

SECTION 01 00 00
GENERAL REQUIREMENTS

1.1 GENERAL INTENTION

- A. Contractor shall completely prepare site for building operations, including demolition and removal of existing structures, and furnish labor and materials and perform work for Renovate Research Lab Phase 3 including minor demolition, gypsum board and metal stud partitions, wood and metal casework, and associated mechanical and electrical work as required by Drawings and Specifications.
- B. Visits to the site by Bidders may be made only by appointment with the Contracting Officer.
- C. Offices of Hart Freeland Roberts, Inc., Brentwood, Tennessee, as Architect-Engineers, will render certain technical services during construction. Such services shall be considered as advisory to the Government and shall not be construed as expressing or implying a contractual act of the Government without affirmations by Contracting Officer or his duly authorized representative.
- D. Before placement and installation of work subject to tests by testing laboratory retained by Department of Veterans Affairs, the Contractor shall notify the Resident Engineer 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 Resident Engineer.
- E. 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.
- F. Prior to commencing work, general Contractor shall provide proof that an OSHA certified "competent person" (CP) (29 CFR 1926.20(b) (2) will maintain a presence at the Work site whenever the general or subContractors are present.
- G. Training:
 - 1. All employees of general Contractor or subContractors shall have the 10-hour OSHA certified Construction Safety course and /or other relevant competency training, as determined by VA CP with input from the ICRA team.

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2. Submit training records of all such employees for approval before the start of work.
- H. Submit mechanical submittals at Notice to Proceed to order long lead items. Refer to Drawings for phasing. HVAC systems shall be fully functional at completion of each phase.
- I. Manifestly Necessary Requirement: Omissions from the Drawings or Specifications or the misdescription 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 misdescribed details of the work, but shall be performed as if fully and correctly set forth and described in the Drawings and Specifications.
- J. Radiation Survey clearance will be completed by VA via separate contract action. General Contractor's Notice to Proceed will be delayed until VA completes its radiation survey and remediation.
- K. Keep 5th floor Men's and Women's Rest Rooms and Lobby in operation and accessible by building occupants until final 45 days of Contract.

1.2 STATEMENT OF BID ITEM(S)

BID ITEM 1: GENERAL CONSTRUCTION: Provide all labor, material, equipment, and supervision necessary to complete all work for the "Renovate Research Lab Phase 3" project #626-11-101 at the Tennessee Valley Healthcare System, VAMC, 1310 24th Avenue South, Nashville, TN 37212. Work includes, but is not limited to: 1) Demolition of existing 3rd floor interior walls, doors and other architectural items, exterior glass and spandrel panel units, utility systems, and mechanical systems, plus miscellaneous demolition as required for new work; and 2) provide new interior walls, finishes, doors, frames, hardware, laboratory casework, ceiling service panels (including associated connectors and devices), fume hoods, exterior glazing units including seals, automatic window shades, cold room, exam lights, snorkel exhaust units, accessories, corner guards, access controls and related plumbing, sprinkler, mechanical, fire alarm, and electrical, items not labeled V.V. (V.A. Furnished, V.A. Installed) and other items required to complete the Work on the project.

BID ITEM 2: Same as Bid Item 1, but also accept Deductive Alternate 1.

DEDUCTIVE ALTERNATE 1:

Delete free-standing tables (see 1-A01.00-357 OVERALL THIRD FLOOR PLAN)

Delete 3rd floor Elevator Lobby wall panels. Substitute with painted gyp. bd. walls. Delete 3rd floor Elevator lobby wall panels. Substitute with painted gyp. bd.

Delete all sheet rubber flooring. Replace with VCT. Sheet rubber flooring in Tissue Cultures, Animal Procedure & Vest., and Fume Hood (Radioactive) to be replaced with sheet vinyl with heat welded seams and integral cove base.

Delete Common Microscope Room tables and dividers

Delete Restroom Renovations. Substitute with existing to remain plumbing fixtures, light fixtures and finishes. Patch ceiling and repaint all walls.

BID ITEM 3: Same as Bid Item 2, but also accept Deductive Alternate 2.

DEDUCTIVE ALTERNATE 2: Deduct HVAC Reheat piping riser and headers; deduct domestic water steam heat exchangers and booster pumps and hot water recirculation pump.

BID ITEM 4: Same as Bid Item 3, but also accept Deductive Alternate 3.

DEDUCTIVE ALTERNATE 3: Deduct Fire Pump, jockey pump, fire pump controller and jockey pump controller. Deduct replacement of RO/DI Water vertical riser and RO equipment. Deduct exhaust heat recovery systems HX-1, HX-2 and associated exhaust/makeup air (ventilation) ductwork and related DDC controls. Abandon return fan RF-31 in place and cap the remaining return air ductwork associated with RF-31 in the basement. Abandon return fan RF-30 in place and cap the remaining return air ductwork associated with RF-30 in the north penthouse.

BID ITEM 5: Same as Bid Item 4, but also accept Deductive Alternate 4.

DEDUCTIVE ALTERNATE 4: Deduct modular lab tables and mobile base cabinets per drawing sheet 1-A01.00-357 - OVERALL THIRD FLOOR PLAN. Provide ceiling service panels and associated panel devices.

1.3 SPECIFICATIONS AND DRAWINGS FOR CONTRACTOR

A. The Contractor shall reproduce Specifications and Drawings provided on 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 3 days' notice to the Contracting Officer so that security arrangements can be provided for the employees. This notice is separate from any notices required for utility shutdown described later in this section.
3. No photography of VA premises is allowed without written permission of the Contracting Officer.
4. VA reserves the right to close down or shut down the project site and order General Contractor's employees off the premises in the event of a national emergency. The General Contractor may return to the site only with the written approval of the Contracting Officer.

C. Not used.

D. Key Control:

1. The General Contractor shall provide duplicate keys and lock combinations to the Resident Engineer for the purpose of security inspections of every area of project including tool boxes and parked machines and take any emergency action.
2. The General Contractor shall turn over all permanent lock cylinders to the VA locksmith for permanent installation. See Section 08 71 00, DOOR HARDWARE and coordinate.

E. Document Control:

1. Before starting any work, the General Contractor/Sub Contractors shall submit an electronic security memorandum describing the approach to following goals and maintaining confidentiality of "sensitive information".
2. The General Contractor is responsible for safekeeping of all Drawings, Project Manual and other project information. This information shall be shared only with those with a specific need to accomplish the project.
4. 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.

5. These security documents shall not be removed or transmitted from the project site without the written approval of Contracting Officer.
6. All paper waste or electronic media such as CD's and diskettes shall be shredded and destroyed in a manner acceptable to the VA.
7. Notify Contracting Officer and Site Security Officer immediately when there is a loss or compromise of "sensitive information."
8. All electronic information shall be stored in specified location following VA standards and procedures using an Engineering Document Management Software (EDMS).
 - a. Security, access and maintenance of all project Drawings, both scanned and electronic shall be performed and tracked through the EDMS system.
 - b. "Sensitive information" including Drawings and other documents may be attached to e-mail provided all VA encryption procedures are followed.

F. Motor Vehicle Restrictions

1. Vehicle authorization request shall be required for any vehicle entering the site and such request shall be submitted 24 hours before the date and time of access. Access shall be restricted to picking up and dropping off materials and supplies.
2. 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 Contracting Officer Technical Representative (COTR).

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):
E84-2008.....Surface Burning Characteristics of Building Materials
 2. National Fire Protection Association (NFPA):
10-2006.....Standard for Portable Fire Extinguishers
30-2007.....Flammable and Combustible Liquids Code
51B-2003.....Standard for Fire Prevention During Welding, Cutting and Other Hot Work
70-2011.....National Electrical Code
241-2004.....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 Resident 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's or subContractors' beginning work, they shall undergo a safety briefing provided by the general Contractor's competent person per OSHA requirements. This briefing shall include information on the construction limits, VAMC safety guidelines, means of egress, break areas, work hours, locations of restrooms, use of VAMC equipment, etc. Documentation shall be provided to the Resident Engineer that individuals have undergone Contractor's safety briefing.
- C. Site and Building Access: Maintain free and unobstructed access to facility emergency services and for fire, police and other emergency response forces in accordance with NFPA 241.
- D. Separate temporary facilities, such as trailers, storage sheds, and dumpsters, from existing buildings and new construction by distances in

accordance with NFPA 241. For small facilities with less than 6 m (20 feet) exposing overall length, separate by 3m (10 feet). Temporary structures, including trailers that are used for storage or offices, shall be a minimum of 9.144 M (30 feet) from any VA occupied building. Location of temporary structures shall be approved by the Resident Engineer.

E. Temporary Construction Partitions:

1. Provide and maintain temporary construction partitions to provide smoke-tight separations between construction areas and adjoining areas. Construct partitions of gypsum board or treated plywood (flame spread rating of 25 or less in accordance with ASTM E84) on both sides of fire retardant treated wood or metal steel studs. Extend the partitions through suspended ceilings to floor slab deck or roof. Seal joints and penetrations. At door openings, provide Class C, $\frac{3}{4}$ hour fire/smoke rated doors with self-closing devices.
2. Provide one-hour fire-rated temporary construction partitions as shown on Drawings to maintain integrity of existing exit stair enclosures, exit passageways, fire-rated enclosures of hazardous areas, horizontal exits, smoke barriers, vertical shafts and openings enclosures.
3. Close openings in smoke barriers and fire-rated construction to maintain fire ratings. Seal penetrations with listed through-penetration firestop materials in accordance with Section 07 84 00, FIRESTOPPING.

F. Temporary Heating and Electrical: Provide, use and maintain installations in accordance with 29 CFR 1926, NFPA 241 and NFPA 70.

G. Means of Egress: Do not block exiting for occupied buildings, including paths from exits to roads. Minimize disruptions and coordinate with Resident Engineer and Facility Safety Manager.

H. Egress Routes for Construction Workers: Maintain free and unobstructed egress. Inspect daily. Report findings and corrective actions weekly to Resident Engineer and Facility Safety Manager.

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

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

- K. Sprinklers: Provide, test and activate new automatic sprinklers prior to removing existing sprinklers.
- L. 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 Resident Engineer 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 Resident Engineer.
- M. Smoke Detectors: Prevent accidental operation. Remove temporary covers at end of work operations each day. Coordinate with Resident Engineer and Facility Safety Manager.
- N. Hot Work: Perform and safeguard hot work operations in accordance with NFPA 241 and NFPA 51B. Coordinate with Resident Engineer. Obtain permits from facility Safety Manager at least 72 hours in advance. Designate Contractor's responsible project-site fire prevention program manager to permit hot work.
- O. Fire Hazard Prevention and Safety Inspections: Inspect entire construction areas weekly. Coordinate with, and report findings and corrective actions weekly to Resident Engineer and facility Safety Manager.
- P. 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.
- Q. Dispose of waste and debris in accordance with NFPA 241. Remove from buildings daily.
- R. Perform other construction, alteration and demolition operations in accordance with 29 CFR 1926.
- S. If required, submit documentation to the Resident Engineer that personnel have been trained in the fire safety aspects of working in areas with impaired structural or compartmentalization features.

PERMIT

FOR CUTTING AND WELDING WITH PORTABLE GAS OR ARC EQUIPMENT

VA Project No.:

Name of Contractor's Firm:

Date:

Building/Location:

Work to be done:

Any special precautions:

Fire Watch Required: _____ yes _____ no.

The location where the Work is to be performed has been examined,
necessary precautions have been taken, and permission is granted for
this work.

Signed:

(Contractor or individual responsible for authorizing hot work)

Permit expires: _____ (Date)

Time hot work started: _____ Time hot work completed _____

FINAL CHECK-UP

Work area and all adjacent areas to which sparks and heat might have
spread (including floors above and below and on opposite sides of
walls) were inspected 30 minutes after the Work was completed and were
found fire safe.

Signed:

(Contractor's Fire Watch)

ATTENTION

Before approving any cutting and welding permit, Contractor's authorized
representative or their appointee shall inspect the Work area and

confirm that precautions have been taken to prevent fire in accordance with NFPA Standard No. 51B.

PRECAUTIONS

- Sprinklers are in service where installed.
- Cutting and welding equipment in good repair.
- Within 35 feet: Floors swept clean of combustible, no combustible material or flammable liquids, all wall and floor openings covered, and covers suspended beneath work to collect sparks.
- When working on enclosed equipment and in confined space, equipment and area is free of flammable vapors.
- Fire watch provided during and 30 minutes after operation (60 minutes for torch applied roofing operations).
- Portable fire extinguisher with adequate rating available in the immediate vicinity.
- Standpipe system in service where installed.
- Protection of any sprinkler heads when hot work is in close proximity.
- Smoking prohibited in immediate vicinity.
- Non-combustible shields provided when hot work is done near combustible walls, partitions, floors, roofs.
- Prohibition of hot work on pipes contacting combustible walls.
- Personnel trained in use of equipment including portable fire extinguishers and sounding a fire alarm.
- Final check-up conducted after 30 minutes.

1.6 OPERATIONS AND STORAGE AREAS

- A. The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.
- B. Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the Work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.
- C. The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the Work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.
- D. Working space and space available for storing materials shall be as determined by the Resident Engineer.
 - Contractors shall provide their own staging area fencing 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 COTR.
 - Smoking shall not be permitted in staging areas. Contractor shall post No Smoking signs in staging area.
 - 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 COTR.
- Contractor shall not lean material against the Medical Center exterior walls.
 - Contractor shall keep the staging area gates locked, except when moving material in/out of staging area.
 - Flammable material shall not be stored near Medical Center exterior walls.
 - 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 Resident Engineer 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: 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, 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 Resident Engineer.

1. No utility service such as water, gas, sewers or electricity, or fire protection systems and communications systems may be interrupted without prior approval of Resident Engineer. 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.
 2. Contractor shall submit a request to interrupt any such services to Resident Engineer, 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 shall be requested, in writing, at least 15 calendar days prior to the desired time and shall be performed as directed by the Resident Engineer.
 5. In case of a contract construction emergency, service will be interrupted on approval of Resident Engineer. 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, payment of such fee shall be the responsibility of the Government and not the Contractor.
- H. 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 shall be open to traffic at all times.
 2. Method and scheduling of required cutting, altering and removal of existing roads, walks and entrances shall be approved by the Resident Engineer.

- I. Coordinate the Work for this contract with other construction operations as directed by Resident Engineer. This includes the scheduling of traffic and the use of roadways, as specified in Article, USE OF ROADWAYS.
- J. 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.
- K. Job sites, mechanical room, electrical closets, etc. shall be secured. They will be keyed to government keying system. VA will provide keys for prime Contractor to distribute to supervisors, foremen, etc. Keys are a privilege that can be taken away.
- L. Abandoned Lines: All service lines such as wires, cables, conduits, ducts, pipes and the like, and their hangers or supports, which are to be abandoned and which are abandoned already shall be removed entirely. The lines shall not be capped in finished areas, but shall be removed to the limits of construction.

1.7 ALTERATIONS

- A. Survey: Before any work is started, the Contractor shall make a thorough survey with the Resident Engineer of areas of buildings in which alterations occur and areas which are anticipated routes of access, and furnish a report, signed by both, to the Contracting Officer. This report shall list by rooms and spaces:
 - 1. Existing condition and types of resilient flooring, doors, windows, walls and other surfaces not required to be altered throughout affected areas of 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 Resident Engineer.
- 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 Resident Engineer, 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.
- C. Resurvey: Thirty days before expected partial or final inspection date, the Contractor and Resident Engineer together shall make a thorough re-survey of the areas of buildings involved. They shall furnish a report on conditions then existing, of resilient flooring, doors, windows, walls and other surfaces as compared with conditions of same as noted in first condition survey report:
1. Re-survey report shall also list any damage caused by Contractor to such flooring and other surfaces, despite protection measures; and, will form basis for determining extent of repair work required of Contractor to restore damage caused by Contractor's workmen in executing work of this contract.
- D. Protection: Provide the following protective measures:
1. 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. Implement the requirements of VAMC's Infection Control Risk Assessment (ICRA) team. ICRA Group may monitor dust in the vicinity of the

construction work and require the Contractor to take corrective action immediately if the safe levels are exceeded.

- B. Establish and maintain a dust control program as part of the Contractor's infection preventive measures in accordance with the guidelines provided by ICRA Group 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 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 RE and VAMC Infection Control personnel shall review pressure differential monitoring documentation to verify that pressure differentials in the construction zone and in the patient-care rooms are appropriate for their settings. The requirement for negative air pressure in the construction zone shall depend on the location and type of activity. Upon notification, the Contractor shall implement corrective measures to restore proper pressure differentials as needed.
2. In case of any problem, the medical center, along with assistance from the Contractor, shall conduct an environmental assessment to find and eliminate the source.

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

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

that will remain jointly occupied by the medical Center and Contractor's workers, the Contractor shall:

- a. Provide dust proof one-hour fire-rated temporary drywall construction barriers to completely separate construction from the operational areas of the hospital in order to contain dirt debris and dust. Barriers shall be sealed and made presentable on hospital occupied side. Provide a self-closing rated door in a metal frame, commensurate with the partition, to allow worker access. Maintain negative air at all times. A fire retardant polystyrene, 6-mil thick or greater plastic barrier meeting local fire codes may be used where dust control is the only hazard, and an agreement is reached with the Resident Engineer and Medical Center.
- b. 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. Provide 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.
- c. 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.
- d. 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.
- e. The Contractor shall not haul debris through patient-care areas without prior approval of the Resident Engineer 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.

- f. 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.
- g. 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 shall be cleaned up and dried within 12 hours. Remove and dispose of porous materials that remain damp for more than 72 hours.
- 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 or 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 Resident Engineer.

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.
- C. Refer to Section 01 57 19, TEMPORARY ENVIRONMENTAL CONTROLS, for additional requirements on protecting vegetation, soils and the environment. Refer to Articles, "Alterations", "Restoration", and "Operations and Storage Areas" for additional instructions concerning repair of damage to structures and site improvements.
- D. 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:

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

1.11 RESTORATION

- A. Remove, cut, alter, replace, patch and repair existing work as necessary to provide new work. Except as otherwise shown or specified, do not cut, alter or remove any structural work, and do not disturb any ducts, plumbing, gas, or electric work without approval of the Resident Engineer. Existing work to be altered or extended and that is found to be defective in any way, shall be reported to the Resident Engineer 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. Where removal of partitions results in adjacent spaces becoming one, rework floors, walls and ceilings to a smooth plane without breaks, steps, or bulkheads. Where a change of plane of 1/4 inch or more occurs, make transition as recommended by flooring manufacturers. Trim existing doors as necessary to clear new floors. Refinish trim as needed for a complete installation.

- C. 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.
- D. 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.

1.12 PHYSICAL DATA

Not used.

1.13 PROFESSIONAL SURVEYING SERVICES

Not used.

1.14 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, templates, platforms, equipment, tools, materials, and labor required to lay out 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.
- B. 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 Contractor.

(FAR 52.236-17)

- C. Establish and plainly mark center lines for addition(s) to existing building, and such other lines and grades that are reasonably necessary to properly assure that location, orientation, and elevations established for the Work are in accordance with lines and elevations shown on contract Drawings.

- D. During progress of the Work, and particularly as work progresses from floor to floor, Contractor shall have line grades and plumbness of all major form work checked and certified by a qualified, competent individual as meeting requirements of contract Drawings. Furnish such certification to the Resident Engineer before any major items of concrete work are placed.

1.15 AS-BUILT DRAWINGS

- A. The Contractor shall maintain two full size sets of as-built Drawings which will be kept current during construction of the project, to include all contract changes, modifications and clarifications.
- B. All variations shall be shown in the same general detail as used in the contract Drawings. To insure compliance, as-built Drawings shall be made available for the Resident Engineer's review, as often as requested.
- C. Contractor shall deliver two approved completed sets of as-built Drawings to the Resident Engineer within 15 calendar days after each completed phase and after the acceptance of the project by the Resident Engineer.
- D. Paragraphs A, B, & C shall also apply to all shop drawings.

1.16 USE OF ROADWAYS

- A. For hauling, use only established public roads and roads on Medical Center property and, when authorized by the Resident Engineer, 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 shall be protected by well constructed bridges.

1.17 RESIDENT ENGINEER'S FIELD OFFICE

Not used.

1.18 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 shall be given by Resident Engineer. If the equipment is not installed and maintained in accordance with the following provisions, the Resident Engineer 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 shall be eliminated.
 4. Automatic temperature control systems for preheat coils shall function properly and all safety controls shall function to prevent coil freeze up damage.
 5. The air filtering system utilized shall be that which is designed for the system when complete, and all filter elements shall be replaced at completion of construction and prior to testing and balancing of system.
 6. All components of heat production and distribution system, metering equipment, condensate returns, and other auxiliary facilities used in temporary service shall be cleaned prior to use; maintained to prevent corrosion internally and externally during use; and cleaned, maintained and inspected prior to acceptance by the Government.
- 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.

1.19 TEMPORARY USE OF EXISTING ELEVATORS

- A. Use of existing elevator for handling building materials and Contractor's personnel will be permitted subject to following provisions:
1. Contractor makes all arrangements with the Resident Engineer for use of elevators. The Resident Engineer will ascertain that elevators are in proper condition. Contractor may use elevator as designated by COTR. Use only one elevator for all construction related activity (personnel, equipment and material). Contractors are responsible for

- cleaning and protecting elevator and lobby areas near construction elevator.
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.

1.20 TEMPORARY USE OF NEW ELEVATORS

Not applicable.

1.21 TEMPORARY TOILETS

- A. Provide where directed, (for use of all Contractor's workmen) ample temporary sanitary toilet accommodations with suitable sewer and water connections; or, when approved by Resident Engineer, provide suitable dry closets where directed. Keep such places clean and free from flies, and all connections and appliances connected therewith are to be removed prior to completion of contract, and premises left perfectly clean.
- B. 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.

1.22 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 provide 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 provide meters at Contractor's expense and furnish the Medical Center a monthly record of the Contractor's usage of electricity as hereinafter specified.
- D. Heat: Furnish temporary heat necessary to prevent injury to work and materials through dampness and cold. Use of open salamanders or any temporary heating devices which may be fire hazards or may smoke and damage finished work, will not be permitted. Maintain minimum temperatures as specified for various materials:
 - 1. Obtain heat by connecting to Medical Center heating distribution system.
- E. 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.
- F. 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 Resident Engineer's discretion) of use of water from Medical Center's system.

1.23 NEW TELEPHONE EQUIPMENT

The Contractor shall coordinate with the Work of installation of telephone equipment by others. This work shall be completed before the building is turned over to VA.

1.24 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 shall 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, 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, 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.

1.25 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 Resident Engineer 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 shall 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 Resident Engineer and shall be considered concluded only when the Resident Engineer 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 Resident Engineer, does not demonstrate sufficient qualifications in accordance with requirements for instructors above.

1.26 GOVERNMENT FURNISHED PROPERTY

- A. The Government shall deliver to the Contractor, the Government furnished property shown on the Drawings.
- B. Equipment furnished by Government to be installed by Contractor will be furnished to Contractor at the Medical Center.
- C. Storage space for equipment will be provided by the Government and the Contractor shall be prepared to unload and store such equipment therein upon its receipt at the Medical Center.
- D. Notify Contracting Officer in writing, 60 days in advance, of date on which Contractor will be prepared to receive equipment furnished by Government. Arrangements will then be made by the Government for delivery of equipment.
 - 1. Immediately upon delivery of equipment, Contractor shall arrange for a joint inspection thereof with a representative of the Government. At such time the Contractor shall acknowledge receipt of equipment described, make notations, and immediately furnish the Government representative with a written statement as to its condition or shortages.
 - 2. Contractor thereafter is responsible for such equipment until such time as acceptance of contract work is made by the Government.
- E. Equipment furnished by the Government will be delivered in a partially assembled (knock down) condition in accordance with existing standard commercial practices, complete with all fittings, fastenings, and appliances necessary for connections to respective services installed under contract. All fittings and appliances (i.e., couplings, ells, tees, nipples, piping, conduits, cables, and the like) necessary to make the connection between the Government furnished equipment item and the utility stub up shall be furnished and installed by the Contractor at no additional cost to the Government.
- F. Completely assemble and provide the Government furnished equipment in place ready for proper operation in accordance with Specifications and Drawings.
- G. Furnish supervision of installation of equipment at construction site by qualified factory trained technicians regularly employed by the equipment manufacturer.

1.27 RELOCATED EQUIPMENT

- A. Contractor shall disconnect, dismantle as necessary, remove and reinstall in new location, all existing equipment and items indicated by symbol "R" or otherwise shown to be relocated by the Contractor.
- B. Perform relocation of such equipment or items at such times and in such a manner as directed by the Resident Engineer.
- C. Suitably cap existing service lines, such as condensate return, water, drain, gas, air, vacuum and/or electrical, whenever such lines are disconnected from equipment to be relocated.
- D. Provide all mechanical and electrical service connections, fittings, fastenings and any other materials necessary for assembly and installation of relocated equipment; and leave such equipment in proper operating condition.
- E. All service lines such as noted above for relocated equipment shall be in place at point of relocation ready for use before any existing equipment is disconnected. Make relocated existing equipment ready for

1.28 STORAGE SPACE FOR DEPARTMENT OF VETERANS AFFAIRS EQUIPMENT

Not used.

1.29 CONSTRUCTION SIGN

Not used.

1.30 SAFETY SIGN

- A. Provide a Safety Sign where directed by Resident Engineer. Face of sign shall be 19 mm (3/4 inch) thick exterior grade plywood. Set bottom of sign level at 1200 mm (four feet) above floor.
- B. Paint all surfaces of Safety Sign and posts with one prime coat and two coats of white gloss paint. Letters and design shall be painted with gloss paint of colors noted.
- C. Maintain sign and remove it when directed by Resident Engineer.
- D. Post the number of accident free days on a daily basis.

1.31 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 COTR all existing "Building Service Equipment" cards (marked with an EE number or a Bldg Service Equip number on a Red Label) and their jackets that are scheduled to be replaced or removed.
- B. The COTR will furnish to the Contractor all new equipment cards to be filled out by the Contractor on all new equipment to be installed under this project. Information to be completed by the Contractor is

highlighted on the attached sample document. Building service equipment includes but not limited to: Electric Panel, Emergency Battery Back-up Wall-Pack Lights, Pumps, Motor Starters, Fans, Main Disconnects, Control Valves, Air Handler Units, etc...

- 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 COTR compliance and accuracy. If equipment is a direct replacement, the same EE number will be used.

[illegible]

VA FORM 6112
MAR 1993 (R)

EQUIPMENT RECORD

[illegible]

REVERSE OF VA FORM 6112, MAR 1993/RO

^aU.S. GPO: 1994-523-608/02154

Construction and Renovation Infection 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 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 TVHS campuses and facilities, including Community Based Outpatient Clinic's (CBOC) and cemeteries.

3. RESPONSIBILITIES:

a. **Engineering Service and Infection Control Officers**, 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, and the amount of shared heating and air conditioning systems. Infection Control will conduct an initial risk assessment for all construction projects.

b. **Infection Control Practitioners (ICP)** will help make recommendations for implementation of safety/infection control practices for the duration of the job. Precautions taken in specific settings will be agreed upon after corroboration between Infection Control, 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 Control, Engineering Service, and the project Contracting Officer Technical Representative (COTR)** 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 Control, EMS and/or the construction team** should be contacted if any regulation is questionable under these guidelines.

4. **DEFINITIONS OF CONSTRUCTION ACTIVITY TYPES:** Using the following table, identify the Type of Construction Project Activity.

TYPE A	Inspection and Non-Invasive Activities. Includes, but is not limited to: <ul style="list-style-type: none">▪ removal of ceiling tiles for visual inspection limited to 1 tile per 50 square feet▪ painting (but not sanding)▪ wallcovering, electrical trim work, minor plumbing, and activities which do not generate dust or require cutting of walls or access to ceilings other than for visual inspection.
TYPE B	Small scale, short duration activities which create minimal dust Includes, but is not limited to: <ul style="list-style-type: none">▪ installation of telephone and computer cabling▪ access to chase spaces▪ cutting of walls or ceiling where dust migration can be controlled.
TYPE C	Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies Includes, but is not limited to: <ul style="list-style-type: none">▪ sanding of walls for painting or wall covering▪ removal of floorcoverings, ceiling tiles and casework▪ new wall construction▪ minor duct work or electrical work above ceilings▪ major cabling activities▪ any activity which cannot be completed within a single workshift.
TYPE D	Major demolition and construction projects Includes, but is not limited to: <ul style="list-style-type: none">▪ activities which require consecutive work shifts▪ requires heavy demolition or removal of a complete cabling system▪ new construction.

5. DESIGNATED INFECTION CONTROL RISK GROUPS:

LOW	MEDIUM	HIGH	HIGHEST
<ul style="list-style-type: none"> Administrative areas Admission and Discharge areas Biomedical Conference rooms Engineering/EMS Office areas Outside construction (unless adjacent to building intake vents) Swimming pool Warehouse Information Systems Laundry services Library Lodging areas Maintenance Medical Information Prosthetic Services 	<ul style="list-style-type: none"> All ancillary patient care areas (example: Rehabilitation Medicine clinics/areas) Cardiology Echocardiography Endoscopy Imaging Services-Radiology/MRI Nuclear Medicine Mental Health-Inpatient Food Service/Canteen Physical Therapy Respiratory Therapy 	<ul style="list-style-type: none"> Ambulatory/Outpatient Surgery CCU GI Lab Dialysis Emergency Room/Department Extended Care Wards Laboratories – specimen & Research Medical and Surgical Wards Surgical Units PACU (Post Anesthesia Care Unit) Pharmacy-Inpatient and Outpatient 	<ul style="list-style-type: none"> Any area caring for immunocompromised patients Cardiac Catheterization Angiography areas Negative pressure isolation rooms Oncology Operating Rooms Pharmacy Admixture ICU's (MICU, SICU, etc.) Sterile Processing & Supply / Acquisition and Materials Management decontamination and storage areas

*Unless designated otherwise

6. CONSTRUCTION ACTIVITY/ INFECTION CONTROL MATRIX:

Determine the level of infection control procedures necessary for the work by matching the construction activity with the risk group of the work area in the following Matrix.

Patient Risk Group (Low, Medium, High, Highest) with the planned Construction Project Type (**A, B, C, D**) the following matrix, to find the Class of Precautions (**I, II, III, IV**) or level of infection control activities required.

Class I-IV Precautions are delineated below:

C Matrix – Class of Precaution: Construction Project by Patient Risk

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

NOTE: Infection Control approval will be required when the Construction Activity and Risk Level indicates that Class III or Class IV control procedures are necessary.

7. RESPONSIBILITIES BY ACTIVITY CLASS: The specific measures to be implemented for the job will be based on the below recommendations, but will carefully be applied to each situation and designated on the Risk Assessment form (see Attachment A). The precautions escalate from Class I to IV; therefore **measures specified in subsequent classes are IN ADDITION to the requirements of the previous class or classes.**

a. **Class I – During Construction Project**

- (1) Execute work by methods to minimize raising dust from construction operations.
- (2) Immediately replace any ceiling tile displaced for work or visual inspection.

b. **Class I – Upon Completion of Construction Project**

- (1) Clean work area.

c. **Class II – During Construction Project**

- (1) Provide active means to prevent airborne dust from dispensing into atmosphere and surrounding areas:
- (2) Construct any temporary barriers. Note: **critical barriers** are not required.
- (3) Seal unused doors with masking tape.
- (4) Isolate HVAC system or remove in area where work is being performed to prevent contamination of duct and areas outside the work area. Filter any return air at the work area.
- (5) Block off and seal air diffusers/vents, IF inactive.
- (6) Place carpet dust mat at entrance and exit of work area. Monitor and clean/change as needed.

(7) Water mist work surfaces to control dust while performing any activity that may produce airborne dust (such as cutting, sweeping, etc.).

(8) Dispose of waste/debris/dust and clean in accordance with defined procedures designated on Risk Assessment form (see Attachment A-1).

(9) Contain construction waste before transport in tightly covered containers or carts. Tape covering (poly, etc.) unless solid lid.

d. Class II – Upon Completion of Project

(1) Project workers shall wipe-down and/or HEPA vacuum (with HEPA-filtered vacuum) exposed surfaces, and then wet mop with water and a suitable disinfectant.

(2) Remove any temporary barriers.

(3) Remove isolation of Heating, Ventilation, & Air Conditioning (HVAC) system in area where work is being performed, and restore HVAC system to proper/normal operation.

(4) VA Environmental Management Service (EMS) will disinfect and terminally clean entire project site.

e. Class III – During Construction Project

(1) Create and maintain negative pressure in area where work is being performed. Adjust air supply/return system and adjust or provide exhaust system by method designated on Risk Assessment form (see Attachment A-1) in areas where work is being performed.

(2) Construct **critical barriers** before construction begins. Isolate work area using full height plastic/poly sheeting securely taped on all edges, sealed drywall partition taped to permanent construction at perimeter, or equivalent dust-tight construction method from floor to deck above (or to intact ceiling that must remain in place, undisturbed, throughout work).

f. Class III – Upon Completion of Project

(1) Project workers must insure that any accumulated debris and dust above ceiling is removed prior to project completion.

(2) Do not remove temporary critical barriers until complete project site is cleaned, and Department of Veterans Affairs (VA) Safety Officer and Infection Control Department shall inspect and clear space for occupancy. Project workers shall HEPA vacuum all exposed surfaces and then wet mop using water and suitable disinfectant. Then, EMS shall disinfect/terminally clean entire site.

(3) Remove temporary barrier materials carefully to minimize spreading of dirt and debris associated with construction.

g. Class IV – During Construction Project

(1) Seal holes, pipes, conduits, and punctures between work site and adjacent areas appropriately.

(2) Construct anteroom and require all personnel to pass through this room so they can be vacuumed using an HEPA vacuum cleaner before leaving work site, or they can wear cloth or paper coveralls that are removed each time they leave the work site.

(3) Provide sticky walk-off mats and carpet mats that are monitored closely for dust buildup at entrance to work area within the anteroom. Replace used mats with new or clean mats as needed.

(4) Wrap large waste items that contain dust and debris in a barrier material before transport from construction site.

Class IV – Upon Completion of Project (Same as Class III)

8. REFERENCES:

a. Association for Professionals in Infection Control and Epidemiology. *Text of Infection Control and Epidemiology: Construction Renovation*, Second Edition: Chapter 108; 1-16. Washington, DC: APIC, 2005

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 2005

9. RESCISSION: None

10. RESPONSIBILITY AND REVIEW DATE: This memorandum will be reviewed annually by the Chief, Engineering with the assistance of Infection Control and Environmental Management Service and will be reissued no later than June 30, 2011.

Renovate Research Lab Phase 3
VA Project No. 626-11-101

Juan A. Morales, RN, MSN
Health System Director

Attachments:

A - Infection Control Risk Assessment (ICRA)

B - Infection Control / 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.)

INFECTION CONTROL RISK ASSESSMENT			
Date: 4/4/2011	Location: 3RD FLOOR ACPE NASHVILLE	Risk Group: <input type="checkbox"/> Low <input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Highest
Activity Type: <input type="checkbox"/> A <input type="checkbox"/> B <input checked="" type="checkbox"/> C <input type="checkbox"/> D	Designation: <input type="checkbox"/> Class 1 <input type="checkbox"/> Class 4	<input type="checkbox"/> Class 2	<input checked="" type="checkbox"/> Class 3
INFECTION CONTROL MEASURES TO BE IMPLEMENTED			
Temporary Barriers <u>SEGREGATED FLOOR - NOT NEEDED</u>			
<input type="checkbox"/>	Sheetrock wall (tape/seal joints and seams). Doors shall be solid/hinged.		
<input type="checkbox"/>	Plastic/poly sheeting (tape/seal joints and seams). Doors shall be minimum double overlapping sheeting.		
<input type="checkbox"/>	Antechamber construction to provide place for donning and removing cover attire and HEPA vac.		
HVAC			
<input checked="" type="checkbox"/> Insure negative pressure (required for Classes III & IV) by...	<input checked="" type="checkbox"/> Adjusting existing system	<input checked="" type="checkbox"/> Providing air exhaust system (with HEPA filtration)	
Supply <input checked="" type="checkbox"/> Close outlets <u>ADJUST BOXES TO MINIMUM</u>	<input type="checkbox"/> Turn-off air handling unit <u>NO.</u>	<input type="checkbox"/> Maintain filtration at _____ % in affected rooms (if returning/recycling air)	
Return <input type="checkbox"/> Filter	<input checked="" type="checkbox"/> Close inlets	<input checked="" type="checkbox"/> Turn-off fan <u>ONLY IF DEDICATED</u>	
Exhaust <input type="checkbox"/> Filter	<input checked="" type="checkbox"/> Close inlets	<input checked="" type="checkbox"/> Turn-off fan <u>ONLY IF DEDICATED</u>	
Control of Construction Dust (in project site and migrated to surrounding areas)			
<input checked="" type="checkbox"/>	Broom sweep		
<input checked="" type="checkbox"/>	Dust mats (provided by construction workers)- <u>WET & DRY</u>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Carpet mats <input checked="" type="checkbox"/> Sticky mats, change when no longer sticky or as manufacturer directs		
<input checked="" type="checkbox"/>	Damp mop		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Periodically through out work shift as dust accumulates <u>CLEAN ELEVATORS. ROUTE TO OUTSIDE</u>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> At end of work shift <input checked="" type="checkbox"/> Weekly		
<input checked="" type="checkbox"/>	Vacuum, with HEPA filtered machine		
Transport and Disposal of Waste			
<input checked="" type="checkbox"/>	Tightly covered carts		

<input checked="" type="checkbox"/>	Large items wrapped in plastic on cart/dolly	OR HEPA CLEAN ALL HARD SURFACES
<input checked="" type="checkbox"/>	Waste chutes constructed	
<input checked="" type="checkbox"/>	Service Elevator, with no patients riding	NO SERVICE AVAILABLE
<input checked="" type="checkbox"/>	Attempt to remove on "off shifts"	
Cleaning		
<input checked="" type="checkbox"/>	Project workers to manage construction dust build-up within construction barriers and surrounding areas during construction work shift as specified above. Project workers shall leave area clean at end of shift.	
<input checked="" type="checkbox"/>	EMS to clean areas outside construction barriers. EMS responsible for making area "hospital clean" (all cleaning required beyond project workers sweeping, vacuuming, & mopping).	
<input checked="" type="checkbox"/>	EMS to terminally clean areas surrounding construction site every SEVEN days. (Infection Control shall evaluate and specify interval).	
Monitoring of site		
Note: Complete "Periodic Construction Rounds Compliance Monitor" attachment A-2		
<input checked="" type="checkbox"/>	Initial monitor and Final check (short duration job) by VA and Project Superintendent/Foreman	
<input checked="" type="checkbox"/>	DAILY VISUAL, WEEKLY WRITTEN	
<input checked="" type="checkbox"/>	Project Superintendent/Foreman inspection (Infection Control shall evaluate and specify required interval):	
<input checked="" type="checkbox"/>	VA inspection (Infection Control shall evaluate and specify required interval):	Date: / /
//s//	Engineering:	Date: / /
//s//	Infection Control:	Date: / /
//s//	Contractor:	Date: / /

Attachment B

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

Infection Control / Safety Program Periodic Construction Rounds Compliance Monitor			
Location:	Observed by:	Review Date:	Review Date:
1. Barriers		Review Time:	Review Time:
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"/>
2. Air Handling			
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"/>
3. Project Area			
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"/>
4. Traffic Control			
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"/>
5. Dress Code			
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"/>
Comments			

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