Department of Veterans Affairs

Louis Stokes Cleveland VA Medical Center
Wade Park
10701 East Boulevard
Cleveland, Ohio 44106

TECHNICAL SPECIFICATIONS

Project No. 541-16-510
Patient Garage Retaining Wall

Architect
Department of Veteran Affairs
10701 E. Blvd.
Cleveland, OH 44106
440-791-2300 x6179
Attn: Nicholas Carrozza

Issue: Bidding
Date: August 4, 2016

DEPARTMENT OF VETERANS AFFAIRS

MASTER SPECIFICATIONS

TABLE OF CONTENTS
Section 00 01 10

SECTION 00 01 15
LIST OF DRAWING SHEETS

The drawings listed below accompanying this specification form as part of the contract.

Drawing No.	Title

INDEX OF DRAWINGS:

ARCHITECTURAL

S-1	Site Plan and Section Detail

- - - E N D - - -

SECTION 01 00 00
GENERAL REQUIREMENTS

1.1 GENERAL INTENTION

A. It is the VA's intention to comply with all the provisions of the VA Master specifications for all work performed under this contract: See www.cfm.va.gov/til/spec.asp for additional information. If there is a conflict or option given within the master specifications the contractor shall bring it to the contracting officer's attention prior to submitting price for the task order.

B. Contractor shall completely prepare site for building operations, including site preparation and excavation for installation of a new reinforced retaining wall as required by drawings and specifications.

C. Visits to the site by Bidders will be in accordance with FAR clause "52.236-27 Site Visits."

D. The VA project Engineer/COR, will render certain technical services during construction. Such services shall be considered as advisory to the Government and shall not be construed as expressing or implying a contractual act of the Government without affirmations by Contracting Officer or his duly authorized representative.

E. Before placement and installation of work subject to tests by testing laboratory retained and paid for by the Contractor, the Contractor shall notify the COR in sufficient time to enable testing laboratory personnel to be present at the site in time for proper taking and testing of specimens and field inspection. Such prior notice shall be not less than three work days unless otherwise designated by the COR.

F. 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.

G. 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.

H. Training:

1. All employees of general contractor or subcontractors shall have the following required hours of OSHA certified Construction Safety course and /or other relevant competency training, as determined by VA CP with input from the ICRA team.

   a. Superintendent: 30 hours

   b. All other Workers: 10 hours

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

1.2 REMOVED.

A. Removed.

B. Removed.

1.3 SPECIFICATIONS AND DRAWINGS FOR CONTRACTOR

A. AFTER AWARD OF CONTRACT, zero (0) sets of specifications and drawings will be furnished.

1.4 CONSTRUCTION SECURITY REQUIREMENETS

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. Sets of drawings may be made by the Contractor, at Contractor's expense, from electronic copies of the drawings furnished by Issuing Office.

B. Security Procedures:

1. General Contractor’s employees shall not enter the project site without appropriate badge. They may also be subject to inspection of their personal effects when entering or leaving the project site.

2. For working outside the “regular hours” as defined in the contract, The General Contractor shall give 3 days notice to the Contracting Officer so that security arrangements can be provided for the employees. This notice is separate from any notices required for utility shutdown described later in this section.

3. No photography of VA premises is allowed without written permission of the Contracting Officer.

4. VA reserves the right to close down or shut down the project site and order General Contractor's employees off the premises in the event of a national emergency. The General Contractor may return to the site only with the written approval of the Contracting Officer.

C. Key Control:

1. The General Contractor shall provide duplicate keys and lock combinations to the COR for the purpose of security inspections of every area of project including tool boxes and parked machines and take any emergency action.

2. All construction doors/access doors must use VA key system and remain locked at all times from the corridor/exterior side.

D. Document Control:

1. Before starting any work, the General Contractor/Sub Contractors shall submit an electronic security memorandum describing the approach to following goals and maintaining confidentiality of "sensitive information".

2. The General Contractor is responsible for safekeeping of all drawings, project manual and other project information. This information shall be shared only with those with a specific need to accomplish the project.

3. Certain documents, sketches, videos or photographs and drawings may be marked "Law Enforcement Sensitive" or "Sensitive Unclassified". Secure such information in separate containers and limit the access to only those who will need it for the project. Return the information to the Contracting Officer upon request.

3. These security documents shall not be removed or transmitted from the project site without the written approval of Contracting Officer.

4. All paper waste or electronic media such as CD's and diskettes shall be shredded and destroyed in a manner acceptable to the VA.

5. Notify Contracting Officer and Site Security Officer immediately when there is a loss or compromise of "sensitive information".

6. All electronic information shall be stored in specified location following VA standards and procedures using an Engineering Document Management Software (EDMS).

7. Security, access and maintenance of all project drawings, both scanned and electronic shall be performed and tracked through the EDMS system.

8. “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. No parking is available at Medical Center for contractors and Contractor commuter vehicles shall be parked off-site.

1.5 FIRE SAFETY

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

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

E84-2009 Surface Burning Characteristics of Building Materials

2. National Fire Protection Association (NFPA):

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

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

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

70-2011.....National Electrical Code

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

3..Occupational Safety and Health Administration (OSHA):

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

B. Fire Safety Plan: Establish and maintain a fire protection program in accordance with 29 CFR 1926. Prior to start of work, prepare a plan detailing project-specific fire safety measures, including periodic status reports, and submit to COR and Facility Safety Manager for review for compliance with contract requirements. Prior to any worker for the contractor or subcontractors beginning work, they shall undergo a safety briefing provided by the general contractor's competent person per OSHA requirements. This briefing shall include information on the construction limits, VAMC safety guidelines, means of egress, break areas, work hours, locations of restrooms, use of VAMC equipment, etc. Documentation shall be provided to the COR that individuals have undergone contractor's safety briefing.

1. A Hazardous Work Activity Checklist must be completed by the Contractor. Any activity with a YES response is to be detailed in the Site Specific Safety Plan. A sample Hazardous Work Activity Checklist is included at the end of this specification.

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 and VA locking system (storeroom type lock always locked from the corridor side).

2. Install temporary construction partitions as shown on drawings to maintain integrity of existing exit stair enclosures, exit passageways, fire-rated enclosures of hazardous areas, horizontal exits, smoke barriers, vertical shafts and openings enclosures.

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

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

H. Egress Routes for Construction Workers: Maintain free and unobstructed egress. Inspect daily. Provide weekly reports of findings and corrective actions to the COR. Any construction materials found in exit stairs or corridors will be disposed of at Contractor’s expense.

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

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

K. Sprinklers: 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 COR. All existing or temporary fire protection systems (fire alarms, sprinklers) located in construction areas shall be tested as coordinated with the medical center. Parameters for the testing and results of any tests performed shall be recorded by the medical center and copies provided to the COR.

M. Smoke Detectors: Prevent accidental operation. Remove temporary covers at end of work operations each day. Coordinate with COR.

N. Hot Work: Perform and safeguard hot work operations in accordance with NFPA 241 and NFPA 51B. Coordinate with COR. Obtain permits from COR 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 COR.

P. Smoking: Smoking is prohibited in and adjacent to construction areas inside existing buildings and additions under construction.

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 COR that personnel have been trained in the fire safety aspects of working in areas with impaired structural or compartmentalization features.

T. See additional OSHA Requirements and Safety and Health Regulations attachment at the end of this specification section.

1.6 OPERATIONS AND STORAGE AREAS

A. The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

B. Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

C. The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

D. Working space and space available for storing materials shall be as determined by the COR.

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

F. Execute work so as to interfere as little as possible with normal functioning of Medical Center as a whole, including operations of utility services, fire protection systems and any existing equipment, and with work being done by others. Use of equipment and tools that transmit vibrations and noises through the building structure, are not permitted in buildings that are occupied, during construction, jointly by patients or medical personnel, and Contractor's personnel, except as permitted by COR where required by limited working space.

1. Schedule delivery of materials and equipment to immediate construction working areas within buildings in use by Department of Veterans Affairs in quantities sufficient that do not impede with Medical Center activities. Provide unobstructed access to Medical Center areas required to remain in operation.

2. 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 and review and approval by COR.

G. Phasing: The work for this project is intended to be accomplished in one phase as described by the Drawings. If the Contractor elects to create additional phases, Contractor shall furnish the COR with a schedule of approximate phasing dates on which the Contractor intends to accomplish work in each specific area of site, building or portion thereof. In addition, Contractor shall notify the COR two weeks in advance for final approval of the proposed date of starting work in each specific area of site, building or portion thereof. Arrange such dates to ensure accomplishment of this work in successive phases mutually agreeable to COR and Contractor. Final inspection of each phase before moving to the next phase will be required through the Contracting Officer and COR.

H. When a section of the 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.

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

1. No utility service such as water, gas, steam, sewers or electricity, or fire protection systems and communications systems may be interrupted without prior approval of COR. Electrical work shall be accomplished with all affected circuits or equipment de-energized. When an electrical outage cannot be accomplished, work on any energized circuits or equipment shall not commence without the Medical Center Director’s prior knowledge and written approval.

2. Contractor shall submit a request to interrupt any such services to COR, in writing, three (3) work/business days in advance of a minor shut down and two (2) weeks in advance of a major 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, including crane and dock usage, must be requested, in writing, at least 14 calendar days prior to the desired time and shall be performed as directed by the COR.

5. In case of a contract construction emergency, service will be interrupted on approval of COR. Such approval will be confirmed in writing as soon as practical.

6. Whenever it is required that a connection fee be paid to a public utility provider for new permanent service to the construction project, for such items as water, sewer, electricity, gas or steam,

payment of such fee shall be the responsibility of the Government and not the Contractor.

7. All utility service shutdowns such as water, gas, steam, sewers, electricity, or fire protection shall occur during off-hours or weekends at no additional cost to the Government.

J. 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 at project boundary line. 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.

K. 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.

2. Method and scheduling of required cutting, altering and removal of existing roads, walks and entrances must be approved by the COR.

L. Coordinate the work for this contract with other construction operations as directed by COR. This includes the scheduling of traffic and the use of roadways, as specified in Article, USE OF ROADWAYS.

1.7 ALTERATIONS

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

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

2. Existence and conditions of items such as plumbing fixtures and accessories, electrical fixtures, equipment, venetian blinds, shades, etc., required by drawings to be either reused or relocated, or both.

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

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

B. Any items required by drawings to be either reused or relocated or both, found during this survey to be nonexistent, or in opinion of COR, to be in such condition that their use is impossible or impractical, shall be furnished and/or replaced by Contractor with new items in accordance with specifications which will be furnished by Government.

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

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

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. Infection Control permits (see sample at the end of this specification section) will be issued by the COR. The Infection Control Permits will be posted outside the appropriate construction area. More than one permit may be issued for a construction project if the work is located in separate areas requiring separate classes. The primary project scope area for this project is: **Class III**, however, work outside the primary project scope area may vary. The required infection control precautions are denoted on the following table:

Description of Required Infection Control Precautions *by Class*

	During Construction Project	**Upon Completion of Project**
CLASS I	1. Notify and receive permission from the COR to perform requested work. 2. Execute work by methods to minimize raising dust from construction operations. 3. Immediately replace a ceiling tile displaced for visual inspection.	1. Notify COR for inspection once the work is complete.
CLASS II	1. Notify and receive permission from the COR to perform requested work. 2. Provide active means to prevent airborne dust from dispersing into atmosphere. 3. Water mist work surfaces to control dust while cutting. 4. Seal unused doors with duct tape. 5. Block off and seal air vents. 6. Place dust mat at entrance and exit of work area. 7. Remove or isolate HVAC system in areas where work is being performed.	1. Wipe work surfaces with disinfectant. 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.

CLASS III	1. Obtain and post valid Infection Control Construction Permit at each work site. Permit must be signed by COR, I.C. Nurse and General Contractor to be valid. 2. Remove or isolate HVAC system in area where work is being done to prevent contamination of duct system. 3. Complete all critical barriers, i.e., sheetrock, plywood, plastic, to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins. Construction of barrier will need to occur outside normal work shifts with approval of COR. 4. Construct anteroom where possible and directed by COR. 5. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. 6. Contain construction waste before transport in tightly covered containers. 7. Cover transport receptacles or carts. Tape covering unless solid lid. 8. If the spread of dust from construction personnel is not contained workers may be required to where show covers and or be vacuumed prior to leaving worksite at the discretion of the COR or I.C. Nurse. 9. Seal holes, pipes, conduits and punctures appropriately. 10. Include particle count readings on daily logs against baseline points as required by COR or I.C. Nurse.	1. Do not remove barriers from work area until completed project is inspected by the owner's Safety Department. 2. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. Barriers are required to be removed after hours with approval of COR. 3. Vacuum work area with HEPA filtered vacuums. 4. Wet mop area with disinfectant. 5. Remove isolation of HVAC system in areas where work is being performed.

CLASS IV	1. Follow all requirements listed in Class III as well as additional requirements listed below. 2. Construct anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site, or they can wear cloth or paper coveralls that are removed each time they leave the work site. 3. All personnel entering work site are required to wear shoe covers. Shoe covers must be changed each time the worker exits the work area.	1. Before work is turned over and accepted by the VA a certified I.H. must be used to certify cleaning as well as swab and air sampling of the area. These tests shall meet or exceed industry standards for the type of area being renovated.

B. An infection control orientation will be provided by the VA Infection Control Personnel to the Contractor prior to construction start.

C. 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.

D. 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 COR for review for compliance with contract requirements.

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

E. Medical Center Infection Control personnel shall monitor for airborne disease (e.g. aspergillosis) as appropriate during construction. A baseline of conditions may be established by the medical center prior to the start of work and periodically during the construction stage to determine impact of construction activities on indoor air quality. In addition:

1. The COR and VAMC Infection Control personnel shall review pressure differential monitoring documentation to verify that pressure differentials in the construction zone and in the patient-care rooms are appropriate for their settings. The requirement for negative air pressure in the construction zone shall be maintained at all times. 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.

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

1. Dampen debris to keep down dust and provide temporary construction partitions in existing structures where directed by COR. Blank off ducts and diffusers to prevent circulation of dust into occupied areas during construction.

2. Do not perform dust producing tasks within occupied areas without the approval of the COR. For construction in any areas that will remain jointly occupied by the medical Center and Contractor’s workers, the Contractor shall:

a. Provide dust proof 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 painted 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. Barrier installation to be done outside normal Medical Center hours.

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 at the end of each shift.

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

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.

G. 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 with reports submitted to COR.

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 COR.

2. Items not reserved shall become property of the Contractor and be removed by Contractor from Medical Center.

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

1.10 RESTORATION

A. Remove, cut, alter, replace, patch and repair existing work as necessary to install new work. Except as otherwise shown or specified, do not cut, alter or remove any structural work, and do not disturb any ducts, plumbing, steam, gas, or electric work without approval of the COR. Existing work to be altered or extended and that is found to be defective in any way, shall be reported to the COR before it is disturbed. Materials and workmanship used in restoring work, shall conform in type

and quality to that of original existing construction, except as otherwise shown or specified.

B. Upon completion of contract, deliver work complete and undamaged. Existing work (walls, ceilings, partitions, floors, mechanical and electrical work, lawns, paving, roads, walks, etc.) disturbed or removed as a result of performing required new work, shall be patched, repaired, reinstalled, or replaced with new work, and refinished and left in as good condition as existed before commencing work.

C. At Contractor's own expense, Contractor shall immediately restore to service and repair any damage caused by Contractor's workmen to existing piping and conduits, wires, cables, etc., of utility services or of fire protection systems and communications systems (including telephone) which are indicated on drawings and which are not scheduled for discontinuance or abandonment.

D. Expense of repairs to such utilities and systems not shown on drawings or locations of which are unknown will be covered by adjustment to contract time and price in accordance with Bid Solicitation GENERAL CONDITIONS.

1.11 AS-BUILT DRAWINGS

A. The contractor shall maintain two full size sets of as-built drawings which will be kept current during construction of the project, to include all contract changes, modifications and clarifications.

B. All variations shall be shown in the same general detail as used in the contract drawings. To insure compliance, as-built drawings shall be made available for the COR's review, as often as requested.

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

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

- - - E N D - - -

(Name) CONSTRUCTION COMPANY

SITE SPECIFIC ACCIDENT PREVENTION PLAN

+

CONSTRUCTION HEALTH AND SAFETY PROGRAM

FOR

Name of Project

Location

Veterans Affairs Medical Center – Wade Park ,Cleveland, Ohio

Project number given by contracting avoid confusion

PROJECT # 541-AB-XYZ

CONTRACT # VA541-A-XYZ

Template date 4/16/2010

RESPONSIBILITIES AND LINES OF AUTHORITY OF NAME CONSTRUCTION COMPANY

The following people have responsibilities and authority for corporate safety:

BACKGROUND INFORMATION (Prime)

I. Contractor: **Name**

Address
City, State Zip

II. Project Name: **Wade Park (Brecksville) Name**

III. Project Description: **Brief Description** (541-xx-xxx)

IV. Contractor Accident Record: **Contractor provide OSHA Log information**

A. RESPONSIBILITIES

1. Chief Corporate Safety Officer: **Contact Name (Contact telephone #)**
Name Construction Company
Title

2. Site Safety Responsibilities: **Contact Name (Contact telephone #)**
Name Construction Company
Title

3. Project Safety Consulting: **Contact Name (Contact telephone #)**
Name Construction Company
Title

BACKGROUND INFORMATION (SUBCONTRACTOR)

I. Contractor: **Name**
Address
City, State Zip

II. Project Name: **Wade Park (Brecksville) Name**

III. Project Description: **Brief Description**

IV. Contractor Accident Record: **Contractor provide OSHA Log information**

A. RESPONSIBILITIES

1. Chief Corporate Safety Officer: **Contact Name (Contact telephone #)**
Name Construction Company
Title

2. Site Safety Responsibilities: **Contact Name (Contact telephone #)**
Name Construction Company
Title

3. Project Safety Consulting: **Contact Name (Contact telephone #)**
Name Construction Company
Title

The overall lines of authority concerning safety and health will be as follows:

Name – Title
Name – Title

A Site Safety and Health Officer will be provided at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor and subcontractors. The SSHO will be employed by the prime. SSHO qualifications with education certificates will be listed in Appendix B.

The competent person for Health Hazard Control and Respiratory Protection Program will conduct and document a hazard assessment in accordance with Section 06 to identify and evaluate. (What form of documentation).

Site Safety and Health Officer (SSHO) shall conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Safety inspection logs shall be attached to the Contractors daily quality control report. Current "Safety Logs" shall be readily available upon request.

SIGNATURE SHEET

The following persons are responsible for preparing and approving this plan:

Preparer:

Contact Name (Phone #)
Contact Title
Name Construction Company

_____

Date_____

SCOPE OF WORK SUMMARY

Summary

This job consists of **(Basic Description) Please include the scope of work submitted for the project**

Pre-demolition:

Describe the activity in sufficient detail to determine the safety program elements that will be required to be addressed in the body of the procedure – Section 6. Use the PCRA (Pre-Construction Risk Assessment) along with the Scope of Work to determine which elements need to be addressed for the pre-demolition phase.

Demolition:

Describe the activity in sufficient detail to determine the safety program elements that will be required to be addressed in the body of the procedure – Section 6. PCRA (Pre-Construction Risk Assessment) along with the Scope of Work to determine which elements need to be addressed for each of the demolition phase.

Construction:

Describe the activity in sufficient detail to determine the safety program elements that will be required to be addressed in the body of the procedure Section - 6. PCRA (Pre-Construction Risk Assessment) along with the Scope of Work to determine which elements need to be addressed for the construction phase.

1. SITE ACCESS:

a) Parking onsite is not provided by the VAMC Cleveland at the Wade Park Facility

b) Access into the facility will be through entrances located close to the work area to avoid patient care areas. The following entrance that will be used by **Name** Construction Company employees will be submitted in writing or on the drawings:

(Enter the specific building access to be used)

2. WORK AREA SECURITY:

a) All **Name** Construction Company employees will wear company identification badges or those provided by VAMC Cleveland Police Service.
b) Patients, visitors and unauthorized VAMC Cleveland employees will be kept out of work areas using locked doors, barricades and safety postings as appropriate.

3. PLAN FOR PREVENTION OF ALCOHOL AND DRUG ABUSE

(Review – replace with your own company policy if this doesn't work for you)

a) Due to the nature of our work, it is critical that all employees are free from the adverse effects of drugs and/or alcohol. The company is committed to providing a safe workplace for all its employees. The goal of this policy is to maintain a safe and secure work environment that is free from the effects of alcohol and drug abuse.

b) The intent of this policy is to be responsive to the employees health needs by the early recognition and treatment of chemical dependency problems and behavioral/medical disorder, and to support the rights of the company and its employees to work within an alcohol / drug free environment.

c) This policy is not applicable to physician prescribed drugs. Employees on such medication(s), which may adversely affect their job performance, should promptly discuss the matter with their supervisor.

- Failure of the employee to so notify their supervisor can result in disciplinary action including discharge.
- It should be noted that while legal, prescribed drugs could adversely affect the safety of the employee and other employees on the site.
- All **Name** Construction employees are drug tested before hiring, periodically, and annually.

4. SITE SAFETY AUDITS (Inspections):

a) INTERNAL INSPECTIONS

The site supervisor, who is the **Name** Construction competent person, will conduct the Site Safety and Health inspections. The competent person's certifications are located in Appendix B. **(Put the Certifications in the Appendix B.)** There will two types of safety inspections that will be performed on this job site.

(1) A weekly Safety and Health inspection and report will be conducted by the site supervisor. The inspection forms will document and track the following information:

- Any Violations
- Date of violation
- Nature of violation
- Needed corrective action
- Date of correction
- Name of responsible person(s)

(a) In addition to the above items he will also notify any employee and/or subcontractor in writing of any violations.
(b) This information will be followed up on by the COR or Construction Safety Group, as needed and/or requires immediate attention to the violations. (Should he notify VA of findings?)
(c) All safety inspection forms are reviewed to ensure that all noted corrective actions are within the applicable OSHA and Veterans Affairs Safety and Health Manual guidelines.
(d) This documentation will be kept (readily available?) at the project field office, and will aid in the audits of the Accident Prevention Plan.

(2) The second type of Safety and Health Inspection will be a daily checklist.
(a) This too, will be performed each workday onsite, by the site supervisor.
(b) This documentation will be kept at the project field office, and will aid in the audits of the Accident Prevention Plan. (this too Should be made readily available?)

b) EXTERNAL INSPECTORS/CONSTRUCTION ROUNDS

(1) At various times there may be announced and unannounced visits to the work area of any of the Contracted Construction Projects. They may be visited by
some or all of the members of the Construction Safety Inspection Group.

(2) Prior to the activity of cutting and/or welding, the COR for the Veterans Affairs will be contacted to assist in scheduling a site inspection and submission for a burn permit.

(3) Prior to any activity including digging and/or excavating, the COR for the Veterans Affairs will be contacted to assist in scheduling a site inspection and submission for a permit.

(4) Prior to any activity including the renovation and/or penetration of rated walls, the COR for the Veterans Affairs will be contacted to assist in scheduling a site inspection and submission for a permit.

(5) Prior to any activity including the removal or repair of Asbestos Containing Building Material, the COR for the Veterans Affairs will be contacted to assist in scheduling a site inspection and submission for a permit.

c) INSPECTIONS BY OUTSIDE PARTIES i.e., OSHA, EPA, etc.

(1) Presentation of Credentials - Upon arrival at the work site or facility, the Compliance Officer must display his or her credentials and will ask to meet with the appropriate employer representative.

(2) The contractor must notify the projects COR immediately upon the initial contact of the Compliance Officer's contact.

(3) Opening Conference – During an opening conference, the compliance officer will explain the purpose of the inspection. The contractor's management representative must be prepared to discuss actions that have been taken to demonstrate their company's commitment to the health and safety of employees (e.g. work practices, safety and industrial hygiene standards, safety manuals, training conducted, internal inspections, etc).

(4) An authorized employee representative will be given the opportunity to attend the opening conference and to accompany the compliance officer during the inspection. Employees may also be consulted during the conduct of the inspection. Employees who participate in the inspection, or are consulted by the compliance officer, are protected from discrimination for exercising their safety and health rights under the "Whistle Blowers Act".

(5) A contractor management representative and a VAMC Cleveland Safety representative must accompany the compliance officer during the inspection and keep accurate notes of any actual or possible violations found by the compliance officer. Obvious violations detected by the compliance officer should be corrected on the spot where possible.

(6) It is imperative that existing operations, reports, logs, etc. not be misrepresented to the compliance officer. The penalty for making false statements or representation to OSHA or its compliance officers is a maximum of $10,000 and 6 months imprisonment. In addition, the offending party can be subject to discipline by the company up to and including discharge.

(7) Closing Conference - After the inspection has been conducted, a closing conference will be held between the compliance officer, the employer and employee representatives and VAMC Cleveland. This is the best time, before possible issuance of a citation, to explain the company's position. It is imperative that we question any proposed findings or abatement periods that are unreasonable. Request that any citations be sent to the company with a copy to the VAMC Cleveland safety office.

5. SAFETY TRAINING /EDUCATION:

a) Site orientation training:

All employees on site will be required to attend a Safety Training Orientation at the start of the project, or before they begin work at the job site. The site supervisor, competent person, will conduct the training. Training on the applicable requirements of this Site Specific Training Plan is plan is mandatory and must be documented.

b) Supervisor and employee safety meetings:

The primary site supervisor, who is the competent person (certifications located in Appendix B), will conduct the initial employee site safety orientation. Mandatory safety meetings will be held on a weekly basis. Safety and health topics will vary from week to week on subject matter, utilizing the 29 CFR 1910 and 29 CFR 1926 standards, along with the Veterans Affairs Safety and Health Program and issues raised during construction.

(Place documentation of training sign-in sheets and agenda in Appendix B)

c) Employee training:

Name Construction Company employees will be trained, at the site safety orientation on the following topics:

- When PPE is necessary.
- What PPE is necessary and which PPE has been selected for each process the employee operates.
- How to properly put on, take off, adjust, and wear PPE.

6. ACCIDENT REPORTING:

All **Name** Construction employees on site will be required to attend an "Accident and Event Reporting" Orientation class at the start of the project, or before they begin work at the job site. The site supervisor, competent person, will conduct the above mentioned training.

a) Accident investigations, reports, and logs:

The project manager and site supervisor will conduct all accident and near miss investigations. The site supervisor will maintain the OSHA 300 log. All documentation will be kept on the job site. Certifications for competent person(s) are located in Appendix B.

b) Immediate notification of major accidents:

Should a major accident occur, the following notifications will take place as soon as any injured person(s) are cared for:

Contact Name, Title
Contact Name, Title
Contact Name, Title
VA Safety Representative: Frank Wunderle

Local Emergency Services:

For Wade Park

Hospital — VA Wade Park Medical Facility
10701 East Blvd.

	Cleveland, Ohio 44106 Dial 2222 from any VA Phone
Hospital	University Hospitals 11100 Euclid Avenue Cleveland, Ohio 44106 911 / (216) 844-1000
Fire Department	911 / 216-664-6813
Security	Dial 4207 from any VA Phone

c) Accident response plan:

Name Construction Company intends to make certain all emergency incidents are handled in a proper and safe manner giving priority to the following:

- Life Safety
- Property Conservation
- Emergency Situation Investigation
- Return to Normal Operations

d) Exposure data / man hours worked:

(1) This section covers the following operations **(Fill in operation/s requiring additional training)** unless the employer can demonstrate that the operation does not involve employee exposure or the reasonable possibility for employee exposure to safety or health hazards. Example; (a negative impact statement or asbestos abatement)

(2) This information will be maintained by the site supervisor and verified by **Contact Name**. A daily log will be maintained of all man hours worked. This information will also be used to determine the final TIR for the project. Any data collected will be submitted to the COR for their report.

7. EMERGENCY RESPONSE PLAN:

This plan covers the actions of all **Name** Construction employees. All subcontractors on site will be required to submit for approval, to **Name** Construction Company, their own site specific Emergency Response Plan. If not adequate, the subcontractor and their employees must be orientated to the **Name** Construction Company's "SITE SPECIFIC EMERGENCY RESPONSE PLAN", before they can begin work at this site.

a) Chemical Safety:

As part of this program, **Name** Construction Company will inform subcontractors, or their representatives of the site emergency response procedures and any potential fire, explosion, health, safety, or other hazards.

The following procedures address emergency response as follows:

- Pre-emergency planning and coordination with outside parties:
  VAMC (COR) will receive notification of date to start work, along with MSDS's of all substances brought onto the facility.

- Personal roles, lines of authority, training, and communication:

The personnel utilizing chemicals will contain the substances brought onto the facility. Plumbers will contain and handle all compressed gas cylinders, providing they have been trained and documented.
In the case where a situation occurs that they cannot handle, all employees will be trained on evacuating the area, notifying the on-site supervisor, and workers in the immediate worksite.

- Emergency recognition and prevention:

All workers will, at the safety orientation, be informed of this site-specific emergency response plan and procedures.
All workers will be responsible to recognize hazards and their prevention, practice this at all times on the worksite.
All workers will be responsible to answer question from surveyors about general safety, health, and emergency procedures wherever they are on site.

b) Emergency plan for severe weather:

For the site-specific severe weather conditions that employees may encounter during the project, **Name** Construction Company has developed the following procedures. First, **Name** Construction Company employees will adhere to all NWS warnings and advisories. For snowfall, the policy for workers is that a Level Three emergency, which is predicted heavy snow fall, or other dangerous weather conditions.

- Safe distances and places of refuge:

All workers at this site will be informed of the designated location of the safe zone. This will also be posted in the field office for all to be reminded of. In the event of an emergency occurrence, and the Local Fire Department, or any other entity is summoned, all workers will report to this zone to be accounted for.

- Site security and control:

In the event of an emergency, workers will notify the site supervisor or project manager of the situation, at that time, workers will report to the safe zone. The site supervisor and/or project manager will notify security and any other applicable authorities. Staying away from the immediate situation and not allowing any unauthorized personnel to enter until proper authorities arrive.

- Evacuation routes and procedures:

Any work will be performed on the interior of the building. Evacuation plans are posted in various locations throughout work area by the VA.

- Decontamination:

This would be required if there is a possibility of a large spill of hazardous material with the potential of contaminating contractor employees. Small spills and personnel contaminations are expected to be cleaned up using the contractors Hazard Communication program and associated MSDS requirements.

c) Medical support:

It will be the duty of all workers onsite, including subcontractors, to immediately report to the site supervisor and/or project manager, COR's any and all emergencies.

The following are items of concern regarding the handling of all medical support requirements:

(1) On site:

- For incidents occurring on site at Wade Park Veterans Affairs Medical Center or Brecksville Veterans Affairs Medical Center; the victim(s) will be stabilized prior to be relocated to another institution.
- For non-emergency support first aid supplies will be kept at the **Name** Construction Company field office. All subcontractors will be required to supply properly trained personnel as well as their own first aid supplies.
- All supplies will be subject to our safety inspections. No one will perform first aid or CPR unless properly trained, and verification of certification is on file at the jobsite.
-

(2) Off site:

- For the Wade Park location, University Hospital Medical Center is located at 11100 Euclid Avenue (216) 844-1000. For the Brecksville location, Marymount medical Center is located on 2001 East Royalton Rd., Broadview Hts., OH 44147.
- Maps are posted and available for all contractors on site (See Appendix A).
- Emergency medical treatment and first aid:
- Emergency alerting and response procedures:
- It will be the duty of all workers onsite, including subcontractors, to immediately respond to the COR's, Construction Safety Team or Outside Inspectors from governmental agencies or agencies approving accreditation regarding their function during an emergency.

(3) Posting of emergency telephone numbers:

The posting of these Emergency Telephone Numbers will be in the job field office, where all workers will have access to them. All employees and subcontractors will be made aware of these and the location at the safety orientation. The numbers are as follows:

Hospital	Wade Park Veterans Affairs Medical Center Dial 2222 from any VA Phone University Hospital 911 / (216) 844-1000
Fire Department	911 / (216) 664-6813
Security	Dial 4207 from any VA Phone

d) Hazard communication program:

This site specific Hazard Communication Plan has been implemented in accordance with 29 CFR 1910.1200.

All areas in which hazardous chemicals will be stored shall have the proper label and/or signs. The MSDS for all chemicals on site will be located in a book labeled MSDS, in the project field office.

The training of employees and subcontractors will be as follows:

- Where to find this program
- What is in this program
- All chemicals on this jobsite
- What is an MSDS
- How to find specific information on an MSDS
- Labeling system
- What area these chemicals are stored in, map indicating
- The proper handling procedures for these chemicals
- Spill/release clean up protocol

Should there be an immediate threat to life or property, the emergency response plan for the installation, which is to be on file at the field office.

It is mandatory that all subcontractors submit, before a new chemical is introduced to the worksite, that the proper MSDS is submitted to the site supervisor/project manager. It will be the responsibility of the site supervisor to inform all employees and subcontractors of the new chemical(s), introduce the MSDS, and the potential hazards of that chemical. The site supervisor and/or project manager will have the responsibility to notify the Contracting Officer / COR of any and all new chemicals brought onto the facility.

Chemical storage areas, if needed, to be located per VA designated location.

e) CORRECTIVE ACTIONS INVOLVING CLEAN-UP OPERATIONS AT SITES COVERED BY THE RESOURCE CONSERVATION AND RECOVERY ACT OF 1976 (RCRA) AS AMENDED (42 W.S.C. 6901 ET SEQ).

Clean-up operations required by a governmental body, whether Federal, state, local or other involving hazardous substance that are conducted at uncontrolled hazardous waste sites (including, but not limited to, the EPA's National Priority Site List (NPL), state priority site lists, sites recommended for the EPA, NPL, and initial investigations of government identified sites which area conducted before the presence or absence of hazardous substances has been ascertained;

Voluntary clean-up operations at sites recognized by Federal, state, local or other governmental bodies as uncontrolled hazardous waste sites;

Operations involving hazardous waste that area conducted at treatment, storage, disposal (TSD) facilities regulated by 40 CFR Parts 264 and 265 pursuant to RCRA; or by agencies under agreement with U.S.E.P.A. to implement RCRA regulations; and Emergency response operations for releases of, or substantial threats of releases of, hazardous substances with regard to the location of the hazard.

8. FIRE PREVENTION PLAN:

We at **Name** Construction Company limit our employees participation to the use of portable fire extinguishers. The site supervisor at safety orientation will cover this Plan. The following topics will include:

a) All areas controlled by the primary contractor are required to maintain fire protection during their occupancy. As a minimum smoke detectors and heat sensors shall be in place whenever the areas original fire protection has been compromised.

b) All fire extinguishers must be checked and tagged every thirty day

c) The general principles of fire extinguisher use and the hazards involved with incipient stage firefighting.

d) Actions to be taken by authorized person(s)
(1) Evacuate area.
(2) Notify site supervisor and/or project manager.
(3) Determine if fire is incipient
(4) Utilize fire extinguisher.
(5) If fire or smoke is too great, report to safe zone.
(6) Make call to Fire Department if instructed by supervisor and/or project manager.

e) Actions to be taken by unauthorized person(s)
(1) Evacuate area
(2) Notify supervisor and/or project manager.
(3) Report to safe zone.
(4) Make call to Fire Department if instructed by site supervisor and/or project manager.

f) Only approved fire extinguishers will be onsite and checked on a daily basis by the site supervisor. These will be located in the following areas, but not limited to:

(1) Portable Fire Extinguishers
(2) Individual Roles and Responsibilities
(3) Fire Watch
(4) Response Plans
(5) Safe Zone
(6) Notification
(7) Site Mapping
(8) Inside field office.
(9) In any area where cutting or welding is taking place

g) The following sections listed below are all part of this Accident Prevention Plan. The information below contains additional requirements that are part of this Fire Prevention Plan:

- Safety and Health Inspections
- Firefighting Plan
- Posting of Emergency Numbers
- Hazard Communication Program
- Site Sanitation Plan

(1) The risk of a job site fire can be avoided through; safety and health inspections, housekeeping, proper maintenance, proper storage and handling, ensuring all employees and subcontractors are performing their designated work duties properly, the handling of supplies and equipment as directed, following all guidelines set forth through operating manuals, instructions, and training,

(2) All employees and subcontractors require the proper storage of combustibles. Combustible liquids must be stored and covered in approved containers.

(3) All chemical spills including, of course, combustible liquids, must be cleaned up immediately.

(4) All chemical and chemical products will be handled and stored in accordance with the procedures noted on their individual MSDS

Note: Care must be taken when cleaning up chemical spills. Information on appropriate personal protective equipment, proper disposal, proper cleanup procedures, required ventilation, etc is found on the products MSDS.

(5) Cleanup materials and damaged containers must be properly disposed.

(6) Combustible liquids and trash must be segregated and stored away from ignition sources.

(7) Approved portable fire extinguishers will be checked on daily basis, ensuring they are charged and ready for use.

(8) Smoking is not permitted inside the facility. Only designated areas by the VA will be permitted (outside), with smoking debris discarded in designated areas..

(9) Debris will not be allowed to accumulate on the job site and will be maintained daily.

h) Submission of a Burn Permit. **Name** Construction will submit a Burn Permit to the COR to perform acetylene oxygen welding, brazing and cutting, the following precautionary measures will be required as part of this permit along with any additional requirements by the VA Medical Center Policy 138-012 (Hot Work):

(1) Inspect all surroundings and equipment to insure that combustible substances are not present in any area where contact of metal at a temperature above the flashpoint of any compound is possible.

(2) Ensure that no open containers or spills of combustible substances are present.

(3) Ensure that ignition is not possible by conduction, convection, radiation, or dispersion of molten metal.

(4) Proper protection equipment and practices will be used, i.e., fireproof blankets, removal of combustible materials where practicable, and portable fire extinguishers of proper type on hand.

(5) When the above operations are in use a continuous Fire Watch will be performed while equipment is being used.

(6) Training in fire protection will occur at the site safety orientation. This training shall include the following topics, but not limited to:

9. SITE SAFETY RULES:

Name Construction Company has developed a comprehensive safety and health program that addresses our specific safety and health concerns and provides guidance for the performance of our individual job tasks within the framework of appropriate Occupational Safety and Health Administration (OSHA) standards.

Safety requires not only that each person understand and perform individual tasks in a safe manner, but also that each individual is aware of his/her surroundings and is actively involved in the safety and health of others.

a) No Smoking: Smoking is not permitted inside the facility. Only designated areas by the VA will be permitted (outside), with smoking debris discarded in designated areas.

b) Accidents: In the event of an emergency, workers will notify the site supervisor or project manager of the situation, at that time, workers will report to the safe zone. The site supervisor and/or project manager will notify security and any other applicable authorities.

The goals for all projects are as follows:

(1) Zero accident rate
(2) Zero injury/illness rate
(3) Compliance with all applicable Local, State, OSHA standards and Veterans Affairs Safety Directives

c) Hard Hats: Head Protection will be as follows:

- All workers on this site will be required to wear approved hart hats when working in the close proximity of heavy equipment and where structural steel is being hoisted

- In the area where another workers activities may exposing them to injury.

d) Hazard Reporting: Each employee is encouraged to contact their Supervisor immediately should a safety or health risk exist so that corrective action may be taken immediately.

e) Controlled Substances: Therefore, the following actions are strictly prohibited and will prompt disciplinary action up to and including consideration for immediate discharge:

(1) The illegal use, sale, arranging for sale, possession or manufacturing of narcotics, drugs or controlled substances while on the job or on VA property.
(2) The use of alcohol or illegal drugs while on the job or VA property.

f) Safety Devices: **Name** Construction Company has fulfilled all required Safety and Health Plans and Programs according to regulation, and has installed all required safety device for the equipment being used for the tasks. Failure to use or to disable the mentioned safety device relating to CFR 1910 and 1926 standards to ensure 100% safety will be grounds for review .

The goal is to provide the company and its workers protection against those individuals who refuse to act in a consistently safe manner.

Without proper enforcement, the policy will not be able to deliver the intended results. Therefore, it is essential that all employees be held accountable to these guidelines for disciplinary actions up to and including discharge.

g) Personnel Protective Equipment: Procedures for implementing an effective PPE policy in accordance with 29 CFR 1910.132, will be as follows:

(1) During a pre-construction walk through, **Contact Name**, the Project Manager, will perform a job site hazard assessment.

(a) HAZARD ASSESSMENT: The purpose of the survey is to identify sources of hazards to workers and co-workers. The documentation of this hazard assessment is located in PCRA (Pre-Construction Risk Assessment)

(b) POTENTIAL HAZARD SOURCES **(Adjust based on scope of work)**

- **Surfaces that could become slick, uneven walking and working surfaces**
- **Welding / Brazing Hazards**
- **Quality Air Control**
- **Electrical Hazards**
- **Potential Overhead Obstructions (above ceiling)**
- **Fall Protection**
- **Rolling or pinching objects**
- **Sharp objects that might pierce feet or cut hands**
- **Motion that includes tool movement, moving machinery, or machine parts, or movement of personnel that could result in collision with stationary objects.**

(c) EMPLOYEE TRAINING: **Name** Construction Company employees will be trained, at the site safety orientation on the following topics:

- When PPE is necessary.
- What PPE is necessary and which PPE has been selected for each process the employee operates.
- How to properly put on, take off, adjust and wear PPE.

(2) Each of the basic hazards has been reviewed and a determination made as to the type, level of risk, and seriousness of potential injury.

- When exposure to hazards cannot be engineered completely out of normal operations or maintenance work.
- When safe work practices cannot provide sufficient additional protection.
- A Final method of control is through the use of protective clothing or equipment. These include eye protection, steel-toed shoes, hard hats, hearing protection, gloves, and fall protection

(3) Consideration has been given to the possibility of exposure to several hazards at once. The general procedure for determining appropriate protective equipment is to:

- Identify the potential hazards and the type of protective equipment that is available, and what protection it provides.
- Compare the capabilities of various types of PPE with the hazards associated with the environment.
- Select the PPE, which provides a level of protection greater than the minimum required to protect employees from the hazards.
- Select PPE that will fit each employee properly and provides protection from the hazard.
- The Hazard Assessment Worksheet is located in Appendix D.

h) Horseplay: Safety training needs will be identified by continual reassessment of our work methods, equipment and job sites as well as employee and management input. Observation of unsafe acts will be addressed immediately.

i) Reporting Under the Influence:

(1) Arriving at work or working under the influence of alcohol or illegal drugs, narcotics or controlled substances.

(2) Any illegal substance confiscated pursuant to this policy will be turned over to the proper authorities.

j) Flammable Liquid Storage: It is mandatory that all subcontractors submit, before a new chemical is introduced to the worksite, that the proper MSDS is submitted to the site supervisor/project manager. It will be the responsibility of the site supervisor to inform all employees and subcontractors of the new chemical(s), introduce the MSDS, and the potential hazards of that chemical. The site supervisor and/or project manager will have the responsibility to notify the Contracting Officer / COR of any and all new chemicals brought onto the facility.

k) Heavy Equipment Operation

10. WEEKLY CONTRACTOR REVIEWS:

a) The primary site supervisor, who is the competent person (certifications in Appendix will conduct the initial employee site safety orientation.

b) Mandatory safety meetings will be held on a weekly basis. Safety and health topics will vary from week to week on subject matter, utilizing the 29 CFR 1910 and 29 CFR 1926 standards, along with the Veterans Affairs Safety and Health Program and issues raised during construction.(Place documentation of training sign-in sheets and agenda in Appendix B)

c) Safety takes a commitment from all personnel within our organization. Weekly Training will be interactive with an opportunity for all to actively participate, ask questions, make suggestions, and refer to our written policies and procedures.

11. COMPETENT PERSON:

a) A Site Safety and Health Officer (SSHO) will be provided at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor and subcontractors.

b) The SSHO will be employed by the prime. SSHO qualifications with education certificates will be listed in Appendix B.

d) There will be a competent person for maintaining a Health Hazard Control and Respiratory Protection Program. They will conduct and document a hazard assessment in accordance with Section 06 to identify and evaluate the need and level of protection required for the activities being scheduled. (What form of documentation).

d) Conduct daily safety and health inspections and maintain a written log which includes

area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Safety inspection logs shall be attached to the Contractors daily quality control report. Current “Safety Logs” shall be readily available upon request.

12. WRITTEN PROTOCOLS FOR OUTSIDE INSPECTIONS:

.

a) Presentation of Credentials - Upon arrival at the work site or facility, the OSHA compliance officer must display his or her credentials and will ask to meet with the appropriate employer representative.

b) The contractor must notify the COR immediately upon the initial OSHA Contact.

(1) Opening Conference – During an opening conference, the compliance officer will explain the purpose of the inspection. Contractor Management representatives must be prepared to discuss actions that have been taken to demonstrate their company’s commitment to the health and safety of employees (e.g. work practices, safety and industrial hygiene standards, safety manuals, training conducted, internal inspections, etc).

(2) An authorized employee representative will be given the opportunity to attend the opening conference and to accompany the compliance officer during the inspection. Employees may also be consulted during the conduct of the inspection. Employees who participate in the inspection, or are consulted by the compliance officer, are protected under the OSHA act from discrimination for exercising their safety and health rights.

(3) A contractor management representative and a VAMC Cleveland Safety representative must accompany the compliance officer during the inspection and keep accurate notes of any actual or possible violations found by the compliance officer. Obvious violations detected by the compliance officer should be corrected on the spot where possible.

(4) It is imperative that existing operations, reports, logs, etc. not be misrepresented to the compliance officer. The penalty for making false statements or representation to OSHA or its compliance officers is a maximum of $10,000 and 6 months imprisonment. In addition, the offending party can be subject to discipline by the company up to and including discharge

(5) Closing Conference - After the inspection has been conducted, a closing conference will be held between the compliance officer, the employer and employee representatives and VAMC Cleveland. This is the best time, before possible issuance of a citation, to explain the company’s position. It is imperative that we question any proposed findings or abatement periods that are unreasonable. Request that any citations be sent to the company with a copy to the VAMC Cleveland safety office.

13. SUBCONTRACTOR SITE SPECIFIC SAFETY PLAN:

As part of employment with **Name** Construction Company, **employees** are

required to comply with all aspects **of their** corporate level "Safety and Health Plan".

- Supervisors are expected and required to comply with all aspects of the corporate level "Safety and Health Plan" as well as to enforce all applicable requirements at the jobsite.

- Supervisors are expected and required to complete all necessary site safety documentation in a complete and timely manner.

- Supervisors are required to report all safety incidents to the main office as soon as possible. The projects COR is to be notified ASAP. The above items represent the method used to ensure our goals are met.

14. REQUIRED POSTERS:

This Policy Statement will be conspicuously posted in the job site office along with all other required postings including the OSHA Form 300, Log and Summary of Occupational Injuries and Illnesses.

15. SUBCONTRACTOR/SUPPLIERS ORIENTATION PROGRAM:

a) Identification of subcontractors:
Name of Subcontractor (List all subcontractors expected to be on site)

b) Controlling and coordination of subcontractors and suppliers:

Suppliers will be under close supervision during material delivery and pick-up. Communication with suppliers will be important to ensure loads are put in designated areas, and supplier is made aware of any immediate hazards in the area he/she will be in. A project schedule has been coordinated and submitted for approval for the coordination of the scope of work being performed.

c) SAFETY RESPONSIBILITIES OF SUBCONTRACTORS AND SUPPLIERS:

All subcontractors will be responsible to Submit and implement their corporate level Safety and Health Plan as appropriate for the project. Subcontractor shall submit these documents to **Name** Construction Company for approval prior to the start of their activities on the work site. In addition, they will be responsible for adhering to all applicable OSHA and the Veterans Affairs Safety and Health Program requirements. These documents will be verified through our own site safety inspections and meetings.

In the event that a subcontractor does not have the required safety and health programs, their employees will receive training utilizing **Name** Construction Company's safety and health programs prior to accessing the work site. This training will be documented and compliance with the provisions of **Name** Construction Company's Safety and Health programs will be mandatory as well as being readily accessible.

16. REPORTING OF CATASTROPHIC EVENTS:

It is the policy of **Name** Construction Company to provide a work environment that is inherently safe. The safety and health of our employees is of primary importance as they are our most important resource

- Pre-emergency planning and coordination with outside parties:

  VAMC (COR) will receive notification of date to start work, along with MSDS's of all substances brought onto the facility.

- Personal roles, lines of authority, training, and communication:

  The personnel utilizing chemicals will contain the substances brought onto the facility. Plumbers will contain and handle all compressed gas cylinders, providing they have been trained and documented.
  In the case where a situation occurs that they cannot handle, all employees will be trained on evacuating the area, notifying the on-site supervisor, and workers in the immediate worksite.

- Emergency recognition and prevention:

  All workers will, at the safety orientation, be informed of this site-specific emergency response plan and procedures.
  All workers will be responsible to recognize hazards and their prevention, practice this at all times on the worksite.

  All workers will be responsible to answer question from surveyors about general safety, health, and emergency procedures wherever they are on site.

- Safe distances and places of refuge:

  All workers at this site will be informed of the designated location of the safe zone. This will also be posted in the field office for all to be reminded of. In the event of an emergency occurrence, and the Local Fire Department, or any other entity is summoned, all workers will report to this zone to be accounted for.

- Site security and control:

  In the event of an emergency, workers will notify the site supervisor or project manager of the situation, at that time, workers will report to the safe zone. The site supervisor and/or project manager will notify security and any other applicable authorities. Staying away from the immediate situation and not allowing any unauthorized personnel to enter until proper authorities arrive.

- Evacuation routes and procedures:

  Any work will be performed on the interior of the building. Evacuation plans are posted in various locations throughout work area by the VA.

- Decontamination:

This would be required if there is a possibility of a large spill of hazardous material with the potential of contaminating contractor employees. Small spills and personnel contaminations are expected to be cleaned up using the contractors Hazard Communication program and associated MSDS requirements.

- Emergency medical treatment and first aid:

- Emergency alerting and response procedures:

  It will be the duty of all workers onsite, including subcontractors, to immediately report to the site supervisor and/or project manager, COR's any and all emergencies

17. Site specific plans to address PCRA:

a. Only those hazards identified as "yes" on the PCRA need to be addressed.
b. Modify the description of the safety precautions as needed to address the specific concern. You may refer to a company policy or company rule book to describe the safety precautions or safety plan; however, we will need to have a copy of your plan or policy on file.
c. To place a check in the box
   - right click on the box
   - Click "Properties"
   - Click "Checked"
   - Click "OK"

Pre Construction Risk Assessment (PCRA)

	Description of safety precautions or reference to contractor Safety Procedures
☐	(1) Respiratory Protection Plan o **Describe of ACTIVITY requiring respiratory protection if applicable** o **NEED documentation of training.** o **Need documentation of fit test.**
☐	(2) Hearing: Protection Plan Any area with noise levels at or above 85dba will be required to wear hearing protection. When workers are utilizing loud equipment, or being exposed to such levels, hearing protection shall be provided.
☐	(3) PPE other: Personal protective equipment (PPE) includes hard hats, gloves, safety glasses, steel-toed shoes/boots, hearing protection, and personal fall protection. Eye protection will be as follows: o Safety glasses used for any worker performing, observing tasks that may result in flying objects, dust, or in the area where another workers activities may exposing them to eye injury. o During welding/cutting operations, the required filter lenses will be utilized according to the operation, electrode size and arc current. Foot Protection: o All workers will be required to wear the appropriate foot protection. o Steel-toed shoes/boots are mandatory. Hand Protection: o Workers may be exposed to hand injuries from; ▪ sharp objects, ▪ abrasive materials ▪ and weather. o Gloves designed to protect against the specific hazard encountered are an effective means of reducing such risks and will be used on this project.
☐	(4) Overhead hazards: **(Example)There will be X critical lifts required on this project. A crane will be utilized to load new materials onto Xth floor roof and remove demolished material from the roof. A plan will be submitted** and approved **prior to this work being performed.**
☐	(5) Confined space: Procedures for entering a confined space depend on the type of confined space and the scope of work associated with the entry. a) The VAMC Cleveland Confined Space Entry Program provides the detailed information necessary for regulatory compliance. The contractor may use the VAMC Program or their own providing that it meets regulatory compliance and is reviewed and approved before entry is made. b) Under no circumstances should a person enter into a posted confined space without notifying the COR. A “Shutdown Request” reviewd by Occupational

	Health and Safety and approved by the COR will be used for this notification. c) Sub-basements are considered non-permit required confined spaces unless welding is performed or other hazards introduced that may create a hazardous atmosphere. When atmospheric hazards are identified then the sub-basements will be worked under the alternate procedure provisions provided that continuous ventilation is used to control the atmospheric hazard. d) Areas posted as "Permit Required" confined spaces will not be entered unless the hazards are eliminated and the space is reclassified. All tanks, voids, ventilation ducts and sewers are considered "Permit Required" confined spaces unless a hazard assessment is conducted and the space is reclassified. e) Employees entering confined spaces will be trained. Training will be based on the Confined Space Entry Program, ANSI National Standard "Safety Requirements for working in Tanks and other Confined Spaces" (ANSI Z117.1), or equivalent training
☐	(6) Ladders: Workers that may be performing work on ladders are instructed to adhere to the following: ▪ Inspect before using ▪ Place ladder using 4 to 1 rule ▪ Never place base of ladder on objects ▪ Never place ladder in front of door unless ▪ Door is blocked in open position ▪ Door is demarcated off ▪ Door is locked
☐	(7) Scaffolding: For work that requires scaffolding use for employees and subcontractors, personal fall protection shall be mandatory, unless working less than 6 ft. The following topics listed will be conveyed to workers prior to scaffolding use ▪ Review scaffolding supplier pamphlet for proper construction ▪ Inspect scaffolding structure before initial use/and daily ▪ Report any defects immediately / do not use / tag out of service ▪ Placement of structure ▪ When fall protection is required ▪ What you can tie off to
☐	(8) Work platforms: Describe type of platform required and specific requirements for its use.
☐	(9) Fall protection**:** Personal Fall Protection **Name** Construction Company requires all employees working at or above 6' to wear personal fall protection, unless the personal fall protection creates a safety hazard by utilizing it. In that case, other means of fall protection shall be provided.
☐	(10) Asbestos: As part of the Asbestos program, **Name** Construction Company will inform subcontractors, or their representatives of the site emergency response procedures and any potential fire, explosion, health, safety, or other hazards. The substances listed in Section 13, paragraph c, under MSDS, have the potential to be released or spilled. Section 13.c, Hazard Communication, lists some potential hazards that contractors and/or subcontractors my encounter. Also listed are the

		response actions to be taken and the proper notification.
☐	(11)	Hazardous materials: The substances listed in Section 13 paragraph c, under MSDS, have the potential to be released or spilled. Section 13 c, Hazard Communication, lists some potential hazards that contractors and/or subcontractors my encounter. Also listed are the response actions to be taken and the proper notification. MSDS sheets must be made available for review by the VAMC and contracted employees.
☐	(12)	Hot work: The **Name** Construction Company will follow VAMC Cleveland's Hot work Policy (MCP 138-012), **Name** Construction will submit a Hot Work Permit to the COR to perform acetylene oxygen welding, brazing and cutting, the following precautionary measures will be required. ▪ Inspect all surroundings and equipment to insure that combustible substances are not present in any area where contact of metal at a temperature above the flashpoint of any compound is possible. ▪ Ensure that no open containers or spills of combustible substances are present. ▪ Ensure that ignition is not possible by conduction, convection, radiation, or dispersion of molten metal. ▪ Proper protection equipment and practices will be used, i.e., fireproof blankets, removal of combustible materials where practicable, and portable fire extinguishers of proper type on hand. ▪ When the above operations are in use a continuous Fire Watch will be performed while equipment is being used. ▪ Training in fire protection will occur at the site safety orientation.
☐	(13)	Ventilation: **Describe the type of forced ventilation that will be used and the reason it is required. Example: A 500 CFM Red Devil blower will be set up for welding operations in the sub-basement. The exhaust of this blower will be directed to the outside.**
☐	(14)	Power distribution: Describe the circumstances that would make it necessary for disruption of power from the main power lines or associated transformers entering the facility.
☐	(15)	Work being done on energized equipment: Any work to be done on Energized Equipment must be done in accordance with Medical Center Policy (MCP) 138 – 03 (Working on Energized Equipment). The Medical Centers Directors permission is required to work any circuit energized. A Energized Circuit Work permit must be approved before starting work.
☐	(16)	Other electric: List Specifics
☐	(17)	Loto: ▪ Only VA Employees will manipulate breakers or valves to perform a Lock Out Tag unless specific permission (in writing) is obtained by the Assistant Chief Engineering, M&O. ▪ The VA will hang Locks or tags on valves or breakers as requested by the project manager.

		▪ After the VA places their lock on the device, then **Name** Construction Company will be allowed to place their lock on the device. ▪ When clearing the Lock Out Tag Out, **Name** Construction. ▪ Company will remove **Name** Construction's locks and notify the COR. ▪ The VA will then remove the VA locks and reposition the valve or breaker at the request of **Name** Construction Company.
☐	(18)	Crane operation: **(Example) There will be X critical lifts required on this project. A crane will be utilized to load new materials onto Xth floor roof and remove demolished material from the roof. A plan will be submitted and approved prior to this work being performed.**
☐	(19)	Excavating; Trenches, ditches – Describe the type, name of competent person, trench boxes required and if necessary air sampling requirements.
☐	(20)	Earthmoving: **(Example)** The use of this equipment will be required on this project for moving of earth. Safety will be the responsibility of the company performing the work.
☐	(21)	Industrial trucks: **(Example)** The use of this equipment will be required on this project for loading materials onto the X^{th} floor roof. Industrial truck safety will be the responsibility of the company performing the work.
☐	(22)	Other motorized equipment: List type and specific use. Only qualified operators will be allowed to operate motorized equipment. Diesel powered equipment will not be used near medical Center Ventilation Intakes.
☐	(23)	Concrete, Masonry operations: Describe the work to be performed and what fall protection will be provided for workers on forms that are higher than six feet.
☐	(24)	Steel Erection: Describe the type of steel erection, fire protection coatings used and fall protection requirements if not already addressed in (10) Fall Protection.
☐	(25)	Alteration or Improvement of existing Electrical transmission and distribution lines and equipment. – Describe the scope of work and provisions made to ensure that the facility does not lose power during the work.
☐	(26)	Hand & portable tools a) Hand Tools .1 For your own protection, do not misuse your tools. Use tools only for the purpose for which they were designed. .2 Your job will be easier and much safer if tools are in good condition. Take care in handling and storing tools. .3 You and the person in charge must be satisfied that all the tools you use on the job, whether they are Company- or personally-owned, are in safe condition. .4 Tools with mushroomed heads, loose, split or broken handles, broken

screw drivers, defective pliers, wrenches with spread jaws, defective cords, ground wires and plugs, etc., must not be used.

.5 Never use a defective tool. Defective tools are to be removed from service and marked defective.

.6 For your own protection, do not misuse your tools.

.7 Cover sharp-edged and pointed tools with scabbards and guards. Always use the guards when the tools are not in use.

.8 Never strike the hardened part of one tool against the hardened part of another tool or against any hardened surface.

.9 Never use a file with a tang unless it is equipped with a handle.

.10 Never throw tools from one person to another or from one level to another.

.11 Hot tools, equipment or materials on tables or benches, even if they are metal covered, shall be properly identified.

.12 Never use improper handles when you work with jacks. Always remove handles when they are not being used.

.13 Never use metal-shielded spotlights or flashlights around exposed electrical equipment.

b) Extension Cords

.1 Use only approved extension cords and lamp guards. Extension cord lamps used in explosion-hazard atmospheres, such as oil vapor or flammable gases, must be equipped with guards and vapor-proof globes. Do not use a lamp with a switch.

.2 When you use an extension cord around switchboards, switch structures or electrical equipment, it must have a non-metallic socket and guard.

.3 Use only specially approved low voltage (6 or 12 Volt) extension cords or ground fault circuit interrupter (GFCI) when you need portable lighting in wet locations. This type of cord should be used when you work outdoors, in tanks or in other areas where moisture or condensation may be a hazard.

.4 Use GFCI protected circuits where required by the electric code. If there is a question about the requirements, contact Engineering Service for resolution.

c) Tool Containers

.1 Cover any grating to prevent your tools or material from falling. When you are working on scaffolds or platforms, use a suitable container for any of your tools that are not actually being used.

d) Power Tools

.1 Always wear the proper personal protective equipment including but not limited to eye protection.

.2 Before you use any power tool, check to make sure:

- .it is properly tested;
- all guards are in place;
- all material is properly secured;
- you disconnect the tool electrically before inserting or removing any

	attachments; and • you use GFCI protected circuits when required. .3 While a machine is in operation: • never remove chips with your hand; always use a suitable brush, hook or stick; • do not let the machine run unattended; • do not place tools or materials on machines where they can be jarred or pushed off; • never try to stop a machine using your hands or any other part of your body as a brake; and • both hands shall be used when working with portable tools. .4 You must unplug power tools when they are left unattended. You must shut off and de-pressurize (bleed down) pneumatic- or hydraulic-operated tools when they are left unattended. .5 Keep the floor around machines clean and free from oil. If you spill any oil, wipe it up immediately or use an oil absorbent. Slipping is one of the most common causes of accidents. .6 Carefully inspect grinding machines before you use them. Be sure that: • you perform a ring test prior to installing a new wheel; • the wheel is secure on the driving shaft; • the wheel is in good condition; dress or replace the wheel as necessary; • the work rest is adjusted properly; and • the safety guard is in place and allows proper visibility to do the work. • Do not use the side of the wheel for grinding, unless it is specifically designed for side grinding. • Many wheels cannot stand up under side grinding. • Never drive a grinding wheel at speeds above that specified by the manufacturer. • When you grind small objects, hold them firmly in place with a suitable tool, not with your fingers. • Do not grind soft metals such as aluminum
☐	(27) Compressed Gasses: Compressed gas cylinders may be used at this worksite. These cylinders and gases present an injury hazard in the event that a regulator or cylinder is damaged and/or broken. The particular gases used will be **(Name Gas).** These hazards will be reduced by routine inspections and maintenance of compressed gas cylinders and by assuring all the units are secured from tipping. Safety caps will be installed on all cylinders that are not in use. Compressed gas cylinder will be kept away from excessive heat, will not be stored where they might be damaged or knocked over by passing or falling objects. The storage of oxygen and fuel gas compressed cylinders will be separated by at least 20 ft.
☐	(28) Other hazardous activities **(Name and describe safety precautions)**
☐	(29) Infection Control : Infection Control (216-791-3800 Ext 4791) has been contacted for work in patient care or high risk areas to conduct an Infection Control Risk Assessment (ICRA). Provisions of the ICRA will be followed unless changed by Infection Control.

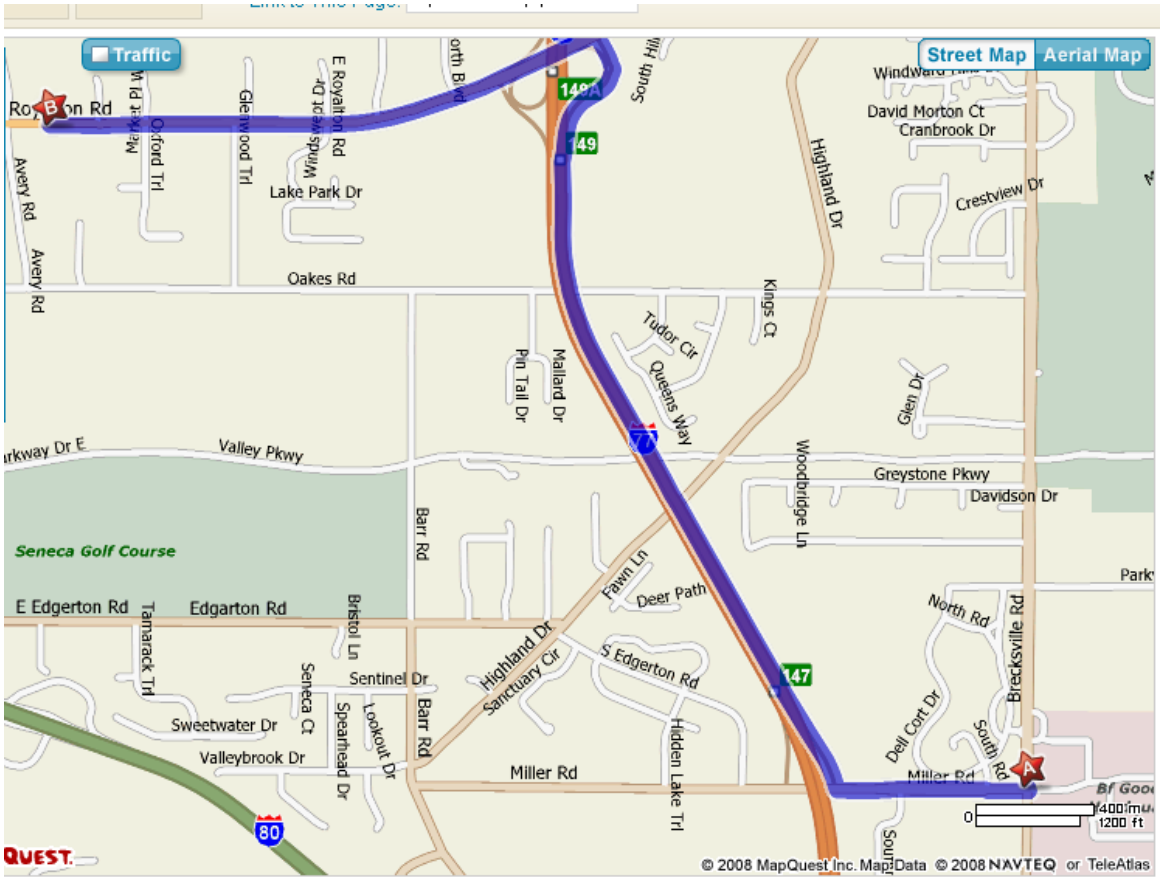
☐	(30)	Life Safety: Occupational Health and Safety 216-791-3800 Ext 4172 has been contacted to conduct a Life Safety Risk Assessment. Interim Life Safety measures have been determined and will be posted outside of the construction area. Fire extinguishers will be provided inside the construction area and they will be inspected at a minimum of 30 day intervals. Provisions of the Interim Life Safety measures will be followed unless modified by Occupational Health and Safety. If penetrations are made in smoke/fire barriers the COR will verify that they have been appropriately sealed before project completion.
☐	(31)	Emergency Procedures: Standard Emergency Response Plan is described in section 7. Additional provisions required for rescuing employees working at heights or working in Permit Required Confined Spaces will be as follows: **Describe Specifics**
☐	(32)	Demolition: Demolition is described in the Scope of Work Summary. Collection of demolition debris for recycling will minimize dust generation. All containers will be covered and employees will use appropriate methods for controlling the spread of dust outside the construction zone.
☐	(33)	New Construction Recycling: A minimum of X% of total project waste will be diverted to a landfill. a) Concrete b) Steel
☐	(34)	Interior Remodeling Recycling: A minimum of X% of total project waste will be diverted to a landfill. a) Ceiling Tile b) Steel c) Carpet
☐	(35)	General Recycling: The following categories of waste shall be diverted from a landfill (Check all that apply):
	☐	Green Waste (Biodegradable landscaping material)
	☐	Soil
	☐	Inserts (concrete, asphalt, masonry)
	☐	Clean dimensional wood, palette wood
	☐	Engineered wood products, plywood, particle board, I joints, etc.
	☐	Cardboard Paper packaging
	☐	Asphalt Roofing materials
	☐	Insulation
	☐	Gypsum board
	☐	Carpet and pad
	☐	Paint
	☐	Plastics: ABX, PVC
	☐	Beverage containers

APPENDIX A

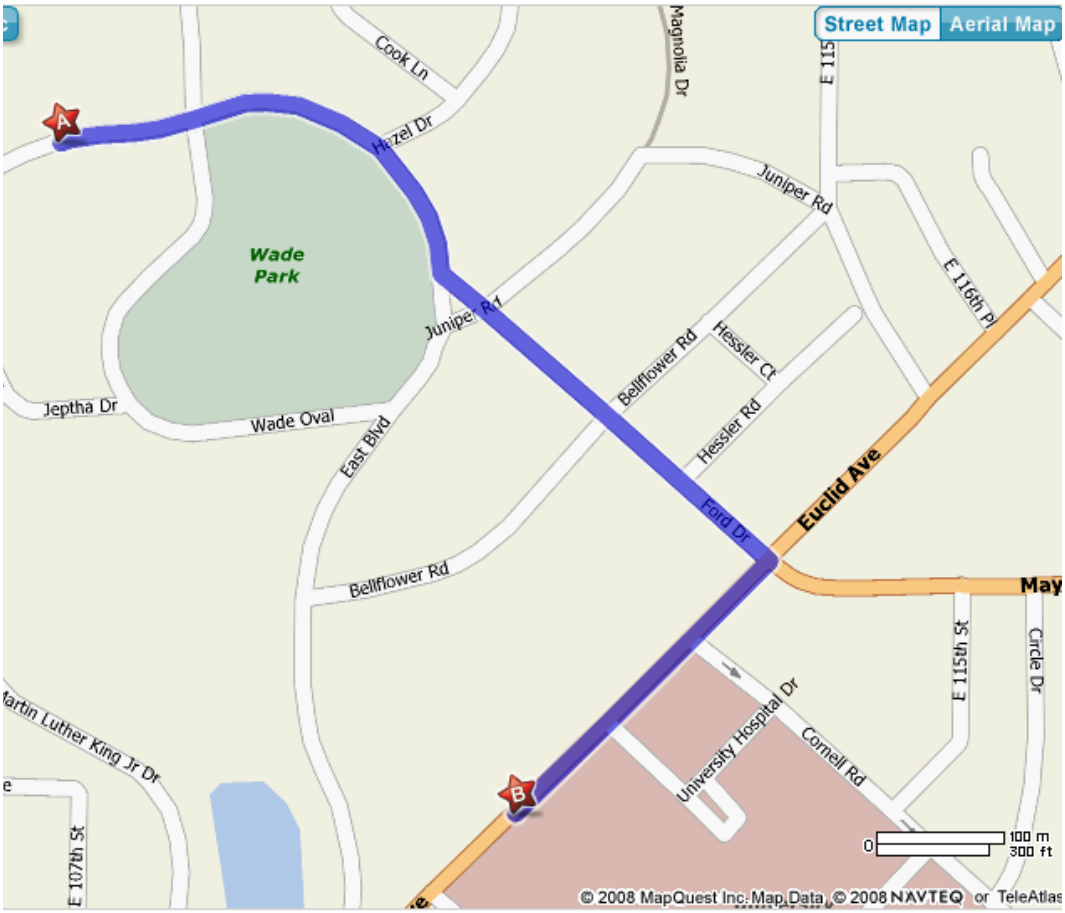
Evacuation Routes Work Zone Layouts and Maps to Emergency Services

Contractor and subcontractors working in the Medical Center will follow the posted exit signs and maps to evacuate the medical Center. To ensure all employees have been evacuated, they will meet at **(Location).**

Map from VAMC Cleveland (Brecksville Division) to Marymount Clinic



Map from VAMC Cleveland (Wade Park Division) to University Hospital



APPENDIX B

CERTIFICATIONS
&
JOBSITE DOCUMENTATION PROGRAM

List all individuals including their titles, who have completed

1. **OSHA 30 Hour Construction Safety Course**
2. **OSHA 10 Hour construction Safety Course**
3. **Competent Person Certifications for Respiratory Protection, Fall Protection, Trenching and Shoring, etc. as required by the Scope of Work and applicable regulations.**

APPENDIX C

CONTRACTOR ACCIDENT RECORD

OSHA 300 FORM

To be updated and maintained in the on site construction office or the service company if an office is not located on station.

OSHA Requirements and Safety and Health Regulations

PART 1 - OSHA Requirements

1.1 General

A. Contractors are required to comply with the Occupational Safety and Health Act of 1970. This will include the safety and health standard found in Code of Federal Regulations (CFR) 1910 and 1926. Copies of those standards can be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20420.

B. In addition, Contractor will be required to comply with other applicable Medical Center policies and safety regulations. These policies and regulations will be presented to the Contractor at the pre-construction meeting. Each of the Contractor's employees will be required to read the statement of policies and regulations, and sign an acknowledgment that such policies and regulations are understood. Signed acknowledgment will be returned to the Contract Officer Technical Representative (COR).

C. Contractors involved with the removal, alteration or disturbance of asbestos-type insulation or materials or lead paint will be required to comply strictly with the regulations found in CFR 1910.1001 and the appropriate Environmental Protection Agency (EPA) lead regulations regarding disposal of asbestos or lead paint. Assistance in identifying asbestos or lead can be requested from the Medical Center's Industrial Hygienist and the COR.

D. Contractors entering locations of asbestos contamination or lead paint residue (i.e., pipe, basements, walls, windows) shall be responsible for providing respiratory protection to their employees and ensuring respirators are worn in accordance with the Occupational Safety and Health Administration (OSHA) [CFR 1910.1001(g)]. Asbestos-or lead paint-contaminated areas shall be defined on project drawings. The minimum equipment requirements will be a half-mask air-purifying respirator equipped with high efficiency filters and disposable coveralls, or as determined by air monitoring results.

E. Contractor, along with other submittals and at least two weeks prior to bringing any materials on-site, must submit a complete list of chemicals the Contractor will use and Material Safety Data Sheets (MSDS) for all hazardous materials as defined in OSHA 1910.1200(d), Hazard Determination. Contracting Officer shall have final approval of all materials brought on site.

F. The Contractor will be held solely responsible for the safety and health of their employees. The contractor will also be held responsible for protecting the health and safety of the VA Community (patients, staff, and visitors) from the unwanted effects of construction. VA staff will monitor the Contractor's performance in complying with all safety and health aspects of the project. Severe or constant violations may result in an immediate work stoppage or request for a Compliance Officer from the Occupational Safety and Health Administration.

G. During all phases of demolition, construction and alterations, Contractors are required to understand and strictly follow National Fire Protection Association (NFPA) 241, Standard for Safeguarding Construction, Alteration and Demolition Operations. The Medical Center's Safety and Occupational Health Specialist or Industrial Hygienist will closely monitor the work area for compliance. Appropriate action will be taken for non-compliance.

PART 2 - Specific VA Medical Center Fire and Safety Policies, Procedures and Regulations

2.1 Introduction.

A. The safety and fire protection of patients, employees, members of the public and government is one of continuous concern to this Medical Center.

B. Contractors, their supervisors and employees are required to comply with Medical Center policies to ensure the occupational safety and health of all. Failure to comply may result in work stoppage.

C. While working at this Medical Center, contractors are responsible for the occupational safety and health of their employees. Contractors are required to comply with the applicable OSHA standards found in 29 CFR 1910 for general industry and 29 CFR 1926 for construction. Failure to comply with these standards may result in work stoppage and a request to the Area Director of OSHA for a Compliance Officer to inspect your work site.

D. Contractors are to comply with the requirements found in the National Fire Protection Association (NFPA) 241, Building Construction and Demolition Operation, and NFPA 51B, Fire Prevention in Use of Cutting and Welding Processes.

E. Questions regarding occupational safety and health issues can be addressed to the Medical Center Safety and Occupational Health Specialist (ext. 4172) or Industrial Hygienist (ext. 4628).

F. Smoking is not permitted in any interior areas of the Medical Center, including all interior stairwells, tunnels, construction and/or service/maintenance sites. Compliance with this policy by your direct and subcontracted labor force is required.

2.2 Hazard Communication

A. Contractors shall comply with OSHA Standard 29 CFR 1926.59, Hazard Communication.

B. Contractors shall submit to the COR, copies of MSDS covering all hazardous materials to which the Contractor and VA employees are exposed.

C. Contractors shall inform the Safety Officer of the hazards to which VA personnel and patients may be exposed.

D. Contractors shall have a written Hazard Communication Program available at the construction site, which details how the Contractor will comply with 29 CFR 1926.59.

2.3 Fires

A. All fires must be reported. In the event of a fire in your work area, use the nearest pull box station, and also notify Medical Center staff in the immediate area. Emergency notification can also be accomplished by dialing ext. 2222.

B. Be sure to give the exact location from where you are calling and the nature of the emergency. If a Contractor experiences a fire that was rapidly extinguished by your staff, you still must notify the COR within an hour of the event so that an investigation of the fire can be accomplished.

2.4 Fire Alarms, Smoke Detection and Sprinkler System

If the nature of your work requires the deactivation of the fire alarm, smoke detection or sprinkler system, you must notify the COR. Notification must be made in accordance with the major and minor shutdown requirements of the specification so time can be allowed to deactivate the system and provide alternative measures for fire protection. Under no circumstance is a Contractor allowed to deactivate any of the fire protection systems in this Medical Center.

2.5 Smoke Detectors

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

preventable. Prior to covering the smoke detectors, the Contractor will notify the COR, who will also be notified when the covers are removed.

2.6 Hot Work Permit

A. Hot work is defined as operations including, but not limited to, cutting, welding, thermal welding, brazing, soldering, grinding, thermal spraying, thawing pipes or any similar situation. If such work is required, whenever possible the Contractor must notify the COR no less than three (3) days in advance of such work. The Competent Hot Work Supervisor (CHWS) will inspect the work area and issue a Hot Work Permit, authorizing the performance of such work.

B. All hot work will be performed in compliance with the Medical Center's policy 138-012 regarding Hot Work Permits and NFPA 241, Safeguarding Construction, Alternation and Demolition Operations; and NFPA 51B, Fire Prevention in Use of Cutting and Welding Processes; and applicable OSHA standard. A hot work permit will only be issued to individuals familiar with these regulations.

C. A Hot Work Permit will be issued only for the period necessary to perform such work. In the event the time necessary will exceed one day, a Hot Work Permit may be issued for the period needed; however, the CHWS will inspect the area daily. Hot Work Permit will apply only to the location identified on the permit. If additional areas involve hot work, then additional permits must be requested.

D. Contractors will not be allowed to perform hot work processes without the appropriate permit.

E. Any work involving the Medical Center's fire protection system will require advance notification. Under no circumstance will the Contractor or employee attempt to alter or tamper with the existing fire protection system.

F. Thirty minutes following completion of the hot work, the Fire Watch will perform an inspection of the area to confirm that sparks or drops of hot metal are not present.

2.7 Temporary Enclosures

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

2.8 Flammable Liquids

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

2.9 Compressed Gas Cylinders

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

2.10 Internal Combustion Engine-Powered Equipment

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

2.11 Powder-Activated Tools

The operator of powder-activated tools must be trained and certified to use them. Powder-activated tools will be kept secured at all times. When not in use, the tools will be locked up. When in use, the operator will have the tool under his immediate control.

2.12 Tools

A. Under no circumstances will equipment, tools and other items of work to be left unattended for any reason. All tools, equipment and items of work must be under the immediate control of your employee.

B. If for some reason a work area must be left unattended, then tools and other equipment must be placed in an appropriate box or container and locked. All tool boxes, containers or any other device used for the storage of tools and equipment will be provided with a latch and padlock, and will be kept locked at all times, except for putting in and removing tools.

C. All doors to work areas will be closed and locked when rooms are left unattended. Failure to comply with this policy will be considered a violation of VA Regulations 1.218(b), Failure to comply with signs of a directive and restrictive nature posted for safety purposes, and subject to a $50.00 fine. Subsequent similar violations may result in both imposition of such a fine as well as the Contracting Officer taking action under the contract's Accident Prevention Clause [Federal Acquisition Regulation (FAR) 52.236-13] to suspend all contract work until violations may be satisfactorily resolved, or under FAR 52.236-5, Material and Workmanship Clause, to remove from the worksite any personnel deemed by the

Contracting Officer to be careless to the point of jeopardizing the welfare of facility patients or staff.

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

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

2.13 Ladders

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

2.14 Scaffolds

All scaffolds will be attended at all times. When not in use, an effective barricade (fence) will be erected around the scaffold to prevent use by unauthorized personnel (Reference OSHA 1926, Subpart L).

2.15 Excavations

The contractor shall comply with OSHA 1926, Subpart P. An OSHA Competent Person must be on site during the excavation. The contractor shall coordinate with COR and utility companies prior to the excavation to identify underground utilities tanks, etc. All excavations left unattended will be provided with a barricade suitable to prevent entry by unauthorized persons.

2.16 Storage

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

2.17 Trash and Debris

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

2.18 Protection of Floors

It may be necessary at times to take steps to protect floors from dirt, debris, paint, etc. A tarp or other protective covering may be used in accordance with specifications outlined in the general requirements section. However, you must maintain the proper amount of floor space for the safe passage of pedestrian traffic.

2.19 Signs

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

2.20 Accidents and Injuries

Contractors must report all accidents and injuries involving their employees.

2.21 Infection Control

Contractors must control the generation of dust and the contamination of patient care surfaces, supplies and equipment. During demolition phases of the construction:

A. The construction area shall be under negative pressure, ensuring there is an appreciable flow of clean air from the VA-occupied portion of the facility into the construction area. The airflow shall be sufficiently strong enough to draw in the plastic door flaps commonly located at the construction entrance or at the specific site within the construction area.

B. Construction debris being transported through the VA-occupied portion of the facility shall be covered and/or whetted.

C. Construction employees shall remove dust-laden clothing before entering the VA-occupied portion of the facility.

D. Carpet/sticky mats shall be placed at all construction entrances, and be satisfactorily maintained so as to minimize the tracking of dust into the VA-occupied portion of the facility.

E. Dry sweeping of dust and debris is not to be performed.

F. Contractor must obtain an Infection Control Construction permit from the COR before work can begin. A separate permit is required for each area work is being done. Permit must be signed by the I.C. Nurse, COR, and Contractor. Permit is required to be posted outside work site at all times.

(Control measures B - E above must be practiced during the construction phase.)

2.22 Confined Space Entry

A. Contractor will be notified if a project work area contains spaces requiring a confined space work permit. Entry to these confined space areas will only be permitted through compliance with a permit space program meeting the requirements of 29 CFR 1910.146 and 1926.21(b)(6).

B. Contractor will be apprised of the elements including the hazards identified and the Medical Center's (last employer) experience with the space that makes the space in question a permit space.

C. Contractor will be apprised of any precautions or procedures that the Medical Center has implemented for the protection of employees in or near permit space where Contractor personnel will be working.

D. Medical Center and Contractor will coordinate entry operations when both Medical Center personnel and Contractor personnel will be working in or near permit spaces as required by 29 CFR 1910.146(d)(ii) and 1926.21(b)(6).

E. Contractor will obtain any available information regarding permit space hazards and entry operation from the Medical Center.

F. At the conclusion of the entry operations, the Medical Center and Contractor will discuss any hazards confronted or created in permit spaces.

G. The Contractor is responsible for complying with 29 CFR 1910.246(d) through (g) and 1926.21(b)(6). The Medical Center, does not provide rescue and emergency services required by 29 CFR 1910.246(k) and 1926.21(b)(6).

2.23 Contractor Parking and Material Delivery

Contractor's parking is not available at the medical center and the delivery of building materials tools, etc., must be pre-arranged with the COR.

SAMPLE INFECTION CONTROL PERMIT

Infection Control Construction Permit

Construction Class:

Project Name and Number:	**Permit #:**
Location of Construction:	
COR:	**Telephone:**
Contractor Performing Work:	
Supervisor:	**Telephone:**

CLASS I	1. Obtain approval from COR before activities begin 2. Work performed is limited to inspections and minor installations 3. Execute work by methods to minimize raising dust from inspection operations 4. Permit does not need to be posted for this classification.
CLASS II	1. Obtain and post infection control permit at work location before work begins 2. Provide active means to prevent air borne dust from dispersing into atmosphere 3. Place dust mat at entrances and exits of work sites 4. Tools and equipment must be cleaned prior to entrance to the medical center 5. Isolate HVAC and seal unused doors with duct tape 6. Contain construction waste before transport in tightly covered containers
CLASS III	1. Obtain and post infection control permit at work location before work begins 2. Follow all requirements listed for Class II in addition to requirements listed below 3. Isolate supply and return ductwork to prevent contamination of system. 4. Complete all critical dust barriers as well as the creation of an anti-room where required for inspection by COR before work begins. 5. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. 6. Construct antiroom where required by COR and I.C. Nurse

SAMPLE INFECTION CONTROL PERMIT

	7. Obtain COR approval before contruction and removal of any dust partitions 8. Include paticle count readings on daily logs against baseline points as required by COR or I.C. Nurse.
CLASS IV	1. Obtain and post infection control permit at work location before work begins 2. Follow all requirements listed for Class III in addition to requirements listed below 3. Workers are required to wear clean suites on site 4. All personel entering and leving work site must be vacuumed using a HEPA filted vacuum cleaner. 5. This class of permit will require additional specilized precautions unique to each activity which will be listed below

Additional Requirements:

Infection Control Nurse:	**Date:**
COR:	**Date:**
Contractor:	**Date:**

SECTION 02 83 20
CONCRETE SEGMENTAL RETAINING WALL

PART 1 GENERAL

1.1. Description

A. The work covered by this section includes the furnishing of all labor, materials, equipment and incidentals for the design, inspection and construction of a modular concrete retaining wall including drainage system and reinforcement as shown on the Construction Drawings and as described by the Contract Specifications. The work included in this section consists of, but is not limited, to the following:

1. Design, inspection and certification by product manufacturer's representative.
2. Excavation and foundation soil preparation.
3. Furnishing and placement of the leveling base.
4. Furnishing and placement of the drainage system.
5. Furnishing and placement of geotextiles.
6. Furnishing and placement of segmental retaining wall facing units.
7. Furnishing and placement of geosynthetic reinforcement.
8. Furnishing and compaction of infill, drainage and retained soils.

1.2. Related Work

A. Site Preparation

B. Earthwork

1.3. Reference Standards

A. Engineering Design

1. NCMA Design Manual for Segmental Retaining Walls, Second Edition.
2. NCMA TEK 2-4 - Specifications for Segmental Retaining Wall Units.
3. NCMA SRWU-1 - Determination of Connection Strength between Geosynthetics and Segmental Concrete Units.
4. NCMA SRWU-2 - Determination of Shear Strength between Segmental Concrete Units.

B. Segmental Retaining Wall Units

1. ASTM C 140 - Sampling and Testing Concrete Masonry Units
2. ASTM C 1262 - Evaluating the Freeze - Thaw Durability of Manufactured Concrete Masonry Units and Related Concrete Units.
3. ASTM C 33 - Specification for Concrete Aggregates
4. ASTM C 90 - Standard Specification for Load-Bearing Concrete Masonry Units

5. ASTM C 150- Specification for Portland Cement.

6. ASTM C 595 - Specification for Blended Hydraulic Cements

C. Geotextile Filter

1. ASTM D 4751 - Standard Test Method for Apparent Opening Size

D. Geosynthetic Reinforcement

1. ASTM D 4595 - Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.

2. ASTM D 5262 - Test Method for Evaluating the Unconfined Creep Behavior of Geosynthetics.

3. GRI GG-1: Single Rib Geogrid Tensile Strength

4. GRI GG-5: Geogrid Pullout

5. GRI GT-6: Geotextile Pullout

E. Soils

1. ASTM D 698 - Moisture Density Relationship for Soils, Standard Method

2. ASTM D 422 - Gradation of Soils

3. ASTM D 424 - Atterberg Limits of Soils

4. ASTM D G51 - Soil pH

5. Drainage Pipe

6. ASTM D 3034 - Specification for Polyvinyl Chloride (PVC) Plastic Pipe

7. ASTM D 1248 - Specification for Corrugated Plastic Pipe

G. Where specifications and reference documents conflict, the Owner or Owner's Representative shall make the final determination of applicable document.

1.4. Approved Products

A. Basis of Design: Pisa2® Segmental Retaining Wall System as supplied by Unilock®.

B. Color to be selected from manufacturer’s full range of standard selections.

1.5. The Contractor

A. The term Contractor shall refer to the individual or firm who will be installing the retaining wall.

B. The Contractor must have the necessary experience for the project and have successfully completed projects of similar scope and size.

1.6. Delivery, Material Handling and Storage

A. The installing contractor shall check all materials delivered to the site to ensure that the correct materials have been received and are in good condition.

B. The Contractor shall store and handle all materials in accordance with manufacturer's recommendations and in a manner to prevent deterioration or damage due to moisture, temperature changes, contaminants, breaking, chipping or other causes.

1.7. Engineering Design and Certification

A. The term Engineer shall refer to the individuals or firms who have been retained by the Contractor to provide design and inspection services for the retaining wall. The Design Engineer may be a different individual or firm from the Inspecting Engineer. The Engineer(s) must be qualified in the area of segmental retaining wall design and construction and must be licensed to practice engineering in the Province or State that the wall is to be constructed.

B. The Engineer(s) will perform the following tasks:

1. Produce sealed construction drawings and detailed design calculations, completed in accordance with the design requirements outlined in Part 3 of these specifications.

2. Review the site soil and geometric conditions to ensure the designed wall is compatible with the site prior to construction.

3. Inspect the site conditions, materials incorporated into the retaining wall, and the construction practices used during the construction.

4. Provide the Contractor with a letter after completion, certifying the design meets the requirements of this specification, the design was compatible with the site and the wall was constructed according to design.

1.8. Submittals

A. The Contractor shall submit the following information for approval thirty (30) days prior to the construction of the segmental retaining wall.

1. Design Submittal - Provide three (3) sets of stamped construction drawings and detailed design calculations, completed and sealed by the Engineer in accordance with the design requirements outlined in Part 3 of this specification. A detailed explanation of the design properties for the geosynthetic reinforcements shall be submitted with the design.

2. Materials Submittal - Manufacturer's certifications, stating that the SRW units, the geosynthetic reinforcement, and imported aggregates and soils meet the requirements of this specification and the Engineer's design.

3. Installer Qualifications - The Contractor must be able to demonstrate that their field construction supervisor has the necessary experience for the project by providing documentation showing that they have successfully completed projects of similar scope and size.

1.9. Measurement for Payment

A. Payment for earthwork to prepare the site for the retaining wall construction will be based on the contract unit price per cubic meter (or cubic yard) for site cut and fill earthwork as detailed in the Site Plan. Additional earthwork as directed and approved in writing by the Owner, or Owner's representative, shall be paid for under a separate pay item.

B. Payment for the retaining wall system will be based on the contract price per square meter (or square foot) of vertical wall face area as shown on the construction drawings. The vertical wall face area shall be measured from the top of the base or footing to the top of the coping course multiplied by the length of the wall. The contract unit price shall include the cost of all engineering, labor, materials, and equipment used to install the leveling base or spread footing, wall modules, drainage materials, infill soil, geosynthetic reinforcement, retained soil and site clean up. Additional vertical wall face area as directed and approved in writing by the Owner, or Owner's representative, shall be paid for under a separate pay item.

PART 2 MATERIALS

2.1. Definitions

A. Modular concrete retaining wall units are dry-cast solid concrete units that form the external fascia of a modular unit retaining wall system.

B. Coping units are the last course of concrete units used to finish the top of the wall.

C. Infill soil is specified material that is placed directly behind the drainage soil and within the reinforced zone, if applicable.

D. Retained soil is an in-situ soil or a specified soil that is placed behind the wall infill soil.

E. Foundation soil is the in-situ soil beneath the wall structure.

F. Drainage aggregate is a free draining soil with natural soil filtering capabilities, or a free draining soil encapsulated in a suitable geotextile, or a combination of free draining soil and perforated pipe all wrapped in a geotextile, placed directly behind the modular concrete units.

G. Drainage pipe is a perforated polyethylene pipe used to carry water, collected at the base of a soil retaining wall, to outlets in order to prevent pore water pressures from building up behind the wall facing modules.

H. Non-woven geotextiles are permeable synthetic fabrics formed from a random arrangement of fibers in a planar structure. They allow the passage of water from one soil medium to another while preventing the migration of fine particles that might clog a drainage medium.

I. Geogrid reinforcement is a polymer grid structure having tensile strength and durability properties that are suitable for soil reinforcement applications.

J. All values stated in metric units shall be considered as accurate. Values in parenthesis stated in imperial units are the nominal equivalents.

2.2. Products

A. Concrete Segmental Retaining Wall Units

1. The concrete wall modules shall be 150 x 200 x 300 mm (6 x 8 x 12 inches) with a maximum tolerance of plus or minus 3 mm (1/8 in.) for each dimension.

2. The retaining wall modules shall be solid units and have a minimum weight of 20.4kg (45 lbs.) per unit.

3. The concrete wall modules shall have a integral shear key connection that shall be offset to permit a minimum wall batter of 1H : 8V.

4. The concrete wall modules shall have a minimum 28-day compressive strength of 35 MPa (5000 psi) as tested in accordance with ASTM C 140. The concrete shall have a maximum moisture absorption rate of 5 percent to ensure adequate freeze-thaw protection.

B. Infill Soil

1. The infill soil shall consist of free draining sands or gravels with less than 5% passing the #200 sieve size or as specified in the Construction Drawings.

2. The Engineer shall review and determine the suitability of the wall infill soil at the time of construction.

C. Retained Soil

1. The retained soil shall be on site soils unless specified otherwise in the Construction Specifications or as directed by the Owner or Owner’s Representative. If imported fill is required, it shall be examined and approved by the Engineer.

D. Foundation Soil

1. The foundation soil shall be the native undisturbed on site soils. The foundation soil shall be examined and approval by the Engineer prior to the placement of the base material.

E. Leveling Base Material

1. The footing material shall be non-frost susceptible, well graded compacted crushed stone (GW-Unified Soil Classification System), or a concrete leveling base, or as shown on the Construction Drawings.

F. Drainage Soil

1. The drainage soil shall be a free draining angular granular material of uniform particle size smaller than 25 mm (1 inch) separated from the infill soil or retained soil by a geotextile filter. The drainage soil shall be installed directly behind the SRW units if the infill soil is unable to provide adequate drainage capacity.

G. Drainage Pipe

1. The drainage pipe shall be perforated corrugated HDPE or PVC pipe, with a minimum diameter of 100 mm (4 inches), protected by a geotextile filter to prevent the migration of soil particles into the pipe, or as specified on the construction drawings.

H. Geotextile Filter

1. The non-woven geotextile shall be installed as specified on the construction drawings. Although selection of the appropriate geotextile specifications is site soil specific, a commonly used geotextile for filtration will have an Apparent Opening Size ranging between 0.149 and 0.210 mm (U.S. Sieve Sizes 100 to 70) and a minimum unit weight of 135 grams per square meter (4.0 oz /square yard.) The coefficient of permeability will typically range between 0.1 and 0.3 cm/second.

I. Geogrid Reinforcement

1. The Engineer shall determine the type, strength and placement location of the reinforcing geosynthetic. The design properties of the reinforcement shall be determined according to the procedures outlined in this specification.

   Detailed test data shall be submitted with the design calculations and shall include tensile strength (ASTM D 4595 or GGI GG-1), creep potential (ASTM D 5262), site damage and durability (GRI GG-4) and pullout resistance (GRI GG-5 or GRI-GT-6) and connection strength (NCMA SRWU-1).

J. Concrete Adhesive

1. The adhesive is used to permanently secure the coping stone to the top course of the wall. The adhesive must provide sufficient strength and remain flexible.

PART 3 WALL DESIGN

3.1. Design Standard

A. The Design Engineer is responsible for providing a design that shall consider the external stability, internal stability, and local stability of the SRW System. It is the responsibility of the Certifying Engineer or Site Geotechnical Engineer to determine if further design considerations must be implemented to ensure adequate global/overall slope stability, and/or, if the foundation soils will require special treatment to control total and differential settlement. The design life of the structure shall be 75 years unless otherwise specified in the construction drawings.

B. The segmental retaining wall shall be designed in accordance with recommendations of the NCMA Design Manual for Segmental Retaining Walls, Second Edition. The following is a summary of the minimum factors of safety for the various modes of failure evaluated in the proposed design.

External Stability

Base Sliding	1.5
Overturning	2.0
Bearing Capacity	2.0
Global Stability	1.3

Internal Stability

Tensile Overstress	1.0
Pullout	1.5
Internal Sliding	1.5

Local Stability

Facing Shear	1.5
Connection	1.5

3.2. Soil

A. Design parameters: The following soil parameters shall be assumed for the design unless otherwise shown on the plans or specified by the Engineer.

3.3. Design Geometry

A. The length, height, and overall elevations of the retaining wall must comply with the requirements of the proposed elevation detail, station information and site grading plan.

B. The structures' design height, H, shall be measured from the top of the leveling pad to the top of the wall where ground surface intercepts the wall facing.

C. Slopes above and below all sections of the segmental retaining wall are detailed in the site grading plan.

D. The minimum wall embedment shall be the greater of:

1. The height of a SRW unit,

2. 150 mm (0.5 ft) or,

3. The minimum embedment required because of the slope below the wall:

Slope Below Wall	**Minimum embedment**
Level	H/10
3 : 1 (18.4 deg)	H/10
2 : 1 (26.5 deg)	H/7

E. The following surcharges shall be applied to the top of each design cross section based on the following proposed uses above the wall.

Use Above Wall	**Minimum Surcharge**
No Traffic	0 kPa (0 lb/sq. ft)
Light Traffic	4.8 kPa (100 lb/sq. ft)
Heavy Traffic	12.0 kPa (250 lb/sq. ft)

3.4. State of Stress

A. The lateral earth pressure to be resisted by the reinforcements at each reinforcement layer shall be calculated using the Coulomb coefficient of earth pressure, Ka, times the vertical stress at each reinforcement layer.

B. The vertical soil stress at each reinforcement layer shall be taken equal to the unit weight of the soil times the depth to the reinforcement layer below the finished grade behind the facing units. A coefficient of active earth pressure, Ka, shall be used from the top to the bottom of the wall. The coefficient of active earth pressure, Ka, shall be assumed independent of all external loads except sloping fills. For sloping fills, the coefficient of active earth pressure, Ka, appropriate for the sloping condition, using Coulomb earth pressure shall be used in the analysis.

3.5. Inclination of Failure Surface

A. A Coulomb failure surface passing through the base of the wall at the back of the reinforced zone up to the ground surface at or above the top of wall shall be assumed in design of walls.

3.6. Geosynthetic Reinforcement

A. The allowable reinforcement tension, T_a, shall be determined in accordance with the method outlined in the NCMA Design Manual for Segmental Retaining Walls, Second Edition. This method calculates the Long Term Design Strength (LTDS. of the geosynthetic reinforcement by considering the time-temperature creep characteristics of the reinforcement, environmental degradation, construction induced damage and an overall factor of safety.

3.7. Geogrid Length

A. The minimum soil reinforcement length shall be as required to achieve a minimum width of structure, B, measured from the front face of the wall to the end of the soil reinforcements. B must be greater than or equal to 60 percent of the total height, H. The length of the reinforcements at the top of the wall may be increased beyond the minimum length required to increase pullout resistance.

3.8. Settlement Control

A. It is the responsibility of the Certifying Engineer or Site Geotechnical Engineer to determine if the foundation soils will require special treatment to control total and differential settlement.

3.9. Global Stability

A. It is the responsibility of the Certifying Engineer or Site Geotechnical Engineer to determine if further design considerations must be implemented to ensure adequate global/overall slope stability.

PART 4 CONSTRUCTION

4.1. Inspection

A. The Engineer is responsible for verifying that the contractor meets all the requirements of the specification. This includes the use of approved materials and their proper installation.

B. The Contractor's field construction supervisor shall have demonstrated experience and be qualified to direct all work related to the retaining wall construction.

4.2. Construction Tolerances

A. The following tolerances are the maximum allowable deviation from the planned construction

Vertical Control: +/- 1.25 inches over a 10 ft distance, +/- 3 inches total

Horizontal Control: +/- 1.25 inches over a 10 ft distance, +/- 3 inches total

Rotation: +/- 2 degrees from planned wall batter

Bulging: 1.0 inch over a 10 ft distance

4.3. Site Preparation

A. The foundation soil shall be excavated or filled as required to the grades and dimensions shown on the Construction Drawings or as directed by the Owner or Owner’s Representative.

B. The foundation soil shall be proof rolled and examined by the Engineer to ensure that it meets the minimum strength requirements according to the design assumptions. If unacceptable foundation soil is encountered, the contractor shall excavate the affected areas and replace with suitable quality material under the direction of the Engineer.

C. In cut situations, the native soil shall be excavated to the lines and grades shown on the Construction Drawings and removed from the site or stockpiled for reuse as retained soil.

4.4. Installing Drainage System

A. The approved non-woven geotextile shall be set against the back of the first retaining wall unit, over the prepared foundation, and extend towards the back of the excavation, up the excavation face and back over the top of the infill soil to the retaining wall, or as shown in the Construction Drawings.

B. The drainage pipe shall be placed behind the leveling base, or lower course of facing units as shown in the Construction Drawings or as directed by the Engineer. The pipe shall be laid at a minimum gradient of 2% to ensure adequate drainage to free outlets.

C. T - Sections and outlet pipes shall be installed on the drainage pipe at 15 m (50 ft.) centers or as shown on the Construction Drawings.

D. The remaining length of geotextile shall be pulled taut and pinned over the face of the retained soil. Geotextile overlaps shall be a minimum of 300 mm (1 ft.) and shall be shingled down the face of the excavation in order to prevent the infiltration of retained soil into the wall infill.

4.5. Leveling Base or Spread Footing Placement

A. The leveling base material shall be crushed stone compacted to 98% Standard Proctor Density, or vibrated concrete along the grades and dimensions shown on the Construction Drawings or as directed by the Engineer. The minimum thickness of the leveling base shall be 150 mm (6 inches)

4.6. Installation of Modular Concrete Retaining Wall Units

A. The bottom row of retaining wall modules shall be placed on the prepared leveling base as shown on the Construction Drawings. Care shall be taken to ensure that the wall modules are aligned properly, leveled from side to side and front to back and are in complete contact with the base material.

B. The wall modules above the bottom course shall be placed such that the tongue and grove arrangement provides the design batter (i.e. setback) of the wall face.

   Successive courses shall be placed to create a running bond pattern with the edge of all units being approximately aligned with the middle of the unit in the course below it.

C. The wall modules shall be swept clean before placing additional levels to ensure that no dirt, concrete or other foreign materials become lodged between successive lifts of the wall modules.

D. A maximum of 4 courses of wall units can be placed above the level of the infill soil at any time.

E. The contractor shall check the level of wall modules with each lift to ensure that no gaps are formed between successive lifts that may affect the pullout resistance of geogrid reinforcement, if applicable.

F. Care shall be taken to ensure that the wall modules and geosynthetic reinforcement are not broken or damaged during handling and placement.

4.7. Drainage Soil

A. The drainage soil will be placed behind the retaining wall modules with a minimum width of 300 mm (1 ft.) and separated from other soils using the approved nonwoven geotextile.

B. Drainage soil shall be placed behind the wall facing in maximum lifts of 6 inches and compacted to a minimum density of 95% Standard Proctor.

C. No heavy compaction equipment shall be allowed within 1 meter (3 ft.) of the back of the wall fascia.

4.8. Infill Soil

A. Wall infill soil shall be placed behind the first course of the wall facing units in maximum lifts of 150 mm (6 inches) and compacted to a minimum density of 95% Standard Proctor. At the specified elevations, geogrid reinforcement shall be placed, as described in section 4.09. The fill shall be placed and compacted level with the top of the wall modules at the specified geogrid elevations prior to placing the geogrid reinforcement.

B. Wall infill soil shall be placed on top of the geogrid reinforcement layers in maximum lifts of 150 mm (6 inches) and compacted to a minimum of 95% Standard Proctor Density. Care shall be taken to ensure that the geogrid lays flat and taut during placement of the infill soil. This is best achieved by placing fill on top of the geogrid near the wall fascia and spreading toward the back of the infill soil zone.

C. No tracked construction equipment shall be allowed to operate directly on top of the geogrid until a minimum thickness of 150 mm (6 inches) of fill has been placed. Rubber tired equipment may drive on top of the geogrid at slow speeds but should exercise care not to stop suddenly or make sharp turns. No heavy equipment shall be allowed within 1 meter (3 ft.) of the back of the wall.

4.9. Geogrid Soil Reinforcement

A. Pre-cut sections of geogrid reinforcement shall be placed horizontally at the specified elevations and with longitudinal axis perpendicular to the wall face (i.e. machine direction), at the elevations shown on the Construction Drawings, or as directed by the Engineer.

B. The geogrid shall be placed over the compacted infill soil and the wall facing units with the outside edge extending over the tongue of the bottom unit and to within 25 mm (1 in.) of the front facing unit. Care shall be taken to ensure that the wall modules are swept clean and that the geogrid is in complete contact with the top and bottom faces of the adjacent wall modules. The next course of wall modules shall be carefully placed on top of the lower modules to ensure that no pieces of concrete are chipped off and become lodged between unit layers.

C. The geogrid shall be pulled taut away from the back the wall modules during placement of infill soil. Alternatively, suitable anchoring pins or staples can be used to ensure that there are no wrinkles or slackness prior to placement of the infill soil.

The geogrid shall lay perfectly flat when pulled back perpendicular to the back of the wall fascia.

4.10. Retained Soil

A. Retained soils shall be placed and compacted behind the infill soil or drainage soil if applicable, in maximum lift thickness of 150 mm (6 inches.) The retained soils shall be undisturbed native material or engineered fill compacted to a minimum density of 95% Standard Proctor.

B. No heavy compaction equipment shall be allowed within 1 m (3 ft.) of the back of the wall modules.

4.11. Finishing Wall

A. Items 4.5 to 4.10 shall be repeated until the grades indicated on the Construction Drawings are achieved.

B. Coping units shall be secured to the top of the wall with two 10 mm (3/8 inch) beads of the approved flexible concrete adhesive positioned 50mm (2 inches) in front and behind the tongue of the last course of retaining wall units.

C. Finish grading above the wall to direct surface run off water away from the segmental retaining wall. Use a soil with a low permeability to restrict the rate of water infiltration into the retaining wall structure.

END OF SECTION