ASTM C 1036 (2006) Standard Specification for Flat Glass

ASTM C 1048 (2004) Standard Specification for Heat-Treated Flat Glass - Kind HS, Kind FT Coated and Uncoated Glass

ASTM E 774 (1997) Classification of the Durability of Sealed Insulating Glass Units

1.3 RELATED WORK

A. Provide factory glazing by manufacturer under Section 08 51 13 ALUMINUM WINDOWS.

B. Provide glazing for stained glass windows under Section 08 82 00 DECORATIVE GLAZING.

1.4 PERFORMANCE REQUIREMENTS

A. Glass Thickness:

1. Select thickness of exterior glass to withstand dead loads and wind loads acting normal to plane of glass at design pressures

calculated in accordance with ASCE 7 or Rhode Island state code whichever is more stringent.

2. Limit glass deflection to 1/200 or flexure limit of glass, whichever is less, with full recovery of glazing materials.
3. Test in accordance with ASTM E 330.
4. Thicknesses listed are minimum. Coordinate thicknesses with framing system manufacturers.

#### 1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

##### SD-03 Product Data

Manufacturer's Literature and Data:

Glass; G, AE

Glass, each kind required.

Insulating glass units; G, AE

Glazing Accessories; G, RO

Sealants; G, RO

Insulated Panel; G, AE

##### SD-04 Samples

Obscure glass; G, RO

Insulated Panel; G, RO

Spandrel Glass; G, RO

Size: 150 mm by 150 mm (6 inches by 6 inches)

##### SD-07 Certificates

Manufacturer's Certificates:

Shading Coefficient; G, RO

Shading Coefficient Certification.

"R" Value; G, RO

"R" Value Certification.

Warranty; G, RO

Submit written guaranty, conforming to General Condition requirements, and to "Warranty of Construction" Article in this Section.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Schedule delivery to coincide with glazing schedules so minimum handling of crates is required. Do not open crates except as required for inspection for shipping damage.
- B. Storage: Store cases according to printed instructions on case, in areas least subject to traffic or falling objects. Keep storage area clean and dry.
- C. Handling: Unpack cases following printed instructions on case. Stack individual windows on edge leaned slightly against upright supports with separators between each.

#### 1.7 PROJECT CONDITIONS

Field Measurements: Field measure openings before ordering products. Be responsible for proper fit of field measured products.

#### 1.8 WARRANTY

**Warranty:** Conform to terms of "Warranty of Construction", FAR clause 52.246-21, except extend warranty period for the following:  
Insulating glass units to remain sealed for 10 years.

### PART 2 PRODUCTS

#### 2.1 GLASS

##### A. Tinted Glass:

- 1. **ASTM C 1036**, Type I, Class 1, Quality q3.
- 2. Thickness, 6 mm (1/4 inch).
- 3. Tint: Light solar gray.
- 4. Apply tint to second surface.

##### Low-E Glass:

- 1. **ASTM C 1036**, Type I, Class 1, Quality q3 with low emissivity pyrolytic coating having an E of 0.15.
- 2. Apply coating to third surface of insulating glass units except in obscure and spandrel glass units.
- 3. Provide tinted low-e coating in obscure and spandrel glass units on surface 2.
- 4. Thickness: 6 mm (1/4 inch).

#### 2.2 INSULATED PANEL

- A. Provide prefabricated insulated panels consisting of one inch total

thickness:

1. Faces: Smooth finish sheet aluminum bonded to core, 0.020 inch thickness minimum.
2. Core: Tempered hardboard or plywood substrate, 1/4 inch thick, bonded to urethane center.
3. Finish: Factory applied acrylic enamel finish exterior and interior, to match window frame finish.

B. Install panels in accordance with manufacturer's recommendations.

1. Field measure and cut to fit window A/C units and all other mechanical penetrations.
2. Install all window A/C units and all other mechanical penetrations as shown and scheduled.

## 2.3 OBSCURE GLASS

A. Tempered Patterned Glass (obscure):

1. **ASTM C 1048**, Kind FT, Type II, Class 1, Form 3, Quality q8, Finish f1, Pattern p3.
2. Thickness 3/16 inch minimum.
3. Install as inside lite of double insulated unit with clear glass as outside lite.

## 2.4 SPANDREL GLASS

A. Ceramic Coated Spandrel Glass:

1. **ASTM C 1048**, Kind HS, Condition B, Type I, Quality q3 with ceramic coating applied over and fused into glass surface.
2. Smooth pattern, color as selected from manufacturer's standards.
3. Apply coating to second surface.
4. Install as inside lite of double insulated unit with tinted glass as outside lite.
5. Thickness, 6 mm (1/4 inch).

## 2.5 INSULATING GLASS UNITS

A. General: Provide factory fabricated, hermetically sealed glass unit consisting of two panes of glass separated by a desiccated argon gas space, overall thickness of one inch.

B. Sealed Edge Units, Typical:

1. Conform to **ASTM E 774**, Class C performance requirements.
2. Argon Gas Space 13 mm (1/2 inch) wide.

3. "R" Value not less than 1.65.
4. Shading Coefficient not more than 0.44.
5. Exterior pane Tinted Glass 6 mm (1/4 inch) thick, tint on surface two.
6. Interior pane Low-E Glass 6 mm (1/4 inch) thick, coating on surface 3.

C. Sealed Edge Units, Obscure:

1. Conform to ASTM E 774, Class C performance requirements.
2. Argon Gas Space 14 mm (9/16 inch) wide.
3. "R" Value not less than 1.65.
4. Exterior pane tinted Low-E Glass 6 mm (1/4 inch) thick, coating on surface 2.
5. Interior pane Obscure Glass 4 mm (3/16 inch) thick, pattern on surface 3.

D. Sealed Edge Units, Spandrel:

1. Conform to ASTM E 774, Class C performance requirements.
2. Argon Gas Space 13 mm (1/2 inch) wide.
3. "R" value not less than 1.65.
4. Exterior pane tinted Low-E Glass 6 mm (1/4 inch) thick, coating on surface 2.
5. Interior pane Spandrel Glass 6 mm (1/4 inch) thick, pattern on surface 4.

2.6 GLAZING ACCESSORIES

A. As required to supplement the accessories provided with the items to be glazed and to provide a complete installation. Metal accessories exposed in the finished work shall be stainless steel.

B. Setting Blocks: ASTM C864:

1. Channel shape; having 6 mm (1/4 inch) internal depth.
2. Shore A hardness of 80 to 90 Durometer.
3. Block lengths: 50 mm (two inches) except 100 to 150 mm (four to six inches) for insulating glass.
4. Block width: Approximately 1.6 mm (1/16 inch) less than the full width of the rabbet.
5. Block thickness: Minimum 4.8 mm (3/16 inch). Thickness sized for rabbet depth as required.

Replace Windows, VA Medical Center, Providence, RI

C. Spacers: ASTM C864:

1. Channel shape having a 6 mm (1/4 inch) internal depth.
2. Flanges not less 2.4 mm (3/32 inch) thick and web 3 mm (1/8 inch) thick.
3. Lengths: 25 mm to 76 mm (one to three inches).
4. Shore A hardness of 40 to 50 Durometer.

D. Sealing Tapes:

1. Semi-solid polymeric based material exhibiting pressure-sensitive adhesion and withstanding exposure to sunlight, moisture, heat, cold, and aging.
2. Shape, size and degree of softness and strength suitable for use in glazing application to prevent water infiltration.

E. Glazing Gaskets: ASTM C864:

1. Firm dense wedge shape for locking in sash.
2. Soft, closed cell with locking key for sash key.
3. Flanges may terminate above the glazing-beads or terminate flush with top of beads.

F. Glazing Sealants: ASTM C920, silicone neutral cure:

1. Type S.
2. Class 50
3. Grade NS.
4. Shore A hardness of 25 to 30 Durometer.

G. Butyl Rubber Sealant: ASTM C 1311

1. Provide Butyl Rubber Based Sealants of single component, solvent release, color as selected.

H. Neoprene, EPDM, or Vinyl Glazing Gasket: ASTM C864.

1. Channel shape; flanges may terminate above the glazing channel or flush with the top of the channel.
2. Designed for dry glazing.

I. Color:

1. Color of glazing compounds, gaskets, and sealants used for aluminum frames shall match color of the finished aluminum and be non-staining.
2. Color of other glazing compounds, gaskets, and sealants which will be exposed in the finished work and unpainted shall be black, gray, or

clear color.

### PART 3 EXECUTION

#### 3.1 EXAMINATION

##### A. Verification of Conditions:

1. Examine openings for glass and glazing units; determine they are proper size; plumb; square; and level before installation is started.
2. Verify that glazing openings conform with details, dimensions and tolerances indicated on manufacturer's approved shop drawings.

B. Advise General Contractor and Window Manufacturer of conditions which may adversely affect glass and glazing unit installation, prior to commencement of installation: Do not proceed with installation until unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

A. For sealant glazing, prepare glazing surfaces in accordance with GANA-02 Sealant Manual.

B. Determine glazing unit size and edge clearances by measuring the actual unit to receive the glazing.

C. Shop fabricate and cut glazing material with smooth, straight edges of full size required by openings to provide GANA recommended edge clearances.

D. Verify that components used are compatible.

E. Clean and dry glazing surfaces.

F. Prime surfaces scheduled to receive sealants if required by manufacturer's instructions.

#### 3.3 INSTALLATION - GENERAL

A. Provide factory or shop glazing to the maximum extent possible. Field glazing only allowed for special conditions with the permission of the Resident Engineer.

B. Install in accordance with GANA-01 Glazing Manual and GANA-02 Sealant Manual unless specified otherwise.

C. Glaze in accordance with recommendations of glazing and framing manufacturers, and as required to meet the Performance Test Requirements specified in other applicable sections of specifications.

D. Set glazing without bending, twisting, or forcing of units.

E. Do not allow glazing material to rest on or contact any framing member.

#### 3.4 INSTALLATION - WET/DRY METHOD (PREFORMED TAPE AND SEALANT)

A. Use this method for field installation of window A/C units and other mechanical penetrations through insulating panels as shown.



## Replace Windows, VA Medical Center, Providence, RI

- B. Cut sealing tape to length and set against panel, 5 mm (3/16 inch) below sight line. Seal corners by butting tape and dabbing with butyl sealant.
- C. Apply heel bead of butyl sealant along full perimeter to complete the continuity of the air and vapor seal.
- D. Install removable stops with spacer strips as required and push against tape and heel bead of sealant with sufficient pressure to achieve full contact.
- E. Fill gap between panel and stop with silicone type sealant to depth equal to bite of frame on glazing, but not more than 9 mm (3/8 inch) below sight line.
- F. Apply cap bead of silicone type sealant along void between the stop and the panel, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

### 3.5 REPLACEMENT AND CLEANING

- A. Clean new glass surfaces removing temporary labels, paint spots, and defacement after approval by Resident Engineer.
- B. Replace cracked, broken, and imperfect glass, or glass which has been installed improperly.
- C. Leave glass and other setting material in clean, whole, and acceptable condition.

### 3.6 PROTECTION

Protect finished surfaces from damage during erection, and after completion of work.

-- End of Section --

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SECTION 08 82 00

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SECTION 08 82 00

DECORATIVE GLAZING

PART 1 GENERAL

1.1 SCOPE OF WORK

The existing decorative stained glass located in the chapel shall be carefully removed and reinstalled in new windows as shown and specified.

1.2 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.

STAINED GLASS ASSOCIATION OF AMERICA (SGAA)

SGAA Standards	Standards and Guidelines for the Preservation of Historic Stained Glass Windows
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ASTM INTERNATIONAL (ASTM)

ASTM C 509	(2006) Elastomeric Cellular Preformed Gasket and Sealing Material
ASTM C 669	(2000) Glazing Compounds for Back Bedding and Face Glazing of Metal Sash
ASTM C 920	(2008) Standard Specification for Elastomeric Joint Sealants
ASTM D 2287	(1996; R 2001) Non-rigid Vinyl Chloride Polymer and Copolymer Molding and Extrusion Compounds
ASTM D 395	(2003; R 2008) Standard Test Methods for Rubber Property - Compression Set

GLASS ASSOCIATION OF NORTH AMERICA (GANA)

GANA Glazing Manual	(2004) Glazing Manual
GANA Sealant Manual	(1990) Sealant Manual

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Existing Conditions Survey; G, RO

Prior to any work, thoroughly document the existing condition of each window. Provide written report with photographs and other documentation as appropriate. Note any defects or conditions that could affect the work.

Installation Details; G, AE

Drawings showing complete details of the proposed setting methods, mullion details, edge blocking, size of openings, frame details, and materials.

SD-03 Product Data

Glazing Materials; G, AE

Glazing Accessories; G, RO

Manufacturer's descriptive product data, handling and storage recommendations, installation instructions, and cleaning instructions.

SD-04 Samples

Glazing Materials; G, RO

Tape; G, RO

Glazing tape.

Sealant; G, RO

Mock-up; G, RO

SD-07 Certificates

SGAA Certification; G, RO

Glazing Subcontractor SGAA Certification.

SD-08 Manufacturer's Instructions

Setting and sealing materials; G, RO

Glass setting; G, RO

Submit glass manufacturer's recommendations for setting and sealing materials and for installation of decorative stained glass.

SD-11 Closeout Submittals

Manufacturer's Warranty; G, RO

Manufacturer's Warranty for glazing materials.

Installer's Warranty; G, RO

#### 1.4 SYSTEM DESCRIPTION

Glazing system shall be fabricated and installed watertight and airtight to withstand thermal movement and wind loading without glass breakage, gasket failure, deterioration of [glazing accessories](#), and defects in the work. System shall conform to requirements of [SGAA Standards](#).

#### 1.5 QUALITY ASSURANCE

##### 1.5.1 Contractor Qualifications

[SGAA Certification](#): Glazing subcontractor shall be a certified member in good standing of the SGAA.

##### 1.5.2 Off-site Work

All glazing work (including removal of decorative stained glass from existing sash) shall be done off-site at the shop of the glazing subcontractor. Transport of decorative glass to and from the site shall be done by the glazing subcontractor and he shall be fully responsible for protecting the glass from any damage.

##### 1.5.3 [Mock-up](#)

Provide one half size mock-up of proposed complete window unit showing glazing methods and materials. Glaze mock-up with plain glass.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

Deliver products to the site in unopened containers, labeled plainly with manufacturers' names and brands. Store glass and setting materials in safe, enclosed dry locations and do not unpack until needed for installation. Handle and install materials in a manner that will protect them from damage.

#### 1.7 ENVIRONMENTAL REQUIREMENTS

Do not start glazing work until the outdoor temperature is above [40 degrees F](#) and rising, unless procedures recommended by the glass manufacturer and approved by the Resident Engineer are made to warm the glass and rabbet surfaces. Provide ventilation to prevent condensation of moisture on glazing work during installation. Do not perform glazing work during damp or rainy weather.

#### 1.8 WARRANTY

[Manufacturer's Warranty](#): Provide manufacturer's standard warranties for all glazing materials. [Installer's Warranty](#): Provide glazing subcontractor's warranty against defective workmanship for 5 years signed by the subcontractor.

## PART 2 PRODUCTS

### 2.1 GLASS

The existing decorative stained glass shall be removed from the existing sash and reglazed in new sash.

## 2.2 SETTING AND SEALING MATERIALS

Provide as specified in the [GANA Glazing Manual](#), [SGAA Standards](#), and manufacturer's recommendations, unless specified otherwise herein. Use materials listed below singly or in combination to achieve complete glazing system. Provide additional materials as need to complete the work whether listed below or not. Do not use metal sash putty, nonskinning compounds, non-resilient preformed sealers, or impregnated preformed gaskets. Use only non-acetic acid forming or neutral cure sealant. Materials exposed to view and unpainted shall be gray or neutral color.

### 2.2.1 Glazing Materials

[ASTM C 669](#). Use for face glazing metal sash. Do not use with insulating glass units or laminated glass.

### 2.2.2 Elastomeric Sealant

[ASTM C 920](#), Type S, Grade NS, Class 12.5, Use G. Use for channel or stop glazing metal sash. [Sealant](#) shall be chemically compatible with setting blocks, edge blocks, and sealing tapes. Use only non-acetic acid forming or neutral cure sealant. Color of sealant shall be as selected from manufacturer's standards.

### 2.2.3 Sealing Tapes

Preformed, semisolid, PVC-based material of proper size and compressibility for the particular condition, complying with [ASTM D 2287](#). Use only where glazing rabbet is designed for tape and [tape](#) is recommended by the glass or sealant manufacturer. Provide spacer shims for use with compressible tapes. Tapes shall be chemically compatible with the product being set.

### 2.2.4 Setting Blocks and Edge Blocks

Closed-cell neoprene setting blocks shall be dense extruded type conforming to [ASTM C 509](#) and [ASTM D 395](#), Method B, Shore A durometer between 70 and 90. Edge blocking shall be Shore A durometer of 50 (+ or - 5). Silicone setting blocks shall be required when blocks are in contact with silicone sealant. Profiles, lengths and locations shall be as required and recommended in writing by glass manufacturer. Block color shall be black.

### 2.2.5 Accessories

Provide [glazing accessories](#) as required for a complete installation, including clips, shims, angles, beads, and spacer strips. Provide non-corroding metal accessories. Provide primer-sealers and cleaners as recommended by the glass and sealant manufacturers.

## PART 3 EXECUTION

### 3.1 GENERAL

#### 3.1.1 Preparation

Preparation, unless otherwise specified or approved, shall conform to applicable recommendations in the [GANA Glazing Manual](#), [GANA Sealant Manual](#), [SGAA Standards](#), and manufacturer's recommendations.

### 3.1.2 Evaluation

Based on the [Existing Conditions Survey](#) evaluate what, if anything, needs to be done to restore, repair, and/or reinforce the glass prior to beginning the work and submit report to the Resident Engineer for review.

### 3.1.3 Measurement and [Installation Details](#)

Determine the required size of the sash based on the existing glass panels. The glass must be glazed so as to exhibit the original artistic effect with no blocking or obscuring of the perimeter detail. Submit shop drawings showing the exact sizes and details required for the new sash to the General Contractor for the fabrication of the new sash under Section [08 51 13](#) Aluminum Windows. No modification of the existing glass to fit in new sash will be allowed. Coordinate installation with installation of protective outer windows.

### 3.1.4 Setting

Securely fix movable items or keep in a closed and locked position until glazing compound has thoroughly set.

## 3.2 [GLASS SETTING](#)

Shop glaze all decorative stained glass. Glazing, unless otherwise specified or approved, shall conform to applicable recommendations in the [GANA Glazing Manual](#), [GANA Sealant Manual](#), [SGAA Standards](#), and manufacturer's recommendations.

## 3.3 CLEANING

Clean glass surfaces and remove paint spots, sealants, putty, and other defacement as required to prevent staining. Glass shall be clean at the time the work is accepted.

## 3.4 PROTECTION

Glass work shall be protected immediately after installation. Glazed openings shall be identified with suitable warning tapes, cloth or paper flags, attached with non-staining adhesives. Protective material shall be placed far enough away from the glass to allow air to circulate to reduce heat buildup and moisture accumulation on the glass. Glass which are broken, chipped, cracked, abraded, or otherwise damaged during construction activities shall be repaired per the requirements of [SGAA Standards](#) at the Contractor's expense.

-- End of Section --

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SECTION 09 26 00

veneer plastering

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SECTION 09 26 00

VENEER PLASTERING

PART 1 GENERAL

1.1 DESCRIPTION

- A. This section specifies veneer plaster and veneer plaster base.
- B. Provide in-kind repair and/or replacement of all plaster and/or veneer plaster work around all windows for a distance of 12 inches as required to achieve a finished interior ready for painting.

1.2 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.

ASTM INTERNATIONAL (ASTM)

ASTM C 11	Standard Terminology Relating to Gypsum and Related Building Materials and Systems
ASTM C 472	(1999; R 2004) Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete
ASTM C 475	(2002) Joint Compound and Joint Tape for Finishing Gypsum Board
ASTM C 587	(2002) Gypsum Veneer Plaster
ASTM C 588/C 588M	(2003e1) Gypsum Base for Veneer Plasters
ASTM C 631	(1995a; R 2004) Bonding Compounds for Interior Gypsum Plastering
ASTM C 843	(1999e1) Application of Gypsum Veneer Plaster
ASTM C 844	(2004) Application of Gypsum Base to Receive Gypsum Veneer Plaster
ASTM C 954	(2004) Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness
ASTM C 1002	(2004) Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
ASTM C 1047	(1999; R 2004) Accessories for Gypsum

Wallboard and Gypsum Veneer Base

1.3 RELATED WORK

Section 09 29 00, GYPSUM BOARD.

Section 07 92 00, JOINT SEALANTS.

1.4 TERMINOLOGY

A. Definitions and description of terms are in accordance with ASTM C 11, ASTM C 843, ASTM C 844, and as specified.

B. "Yoked": Gypsum Board cut out for opening with no joint at the opening corners.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Gypsum veneer plaster; G, RO

Gypsum Base for Veneer Plaster; G, RO

Accessories; G, RO

Joint reinforcing materials; G, AE

Laminating adhesive; G, RO

PART 2 PRODUCTS

2.1 GYPSUM BASE FOR VENEER PLASTER

ASTM C 588/C 588M, plain, 16 mm (5/8-inch) thick.

2.2 GYPSUM VENEER PLASTER

ASTM C 587. Minimum compressive strength of finish coat plaster shall be 17.2 MPa (2500 psi) in accordance with ASTM C 472.

2.3 ACCESSORIES

A. Corner Bead, Edge Trim and Control Joints: ASTM C 1047, except as specified.

B. Corner bead and edge trim (casings): Minimum 0.38 mm (0.015-inch) thick zinc-coated steel sheet.

C. Flanges not less than 22 mm (7/8-inch) wide with punch-outs or deformations as required to provide plaster bond.

D. Vapor Barrier: 6 mil polyethylene sheet.

## 2.4 JOINT REINFORCING MATERIALS

ASTM C 475, Paper tape.

## 2.5 LAMINATING ADHESIVE

ASTM C 475 joint compound chemical setting type or as recommended by veneer base manufacturer. VOC not to exceed 20 g/l; free of antifreeze and pesticides.

## 2.6 FASTENERS

Screws: ASTM C 1002 or ASTM C 954.

## 2.7 BONDING COMPOUND

ASTM C 631.

# PART 3 EXECUTION

## 3.1 APPLICATION OF VENEER BASE

### 3.1.1 Gypsum Board Heights:

A. Extend gypsum board from floor to underside of structure overhead on partitions and furring as follows:

1. Inside of exterior walls and furring.
2. Room side of rooms without suspended ceilings.
3. Furring for pipes and duct shafts, except where fire rated construction is shown.

### 3.1.2 Installation:

A. Apply veneer base in accordance with ASTM C 844, except as otherwise specified or shown.

B. Install vapor barrier on inside of exterior walls.

C. Use veneer base of maximum practical length.

D. Install veneer base with long dimension direction as follows:

1. On ceilings, at 90 degrees to framing to which it is applied.
2. On partitions, horizontally or vertically, except when the partition is fire rated apply base as designed in the fire rating test.

E. In vertical application of veneer base, use panels of length required to reach full height of vertical surfaces in one continuous piece.

F. Erect veneer base so that the leading edge of the base is first attached to the open end of the metal stud flange.

G. Leave a space approximately 6 mm (1/4-inch) at bottom and top of veneer base for caulking or sealant.

3.1.3 Edge and End Joints:

- A. Locate end joints over furring or framing in all cases.
- B. Stagger end joints of adjoining boards or multiple layer boards.

3.1.4 Control Joints:

- A. **ASTM C 844**, paragraph 7.4.
- B. Locate at both side of jambs of openings if gypsum board is not "yoked". Use only one system throughout.
- C. Not required for wall length less than 9 m (30 feet).
- D. Do not extend veneer base across control joints.
- E. Extend control joints the full height of the wall or length of soffit/ceiling veneer plaster membrane.

3.1.5 Two-Ply Construction:

- A. Apply in accordance with **ASTM C 844** with joints between layers staggered or offset and falling over framing member, except at control joints.
- B. Use screws to hold veneer base in place.

3.1.6 Accessories:

- A. Set plastering accessories plumb, level and true to line, neatly mitered at corners and intersections, and securely attach to supporting surfaces with screws.
- B. Install in one piece, within the limits of the longest commercially available lengths.
- C. Corner Beads:
  - 1. At all external corners.
  - 2. Where required as grounds.
  - 3. Where shown.
- D. Casings Beads:
  - 1. At both sides of expansion and control joints, except as otherwise shown.
  - 2. Where veneer plaster terminates against dissimilar materials and at perimeter of openings, except where covered by flanges, casings or permanently built-in equipment.
  - 3. Where non-load bearing veneer plastered surfaces abuts load bearing members.
  - 4. Where shown.

### 3.2 SEALANT APPLICATION

- A. Apply sealants to veneer plaster base to cut outs, penetrations, and intersections with adjoining materials prior to application of veneer plaster for acoustical partitions.
- B. Coordinate with Section 07 92 00, JOINT SEALANTS, for application of sealants.

### 3.3 VENEER PLASTER APPLICATION OVER GYPSUM BASE

- A. Mix and apply veneer plaster in accordance with ASTM C 843 for one-component plasters, except as specified otherwise.
- B. Joint Reinforcement: ASTM C 843.
- C. Apply smooth-trowel finish.
- D. On partitions specified or shown to extend to underside of structure overhead or full height, the veneer plaster finish may terminate 100 mm (four inches) above the suspended ceiling.
- E. Seal and reinforce all joints and fastener heads above ceilings.

### 3.4 CLEANUP AND PATCHING

Remove any plaster splashes from adjacent surfaces. Repair defects in veneer plaster. Plaster surfaces shall be smooth, clean, and in condition to receive the finishing materials that will be applied.

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SECTION 09 29 00

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- 3.2 INSTALLING GYPSUM BOARD
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- 3.4 REPAIRS

-- End of Section Table of Contents --

SECTION 09 29 00

GYPSUM BOARD

PART 1 GENERAL

1.1 DESCRIPTION

- A. This section specifies installation and finishing of gypsum board.
- B. Provide in-kind repair and/or replacement of all gypsum board work for a distance of 12 inches around all windows as required to achieve a finished interior ready for painting.

1.2 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.

ASTM INTERNATIONAL (ASTM)

ASTM C 1002	(2004) Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
ASTM C 475	(2002) Joint Compound and Joint Tape for Finishing Gypsum Board
ASTM C 840	(2004) Application and Finishing of Gypsum Board
ASTM C 1047	(1999; R 2004) Accessories for Gypsum Wallboard and Gypsum Veneer Base
ASTM C 954	(2004) Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness
ASTM C 1396/C 1396M	(2004) Gypsum Board

1.3 RELATED WORK

- A. Sealants: Section 07 92 00, JOINT SEALANTS.
- B. Gypsum base for veneer plaster: Section 09 26 00 VENEER PLASTERING.

1.4 TERMINOLOGY

- A. Definitions and description of terms shall be in accordance with ASTM C11-08,

ASTM C 840, and as specified.

B. "Yoked": Gypsum board cut out for opening with no joint at the opening (along door jamb or above the door).

#### 1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

##### SD-03 Product Data

Gypsum board; G, RO

Gypsum board, each type.

Accessories; G, RO

Finishing materials; G, RO

Laminating adhesive; G, RO

##### SD-04 Samples

Corner bead; G, RO

Edge trim; G, RO

#### 1.6 DELIVERY, IDENTIFICATION, HANDLING AND STORAGE

In accordance with the requirements of

ASTM C 840.

#### 1.7 ENVIRONMENTAL CONDITIONS

In accordance with the requirements of

ASTM C 840.

#### 1.8 APPLICABLE PUBLICATIONS

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

##### ASTM INTERNATIONAL (ASTM)

ASTM C11-08	Terminology Relating to Gypsum and Related Building Materials Systems
ASTM C 475	(2002) Joint Compound and Joint Tape for Finishing Gypsum Board
ASTM C 630	Water-Resistant Gypsum Backing Board



ASTM C 840	(2004) Application and Finishing of Gypsum Board
ASTM C 954	(2004) Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness
ASTM C 1002	(2004) Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
ASTM C 1047	(1999; R 2004) Accessories for Gypsum Wallboard and Gypsum Veneer Base
ASTM C 1396/C 1396M	(2004) Gypsum Board

## PART 2 PRODUCTS

### 2.1 GYPSUM BOARD

#### 2.1.1 Gypsum Board:

ASTM C 1396/C 1396M, 16 mm (5/8 inch) thick unless shown otherwise. Shall contain a minimum of 20 percent recycled gypsum.

#### 2.1.2 Water Resistant Gypsum Backing Board:

ASTM C 630, Type X, 16 mm (5/8 inch) thick.

### 2.2 ACCESSORIES

#### 2.2.1 Corner Bead, Edge Trim and Control Joints:

ASTM C 1047, except as specified.

#### 2.2.2 Corner bead and edge trim (casings):

Minimum 0.38 mm (0.015-inch) thick zinc-coated steel sheet.

#### 2.2.3 Vapor Barrier:

6 mil polyethylene sheet.

### 2.3 FASTENERS

A. ASTM C 1002 and ASTM C 840, except as otherwise specified.

B. ASTM C 954, for steel studs thicker than 0.04 mm (0.33 inch).

C. Select screws of size and type recommended by the manufacturer of the material being fastened.

D. Clips: Zinc-coated (galvanized) steel; gypsum board manufacturer's standard items.

## 2.4 FINISHING MATERIALS AND LAMINATING ADHESIVE

ASTM C 475 and ASTM C 840. Free of antifreeze, vinyl adhesives, preservatives, biocides and other VOC. Adhesive shall contain a maximum VOC content of 50 g/l.

## PART 3 EXECUTION

### 3.1 GYPSUM BOARD HEIGHTS

A. Extend all layers of gypsum board from floor to underside of structure overhead on following partitions and furring:

1. Inside of exterior wall furring or stud construction.
2. Room side of room without suspended ceilings.
3. Furring for pipes and duct shafts.

### 3.2 INSTALLING GYPSUM BOARD

A. Coordinate installation of gypsum board with other trades and related work.

B. Install gypsum board in accordance with ASTM C 840, except as otherwise specified.

C. Use gypsum boards in maximum practical lengths to minimize number of end joints.

D. Bring gypsum board into contact, but do not force into place.

#### 3.2.1 Ceilings:

A. For single-ply construction, use perpendicular application.

B. For two-ply assemblies:

1. Use perpendicular application.
2. Apply face ply of gypsum board so that joints of face ply do not occur at joints of base ply with joints over framing members.

#### 3.2.2 Walls:

A. Install vapor barrier on inside of exterior walls.

B. When gypsum board is installed parallel to framing members, space fasteners 300 mm (12 inches) on center in field of the board, and 200 mm (8 inches) on center along edges.

C. When gypsum board is installed perpendicular to framing members, space fasteners 300 mm (12 inches) on center in field and along edges.

D. Stagger screws on abutting edges or ends.

E. For single-ply construction, apply gypsum board with long dimension either parallel or perpendicular to framing members as required to minimize number of joints except gypsum board shall be applied vertically over "Z"

furring channels.

F. For two-ply gypsum board assemblies, apply base ply of gypsum board to assure minimum number of joints in face layer. Apply face ply of wallboard to base ply so that joints of face ply do not occur at joints of base ply with joints over framing members.

G. For three-ply gypsum board assemblies, apply plies in same manner as for two-ply assemblies, except that heads of fasteners need only be driven flush with surface for first and second plies. Apply third ply of wallboard in same manner as second ply of two-ply assembly, except use fasteners of sufficient length enough to have the same penetration into framing members as required for two-ply assemblies.

H. No offset in exposed face of walls and partitions will be permitted because of single-ply and two-ply or three-ply application requirements.

### 3.2.3 Control Joints ASTM C840 and as follows:

A. Locate at both side jambs of openings if gypsum board is not "yoked". Use one system throughout.

B. Not required for wall lengths less than 9000 mm (30 feet).

C. Extend control joints the full height of the wall or length of soffit/ceiling membrane.

### 3.2.4 Accessories:

A. Set accessories plumb, level and true to line, neatly mitered at corners and intersections, and securely attach to supporting surfaces as specified.

B. Install in one piece, within the limits of the longest commercially available lengths.

#### A. Corner Beads:

1. Install at all vertical and horizontal external corners and where shown.

2. Use screws only. Do not use crimping tool.

#### B. Edge Trim (casings Beads):

1. At both sides of expansion and control joints unless shown otherwise.

2. Where gypsum board terminates against dissimilar materials and at perimeter of openings, except where covered by flanges, casings or permanently built-in equipment.

3. Where gypsum board surfaces of non-load bearing assemblies abut load bearing members.

4. Where shown.

### 3.3 FINISHING OF GYPSUM BOARD

A. Finish joints, edges, corners, and fastener heads in accordance with

ASTM C 840. Use Level 5 finish for all finished areas open to public view. Level 2 in unfinished areas above ceilings.

B. Before proceeding with installation of finishing materials, assure the following:

1. Gypsum board is fastened and held close to framing or furring.
2. Fastening heads in gypsum board are slightly below surface in dimple formed by driving tool.

A. Finish joints, fasteners, and all openings, including openings around penetrations, on that part of the gypsum board extending above suspended ceilings to seal surface of non-decorated smoke barrier, fire rated, and/or sound rated gypsum board construction. After the installation of hanger rods, hanger wires, supports, equipment, conduits, piping and similar work, seal remaining openings and maintain the integrity of the construction. Sanding is not required of non-decorated surfaces.

### 3.4 REPAIRS

A. After taping and finishing has been completed, and before decoration, repair all damaged and defective work, including non-decorated surfaces.

B. Patch holes or openings 13 mm (1/2 inch) or less in diameter, or equivalent size, with a setting type finishing compound or patching plaster.

C. Repair holes or openings over 13 mm (1/2 inch) diameter, or equivalent size, with 16 mm (5/8 inch) thick gypsum board secured in such a manner as to provide solid substrate equivalent to undamaged surface.

D. Repair any smoke tight construction, fire rated construction, and/or sound rated construction surfaces equal to adjacent existing construction in order to maintain ratings.

-- End of Section --

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SECTION 09 91 00

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Replace Windows, VA Medical Center, Providence, RI

SECTION 09 91 00

PAINTING

PART 1 GENERAL

1.1 DESCRIPTION

- A. Section specifies field painting including, but not limited to, steel lintels at all windows scheduled for any work.
- B. Section specifies prime coats which may be applied in shop under other sections.
- C. Painting includes shellacs, stains, varnishes, coatings specified, and striping or markers and identity markings.
- D. Follow all requirements as specified under Section 02 83 33 Lead Based Paint Removal and Disposal and in "Limited Asbestos Containing Materials & Lead Containing Paint Survey Report" prepared by Axiom Partners, Inc. incorporated herein by reference.

1.2 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 TLVs/BEIs	(2006) TLVs and BEIs
ACGIH 0100Doc	(2005) Documentation of the Threshold Limit Values and Biological Exposure Indices

MASTER PAINTERS INSTITUTE (MPI)

MPI 4	(Jan 2004) Interior/Exterior Latex Block Filler
MPI 31	(Jan 2004) Polyurethane, Moisture Cured, Clear Gloss
MPI 45	(Jan 2004) Interior Alkyd Primer Sealer
MPI 46	(Jan 2004) Interior Enamel Undercoat
MPI 47	(Jan 2004) Interior Alkyd, Semi-Gloss, MPI Gloss Level 5
MPI 50	(Jan 2004) Interior Latex Primer Sealer
MPI 54	(Jan 2004) Interior Latex, Semi-Gloss, MPI Gloss Level 5

Replace Windows, VA Medical Center, Providence, RI

MPI 71	(Jan 2004) Polyurethane, Moisture Cured, Clear, Flat
MPI 90	(Jan 2004) Interior Wood Stain, Semi-Transparent
MPI 94	(Jan 2004) Exterior Alkyd, Semi-Gloss, MPI Gloss Level 5
MPI 134	(Jan 2004) Galvanized Primer (Waterbased)
MPI 139	(Jan 2004) Interior High Performance Latex, MPI Gloss Level 3
MPI 140	(Jan 2004) Interior High Performance Latex, MPI Gloss Level 4

### 1.3 RELATED WORK

Shop prime painting of other materials for field finishing under this section.

### 1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

#### SD-03 Product Data

Manufacturer's Literature and Data; G, RO

#### SD-04 Samples

Sample Panels; G, RO

#### SD-07 Certificates

Manufacturers' Certificates; G, RO

Manufacturers' Certificates indicating compliance with specification

### 1.5 DELIVERY AND STORAGE

A. Deliver materials to site in manufacturer's sealed container marked to show following:

1. Name of manufacturer.
2. Product type.
3. Batch number.
4. Instructions for use.
5. Safety precautions.

B. In addition to manufacturer's label, provide a label legibly printed as following:

1. Federal Specification Number, where applicable, and name of material.



2. Surface upon which material is to be applied.
3. If paint or other coating, state coat types; prime, body or finish.

C. Maintain space for storage, and handling of painting materials and equipment in a neat and orderly condition to prevent spontaneous combustion from occurring or igniting adjacent items.

D. Store materials at site at least 24 hours before using, at a temperature between 18 and 30 degrees C (65 and 85 degrees F).

## PART 2 PRODUCTS

### 2.1 MATERIALS

A. For the purpose of maintaining consistent paint quality throughout the VAMC and establishing a level of quality for this project, Sherwin Williams Paints are highly preferred. Before work is started, or sample panels are prepared, submit [manufacturer's literature and data](#). The Contractor may choose to use 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 Product List" where applicable is acceptable.

B. Provide [Manufacturers' Certificates](#) indicating compliance with the following:

1. Manufacturer's paint substituted for Federal Specification paints meets or exceeds performance of Federal Specification.
2. Intumescent clear coating or fire retardant paint meets or exceeds performance of Federal Specification.

#### 2.1.1 Wood Sealer:

[MPI 31](#) (gloss) or [MPI 71](#) (flat) thinned with thinner recommended by manufacturer at rate of about one part of thinner to four parts of varnish.

#### 2.1.2 Paintings and Coatings:

1. Organic Zinc Rich Primer: MPI 18
2. Polyurethane, Moisture Cured, Clear Gloss (PV): MPI 31.
3. Knot Sealer: MPI 36.
4. Interior Enamel Undercoat: MPI 46.
5. Interior Latex Primer Sealer: MPI 50.
6. Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE): MPI 54.
7. Interior Latex Fire Retardant, Top-Coat (ULC Approved) (FR): MPI 67.
8. Interior Wood Stain, Semi-Transparent (WS): MPI 90.
9. Wood Filler Paste: MPI 91.
10. Exterior Alkyd, Semi-Gloss (EO): MPI 94.
11. Waterborne Galvanized Primer: MPI 134.

### 2.2 PAINT PROPERTIES

- A. Use ready-mixed (including colors).
- B. Where no requirements are given in the referenced specifications for

primers, use primers with pigment and vehicle, compatible with substrate and finish coats specified.

## 2.3 REGULATORY REQUIREMENTS/QUALITY ASSURANCE

A. Paint materials shall conform to the restrictions of the local Environmental and Toxic Control jurisdiction.

B. Volatile Organic Compounds (VOC): VOC content of paint materials shall not exceed 10 g/l for interior latex paints/primers and 50 g/l for exterior latex paints and primers.

C. Lead-Base Paint:

1. Comply with Section 410 of the Lead-Based Paint Poisoning Prevention Act, as amended, and with implementing regulations promulgated by Secretary of Housing and Urban Development.

2. Regulations concerning prohibition against use of lead-based paint in federal and federally assisted construction, or rehabilitation of residential structures are set forth in Subpart F, Title 24, Code of Federal Regulations, Department of Housing and Urban Development.

3. For lead-paint removal, see Section 02 83 33, LEAD-BASED PAINT REMOVAL AND DISPOSAL.

D. Asbestos: Materials shall not contain asbestos.

E. Chromate, Cadmium, Mercury, and Silica: Materials shall not contain zinc-chromate, strontium-chromate, Cadmium, mercury or mercury compounds or free crystalline silica.

F. Human Carcinogens: Materials shall not contain any of the ACGIH TLVs/BEIs and ACGIH 0100Doc confirmed or suspected human carcinogens.

G. Use high performance acrylic paints in place of alkyd paints, where possible.

H. VOC content for solvent-based paints shall not exceed 250 g/l and shall not be formulated with more than one percent aromatic hydro carbons by weight.

## PART 3 EXECUTION

### 3.1 JOB CONDITIONS

#### 3.1.1 Safety

A. Observe required safety regulations and manufacturer's warning and instructions for storage, handling and application of painting materials.

B. Take necessary precautions to protect personnel and property from hazards due to falls, injuries, toxic fumes, fire, explosion, or other harm.

C. Deposit soiled cleaning rags and waste materials in metal containers approved for that purpose. Dispose of such items off the site at end of each days work.

### 3.1.2 Atmospheric and Surface Conditions

- A. Do not apply coating when air or substrate conditions are:
  - 1. Less than 3 degrees C (5 degrees F) above dew point.
  - 2. Below 10 degrees C (50 degrees F) or over 35 degrees C (95 degrees F), unless specifically pre-approved by the Contracting Officer and the product manufacturer. Under no circumstances shall application conditions exceed manufacturer recommendations.
- B. Maintain interior temperatures until paint dries hard.
- C. Do no exterior painting when it is windy and dusty.
- D. Do not paint in direct sunlight or on surfaces that the sun will soon warm.
- E. Apply only on clean, dry and frost free surfaces.
- F. Dampened with a fine mist of water on hot dry days concrete and masonry surfaces to which water thinned acrylic and cementitious paints are applied to prevent excessive suction and to cool surface.
- G. Varnishing:

Apply in clean areas and in still air.

Before varnishing vacuum and dust area.

Immediately before varnishing wipe down surfaces with a tack rag.

### 3.2 [SAMPLE PANELS](#)

- 1. After painters' materials have been approved and before work is started submit [sample panels](#) showing each type of finish and color specified.
- 2. Panels to show color: Composition board, 100 mm by 250 mm by 3 mm (4 inch by 10 inch by 1/8 inch).
- 3. Panel to show transparent finishes: Wood of same species and grain pattern as wood approved for use, 100 mm by 250 mm by 3 mm (4 inch by 10 inch face by 1/4 inch) thick minimum, and where both flat and edge grain will be exposed, 250 mm (10 inches) long by sufficient size, 50 mm by 50 mm (2 inch by 2 inch) minimum or actual wood member to show complete finish.
- 4. Panel to show undercoats: Strips showing not less than 50 mm (2 inch) wide strips of undercoats and 100 mm (4 inch) wide strip of finish coat.
- 5. Attach labels to panels stating the following:
  - a. Federal Specification Number or manufacturers name and product number of paints used.
  - b. Product type and color.
  - c. Name of project.

### 3.3 SURFACE PREPARATION

#### 3.3.1 General:

- A. Remove prefinished items not to be painted such as lighting fixtures, escutcheon plates, hardware, trim, and similar items for reinstallation after paint is dried.
- B. Remove items for reinstallation and complete painting of such items and adjacent areas when item or adjacent surface is not accessible or finish is different.
- C. See other sections of specifications for specified surface conditions and prime coat.
- D. Clean surfaces for painting with materials and methods compatible with substrate and specified finish. Remove any residue remaining from cleaning agents used. Do not use solvents, acid, or steam on concrete and masonry.

#### 3.3.2 Wood:

- A. Sand to a smooth even surface and then dust off.
- B. Sand surfaces showing raised grain smooth between each coat.
- C. Wipe surface with a tack rag prior to applying finish.
- D. Surface painted with an opaque finish:
  - 1. Coat knots, sap and pitch streaks with MPI 36 (Knot Sealer) before applying paint.
  - 2. Apply two coats of MPI 36 (Knot Sealer) over large knots.
- E. After application of prime or first coat of stain, fill cracks, nail and screw holes, depressions and similar defects with wood filler paste. Sand the surface to make smooth and finish flush with adjacent surface.
- F. Before applying finish coat, reapply wood filler paste if required, and sand surface to remove surface blemishes. Finish flush with adjacent surfaces.
- G. Fill open grained wood such as oak, walnut, ash and mahogany with MPI 91 (Wood Filler Paste), colored to match wood color.
  - 1. Thin filler in accordance with manufacturer's instructions for application.
  - 2. Remove excess filler, wipe as clean as possible, dry, and sand as specified.

#### 3.3.3 Ferrous Metals:

- A. Remove oil, grease, soil, drawing and cutting compounds, flux and other detrimental foreign matter in accordance with SSPC-SP 1 (Solvent Cleaning).
- B. Remove loose mill scale, rust, and paint, by hand or power tool cleaning, as defined in SSPC-SP 2 (Hand Tool Cleaning) and SSPC-SP 3 (Power

Tool Cleaning).

C. Fill dents, holes and similar voids and depressions in flat exposed surfaces of items specified to have semi-gloss or gloss finish with TT-F-322D (Filler, Two-Component Type, For Dents, Small Holes and Blow-Holes). Finish flush with adjacent surfaces.

1. This includes flat head countersunk screws used for permanent anchors.

2. Do not fill screws of item intended for removal such as glazing beads.

D. Spot prime abraded and damaged areas in shop prime coat which expose bare metal with same type of paint used for prime coat. Feather edge of spot prime to produce smooth finish coat.

E. Spot prime abraded and damaged areas which expose bare metal of factory finished items with paint as recommended by manufacturer of item.

### 3.3.4 Zinc-Coated (Galvanized) Metal, Aluminum, Copper and Copper Alloys Surfaces Specified as Painted:

A. Clean surfaces to remove grease, oil and other deterrents to paint adhesion in accordance with SSPC-SP 1 (Solvent Cleaning).

B. Spot coat abraded and damaged areas of zinc-coating which expose base metal on hot-dip zinc-coated items with MPI 18 (Organic Zinc Rich Primer) Prime or spot prime with MPI 134 (Waterborne Galvanized Primer) or MPI 135 (Non- Cementitious Galvanized Primer) depending on finish coat compatibility.

### 3.3.5 Gypsum Plaster and Gypsum Board:

A. Remove efflorescence, loose and chalking plaster or finishing materials.

B. Remove dust, dirt, and other deterrents to paint adhesion.

C. Fill holes, cracks, and other depressions with gypsum patching compound finished flush with adjacent surface, with texture to match texture of adjacent surface. Patch holes over 25 mm (1-inch) in diameter as specified in Section for plaster or gypsum board.

### 3.4 PAINT PREPARATION

A. Thoroughly mix painting materials to ensure uniformity of color, complete dispersion of pigment and uniform composition.

B. Do not thin unless necessary for application and when finish paint is used for body and prime coats. Use materials and quantities for thinning as specified in manufacturer's printed instructions.

C. Remove paint skins, then strain paint through commercial paint strainer to remove lumps and other particles.

D. For tinting required to produce exact shades specified, use color pigment recommended by the paint manufacturer.

### 3.5 APPLICATION

- A. Start of surface preparation or painting will be construed as acceptance of the surface as satisfactory for the application of materials.
- B. Unless otherwise specified, apply paint in three coats; prime, body, and finish. When two coats applied to prime coat are the same, first coat applied over primer is body coat and second coat is finish coat.
- C. Apply each coat evenly and cover substrate completely.
- D. Allow not less than as allowed by manufacturer's printed instructions, between application of succeeding coats.
- E. Finish surfaces to show solid even color, free from runs, lumps, brush marks, laps, holidays, or other defects.
- F. Apply by brush or roller. Do not apply by spray.
- G. Do not paint in closed position operable items such as access doors and panels, window sashes, overhead doors, and similar items.

### 3.6 PRIME PAINTING

- A. After surface preparation prime surfaces before application of body and finish coats, except as otherwise specified.
- B. Spot prime and apply body coat to damaged and abraded painted surfaces before applying succeeding coats.
- C. Additional field applied prime coats over shop or factory applied prime coats are not required.

### 3.7 FINISHES

#### 3.7.1 Metal Work:

- A. Ferrous Metal, Galvanized Metal, and Other Metals Scheduled:
  - 1. Exterior: One coat of MPI 18 (Organic Zinc Rich Primer) and two coats of MPI 94 (Exterior Alkyd, Semi-Gloss (EO)) unless specified otherwise.
  - 2. Interior: One coat of MPI 46 (Interior Enamel Undercoat) plus one coat of MPI 47 (Interior Alkyd, Semi-Gloss (AK)) on exposed interior surfaces

#### 3.7.2 Gypsum Board and Plaster:

- A. New Material: One coat of MPI 45 (Interior Primer Sealer) plus two coats of MPI 139 (Interior High Performance Latex, MPI Gloss level 3 (LL)).
- B. Existing Material: Spot prime with MPI 45 (Interior Primer Sealer) plus one coat of MPI 139 (Interior High Performance Latex, MPI Gloss level 3 (LL)).

#### 3.7.3 Masonry and Concrete Walls:

- A. Spot prime with MPI 4 (Interior/Exterior Latex Block Filler) on CMU

surfaces.

- B. Two coats of MPI 140 (Interior High Performance Latex MPI Gloss level 4).

#### 3.7.4 Wood:

##### A. Sanding:

1. Use 220-grit sandpaper.
2. Sand sealers and varnish between coats.
3. Sand enough to scarify surface to assure good adhesion of subsequent coats, to level roughly applied sealer and varnish, and to knock off "whiskers" of any raised grain as well as dust particles.

##### B. Sealers:

1. Apply sealers specified except sealer may be omitted where pigmented, penetrating, or wiping stains containing resins are used.
2. Allow manufacturer's recommended drying time before sanding, but not less than 24 hours or 36 hours in damp or muggy weather.
3. Sand as specified.

##### C. Paint Finish:

1. One coat of MPI 50 (Interior Latex Primer Sealer) plus one coat of MPI 54 (Interior Latex, Semi-Gloss, MPI Gloss Level 5 (LE)).
2. One coat MPI 67 (Interior Latex Fire Retardant, Top-Coat (ULC Approved) (FR), intumescent type (FR) on exposed wood.

#### 3.7.5 Transparent Finishes on Wood.

##### A. Stain Finish:

1. One coat of MPI 90 (Interior Wood Stain, Semi-Transparent (WS)).
2. Use wood stain of type and color required to match existing finish. Do not use varnish type stains.
3. One coat of sealer.
4. Two coats of MPI 31 (Polyurethane Moisture Cured, Clear Gloss (PV)) to match existing.
5. One coat MPI 66 (Interior Alkyd Fire Retardant, Clear Top-Coat (ULC Approved) (FC)) Intumescent Type, Fire Retardant Coating (FC) on exposed wood.

#### 3.8 REFINISHING EXISTING PAINTED SURFACES

- A. Clean, patch and repair existing surfaces as specified under surface preparation.

## Replace Windows, VA Medical Center, Providence, RI

- B. Remove and reinstall items as specified under surface preparation.
- C. Remove existing finishes or apply separation coats to prevent non-compatible coatings from having contact.
- D. Patched or Replaced Areas in Surfaces and Components: Apply spot prime and body coats as specified for new work to repaired areas or replaced components.
- E. Except where scheduled for complete painting For all walls adjacent to window openings, apply finish coat from floor to ceiling over entire plane surface to nearest break in plane, such as corner of room, reveal, or frame. Spot painting only at the window surround is not acceptable.
- F. In existing rooms and areas where alterations occur, clean existing stained and natural finished wood, retouch abraded surfaces and then give entire surface one coat of finish as specified above. MPI 31 (Polyurethane, Moisture Cured, Clear Gloss).
- G. Refinish areas as specified for new work to match adjoining work unless specified or scheduled otherwise.
- H. Coat knots and pitch streaks showing through old finish with MPI 36 (Knot Sealer) before refinishing.
- I. Sand or dull glossy surfaces prior to painting.
- J. Sand existing coatings to a feather edge so that transition between new and existing finish will not show in finished work.

### 3.9 PAINT COLOR

#### 3.9.1 Coat Colors:

- A. Color of priming coat: Lighter than body coat.
- B. Color of body coat: Lighter than finish coat.
- C. Color prime and body coats to not show through the finish coat and to mask surface imperfections or contrasts.

#### 3.9.2 Painting, Caulking, Closures, and Fillers Adjacent to Casework:

- A. Paint to match color of casework where casework has a paint finish.
- B. Paint to match color of wall where casework is stainless steel, plastic laminate, or varnished wood.

### 3.10 PROTECTION CLEAN UP, AND TOUCH-UP

- A. Protect adjacent areas inside and out from paint dust, chips, and flakes caused by scraping and sanding by use of drop cloths or plastic sheeting. Collect debris and dispose of properly.
- B. Protect work from paint droppings and spattering by use of masking, drop cloths, removal of items or by other approved methods.
- C. Upon completion, clean paint from hardware, glass and other surfaces and items not required to be painted of paint drops or smears.



D. Before final inspection, touch-up or refinish in a manner to produce solid even color and finish texture, free from defects in work which was damaged or discolored.

### 3.11 PAINT SCHEDULE

#### INTERIOR FINISHES

##### GWB WALLS

Primer: B28W00200-PrepRite 200 Interior Latex Wall Primer White  
Topcoat: B20W00651-ProGreen 200 Low VOC Interior Latex Eg-Shel  
Extra White

##### GWB Ceilings/Soffits

Primer: B28W00200-PrepRite 200 Interior Latex Wall Primer White  
Topcoat: B20W00651-ProGreen 200 Low VOC Interior Latex Eg-Shel  
Extra White

##### GWB Epoxy Walls

Primer: B28W00200-PrepRite 200 Interior Latex Wall Primer White  
Topcoat: B70W00211-Waterbased Catalyzed Epoxy Extra White/Tint  
Base Part A

##### Metal Doors, Frames, Stairs and Railings

Primer: B50WZ0001-Kem Kromik Universal Metal Primer Off White  
Topcoat: B34W02251-ProMar 200 Interior Alkyd Semi-Gloss VOC 3.20  
Extra White

-- End of Section --

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SECTION 12 21 00

WINDOW BLINDS - DEDUCT ALTERNATE #1

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.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701 (2004) Fire Tests for Flame Propagation of Textiles and Films

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Hardware; G, AE

Installation

Drawings showing fabrication and installation details. Show layout and locations of track, direction of draw, mounting heights, and details.

SD-03 Product Data

Window Blinds; G, RO

Hardware; G, RO

Installation; G, RO

Manufacturer's data composed of catalog cuts, brochures, product information, and maintenance instructions.

SD-04 Samples

Window Blinds; G, RO

Hardware; G, RO

Valance; G, RO

Samples of each type and color of window treatment. Provide

vertical louvers 6 inch in length for each color. Track must be 6 inch in length.

#### SD-06 Test Reports

##### Window Blinds

Fire resistance, Flame Spread, and smoke contribution data.

#### SD-08 Manufacturer's Instructions

##### Window Blinds; G, RO

#### SD-10 Operation and Maintenance Data

##### Window Blinds; G, RO

### 1.3 GENERAL REQUIREMENTS

Provide window treatment, conforming to NFPA 701, complete with necessary brackets, fittings, and hardware. Each window treatment type must be a complete unit provided in accordance with paragraph WINDOW TREATMENT PLACEMENT SCHEDULE. Mount and operate equipment as per manufacturer's instructions. Windows to receive a treatment must be completely covered.

### 1.4 DELIVERY, STORAGE, AND HANDLING

Deliver components to the jobsite in the manufacturer's original packaging with the brand or company name, item identification, and project reference clearly marked. Store components in a dry location that is adequately ventilated and free from dust, water, or other contaminants and has easy access for inspection and handling. Store materials flat in a clean dry area with temperature maintained above 50 degrees F. Do not open containers until needed for installation unless verification inspection is required.

### 1.5 FIELD MEASUREMENTS

Become familiar with details of the work, verify all dimensions in the field, and advise the Contracting Officer of any discrepancy before performing the work.

### 1.6 WARRANTY

Provide manufacturer's standard performance guarantees or warranties that extend beyond a 1 year period.

## PART 2 PRODUCTS

### 2.1 WINDOW BLINDS

Provide each blind, including hardware, accessory items, mounting brackets and fastenings, as a complete unit produced by one manufacturer. All parts must be one color, unless otherwise indicated, to match the color of the blind slat. Treat steel features for corrosion resistance.

#### 2.1.1 Vertical Blinds

Provide vertical blind units capable of nominally 180 degree partial

tilting operation and full stackback. The blinds must be listed by the manufacturer as designed for heavy duty strength applications including heavy duty hardware. Provide vertical blinds to be ceiling mounted with inside brackets. Blinds must be sill length.

#### 2.1.1.1 Modifications

Modify any and all blinds to fit special window conditions including, but not limited to cutting louvers to fit around window air conditioners, fans, ducts, and other obstructions.

#### 2.1.1.2 Louvers

Provide louvers which are flame retardant fabric having straight, flat, unfrayed edges and flat, without noticeable twists. A weight must be provided at the bottom of the louver without the insert discoloring the fabric. Provide louvers with a bottom chain. Grooves extruded from solid vinyl with clear non-yellowing channel lips to accept fabric inserts. Fabric inserts must be flame retardant and colorfast. Louvers that are 3-1/2 inch must overlap not less than 3/8 inch and be dimensionally stable.

#### 2.1.1.3 Carriers

Provide carriers to support each louver. Provide carriers made of molded plastic to transverse on self-fabricated wheels for smooth, easy operation. The hook of the carrier must have an automatic latch to permit easy installation and removal of the louver, and to securely lock the louver for tilting and traversing.

#### 2.1.1.4 Headrail System

Provide headrail system not less than 0.047 inch thick and made of anodized aluminum alloy or 0.027 inch thick phosphate treated steel with a baked on ivory gloss enamel paint finish. The headrail must extend the full width of the blind and be closed with an end cap at each end. One cap must contain the traversing and tilting controls. The opposite cap will house the pulley for the traversing cord.

#### 2.1.1.5 Valance

Attach the manufacturer's standard valance to the headrail by metal or plastic holders which grip the top and bottom edge of the valance and accept an insert of the same material as the slats. Provide sufficient clearance behind the valance to permit the louvers to tilt without interference. The headrail cover must extend the full width of the blind. Returns must be provided.

#### 2.1.1.6 Controls

Provide tilting and traversing controls that hang compactly at the side of the blinds and reach within 5 feet of the floor. The tilt/traverse control must tilt all vanes simultaneously to any desired angle and hold them at that angle. Provide louvers that traverse one way to the left. Provide louvers that traverse along the headrail by pulling a fiberglass wand that tilts the louvers by turning the wand and traverses the louvers by using the wand as a drapery control.

#### 2.1.1.7 Connectors and Spacers

The connector must be flexible, smooth and flat to slide unhindered when carriers move independently of each other, and to nest compactly when carriers are stacking. The length of the links must relate to the louver width in order to equally space the traversing louvers, to maintain uniform and adequate overlap of louvers, and to fully cover the width of the opening.

#### 2.1.1.8 Intermediate Brackets

Furnish intermediate installation brackets for blinds over 62 inches wide.

### 2.2 COLOR

Provide color, pattern and texture selected from manufacturer's standard colors.

## PART 3 EXECUTION

### 3.1 WINDOW TREATMENT PLACEMENT SCHEDULE

Provide treatments for all exterior windows as shown and scheduled on drawings except those specifically noted as excluded.

### 3.2 IDENTIFICATION

In accordance with the numbering plan, mark each opening and the corresponding window treatment with identical numbers. For multiple windows separated by mullions, the space required by each blind must be numbered separately. Use brass, aluminum, plastic, durable paper plates, or stamp to place corresponding numbers on unexposed surfaces of openings and inside or on top of the headrail track.

### 3.3 INSTALLATION

#### 3.3.1 Vertical Blinds

Perform installation in accordance with the approved detail drawings and manufacturer's installation instructions. Install units level, plumb, secure, and at proper height and location relative to window units. Furnish and install supplementary or miscellaneous items in total, including clips, brackets, or anchorages incidental to or necessary for a sound, secure, and complete installation. Do not start installation until completion of room painting and finishing operations.

#### 3.3.2 Modifications

Modify blinds to fit around window air conditioners, fans, ducts, and other obstructions.

#### 3.3.3 Valance

Perform installation in accordance with the approved detail drawings and manufacturer's installation instructions. Install units level, plumb, secure, and at proper height and location relative to window units. Furnish and install supplementary or miscellaneous items in total, including clips, brackets, or anchorages incidental to or necessary for a sound, secure, and complete installation. Do not start installation until

completion of room painting and finishing operations.

#### 3.3.4 Installation Requirements

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, must 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.

#### 3.4 CLEAN-UP

Upon completion of the installation, free window treatments from soiling, damage or blemishes; and adjust them for form and appearance and proper operating condition. Repair or replace damaged units as directed by the Contracting Officer.

-- End of Section --