

**DEPARTMENT OF VETERANS AFFAIRS  
MASTER SPECIFICATIONS**

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**SECTION 01 00 00  
GENERAL REQUIREMENTS**

**1.1 GENERAL INTENTION**

- A. Contractor shall completely prepare site for building operations, including demolition and removal of existing structures, and furnish labor and materials and perform work for as required by drawings and specifications.
- B. Visits to the site by Bidders may be made only at the pre-bid conference. Please refer to the Solicitation for the date/time of the organized visit.
- C. All employees of general contractor and subcontractors shall comply with VA security management program and obtain permission of the VA police, be identified by project and employer, and restricted from unauthorized access.
- D. Prior to commencing work, general contractor shall provide proof that a OSHA certified "competent person" (CP) (29 CFR 1926.20(b)(2)) will maintain a presence at the work site whenever the general or subcontractors are present.
- G. Training:
  - 1. All employees of general contractor or subcontractors shall have the 10-hour OSHA certified Construction Safety course and /or other relevant competency training as determined by VA CP with input from the ICRA team. Contractor's on site Superintendant is recommended to have the 30-hour OSHA certified Construction Safety course.
  - 2. Submit training records of all such employees for approval before the start of work. No contractor or subcontract employee will be permitted to work until the required documents have been submitted and approved.

**1.2 STATEMENT OF BID ITEM(S)**

- A. BID ITEM I (Base Bid): Removal of the existing double hung aluminum windows, and fixed windows, greenstone sills and all housings where installed in Building 2 as indicated on the drawings. Replace all windows with new triple glazed in-swing casement with integral muntins and blinds, and install new window sills, as noted and detailed on the drawings. All work shall be completed within two-hundred and forty (240) calendar days from the Notice to Proceed.
- B. BID ITEM II (Deduct Alternate 1): Perform all work described in BID ITEM I (Base Bid) above, except DELETE work associated with the removal and replacement of all windows and sills in the Primary Clinic on the first floor on the south side of Building 2. All work shall be completed within two-hundred and twenty (220) calendar days from the Notice to Proceed.

**1.3 SPECIFICATIONS AND DRAWINGS FOR CONTRACTOR**

- A. Available electronically as required and upon request.

**1.4 CONSTRUCTION SECURITY REQUIREMENTS**

- A. Security Plan:

1. The security plan defines both physical and administrative security procedures that will remain effective for the entire duration of the project. 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. 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. Key Control:

1. The General Contractor shall sign for and be provided VA keys by the COR for the purpose of securing construction areas and providing VA access to all areas of the project.

D. Motor Vehicle Restrictions

1. Coordinate with Contracting Officer or COR on current motor vehicle authorization requests. 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.
2. Separate permits shall be issued for General Contractor and its employees for parking in designated areas only.

## 1.5 FIRE SAFETY

- A. Applicable Publications: Publications listed below form part of this Article to extent referenced. Publications are referenced in text by basic designations only.

1. American Society for Testing and Materials (ASTM):

E84-2009.....Surface Burning Characteristics of Building Materials

2. National Fire Protection Association (NFPA):

10-2010 .....Standard for Portable Fire Extinguishers

30-2008 .....Flammable and Combustible Liquids Code

51B-2009.....Standard for Fire Prevention During Welding, Cutting and Other Hot Work

70-2011 .....National Electrical Code

241-2009 .....Standard for Safeguarding Construction, Alteration, and Demolition Operations

3. Occupational Safety and Health Administration (OSHA):

29 CFR 1926 .....Safety and Health Regulations for Construction

- B. 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 COR and Facility Safety Manager for review for compliance with contract requirements in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES Prior to any worker for the 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 contractor's safety briefing.
- C. Site and Building Access: Maintain free and unobstructed access to facility emergency services and for fire, police and other emergency response forces in accordance with NFPA 241.
- D. 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).
- E. Temporary Construction Partitions: 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 E84) 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, ¾ hour fire/smoke rated doors with self-closing devices.
- F. Temporary Heating and Electrical: Install, use and maintain installations in accordance with 29 CFR 1926, NFPA 241 and NFPA 70.
- G. Means of Egress: Do not block exiting for occupied buildings, including paths from exits to roads. Minimize disruptions and coordinate with COR and facility Safety Manager.
- H. Egress Routes for Construction Workers: Maintain free and unobstructed egress. Inspect daily and report findings and corrective actions weekly to COR and facility Safety Manager.
- I. Fire Extinguishers: Provide and maintain extinguishers in construction areas and temporary storage areas in accordance with 29 CFR 1926, NFPA 241 and NFPA 10.
- J. Flammable and Combustible Liquids: Store, dispense and use liquids in accordance with 29 CFR 1926, NFPA 241 and NFPA 30.
- K. 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. Request interruptions in accordance with Article, OPERATIONS AND STORAGE AREAS, and coordinate with COR and facility Safety Manager. 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 COR.

- L. Smoke Detectors: Prevent accidental operation. Remove temporary covers at end of work operations each day. Coordinate with COR and facility Safety Manager.
- M. Hot Work: Perform and safeguard hot work operations in accordance with NFPA 241 and NFPA 51B. Coordinate with COR. Obtain permits from facility Safety Manager at least 48 hours in advance. Designate contractor's responsible project-site fire prevention program manager to permit hot work.
- N. Fire Hazard Prevention and Safety Inspections: Inspect entire construction areas weekly. Coordinate with, and report findings and corrective actions weekly to COR and facility Safety Manager .
- O. 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.
- P. Dispose of waste and debris in accordance with NFPA 241. Remove from buildings daily.
- Q. Perform other construction, alteration and demolition operations in accordance with 29 CFR 1926.

#### **1.6 OPERATIONS AND STORAGE AREAS**

- A. The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.
- B. Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.
- C. The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.
- D. Working space and space available for storing materials shall be as determined by the COR.
- E. Workmen are subject to rules of Medical Center applicable to their conduct.
- F. Execute work in such a manner as to interfere as little as possible with work being done by others. Keep roads clear of construction materials, debris, standing construction equipment and vehicles at all times.
- F. Execute work so as to interfere as little as possible with normal functioning of Medical Center as a whole and the operations in Building 2 in particular. Building 2 will remain in operation throughout the replacement of the windows.

Contractor shall coordinate with COR on the number of windows to be replaced in one working day and shall coordinate on a schedule so that the mission of the employees and Veterans in Building 2 shall not be interrupted any more than is absolutely necessary. Use of equipment and tools that transmit vibrations and noises through the building structure, are not permitted in buildings that are occupied, during construction, jointly by patients or medical personnel, and Contractor's personnel, except as permitted by COR where required by limited working space and as scheduled for other than normal duty hours.

1. Do not store materials and equipment in other than assigned areas.
  2. Schedule delivery of materials and equipment to immediate construction working areas within buildings in use by Department of Veterans Affairs in quantities sufficient for not more than two work days. Provide unobstructed access to Medical Center areas required to remain in operation.
- G. Phasing: To insure adequate scheduling in occupied areas, Contractor shall furnish the COR with a schedule of approximate dates on which the Contractor intends to accomplish work in each specific area building. In addition, Contractor shall notify the COR two weeks in advance of the proposed date of starting work in each specific area of building or portion thereof. Arrange such phasing dates to insure accomplishment of all work in successive phases mutually agreeable to COR and Contractor.
- H. Building 7 will be occupied during performance of work, but immediate areas of alterations will be vacated for contractor access.
1. Contractor shall take all measures and provide all material necessary for protecting existing equipment and property in affected areas of construction against dust and debris, so that equipment and affected areas to be used in the Medical Centers operations will not be hindered. Contractor shall permit access to Department of Veterans Affairs personnel and patients through other construction areas which serve as routes of access to such affected areas and equipment. Coordinate alteration work in areas occupied by Department of Veterans Affairs so that Medical Center operations will continue during the construction period.
- I To minimize interference of construction activities with flow of Medical Center traffic keep roads, walks and entrances to grounds, to parking and to occupied areas of buildings clear of construction materials, debris and standing construction equipment and vehicles.

## **1.7 ALTERATIONS**

- A. Survey: Before any work is started, the Contractor shall make a thorough survey with the COR and Contracting Officer of all areas of buildings in which alterations occur and areas which are anticipated routes of access, and furnish a report, signed by all three. 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 building.
  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 Contractor and COR.
- 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 COR and 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, under provisions of clause entitled "DIFFERING SITE CONDITIONS" (FAR 52.236-2) and "CHANGES" (FAR 52.243-4 and VAAR 852.236-88).
- C. Resurvey: Thirty days before expected partial or final inspection date, the Contractor and Resident Engineer together shall make a thorough re-survey of the areas of buildings involved. They 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. 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.
  2. 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.

#### **1.8 INFECTION PREVENTION MEASURES**

- A. Implement the requirements of VAMC's Infection Control Risk Assessment (ICRA) team. ICRA Group may monitor dust in the vicinity of the construction work and require the Contractor to take corrective action immediately if the safe levels are exceeded.
- B. Establish and maintain a dust control program as part of the contractor's infection preventive measures in accordance with the guidelines provided by ICRA Group. Prior to start of work, prepare a plan detailing project-specific dust protection measures, including periodic status reports, and submit to COR and Facility ICRA team for review for compliance with contract requirements in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.
1. All personnel involved in the construction or renovation activity shall be educated and trained in infection prevention measures established by the medical center.
- C. Medical center Infection Control personnel shall monitor for airborne disease (e.g. aspergillosis) as appropriate during construction. A baseline of conditions may be established by the medical center prior to the start of work and periodically during the construction stage to determine impact of construction activities on indoor air quality. In addition:



1. The COR and VAMC Infection Control personnel shall review pressure differential monitoring documentation 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. Upon notification, the contractor shall implement corrective measures to restore proper pressure differentials as needed.
  2. In case of any problem, the medical center, along with assistance from the contractor, shall conduct an environmental assessment to find and eliminate the source.
- D. In general, 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. Blank off ducts and diffusers to prevent circulation of dust into occupied areas during construction.
  2. Do not perform dust producing tasks within occupied areas without the approval of the COR. For construction in any areas that will remain jointly occupied by the medical Center and Contractor's workers, the Contractor shall:
    - a. Provide a fire retardant polystyrene, 6-mil thick or greater plastic barrier meeting local fire codes may be used where dust control is the only hazard, and an agreement is reached with the COR and Medical Center.
    - b. Vacuum and wet mop all transition areas from construction to the occupied medical center as necessary to maintain a clean work area. Vacuum shall utilize HEPA filtration. Maintain surrounding area frequently. Remove debris as they are created. Transport these outside the construction area in containers with tightly fitting lids.
    - c. 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.
    - d. At completion, remove construction barriers and ceiling protection carefully, outside of normal work hours. Vacuum and clean all surfaces free of dust after the removal.
- E. Final Cleanup:
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.

## **1.9 DISPOSAL AND RETENTION**

- A. Materials and equipment accruing from work removed and from demolition of buildings or structures, or parts thereof, shall be disposed of as follows:
1. Reserved items which are to remain property of the Government are noted on drawings or in specifications as items to be stored. Items that remain property of the Government shall be removed or dislodged from present

locations in such a manner as to prevent damage which would be detrimental to re-installation and reuse. Store such items where directed by COR.

2. Items not reserved shall become property of the Contractor and be removed by Contractor from Medical Center.
3. Items of portable equipment and furnishings located in rooms and spaces in which work is to be done under this contract shall remain the property of the Government. When rooms and spaces are vacated by the Department of Veterans Affairs during the alteration period, such items which are NOT required by drawings and specifications to be either relocated or reused will be removed by the Government in advance of work to avoid interfering with Contractor's operation.

#### **1.10 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS**

- A. The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree pruning compound as directed by the Contracting Officer.

#### **1.11 RESTORATION**

- A. Remove, cut, alter, replace, patch and repair existing work as necessary to install new work. Except as otherwise shown or specified, do not cut, alter or remove any structural work, and do not disturb any ducts, plumbing, steam, gas, or electric work without approval of the COR. Existing work to be altered or extended and that is found to be defective in any way, shall be reported to the COR before it is disturbed. Materials and workmanship used in restoring work shall conform in type and quality to that of original existing construction, except as otherwise shown or specified.
- B. Upon completion of contract, deliver work complete and undamaged. Existing work (walls, ceilings, partitions, floors, mechanical and electrical work, lawns, paving, roads, walks, etc.) disturbed or removed as a result of performing required new work, shall be patched, repaired, reinstalled, or replaced with new work, and refinished and left in as good condition as existed before commencing work.
- C. At Contractor's own expense, Contractor shall immediately restore to service and repair any damage caused by Contractor's workmen to existing piping and conduits, wires, cables, etc., of utility services or of fire protection systems and communications systems (including telephone) which are indicated on drawings and which are not scheduled for discontinuance or abandonment.
- D. Expense of repairs to such utilities and systems not shown on drawings or locations of which are unknown will be covered by adjustment to contract time and price in accordance with clause entitled "CHANGES" (FAR 52.243-4 and VAAR 852.236-88) and "DIFFERING SITE CONDITIONS" (FAR 52.236-2).

#### **1.12 AS-BUILT DRAWINGS**

- A. The contractor shall maintain two full size sets of as-built drawings which will be kept current during construction of the project, to include all contract changes, modifications and clarifications.
- B. All variations shall be shown in the same general detail as used in the contract drawings. To insure compliance, as-built drawings shall be made available for the Resident Engineer's review, as often as requested.

- C. Contractor shall deliver two approved completed sets of as-built drawings to the Resident Engineer within 15 calendar days after each completed phase and after the acceptance of the project by the Resident Engineer.
- D. Paragraphs A, B, & C shall also apply to all shop drawings.

#### **1.13 USE OF ROADWAYS**

- A. For hauling, use only established public roads and roads on Medical Center property and, when authorized by the COR, such temporary roads which are necessary in the performance of contract work. Temporary roads shall be constructed by the Contractor at Contractor's expense. When necessary to cross curbing, sidewalks, or similar construction, they must be protected by well constructed bridges.

#### **1.14 AVAILABILITY AND USE OF UTILITY SERVICES**

- A. The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. The amount to be paid by the Contractor for chargeable electrical services shall be the prevailing rates charged to the Government. The Contractor shall carefully conserve any utilities furnished without charge.

#### **1.15 INSTRUCTIONS**

- A. Contractor shall furnish Maintenance and Operating manuals and verbal instructions when required by the various sections of the specifications and as hereinafter specified.
- B. Manuals: Maintenance and operating manuals (four copies each) for each separate piece of equipment shall be delivered to the COR coincidental with the delivery of the equipment to the job site.
- C. Instructions: Contractor shall provide qualified, factory-trained manufacturers' representatives to give detailed instructions to assigned Department of Veterans Affairs personnel in the operation and complete maintenance for each piece of equipment. All such training will be at the job site.

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## **SECTION 01061**

### **OSHA REQUIREMENTS - SAFETY AND HEALTH REGULATIONS**

#### **INFECTION CONTROL GUIDELINES**

##### **VAMC Salisbury North Carolina**

### **PART 1 - OSHA REQUIREMENTS**

#### **1.1 GENERAL**

- A. Contractors are required to comply with the Occupational Safety and Health Act of 1970. This will include the safety and health standard found in CFR 1910 and 1926. Copies of those standards can be acquired from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20420
- B. Training:
  - 1. Beginning January 1, 2005, all employees of general contractor or subcontractors shall have the 10-hour OSHA certified Construction Safety course and /or other relevant competency training, as determined by VA CP with input from the ICRA team.
  - 2. Submit training records of all such employees for approval before the start of work.
- C. In addition, Contractor will be required to comply with other applicable Medical Center policies and safety regulations. These policies and regulations will be presented to the Contractor at the pre-construction meeting. Each of the Contractor's employees will be required to read the statement of policies and regulations and sign an acknowledgment that such policies and regulations are understood. Signed acknowledgment will be returned to the Project Superintendent.
- D. Contractors involved with the removal, alteration, or disturbance of asbestos type insulation or materials will be required to comply strictly with the regulations found in CFR 1910.1001 and the appropriate EPA regulations regarding disposal of asbestos. Assistance in identifying asbestos can be requested from the Medical Center's Industrial Hygienist and the Project Engineer.
- E. Contractors entering locations of asbestos contamination (i.e. pipe basements) shall be responsible for providing respiratory protection as required to their employees and ensuring respirators are worn in accordance with OSHA (CFR 1910.1001 (g)). Asbestos contaminated areas shall be defined on project drawings. The minimum equipment requirements will be a half-mask air-purifying respirator equipped with high efficiency filters and disposable Tyvek coveralls.
- F. Contractor, along with other submittals, and at least two weeks prior to brining any materials on-site, must submit a complete list of chemicals the Contractor will use and MSDS for all hazardous materials as defined in OSHA 1910.1200 (d) Hazard Determination. Contracting Officer shall have final approval of all materials brought on site.
- G. The Medical Center Safety and Occupational Health Specialist will closely monitor all safety aspects of the project. Severe or constant violations may result in an immediate work stoppage or request for a Compliance Officer from the Occupational Safety and Health Administration.
- H. During all phases of demolition, construction and alterations, Contractors are required to understand and strictly follow NFPA 241 Standard for Safeguarding Construction, Alteration and Demolition Operations. The Medical Center's Safety and Occupational Health Specialist and Industrial Hygienist will closely monitor the work area for compliance. Appropriate action will be taken for non-compliance.

### **PART 2 - SPECIFIC VA MEDICAL CENTER FIRE & SAFETY POLICIES, PROCEDURES & REGULATIONS**

## 2.1 INTRODUCTION

- A. The safety and fire protection of patients, employees, members of the public and government is one of continuous concern to this Medical Center.
- B. Contractors, their supervisors and employees are required to comply with Medical Center policies to ensure the occupational safety and health of all. Failure to comply may result in work stoppage.
- C. While working at this Medical Center, Contractors are responsible for the occupational safety and health of their employees. Contractors are required to comply with the applicable OSHA standards found in 29 CFR 1910 for general industry and 29 CFR 1926 for construction. Failure to comply with these standards may result in work stoppage and a request to the Area Director of OSHA for a Compliance Officer to inspect your work site.
- D. Contractors are to comply with the requirements found in the National Fire Protection Association (NFPA) #241, Building Construction and Demolition Operations and NFPA #51B, Fire Prevention in Use of Cutting and Welding Processes.
- E. Questions regarding occupational safety and health issues can be addressed to the Medical Center Safety and Occupational Health Specialist or the Medical Center Industrial Hygienist.
- F. Smoking is not permitted in any interior areas of the Medical Center, including all interior stairwells, tunnels, construction and/or service/maintenance sites. (Note: This includes interior posted patient smoking areas). Compliance with this policy by your direct and subcontracted labor force is required.

## 2.2 HAZARD COMMUNICATION

- A. Contractors shall comply with OSHA Standard 29 CFR 1926.59 Hazard Communication.
- B. Contractors shall submit to the VA Safety and Occupational Health Specialist, copies of Material Safety Data Sheets covering all hazardous materials to which the Contractor and VA employees are exposed.
- C. Contractors shall inform VA Safety and Occupational Health Specialist personnel of the hazards to which VA personnel and patients may be exposed.
- D. Contractors shall have a written Hazard Communication Program, which details how the Contractor will comply with 29 CFR 1926.59.

## 2.3 FIRES

All fires must be reported. In the event of a fire in your work area, use the nearest pull box station and also notify Medical Center staff in the immediate area. Emergency notification can also be accomplished by dialing ext. 3333.

This is the emergency phone only. Be sure to give the exact location from where you are calling. If a Contractor has experienced a fire and it was rapidly extinguished, you still must notify the Medical Center Safety Staff immediately (ext. 3333) such that an investigation of the fire can be accomplished. Delay in reporting a fire is unacceptable.

## 2.4 FIRE ALARMS, SMOKE DETECTION AND SPRINKLER SYSTEM

If the nature of your work requires the deactivation of the fire alarm, smoke detection or sprinkler system, you must notify the Resident Engineer and Medical Center Safety Staff. Notification must be made well in advance such that ample time can be allowed to deactivate the system and provide alternative measures for fire protection. Under no circumstance is a Contractor allowed to deactivate any of the fire protection systems in this Medical Center.

## 2.5 SMOKE DETECTORS

False alarms will not be tolerated. You are required to be familiar with the location of the smoke detectors in your work area. When performing cutting, burning or welding or any other operations that may cause smoke or dust, you must take steps to temporarily cover smoke detectors in order to prevent false alarms and maintain cleanliness of the smoke detectors. Failure to take the appropriate action will result in the Contracting Officer assessing actual costs for

government response for each false alarm that is preventable. Prior to covering the smoke detectors, the Contractor will notify the VAMC Safety Staff, who will also be notified when the covers are removed at a minimum at the end of each work day.

## 2.6 HOT WORK PERMIT

- A. Hot work is defined as operations including, but not limited to, cutting, welding, thermal welding, brazing, soldering, grinding, thermal spraying, thawing pipes, or any similar situation. If such work is required, the Contractor must notify the Resident Engineer no less than one day in advance of such work. The VAMC Safety Staff will inspect the work area and issue a Hot Work Permit authorizing the performance of such work.
- B. All hot work will be performed in compliance with NFPA 241, Safeguarding Construction, Alteration, and Demolition Operations, and NFPA 51B, Fire Prevention in Use of Cutting and Welding Processes, and applicable OSHA standard. A hot work permit will only be issued to individuals familiar with these regulations.
- C. A hot work permit will only be issued when the following conditions are met:
  - 1. Combustible materials are located a minimum of 35 feet from the work site, or protected by flameproof covers or shielded with metal or fire-resistant guards or curtains.
  - 2. Openings or cracks in walls, floors, or ducts within 35 feet of the site are covered to prevent the passage of sparks to adjacent areas.
  - 3. Where cutting or welding is done near walls, partitions, ceiling, or roof of combustible construction, fire resistant guards or shields are provided to prevent ignition.
  - 4. Cutting or welding on pipes or other metal in contact with combustible walls, ceilings or roofs is not undertaken if the work is close enough to cause ignition by conduction.
  - 5. Fully charged and operable fire extinguishers, appropriate for the type of possible fire, are available at the work area.
  - 6. When cutting or welding is done in close proximity to a sprinkler head, a wet rag is laid over the head during operation.
  - 7. Assure that nearby personnel are protected against heat, sparks, cut off, etc.
  - 8. Assure that a fire watch is at the site. Make a final check-up 30 minutes after completion of operations to detect and extinguish any smoldering fires.
- D. A fire watch shall be provided by the Contractor whenever cutting, welding, or performing other hot work. Fire watcher(s) shall:
  - 1. Have fire-extinguishing equipment readily available and be trained in its use.
  - 2. Be familiar with facilities and procedures for sounding an alarm in the event of fire.
  - 3. Watch for fires in all exposed areas, sound the fire alarm immediately, and try to extinguish only within the capability of the portable extinguishing equipment available. In all cases if a fire is detected the alarm shall be activated even if the fire is extinguished.
  - 4. Maintain the watch for at least a half-hour after completion of operations to detect and extinguish smoldering fires.
- E. A Hot Work Permit will be issued only for the period necessary to perform such work. In the event the time necessary will exceed one day, a Hot Work Permit may be issued for the period needed; however, the VAMC Safety Staff will inspect the area daily. Hot work permit will apply only to the location identified on the permit. If additional areas involve hot work, then additional permits must be requested.

- F. Contractors will not be allowed to perform hot work processes without the appropriate permit.
- G. Any work involving the Medical Center's fire protection system will require notification of the VA Safety Staff and Resident Engineer. Under no circumstances will the Contractor or employee attempt to alter or tamper with the existing fire protection system.
- H. Upon completion of all hot work, the VA Safety Staff will be notified to perform an inspection of the area. It is recommended that the inspection take place approximately 30 minutes after the hot work is completed to confirm that sparks or drops of hot metal are not present.

## 2.7 TEMPORARY ENCLOSURES

Only non-combustible materials will be used to construct temporary enclosures or barriers at this Medical Center. Plastic materials and fabrics used to construct dust barriers must conform to NFPA #701, Standard Methods of Fire Tests for Flame-Resistant Textiles and Films.

## 2.8 FLAMMABLE LIQUIDS

All flammable liquids will be kept in approved safety containers. Only the amount necessary for your immediate work will be allowed in the building. Flammable liquids must be removed from the building at the end of each day.

## 2.9 COMPRESSED GAS CYLINDERS

Compressed gas shall be secured in an upright position at all times. A suitable cylinder cart will be used to transport compressed gas cylinders. Only those compressed gas cylinders necessary for immediate work will be allowed in occupied buildings. All other will be stored outside of buildings in a designated area. Contractor will comply with applicable standards compressed gas cylinders found in 29 CFR 1910 and 1926 (OSHA).

## 2.10 INTERNAL COMBUSTION ENGINE-POWERED EQUIPMENT

Equipment powered by an internal combustion engine such as saws, compressors, generators and etc. will not be used in an occupied building. Special consideration may be given for unoccupied buildings only if the OSHA and NFPA requirements have been met.

## 2.11 POWDER ACTIVATED TOOLS

Powder activated tools will be kept in a secured manner at all times. When not in use, the tools will be locked up. When in use, the operator will have the tool under his immediate control.

## 2.12 TOOLS

- A. Under no circumstances is equipment, tools and other items of work to be left unattended for any reason. All tools, equipment and items of work must be under the immediate control of your employee.
- B. If for some reason a work area must be left unattended, then it will be required that tools and other equipment be placed in an appropriate box or container and locked. All toolboxes, containers or any other device used for the storage of tool and equipment, will be provided with a latch and padlock. All tool boxes, containers or any other device used for the storage of tools and equipment, will be locked at all times except for putting in and removing tools.
- C. All doors to work areas will be closed and locked when room are left unattended. Failure to comply with this directive will be considered a violation of VA Regulations 1.218 (b), Failure to comply with signs of a directive and restrictive nature posted for safety purposes, subject to a \$50.00 fine. Subsequent similar violations may result in both imposition of such a fine as well as the Contracting Officer taking action under the Contract's Accident Prevention Clause (FAR 52.236-13) to suspend all contract work until violations such may be satisfactorily resolved or under FAR 52.236-5 Material and Workmanship Clause to remove from the work site any personnel deemed by the Contracting Officer to be careless to the point of jeopardizing the welfare of Facility patients or staff.

D. You must report to the VA Police Department, Ext. 3333, any tools or equipment that are missing.

E. Tools and equipment found unattended will be confiscated and removed from the work area.

#### 2.13 LADDERS

It is required that ladders not be left unattended in an upright position. Ladders must be attended at all times or taken down and chained securely to a stationary object.

#### 2.14 SCAFFOLDS

All scaffolds will be attended at all times. When not in use, an effective barricade (fence) will be erected around the scaffold to prevent use by unauthorized personnel.

#### 2.15 EXCAVATIONS

All excavations left unattended will be provided with a barricade suitable to prevent entry by unauthorized persons.

#### 2.16 STORAGE

You must make prior arrangements with the Project Inspector for the storage of building materials. Storage will not be allowed to accumulate in the Medical Center buildings.

#### 2.17 TRASH AND DEBRIS, CLEANING

You must remove all trash and debris from the work area and perform at least general cleaning on a daily basis. Trash and debris will not be allowed to accumulate inside or outside of the buildings. You are responsible for making arrangements for removal of trash from the Medical Center facility.

#### 2.18 PROTECTION OF FLOORS

It may be necessary at times to take steps to protect floors from dirt, debris, paint, etc. A tarp or other protective covering may be used. However, you must maintain a certain amount of floor space for the safe passage of pedestrian traffic. Common sense must be used in this matter.

#### 2.19 SIGNS

Signs must be placed at the entrance to work areas warning people of your work. Signs must be suitable for the condition of the work. Small pieces of paper with printing or writing are not acceptable. The VAMC Safety Officer can be consulted in this matter.

#### 2.20 ACCIDENTS AND INJURIES

Contractors must report all accidents and injuries involving your employees. The Contractor may use the VAMC for emergency care only.

#### 2.21 CONFINED SPACE ENTRY

- A. Contractor will be informed that the workplace contains permit required confined space and that permit space entry is allowed only through compliance with a permit space program meeting the requirements of 29 CFR 1910.146 and 1926.21 (b)(6).
- B. Contractor will be apprised of the elements including the hazards identified and the Medical Center's (last employer) experience with the space that makes the space in question a permit space.
- C. Contractor will be apprised of any precautions or procedures that the Medical Center has implemented for the protection of employees in or near permit space where Contractor personnel will be working.



- D. Medical Center and Contractor will coordinate entry operations when both Medical Center personnel and Contractor personnel will be working in or near permit spaces as required by 29 CFR 1910.146 (d)(ii) and 1926.21 (b)(6).
- E. Contractor will obtain any available information regarding permit space hazards and entry operation from the Medical Center.
- F. At the conclusion of the entry operations the Medical Center and Contractor will discuss any hazards confronted or created in permit spaces.
- G. The Contractor is responsible for complying with 29 CFR 1910.246 (d) through (g) and 1926.21 (b)(6). The Medical Center, upon request, will provide rescue and emergency services required by 29 CFR 1910.246 (k) and 1926.21 (b)(6).

#### 2.22 CONTRACTOR PARKING

There will be no parking on the grass or Contractor vehicle parking at work sites. Contractors will deliver supplies, tools etc., drop them off at the work site, return their vehicles to the designated project parking area. The designated parking area is as noted on the project plans or in the specifications. Under no circumstances will the contractor park in designated patient parking areas.

#### 2.23 SMOKE BARRIER PENETRATION PERMIT

Contractor shall obtain smoke barrier penetration permit from Medical Center Safety Office prior to penetration of any defined smoke barrier. Comply with Medical Center policies and requirements for this work.

#### 2.24 CONTRACT HEALTH ASSESSMENT

Any contracted individual who will be working in patient care areas (or with persons who provide direct patient care), or working closely with other employees, or with patient care items, MUST provide documentation of the following:

- PPD Skin Test – results from the last three months will be accepted. If PPD is positive, the individual MUST provide documentation of the absence of active TB (Chest X-ray).
- Hepatitis B immunization, or declination – those contracted individuals who will have contact with blood, body fluids, or other potentially infectious materials MUST provide documentation of a Hepatitis B Vaccination series or declination.
- Documentation of Bloodborne Pathogen Training must be maintained.

It is the contractor's responsibility to provide documentation of all the above prior to starting work. Copies of the documentation are to be maintained with the project/contract files. The Contracting Officer and COR should be notified of any changes in individual status with appropriate documentation. In the event of an exposure, it is required that the contractor (employer) has a plan that must be followed to protect the individual contract worker. Records must be maintained as required by CFR 1910.1030.

#### 2.25 ASBESTOS WORK AND OTHER HAZARDOUS MATERIAL ABATEMENT

Contractor shall follow all contract requirements for work with asbestos and other hazardous materials abatement. Contractor is responsible for submitting all waste manifests to show proper disposal of materials prior to completion of project.

W. G. (BILL) HEFNER VA MEDICAL CENTER

SALISBURY, NORTH CAROLINA

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MEDICAL CENTER MEMORANDUM 659-138-25

DECEMBER 30, 2010

**CHANGE 1**

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PROJECT DEVELOPMENT AND IMPLEMENTATION

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1. PURPOSE: To establish medical center policy and procedure for the development of construction projects to ensure compliance with all applicable code and VA requirements and implementation that provides necessary aspects of the project scope in a cost effective manner.

2. POLICY:

a. It is the policy of the Salisbury VA Medical Center (SVAMC) to design projects that comply with VA Construction Standards, VA Barrier-Free Design Handbook, Life Safety Code, Uniform Plumbing Code, VA HVAC Design Criteria, Uniform Building Code, Local Building Codes, National Fire Protection Association (NFPA) Codes and medical center Infection Control Policy.

b. All designs for new construction will include accessibility to parking lots, including reserved parking. All SVAMC buildings will have at least one entrance/exit that is accessible to the handicapped. This includes, but is not limited to, handicap ramps, automatic doors or doors with appropriate hardware to render them accessible to the handicapped, Braille signage, tactile warning strips and handrails.

c. The SVAMC will also provide handicap accessibility to all public areas, amenities, and elevators.

3. RESPONSIBILITY:

a. Project Design (Development Phase):

(1) Requesting services will provide project scope input prior to and during the design phase, which will incorporate criteria and special requirements for equipment and procedures related to the design area. Upon completion of the design, the using service chief will sign the design drawing.

(2) Project design staff, including architect/engineering (A/E) firms, shall certify to the Chief, Facilities Management Service (FMS) that all applicable codes have been met by initialing the "Drawn By" and "Checked By" blocks on the project drawings. When a project is designed or developed for construction that impacts life safety or fire protection with greater than 50% of the work involving fire safety improvements or changes, the A/E for the design must have a Fire Protection Engineer or staff who is a qualified professional with knowledge of NFPA Fire Codes in accordance with VHA Directive 2005-007, Fire Code Reviews Of Delegated Construction Projects, dated February 15, 2005. A/E firms shall also apply their seals.

(3) The project design staff will review the H-08-13 "Checklist for Barrier Free Design" and other design criteria to assure projects are designed to eliminate all deficiencies. Special attention shall be paid to new parking areas, building entrances, public amenities, and elevators. The project design staff and an Infection Control representative will perform an infection control assessment and complete associated checklists (see Attachment B) using the Infection Control Guidelines (see Attachment A).

(4) Chief, FMS shall be responsible for certifying that each project complies with the appropriate codes.

(5) Copies of the approved drawings and specifications are prepared for the CO, so that the construction phase may be accomplished.

b. Project Construction (Implementation Phase):

(1) After contract award the Contracting Officers Representative (COR) will participate in the pre-construction conference held with the CO, the contractor, Infection Control representative, Safety representative, Maintenance and Operations representative and a representative from the requesting service. In this meeting the COR will provide the contractor with information regarding safety regulations, permit requirements for welding/open flame devices and confined space entry, policies on parking, identification badges, door keys, smoking, hazardous materials and waste management, fire safety and prevention and control of infection. Additionally the contractor will receive samples of a safety letter, cost breakdown, progress schedule graph, daily log, progress payment request form and payroll sheet, as well as a construction fire safety checklist and an infection control checklist (Attachment C).

(2) Prior to beginning construction activities, the COR, along with an Infection Control representative, will complete an infection control risk assessment, and, where indicated by the assessment, an infection control construction and pre-occupancy checklist (Attachment A). These documents will be used throughout the construction phase to assure compliance with infection control requirements.

(3) Prior to beginning construction activities, the COR and a Safety representative will complete a safety assessment, and, where indicated by the assessment, develop interim life safety measures to be used throughout the construction phase to assure compliance with the Life Safety Code. Interim Life Safety Measures are to be developed if at any time the effectiveness of the fire protection system is decreased.

(4) During the construction phase, the COR will make regular site visits to assure compliance with the drawings and specifications and all safety and infection control regulations and requirements. He/she will report any deficiencies to the CO for corrective actions. Additionally, he/she will advise the CO about the need for any contractual changes as the construction progresses and provide cost estimates as appropriate.

(5) During the construction phase, the COR will review and process progress payment requests and contract change proposals from the contractor. He/she will maintain a contract file that includes all documentation relating to the contract, daily logs, construction photographs, etc. At the conclusion of the contract he/she will participate in the final inspection and process the final payment, final inspection report and final settlement report, along with a capitalization report to Resource Management Service.

4. REFERENCE:

TJC Comprehensive Accreditation Manual for Hospitals

5. RESCISSION: Medical Center Memorandum 138-25, dated August 8, 2007.

6. FOLLOW-UP RESPONSIBILITY: Chief, Facilities Management.

7. AUTOMATIC RESCISSION DATE: December 30, 2013 (Change 1)

8. ANNUAL REVIEW:

First Year Review:	_____	_____
	Responsible Official	Date
Second Year Review:	_____	_____
	Responsible Official	Date

/s/

PAUL M. RUSSO, MHSA, FACHE, RD

Director

## INFECTION CONTROL GUIDELINE CONSTRUCTION AND RENOVATION

**OBJECTIVE:** To prevent the acquisition of nosocomial infections in-patients and healthcare workers during medical center renovations or construction activities.

**POLICY:**

1. All renovation or construction projects will be reviewed with Infection Control during the planning phases.
2. Infection Control will participate in meetings and area walk-through inspections as necessary.
3. All construction workers, including subcontractors, and Facilities Management employees, must follow the infection control procedures as described in the guideline.
4. Appropriate pre-employment screening must be completed prior to starting work in clinical areas.

**PLANNING PHASE**

Infection Control will be involved in the planning phases for all renovation and new construction projects specific to the following major components (schematic design):

1. Number and placement of isolation rooms.
2. Air handling systems; use of adjunctive measures such as ultraviolet germicidal irradiation (UVGI).
3. Number and placement of hand washing facilities.
4. Staff and patient traffic patterns for the duration of the project.
5. Relocation decisions regarding patient care areas, storage areas, etc.
6. Water supply and plumbing.

7. Construction waste containment, transport and disposal.
8. Selection and installation of medical equipment as it relates to infection control.
9. Selection of finishes and surfaces that can be effectively cleaned.
10. Accommodation of personal protective equipment (accessibility, security, sanitation, etc.).
11. Storage of moveable equipment.

## OPERATIONAL PHASE

### 1. Medical Waste

- a. Hospital staff shall ensure the removal of any medical waste, including sharps containers, from areas to be renovated or constructed PRIOR to the start of the project.
- b. Infection Control shall be notified by Facilities Management staff immediately if unexpected medical waste is encountered.

### 2. Barrier Walls

Construction or renovation sites must be separated from patient-care areas and critical areas such as SPD and Pharmacy by barriers that keep the dirt and dust inside the worksite.

- a. The integrity of the barrier walls must assure a complete seal of the construction area from adjacent areas.
- b. Rigid construction or fire-rated plastic sheeting (4 or 6 mil thickness) are used, depending on the location of the project, adjacent uses, and duration of the project.
- c. Walls will be dustproof with airtight seals maintained at the full perimeter of the walls as well as all penetrations.

### 3. Environmental Control

- a. Negative air pressure will be maintained within the construction zone with no disruption of the air systems of the adjacent areas, depending on project location. A HEPA (High Efficiency Particulate Accumulator) filter vacuum system rated at 95% capture of 0.3 microns (effective for pollen, mold spores, and dust particles) shall be installed to insure continuous negative air pressures within the work area. There should be no recirculation of air, and ventilation filters will be changed as needed.
- b. Demolition debris will be removed from the construction area in tightly fitted covered carts using specified traffic patterns daily.
- c. Tacky or walk-off mats shall be utilized immediately outside the construction zone to remove dust and soil from shoes, cart wheels, etc. as personnel exit the area. The tacky mat must be large enough to cover the entire exit and is changed whenever necessary.
- d. Exterior window seals must minimize infiltration of outside excavation debris. Windows will remain closed at all times.
- e. When using demolition chutes, chute openings must be sealed when not in use. The chute and damper should be sprayed with water, as necessary, to maintain dust control.
- f. Control, collection and disposal must be provided for any drain liquid or sludge encountered when demolishing plumbing.

### 4. Traffic Control

- a. Designated entry and exit procedures will be defined (in conjunction with any necessary Interim Life Safety Measures) for each construction project where applicable.
- b. All egress pathways will be free of debris.
- c. Unauthorized personnel will not be allowed to enter the construction zone.
- d. Only designated elevators will be used for construction activities during scheduled times.

### 5. Cleaning

a. The construction zone and adjacent entry areas shall be maintained in a clean and sanitary manner by the contractors and will be swept and wet mopped daily or more frequently as needed to minimize dust generation.

b. Environmental Management Service may be responsible for the routine cleaning of adjacent areas and for the terminal cleaning of the construction zone prior to the opening of the newly renovated or constructed area. Specific responsibility will be defined in the construction contracts.

## 6. Personnel Requirements

a. Clothing shall be free of loose soil and debris upon exiting the construction zone.

b. Personal protective equipment, including face shield, gloves, and N95 respirators will be utilized as appropriate.

c. Personnel entering sterile/invasive procedure areas will be provided with a disposable jumpsuit, head covering and shoe coverings, which must be removed prior to exiting the work area.

(1) Tools and equipment must be damp-wiped prior to entry and exit from sterile and invasive procedure areas.

(2) Tools and equipment soiled with blood and body fluids will be cleaned with an approved germicide.

d. All contractors, subcontractors and Facilities Management employees shall receive infection control training as it relates to construction.

## 7. Environmental Monitoring

a. Infection Control, in conjunction with Facilities Management and Safety, will plan for environmental monitoring as appropriate for the project.

## 8. Completion Phase

a. After completion of construction, ventilation will meet specifications as mandated by regulatory bodies.

b. The area will be thoroughly cleaned and disinfected before being placed into service.

c. Water supply lines will be flushed before placing newly renovated or constructed areas in service. Infection Control shall be notified prior to the flushing.

d. Industrial Hygiene shall certify that water supply lines are safe for use.

#### 9. Compliance Monitoring

a. Medical Center staff (Contracting Officer (COR), Safety Representative and Infection Control) and the contractor will conduct compliance monitoring as necessary to insure patients, staff, visitors and contractors are safe. The following parameters may be monitored:

(1.) Air handling

(2.) Integrity of barrier walls

(3.) Dress code

(4.) Environmental control

(5.) Traffic control

(6.) Personal protective equipment

(7.) Water supply



## W.G. 'BILL' HEFNER VETERANS AFFAIRS MEDICAL CENTER

August 2007

## RISK ASSESSMENT MATRIX: IC GUIDELINES FOR CONSTRUCTION

CLASS	CONSTRUCTION ACTIVITY	RISK	PRECAUTIONS REQUIRED
CLASS I	<p><b>Type A:</b> Inspection and Non-Invasive Activities.</p> <p>Includes, but is not limited to:</p> <ol style="list-style-type: none"> <li>1. Small scale removal of ceiling tiles for visual inspection or minor installation.</li> <li>2. Painting (but not sanding).</li> <li>3. Wall covering, electrical trim work, minor plumbing, and activities that do not generate dust or require cutting of walls.</li> </ol>	<p>Low or Moderate Risk Patients</p> <p>Only</p> <p>High Risk Requires Class II Precautions</p>	<ol style="list-style-type: none"> <li>1. Execute work by methods to minimize raising dust from construction operations.</li> <li>2. <b>Immediately replace a ceiling tile displaced for visual inspection.</b></li> </ol>
CLASS II	<p><b>Type B:</b> Small scale, short duration activities that create minimal dust.</p> <p>Includes, but is not limited to:</p> <ol style="list-style-type: none"> <li>1. Access to chase spaces.</li> <li>2. Cutting of walls or ceiling where dust migration can be controlled.</li> </ol>	<p>Low or Moderate Risk Patients</p> <p>Only</p> <p>High Risk Requires Class III Precautions</p>	<ol style="list-style-type: none"> <li>1. Notify staff in the immediate area.</li> <li>2. Provide active means to prevent airborne dust from dispersing into air.</li> <li>3. Water mist work surfaces while cutting.</li> <li>4. Seal unused doors with duct tape.</li> <li>5. Block off and seal air vents.</li> <li>6. Place dust mat at entrance/exit of area.</li> <li>7. Contain construction waste before transport in tightly covered containers.</li> <li>8. Upon completion, wipe work surfaces with disinfectant, wet mop and/or vacuum and remove isolation of HVAC system.</li> </ol>
CLASS III	<p><b>Type C:</b> Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components and assemblies or new construction.</p> <p>Includes, but is not limited to:</p>	<p>Moderate or High Risk Patients</p> <p>Only</p> <p>Low Risk</p>	<p><b>In addition to Class II Precautions above,</b></p> <ol style="list-style-type: none"> <li>1. Obtain IC concurrence before construction begins.</li> <li>2. Complete all critical barriers, i.e., sheetrock, plywood, plastic, to seal from non-work area or implement control cube method (cart with plastic covering/sealed connection to work site with vacuuming prior to exit) before</li> </ol>

	1. Sanding of walls for painting or wall covering. 2. Removal of floor coverings, ceiling tiles, and casework. 3. New wall construction. 4. Uncontained duct, HVAC or electrical work above ceiling. 5. Major cabling activities. 6. Any other project where high levels of dust are generated.	<b>Requires Class II Precautions</b>	construction begins. 3. Isolate HVAC system in area and maintain negative air pressure within work site. 4. Cover transport receptacles or carts. 5. Seal holes, pipes, conduits, and punctures. 6. Personnel required to ensure shoes are not tracking when leaving the work site. 7. Upon completion, do not remove barriers until inspected by Safety and IC and thoroughly cleaned by FMS. Remove barrier materials carefully to minimize spreading of dirt and debris.
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PATIENT RISK GROUP		
Low Risk Group	Medium Risk Group	High Risk Group
<b>Administrative Offices</b> Lobbies Public Corridors Elevators Day Rooms Canteen Retail Store	<b>Outpatient, Urgent Care and Primary Care Clinics</b> Cardiology                      Endoscopy Laboratory Radiology and Nuclear Medicine Physical Therapy Respiratory Therapy Pharmacy Food Services Interim Care and Medical Units (Inpatient Units)	ICU ED Oncology Cardiac Cath. Medical Unit Surgical Unit and O.R. areas SPD Storage/Sterilization Intensive Care Units TB Negative Pressure isolation rooms Operating Room

W.G. (Bill) Hefner Medical Center

August 2007

**CONSTRUCTION RISK REDUCTION PLAN**

Location of Construction:		Project Start Date:	
Contractor Performing Work:		Estimated Duration:	
√	<b>CONSTRUCTION ACTIVITY</b>		√ <b>IC RISK GROUP</b>
	Type A: Inspection, non-invasive, minor		Low Risk
	Type B: Small scale, short duration, moderate levels.		Medium Risk
	Type C: Major activity generates moderate to high levels of dust.		High Risk
√	<b>INFECTION CONTROL PRECAUTIONS</b>		
	<b>CLASS I</b>	1. Execute work by methods to minimize raising dust from construction operations. 2. Immediately replace any ceiling tile displaced for visual inspection.	
	<b>CLASS II</b>	1. Provides active means to prevent air-borne 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. Contain construction waste before transport in tightly covered containers. 7. Upon completion, wipe work surfaces with disinfectant, wet mop and/or vacuum and remove isolation of HVAC system.	
	<b>CLASS III</b>	In addition to Class II Precautions above, 1. Obtain IC concurrence before construction begins. 2. Complete all critical barriers or implement control cube method before construction begins. 3. Control airflow: Isolate HVAC system in areas where work is being performed and maintain negative air pressure within work site. 4. Cover transport receptacles or carts. 5. Seal holes, pipes, conduits, and punctures appropriately 6. Personnel are required to ensure shoes are not tracking dust and soil when leaving the work site. 7. Upon completion, do not remove barriers until inspected by Safety and Infection Control and thoroughly cleaned by FMS. Remove barrier materials carefully to minimize spreading of dirt and debris.	
<b>INTERIM LIFE SAFETY MEASURES</b>			
√	<b>CLASS</b>	<b>ACTIVITY</b>	<b>ILSM PRECAUTIONS</b>
	<b>CLASS I</b>	Minor: No breach of fire detection, alarm or fighting systems. No egress or access blockage.	None required beyond routine general safety precautions. Ensure egress. Ensure access for Emergency forces. Ensure operational Life Safety Systems.

			Prohibit smoking.	
	<b>CLASS II</b>	Moderate: Short-term breach of fire detection, alarm or fighting systems < a single work shift. Blockage of egress or access but second means available.	In addition to Class I ILSM's, apply at-the-site measures. Notify staff in the immediate area. Control combustible loads. Repair/construction staff immediately available at the site. Compensate for compartmentalization deficiencies? Each single breach of fire barrier immediately replaced.	
	<b>CLASS III</b>	Major: Multiple or continuous breach of fire detection, alarm or fighting systems. Blockage of egress or access. Work > a single shift.	In addition to Class I and II ILSM's, obtain Safety Manager concurrence before construction begins. Construct temporary smoke tight barriers of non-combustible materials. Provide additional firefighting equipment. Designate alternative exit/access routes. Increase Hazard Surveillance. Inform/educate applicable Medical Center Staff/Incident Response Team of concerns Conduct 2 fire drills per shift in areas and notify Emergency Forces.	
Additional Requirements including air quality, noise, vibration, utility failure issues, ILSM, emergency procedures or other issues not addressed above: _____				
Exceptions/Additions to this permit. _____				
SIGNATURES:		Date:		Date:
Project Coordinator			Safety Manager	
Chief, FMS			Infection Control	



**Infection Control Program**  
**Construction Rounds Checklist**

Project Name/Number/Location: \_\_\_\_\_

LOCATION	<b><i>INFECTION CONTROL</i></b>
1	Monitor barrier for integrity and airflow from clean to dirty (Construction)
2	Demonstrate compliance with traffic patterns, both construction worker and debris/worker movement.
3	Floors free of visible track dirt in clinical corridors and support areas.
4	Demonstrate compliance with cover clothing.
5	<b><i>Demonstrate use of equipment to prevent airborne particle material from migrating to patient care areas to include: portable HEPA filters, HEPA filtered vacuums, self-closing construction doors, or appropriate use of exhaust fans or debris chutes. Negative air pressure in construction site when indicated.</i></b>
6	Doors closed to construction site and appropriate signage in place.
7	Demonstrate appropriate debris transport: covered cart, dedicated elevator, designated route, etc.
8	All windows, doors, and debris chutes to the outside are closed and secured after hours.
9	Carpet or other track dirt compliance aids (tacky mats)  are in place at the doors leading to the hospital/clinic/support space. Housekeeping notified for "as needed" cleaning.
10	Water leakage must be handled in an emergent fashion in occupied areas. Immediate control of large leaks may necessitate drying. (<72 Hrs.)
11	Areas cleaned at the end of the day. Trash emptied in break area.
12	Pest control - No visible signs of mice, insects, birds, or squirrels or other vermin.
13	Roof protection in place for projects on the roof.

COMMENTS/CORRECTIVE ACTION:

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Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## INFECTION CONTROL ORIENTATION

### CONSTRUCTION SERVICE WORKERS INFORMATION SHEET

The goal of the Infection Control Program is to identify and reduce the risks of acquiring and transmitting infections among patients, employees, physicians and other licensed independent practitioners, contract service workers, volunteers, students and visitors.

Pre-employment health screening may be required prior to beginning work in patient care or other designated high-risk areas.

During construction, renovation and minor improvement projects, hidden infectious disease hazards may be released into the air, carried on dust particles or on clothing - for example, fungal organisms such as *Aspergillus*. *Aspergillus* species may be found in decaying leaves and compost, plaster and drywall, and settled dust. These organisms usually do not cause problems in healthy people, but may be a risk for already sick patients. *Aspergillus* and other fungal organisms can cause illness and even death in premature babies, transplant patients, cancer treatment patients, and patients with lung problems or poor immunity. Therefore, it is critical that you do your part to keep our patients, employees, and visitors as safe and healthy as possible. We, in turn, will make conditions as safe as possible for you.

#### 1. Medical Waste:

a. Environmental Management Services will remove any waste, including sharps containers (for used needles and syringes), from construction areas prior to the start of projects.

b. If you (contract workers) find any needles, syringes, sharp medical objects. Do not touch them. Please notify the COR, who will notify Infection Control.

#### 2. Barrier Walls:

a. The construction areas **MUST** be kept separated from patient care areas by barriers that keep the dust and dirt inside the worksite.

b. The walls must provide a complete seal of the construction area from adjacent areas (walls may be rigid or 4 or 6 mil thickness plastic).

#### 3. Environmental Control:

- a. Negative air pressure must be maintained within the construction area.
- b. Demolition debris is removed in tightly fitted covered carts - use specified traffic patterns.
- c. Sticky or walk-off mats are placed immediately outside the construction zone and changed whenever necessary to control the spread of dust and dirt.
- d. Exterior window seals are to be used to reduce the amount of outside excavation debris coming into the building.
- e. If demolition chutes are used, they must be sealed when not in use; the chute and damper should be sprayed with water, as necessary to maintain dust control.
- f. Control, collection and disposal must be provided for any drain liquid or sludge found when demolishing plumbing.

4. Traffic Control:

- a. Use designated entry and exit procedures.
- b. Keep all pathways free from debris.
- c. No unauthorized personnel should be allowed to enter construction areas.
- d. Use designated elevators only.

5. Cleaning:

- a. Keep the construction area clean on a DAILY basis.
- b. Dust and dirt MUST be kept to a minimum.

6. Workers:



a. Clothing must be free of loose soil and debris when exiting the construction area.

b. Use personal protective equipment (masks, face shields, etc.) as indicated for the task at hand.

c. Hand washing is the best method of reducing the transmission of infection: always wash your hands with soap and water after visiting the restroom, before eating, and when leaving the construction site.

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Signature of Infection Control      Date

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Signature of COR      Date

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Contractor/Foreman      Date

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Contractor/Foreman      Date

**SECTION 01 33 23**  
**SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES**

- 1-1. Refer to Articles titled SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FAR 52.236-21) and, SPECIAL NOTES (VAAR 852.236-91).
- 1-2. For the purposes of this contract, samples (including laboratory samples to be tested), test reports, certificates, and manufacturers' literature and data shall also be subject to the previously referenced requirements. The following text refers to all items collectively as SUBMITTALS.
- 1-3. Submit for approval, all of the items specifically mentioned under the separate sections of the specification, with information sufficient to evidence full compliance with contract requirements. Materials, fabricated articles and the like to be installed in permanent work shall equal those of approved submittals. After an item has been approved, no change in brand or make will be permitted unless:
  - A. Satisfactory written evidence is presented to, and approved by Contracting Officer, that manufacturer cannot make scheduled delivery of approved item or;
  - B. Item delivered has been rejected and substitution of a suitable item is an urgent necessity or;
  - C. Other conditions become apparent which indicates approval of such substitute item to be in best interest of the Government.
- 1-4. Forward submittals in sufficient time to permit proper consideration and approval action by Government. Time submission to assure adequate lead time for procurement of contract - required items. Delays attributable to untimely and rejected submittals will not serve as a basis for extending contract time for completion.
- 1-5. Submittals will be reviewed for compliance with contract requirements by COR, and action thereon will be taken by COR on behalf of the Contracting Officer.
- 1-6. Upon receipt of submittals, COR will assign a file number thereto. Contractor, in any subsequent correspondence, shall refer to this file and identification number to expedite replies relative to previously approved or disapproved submittals.
- 1-7. The Government reserves the right to require additional submittals, whether or not particularly mentioned in this contract. If additional submittals beyond those required by the contract are furnished pursuant to request therefore by Contracting Officer, adjustment in contract price and time will be made in accordance with Articles titled CHANGES (FAR 52.243-4) and CHANGES - SUPPLEMENT (VAAR 852.236-88) .
- 1-8. Schedules called for in specifications and shown on shop drawings shall be submitted for use and information of Department of Veterans Affairs and COR. However, the Contractor shall assume responsibility for coordinating and verifying schedules. The Contracting Officer and COR assumes no responsibility for checking schedules or layout drawings for exact sizes, exact numbers and detailed positioning of items.
- 1-9. Submittals must be submitted by Contractor only and shipped prepaid. Contracting Officer assumes no responsibility for checking quantities or exact numbers included in such submittals.

- A. Submit samples in single units unless otherwise specified. Submit shop drawings, schedules, manufacturers' literature and data, and certificates in quadruplicate, except where a greater number is specified.
- B. Submittals will receive consideration only when covered by a transmittal letter signed by Contractor. Letter shall be sent via first class mail or FAX and shall contain the list of items, name of Medical Center, name of Contractor, contract number, applicable specification paragraph numbers, applicable drawing numbers (and other information required for exact identification of location for each item), manufacturer and brand, ASTM or Federal Specification Number (if any) and such additional information as may be required by specifications for particular item being furnished. In addition, catalogs shall be marked to indicate specific items submitted for approval.
  - 1. A copy of letter must be enclosed with items, and any items received without identification letter will be considered "unclaimed goods" and held for a limited time only.
  - 2. Each sample, certificate, manufacturers' literature and data shall be labeled to indicate the name and location of the Medical Center, name of Contractor, manufacturer, brand, contract number and ASTM or Federal Specification Number as applicable and location(s) on project.
  - 3. Required certificates shall be signed by an authorized representative of manufacturer or supplier of material, and by Contractor.
- D. If submittal samples have been disapproved, resubmit new samples as soon as possible after notification of disapproval. Such new samples shall be marked "Resubmitted Sample" in addition to containing other previously specified information required on label and in transmittal letter.
- E. Approved samples will be kept on file by the COR at the site until completion of contract, at which time such samples will be delivered to Contractor as Contractor's property. Where noted in technical sections of specifications, approved samples in good condition may be used in their proper locations in contract work. At completion of contract, samples that are not approved will be returned to Contractor only upon request and at Contractor's expense. Such request should be made prior to completion of the contract. Disapproved samples that are not requested for return by Contractor will be discarded after completion of contract.
- F. Submittal drawings (shop, erection or setting drawings) and schedules, required for work of various trades, shall be checked before submission by technically qualified employees of Contractor for accuracy, completeness and compliance with contract requirements. These drawings and schedules shall be stamped and signed by Contractor certifying to such check.
  - 1. For each drawing required, submit one legible photographic paper or vellum reproducible.
  - 2. Reproducible shall be full size.
  - 3. Each drawing shall have marked thereon, proper descriptive title, including Medical Center location, project number, manufacturer's number, reference to contract drawing number, detail Section Number, and Specification Section Number.
  - 4. A space 120 mm by 125 mm (4-3/4 by 5 inches) shall be reserved on each drawing to accommodate approval or disapproval stamp.

5. Submit drawings, ROLLED WITHIN A MAILING TUBE, fully protected for shipment.
  6. One reproducible print of approved or disapproved shop drawings will be forwarded to Contractor.
  7. When work is directly related and involves more than one trade, shop drawings shall be submitted to COR under one cover.
- 1-10. Samples (except laboratory samples), shop drawings, test reports, certificates and manufacturers' literature and data, shall be submitted for approval to:

W. G. Hefner VA Medical Center

Attn: Greg Miller (138)

1601 Brenner Avenue,

Salisbury, NC 28144

--- E N D ---

**SECTION 01 74 19**  
**CONSTRUCTION WASTE MANAGEMENT**

**PART 1 – GENERAL**

**1.1 DESCRIPTION**

- A. This section specifies the requirements for the management of non-hazardous building construction and demolition waste.
- B. Waste disposal in landfills shall be minimized to the greatest extent possible. Of the inevitable waste that is generated, as much of the waste material as economically feasible shall be salvaged, recycled or reused.
- C. Contractor shall use all reasonable means to divert construction and demolition waste from landfills and incinerators, and facilitate their salvage and recycle not limited to the following:
  - 1. Waste Management Plan development and implementation.
  - 2. Techniques to minimize waste generation.
  - 3. Sorting and separating of waste materials.
  - 4. Salvage of existing materials and items for reuse or resale.
  - 5. Recycling of materials that cannot be reused or sold.
- D. At a minimum the following waste categories shall be diverted from landfills:
  - 1. Soil.
  - 2. Inerts (eg, concrete, masonry and asphalt).
  - 3. Clean dimensional wood and palette wood.
  - 4. Green waste (biodegradable landscaping materials).
  - 5. Engineered wood products (plywood, particle board and I-joists, etc).
  - 6. Metal products (eg, steel, wire, beverage containers, etc).
  - 7. Cardboard, paper and packaging.
  - 8. Bitumen roofing materials.
  - 9. Plastics (eg, ABS, PVC).
  - 10. Carpet and/or pad.
  - 11. Gypsum board.
  - 12. Insulation.
  - 13. Paint.

## **1.2 RELATED WORK**

- A. Section 02 41 00, DEMOLITION.
- B. Section 01 00 00, GENERAL REQUIREMENTS.

## **1.3 QUALITY ASSURANCE**

- A. Contractor shall practice efficient waste management when sizing, cutting and installing building products. Processes shall be employed to ensure the generation of as little waste as possible. Construction /Demolition waste includes products of the following:
  - 1. Excess or unusable construction materials.
  - 2. Packaging used for construction products.
  - 3. Poor planning and/or layout.
  - 4. Construction error.
  - 5. Over ordering.
  - 6. Weather damage.
  - 7. Contamination.
  - 8. Mishandling.
  - 9. Breakage.
- B. Establish and maintain the management of non-hazardous building construction and demolition waste set forth herein. Conduct a site assessment to estimate the types of materials that will be generated by demolition and construction.
- C. Contractor shall develop and implement procedures to reuse and recycle new materials to a minimum of 50 percent.
- D. Contractor shall be responsible for implementation of any special programs involving rebates or similar incentives related to recycling. Any revenues or savings obtained from salvage or recycling shall accrue to the contractor.
- E. Contractor shall provide all demolition, removal and legal disposal of materials. Contractor shall ensure that facilities used for recycling, reuse and disposal shall be permitted for the intended use to the extent required by local, state, federal regulations. The Whole Building Design Guide website <http://www.wbdg.org> provides a Construction Waste Management Database that contains information on companies that haul. Collect, and process recyclable debris from construction projects.
- F. Contractor shall assign a specific area to facilitate separation of materials for reuse, salvage, recycling, and return. Such areas are to be kept neat and clean and clearly marked in order to avoid contamination or mixing of materials.
- G. Contractor shall provide on-site instructions and supervision of separation, handling, salvaging, recycling, reuse and return methods to be used by all parties during waste generating stages.
- H. Record on daily reports any problems in complying with laws, regulations and ordinances with corrective action taken.

## 1.4 TERMINOLOGY

- A. Class III Landfill: A landfill that accepts non-hazardous resources such as household, commercial and industrial waste resulting from construction, remodeling, repair and demolition operations.
- B. Clean: Untreated and unpainted; uncontaminated with adhesives, oils, solvents, mastics and like products.
- C. Construction and Demolition Waste: Includes all non-hazardous resources resulting from construction, remodeling, alterations, repair and demolition operations.
- D. Dismantle: The process of parting out a building in such a way as to preserve the usefulness of its materials and components.
- E. Disposal: Acceptance of solid wastes at a legally operating facility for the purpose of land filling (includes Class III landfills and inert fills).
- F. Inert Backfill Site: A location, other than inert fill or other disposal facility, to which inert materials are taken for the purpose of filling an excavation, shoring or other soil engineering operation.
- G. Inert Fill: A facility that can legally accept inert waste, such as asphalt and concrete exclusively for the purpose of disposal.
- H. Inert Solids/Inert Waste: Non-liquid solid resources including, but not limited to, soil and concrete that does not contain hazardous waste or soluble pollutants at concentrations in excess of water-quality objectives established by a regional water board, and does not contain significant quantities of decomposable solid resources.
- I. Mixed Debris: Loads that include commingled recyclable and non-recyclable materials generated at the construction site.
- J. Mixed Debris Recycling Facility: A solid resource processing facility that accepts loads of mixed construction and demolition debris for the purpose of recovering re-usable and recyclable materials and disposing non-recyclable materials.
- K. Permitted Waste Hauler: A company that holds a valid permit to collect and transport solid wastes from individuals or businesses for the purpose of recycling or disposal.
- L. Recycling: The process of sorting, cleansing, treating, and reconstituting materials for the purpose of using the altered form in the manufacture of a new product. Recycling does not include burning, incinerating or thermally destroying solid waste.
  - 1. On-site Recycling – Materials that are sorted and processed on site for use in an altered state in the work, i.e. concrete crushed for use as a sub-base in paving.
  - 2. Off-site Recycling – Materials hauled to a location and used in an altered form in the manufacture of new products.
- M. Recycling Facility: An operation that can legally accept materials for the purpose of processing the materials into an altered form for the manufacture of new products. Depending on the types of materials accepted and operating procedures, a recycling facility may or may not be required to have a solid waste facilities permit or be regulated by the local enforcement agency.

- N. Reuse: Materials that are recovered for use in the same form, on-site or off-site.
- O. Return: To give back reusable items or unused products to vendors for credit.
- P. Salvage: To remove waste materials from the site for resale or re-use by a third party.
- Q. Source-Separated Materials: Materials that are sorted by type at the site for the purpose of reuse and recycling.
- R. Solid Waste: Materials that have been designated as non-recyclable and are discarded for the purposes of disposal.
- S. Transfer Station: A facility that can legally accept solid waste for the purpose of temporarily storing the materials for re-loading onto other trucks and transporting them to a landfill for disposal, or recovering some materials for re-use or recycling.

## **1.5 SUBMITTALS**

- A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, and SAMPLES, furnish the following:
  - B. Prepare and submit to the Resident Engineer a written demolition debris management plan. The plan shall include, but not be limited to, the following information:
    - 1. Procedures to be used for debris management.
    - 2. Techniques to be used to minimize waste generation.
    - 3. Analysis of the estimated job site waste to be generated:
      - a. List of each material and quantity to be salvaged, reused, recycled.
      - b. List of each material and quantity proposed to be taken to a landfill.
    - 4. Detailed description of the Means/Methods to be used for material handling.
      - a. On site: Material separation, storage, protection where applicable.
      - b. Off site: Transportation means and destination. Include list of materials.
        - 1) Description of materials to be site-separated and self-hauled to designated facilities.
        - 2) Description of mixed materials to be collected by designated waste haulers and removed from the site.
      - c. The names and locations of mixed debris reuse and recycling facilities or sites.
      - d. The names and locations of trash disposal landfill facilities or sites.
      - e. Documentation that the facilities or sites are approved to receive the materials.
- B. Designated Manager responsible for instructing personnel, supervising, documenting and administer over meetings relevant to the Waste Management Plan.
- C. Monthly summary of construction and demolition debris diversion and disposal, quantifying all materials generated at the work site and disposed of or diverted from disposal through recycling.



## **1.6 APPLICABLE PUBLICATIONS**

Publications listed below form a part of this specification to the extent referenced. Publications are referenced by the basic designation only. In the event that criteria requirements conflict, the most stringent requirements shall be met.

- A. U.S. Green Building Council (USGBC):

LEED Green Building Rating System for New Construction

## **1.7 RECORDS**

Maintain records 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. Records shall be kept in accordance with the LEED Reference Guide and LEED Template.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. List of each material and quantity to be salvaged, recycled, and/or reused.
- B. List of each material and quantity proposed to be taken to a landfill.
- C. Material tracking data: Receiving parties, dates removed, transportation costs, weight tickets, tipping fees, manifests, invoices, net total costs or savings.

## **PART 3 - EXECUTION**

### **3.1 COLLECTION**

- A. Provide all necessary containers, bins and storage areas to facilitate effective waste management.
- B. Clearly identify containers, bins and storage areas so that recyclable materials are separated from trash and can be transported to respective recycling facility for processing.
- C. Hazardous wastes shall be separated, stored, disposed of according to local, state, federal regulations.

### **3.2 DISPOSAL**

- A. Contractor shall be responsible for transporting and disposing of materials that cannot be delivered to a source-separated or mixed materials recycling facility to a transfer station or disposal facility that can accept the materials in accordance with state and federal regulations.
- B. Construction or demolition materials with no practical reuse or that cannot be salvaged or recycled shall be disposed of at a landfill or incinerator.

### **3.3 REPORT**

- A. With each application for progress payment, submit a summary of construction and demolition debris diversion and disposal including beginning and ending dates of period covered.
- B. Quantify all materials diverted from landfill disposal through salvage or recycling during the period with the receiving parties, dates removed, transportation costs, weight tickets, manifests, invoices. Include the net total costs or savings for each salvaged or recycled material.

- C. Quantify all materials disposed of during the period with the receiving parties, dates removed, transportation costs, weight tickets, tipping fees, manifests, invoices. Include the net total costs for each disposal.

--- E N D ---

**SECTION 02 41 00  
DEMOLITION**

**PART 1 - GENERAL**

**1.1 DESCRIPTION:**

This section specifies demolition and removal of buildings, portions of buildings, utilities, other structures and debris from trash dumps shown.

**1.2 RELATED WORK:**

- A. Disconnecting utility services prior to demolition: Section 01 00 00, GENERAL REQUIREMENTS.
- B. Reserved items that are to remain the property of the Government: Section 01 00 00, GENERAL REQUIREMENTS.
- C. Infectious Control: Section 01 00 00, GENERAL REQUIREMENTS, Article 1.8, INFECTION PREVENTION MEASURES.
- D. Construction Waste Management: Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT.

**1.3 PROTECTION:**

- A. Perform demolition in such manner as to eliminate hazards to persons and property; to minimize interference with use of adjacent areas, utilities and structures or interruption of use of such utilities; and to provide free passage to and from such adjacent areas of structures.
- B. Provide safeguards, including warning signs, barricades, temporary fences, warning lights, and other similar items that are required for protection of all personnel during demolition and removal operations. Comply with requirements of Section 01 00 00, GENERAL REQUIREMENTS, Article PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES AND IMPROVEMENTS.
- C. Maintain fences, barricades, lights, and other similar items around exposed excavations until such excavations have been completely filled.
- D. Provide enclosed dust chutes with control gates from each floor to carry debris to truck beds and govern flow of material into truck. Provide overhead bridges of tight board or prefabricated metal construction at dust chutes to protect persons and property from falling debris.
- E. Prevent spread of flying particles and dust. Sprinkle rubbish and debris with water to keep dust to a minimum. Do not use water if it results in hazardous or objectionable condition such as, but not limited to; ice, flooding, or pollution. Vacuum and dust the work area daily.
- F. In addition to previously listed fire and safety rules to be observed in performance of work, include following:
  - 1. No wall or part of wall shall be permitted to fall outwardly from structures.
  - 2. Maintain at least one stairway in each structure in usable condition to highest remaining floor. Keep stairway free of obstructions and debris until that level of structure has been removed.
  - 3. Wherever a cutting torch or other equipment that might cause a fire is used, provide and maintain fire extinguishers nearby ready for immediate use. Instruct all possible users in use of fire extinguishers.

4. Keep hydrants clear and accessible at all times. Prohibit debris from accumulating within a radius of 4500 mm (15 feet) of fire hydrants.
- G. Before beginning any demolition work, the Contractor shall survey the site and examine the drawings and specifications to determine the extent of the work. The contractor shall take necessary precautions to avoid damages to existing items to remain in place, to be reused, or to remain the property of the Medical Center Property, any damaged items shall be repaired or replaced as approved by the COR. The Contractor shall coordinate the work of this section with all other work and shall construct and maintain shoring, bracing, and supports as required. The Contractor shall ensure that structural elements are not overloaded and shall be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under this contract. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition or removal works. Repairs, reinforcement, or structural replacement must have COR's approval.
- H. The work shall comply with the requirements of Section 01 00 00, GENERAL REQUIREMENTS, Article 1.8 INFECTION PREVENTION MEASURES.

#### **1.4 UTILITY SERVICES:**

- A. Demolish and remove outside utility service lines shown to be removed.
- B. Remove abandoned outside utility lines that would interfere with installation of new utility lines and new construction.

#### **PART 2 - PRODUCTS (NOT USED)**

#### **PART 3 – EXECUTION**

##### **3.1 DEMOLITION:**

- A. Debris, including brick, concrete, stone, metals and similar materials shall become property of Contractor and shall be disposed of by him daily, off the Medical Center Property to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas specified by the COR. Break up concrete slabs below grade that do not require removal from present location into pieces not exceeding 600 mm (24 inches) square to permit drainage. Contractor shall dispose debris in compliance with applicable federal, state or local permits, rules and/or regulations.
- B. Remove and legally dispose of all materials, other than earth to remain as part of project work, from any trash dumps shown. Materials removed shall become property of contractor and shall be disposed of in compliance with applicable federal, state or local permits, rules and/or regulations. All materials in the indicated trash dump areas, including above surrounding grade and extending to a depth of 1500mm (5feet) below surrounding grade, shall be included as part of the lump sum compensation for the work of this section. Materials that are located beneath the surface of the surrounding ground more than 1500 mm (5 feet), or materials that are discovered to be hazardous shall be handled as unforeseen. The removal of hazardous material shall be referred to Hazardous Materials specifications.

##### **3.2 CLEAN-UP:**

On completion of work of this section and after removal of all debris, leave site in clean condition satisfactory to Resident Engineer. Clean-up shall include off the Medical Center Property disposal of all items and materials not required to remain property of the Government as well as all debris and rubbish resulting from demolition operations.

- - - E N D - - -

**SECTION 08 51 13.11**  
**SIDE-HINGED ALUMINUM WINDOWS (TRIPLE GLAZED)**

**PART 1 – GENERAL**

**1.1 DESCRIPTION**

- A. Side hinged, in-swing casement type, triple glazed windows with venetian blinds and muntins enclosed between the glazing, complete, with hardware, related components and accessories.
- B. Windows shall be similar in appearance or equal to the 450 Series in-swing casement windows manufactured by EFCO, a Pella Company. Casement in-swing Series 450 Thermal windows with 4 ½" wide aluminum frame, white color. 1 inch interior venetian blinds white in color. Insulated low e glass shall be 1/4" monolithic dual glazed.

**1.2 DEFINITIONS**

- A. Accessories: Mullions, closures, trim, clips, anchors, fastenings, weather-stripping, and other necessary components required for the fabrication and installation of the window units.
- B. Uncontrolled Water: Water not drained to the exterior or water appearing on the room side of the window.

**1.3 RELATED WORK**

- A. Glazing: Section 08 80 00, GLAZING.

**1.4 PROTECTION**

- A. Protect windows from damage from handling, and construction operations before, during and after installation.
- B. Store windows under cover, setting upright. Do not stack windows flat. Do not lay building materials or equipment on windows.

**1.5 QUALITY ASSURANCE**

- A. Approval by COR is required of products or service of proposed manufacturer, suppliers and installers.
- B. Approval will be based upon submission of certification by the Contractor that:
  - 1. Manufacturer regularly and presently manufactures the specified windows as one of its principal products.
  - 2. The manufacturer shall instruct the installer in installation methods and shall certify that the installation is as per manufacturer's installation procedures. Certification is not required if installation is done by a certified installer.
- C. Test Units:
  - 1. All test units shall be constructed in strict accordance with the drawings and specifications.
  - 2. Minimum test size of specimen to be 1200 mm (four feet) wide by 1800 mm (six feet) high for thermal test and as per AAMA 101-I.S.2 for the window type selected for air, water, structural and life cycle testing.
- D. Performance Requirements:
  - 1. AAMA/WDMA/CAS 101-I.S.2 for SD-AW40, side Hinged Windows.
  - 2. Condensation Resistance Factor (CRF): CRF Class 55.

3. Thermal Transmittance: U value Class 50 ( $U = 0.49$ ).
4. Solar Heat Gain Coefficient ( $SHGC = 0.25$ ).
5. Submit copies of test reports from an independent testing laboratory accredited by AAMA and certificates signed by the window supplier or manufacturer stating that the windows delivered to the site comply with all specified performance requirements, within size and variables.
6. Quality Certified Labels or Certificate:
  - a. Architectural Aluminum Manufacturer Association, "AAMA label" affixed to each window indicating compliance with specification.
  - b. Certificates in lieu of label with copy of recent test report (not more than four years old) from an independent testing laboratory and certificate signed by window manufacturer stating that windows provided compliance with specified requirements and AAMA/WDMA/CAS 101/I.S.2 for type of window specified.

## 1.7 FIELD TESTING

- A. Test Method: AAMA 502.
- B. Test Specimen:
  1. Shall include the window assembly and construction. The test chamber shall be affixed to the interior side of the test specimen and the test will be conducted using positive static air pressure (Test method A).
  2. Shall be selected by the COR after windows have been installed in accordance with the drawings and specification.
- C. Testing Laboratory- Contractor Retained. Engage an AAMA accredited commercial testing laboratory to perform tests specified. Submit information regarding testing laboratory's facilities and qualifications of technical personnel to COR for approval.
- D. Number of Test Specimens: First 4 windows installed and then 5% of total windows installed thereafter.
- E. Requirements:
  1. Air Infiltration: Not more than 1.5 times the amount specified for the windows only.
  2. Water Infiltration: No uncontrolled water shall be present at the specified test pressure.
- F. Retesting:
  1. Should any of the specimens fail the field test; the specimens may be modified or repaired, and retested.
  2. Should any of the specimens fail the second field test; the specimens may be additionally modified or repaired, and retested.
  3. All modifications and repairs made to the specimens shall be recorded, and the same modifications and repairs made to all the windows and adjacent construction on the project.

4. Should the second test fail, the COR may require two additional windows and their adjacent construction to be tested.
- G. Rejection: Failure of any of the specimens to meet the test requirements of the third test shall be cause for rejection of all windows and adjacent construction on the project.

## 1.8 SUMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Samples:
1. Provide two 150 mm (six-inch) length samples of color anodized aluminum showing finish and maximum shade range proposed for use on the windows. Colored aluminum for each organic color proposed for use on the windows. Variation of more than 50 percent of the maximum shade range approved will not be accepted in a single window or in adjacent windows and mullions on a continuous series.
- C. Shop Drawings:
1. Identifying all window parts by name, kind of metal and material, and showing details of construction, installation and anchorage.
  2. Details of metal trim, including anchorages.
- D. Test Reports and Manufacturer's Certificates:
1. Manufacturers and Installers qualifications as specified.
  2. Certified labels or certificate as specified under Performance Requirements.
  3. Certification of the type and thickness of finish.

## 1.9 WARRANTY

Windows including thermal barrier shall be warranted against malfunctions due to defects in materials and workmanship, and shall be subject to the terms of Article "Warranty of Construction".

## 1.10 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to by the basic designation only.
- B. American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE):
- 90.1-04 .....Energy Standard of Buildings
- C. American Society of Testing and Materials (ASTM):
- A653/A653M-07 .....Steel Sheet, Zinc-Coated (Galvanized), Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
- E90-04 .....Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

- D. American Architectural Manufacturers Association/Window and Door Manufacturers Canadian Standards Association (AAMA/WDMA/CAS Association (AAMA/NWWDA) :

101/I.S.2/A440-05.....Windows, Doors and Unit Skylights

- E. American Architectural Manufacturers Association (AAMA):

TIR-A8-04 .....Structural Performance of Composite Thermal Barrier Framing Systems

502-90 .....Field Testing of Windows and Sliding Glass Doors.

505-98 .....Dry Shrinkage and Composite Performance thermal Cycling Test Procedures

2605-05 .....Superior Performing Organic Coatings on Architectural Aluminum Extrusions and Panels.

- F. National Association of Architectural Metal Manufacturers (NAAMM):

AMP 500 Series.....Metal Finishes Manual

- G. National Fenestration Rating Council (NFRC):

100-04 (E1-07).....Determining Fenestration Product U-Factors

200-04 (E1-07).....Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence

500-04 .....Determining Fenestration Product Condensation Resisting Rating Values

## **PART 2 – PRODUCTS**

### **2.1 MATERIALS**

- A. Aluminum Extrusions: AAMA/WDMA/CAS 101-I.S.2.
- B. Sheet Steel, Galvanized: ASTM A653; G90 galvanized coating.
- C. Fastenings: 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.
- D. Weather-strips: AAMA/WDMA/CAS 101-I.S.2.



## **2.2 VENETIAN BLINDS**

- A. Slats shall be tempered aluminum with baked-on acrylic finish. White color Slats shall be maximum one inch wide. Weave cords and tapes of polyester-dacron fiber. Mount blinds in the sash head so that they may be removed for maintenance without tools.
- B. Angle of slat tilt shall be adjustable from the room side by means of a nonremovable control knob, having cable or gear drive with slip mechanism. Control raising and lowering of blinds by cords or other arrangement, accessible only when the inner sash is opened.

## **2.3 GLAZING**

- A. Glaze in accordance with Section 08 80 00, GLAZING.
- B. Install removable glazing beads on the venetian blind side of the sash so as to be inaccessible to patients.

## **2.4 HARDWARE**

- A. Locks: Two position locking bolts or cam type, tamperproof custodial locks at three locations points equally distributed on the window (see suggested locations points on detail sheet). Locate locking devices in the vent side rail. Fastenings for locks and keepers shall be concealed or nonremovable.
- B. Locking Device Strikes: Locate strikes in frame jamb. Strikes shall be adjustable for locking tension. Fabricate strikes from Type 304 stainless steel or white bronze.
- C. Fabricate hinges of noncorrosive metal. Hinges may be either fully concealed when window is closed or semi-concealed with exposed knuckles. All exposed knuckle hinges shall have hospital tips, at both ends. Surface mounted hinges will not be accepted.
- D. Guide Blocks: Fabricate guide blocks of injection molded nylon. Install guide block fully concealed in vent/frame sill.
- E. Hardware for Emergency Ventilation of Windows:
  - 1. Provide windows with a hold open linkage for emergency ventilation.
  - 2. Hold open hardware shall provide for maximum 150 mm (6 inch) of window opening and shall include an adjustable friction shoe to provide resistance when closing the window.
  - 3. Handles shall be removable.
- F. Hardware for Maintenance Opening of Windows: Opening beyond the 150 mm (6 inch) position shall be accomplished with a window washer's key. The release device shall capture the key when window is in the open position.
- G. Provide 50 loose window handles and 50 window washer's keys.
- H. Design operating device to prevent opening with standard tools, coins or bent wire devices.

## **2.5 FABRICATION**

- A. Meet or exceed performance requirements of AAMA/WDMA/CAS 101-I.S.2 for SHW-AW40 windows, and additional requirements as specified.

- B. Sizes and Profiles: Required sizes and profile requirements are shown on the drawings.
- C. Sash of window shall be side hinged for casement operation. Sash shall be provided with access to blinds and inner surfaces of glass.
- 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 and AAMA 505 for Dry Shrinkage & 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. Provide baffled weep holes and internal water passages to conduct infiltrating water to the exterior.
- F. Weather-stripping: Provide primary weather-stripping around exterior perimeter of the sash. Provide secondary weather-stripping located at the thermal barrier between the two frames to seal against the perimeter of the inner vent. Weather-stripping to be in compression when the sash is in a locked closed position.
- G. Miter all corners, internally heat weld or mechanically crimp to reinforcing bar and cement with epoxy adhesive to develop full strength of section, with airtight and watertight joints.

## **2.6 CLOSURES, TRIM, MULLIONS AND SUBSILLS, GENERAL**

Closures, mullions and trim shall be extruded aluminum, at least 1.6 mm (0.062-inch) thick, except stools shall be 2 mm (0.080-inch) thick. Or Closures, stools and trim shall be 2 mm (0.080-inch) thick zinc-coated steel.

## **2.7 CLOSURES**

Closures shall have external corners mitered and internal corners coped, fitted with hairline, tightly closed joints. Secure closures to window frames with machine screws or expansion rivets, and to masonry with anchor bolts, power actuated drive pins, or expansion rivets.

## **2.8 TRIM**

- A. Fit heads, jambs (including reveals of opening) and stools, with hairline mitered corners, dressed flush and smooth. Trim shall have flanges expanded or perforated for plaster keying and attachments for anchorage. Slightly round all exposed edges.
- B. Secure trim to concrete or 100 percent solid masonry with expansion bolts, expansion rivets, split shank drive bolts, or power actuated drive pins; strap-anchored or toggle bolted to hollow masonry units, screwed to wood or metal. Except for strap anchors, fastenings shall occur near the ends and corners of the trim, and at a spacing of not more than 300 mm (12 inches) in between.

## **2.9 MULLIONS**

AAMA/WDMA/CAS 101-I.S.2

## **2.10 SUBSILLS**

Extruded aluminum, minimum 2 mm (0.080-inch) thick.

## **2.11 FINISH**

- A. In accordance with NAAMM AMP 500 series.
- B. Anodized Aluminum, white:
  - 1. AA-C22A44 Chemically etched medium matte with electrolytically deposited metallic compound, integrally colored coating Class I Architectural, 0.7-mil thick finish. Dyes will not be accepted.
- C. Fluorocarbon Finish: AAMA 605.
- D. Hardware: Finish hardware exposed when window is in the closed position shall match the window color.

## **PART 3 – EXECUTION**

### **3.1 INSTALLATION**

- A. Set, windows in masonry walls during progress of the work. If windows are not delivered to job in time for installation in prepared openings, make provision to keep the opening sealed for later installation.
- B. Provide necessary anchorage when installed in prepared openings. Set windows plumb, true and in alignment. Anchor windows on four sides with anchor clips or fin trim. Make connections to allow for thermal and other movements. No load shall be allowed to bear on windows. Coordinate with COR. No work on windows shall be done until windows are readily available.

### **3.2 MATERIAL ISOLATION**

- A. Isolate aluminum surfaces (including anchorages) that will come in contact with steel, steel sub-frames or concrete, by giving steel or concrete a heavy coat of alkali resisting bituminous paint.
- B. Isolate the aluminum from plaster and masonry by coating aluminum with bituminous paint.

### **3.3 ADJUSTING**

Adjust movable sash, hardware, and equipment to operate easily and properly, and be free of defects before acceptance of the work.

### **3.4 PROTECTION**

Except when a window is being adjusted or tested, lock all windows set in place in the closed position during the progress of the work. Protect interior and exterior faces of windows

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**SECTION 08 80 00  
GLAZING**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

This section specifies glass, plastic, related glazing materials and accessories. Glazing products specified apply to factory or field glazed items.

**1.2 RELATED WORK**

A. Factory glazed by manufacturer in following units:

1. Section 08 51 13.11, SIDE HINGED ALUMINUM WINDOWS (Triple Glazed).

**1.3 LABELS**

A. Temporary labels:

1. Provide temporary label on each light of glass identifying manufacturer or brand and glass type, quality and nominal thickness.
2. Label in accordance with NFRC (National Fenestration Rating Council) label requirements.
3. Temporary labels shall remain intact until glass is approved by COR.

B. Permanent labels:

1. Locate in corner for each pane.
2. Label in accordance with ANSI Z97.1 and SGCC (Safety Glass Certification Council) label requirements.
  - a. Tempered glass.
  - b. Laminated glass or have certificate for panes without permanent label.
  - c. Organic coated glass.

**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.
2. Test in accordance with ASTM E 1300.
3. Thicknesses listed are minimum. Coordinate thicknesses with framing system manufacturers.

**1.5 SUBMITTALS**

A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Manufacturer's Certificates:

1. Certificate on shading coefficient.
  2. Certificate on "R" value when value is specified.
- C. Warranty: Submit written guaranty, conforming to General Condition requirements, and to "Warranty of Construction" Article in this Section.
- D. Manufacturer's Literature and Data:
1. Glass, each kind required.
  2. Insulating glass units.
  3. Elastic compound for metal sash glazing.
  4. Glazing cushion.
  5. Sealing compound.
  6. Plastic glazing material, each type required.
- E. Samples:
1. Size: 150 mm by 150 mm (6 inches by 6 inches).
  2. Tinted glass.
- F. Preconstruction Adhesion and Compatibility Test Report: Submit glazing sealant manufacturer's test report indicating glazing sealants were tested for adhesion to glass and glazing channel substrates and for compatibility with glass and other glazing materials.

#### **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.
- D. Protect laminated security glazing units against face and edge damage during entire sequence of fabrication, handling, and delivery to installation location. Provide protective covering on exposed faces of glazing plastics, and mark inside as "INTERIOR FACE" or "PROTECTED FACE":
1. Protect sealed-air-space insulating glazing units from exposure to abnormal pressure changes, as could result from substantial changes in altitude during delivery by air freight. Provide temporary breather tubes which do not nullify applicable warranties on hermetic seals.

2. Temporary protections: The glass front and polycarbonate back of glazing shall be temporarily protected with compatible, peelable, heat-resistant film which will be peeled for inspections and re-applied and finally removed after doors and windows are installed at destination. Since many adhesives will attack polycarbonate, the film used on exposed polycarbonate surfaces shall be approved and applied by manufacturer.

## 1.7 PROJECT CONDITIONS

Field Measurements: Field measure openings before ordering tempered glass products. Be responsible for proper fit of field measured products.

## 1.8 WARRANTY

- A. Warranty: Conform to terms of "Warranty of Construction", FAR clause 52.246-21.

## 1.9 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American National Standards Institute (ANSI):  
  
Z97.1-04 ..... Safety Glazing Material Used in Building - Safety Performance Specifications and Methods of Test.
- C. American Society for Testing and Materials (ASTM):  
  
C1363-05 ..... Thermal Performance of Building Assemblies, by Means of A Hot Box Apparatus  
C542-05 ..... Lock-Strip Gaskets.  
C716-06 ..... Installing Lock-Strip Gaskets and Infill Glazing Materials.  
C794-06 ..... Adhesion-in-Peel of Elastomeric Joint Sealants.  
C864-05 ..... Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.  
C920-08 ..... Elastomeric Joint Sealants.  
C964-07 ..... Standard Guide for Lock-Strip Gasket Glazing.  
C1036-06 ..... Flat Glass.  
C1048-04 ..... Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass.  
C1172-09 ..... Laminated Architectural Flat Glass.  
C1376-10 ..... Pyrolytic and Vacuum Deposition Coatings on Flat Glass.  
E84-09 ..... Surface Burning Characteristics of Building Materials.  
E1300-09 ..... Determining Load Resistance of Glass in Buildings.  
E2190-08 ..... Insulating Glass Unit

D. Code of Federal Regulations (CFR):

16 CFR 1201 - Safety Standard for Architectural Glazing Materials; 1977, with 1984 Revision.

E. National Fire Protection Association (NFPA):

80-08 .....Fire Doors and Windows.

F. National Fenestration Rating Council (NFRC)

G. Safety Glazing Certification Council (SGCC)2009:

Certified Products Directory (Issued Semi-Annually).

H. Glass Association of North America (GANA):

Glazing Manual (Latest Edition)

Sealant Manual (2008)

I. American Society of Civil Engineers (ASCE):

ASCE 7-10.....Wind Load Provisions

## **PART 2 - PRODUCT**

### **2.1 GLASS**

A. Use thickness stated unless specified otherwise in assemblies.

B. Clear Glass:

1. ASTM C1036, Type I, Class 1, Quality q3; Thickness, 6 mm (1/4 inch).

C. Tinted Heat reflective and low emissivity coated glass:

1. ASTM C1036, Type I, Class 2, Quality q3; Thickness, 6 mm (1/4 inch) as indicated.

### **2.2 HEAT-TREATED GLASS**

A. Clear Tempered Glass:

1. ASTM C1048, Kind FT, Condition A, Type I, Class 1, Quality q3; Thickness, 6 mm (1/4 inch) as indicated.

B. Tinted Tempered Glass.

1. ASTM C1048, Kind FT, Condition A, Type I, Class 2, Quality q3; Thickness, 6 mm (1/4 inch) as indicated.

### **2.3 COATED GLASS**

A. Low-E Tempered Glass:

1. ASTM C1048, Kind FT, Condition C, Type I, Class 1, Quality q3 with low emissivity pyrolytic coating having an E of 0.15; Thickness, 6 mm (1/4 inch) as indicated.

2. Apply coating to second or third surface of insulating glass units.

## **2.4 LAMINATED GLASS**

- A. Two or more lites of glass bonded with an interlayer material for use in building glazing
- B. Colored Interlayer:
  1. Use color interlayer ultraviolet light color stabilization.
  2. Option: Use colored interlayer with clear glass in lieu of tinted glass and clear interlayer.
  3. Option: Use white interlayer with clear glass in lieu of obscure glass and clear interlayer.
  4. The interlayer assembly shall have uniform color presenting same appearance as tinted glass assembly.
- C. Use 1.5 mm (0.060 inch) thick interlayer for:
  1. Horizontal or Sloped glazing.
  2. Acoustical glazing.
  3. Heat strengthened or fully tempered glass assemblies.
- D. Use min. 0.75 mm (0.030 inch) thick interlayer for vertical glazing where 1.5 mm (0.060 inch) interlayer is not otherwise shown or required.

## **2.5 LAMINATED GLAZING ASSEMBLIES**

- A. Clear Tempered Glazing:
  1. Both panes ASTM C1048, Kind FT, Condition A, Type I, Class 1, Quality q3.
  2. Thickness: Each pane 6 mm (1/4 inch) thick as indicated.
- B. Tinted Tempered Glazing:
  1. Exterior pane ASTM C1036, Type I, Class 3, Quality q3, 6 mm (1/4 inch) thick.
  2. Interior pane ASTM C1048, Kind FT, Condition A, Type I, Class 1, Quality q3, 6 mm (1/4 inch) thick.

## **2.6 INSULATING GLASS UNITS**

- A. Provide factory fabricated, hermetically sealed glass unit consisting of two panes of glass separated by a dehydrated air space and comply with ASTM E2190.
- B. Assemble units using glass types specified:
- C. Sealed Edge Units (SEU):
  1. Insulating Glass Unit Makeup
    - a. Outboard Lite



1. Glass type: Clear Tempered Glazing
2. Nominal Thickness: 6 mm (1/4 inch) thick as indicated
- b. Spacer
  1. Nominal Thickness: 13 mm (1/2") wide.
  2. Gas Fill: (90% Argon)
- c. Inboard Lite
  1. Glass Type: Tinted Tempered Glazing
  2. Glass Tint: Mfg. Standard.
  3. Nominal Thickness: 6 mm (1/4 inch) thick.
- D. Fused Edge Units, (FEU):
  1. Glass to glass sealed edges electrically fused.
  2. Air space not less than 4.8 mm (3/16 inch) wide up to 6 mm (1/4 inch) wide.
  3. R value not less than 1.5.
- E. FEU Clear Glass.
  1. Interior and exterior panes, ASTM C1036, Type I, Class 1, Quality q3, 6 mm (1/4 inch) thick.
  2. Thickness, 6 mm (1/4 inch) minimum.

## **2.7 GLAZING ACCESSORIES**

- A. As required to supplement the accessories provided with the items to be glazed and to provide a complete installation.  
Ferrous metal accessories exposed in the finished work shall have a finish that will not corrode or stain while in service.
- 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.
- 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: One to 25 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. Spring Steel Spacer: Galvanized steel wire or strip designed to position glazing in channel or rabbeted sash with stops.

F. Glazing Clips: Galvanized steel spring wire designed to hold glass in position in rabbeted sash without stops.

G. 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.

HI. Lock Strip Glazing Gaskets: ASTM C542, shape, size, and mounting as indicated.

I. Glazing Sealants: ASTM C920, silicone neutral cure:

1. Type S.
2. Class 25
3. Grade NS.
4. Shore A hardness of 25 to 30 Durometer.

J. Structural Sealant: ASTM C920, silicone acetoxycure:

1. Type S.
2. Class 25.
3. Grade NS.
4. Shore a hardness of 25 to 30 Durometer.

K. 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.

L. Color:

1. Color of glazing compounds, gaskets, and sealants used for aluminum color frames shall match color of the finished aluminum and be nonstaining.
2. Color of other glazing compounds, gaskets, and sealants which will be exposed in the finished work and unpainted shall be black, gray, or neutral 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 to details; dimensions and tolerances indicated on manufacturer's approved shop drawings.

- B. Advise Contractor 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 glass 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, as determined by preconstruction sealant-substrate testing.

#### **3.3 INSTALLATION - GENERAL**

- A. Install in accordance with GANA-01 Glazing Manual and GANA-02 Sealant Manual unless specified otherwise.
- B. 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.
- C. Set glazing without bending, twisting, or forcing of units.
- D. Do not allow glass to rest on or contact any framing member.
- E. Glaze operable sash, in a securely fixed or closed and locked position, until sealant, glazing compound, or putty has thoroughly set.
- F. Tempered Glass: Install with roller distortions in horizontal position unless otherwise directed.

G. Laminated Glass:

1. Tape edges to seal interlayer and protect from glazing sealants.
2. Do not use putty or glazing compounds.

H. Insulating Glass Units:

1. Glaze in compliance with glass manufacturer's written instructions.
2. When glazing gaskets are used, they shall be of sufficient size and depth to cover glass seal or metal channel frame completely.
3. Do not use putty or glazing compounds.
4. Do not grind, nip, cut, or otherwise alter edges and corners of fused glass units after shipping from factory.

**3.4 INSTALLATION - WET/DRY METHOD (PREFORMED TAPE AND SEALANT)**

- A. Cut glazing tape to length and set against permanent stops, 5 mm (3/16 inch) below sight line. Seal corners by butting tape and dabbing with butyl sealant.
- B. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.
- C. Place setting blocks at 1/8 points with edge block no more than 150 mm (6 inches) from corners.
- D. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to achieve full contact at perimeter of pane or glass unit.
- E. Install removable stops, with spacer strips inserted between glazing and applied stops, 6 mm (1/4 inch) below sight line. Place glazing tape on glazing pane or unit with tape flush with sight line.
- F. Fill gap between glazing and stop with sealant to depth equal to bite of frame on glazing, but not more than 9 mm (3/8 inch) below sight line.
- G. Apply cap bead of sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

**3.5 INSTALLATION - WET METHOD (SEALANT AND SEALANT)**

- A. Place setting blocks at 1/8 points and install glazing pane or unit.
- B. Install removable stops with glazing centered in space by inserting spacer shims both sides at 600 mm (24 inch) intervals, 6 mm (1/4 inch) below sight line.
- C. Fill gaps between glazing and stops with sealant to depth of bite on glazing, but not more than 9 mm (3/8 inch) below sight line to ensure full contact with glazing and continue the air and vapor seal.
- D. Apply sealant to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

### **3.6 INSTALLATION - EXTERIOR BUTT GLAZED METHOD (SEALANT ONLY)**

- A. Temporarily brace glass in position for duration of glazing process. Mask edges of glass at adjoining glass edges and between glass edges and framing members.
- B. Temporarily secure a small diameter non-adhering foamed rod on back side of joint.
- C. Apply sealant to open side of joint in continuous operation; thoroughly fill the joint without displacing the foam rod. Tool the sealant surface smooth to concave profile.
- D. Permit sealant to cure then remove foam backer rod. Apply sealant to opposite side, tool smooth to concave profile.
- E. Remove masking tape.

### **3.7 INSTALLATION - INTERIOR WET/DRY METHOD (TAPE AND SEALANT)**

- A. Cut glazing tape to length and install against permanent stops, projecting 1.6 mm (1/16 inch) above sight line.
- B. Place setting blocks at 1/8 points with edge block no more than 150 mm (6 inches) from corners.
- C. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.
- D. Install removable stops, spacer shims inserted between glazing and applied stops at 600 mm (24 inch) intervals, 6 mm (1/4 inch) below sight line.
- E. Fill gaps between pane and applied stop with sealant to depth equal to bite on glazing, to uniform and level line.
- F. Trim protruding tape edge.

### **3.8 INSTALLATION - INTERIOR WET METHOD (COMPOUND AND COMPOUND)**

- A. Install glazing resting on setting blocks. Install applied stop and center pane by use of spacer shims at 600 mm (24 inch) centers, kept 6 mm (1/4 inch) below sight line.
- B. Locate and secure glazing pane using glazers' clips.
- C. Fill gaps between glazing and stops with glazing compound until flush with sight line. Tool surface to straight line.

### **3.9 REPLACEMENT AND CLEANING**

- A. Clean new glass surfaces removing temporary labels, paint spots, and defacement after approval by COR.
- B. Replace cracked, broken, and imperfect glass, or glass which has been installed improperly.
- C. Leave glass, putty, and other setting material in clean, whole, and acceptable condition.

### **3.10 PROTECTION**

Protect finished surfaces from damage during erection, and after completion of work. Strippable plastic coatings on colored anodized finish are not acceptable.

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