

**SECTION 01 00 00
GENERAL REQUIREMENTS**

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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 to: **INSTALL ACTUATORS & LINKAGES** 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 C.O.T.R. 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.
- 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 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.
- F. 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.
 - 2. Submit training records of all such employees for approval before the start of work.
- G. The contractor shall provide to the COTR the "linked" documents:
 - 1. DAILY LOG:
 - a. For all General and Sub-Contractors. (If no work is performed on a particular day, write: "No-Work")
 - b. Department Of Veterans Affairs; VA Form 10-6131
 - c. <http://www.va.gov/vaforms/medical/pdf/vha10-6131-fill.pdf>

2. WEEKLY PAYROLLS:

- a. For all General and Sub-Contractors. (If no work is performed during a particular week, write: "No-Work")
- b. US Department Of Labor; Wage and Hour Division; Form WH-347.
- c. <http://www.dol.gov/whd/forms/wh347.pdf>

H. Under the Green Environmental Management System (GEMS), the contractor is required to consider green materials and processes (wherever possible) for all items of construction not otherwise specified or detailed. If such green materials are not used, the contractor must provide documentation as to why such items could not be Used. COST is an acceptable reason to forgo such.

I. Submittals:

1. Furnish manufacturer's submittals consisting of literature and "cut-sheets" for VA written approval showing compliance with all requirements of drawings and specifications. Highlight all applicable portions of submittal including model numbers, sizes, types, etc.
2. Do not begin work until VA has approved submittals.

J. Use of Mechanical and Electrical Rooms:

1. Do not use Mechanical and Electrical Rooms for long-term storage of construction equipment, materials, or debris.

K. Use of VA Dumpsters:

1. All materials made obsolete by work performed under this contract will become the property of the contractor and will be removed off site at end of each working shift.
2. Do not use VA dumpsters or trash receptacles to deposit debris.

L. Parking: All contractor personnel will be required to park down by the Boiler Plant. In addition, contractor trailers and "staging" shall also be located in this area. For unloading materials, tooling and equipment, VA Police will temporarily "block-off" a parking space close to the work area.

M. No contractor materials shall be delivered to the VA Loading Dock. Items sent to this dock may be refused, with no responsibility incurred by VA. Deliveries shall be made only to the contractor's staging area. The contractor must be available to accept delivery. VA personnel will not sign for contractor materials.

N. I.D. Badges::

1. Prior to start of work, all Contractor Personnel, (employees, sub-contractors, technical support, and associates (herein referred to as "Contractor") will be required to obtain ID Badges from VA Police. The procedure is as follows:
 - a. Contractor will be interviewed by Engineering and Human Resources.
Interviews will focus on general background and will document any identifying characteristics such as tattoo's. VA will use the following form: REQUEST FOR PERSONAL IDENTITY VERIFICATION CARD:
http://www4.va.gov/PIVPROJECT/docs/VA0711_Oct2006.pdf
 - b. Contractor will then be fingerprinted by VA Police. Before fingerprinting, Contractor will be required to produce two forms of identification, one of which will be a Photo-ID. Acceptable forms of identification are as follows:

PICTURE ID FROM FEDERAL OR STATE GOVERNMENT:

State Issued Drivers License
 State DMV Issued I.D. Card
 U.S. Passport
 Military I.D. Card
 U.S. Coast Guard Merchant Mariner Card
 Foreign Passport with appropriate stamps
 Permanent Residence Card or Alien Registration Card with photo INS Form I-151/I-551
 I.D. Card issued by federal or state government agencies

NON-PHOTO ID OR ACCEPTABLE PHOTO ID NOT ISSUED BY FED OR STATE:

Social Security Card
 Certified Birth Certificate
 State Voter Registration Card
 Native American Tribal Document
 Certificate of U.S. Citizenship (INS Form N-560 or N-561)
 Certificate of Naturalization (INS Form N-550 or N-570)
 Certificate of Birth Abroad issued by Dept of State (Form FS-545 or Form DS-1350)
 Permanent or Temporary Resident Card
 I.D. Card issued by local government listing: Name, Birth Date, Gender, Height, Eye Color and Address
 Non-Photo I.D. federal or state card listing: Name, Birth Date Gender, Height, Eye Color and Address
 School I.D. with photograph
 Canadian Drivers License
 U.S. Citizen I.D. Card (Form I-179)

- c. A background check will then be initiated based on the information obtained from the above. If the background check reveals unsatisfactory results in the opinion of VA, the contractor will not be allowed to work on VA property. This process may take up to 3-weeks.

O. Video Training: All Contractors will be required to watch four videos:

1. Safety (15 minutes)
2. Infection Control (20 minutes)
3. Privacy (25 minutes)

1.2 STATEMENT OF BID ITEM(S)

A. Furnish all labor, materials, tooling and equipment required to:

INSTALL ACTUATORS & LINKAGES per drawings and specifications.

1.3 SPECIFICATIONS AND DRAWINGS FOR CONTRACTOR

A. AFTER AWARD OF CONTRACT, additional sets of specifications and drawings may be furnished. These drawings and specifications will consist of those returned by prospective bidders, and may be "marked-up".

B. Additional sets of drawings may be made by the Contractor, at Contractor's expense.

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 and/or escort 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. If requested by VA, 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. Locks shall be Interchangeable, 7-Pin, D-Core.

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.
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.

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. Separate permits shall be issued for General Contractor and its employees for parking in designated areas only.

1.5 FIRE SAFETY

- A. Applicable Publications: Publications listed below form part of this Article to extent referenced. Publications are referenced in text by basic designations only.
 1. American Society for Testing and Materials (ASTM):
E84-2009Surface 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-2009Standard 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 Contracting Officer for review for compliance with contract requirements. Prior to any worker for the contractor or subcontractors beginning work, they shall undergo a safety briefing provided by the general contractor's competent person per OSHA requirements. This briefing shall include information on the construction limits, VAMC safety guidelines, means of egress, break areas, work hours, locations of restrooms, use of VAMC equipment, etc. Documentation shall be provided to the Resident Engineer that individuals have undergone contractor's safety briefing.
- C. Site and Building Access: Maintain free and unobstructed access to facility emergency services and for fire, police and other emergency response forces in accordance with NFPA 241.

- D. Separate temporary facilities, such as trailers, storage sheds, and dumpsters, from existing buildings and new construction by distances in accordance with NFPA 241. For small facilities with less than 6 m (20 feet) exposing overall length, separate by 3m (10 feet).
- E. Temporary Construction Partitions:
1. Install and maintain temporary construction partitions to provide smoke-tight separations between construction areas, and adjoining areas. Construct partitions of gypsum board or treated plywood (flame spread rating of 25 or less in accordance with ASTM E84) on both sides of fire retardant treated wood or metal steel studs. Extend the partitions through suspended ceilings to floor slab deck or roof. Seal joints and penetrations. At door openings, install Class C, ¾ hour fire/smoke rated doors with self-closing devices.
 2. Install one-hour fire-rated temporary construction partitions as shown 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 fire-stop materials.
- F. Temporary Heating and Electrical: Install, use and maintain installations in accordance with 29 CFR 1926, NFPA 241 and NFPA 70.
- G. Means of Egress: Do not block exiting for occupied buildings, including paths from exits to roads. Minimize disruptions and coordinate with Contracting Officer Technical Representative (C.O.T.R.).
- H. Egress Routes for Construction Workers: Maintain free and unobstructed egress. Inspect daily. Report findings and corrective actions weekly to C.O.T.R.
- 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. New Sprinklers: Install, 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 C.O.T.R. 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 C.O.T.R.
- N. Hot Work: Perform and safeguard hot work operations in accordance with NFPA 241 and NFPA 51B. Coordinate with Facility Safety Officer at least 48 hours in advance.
- O. Fire Hazard Prevention and Safety Inspections: Inspect entire construction areas weekly. Coordinate with, and report findings and corrective actions weekly to C.O.T.R.
- 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 C.O.T.R. that personnel have been trained in the fire safety aspects of working in areas with impaired structural or compartmentalization features.

T. INTERIM LIFE SAFETY: FOR FIRE PROTECTION, THE CONTRACTOR SHALL
BECOME FAMILIAR WITH THE PROVISIONS OF THE ATTACHED:

Interim Life Safety Measures shall be implemented by the contractor according to the requirements listed at the end of this section entitled INTERIM LIFE SAFETY MEASURES (Facilities Department Memorandum, dated April 15, 1998), along with all three (3) attachments:

1. ATTACHMENT 1 - INTERIM LIFE SAFETY MEASURES EVALUATION SHEET.
2. ATTACHMENT 2 - INTERIM LIFE SAFETY MEASURES.
3. ATTACHMENT 3 - DESCRIPTION OF INTERIM LIFE SAFETY MEASURES USED.

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 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 firesafe.

Signed _____
(Contractor's Fire Watch)

ATTENTION

Before approving any cutting and welding permit, the 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

- o Sprinklers are in service where installed
- o Cutting and welding equipment in good repair
- o Within 10 500 mm (35 feet); floors swept clean of combustibile, no combustibile material or flammable liquids, all wall and floor openings covered, and covers suspended beneath work to collect sparks
- o When working on enclosed equipment and in confined space, equipment and area is free of flammable vapors
- o Fire watch provided during and 30 minutes after operation (60 minutes for torch applied roofing operations)
- o Portable fire extinguisher with adequate rating available in the immediate vicinity
- o Standpipe system in service where installed
- o Protection of any sprinkler heads when hot work is in close proximity
- o Smoking prohibited in immediate vicinity
- o Non-combustibile shields provided when hot work is done near combustibile walls, partitions, floors, roofs
- o Prohibition of hot work on pipes contacting combustibile walls
- o Personnel trained in use of equipment including portable fire extinguishers and sounding a fire alarm
- o Final check-up conducted after 30 minutes

INTERIM LIFE SAFETY MEASURES

1. **PURPOSE.** To identify the need for, and to institute interim life safety measures (ILSM) to temporarily compensate for the hazard posed by life safety deficiencies due to construction.
2. **POLICY.** When requirements for fire protection and/or environment and grounds safety are affected by construction, Facilities Department will institute and document interim life safety measures. The interim measures are to be continued and documented so that the level of safety is not diminished in any occupied area, and a safe environment is maintained throughout construction of and/or alteration to buildings and/or grounds. For each project, effective ILSMs will be implemented and continually assessed for appropriateness based on the hazards present.
3. **RESPONSIBILITIES.**
 - a. **Contracting Officer's Technical Representative (COTR) and Contractor.** The assigned COTR will be responsible for including a copy of this memorandum in specifications for construction projects. The Contractor will then be responsible for evaluating the project concerning interim life safety measures. If measures are found to be applicable to the project, the Contractor will develop procedures for enforcement and document compliance with the measure.
 - b. **Safety Manager.** Responsible for reviewing the interim life safety measures evaluation sheet for approval.
 - c. **Manager, Facilities Department.** Responsible for reviewing the interim life safety measures evaluation sheet for approval and for ensuring the implementation, enforcement, and documentation of the interim life safety measures.
4. **PROCEDURES.**
 - a. Prior to the start of any construction project, the responsible Contractor will evaluate the need for interim life safety measures.
 - b. The responsible Contractor will complete an Interim Life Safety Measures Evaluation Packet and submit it to the COTR, the Safety Manager and the Manager, Facilities Department for approval. The packet includes:
 - i. (1) Attachment 1 - An evaluation sheet. A list of questions to assist in determining whether interim life safety measures are necessary.
 - ii. (2) Attachment 2 - An interim life safety measures matrix to assist in answering the questions in Attachment 1.
 - iii. (3) Attachment 3 - A page where the responsible Contractor documents which interim life safety measures / procedures will be incorporated as part of the project. This form will be signed by the Contractor, COTR, the Safety Manager, and the Manager, Facilities Department.
 - c. To complete the packet:
 - iv. (1) The questions on Attachment 1 and the columns on Attachment 2 correlate. Examine the questions in Attachment 1 and find the corresponding column on Attachment 2. Any deficiencies identified on Attachment 2 will be considered in completing the questions on Attachment 1.
 - v. (2) If, according to a column on Attachment 2, the project does not create the specific deficiency, the question on Attachment 1 will state that the ILSM was evaluated, but no action was deemed necessary.
 - vi. (3) Then, using the information from Attachments 1 and 2, complete Attachment 3 by listing all of the ILSMs which will be instituted during the course of the project. Attachment 3 will then be signed by the Contractor, COTR, the Safety Manager, and the Manager, Facilities Department.
 - d. Once necessary ILSMs are implemented, inspect the project daily and record findings in the daily log. Any identified problems with the implemented ILSMs will be abated as soon as possible.
 - e. All necessary documentation will be maintained in the project files to reflect compliance with this procedure.
 - f. The project will be continually evaluated for ILSM needs throughout the project as conditions change which may compromise life safety protection elements of the hospital.
5. **REFERENCES.** 1997 Accreditation Manual for Hospitals, JCAHO.
6. **RECESSION.** None.

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Jeffery L. Thompson
Manager, Facilities Department

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Attachment No. 1

Interim Life Safety Measures Evaluation Sheet

Date: _____

Project Title: _____ Project No. _____

The following Interim Life Safety Measures will be evaluated individually and initiated as needed to compensate for the temporary hazards imposed during construction:

1. Ensure exits provide an unobstructed egress. Personnel receive additional training if alternate exits must be designated. Buildings or areas under construction must maintain escape routes for construction workers at all times. See Column A, Attachment 2.

Exits Obstructed? YES NO If Yes, then:

- a. The Contractor will coordinate and document that appropriate facility personnel receive training on alternate routes and exits.

Training Conducted? YES NO Date: __

- b. Construction areas will have designated and marked exits. Areas will be inspected daily to ensure exits are kept clear.

2. Ensure free and unobstructed access to emergency services and for fire, police and other emergency forces (i.e., Local Fire Department). See Column B, Attachment 2.

- a. The construction plans will be reviewed to ensure proper access will be maintained.

Plans reviewed? YES NO Date: _____

- b. Areas will be inspected daily and results will be recorded.

- c. Emergency forces notified about the construction? See Column C, Attachment 2.

VA Police notified? YES NO Date: __

Local Fire
Department notified? YES NO Date: __

3. Ensures fire alarm, detection, and suppression systems are in good working order. A temporary but equivalent system will be provided when any fire system is impaired. Temporary systems must be inspected and tested monthly and results will be recorded. See Column D, Attachment 2.

- a. Contractor will schedule work to minimize the time systems are impaired and the Contractor will insure shutdown of the Life Safety Systems.

Shutdown
Procedure followed? YES NO Date: __

4. Ensure temporary construction partitions are smoke tight and built of noncombustible or limited combustible materials that will not contribute to the development or spread of fire. See Column E, Attachment 2.

- a. Areas will be inspected daily and deficiencies will be recorded.

5. Coordinate providing additional fire-fighting equipment and training of appropriate personnel in its use. Evaluate the impact to emergency response teams and provide notification, if necessary (i.e., Code Red Team, Police and Security, Fire Department). See Column F and G, Attachment 2.

a. Provided? YES NO Date: __

b. Training Conducted? YES NO Date: _____

c. VA Police Notified? YES NO Date: __

d. Altoona Fire
Department Notified? YES NO Date: __

e. Code Teams Notified? YES NO Date: __

f. Contractor will be briefed at pre-construction conference of need to provide adequate fire fighting equipment and training to construction employees.

Brief Conducted? YES NO Date: __

6. Smoking is prohibited in the hospital. Within other construction areas outside the hospital, smoking is only allowed in approved designated areas. See Column H, Attachment 2.

7. Developing and enforcing storage, housekeeping, and debris removal, practices that reduce the flammable and combustible fire load of the building to the lowest feasible level. See Column I, Attachment 2.

a. Areas will be inspected daily and the results will be recorded.

8. Conduct a minimum of two fire drills per shift per quarter. Although the Contractor will inform the COTR and the Safety Manager of the need to conduct more fire drills, the Safety Manager will assume responsibility for completing the required number of drills. See Column J, Attachment 2.

Additional Drills
Required? YES NO Date: __

9. Increase hazard surveillance of buildings, grounds, and equipment with special attention to excavations, construction areas, construction storage and field offices See Column K, Attachment 2.

a. Areas will be inspected daily and results will be recorded in the daily log.

1. Means of egress is clear in construction areas.

2. Access for fire department and emergency services is clear. Every building and area will remain accessible to fire department apparatus and personnel. Roadways will be maintained within 20 feet of all buildings.

3. Note the status of the fire detection / sprinkler system.

4. Construction partitions are being maintained.

5. Good housekeeping practices are being used in construction areas. Flammable and combustible fire load is being kept to a minimum.

6. Buildings, grounds, and equipment are being maintained in a safe manner (pay special attention to excavations, construction areas, construction storage, and field offices).

7. Smoking regulations are being followed.

b. List on Attachment 3 descriptions of the interim life safety measures that will be used during the project as determined by Attachments 1 and 2.

10. Coordinating and documenting that affected personnel have been trained to compensate for impaired structural and compartmentalization features of fire safety. See Column L, Attachment 2.

Training Conducted? YES NO Date: _____

11. Coordinating with the Safety Manager to conduct organization-wide safety education programs to ensure awareness of any Life Safety Code deficiencies, construction hazards, and ILSM. See Column M, Attachment 2.

Information Provided? YES NO Date: __

SECTION 01 00 00
LIFE SAFETY

Attachment 2

Interim Life Safety Measures

		A	B	C	D	E	F	G	H	I	J	K	L	M
Existing Significant Life Safety Code Deficiencies or Conditions as a Result of Construction		Ensuring Egress	Emergency Forces Access	Emergency Forces Notification	Ensuring Operational Life Safety	Temporary Construction Barriers	Additional Fire Fighting Equipment	Conducting Additional Training of	Prohibiting Smoking	Controlling Combustible Loading	Conducting 2 Fire Drills Per Shift in	Increased Hazard Surveillance	Compartmentation Training of	Conducting Organizational Training
1	Patient room door latching problem.						X		X	X		X	X	
2	Lacking a code complying smoke barrier.						X	X	X			X	X	X
3	Fire exit stairs discharge improperly.			X				X	X		X		X	X
4	Excessive travel distance to an approved exit.								X	X		X	X	
5	Lack of two remote exits.							X	X	X		X	X	
6	Nonconforming building construction type.						X		X	X	X	X		X
7	Improperly protected vertical openings.								X	X	X	X	X	
8	Large penetrations in fire/smoke barriers.							X	X	X		X		
9	Corridor walls do not extend to the ceiling.								X	X		X	X	
10	Hazardous areas not properly protected.								X	X		X		
11	Blocking off an approved exit.	X		X				X	X	X		X	X	
12	Rerouting of traffic to emergency room.		X	X					X					
13	Major renovation of an occupied floor.	X			X	X	X		X	X		X	X	

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14	Replacing fire alarm system (out-of-service).			X	X			X	X	X	X	X		
		A	B	C	D	E	F	G	H	I	J	K	L	M
Existing Significant Life Safety Code Deficiencies or Conditions as a Result of Construction		Ensuring Egress	Emergency Forces Access	Emergency Forces Notification	Ensuring Operational Life Safety	Temporary Construction Barriers	Additional Fire Fighting Equipment	Conducting Additional Training of	Prohibiting Smoking	Controlling Combustible Loading	Conducting 2 Fire Drills Per Shift in	Increased Hazard Surveillance	Compartmentation Training of	Conducting Organizational Training
15	Installing sprinkler system (out-of-service).			X	X		X		X	X	X	X		X
16	Significantly modifying smoke or fire barrier walls.					X			X	X		X	X	
17	Adding an addition to an existing structure.	X	X	X	X	X		X	X					X
18	Taking a fire alarm system out-of-service.			X	X			X	X					
19	Taking a sprinkler system out -of-service.			X	X			X	X					
20	Disconnecting alarm devices.			X					X					

SECTION 01 00 00
LIFE SAFETY

Attachment 3

Description of Interim Life Safety Measures Used

Project Title: _____ Project No. _____

Provide description of the Interim Life Safety Measures which will be used during the project as determined by Attachments 1 and 2. Attach additional sheets if necessary.

Signature and Title of Contractor

Date

Signature and Title of COTR

Date

Signature of Safety Manager

Date

Signature of Manager, Facilities Department

Date

END

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 C.O.T.R.
- E. Workmen are subject to rules of the Medical Center applicable to their conduct.
- F. Execute work in such a manner as to interfere as little as possible with work being done by others. Keep roads clear of construction materials, debris, standing construction equipment and vehicles at all times.
- G. 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 C.O.T.R.
 - 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.
- H. 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 C.O.T.R. All such actions shall be coordinated with the Utility Company involved:
1. 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.
- I. Phasing/Scheduling: To insure such executions, Contractor shall furnish the Resident Engineer with a schedule of approximate 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 C.O.T.R. two weeks in advance of the proposed date of starting work in each specific area of site, building or portion thereof. Arrange such dates to insure accomplishment of this work in successive phases mutually agreeable to C.O.T.R.
- J. Areas will be vacated by Government in accordance with above phasing beginning immediately after date of receipt of Notice to Proceed and turned over to Contractor.
- K. Outdoor Construction Fence: Before construction operations begin, Contractor shall provide a chain link construction fence, 2.1m (seven feet) minimum height, around the outdoor construction area indicated on the drawings. Provide gates as required for access with necessary hardware, including hasps and padlocks. Fasten fence fabric to terminal posts with tension bands and to line posts and top and bottom rails with tie wires spaced at maximum 375mm (15 inches). Bottom of fences shall extend to 25mm (one inch) above grade. Remove the fence when directed by C.O.T.R.
- L. When an area or building is turned over to Contractor, Contractor shall accept entire responsibility therefore.
1. Contractor shall maintain a minimum temperature of 4 degrees C (40 degrees F) at all times, except as otherwise specified.

2. Contractor shall maintain in operating condition existing fire protection and alarm equipment. In connection with fire alarm equipment, Contractor shall make arrangements for pre-inspection of site with Fire Department or Company (Department of Veterans Affairs or municipal) whichever will be required to respond to an alarm from Contractor's employee or watchman.
- M. 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 C.O.T.R.
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 C.O.T.R. 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 C.O.T.R, in writing, 48 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 C.O.T.R.
 5. In case of a contract construction emergency, service will be interrupted on approval of C.O.T.R. 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.
- N. 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 but are not required to be entirely removed, shall be sealed, capped or plugged. The lines shall not be capped in

finished areas, but shall be removed and sealed, capped or plugged in ceilings, within furred spaces, in unfinished areas, or within walls or partitions; so that they are completely behind the finished surfaces.

- O. 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 C.O.T.R.
- P. Coordinate the work for this contract with other construction operations as directed by C.O.T.R. This includes the scheduling of traffic and the use of roadways, as specified in Article, USE OF ROADWAYS.

1.7 ALTERATIONS

- A. Survey: Before any work is started, the Contractor shall make a thorough survey with the C.O.T.R. of areas 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 buildings.
 - 2. Existence and conditions of items such as plumbing fixtures and accessories, electrical fixtures, equipment, venetian blinds, shades, etc., required by drawings to be either reused or relocated, or both.
 - 3. Shall note any discrepancies between drawings and existing conditions at site.
 - 4. Shall designate areas for working space, materials storage and routes of access to areas within buildings where alterations occur and which have been agreed upon by Contractor and C.O.T.R.
- 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 C.O.T.R. 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 C.O.T.R. 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 C.O.T.R.
 - 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 C.O.T.R. 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. Install 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 C.O.T.R. 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. 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.

- 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 C.O.T.R. 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 must 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.

F. INFECTION CONTROL: THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE PROVISIONS OF THE ATTACHED:

JAMES E. VAN ZANDT VA MEDICAL CENTER
ALTOONA, PENNSYLVANIA

MEDICAL CENTER MEMORANDUM 10F-13
DECEMBER 2006

INFECTION CONTROL AND SAFETY/HEALTH GUIDELINES FOR CONSTRUCTION AND RENOVATION

1. **PURPOSE:** To prevent the acquisition of nosocomial infections in patients and to decrease the risk of exposure of employees, visitors, and contractors, to potential infections, safety, and other health hazards during renovation or construction activities at the VA Medical Center, Altoona, and Community Based Outpatient Clinics (CBOCs).

2. **POLICY:** All renovation or construction projects will be reviewed with Infection Control Nurse and the Safety Manager during the planning phases.

a. The Infection Control Nurse and the Safety Manager will participate in meetings and area walk-through inspections as necessary. All walk-throughs of the construction area must be coordinated with the Facilities Service, Project Section.

b. All construction workers, including subcontractors, and Facilities Service employees, must follow the infection control procedures as described in this guideline.

3. **RESPONSIBILITIES:**

a. **Chief, Facilities**, or designee, will ensure that all project coordinators and engineers apprise the Infection Control Nurse, Privacy Officer, and Safety Manager of plans for all projects involving construction and/or renovation of clinical and non-clinical areas in the medical center. Chief, Facilities will notify the Infection Control Nurse, Privacy Officer, and Safety Manager, in writing, of pertinent planning meetings related to construction and renovation projects.

b. **Infection Control Nurse** will respond to requests and provide infection prevention and control related recommendations for project development and maintenance of areas during construction and renovation projects.

c. **Safety Manager** will respond to requests and provide safety and health related recommendations for project development and maintenance of areas during construction and renovation projects.

d. **Privacy Officer** will respond to requests and provide recommendations for project development and maintenance of areas during construction and renovation.

4. **PROCEDURES:**

a. Design Phase:

(1) The Infection Control Nurse and the Safety Manager will participate in project kick-off meetings.

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

(a) Number and placement of isolation rooms

(b) Air handling systems; use of adjunctive measures such as ultraviolet germicidal irradiation (UVGI) and appropriate filtration systems

(c) Number and placement of hand washing facilities

(d) Staff and patient traffic patterns for the duration of the project

(e) Relocation decisions regarding patient care areas, storage areas, etc.

(f) Water supply and plumbing

01 00 00

- (g) Construction waste containment, transport and disposal
- (h) Selection and installation of medical equipment as it relates to infection control
- (i) Selection of finishes and surfaces that can be effectively cleaned

01 00 00

(3) The Safety Manager will be involved in the planning phases for **all** renovation and new construction projects specific to the following major components (design):

- (a) Number and placement of eye-wash, shower, hazardous chemical, or compressed gas facilities
- (b) Staff and patient traffic patterns for the duration of the project
- (c) Relocation decisions regarding patient care areas, storage areas, etc.
- (d) Water supply and plumbing
- (e) Construction waste containment, transport, and disposal
- (f) Selection of finishes and surfaces that can be effectively cleaned

(4) The Privacy Officer will be involved in the design phases for all renovation and new construction projects as applicable.

(5) An *Infection Control Risk Assessment* will be conducted by the Safety Manager; Infection Control Nurse; Project COTR; Chief, Facilities; stakeholder(s); and others as deemed necessary (Privacy Officer, HVAC technicians, pipefitter, etc.) in accordance with **Attachment A**, when the architectural floor plan is complete.

(6) At the completion of the Design Development Phase (50%), an *Infection Control Construction Permit (Attachment B)* will be completed by the Chief, Facilities, or designee, and placed in the contract file. Construction drawings and specifications will be adjusted accordingly in the Construction Documents Phase.

b. Operational Phase:

(1) Medical waste:

(a) Environmental Management staff shall remove any medical waste, including sharps containers, from areas to be renovated or constructed **BEFORE** the start of the project.

(b) The Infection Control Nurse shall be notified immediately if unexpected medical waste is encountered.

(c) Environmental Management staff will do appropriate cleaning of all areas prior to the start of the project and at the completion of the project.

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

(a) The integrity of the barrier walls must assure a complete seal of the construction area from adjacent areas.

(b) Rigid construction or plastic sheeting (4 or 6 mil thickness) is used, depending on the location of the project, adjacent uses, and duration of the project.

(c) Walls will be dustproof with seals maintained at the full perimeter of the walls, which allow for minimization of dust collection and spread.

(3) Environmental control:

(a) At the discretion of the engineering staff, construction site manager, and Infection Control Risk Assessment: Constant negative pressure within the zone must be maintained and monitored by construction personnel. Exhaust from construction air should be directed outside with no recirculation if possible. If the exhaust must tie into a recirculated air system, a pre-filter and high efficiency filter (95%) should be used before exhaust to prevent contamination of the ducts. Fans should be turned off before opening ductwork and necessary interruptions should be planned for to minimize risk.

(b) Demolition debris will be disposed of into non-infectious waste trash bins and removed from the construction area daily, using specified traffic patterns. Construction waste will be contained in tightly covered containers before transport as needed. Transport receptacles or carts will be covered and the covering taped unless there is a solid lid. Construction materials are not to be disposed of in medical center waste containers.

(c) "Sticky" or walk-off mats shall be utilized immediately outside the construction zone and elevators to remove dust and soil from shoes, cart wheels, etc. as personnel exit the area. The "sticky" mat must be large enough to cover the entire exit and must be changed whenever necessary.

(d) Windows will remain closed as much as feasible during the construction/renovation process.

(e) When using demolition chutes, chute opening must be closed when not in use. The chute and damper should be sprayed with water, as necessary, to maintain dust control.

(f) Control, collection, and disposal must be provided for any drain liquid or sludge encountered when demolishing plumbing.

(4) Traffic control:

(a) Designated entry and exit procedures will be defined (in conjunction with any necessary Interim Life Safety Measures) for each construction project where applicable.

(b) All egress pathways will be free of debris.

(c) Unauthorized personnel will not be allowed to enter the construction zone.

(d) Only designated elevators will be used for construction activities during scheduled times.

(e) Construction areas will be fitted with lockable doors and will remain locked when not occupied by construction crew when drywall barriers are used.

(5) Cleaning:

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

(b) Environmental Management staff are responsible for the routine cleaning of adjacent areas including stairwells and for the final cleaning of the construction zone prior to the opening of the newly renovated or constructed area. Specific responsibility will be defined in the construction contracts.

(6) Personnel requirements:

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

(b) Personnel entering sterile and/or invasive procedure areas will be provided with a disposable jump suit, head covering, and shoe coverings, which must be removed prior to exiting the work area.

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

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

(c) Facilities Service employees shall receive Infection Control and Safety and Health training as it relates to construction. (See **Attachment C**)

(7) Environmental monitoring:

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

c. Completion Phase:

(1) After completion of construction, ventilation will meet specifications as mandated by regulatory bodies.

(2) The area will be thoroughly cleaned and disinfected by in-house staff before being placed into service.

(3) Safety Manager, Infection Control Nurse, and Privacy Officer will be invited to the final inspection.

d. Compliance Monitoring:

Medical center staff (Project Engineer, Safety Manager/Industrial Hygiene, Infection Control Nurse) and the contractor (or designee) will conduct compliance monitoring as necessary. The following parameters will be monitored:

(1) Air quality

(2) Integrity of barrier walls

(3) Personnel requirements

(4) Infection control

(5) Noise

- (6) Traffic control
- (7) Vibration
- (8) Utility Management

5. **REFERENCES:** Bartley, Judene, APIC Infection Control and Applied Epidemiology: Principles and Practices, Ch. 104, Construction, Mosby Year Book, Inc. 1996; Bartley, Judene, APIC State-of-the-Art Report: The Role of Infection Control During Construction in Healthcare Facilities, American Journal of Infection Control, Vol. 28, No. 2; CAMH, CAMAC, CAMLTC, CAMBHC EC 3.2.1 2002 edition

6. **RESCISSIONS:** Medical Center Memorandum 13-14, Infection Control; and Safety/Health Guidelines for Construction & Renovation, dated December 2005

7. **REISSUE DATE:** September 2009

8. **FOLLOW-UP RESPONSIBILITY:** Chief, Facilities Service

/S/
GERALD L. WILLIAMS

Distribution "I"

Attachments:

Attachment A – Infection Control Risk Assessment/Matrix of Precautions for Construction & Renovation
Attachment B – Infection Control Construction Permit
Attachment C – Infection Control Orientation – Construction Service Workers

**Infection Control Risk Assessment
Matrix of Precautions for Construction & Renovation**

Step 1: Using the following table, *identify* the type of Construction Project Activity (A-D)

Type A	<p>Inspection and Non-Invasive Activities</p> <p>Includes, but is not limited to:</p> <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) • Wall covering, 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.
<p>Type B</p>	<p>Small scale, short duration activities which create minimal dust</p> <p>Includes, but is not limited to:</p> <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	<p>Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies</p> <p>Includes, but is not limited to:</p> <ul style="list-style-type: none"> • Sanding of walls for painting or wall covering • Removal of floor coverings, 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 work shift
Type D	<p>Major demolition and construction projects</p> <p>Includes, but is not limited to:</p> <ul style="list-style-type: none"> • Activities which require consecutive work shifts • Requires heavy demolition or removal of a complete cabling system • New construction

Step 2: Using the following table, *identify the Patient Risk Groups* that will be affected. If more than one risk group will be affected, select the higher risk group:

Low Risk	Medium Risk	High Risk	Highest Risk
<ul style="list-style-type: none"> • Office areas • Chapel • Facilities Service • Lobbies • Public Corridors • Warehouse 	<ul style="list-style-type: none"> • Cardiology • Physical Therapy • Radiology/MRI • Respirator Therapy • Radiology • Respiratory Therapy • Pharmacy • Ambulatory Care Clinic • Unit 4 • Unit 5 • Unit 6 • Canteen • Food Service Kitchen 	<ul style="list-style-type: none"> • Intensive Care (ICU) • Emergency Room • Laboratories (specimen) • Outpatient Surgery • Post-Anesthesia Care Unit • Pharmacy Admixture 	<ul style="list-style-type: none"> • Any area caring for immunocompromised patients • SPD • Negative pressure isolation rooms • Operating rooms

Step 3:

Match the Patient Risk Group (low, medium, high, highest) with the planned **Construction Project Type** (A, B, C, D) on the IC Matrix to find the **Class of Precautions** (I, II, III, IV) or level of infection control activities required. Classes of precautions are described in the table on the next page.

IC Matrix: Class of Precautions for Construction Projects by Patient Risk

Patient Risk Group	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.

Description of Required Infection Control Precautions by Class

Note: Specific items within each Class will be selected by the Risk Assessment Team.

	During Construction Project	Upon Completion of Project
Class I	<ol style="list-style-type: none"> 1. Execute work by methods to minimize raising dust from construction operations. 2. Immediately replace a ceiling tile displaced for visual inspection. 	
Class II	<ol style="list-style-type: none"> 1. Provide active means to prevent airborne dust from dispersing into atmosphere. 2. Water mist work surfaces to control dust while cutting. 3. Seal unused doors with duct tape. 4. Block off and seal air vents. 5. Place dust mat at entrance and exit of work area. 6. Remove or isolate HVAC system in areas where work is being performed. 	<ol style="list-style-type: none"> 1. Wipe work surfaces with disinfectant (in-house staff) 2. Contain construction waste before transport in tightly covered containers. 3. Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area. 4. Remove isolation of HVAC system in areas where work is being performed.

During Construction Project		Upon Completion of Project
Class III	<ol style="list-style-type: none"> 1. Remove or isolate HVAC system in areas where work is being done to prevent contamination of duct system. 2. Complete all critical barriers i.e. sheetrock, plywood, plastic, to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum or vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units or exhaust fans. 4. Contain construction waste before transport in tightly covered containers. 5. Cover transport receptacles or carts. Tape covering unless solid lid. 	<ol style="list-style-type: none"> 1. Do not remove barriers from work area until completed project is inspected by the Safety Manager and Infection Control Nurse and thoroughly cleaned by the Environmental Management staff. 2. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 3. Vacuum work area with HEPA filtered vacuums (contractor). 4. Wet mop area with disinfectant (contractor). 5. Remove isolation of HVAC system in areas where work is being performed.

During Construction Project		Upon Completion of Project
Class IV	<ol style="list-style-type: none"> 1. Remove or isolate HVAC system in areas where work is being done to prevent contamination of duct system. 2. Complete all critical barriers i.e. sheetrock, plywood, plastic, to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum or vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. 4. Seal holes, pipes, conduits, and punctures appropriately. 5. 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. 6. All personnel entering work site area required to wear shoe covers. Shoe covers must be changed each time the worker exits the work area. 7. Do not remove barriers from work area until completed project is inspected by the Safety Office and Infection Control and thoroughly cleaned by the Environmental Management staff. 	<ol style="list-style-type: none"> 1. Remove barrier material carefully to minimize spreading of dirt and debris associated with construction. 2. Contain construction waste before transport in tightly covered containers. 3. Cover transport receptacles or carts. Tape covering unless there is a solid lid. 4. Vacuum work area with HEPA filtered vacuums (contractor). 5. Wet mop area with disinfectant (contractor). 6. Remove isolation of HVAC system in areas where work is being performed.

NOTE: Steps 4 through 14 as follows are addressed by the Risk Assessment Team.

Step 4. Identify the areas surrounding the project area, assessing potential impact.

<i>Unit Below</i>	<i>Unit Above</i>	<i>Lateral</i>	<i>Lateral</i>	<i>Behind</i>	<i>Front</i>
Risk Group	Risk Group	Risk Group	Risk Group	Risk Group	Risk Group

Step 5. Identify specific site of activity, e.g., patient rooms, medication room, etc.

Step 6. Identify issues related to ventilation, plumbing, electrical in terms of the occurrence of probable outages.

Step 7. Identify containment measures, using prior assessment. What types of barriers? (E.g. solid wall barriers); Will HEPA filtration be required?

(Note: Renovation/construction area shall be isolated from the occupied areas during construction and shall be negative with respect to surrounding areas.)

Step 8. Consider potential risk of water damage. Is there a risk due to compromising structural integrity? (E.g., wall, ceiling, roof)

Step 9. Work hours: Can or will the work be done during non-patient care hours?

Step 10. Do plans allow for adequate number of isolation/negative airflow rooms?

Step 11. Do the plans allow for the required number and type of hand washing sinks?

Step 12. Does the infection control staff agree with the minimum number of sinks for this project? (Verify against AIA Guidelines for types and area)

Step 13. Does the infection control staff agree with the plans relative to clean and soiled utility rooms?

Step 14. Plan to discuss the following containment issues with the project team. E.g., traffic flow, housekeeping, debris removal (how and when).

Infection Control Construction Permit

Project Title:
 Construction:
 Project Coordinator:
 Contractor Performing Work:
 Supervisor:

Project No: Location of
 Project Start Date:
 Estimated Duration:
 Permit Expiration Date:
 Telephone:

YES	NO	CONSTRUCTION ACTIVITY	YES	NO	INFECTION CONTROL RISK GROUP
		TYPE A: Inspection, non-invasive activity.			GROUP 1: Low Risk
		TYPE B: Small scale, short duration, moderate to high levels.			GROUP 2: Medium Risk
		TYPE C: Activity generates moderate to high levels of dust, requires greater 1 work shift for completion.			GROUP 3: Medium/High Risk
		TYPE D: Major duration and construction. Activities requiring consecutive work shifts.			GROUP 4: Highest Risk
Class I	1.	Execute work by methods to minimize raising dust from construction operations.	3.		Minor demolition for remodeling.
	2.	Immediately replace any ceiling tile displaced for visual inspection.			
Class II	1.	Provides active means to prevent air-borne dust from dispensing into atmosphere.	6.		Contain construction waste before transport in tightly covered containers.
	2.	Water mist work surfaces to control dust while cutting.	7.		Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area.
	3.	Seal unused doors with duct tape.	8.		Place dust mat at entrance and exit of work area.
	4.	Block off and seal air vents.	9.		Remove or isolate HVAC system in areas where work is being performed.
	5.	Wipe surfaces with disinfectant (in-house staff)			
Class III	1.	Obtain infection control permit before construction begins.	6.		Vacuum work area with HEPA filtered vacuums.
Date:	2.	Isolate HVAC system in area where work is being done to prevent contamination of the duct system.	7.		Wet mop with disinfectant.
Initials:	3.	Complete all critical barriers or implement control Cube method before construction begins.	8.		Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.
	4.	Maintain negative air pressure within work site utilizing HEPA equipped air filtration units or exhaust fans.	9.		Contain construction waste before transport in tightly covered containers.
	5.	Do not remove barriers from work area until Complete project is thoroughly cleaned.	10.		Cover transport receptacles or carts. Tape covering.
			11.		Remove or isolate HVAC system in areas where work is being performed.
Class IV	1.	Obtain infection control permit before construction begins.	7.		All personnel entering work site are required to wear shoe covers.
Date:	2.	Isolate HVAC system in areas where work is being done to prevent contamination of duct systems.	8.		Do not remove barriers from work area until complete project is thoroughly cleaned.
Initials:	3.	Complete all critical barriers or implement control cube method before construction beings.	9.		Vacuum work area with HEPA filtered vacuums.
	4.	Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.	10.		Wet mop with disinfectant.
	5.	Seal holes, pipes, conduits, and punctures appropriately.	11.		Remove barrier materials carefully to minimize spreading of dirt and Debris associated with construction.

	6. Construct anteroom and require all personnel to pass through room so they can be vacuumed using 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.	12. Contain construction waste before transport in tightly covered containers. 13. Cover transport receptacles or carts. Tape covering. 14. Remove or isolate HVAC system in areas where work is being done.
Additional Requirements:		Date: _____ Initials: _____
_____ Exceptions/Additions to this permit are noted by attached memoranda.		Date: _____ Initials: _____
Permit Request By: Date: _____		Permit Authorized By: Date: _____



Infection Control Orientation – Construction Service Workers

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

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

1. Medical Waste: We will remove any medical waste, including sharps containers (for used needles and syringes), from construction areas prior to the start of the projects.

If you (contract workers) find any needles, syringes, sharp medical objects, please notify Infection Control Nurse (Extension 7206) **IMMEDIATELY**

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

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

3. Environmental Control: Negative air pressure must be maintained within the construction area. Demolition debris is removed in tightly fitted covered carts – use specified traffic patterns. Sticky or walk-off mats are placed immediately outside the construction zone and changed whenever necessary to control the spread of dust and dirt.

Exterior window seals are to be used to reduce the amount of outside excavation debris coming into the building. If demolition chutes are used, they must be sealed when not in use; the chute and damper should be sprayed with water, as necessary to maintain dust control. Control, collection and disposal must be provided for any drain liquid or sludge found when demolishing plumbing.

4. Traffic Control: Use designated entry and exit procedures.


Keep all egress pathways free of debris. No unauthorized personnel should be allowed to enter construction areas. Use designated elevators only.

5. Cleaning: Keep the construction area clean on a daily basis.

Dust and dirt **must** be kept to a minimum.

6. Workers: Clothing must be free of loose soil and debris when exiting the construction area. Use personal protective equipment (masks, face shields, etc.) as required for the task at hand. Hand washing is the best method of reducing the transmission of infection: always wash your hands with soap and water after visiting the restroom, before eating, when leaving the construction site.

Questions? Please feel free to call Infection Control

 JUSTIFICATION FOR PROPOSED FIELD STATION ISSUE <i>(Except forms and form letters)</i>					
INSTRUCTIONS: <i>Submit proposed issue and this form in DUPLICATE.</i>					
<input type="checkbox"/> THIS PROPOSED ISSUE DOES NOT REITERATE, DEVIATE FROM, CONTRADICT, OR SUPPLEMENT POLICY AND PROCEDURE PRESCRIBED BY CENTRAL OFFICE			<input type="checkbox"/> THIS PROPOSED ISSUE CONTAINS MINOR DEVIATIONS FROM CENTRAL OFFICE PROCEDURES <i>(Explain fully in Item 4)</i>		
1A. APPROVED BY SERVICE DIRECTOR/DIVISION CHIEF OF ORIGINATING ISSUE Jeffrey L. Thompson		1B. DATE 7/22/02		2. PROPOSED MEDIUM <i>(Include Issue Number assigned after final approval)</i> MCM	
1C. TITLE AND ORGANIZATION Manager, Facilities					
3. SUBJECT					
4. PURPOSE <i>(Explain fully the necessity, objective, reason for change in existing issue, etc.)</i> Establish guidelines for acquiring permits prior to construction or renovation projects for purpose of preventing acquisition of nosocomial infections in patients and to decrease risk of exposure of employees, visitors, and contractors, to potential infections, safety, and other health hazards during construction or renovation activities at the medical center or CBOCs.					
5. EACH ISSUE ON SAME SUBJECT <i>(Except those listed in Item 6)</i> None					
6. ADMENDMENTS OR RESCISSIONS EFFECTED BY THIS ISSUE None			7. NEW (OR REVISED) FORMS REQUIRED BY THIS ISSUE		
			FORM NO.	TITLE	
8A. NAME OF ORIGINATOR OF PROPOSED ISSUE <i>(type or print)</i> Jeffrey L. Thompson, Manager, Facilities			8B. ROOM NO.	8C. BUILDING	8D. TELEPHONE NO.
9. CONCURRENCES					
SYMBOL	SIGNATURE	DATE	SYMBOL	SIGNATURE	DATE
15l					
10. DISTRIBUTION					
11. REMARKS					
12A. FORWARDED FOR APPROVAL <i>(Signature of Station Publications Control Officer)</i>		12B. DATE	13A. APPROVED FOR PUBLICATION <i>(Signature of Director or Designee)</i>		13B. DATE

Automated VA Form 3222b

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 C.O.T.R..
 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 FAR clause 52.236-7, "Permits and Responsibilities," which is included in General Conditions. 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 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 Resident Engineer. Existing work to be altered or extended and that is found to be defective in any way, shall be reported to the C.O.T.R. 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 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.
- B. 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 PROFESSIONAL SURVEYING SERVICES

- A. Drawings will indicate if surveying services are required.

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, 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 Contractor.
- B. Establish and plainly mark center lines for each building and/or addition to each existing building, and such other lines and grades that are reasonably necessary to properly assure that location, orientation, and elevations established for each such structure and/or addition,

roads, or parking lots, are in accordance with lines and elevations shown on contract drawings.

- C. Following completion of general mass excavation and before any other permanent work is performed, establish and plainly mark (through use of appropriate batter boards or other means) sufficient additional survey control points or system of points as may be necessary to assure proper alignment, orientation, and grade of all major features of work. Survey shall include, but not be limited to, location of lines and grades of footings, exterior walls, center lines of columns in both directions, major utilities and elevations of floor slabs:
 - 1. Such additional survey control points or system of points thus established shall be checked and certified by a registered land surveyor or registered civil engineer. Furnish such certification to the C.O.T.R. before any work (such as footings, floor slabs, columns, walls, utilities and other major controlling features) is placed.
- D. During progress of 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 registered land surveyor or registered civil engineer as meeting requirements of contract drawings. Furnish such certification to the C.O.T.R. before any major items of concrete work are placed. In addition, contractor shall also furnish to the C.O.T.R., certificates from a registered land surveyor or registered civil engineer that the following work is complete in every respect as required by contract drawings.
 - 1. Lines of each building and/or addition.
 - 2. Elevations of bottoms of footings and tops of floors of each building and/or addition.
 - 3. Lines and elevations of sewers and of all outside distribution systems.
 - 4. Lines and elevations of roads, streets and parking lots.
- E. Whenever changes from contract drawings are made in line or grading requiring certificates, record such changes on a reproducible drawing bearing the registered land surveyor or registered civil engineer seal, and forward these drawings upon completion of work to C.O.T.R.

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 C.O.T.R.'s review, as often as requested.

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

1.17 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 C.O.T.R. If the equipment is not installed and maintained in accordance with the following provisions, the C.O.T.R. 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.
 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.

1.18 TEMPORARY USE OF EXISTING ELEVATORS

- A. Contractor will be allowed the use of existing freight elevator, however outside hoist shall be used by Contractor for transporting large materials and equipment that will not fit on elevator. It is the Contractors responsibility to determine if hoist is required.
- B. Use of existing freight elevator for handling building materials and Contractor's personnel will be permitted subject to following provisions:
 1. Contractor makes all arrangements with the C.O.T.R. for use of elevator. The C.O.T.R. will ascertain that elevator are in proper condition. Contractor may use freight elevator for daily use, but shall not use this elevator when it is reserved to transport meals to patients. These times are posted in freight 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. Do not use passenger elevators for transporting equipment unless approved by C.O.T.R.
 4. Contractor will be responsible for all damage done to elevators.

1.19 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 C.O.T.R., 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.

1.20 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. If required by Contracting Officer, 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. 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.
 - a. Steam is available at no cost to Contractor.
- 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 C.O.T.R.'s discretion) of use of water from Medical Center's system.

- G. Steam: Furnish steam system for testing required in various sections of specifications.
 - 1. Obtain steam for testing by connecting to the Medical Center steam distribution system. Steam is available at no cost to the Contractor.
 - 2. Maintain connections, pipe, fittings and fixtures and conserve steam-use so none is wasted. Failure to stop leakage or other waste will be cause for revocation (at C.O.T.R's discretion), of use of steam from the Medical Center's system.
- H. Fuel: Natural and LP gas and burner fuel oil required for boiler cleaning, normal initial boiler-burner setup and adjusting, and for performing the specified boiler tests will be furnished by the Government. Fuel required for prolonged boiler-burner setup, adjustments, or modifications due to improper design or operation of boiler, burner, or control devices shall be furnished by the Contractor at Contractor's expense.

1.21 NEW TELEPHONE EQUIPMENT

- A. 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.

1.22 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.

1.23 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 (two copies each) for each separate piece of equipment shall be delivered to the C.O.T.R. 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.
 - 1. Manuals shall include a "Parts-Breakdown".
- 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 C.O.T.R. and shall be considered concluded only when the C.O.T.R. 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 C.O.T.R., does not demonstrate sufficient qualifications in accordance with requirements for instructors above.

1.24 GOVERNMENT-FURNISHED PROPERTY

- A. The Government shall deliver to the Contractor, the Government-furnished property shown on drawings, specifications, and/or Scope-of-Work.
- 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 install 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.

1.25 RELOCATED EQUIPMENT AND/OR ITEMS

- A. Contractor shall disconnect, dismantle as necessary, remove and reinstall in new location, all existing equipment and/or items indicated by symbol 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 C.O.T.R.
- C. Suitably cap existing service lines, such as steam, condensate return, water, drain, gas, air, vacuum and/or electrical, whenever such lines are disconnected from equipment to be

relocated. Remove abandoned lines in finished areas and cap as specified herein before under paragraph "Abandoned Lines".

- 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 operation or use immediately after reinstallation.

1.26 CONSTRUCTION SIGN

- A. Provide a Construction Sign where directed by the C.O.T.R. All wood members shall be of framing lumber. Cover sign frame with 0.7 mm (24 gage) galvanized sheet steel nailed securely around edges and on all bearings. Provide three 100 by 100 mm (4 inch by 4 inch) posts (or equivalent round posts) set 1200 mm (four feet) into ground. Set bottom of sign level at 900 mm (three feet) above ground and secure to posts with through bolts. Make posts full height of sign. Brace posts with 50 x 100 mm (two by four inch) material as directed.
- B. Paint all surfaces of sign and posts two coats of white gloss paint. Border and letters shall be of black gloss paint, except project title which shall be blue gloss paint.
- C. Maintain sign and remove it when directed by the C.O.T.R.

1.27 SAFETY SIGN

- A. Provide a Safety Sign where directed by C.O.T.R. Face of sign shall be 19 mm (3/4 inch) thick exterior grade plywood. Provide two 100 mm by 100 mm (four by four inch) posts extending full height of sign and 900 mm (three feet) into ground. Set bottom of sign level at 1200 mm (four feet) above ground.
- 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 C.O.T.R.
- D. Post the number of accident free days on a daily basis.

1.28 HISTORIC PRESERVATION

- A. Where the Contractor or any of the Contractor's employees, prior to, or during the construction work, are advised of or discover any possible archeological, historical and/or cultural resources, the Contractor shall immediately notify the Resident Engineer verbally, and then with a written follow up.