

**Veterans Affairs Medical Center  
Tennessee Valley Health Care System  
Nashville Campus  
Nashville, TN**

**COMPLIANCE RENOVATIONS FOR  
ANIMAL RESEARCH**

VA Project No. 626-14-503

12/17/2013

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**SECTION 00851**  
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**SECTION 01010  
GENERAL REQUIREMENTS**

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**SECTION 01010**  
**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 Compliance Improvements for the Animal Research 6<sup>th</sup> Floor as required by drawings and specifications.
- B. Visits to the site by Bidders may be made only by appointment with the Contracting Officer.
- C. Before placement and installation of work subject to tests by testing laboratory retained by Department of Veterans Affairs, the Contractor shall notify the COR in sufficient time to enable testing laboratory personnel to be present at the site in time for proper taking and testing of specimens and field inspection. Such prior notice shall be not less than three work days unless otherwise designated by the COR.
- D. 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.
- E. Prior to commencing work, general contractor shall provide proof that a OSHA designated "competent person" (CP) (29 CFR 1926.20(b)(2) will maintain a presence at the work site whenever the general or subcontractors are present.
- F. Training:
  - 1. All employees of general contractor or subcontractors shall have the 10-hour or 30-hour OSHA Construction Safety course and other relevant competency training, as

determined by COR acting as the Construction Safety Officer with input from the facility Construction Safety Committee. Superintendent must have OSHA 30-Hour.

2. Submit training records of all such employees for approval before the start of work.

G. VHA Directive 2011-36, Safety and Health during Construction, dated 9/22/2011 in its entirety is made a part of this section

H. Manifestly Necessary Requirement: Omissions from the Drawings or Specifications or the mis-description of details of work which are manifestly necessary to carry the intent of the Drawings and Specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or mis-described details of the work, but shall be performed as if fully and correctly set forth and described in the Drawings and Specifications.

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

- A. Base Bid: Work includes general construction, alterations, plumbing and electrical work, necessary removal of existing equipment, installation of new equipment and construction and certain other items as indicated on the drawings and specifications.
- B. BID ITEM #2: Same as Bid Item 1, Base Bid, except substitute epoxy coating system for Glass Fiber Reinforced Paneling at Corridor and Cage Wash.
- C. BID ITEM #3: Same as Bid Item 2, except delete Remove and Replace light fixtures.
- D. BID ITEM #4: Same as Bid Item 3, except delete remove and replace door hardware including kickplates, door entry assembly, fire exit door assemblies.
- E. BID ITEM #5: Same as Bid Item 4, except delete general purpose electrical receptacles. Sterilizer power remains in the job.

#### **1.3 SPECIFICATIONS AND DRAWINGS FOR CONTRACTOR**

- A. Contractor shall reproduce specifications and Drawings provided on [www.fbo.gov](http://www.fbo.gov).

#### **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.
2. The General Contractor is responsible for assuring that all sub-contractors working on the project and their employees also comply with these regulations.

##### **B. Security Procedures:**

1. 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 4 days notice to the COR 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 provide duplicate keys and lock



combinations to the COR for the purpose of security inspections of every area of project including tool boxes and parked machines and take any emergency action.

2. The General Contractor shall turn over all permanent lock cylinders to the VA locksmith for permanent installation. Coordinate with COR.

D. Document Control:

1. Before starting any work, the General Contractor/Sub Contractors shall submit an electronic security memorandum describing the approach to following goals and maintaining confidentiality of "sensitive information".
2. The General Contractor is responsible for safekeeping of all drawings, project manual and other project information. This information shall be shared only with those with a specific need to accomplish the project.
3. Certain documents, sketches, videos or photographs and drawings may be marked "Law Enforcement Sensitive" or "Sensitive Unclassified". Secure such information in separate containers and limit the access to only those who will need it for the project. Return the information to the Contracting Officer upon request.
4. These security documents shall not be removed or transmitted from the project site without the written approval of Contracting Officer.
5. All paper waste or electronic media such as CD's and diskettes shall be shredded and destroyed in a manner acceptable to the VA.
6. Notify Contracting Officer and Site Security Officer immediately when there is a loss or compromise of "sensitive information".
7. All electronic information shall be stored in specified

location following VA standards and procedures using an Engineering Document Management Software (EDMS).

- a. Security, access and maintenance of all project drawings, both scanned and electronic shall be performed and tracked through the EDMS system.
- b. "Sensitive information" including drawings and other documents may be attached to e-mail provided all VA encryption procedures are followed.

#### E. Motor Vehicle Restrictions

- 1. Vehicle authorization request shall be required for any vehicle entering the site and such request shall be submitted 24 hours before the date and time of access. Access shall be restricted to picking up and dropping off materials and supplies.
- 2. On site VA parking is restricted to patients and staff only. No Contractor parking will be permitted in the VA garage or anywhere on site.
- 3. Contractor can park a vehicle within staging areas (if there's enough room with storage and dumpster; past staging area sizes will NOT increase in the future). If coordinated/approved, Contractor may be allowed to park one vehicle adjacent to its staging area. Contractor can actively drop-off / pickup personnel and materials, but cannot park illegally when doing so and should not leave a vehicle unattended. Contractor actively working out of a vehicle (on-board welder, pressure washer, waste catch, etc.) will have to coordinate these provisions / allowances in advance with its COR.
- 4. Contractor discovered to be parking illegally will be reported to VA Police and may be ticketed and/or asked to leave the property.

#### **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 Project Engineer and Facility Safety Officer 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 COR 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 Heating and Electrical: Install, use and maintain installations in accordance with 29 CFR 1926, NFPA 241 and NFPA 70.
- F. Means of Egress: Do not block exiting for occupied buildings, including paths from exits to roads. Minimize disruptions and coordinate with COR and facility Safety Manager
- G. Egress Routes for Construction Workers: Maintain free and unobstructed egress. Inspect daily. Report findings and corrective actions weekly to COR and facility Safety Manager.
- H. Fire Extinguishers: Provide and maintain extinguishers in construction areas and temporary storage areas in accordance with 29 CFR 1926, NFPA 241 and NFPA 10.
- I. Flammable and Combustible Liquids: Store, dispense and use liquids in accordance with 29 CFR 1926, NFPA 241 and NFPA 30.

- J. Existing Fire Protection: Do not impair automatic sprinklers, smoke and heat detection, and fire alarm systems, except for portions immediately under construction, and temporarily for connections. Provide fire watch for impairments more than 4 hours in a 24-hour period. 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. ILSM measures must be implemented in the event that any of these systems are required to be taken down to perform construction. Refer to attached "ILSM Check Sheet" at the end of this section.
- K. Smoke Detectors: Prevent accidental operation. Remove temporary covers at end of work operations each day. Coordinate with COR and facility Safety Manager. The contractor shall coordinate and implement necessary "Interim Life Safety Measures" (ILSM) with the COR. Refer to attached "ILSM Check Sheet" at the end of this section.
- L. 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 24 hours in advance. Designate contractor's responsible project-site fire prevention program manager to permit hot work. Refer to "Burn Permit" at the end of this section.
- M. 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.
- N. Smoking: Smoking is prohibited in and adjacent to construction areas inside existing buildings and additions under

construction. In separate and detached buildings under construction, smoking is prohibited except in designated smoking rest areas.

- O. Dispose of waste and debris in accordance with NFPA 241. Remove from buildings daily.
- P. Perform other construction, alteration and demolition operations in accordance with 29 CFR 1926.
- Q. The COTR and contractor will complete the Interim Life Safety Measures (ILSM) Check Sheet attached to this section. When project work makes it necessary, the Safety Officer will assist in initiating ILSM necessary to maintain life safety before the project starts.

#### **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 staging materials shall be as determined by the COR. No storage space will be provided by the VA.

1. Contractors shall provide their own staging area fencing (7' minimum) that includes screening fabric, insure fence is properly anchored (to the pavement or ground) to prevent fence from blowing over. Contractor shall provide the name of the project construction company on the exterior of the staging areas fencing. Location of sign shall be coordinated with the COR.

2. Smoking shall not be permitted in staging areas. Contractor shall post No Smoking signs in staging area.

3. Contractors shall insure any stored material is on pallets, covered to protect from weather or stored in Conex Containers or Trailers. All conduit and piping material stored in exterior staging areas shall be covered at all times. Bulk and Large material will be exempt from this requirement if approved by the COR.

4. Contractor shall not lean material against the Medical Center exterior walls or fencing.

5. Contractor shall keep the staging area gates locked, except when moving material in/out of staging area.

6. Flammable material shall not be stored near Medical Center exterior walls.

7. Contractor shall cut grass inside their staging area and trim along the outside of their staging area fence.

E. Workmen are subject to rules of Medical Center applicable to their conduct.

- F. Execute work so as to interfere as little as possible with normal functioning of Medical Center as a whole, including operations of utility services, fire protection systems and any existing equipment, and with work being done by others. 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.
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.
  3. Where access by Medical Center personnel to vacated portions of buildings is not required, storage of Contractor's materials and equipment will be permitted subject to fire and safety requirements.
- G. Utilities Services: Where necessary to cut existing pipes, electrical wires, conduits, cables, etc., of utility services, or of fire protection systems or communications systems (except telephone), they shall be cut and capped at suitable places where shown; or, in absence of such indication, where directed by COR.
- H. Phasing: To insure such executions, Contractor shall furnish the COR with a schedule of approximate phasing dates on which the Contractor intends to accomplish work in each specific area of site, building or portion thereof. In addition, Contractor shall notify the COR two weeks in advance of the proposed date of starting work in each specific area of site, building or portion thereof. Arrange such phasing dates to insure accomplishment of



this work in successive phases mutually agreeable to COR and Contractor, as follows:

**Phase I:** See Phasing Plans. Renovations in Corridor, Lobby and Cage Wash shall be done on weekends to ensure Research Lab remains operational during work week.

**Phase II:** See Phasing Plans.

**Phase III:** See Phasing Plans.

I. Utilities Services: Maintain existing utility services for Medical Center at all times. Provide temporary facilities, labor, materials, equipment, connections, and utilities to assure uninterrupted services. Where necessary to cut existing water, steam, gases, sewer or air pipes, or conduits, wires, cables, etc. of utility services or of fire protection systems and communications systems (including telephone), they shall be cut and capped at suitable places where shown; or, in absence of such indication, where directed by COR.

1. No utility service such as water, gas, steam, sewers or electricity, or fire protection systems and communications systems may be interrupted without prior approval of COR. Electrical work shall be accomplished with all affected circuits or equipment de-energized. When an electrical outage cannot be accomplished, work on any energized circuits or equipment shall not commence without the Medical Center Director's prior knowledge and written approval. Refer to specification Sections 16050, BASIC METHODS AND REQUIREMENTS (ELECTRICAL) for additional requirements.
2. Contractor shall submit a request to interrupt any such services to COR, in writing, 72 hours in advance of proposed interruption. Request shall state reason, date, exact time of, and approximate duration of such interruption.
3. Contractor will be advised (in writing) of approval of request, or of which other date and/or time such interruption will cause least inconvenience to operations of Medical Center. Interruption time approved by Medical Center

may occur at other than Contractor's normal working hours.

4. Major interruptions of any system must be requested, in writing, at least 15 calendar days prior to the desired time and shall be performed as directed by the COR.
  5. In case of a contract construction emergency, service will be interrupted on approval of COR. Such approval will be confirmed in writing as soon as practical.
  6. Whenever it is required that a connection fee be paid to a public utility provider for new permanent service to the construction project, for such items as water, sewer, electricity, gas or steam, payment of such fee shall be the responsibility of the Government and not the Contractor.
- J. To minimize interference of construction activities with flow of Medical Center traffic, comply with the following:
1. 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. Wherever excavation for new utility lines cross existing roads, at least one lane must be open to traffic at all times.
  2. Method and scheduling of required cutting, altering and removal of existing roads, walks and entrances must be approved by the COR.
- K. Coordinate the work for this contract with other construction operations as directed by COR. This includes the scheduling of traffic and the use of roadways, as specified in Article, USE OF ROADWAYS.
- L. Contractor shall perform work between 7:00 am - 4:30pm Monday through Friday. No work shall be performed on federal VA holidays. In order to accomplish tasks and meet deadlines,

permission to work (no extra cost allowed) at times other than those specified above will be granted/denied at the Resident Engineer's discretion upon request. Work during off hours will be required in order to minimize disruptions. Conduct work on floor below and floor above after hours and on weekends. Temperature dependent work shall be done during mild weather of the Spring or Fall. Provide Fire Watch personnel during Fire Protection or Fire Alarm outages. Heavy vibration work shall be after normal duty hours. Work outside of construction limits shall be done outside of normal duty hours or on the weekends.

#### **1.7 ALTERATIONS**

- A. Survey: Before any work is started, the Contractor shall make a thorough survey with the COR and a representative of VA Supply Service, of buildings areas of buildings in which alterations occur and areas which are anticipated routes of access, and furnish a report, signed by all three, to the Contracting Officer. This report shall list by rooms and spaces:
1. Existing condition and types of resilient flooring, doors, windows, walls and other surfaces not required to be altered throughout 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 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. Re-Survey: Thirty days before expected partial or final inspection date, the Contractor and COR 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.

E. Protection: Provide the following protective measures:

1. Wherever existing roof surfaces are disturbed they shall be protected against water infiltration. In case of leaks, they shall be repaired immediately upon discovery.
2. Temporary protection against damage for portions of existing structures and grounds where work is to be done, materials handled and equipment moved and/or relocated.
3. Protection of interior of existing structures at all times, from damage, dust and weather inclemency. Wherever work is performed, floor surfaces that are to remain in place shall be adequately protected prior to starting work, and this protection shall be maintained intact until all work in the area is completed.

## 1.8 INFECTION PREVENTION MEASURES

- A. Obtain PICRA Permit and implement the requirements of VAMC's Preconstruction Infection Control Risk Assessment (PICRA) team. PICRA 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. Medical Center's PICRA policy can be found later in this section.
  
- 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 as specified here. Prior to start of work, prepare a plan detailing project-specific dust protection measures, including periodic status reports, and submit to Resident Project Engineer 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 COR. 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. HEPA filtration is required where the exhaust dust may reenter the breathing zone. Contractor shall verify that construction exhaust to exterior is not reintroduced to the medical center through intake vents, or building openings. Install HEPA (High Efficiency Particulate Accumulator) filter vacuum system rated at 95% capture of 0.3 microns including pollen, mold spores and dust particles. Insure continuous negative air pressures occurring within the work area. HEPA filters should have ASHRAE 85 or other prefilter to extend the useful life of the HEPA. Provide both primary and secondary filtrations units. Exhaust hoses shall be heavy duty, flexible steel reinforced and exhausted so that dust is not reintroduced to the medical center.

- b. Adhesive Walk-off/Carpet Walk-off Mats, minimum 600mm x 900mm (24" x 36"), shall be used at all interior transitions from the construction area to occupied

medical center area. These mats shall be changed as often as required to maintain clean work areas directly outside construction area at all times.

- c. Vacuum and wet mop all transition areas from construction to the occupied medical center at the end of each workday. 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.
- d. The contractor shall not haul debris through patient-care areas without prior approval of the COR and the Medical Center. 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.
- e. Using a HEPA vacuum, clean inside the barrier and vacuum ceiling tile prior to replacement. Any ceiling access panels opened for investigation beyond sealed areas shall be sealed immediately when unattended.
- f. There shall be no standing water during construction. This includes water in equipment drip pans and open containers within the construction areas. All accidental spills must be cleaned up and dried within 12 hours. Remove and dispose of porous materials that remain damp for more than 72 hours.
- g. 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.

- h. 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.
3. All new air ducts shall be cleaned prior to final inspection.

**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 identified by attached tags 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.
- B. The Contractor shall protect from damage all existing improvements and utilities at or near the work site and on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

**(FAR 52.236-9)**

C. Refer to FAR clause 52.236-7, "Permits and Responsibilities," which is included in General Conditions. A National Pollutant Discharge Elimination System (NPDES) permit is required for this project. The Contractor is considered an "operator" under the permit and has extensive responsibility for compliance with permit requirements. VA will make the permit application available at the (appropriate medical center) office. The apparent low bidder, contractor and affected subcontractors shall furnish all information and certifications that are required to comply with the permit process and permit requirements. Many of the permit requirements will be satisfied by completing construction as shown and specified. Some requirements involve the Contractor's method of operations and operations planning and the Contractor is responsible for employing best management practices. The affected activities often include, but are not limited to the following:

1. Designating areas for equipment maintenance and repair;
2. Providing waste receptacles at convenient locations and provide regular collection of wastes;
3. Locating equipment wash down areas on site, and provide appropriate control of wash-waters;
4. Providing protected storage areas for chemicals, paints, solvents, fertilizers, and other potentially toxic materials
5. Providing adequately maintained sanitary facilities.

#### **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 PHYSICAL DATA**

- A. Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.
  - 1. The indications of physical conditions on the drawings and in the specifications are the result of site investigations by VA.

#### **(FAR 52.236-4)**

Government does not guarantee that other materials will not be encountered nor that proportions, conditions or character of several materials will not vary from those indicated by

explorations. Bidders are expected to examine site of work and logs of borings; and, after investigation, decide for themselves character of materials and make their bids accordingly. Upon proper application to Department of Veterans Affairs, bidders will be permitted to make subsurface explorations of their own at site.

#### **1.13 LAYOUT OF WORK**

- A. The Contractor shall lay out the work from Government established base lines and bench marks, indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at Contractor's own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through Contractor's negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the (FAR 52.236-17)

#### **1.14 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 COR's review, as often as requested.

C. Contractor shall deliver two approved completed sets of as-built drawings to the COR within 15 calendar days after each completed phase and after the acceptance of the project by the COR.

D. Paragraphs A, B, & C shall also apply to all shop drawings.

#### **1.15 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.

B. When new permanent roads are to be a part of this contract, Contractor may construct them immediately for use to facilitate building operations. These roads may be used by all who have business thereon within zone of building operations.

C. When certain buildings (or parts of certain buildings) are required to be completed in advance of general date of completion, all roads leading thereto must be completed and available for use at time set for completion of such buildings or parts thereof.

#### **1.16 TEMPORARY USE OF MECHANICAL AND ELECTRICAL EQUIPMENT**

A. Use of new installed mechanical and electrical equipment to provide heat, ventilation, plumbing, light and power will be permitted subject to compliance with the following provisions:

1. Permission to use each unit or system must be given by COR. If the equipment is not installed and maintained in accordance with the following provisions, the COR will withdraw permission for use of the equipment.
2. Electrical installations used by the equipment shall be completed in accordance with the drawings and specifications to prevent damage to the equipment and the electrical systems, i.e. transformers, relays, circuit breakers, fuses, conductors, motor controllers and their overload elements shall be properly sized, coordinated and adjusted. Voltage supplied to each item of equipment shall be verified to be correct and it shall be determined that motors are not overloaded. The electrical equipment shall be thoroughly cleaned before using it and again immediately before final inspection including vacuum cleaning and wiping clean interior and exterior surfaces.
3. Units shall be properly lubricated, balanced, and aligned. Vibrations must be eliminated.

B. Prior to final inspection, the equipment or parts used which show wear and tear beyond normal, shall be replaced with identical replacements, at no additional cost to the Government.

C. This paragraph shall not reduce the requirements of the mechanical and electrical specifications sections.

#### **1.17 TEMPORARY USE OF EXISTING ELEVATORS**

A. Use of existing elevators for handling building materials and Contractor's personnel will be permitted subject to following provisions:

1. Contractor makes all arrangements with the COR for use of elevators. The COR will ascertain that elevators are in

- proper condition. Contractor may use elevators designated by the COR and for special nonrecurring time intervals when permission is granted. Personnel for operating elevators will not be provided by the Department of Veterans Affairs.
2. Contractor covers and provides maximum protection of following elevator components:
    - a. Entrance jambs, heads soffits and threshold plates.
    - b. Entrance columns, canopy, return panels and inside surfaces of car enclosure walls.
    - c. Finish flooring.
  3. Government will accept hoisting ropes of elevator and rope of each speed governor if they are worn under normal operation. However, if these ropes are damaged by action of foreign matter such as sand, lime, grit, stones, etc., during temporary use, they shall be removed and replaced by new hoisting ropes.
  4. If brake lining of elevators are excessively worn or damaged during temporary use, they shall be removed and replaced by new brake lining.
  5. All parts of main controller, starter, relay panel, selector, etc., worn or damaged during temporary use shall be removed and replaced with new parts, if recommended by elevator inspector after elevator is released by Contractor.
  6. Place elevator in condition equal, less normal wear, to that existing at time it was placed in service of Contractor as approved by Contracting Officer.

#### **1.18 TEMPORARY TOILETS**

- A. Contractor may have for use of Contractor's workmen, such toilet accommodations as may be assigned to Contractor by Medical Center. Contractor shall keep such places clean and be responsible for any damage done thereto by Contractor's workmen.

Failure to maintain satisfactory condition in toilets will deprive Contractor of the privilege to use such toilets.

#### **1.19 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.
- B. The Contractor, at Contractor's expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of electricity used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.
- C. Contractor shall install meters at Contractor's expense and furnish the Medical Center a monthly record of the Contractor's usage of electricity as hereinafter specified.
- D. Electricity (for Construction and Testing): Furnish all temporary electric services.
  - 1. Obtain electricity by connecting to the Medical Center electrical distribution system. The Contractor shall meter and pay for electricity required for electric cranes and hoisting devices, electrical welding devices and any electrical heating devices providing temporary heat. Electricity for all other uses is available at no cost to the Contractor.
- E. Water (for Construction and Testing): Furnish temporary water service.
  - 1. Obtain water by connecting to the Medical Center water distribution system. Provide reduced pressure backflow



preventer at each connection. Water is available at no cost to the Contractor.

2. Maintain connections, pipe, fittings and fixtures and conserve water-use so none is wasted. Failure to stop leakage or other wastes will be cause for revocation (at COR's discretion) of use of water from Medical Center's system.

#### **1.20 TESTS**

- A. Pre-test mechanical and electrical equipment and systems and make corrections required for proper operation of such systems before requesting final tests. Final test will not be conducted unless pre-tested.
- B. Conduct final tests required in various sections of specifications in presence of an authorized representative of the Contracting Officer. Contractor shall furnish all labor, materials, equipment, instruments, and forms, to conduct and record such tests.
- C. Mechanical and electrical systems shall be balanced, controlled and coordinated. A system is defined as the entire complex which must be coordinated to work together during normal operation to produce results for which the system is designed. For example, air conditioning supply air is only one part of entire system which provides comfort conditions for a building. Other related components are return air, exhaust air, steam, chilled water, refrigerant, hot water, controls and electricity, etc. Another example of a complex which involves several components of different disciplines is a boiler installation. Efficient and acceptable boiler operation depends upon the coordination and proper operation of fuel, combustion air, controls, steam, feedwater, condensate and other related components.
- D. All related components as defined above shall be functioning when any system component is tested. Tests shall be completed within a reasonably short period of time during which operating and environmental conditions remain reasonably constant.



- E. Individual test result of any component, where required, will only be accepted when submitted with the test results of related components and of the entire system.

#### **1.21 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. Manuals shall be complete, detailed guides for the maintenance and operation of equipment. They shall include complete information necessary for starting, adjusting, maintaining in continuous operation for long periods of time and dismantling and reassembling of the complete units and sub-assembly components. Manuals shall include an index covering all component parts clearly cross-referenced to diagrams and illustrations. Illustrations shall include "exploded" views showing and identifying each separate item. Emphasis shall be placed on the use of special tools and instruments. The function of each piece of equipment, component, accessory and control shall be clearly and thoroughly explained. All necessary precautions for the operation of the equipment and the reason for each precaution shall be clearly set forth. Manuals must reference the exact model, style and size of the piece of equipment and system being furnished. Manuals referencing equipment similar to but of a different model, style, and size than that furnished will not be accepted.
- 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. These requirements are more specifically detailed in the various technical sections. Instructions for different items of equipment that are component parts of a complete system, shall be given in an integrated, progressive manner. All instructors for every piece of component equipment in a system shall be available until instructions for all items included in the system have been completed. This is to assure proper instruction in the operation of inter-related systems. All instruction periods shall be at such times as scheduled by the COR and shall be considered concluded only when the COR is satisfied in regard to complete and thorough coverage. The Department of Veterans Affairs reserves the right to request the removal of, and substitution for, any instructor who, in the opinion of the COR, does not demonstrate sufficient qualifications in accordance with requirements for instructors above.

#### **1.22 PHOTOGRAPHIC DOCUMENTATION**

- A. During the construction period through completion, provide photographic documentation of construction progress and at selected milestones including electronic indexing, navigation, storage and remote access to the documentation, as per these specifications.
- B. Photographic documentation elements:
  - 1. Each digital image shall be taken with a professional grade camera with minimum size of 6 megapixels (MP) capable of producing 200x250mm (8 x 10 inch) prints with a minimum of 2272 x 1704 pixels and 400x500mm (16 x 20 inch) prints with a minimum 2592 x 1944 pixels.
  - 2. Indexing and navigation system shall utilize actual AUTOCAD construction drawings, making such drawings interactive on an on-line interface. For all documentation referenced herein, indexing and navigation must be organized by both time (date- stamped) and location throughout the project.
  - 3. As-built condition of pre-slab utilities and site utilities

shall be documented prior to pouring slabs, placing concrete and/or backfilling. This process shall include all underground and in-slab utilities within the building(s) envelope(s) and utility runs in the immediate vicinity of the building(s) envelope(s). This may also include utilities enclosed in slab-on-deck in multi-story buildings. Overlapping photographic techniques shall be used to insure maximum coverage. Indexing and navigation accomplished through interactive site utility plans.

4. As-built conditions of mechanical, electrical, plumbing and all other systems shall be documented post-inspection and pre-insulation, sheet rock or dry wall installation. This process shall include all finished systems located in the walls and ceilings of all buildings at the Project. Overlapping photographic techniques shall be used to insure maximum coverage. Indexing and navigation accomplished through interactive architectural drawings.

- C. Upon completion of the project, final copies of the documentation (the "Permanent Record") with the indexing and navigation system embedded (and active) shall be provided in an electronic media format, typically a DVD or external hard-drive. Permanent Record shall have Building Information Modeling (BIM) interface capabilities. On-line access terminates upon delivery of the Permanent Record.

#### **1.23 EQUIPMENT ID FOR VA OWNED EQUIPMENT**

- A. During the demolition phase of this project, the Contractor will be required to remove and turn over to the COR all existing "Building Service Equipment" cards (marked with an EE number or a Bldg Service Equip number on a Label) and their jackets that are scheduled to be replaced or removed.
- B. The Contractor shall complete all new equipment cards to be on all new equipment installed under this project. A Blank equipment card is included at the end of this section.
- C. The Contractor shall complete this information and turnover the

card before the new equipment is accepted (before final inspection). After the equipment cards have been completed on each new equipment item, the Contractor shall verify with the COR compliance and accuracy. If equipment is a direct replacement, the same EE number will be used.

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# Department of Veterans Affairs

**ATTACHMENT A**  
**Memorandum 626-01-EC5-01**

INTERIM LIFE SAFETY MEASURES (ILSM) CHECK SHEET		PROJECT TITLE	PROJECT NO.	COR
<p>The COR for each and every project will complete this ILSM Check Sheet prior to the start of the project. When project work makes it necessary to implement ILSM, the Safety Officer will be informed. The Safety Officer will assist in initiating those ILSM necessary to maintain life safety before the project starts. The COR is responsible for assuring that the project does not start before ILSM are in place. The COR is responsible for conducting daily inspections of the work site.</p>				
1.	Will any exits be obstructed during construction such that alternative exits will have to be established? If yes, then the Safety Officer must provide training to all concerned staff on alternative exiting arrangements.			Yes <input type="checkbox"/> No <input type="checkbox"/>
	Training completed:	Date By		
2.	Will access to emergency services be obstructed so that emergency forces cannot gain access? If yes, then alternate means of access or proper direction for emergency service personnel must be provided.			Yes <input type="checkbox"/> No <input type="checkbox"/>
	Corrections completed:	Date By		
3.	Will any fire alarm, detection, or suppression system be impaired during this project? If yes, then a temporary but equivalent system must be provided. The temporary system must be inspected every day.			Yes <input type="checkbox"/> No <input type="checkbox"/>
	Temporary in place:	Date By		
4.	Will temporary construction partitions be necessary? If yes, then the temporary partitions must be smoke tight and built of non-combustible or limited-combustible materials that will not contribute to the development or spread of fire.			Yes <input type="checkbox"/> No <input type="checkbox"/>
5.	Will additional fire fighting equipment be necessary? If yes, then the COR will assure that the contractor provides construction employees with adequate fire extinguishers and assure that these employees are properly trained in the use of the fire fighting equipment.			Yes <input type="checkbox"/> No <input type="checkbox"/>
6.	Will the level of fire safety that is required by the Life Safety Code be reduced because of exiting deficiencies or other activities due to the construction? If yes then the Safety Officer will initiate a program of conducting two fire drills per shift per quarter in the areas affected by the construction for the duration of the project.			Yes <input type="checkbox"/> No <input type="checkbox"/>
7.	Will structural or compartmentation features of fire safety be compromised? If yes, then the Safety Officer will provide training on alternate fire safety procedures to the personnel of all smoke zones that will be affected.			Yes <input type="checkbox"/> No <input type="checkbox"/>
	Training completed:	Date By		
8.	Will any of the above ILSM need to be implemented? If yes, then In addition to the training and education initiatives, the Safety Officer will initiate a memorandum for the Director's signature addressed to all employees that clarifies the ILSM taken to address any Life Safety Code deficiencies and/or construction hazards that will exist during this project.			Yes <input type="checkbox"/> No <input type="checkbox"/>
	Memorandum initiated:	Date By		
<p>Remarks:</p>				

# Department of Veterans Affairs

# Portable Gas or Arc Equipment Cutting and Welding Permit

## SECTION I

Location of Work (Include project as applicable)		Work to be Performed (Include contractor as applicable)	
Special Precautions Normal fire precautions		Fire Watch Required YES <input type="checkbox"/> NO <input type="checkbox"/>	
Permit Issued By	Date Issued 10/2/13 Month/Day/Year	Date Expires Month/Day/Year	
Inspection Completed By		Permit to be posted at work site and at the Engineering Office. Permit expires on the specified date or upon the completion of the work as indicated. Return completed permit to Engineering Office.	

## SECTION II

Before approval, a VA Engineering Officer shall inspect the work area and confirm that precautions have been taken to prevent fire in accordance with NFPA 51B

### PRECAUTIONS

- ☐ Sprinklers in service  
☐ Cutting and welding equipment is in good repair

### WITHIN 35 FEET OF THE WORKING AREA

- ☐ Floor swept of combustibles  
☐ All wall and floor openings covered  
☐ Combustible floor wet down, covered with damp sand, metal or other shields  
☐ Combustibles and flammable liquids protected with covers, guards or metal shields  
☐ Covers suspended beneath work to collect sparks  
☐ No combustible material or flammable liquids

### WORK ON WALLS OR CEILINGS

- ☐ Construction and coverings are noncombustible  
☐ Combustibles removed from opposite side of walls

### WORK ON TANKS, CONTAINERS, DUCTS, ETC.

- ☐ Equipment cleaned of all combustibles  
☐ Containers purged of flammable vapors

### FIRE WATCH REQUIRED

- ☐ To be provided during and 30 minutes after operation  
☐ Supplied with appropriate charged extinguisher  
☐ Trained in use of equipment and in sounding fire alarm

### FINAL CHECK-UP

- ☐ To be made 30 minutes after completion of any operation

## SECTION III

Use Reverse Side for Additional Space

Date			Time Started			Time Completed			Supervisor Initial
MONTH	DAY	YEAR		AM	PM		AM	PM	



## Continued

## Portable Gas or Arc Equipment Cutting and Welding Permit (Hot Work)

- 01010 - 36

## **Construction and Renovation Infection Prevention & Control Precautions**

**1. PURPOSE:** To identify and reduce the risk of acquiring and transmitting infections among patients, employees, physicians and other independent practitioners, contractors, vendors, contract service workers, volunteers, students, visitors, and any other building occupants during hospital renovation or construction activities. Fungal organisms released into the air during these activities can cause illness and even death in people with poor immunity. This memorandum is to be included in the (Green) Safety Manual.

**2. POLICY:** Precautions will be taken to make conditions as safe as possible before and during all construction and renovation to protect the environment from hidden infectious disease hazards which may be released into the air, carried on dust particles or on clothing during construction activities. (For example: Aspergillus species may be found in decaying plaster, drywall, and settled dust found on ceiling tiles and in areas that have been undisturbed for long periods of time.) This applies to all construction and/or renovation managed by Engineering Service, Department of Veterans Affairs Tennessee Valley Healthcare System (VA TVHS) at VA TVHS campuses and facilities, including Community Based Outpatient Clinic's (CBOC) and cemeteries.

### **3. RESPONSIBILITIES:**

a. Engineering Service and Infection Prevention & Control Team, will screen future construction/ renovation projects during the project design phase and at the project start for construction activity types. Construction activity types will be defined by the amount of dust that is generated, the duration and extent of the activity, the amount of shared heating and air conditioning systems, and the location of the activity. Personnel will conduct a Pre-Construction Risk Assessment (PCRA) for all construction projects.

b. Infection Preventionists (IP) will assist in making recommendations for implementation of safety/infection prevention and control practices for the duration of the job. Precautions taken in specific settings will be agreed upon after corroboration between Infection Prevention, Engineering Service and the service chief of the specific area.

c. The Immediate Job Supervisor, Superintendent, Foreman (VA or Contractor): of the construction/renovation will be responsible for insuring that coordinated precautionary measures are properly enacted and maintained throughout the work.

d. Infection Prevention, Engineering Service and the project Contracting Officer Technical Representative (COR) will monitor these temporary measures by conducting documented periodic inspections at predetermined intervals during construction/renovation.

e. Environmental Management Service (EMS) will have an integral part in cleaning of the areas immediately adjacent to the site and in certain cases within the work site itself.

f. Engineering/Safety, Infection Prevention, EMS and/or the construction team should be contacted if any regulation is questionable under these guidelines.

#### 4. DEFINITIONS & PRE-CONSTRUCTION ACTIVITIES:

a. Preparation for Construction and Renovation should include the following:

- (1) Patient placement and relocation;
- (2) Standards for barriers and other protective measures required to protect adjacent areas and susceptible patient from airborne contaminants;
- (3) Temporary provisions or phasing for construction or modification of heating, ventilating, air conditioning, and water supply systems;
- (4) Protection of occupied patient areas from demolition;
- (5) Measures to be taken to train healthcare facility staff, visitors, and construction personnel on maintenance of interim life safety and infection control risk mitigation recommendations.

b. **Attachment A** will be used to identify the Type of Construction Project Activity, Patient Risk Group (Low, Medium, High, Highest) and the Class of Precautions (*I, II, III, IV*) or level of infection control activities required.

c. **Attachment B** will be used to monitor Construction Project Activity during the Project. Findings will be reported to the Environment of Care Board through the Safety Manager or Chief Engineer.

#### 5. REFERENCES:

a. Association for Professionals in Infection Control and Epidemiology. *Text of Infection Control and Epidemiology: Construction Renovation*, 3<sup>rd</sup> Edition: Chapter 106:1-18. Washington, DC: APIC, 2009

b. American Lung Association, Environmental Protection Agency, Consumer Product Safety Commissions, American Medical Association. *Indoor Air Pollution: An Introduction for Health Professionals*. Washington, DC: US Government Printing Office, 1994. Publication 523-217/ 81322

c. American Institute of Architects. *Guidelines for Design and Construction of Hospital and Healthcare Facilities*. Washington, DC: AIA Press: 1996

d. Occupational Safety and Health Administration, Legionnaires' disease. In *OSHA Technical Manual* Section II, 1997;7:1-46, U.S. Department of Labor

e. VHA Center for Engineering & Occupational Health and Safety. *Construction Safety Guidebook*. St. Louis, MO. April 2009

**6. RESCISSION:** VA TVHS Memorandum 626-08-138-74

**7. RESPONSIBILITY AND REVIEW DATE:** This memorandum will be reviewed annually by the Chief, Engineering with the assistance of Infection Prevention and Environmental Management Service and will be reissued no later than June 30, 2014.

**/s/ Juan A. Morales, RN, MSN 8/15/2011**

Juan A. Morales, RN, MSN  
Health System Director

Attachments:

A - Pre-Construction Control Risk Assessment (PCRA)  
B - Infection Prevention/ Safety Program, Periodic Construction Rounds Compliance Monitor

**DISTRIBUTION: Green Safety Manual**

## ATTACHMENT A

(Note: To be filled out by Infection Control and Engineering Service during project design and revalidated at the start of construction.)

<b>Pre-Construction Risk Assessment</b>		
<b>Infection Prevention/ Safety Construction Permit</b>		
<b>Location of Construction: Compliance Renovations for Animal Research- Acre 6<sup>th</sup> Floor</b>	<b>Project Start Date:</b>	
<b>COR: Katrina Norris</b>	<b>Estimated Duration: 90 days</b>	
<b>Contractor Performing Work:</b>	<b>Permit Expiration Date:</b>	
<b>Supervisor: Sam Smart</b>	<b>Telephone:</b>	
Description of project: The purpose of this work is to renovate the wall, floor and ceiling finishes and prepare site for new research equipment. Lighting will be replaced to meet current VA Energy Guidelines. Door Hardware will be replaced to meet ADA. Work includes electrical, plumbing, demolition, general construction and finishes		
<b>Construction Activities</b>		
<p>The following jobs do not require completion of the Pre-construction risk assessment form on low and medium risk project areas:</p> <ol style="list-style-type: none"> <li>1. Paint and wallpaper in business offices and non-patient areas.</li> <li>2. Paint in empty patient room if closed for painting and less than 3 sq.ft. of wall needs patched. Filter for room unit changed after painting.</li> <li>3. Installation of soap dispenser/needle box/paper towel holder in patient room.</li> <li>4. Repair of window blind.</li> <li>5. Ceiling tile replacement for area less than 5' X 2' tiles in a patient area if patient is out of the immediate area and clean up can be accomplished before patient returns.</li> <li>5. Minimum repair of nurse call system/TV/Bed/Telephone.</li> <li>6. Check or replace electric outlet.</li> <li>7. Replace light bulb.</li> <li>8. Unstop sink/commode with no water on floor.</li> <li>9. Unstop commode when water on floor requires maintenance to have Housekeeping clean area immediately.</li> <li>10. Repair medical gas outlet. (Front Body)</li> <li>11. Air balance readings.</li> <li>12. Check air-conditioning.</li> <li>13. Intermediate jobs that create a moderate amount of dust inside room and is made negative by use of hepa-equipped unit with minimum 10 ACH, and all air discharged outside, hepa unit must run 2 hours after completion of job and Housekeeping must clean room before unit is removed from room. All work and use of hepa unit must be documented and copy forward to Infection Control and Safety. <b>NOTE: all duct vents to be sealed off during work!</b></li> </ol> <ul style="list-style-type: none"> <li>• The above does not apply to any Protective Environment patient areas or occupied high and highest risk areas.</li> </ul>		
Yes	No	
<b>y</b>		<b>Will there be noise generated that will impact a department adjacent to, above, or below the construction area?</b>
		a. If so, these departments must be notified.
		b. How are you going to reduce the noise to an acceptable level?
Yes	No	
<b>y</b>		<b>Will there be vibration generated that will impact a department adjacent to, above, or below the construction area?</b>
		a. If so, these departments must be notified each time this type of work will be performed.
		b. How are you going to reduce the vibration to an acceptable level?
Yes	No	
		<b>Are Emergency Procedures in place and posted on each job for accidental events that could greatly impact Patient Care or Life Safety to the facility? Included in these procedures are such things as:</b> <ul style="list-style-type: none"> <li>• Emergency telephone numbers of key departments.</li> <li>• A plan that describes where main valves, switches, and controls are for the area in case of an emergency.</li> <li>• A plan for unexpected outages.</li> </ul>
<b>Environment</b>		
Yes	No	<b>Are any of the following environmental hazards present?</b>
<b>x</b>		Will hazardous chemicals be used on this project? How will fumes and odors be controlled? <b>MSDS Sheets are required.</b>
	<b>y</b>	Is asbestos abatement required on this job? <b>If so, notify Safety and FES at the activation.</b>
<b>x</b>		Will there be hot work done on this project? If there are, then a hot work permit must be posted on the job site. All hot work must have a fire watch assigned to each area while the hot work is being performed.
		Will there be a Confined Space Entry required on this project? If so, the Medical Center's confined space entry program must be followed.
<b>Utility Failures</b>		
Yes	No	<b>Will any of the following systems be out of service at any time during the project?</b>
		• Fire alarm <b>(If out for more than 4 hours, Interim Life Safety Measures must be implemented.)</b>
		• Sprinkler <b>(If out for more than 4 hours, Interim Life Safety Measures must be implemented.)</b>
<b>x</b>		• Electrical
<b>x</b>		• Domestic water

		<ul style="list-style-type: none"> <li>• Oxygen</li> </ul>
x		<ul style="list-style-type: none"> <li>• Sewage</li> </ul>
		<ul style="list-style-type: none"> <li>• H V A C</li> </ul>

Yes	No	
		<p><b>Will there be any work that will require activation of the Interim Life Safety Measures during this project? Some things that trigger ILSM's to be implemented are but not limited to:</b></p> <ul style="list-style-type: none"> <li>Any construction that impacts an EXIT or stairs,</li> <li>Any construction that impacts major breaches in a fire or smoke wall, (<b>penetration permit required</b>)</li> <li>Taking the main fire protection system out of service (sprinkler),</li> <li>Taking the main fire alarm system out of service,</li> <li>Taking the "area" fire or fire alarm systems out of service for more than 4 hours within a 24-hour period.</li> </ul>
		<b>Implementation of the ILSM requires a fire watch and the ILSM forms to be completed (forms are to be obtained from the</b>
		Medical Center Fire Department
<b>Additional Safety Concerns</b>		
Yes	No	
		Will construction affect exit routes from occupied areas adjacent to construction site?
		Will project affect traffic patterns in area? <i>If yes, explain plan.</i>
		<b>The following must be completed prior to any construction activities.</b>
		<ul style="list-style-type: none"> <li>Separation wall must be constructed prior to project beginning.</li> <li>Fire protection systems must remain intact.</li> <li>Provide extra fire extinguishers in work areas.</li> <li>Maintain exit lights in work area.</li> <li>Maintain negative air in construction area (24/7) through duration of project.</li> <li>There cannot be any return air from within the construction area to the rest of the building.</li> <li>Redirect exiting not to go through construction area.</li> <li>Put signs on doors into construction area "Construction Area – Do Not Enter".</li> <li>Maintain daily logs and keep a current Hot Work Permit.</li> <li>Place tacky mats at doors exiting construction area.</li> <li>All debris removal must be by covered cart.</li> <li>Maintain clean and orderly work area.</li> <li>How will this project affect the departments above, below and adjacent to this project?</li> </ul>
<b>Air Quality and Infection Control</b>		
The construction activity types are defined by the amount of dust that is generated, the duration of the activity, and the amount of shared HVAC systems. Contact CVAMC's Safety Office and Infection Preventionist if any activity is questionable under these guidelines.		
Yes	No	
		<p>Will dust be generated during this project?</p> <p><i>If yes, explain location of and plan for interim dust barriers or attach floor plan with barriers clearly marked.</i></p>
		Will debris removal be necessary? <i>If yes, explain plan for debris removal and control.</i>
		Negative airflow ventilation and filtration in place and assessed for effectiveness.
		Exhaust fans in place and functioning.
		Is supply duct to area closed and HEPA filtration unit in place and functioning in adjacent patient care area?
		Will work be done in a sterile area? <i>If so, how are you going to maintain sterile atmosphere in work area and access to and from work area?</i>
<b>Type A Inspections and Non-Invasive Activities or Small scale, Short duration Activities</b>		
Yes	No	
		Removal of ceiling tiles for visual inspection (limited to <25% of total area)
		Painting (limited sanding to <10% of area)
		Wall covering—Describe work to be done:
		Electrical trim work. Describe:
		Minor plumbing. Describe:
<b>Type B Small scale, short duration activities that create minimal dust.</b>		
Yes	No	
		Installation of telephone and computer cabling
		Access to chase spaces
		Sanding of walls for painting or wall covering (minor repairs—not sanding for drywall finishing)

<b>Type C</b>		<b>Any work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies.</b>	
Yes	No		
<input checked="" type="checkbox"/>		Sanding of walls-(>50% of surface area)-drywall finishing	
<input checked="" type="checkbox"/>		Removal of <input checked="" type="checkbox"/> floor coverings <input type="checkbox"/> ceiling tile <input type="checkbox"/> casework (>50% of surface area) Describe:	
<input checked="" type="checkbox"/>		Cutting of walls or ceiling. Describe: Remove wall partially to	
		New wall construction	
<input checked="" type="checkbox"/>		Minor ductwork or electrical work above ceilings	
		Major cabling activities	
		Activity cannot be completed within a single work shift	
<b>Type D</b>		<b>Major demolition and construction projects.</b>	
Yes	No		
		Will require heavy demolition or removal of a complete ceiling system	
		New construction	
<b>GROUP 1 LOWEST</b>		<b>GROUP 2 MEDIUM</b>	<b>GROUP 3 HIGH</b>
1.) Office areas 2.) Hallways 3.) EMS		1) Ancillary Therapy areas 2) Respiratory Therapy 3) Outpatient Clinics 4) CBOC's 5) Mental Health Units	1) Pharmacy Areas 2) Radiology 3) Triage 4) Laboratories
			<b>GROUP 4 HIGHEST</b> 1) CLCs 2) SPD 3) Acute Care Units 4) Bone Marrow Transplant Unit 5) Operating Rooms 6) Chemotherapy areas (outpatient clinics/inpatient) 7) Areas/Units adjacent to BMTU 8) Palliative Care 9) ICU's

Contact the Infection Preventionist or Safety Office for risk assessment of any area not listed above.

<b>CONSTRUCTION ACTIVITY</b> (from previous page) <i>Check type of activity</i>		<b>INFECTION CONTROL RISK GROUP</b> (see above) <i>Check risk group</i>	
	TYPE A: Inspection, non-invasive activity		GROUP 1: Lowest Risk
	TYPE B: Small scale, short duration projects		GROUP 2: Medium Risk
	TYPE C: Activity generates moderate to high levels of dust, requiring >1 work shift for completion		GROUP 3: High Risk
	TYPE D: Major duration and construction activities Requiring consecutive work shifts		GROUP 4: Highest Risk

#### CLASSIFICATION OF REQUIRED PREVENTIVE MEASURES

CONSTRUCTION ACTIVITY- INFECTION CONTROL RISK GROUP 4,	TYP E "A"	TYPE "B"	TYP E "C"	TYP E "D"
Group 1	I	I	II	III/IV
Group 2	I	I	III	IV
Group 3	II	III	III/IV	IV
Group 4	III	III/IV	III/IV	IV

**An Infection Control—Safety Construction Permit is required for Class III or higher projects. Refer to shaded area on Construction Activity/Risk Group Matrix (above).**

CLASS I	1. Execute work by methods to minimize raising dust from construction operations.	2. Immediately replace any ceiling tile displaced for visual inspection.
CLASS II	1. Provide 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. Wipe surfaces with disinfectant.	6. Contain construction waste before and during transport in tightly covered containers. 7. Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area. 8. Place dust mat at entrance and exit of work area as needed. 9. Remove or isolate HVAC system in areas where work is being performed.

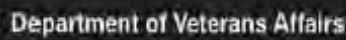


CLASS III	<ol style="list-style-type: none"> <li>1. Obtain infection control permit before construction begins.</li> <li>2. Isolate HVAC system in area where work is being done to prevent contamination of the duct system.</li> <li>3. Complete all critical barriers before construction begins.</li> <li>4. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.</li> <li>5. Contain construction waste before and during transport in tightly covered containers.</li> <li>6. Seal holes, pipes, conduits, etc. appropriately.</li> </ol>	<ol style="list-style-type: none"> <li>7. Place dust mat at entrance and exit of work area. Replace as needed.</li> <li>8. Do not remove barriers from work area until completed project is inspected by Safety and Epidemiology Depts. and thoroughly cleaned.</li> </ol> <p><b>After work is completed:</b></p> <ol style="list-style-type: none"> <li>9. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.</li> <li>10. Remove isolation of HVAC system.</li> </ol>
Class IV	<ol style="list-style-type: none"> <li>1. Obtain infection control permit before construction begins.</li> <li>2. Isolate HVAC system in area where work is being done to prevent contamination of duct system.</li> <li>3. Complete all critical barriers or implement control cube method before construction begins.</li> <li>4. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.</li> <li>5. Seal holes, pipes, conduits, and punctures appropriately.</li> <li>6. Construct anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or they can wear cloth or paper coveralls that are removed each time they leave the work site.</li> </ol>	<ol style="list-style-type: none"> <li>7. All personnel entering work site are required to wear shoe covers</li> <li>8. Contain construction waste before and during transport in tightly covered containers. Cover transport receptacles or carts. Tape covering.</li> <li>9. Do not remove barriers from work area until completed project is inspected by Safety and Epidemiology Depts. and thoroughly cleaned.</li> </ol> <p><b>After work is completed:</b></p> <ol style="list-style-type: none"> <li>10. Vacuum work area with HEPA filtered vacuums.</li> <li>11. Wet mop with disinfectant.</li> <li>12. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.</li> <li>13. Remove isolation of HVAC system.</li> </ol>
<p><b>Additional concerns for all classes:</b></p> <ol style="list-style-type: none"> <li>1. Maintain manpower and equipment including dust mops, wet mops, brooms, buckets, and clean wiping rags for cleaning fine dust from floors and adjacent occupied areas.</li> <li>2. Contain work areas outside of construction barriers, including spaces above ceilings, with full height polyethylene sheet barrier, tightly taped.</li> <li>3. Clean up dust tracked outside of construction area immediately.</li> <li>4. Temporary construction barriers and closures above ceiling must be dust tight.</li> <li>5. Removal of debris must be in covered containers.</li> </ol>		
<p><b>Additional Requirements or Concerns:</b></p>		
Date:	Date:	Date:

## Attachment B

(Note: Fill out for Class II, III, and IV at interval specified by Infection Prevention on A-1)

<b>Infection Prevention / Safety Program</b> <b>Periodic Construction Rounds Compliance Monitor</b>			
<b>Location:</b>	<b>Observed by:</b>	<b>Review Date:</b>	<b>Review Date:</b>
<b>1. Barriers</b>		<b>Review Time:</b>	<b>Review Time:</b>
a. Construction signs posted for the area		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Doors properly closed and sealed		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Floor area clean, no dust tracked		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>2. Air Handling</b>			
a. All windows closed behind barrier		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Negative air at barrier entrance (Types III & IV)		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. HVAC system adjusted/modified (Per Attachment. A-1)		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>3. Project Area</b>			
a. Debris removed in appropriate container		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Dust Control mats: Walk off mats clean & adequate to contain construction dust		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Routine cleaning of trash/waste/debris		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>4. Traffic Control</b>			
a. Restricted to necessary staff only with proper escort and construction workers		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. All doors and exits free of debris		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>5. Dress Code</b>			
a. Appropriate for the area		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
b. Required to enter		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. Required to leave		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments</b>			

[illegible]

Adobe LiveCycle Designer 7.0

**SECTION 01050**  
**PROJECT SCHEDULES**  
*(SMALL PROJECTS)*

**PART 1- GENERAL**

**1.1 DESCRIPTION:**

- A. The Contractor shall develop a Critical Path Method (CPM) plan and schedule demonstrating fulfillment of the contract requirements (Project Schedule), and shall keep the Project Schedule up-to-date in accordance with the requirements of this section and shall utilize the plan for scheduling, coordinating and monitoring work under this contract (including all activities of subcontractors, equipment vendors and suppliers). Conventional Critical Path Method (CPM) technique shall be utilized to satisfy both time and cost applications.

**1.2 CONTRACTOR'S REPRESENTATIVE:**

- A. The Contractor shall designate an authorized representative responsible for the Project Schedule including preparation, review and progress reporting with and to the Contracting Officer's Representative (COR).
- B. The Contractor's representative shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling the requirements of this specification section.

**1.3 COMPUTER PRODUCED SCHEDULES**

- A. The contractor shall provide to the Department of Veterans Affairs (VA), a computer-produced time/cost schedule.
- B. The contractor shall be responsible for the correctness and timeliness of the computer-produced reports. The Contractor shall also be responsible for the accurate and timely submittal of the project schedule and all CPM data necessary to produce the computer reports and payment request that is specified.
- C. The VA will report errors in computer-produced reports to the Contractor's representative within ten calendar days from receipt of reports. The Contractor shall reprocess the computer-produced reports and associated diskette(s), when requested by the Contracting Officer's representative, to correct errors which affect the payment and schedule for the project.

**1.4 THE COMPLETE PROJECT SCHEDULE SUBMITTAL**

- A. Within 15 calendar days after receipt of Notice to Proceed, the Contractor shall submit for the Contracting Officer's review; electronic pdf copy of the baseline schedule on sheets of paper 765 x 1070 mm (30 x 42 inches) and an electronic file in the previously approved CPM schedule program. The submittal shall also include a pdf copy of a

computer-produced activity/event ID schedule showing project duration; phase completion dates; and other data, including event cost. Each activity/event on the computer-produced schedule shall contain as a minimum, but not limited to, activity/event ID, activity/event description, duration, budget amount, early start date, early finish date, late start date, late finish date and total float. Work activity/event relationships shall be restricted to finish-to-start or start-to-start without lead or lag constraints. Activity/event date constraints, not required by the contract, will not be accepted unless submitted to and approved by the Contracting Officer. The contractor shall make a separate written detailed request to the Contracting Officer identifying these date constraints and secure the Contracting Officer's written approval before incorporating them into the network diagram. The Contracting Officer's separate approval of the Project Schedule shall not excuse the contractor of this requirement. Logic events (non-work) will be permitted where necessary to reflect proper logic among work events, but must have zero duration. The complete working schedule shall reflect the Contractor's approach to scheduling the complete project. **The final Project Schedule in its original form shall contain no contract changes or delays which may have been incurred during the final network diagram development period and shall reflect the entire contract duration as defined in the bid documents.** These changes/delays shall be entered at the first update after the final Project Schedule has been approved. The Contractor should provide their requests for time and supporting time extension analysis for contract time as a result of contract changes/delays, after this update, and in accordance with Article, ADJUSTMENT OF CONTRACT COMPLETION.

- D. The approved baseline schedule and the computer-produced schedule(s) generated there from shall constitute the approved baseline schedule until subsequently revised in accordance with the requirements of this section.
- E. The Complete Project Schedule shall contain logical work activities/events broken down by trade/discipline and by work task. The schedule should not contain less than 30 work activities/events.

#### **1.5 WORK ACTIVITY/EVENT COST DATA**

- A. The Contractor shall cost load all work activities/events except procurement activities. The cumulative amount of all cost loaded work activities/events (including alternates) shall equal the total contract price. Prorate overhead, profit and general conditions on all work activities/events for the entire project length. The contractor shall generate from this information cash flow curves indicating graphically

the total percentage of work activity/event dollar value scheduled to be in place on early finish, late finish. These cash flow curves will be used by the Contracting Officer to assist him in determining approval or disapproval of the cost loading. Negative work activity/event cost data will not be acceptable, except on VA issued contract changes.

- B. The Contractor shall cost load work activities/events for guarantee period services, test, balance and adjust various systems in accordance with the provisions in Article, FAR 52.232 - 5 (PAYMENT UNDER FIXED-PRICE CONSTRUCTION CONTRACTS) and VAAR 852.236 - 83 (PAYMENT UNDER FIXED-PRICE CONSTRUCTION CONTRACTS).
- C. In accordance with FAR 52.236 - 1 (PERFORMANCE OF WORK BY THE CONTRACTOR) and VAAR 852.236 - 72 (PERFORMANCE OF WORK BY THE CONTRACTOR), the Contractor shall submit, simultaneously with the cost per work activity/event of the construction schedule required by this Section, a responsibility code for all activities/events of the project for which the Contractor's forces will perform the work.
- D. The Contractor shall cost load work activities/events for all BID ITEMS. The sum of each BID ITEM work shall equal the value of the bid item in the Contractors' bid.

#### **1.6 PROJECT SCHEDULE REQUIREMENTS**

- A. Show on the project schedule the sequence of work activities/events required for complete performance of all items of work. The Contractor Shall:
  - 1. Show activities/events as:
    - a. Contractor's time required for submittal of shop drawings, templates, fabrication, delivery and similar pre-construction work.
    - b. COR's review and approval of shop drawings, equipment schedules, samples, template, or similar items.
    - c. Interruption of VA Facilities utilities, delivery of Government furnished equipment, and rough-in drawings, project phasing and any other specification requirements.
    - d. Test, balance and adjust various systems and pieces of equipment, maintenance and operation manuals, instructions and preventive maintenance tasks.
    - e. VA inspection and acceptance activity/event with a minimum duration of five work days at the end of each phase and immediately preceding any VA move activity/event required by the contract phasing for that phase.
  - 2. Show not only the activities/events for actual construction work for each trade category of the project, but also trade relationships to indicate the movement of trades from one area, floor, or building, to another area, floor, or building, for at least five trades who are

performing major work under this contract.

3. Break up the work into activities/events of a duration no longer than 10 work days each or one reporting period, except as to non-construction activities/events (i.e., procurement of materials, delivery of equipment, concrete and asphalt curing) and any other activities/events for which the COR may approve the showing of a longer duration. The duration for VA approval of any required submittal, shop drawing, or other submittals will not be less than 10 work days.
  4. Describe work activities/events clearly, so the work is readily identifiable for assessment of completion. Activities/events labeled "start," "continue," or "completion," are not specific and will not be allowed. Lead and lag time activities will not be acceptable.
  5. The schedule shall be generally numbered in such a way to reflect either discipline, phase or location of the work.
- B. The Contractor shall submit the following supporting data in addition to the project schedule:
1. The appropriate project calendar including working days and holidays.
  2. The planned number of shifts per day.
  3. The number of hours per shift.
- Failure of the Contractor to include this data shall delay the review of the submittal until the Contracting Officer is in receipt of the missing data.
- C. To the extent that the Project Schedule or any revised Project Schedule shows anything not jointly agreed upon, it shall not be deemed to have been approved by the COR. Failure to include any element of work required for the performance of this contract shall not excuse the Contractor from completing all work required within any applicable completion date of each phase regardless of the COR's approval of the Project Schedule.
- D. Compact Disk Requirements and CPM Activity/Event Record Specifications: Submit to the VA an electronic file(s) containing one file of the data required to produce a schedule, reflecting all the activities/events of the complete project schedule being submitted.

#### **1.7 PAYMENT TO THE CONTRACTOR:**

- A. Monthly, the contractor shall submit the AIA application and certificate for payment documents G702 & G703 reflecting updated schedule activities and cost data in accordance with the provisions of the following Article, PAYMENT AND PROGRESS REPORTING, as the basis upon which progress payments will be made pursuant to Article, FAR 52.232 - 5 (PAYMENT UNDER FIXED-PRICE CONSTRUCTION CONTRACTS) and VAAR 852.236 - 83 (PAYMENT UNDER FIXED-PRICE CONSTRUCTION CONTRACTS). The Contractor shall be entitled to a monthly progress payment upon approval of estimates as

determined from the currently approved updated project schedule. Monthly payment requests shall include: a listing of all agreed upon project schedule changes and associated data; and an electronic file (s) of the resulting monthly updated schedule.

- B. Approval of the Contractor's monthly Application for Payment shall be contingent, among other factors, on the submittal of a satisfactory monthly update of the project schedule.

#### **1.8 RESPONSIBILITY FOR COMPLETION**

- A. If it becomes apparent from the current progress schedule that phasing or contract completion dates will not be met, the Contractor shall execute some or all of the following remedial actions:
  - 1. Increase construction manpower in such quantities and crafts as necessary to eliminate the backlog of work.
  - 2. Increase the number of working hours per shift, shifts per working day, working days per week, the amount of construction equipment, or any combination of the foregoing to eliminate the backlog of work.
  - 3. Reschedule the work in conformance with the specification requirements.
- B. Prior to proceeding with any of the above actions, the Contractor shall notify and obtain approval from the COR for the proposed schedule changes. If such actions are approved, the representative schedule revisions shall be incorporated by the Contractor into the Project Schedule before the next update, at no additional cost to the Government.

#### **1.9 CHANGES TO THE SCHEDULE**

- A. Within 30 calendar days after VA acceptance and approval of any updated project schedule, the Contractor shall submit a revised electronic file (s) and a list of any activity/event changes including predecessors and successors for any of the following reasons:
  - 1. Delay in completion of any activity/event or group of activities/events, which may be involved with contract changes, strikes, unusual weather, and other delays will not relieve the Contractor from the requirements specified unless the conditions are



shown on the CPM as the direct cause for delaying the project beyond the acceptable limits.

2. Delays in submittals, or deliveries, or work stoppage are encountered which make rescheduling of the work necessary.
  3. The schedule does not represent the actual prosecution and progress of the project.
  4. When there is, or has been, a substantial revision to the activity/event costs regardless of the cause for these revisions.
- B. CPM revisions made under this paragraph which affect the previously approved computer-produced schedules for Government furnished equipment, vacating of areas by the VA Facility, contract phase(s) and sub phase(s), utilities furnished by the Government to the Contractor, or any other previously contracted item, shall be furnished in writing to the Contracting Officer for approval.
- C. Contracting Officer's approval for the revised project schedule and all relevant data is contingent upon compliance with all other paragraphs of this section and any other previous agreements by the Contracting Officer or the VA representative.
- D. The cost of revisions to the project schedule resulting from contract changes will be included in the proposal for changes in work as specified in FAR 52.243 - 4 (Changes) and VAAR 852.236 - 88 (Changes - Supplemental), and will be based on the complexity of the revision or contract change, man hours expended in analyzing the change, and the total cost of the change.
- E. The cost of revisions to the Project Schedule not resulting from contract changes is the responsibility of the Contractor.

#### **1.10 ADJUSTMENT OF CONTRACT COMPLETION**

- A. The contract completion time will be adjusted only for causes specified in this contract. Request for an extension of the contract completion date by the Contractor shall be supported with a justification, CPM data and supporting evidence as the COR may deem necessary for determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract. Submission of proof based on revised activity/event logic, durations (in work days) and costs is obligatory to any approvals. The schedule must clearly display that the Contractor has used, in full, all the float time available for the work involved in this request. The Contracting Officer's determination as to the total number of days of contract extension will be based upon the current computer-produced calendar-dated schedule for the time period in question and all other relevant information.

- B. Actual delays in activities/events which, according to the computer-produced calendar-dated schedule, do not affect the extended and predicted contract completion dates shown by the critical path in the network, will not be the basis for a change to the contract completion date. The Contracting Officer will within a reasonable time after receipt of such justification and supporting evidence, review the facts and advise the Contractor in writing of the Contracting Officer's decision.
- C. The Contractor shall submit each request for a change in the contract completion date to the Contracting Officer in accordance with the provisions specified under FAR 52.243 - 4 (Changes) and VAAR 852.236 - 88 (Changes - Supplemental). The Contractor shall include, as a part of each change order proposal, a sketch showing all CPM logic revisions, duration (in work days) changes, and cost changes, for work in question and its relationship to other activities on the approved network diagram.
- D. All delays due to non-work activities/events such as RFI's, WEATHER, STRIKES, and similar non-work activities/events shall be analyzed on a month by month basis.

- - - E N D - - -

**SECTION 01090**  
**REFERENCE STANDARDS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

This section specifies the availability and source of references and standards specified in the project manual under paragraphs APPLICABLE PUBLICATIONS and/or shown on the drawings.

**1.2 AVAILABILITY OF SPECIFICATIONS LISTED IN THE GSA INDEX OF FEDERAL SPECIFICATIONS, STANDARDS AND COMMERCIAL ITEM DESCRIPTIONS FPMR PART 101-29 (FAR 52.211-1) (AUG 1998)**

- A. The GSA Index of Federal Specifications, Standards and Commercial Item Descriptions, FPMR Part 101-29 and copies of specifications, standards, and commercial item descriptions cited in the solicitation may be obtained for a fee by submitting a request to - GSA Federal Supply Service, Specifications Section, Suite 8100, 470 East L'Enfant Plaza, SW, Washington, DC 20407, Telephone (202) 619-8925, Facsimile (202) 619-8978.
- B. If the General Services Administration, Department of Agriculture, or Department of Veterans Affairs issued this solicitation, a single copy of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained free of charge by submitting a request to the addressee in paragraph (a) of this provision. Additional copies will be issued for a fee.

**1.3 AVAILABILITY FOR EXAMINATION OF SPECIFICATIONS NOT LISTED IN THE GSA INDEX OF FEDERAL SPECIFICATIONS, STANDARDS AND COMMERCIAL ITEM DESCRIPTIONS (FAR 52.211-4) (JUN 1988)**

The specifications and standards cited in this solicitation can be examined at the following location:

DEPARTMENT OF VETERANS AFFAIRS  
Office of Facilities Management  
Facility Quality Service (181A)  
811 Vermont Avenue, NW - Room 462  
Washington, DC 20420  
Telephone Number: (202) 565-5214  
Between 9:00 AM - 3:00 PM

**1.4 AVAILABILITY OF SPECIFICATIONS NOT LISTED IN THE GSA INDEX OF FEDERAL SPECIFICATIONS, STANDARDS AND COMMERCIAL ITEM DESCRIPTIONS (FAR 52.211-3) (JUN 1988)**

The specifications cited in this solicitation may be obtained from the associations or organizations listed below.

AA Aluminum Association Inc.  
<http://www.aluminum.org>

AABC	Associated Air Balance Council <a href="http://www.aabchq.com">http://www.aabchq.com</a>
AAMA	American Architectural Manufacturer's Association <a href="http://www.aamanet.org">http://www.aamanet.org</a>
AAN	American Nursery and Landscape Association <a href="http://www.anla.org">http://www.anla.org</a>
AASHTO	American Association of State Highway and Transportation Officials <a href="http://www.aashto.org">http://www.aashto.org</a>
AATCC	American Association of Textile Chemists and Colorists <a href="http://www.aatcc.org">http://www.aatcc.org</a>
ACGIH	American Conference of Governmental Industrial Hygienists <a href="http://www.acgih.org">http://www.acgih.org</a>
ACI	American Concrete Institute <a href="http://www.aci-int.net">http://www.aci-int.net</a>
ACPA	American Concrete Pipe Association <a href="http://www.concrete-pipe.org">http://www.concrete-pipe.org</a>
ACPPA	American Concrete Pressure Pipe Association <a href="http://www.acppa.org">http://www.acppa.org</a>
ADC	Air Diffusion Council <a href="http://flexibleduct.org">http://flexibleduct.org</a>
AGA	American Gas Association <a href="http://www.aga.org">http://www.aga.org</a>
AGC	Associated General Contractors of America <a href="http://www.agc.org">http://www.agc.org</a>
AGMA	American Gear Manufacturers Association, Inc. <a href="http://www.agma.org">http://www.agma.org</a>
AHAM	Association of Home Appliance Manufacturers <a href="http://www.aham.org">http://www.aham.org</a>
AISC	American Institute of Steel Construction <a href="http://www.aisc.org">http://www.aisc.org</a>
AISI	American Iron and Steel Institute <a href="http://www.steel.org">http://www.steel.org</a>
AITC	American Institute of Timber Construction <a href="http://www.aitc-glulam.org">http://www.aitc-glulam.org</a>
AMCA	Air Movement and Control Association, Inc. <a href="http://www.amca.org">http://www.amca.org</a>
ANLA	American Nursery & Landscape Association <a href="http://www.anla.org">http://www.anla.org</a>
ANSI	American National Standards Institute, Inc. <a href="http://www.ansi.org">http://www.ansi.org</a>

APA	The Engineered Wood Association <a href="http://www.apawood.org">http://www.apawood.org</a>
ARI	Air-Conditioning and Refrigeration Institute <a href="http://www.ari.org">http://www.ari.org</a>
ASAE	American Society of Agricultural Engineers <a href="http://www.asae.org">http://www.asae.org</a>
ASCE	American Society of Civil Engineers <a href="http://www.asce.org">http://www.asce.org</a>
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers <a href="http://www.ashrae.org">http://www.ashrae.org</a>
ASME	American Society of Mechanical Engineers <a href="http://www.asme.org">http://www.asme.org</a>
ASSE	American Society of Sanitary Engineering <a href="http://www.asse-plumbing.org">http://www.asse-plumbing.org</a>
ASTM	American Society for Testing and Materials <a href="http://www.astm.org">http://www.astm.org</a>
AWI	Architectural Woodwork Institute <a href="http://www.awinet.org">http://www.awinet.org</a>
AWA	American Welding Society, Inc. <a href="http://www.amweld.org">http://www.amweld.org</a>
AWWA	American Water Works Association <a href="http://www.awwa.org">http://www.awwa.org</a>
BHMA	Builders Hardware Manufacturers Association <a href="http://www.buildershardware.com">http://www.buildershardware.com</a>
BIA	Brick Institute of America <a href="http://www.bia.org">http://www.bia.org</a>
CAGI	Compressed Air and Gas Institute <a href="http://www.cagi.org">http://www.cagi.org</a>
CGA	Compressed Gas Association, Inc. <a href="http://www.cganet.com">http://www.cganet.com</a>
CI	The Chlorine Institute, Inc. <a href="http://www.chlorineinstitute.org">http://www.chlorineinstitute.org</a>
CISCA	Ceilings and Interior Systems Construction Association <a href="http://www.cisca.org">http://www.cisca.org</a>
CISPI	Cast Iron Soil Pipe Institute <a href="http://www.cispi.org">http://www.cispi.org</a>
CLFMI	Chain Link Fence Manufacturers Institute <a href="http://www.chainlinkinfo.org">http://www.chainlinkinfo.org</a>
CPMB	Concrete Plant Manufacturers Bureau <a href="http://www.cpmc.org">http://www.cpmc.org</a>

CRA	California Redwood Association <a href="http://www.calredwood.org">http://www.calredwood.org</a>
CRSI	Concrete Reinforcing Steel Institute <a href="http://www.crsi.org">http://www.crsi.org</a>
CTI	Cooling Technology Institute <a href="http://www.cti.org">http://www.cti.org</a>
DHI	Door and Hardware Institute <a href="http://www.dhi.org">http://www.dhi.org</a>
EGSA	Electrical Generating Systems Association <a href="http://www.egsa.org">http://www.egsa.org</a>
EEI	Edison Electric Institute <a href="http://www.eei.org">http://www.eei.org</a>
EPA	Environmental Protection Agency <a href="http://www.epa.gov">http://www.epa.gov</a>
ETL	ETL Testing Laboratories, Inc. <a href="http://www.etl.com">http://www.etl.com</a>
FAA	Federal Aviation Administration <a href="http://www.faa.gov">http://www.faa.gov</a>
FCC	Federal Communications Commission <a href="http://www.fcc.gov">http://www.fcc.gov</a>
FPS	The Forest Products Society <a href="http://www.forestprod.org">http://www.forestprod.org</a>
GANA	Glass Association of North America <a href="http://www.cssinfo.com/info/gana.html/">http://www.cssinfo.com/info/gana.html/</a>
FM	Factory Mutual Insurance <a href="http://www.fmglobal.com">http://www.fmglobal.com</a>
GA	Gypsum Association <a href="http://www.gypsum.org">http://www.gypsum.org</a>
GSA	General Services Administration <a href="http://www.gsa.gov">http://www.gsa.gov</a>
HI	Hydraulic Institute <a href="http://www.pumps.org">http://www.pumps.org</a>
HPVA	Hardwood Plywood & Veneer Association <a href="http://www.hpva.org">http://www.hpva.org</a>
ICBO	International Conference of Building Officials <a href="http://www.icbo.org">http://www.icbo.org</a>
ICEA	Insulated Cable Engineers Association Inc. <a href="http://www.icea.net">http://www.icea.net</a>
\ICAC	Institute of Clean Air Companies <a href="http://www.icac.com">http://www.icac.com</a>

IEEE	Institute of Electrical and Electronics Engineers <a href="http://www.ieee.org/">http://www.ieee.org/</a>
IMSA	International Municipal Signal Association <a href="http://www.imsasafety.org">http://www.imsasafety.org</a>
IPCEA	Insulated Power Cable Engineers Association
NBMA	Metal Buildings Manufacturers Association <a href="http://www.mbma.com">http://www.mbma.com</a>
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry Inc. <a href="http://www.mss-hq.com">http://www.mss-hq.com</a>
NAAMM	National Association of Architectural Metal Manufacturers <a href="http://www.naamm.org">http://www.naamm.org</a>
NAPHCC	Plumbing-Heating-Cooling Contractors Association <a href="http://www.phccweb.org.org">http://www.phccweb.org.org</a>
NBS	National Bureau of Standards See - NIST
NBBPVI	National Board of Boiler and Pressure Vessel Inspectors <a href="http://www.nationboard.org">http://www.nationboard.org</a>
NEC	National Electric Code See - NFPA National Fire Protection Association
NEMA	National Electrical Manufacturers Association <a href="http://www.nema.org">http://www.nema.org</a>
NFPA	National Fire Protection Association <a href="http://www.nfpa.org">http://www.nfpa.org</a>
NHLA	National Hardwood Lumber Association <a href="http://www.natlhardwood.org">http://www.natlhardwood.org</a>
NIH	National Institute of Health <a href="http://www.nih.gov">http://www.nih.gov</a>
NIST	National Institute of Standards and Technology <a href="http://www.nist.gov">http://www.nist.gov</a>
NLMA	Northeastern Lumber Manufacturers Association, Inc. <a href="http://www.nelma.org">http://www.nelma.org</a>
NPA	National Particleboard Association 18928 Premiere Court Gaithersburg, MD 20879 (301) 670-0604
NSF	National Sanitation Foundation <a href="http://www.nsf.org">http://www.nsf.org</a>
NWWDA	Window and Door Manufacturers Association <a href="http://www.nwwda.org">http://www.nwwda.org</a>

OSHA	Occupational Safety and Health Administration Department of Labor <a href="http://www.osha.gov">http://www.osha.gov</a>
PCA	Portland Cement Association <a href="http://www.portcement.org">http://www.portcement.org</a>
PCI	Precast Prestressed Concrete Institute <a href="http://www.pci.org">http://www.pci.org</a>
PPI	The Plastic Pipe Institute <a href="http://www.plasticpipe.org">http://www.plasticpipe.org</a>
PEI	Porcelain Enamel Institute, Inc. <a href="http://www.porcelainenamel.com">http://www.porcelainenamel.com</a>
PTI	Post-Tensioning Institute <a href="http://www.post-tensioning.org">http://www.post-tensioning.org</a>
RFCI	The Resilient Floor Covering Institute <a href="http://www.rfci.com">http://www.rfci.com</a>
RIS	Redwood Inspection Service See - CRA
RMA	Rubber Manufacturers Association, Inc. <a href="http://www.rma.org">http://www.rma.org</a>
SCMA	Southern Cypress Manufacturers Association <a href="http://www.cypressinfo.org">http://www.cypressinfo.org</a>
SDI	Steel Door Institute <a href="http://www.steeldoor.org">http://www.steeldoor.org</a>
IGMA	Insulating Glass Manufacturers Alliance <a href="http://www.igmaonline.org">http://www.igmaonline.org</a>
SJI	Steel Joist Institute <a href="http://www.steeljoist.org">http://www.steeljoist.org</a>
SMACNA	Sheet Metal and Air-Conditioning Contractors National Association, Inc. <a href="http://www.smacna.org">http://www.smacna.org</a>
SSPC	The Society for Protective Coatings <a href="http://www.sspc.org">http://www.sspc.org</a>
STI	Steel Tank Institute <a href="http://www.steeltank.com">http://www.steeltank.com</a>
SWI	Steel Window Institute <a href="http://www.steelwindows.com">http://www.steelwindows.com</a>
TCA	Tile Council of America, Inc. <a href="http://www.tileusa.com">http://www.tileusa.com</a>
TEMA	Tubular Exchange Manufacturers Association <a href="http://www.tema.org">http://www.tema.org</a>



TPI        Truss Plate Institute, Inc.  
          583 D'Onofrio Drive; Suite 200  
          Madison, WI 53719  
          (608) 833-5900

UBC        The Uniform Building Code  
          See ICBO

UL         Underwriters' Laboratories Incorporated  
          <http://www.ul.com>

ULC        Underwriters' Laboratories of Canada  
          <http://www.ulc.ca>

WCLIB      West Coast Lumber Inspection Bureau  
          6980 SW Varns Road, P.O. Box 23145  
          Portland, OR 97223  
          (503) 639-0651

WRCLA      Western Red Cedar Lumber Association  
          P.O. Box 120786  
          New Brighton, MN 55112  
          (612) 633-4334

WWPA      Western Wood Products Association  
          <http://www.wwpa.org>

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**SECTION 01340**  
**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), in GENERAL CONDITIONS.
- 1-2. For the purposes of this contract, samples, 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.
  - D. Submittals for individual systems and equipment assemblies which consist of more than one item or component shall be made for the system or assembly as a whole. Partial submittals will not be considered for approval.
    1. Mark the submittals, "SUBMITTED UNDER SECTION\_", contract number, project number, project title, facility name and address.
    2. Submittals shall be marked to show specification reference including the section and paragraph numbers.
    3. Submit each section separately.
  - E. The submittals shall include the following:

1. Information that confirms compliance with contract requirements highlighted or otherwise indicated clearly. Include the manufacturer's name, pertaining model or catalog numbers, catalog information, technical data sheets, shop drawings, manuals, pictures, nameplate data, and test reports as required.
- 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 therefor 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) of the GENERAL CONDITIONS.
- 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 electronically. Samples should be hand delivered to COR. COR assumes no

responsibility for checking quantities or exact numbers included in such submittals.

1-10. Submittals must be submitted to, reviewed and approved by the COR prior to the contractor beginning demolition or construction.

1-11. Flooring Submittal shall include mock up. See Specification Section 099700- Resinous Epoxy Coatings for Floors and Walls.

A. Submittals will receive consideration only when covered by a transmittal letter signed by Contractor. Letter shall be sent electronically and shall contain the list of items, name of Medical Center, name of Contractor, project 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.

B. In addition to complying with the applicable requirements specified in preceding Article 1.9, samples which are required to have Laboratory Tests (those preceded by symbol "LT" under the separate sections of the specification shall be tested, at the expense of Contractor, in a commercial laboratory approved by Contracting Officer.

1. Laboratory shall furnish Contracting Officer with a certificate stating that it is fully equipped and qualified to

perform intended work, is fully acquainted with specification requirements and intended use of materials and is an independent establishment in no way connected with organization of Contractor or with manufacturer or supplier of materials to be tested.

2. Certificates shall also set forth a list of comparable projects upon which laboratory has performed similar functions during past five years.

3. Samples and laboratory tests shall be sent directly to approved commercial testing laboratory.

4. Contractor shall send a copy of transmittal letter to both COR simultaneously with submission of material to a commercial testing laboratory.

5. Laboratory test reports shall be sent directly to COR for appropriate action.

6. Laboratory reports shall list contract specification test requirements and a comparative list of the laboratory test results. When tests show that the material meets specification requirements, the laboratory shall so certify on test report.

7. Laboratory test reports shall also include a recommendation for approval or disapproval of tested item.

C. 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.

D. 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.

E. 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 shop drawings, test reports, certificates and manufacturers' literature and data, shall be submitted for approval electronically to COR.

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**SECTION 01582**  
**TEMPORARY INTERIOR SIGNAGE**

**PART 1 GENERAL**

**DESCRIPTION**

This section specifies temporary interior signs.

**PART 2 PRODUCTS**

**2.1 TEMPORARY SIGNS**

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

**PART 3 EXECUTION**

**3.1 INSTALLATION**

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

**3.2 LOCATION**

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

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**SECTION 01741**  
**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:
  - 6. Metal products (eg, steel, wire, beverage containers, copper, etc).
  - 7. Cardboard, paper and packaging.
  - 9. Plastics (eg, ABS, PVC).
  - 13. Paint.

**1.2 RELATED WORK**

- A. Section 02050, DEMOLITION.
- B. Section 01010, 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 recycle construction and demolition waste 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.cwm.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 01340, SHOP DRAWINGS, PRODUCT DATA, and SAMPLES, furnish the following:
- B. Prepare and submit to the COR 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.
- C. Designated Manager responsible for instructing personnel, supervising, documenting and administer over meetings relevant to the Waste Management Plan.
- D. 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**

- A. 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.
- B. 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, 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.

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**SECTION 02050**  
**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. Safety Requirements: Section 01010, GENERAL REQUIREMENTS.
- B. Disconnecting utility services prior to demolition: Section 01010, GENERAL REQUIREMENTS.
- C. Reserved items that are to remain the property of the Government: Section 01010, GENERAL REQUIREMENTS.
- D. Infectious Control: Section 01010, GENERAL REQUIREMENTS, Attachment, INFECTION CONTROL POLICY and INFECTION CONTROL PERMIT.

**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. Comply with requirements of Section GENERAL CONDITIONS.
- B. Provide safeguards, including warning signs, barricades, temporary fences, and other similar items that are required for protection of all personnel during demolition and removal operations. Comply with requirements of Section 01010, 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.
- 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. 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.
  3. 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; 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 01010, GENERAL REQUIREMENTS, Attachment, INFECTION CONTROL POLICY and INFECTION CONTROL PERMIT.

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

- A. Demolish and remove inside utility service lines shown to be removed.
- B. Remove abandoned inside 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. Completely demolish and remove buildings and structures, including all appurtenances related or connected thereto, as noted below:
  1. As required for installation of new utility service lines.
- B. 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 to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas specified by the COR.



C. Remove and legally dispose of all materials 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 shall be included as part of the lump sum compensation for the work of this section. 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 COR. Clean-up shall include off the Medical Center 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.

### **3.3 SALVAGE**

- A. Removed and Salvaged Items: Do not store or sell items of salvageable value on site.
1. Clean salvaged items of dirt and demolition debris.
  2. Pack or crate items after cleaning. Identify contents of containers.
  3. Store items in a secure area until delivery to Owner.
  4. Transport items to Owner's storage area off-site.
  5. Protect items from damage during transport and storage.

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**SECTION 03 54 20**

**CEMENT-BASED SELF-LEVELING AND SLOPED UNDERLAYMENT**

**PART 1 - GENERAL**

**1.1 DESCRIPTION:**

This section specifies cement-based, polymer-modified, self-leveling, and sloped underlayment over existing concrete floors to an average thickness of one-quarter inch for interior finish flooring.

**1.2 RELATED WORK:**

- A. Materials testing and inspection during construction: Section 01 45 29, TESTING LABORATORY SERVICES.
- B. Resinous Epoxy Coatings for Floors and Walls: Section 09 97 00

**1.3 TOLERANCES:**

- A. ACI 117.
- B. Slab Finishes: ACI 117, F-number method in accordance with ASTM E1155.

**1.4 SUBMITTALS:**

- A. Submit in accordance with Section 013400, SAMPLES AND SHOP DRAWINGS.
- B. Product Data: Provide physical characteristics, product limitations, and related data.
- C. Shop Drawings: Plans indicating substrates, locations, and average depths of underlayment based on survey of substrate conditions.

**1.5 ENVIRONMENTAL REQUIREMENTS:**

- A. Do not install underlayment until floor penetrations and peripheral work are complete.
- B. Maintain minimum ambient temperatures of 50 degrees F 24 hours before, during, and 72 hours after installation of underlayment.
- C. During cure process, ventilate room spaces to remove moisture.

**PART 2 - PRODUCTS**

**2.1 MATERIALS:**

- A. Underlayment: Cementitious-based, pre-mixed, factory-packaged, self-leveling product that can be applied in minimum uniform thicknesses of 1/8 inch (3 mm) and that can be feathered at edges to match adjacent floor elevations.
- B. Water: Potable and not detrimental to underlayment mix materials.
- C. Primer: Manufacturer's recommended type.
- D. Sealer: Manufacturer's recommended type.
- E. Joint and Crack Filler: Latex based.
- F. Sand: Silica aggregate meeting system manufacturer's requirements.

G. Additives: None permitted.

## **2.2 MIXES:**

A. Add water to material according to manufacturer's instructions.

B. Mix to achieve following characteristics:

1. Compressive Strength: 1-day - 2,800 psi, 7 days - 4,000 psi, 28 days - 4,800 psi minimum according to ASTM C109.
2. Flexural Strength: 1-day - 500 psi, 28 days - 1,000 psi minimum according to ASTM C348.
3. Pullout Strength: 7 days - 360 psi, 28 days - 440 psi minimum according to CAN/CSA - A232-6B.
4. Abrasion Resistance: 28 days 0.50 grams of loss maximum according to ASTM D4060/Taber H22-500 9,200 cycles.
5. Fire Hazard Classification: Flame/Smoke rating of 0/0 according to ASTM E286.

C. Mix to self-leveling consistency.

D. Mix to maintain slope consistency where slope is required.

E. All components shall come in the mix (i.e. no additives, except water).

## **PART 3 - EXECUTION**

### **3.1 INSPECTION:**

A. Verify material is compatible with finish flooring.

B. Verify substrate surface is ready to receive work of this Section.

C. Utilizing a qualified independent agency, perform anhydrous calcium chloride test, ASTM F 1869. Verify concrete substrates are dry to a maximum moisture content of 3 lb of water/1000 sq. ft. in 24 hours or more stringent as required by underlayment manufacturer.

1. Remove sealers and curing compounds before testing.
2. Maintain the same temperature and humidity conditions as the underlayment will be exposed to for 48 hours before and during testing.
3. Measure at locations uniformly distributed around the slab, with 3 tests for up to 1000 sf and an additional test for each 1000 sf of floor.

D. Apply corrective measures as necessary to bring substrate to within moisture, pH and other tolerances as recommended by flooring manufacturer.

E. Beginning of installation means acceptance of existing substrate and site conditions.

### **3.2 PREPARATION:**

- A. Grind down or shot blast as required to remove humps, ridges, nubs, projections, irregularities beyond fill variance. Fill voids, deck joints and irregularities with filler. Finish smooth. Provide clean, dry, neutral-pH substrate for underlayment application.
  - 1. Treat nonmoving substrate cracks to prevent cracks from telegraphing (reflecting) through underlayment according to manufacturer's written recommendations.
- B. Vacuum clean substrate surfaces. Fill cracks and voids according to manufacturer's instructions.
- C. Mechanically remove laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair underlayment bond according to manufacturer's written instructions.

### **3.3 INSTALLATION:**

- A. Install underlayment according to manufacturer's instructions to indicated minimum and maximum thicknesses. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.
- B. Install before partition installation. Apply primer over prepared substrate at manufacturer's recommended spreading rate.
- C. Provide final feather finish or maximum of 1/8 inch edge with product recommended by Manufacturer to eliminate reflecting of surface through final floor material.

### **3.4 FLATNESS:**

- A. For elevated decks place, consolidate, strike off and level concrete to overall flatness value of  $F_F$  50 and minimum local value of  $F_F$  35 according to ASTM E1155.
- B. Provide test results certified by an independent laboratory indicating actual flatness values achieved within 24 hours after floor is finished. Provide results of testing within 72 hours of tests.
- C. Correct floor slabs failing flatness criteria by grinding, planing, skimming, re-topping, removal or replacement as required to bring flatness and levelness to within specified tolerances.

### **3.5 PROTECTION AND CURING:**

- A. Air cure according to manufacturer's instructions. Prevent contamination during application and curing processes.

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- B. Prohibit foot traffic from floor finish for 48 hours after installation. Prohibit heavy machine traffic from floor finish for 7 days after installation.
- C. Repair nicks, gouges, and other imperfections in flooring according to manufacturer's instructions.
- D. Do not install floor coverings over underlayment until after time period recommended in writing by underlayment manufacturer.

**3.6 FIELD QUALITY CONTROL:**

- A. Provide field quality control in areas scheduled to receive self leveling underlayment.
- B. Provide services of manufacturer's representative to direct initial installation of self leveling underlayment to ensure compliance with these Specifications.
- C. Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.
- D. Submit written report to COTR along with Close Out documents indicating compliance with this provision.
- E. Slump Test: Test underlayment system for slump as it's being pumped using a 2 inch by 4 inch cylinder resulting is a patty size of 9-1/2 inches plus or minus 1 inch diameter.
- F. Field Samples: Take at least one set of 3 molded cube samples from each day's pour during underlayment application. Test according to ASTM C109. Provide COTR with copy of test results.

**3.7 CLEANING:**

- A. Remove excess material from floor, base and wall surfaces.
- B. Follow cleaning and maintenance procedures indicated in manufacturer's specifications.

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