

**SECTION 01 00 00
GENERAL REQUIREMENTS**

PART 1 - GENERAL

1.1 DESCRIPTION:

- A. Contractor shall completely prepare site for core drilling for the National Wireless Project.
- B. Before placement and installation of work subject to tests by testing laboratory, the Contractor shall notify the Resident Engineer and testing laboratory in sufficient time to enable testing laboratory personnel to be present at the site in time for proper taking and testing of specimens and field inspection. Such prior notice shall be not less than three work days unless otherwise designated by the Resident Engineer.
- C. All employees of general contractor and subcontractors shall comply with VA security management program and obtain permission of the VA police, be identified by project and employer, and restricted from unauthorized access.
- D. Prior to commencing work, general contractor shall provide proof that a OSHA certified “competent person” (CP) (29 CFR 1926.20(b)(2)) will maintain a presence at the work site whenever the general or subcontractors are present.
- E. Training:
 - 1. All employees of general contractor or subcontractors shall have the 10-hour OSHA certified Construction Safety course and /or other relevant competency training approved by Resident Engineer.
 - 2. General Contractor’s superintendent shall have the 30-hour OSHA certified Construction Safety course and /or other relevant competency training.
 - 3. Submit training records of all such employees for approval before the start of work.

1.2 STATEMENT OF BID ITEM(S)

- A. ITEM I, GENERAL CONSTRUCTION: Core drill 5-4” holes and install firestopping devices.

1.3 CONSTRUCTION SECURITY REQUIREMENTS

- A. See also Section 01 00 11 – MEDICAL CENTER REQUIREMENTS for additional security requirements.

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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. Work Area Security:

1. Contractor shall maintain the work area secure so that the public cannot enter the site unescorted.
2. Notify Contracting Officer and Site Security Officer immediately when there is a loss or compromise of "sensitive information".
3. All electronic information shall be stored in specified location following VA standards and procedures using an Engineering Document Management Software (EDMS).
 - a. Security, access and maintenance of all project drawings, both scanned and electronic shall be performed and tracked through the EDMS system.
 - b. "Sensitive information" including drawings and other documents may be attached to e-mail provided all VA encryption procedures are followed.

1.4 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):

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- 10 Standard for Portable Fire Extinguishers
- 30 Flammable and Combustible Liquids Code
- 51B..... Standard for Fire Prevention During Welding, Cutting and
Other Hot Work
- 70 National Electrical Code
- 241 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. Prior to any worker for the contractor or subcontractors beginning work, they shall undergo a safety briefing provided by the contractor’s competent person per OSHA requirements. This briefing shall include information on the construction limits, VAMC safety guidelines, means of egress, break areas, work hours, locations of restrooms, use of VAMC equipment, etc. Documentation shall be provided to the Resident Engineer that individuals have undergone contractor’s safety briefing.
- C. Site and Building Access: Maintain free and unobstructed access to facility emergency services and for fire, police and other emergency response forces in accordance with NFPA 241.
- D. Separate temporary facilities, such as trailers, storage sheds, and dumpsters, from existing buildings and new construction by distances in accordance with NFPA 241. For small facilities with less than 6 m (20 feet) exposing overall length, separate by 3m (10 feet).
 - 1. Close openings in smoke barriers and fire-rated construction to maintain fire ratings. Seal penetrations with listed through-penetration firestop materials in accordance with Section 07 84 00, FIRESTOPPING.
 - 2. See also Section 01 00 11 – MEDICAL CENTER REQUIREMENTS for additional requirements regarding dust control.
- E. Temporary Heating and Electrical: Install, use and maintain installations in accordance with 29 CFR 1926, NFPA 241 and NFPA 70.

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- F. Means of Egress: Do not block exiting for occupied buildings, including paths from exits to roads. Minimize disruptions and coordinate with Resident Engineer, facility Fire Chief, and facility Safety Officer.
- G. Egress Routes for Construction Workers: Maintain free and unobstructed egress. Inspect daily. Report findings and corrective actions weekly to Resident Engineer, facility Fire Chief, and facility Safety Officer.
- H. Fire Extinguishers: Provide and maintain extinguishers in construction areas and temporary storage areas in accordance with 29 CFR 1926, NFPA 241 and NFPA 10.
- I. Flammable and Combustible Liquids: Store, dispense and use liquids in accordance with 29 CFR 1926, NFPA 241 and NFPA 30.
- J. Existing Fire Protection: Do not impair automatic sprinklers, smoke and heat detection, and fire alarm systems, except for portions immediately under construction, and temporarily for connections. All existing or temporary fire protection systems (fire alarms, sprinklers) located in construction areas shall be tested as coordinated with the medical center. Parameters for the testing and results of any tests performed shall be recorded by the medical center and copies provided to the Resident Engineer.
 - 1. Interruption of the existing Fire Protection Systems solely for the Contractor's convenience will NOT be permitted.
- K. Smoke Detectors: Prevent accidental operation. Remove temporary covers at end of work operations each day. Coordinate with Resident Engineer, facility Fire Chief, and facility Safety Officer.
- L. Hot Work: See Section 01 00 11 – MEDICAL CENTER REQUIREMENTS.
- M. Smoking: Smoking is prohibited in and adjacent to construction areas inside existing buildings and additions under construction. In separate and detached buildings under construction, smoking is prohibited except in designated smoking rest areas.
- N. Dispose of waste and debris in accordance with NFPA 241. Remove from buildings daily.
- O. Perform other construction, alteration and demolition operations in accordance with 29 CFR 1926.
- P. If required, submit documentation to the Resident Engineer that personnel have been trained in the fire safety aspects of working in areas with impaired structural or compartmentalization features.

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1.5 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.

(FAR 52.236-10)

- B. Workmen are subject to rules of Medical Center applicable to their conduct.
- C. Execute work in such a manner as to interfere as little as possible with work being done by others. Keep roads clear of construction materials, debris, standing construction equipment and vehicles at all times.
- D. Execute work so as to interfere as little as possible with normal functioning of Medical Center as a whole, including operations of utility services, fire protection systems and any existing equipment, and with work being done by others. Use of equipment and tools that transmit vibrations and noises through the building structure, are not permitted in buildings that are occupied, during construction, jointly by patients or medical personnel, and Contractor's personnel, except as permitted by Resident Engineer where required by limited working space.
1. Do not store materials and equipment in other than assigned areas.
 2. Schedule delivery of materials and equipment to immediate construction working areas within buildings in use by Department of Veterans Affairs in quantities sufficient for not more than two work days. Provide unobstructed access to Medical Center areas required to remain in operation.
 3. Where access by Medical Center personnel to vacated portions of buildings is not required, storage of Contractor's materials and equipment will be permitted subject to fire and safety requirements.
 4. The public corridors in the occupied portions of the building must remain open at all times.
 - a. Provide temporary construction partitions between construction area and the public path.
 - b. Conduct demolition and construction within the public corridors during the overnight and weekend hours. Coordinate schedule with the Resident Engineer.

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- c. All occupied areas must be fully cleaned by the Contractor prior to re-commencement of hospital operations within those areas.
 - d. Contractor shall take all measures and provide all material necessary for protecting existing equipment and property in affected areas of construction against dust and debris, so that equipment and affected areas to be used in the Medical Centers operations will not be hindered. Coordinate alteration work in areas occupied by Department of Veterans Affairs so that Medical Center operations will continue during the construction period.
- E. Utilities Services: Maintain existing utility services for Medical Center at all times. 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 Resident Engineer.
- 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 Resident Engineer. Contractor shall submit a request to interrupt any such services to Resident Engineer, in writing, 48 hours in advance of proposed interruption. Request shall state reason, date, exact time of, and approximate duration of such interruption.
 - 2. 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.
 - 3. Major interruptions of any system must be requested, in writing, at least 15 calendar days prior to the desired time and shall be performed as directed by the Resident Engineer.
 - 4. In case of a contract construction emergency, service will be interrupted on approval of Resident Engineer. Such approval will be confirmed in writing as soon as practical.
- F. 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

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and vehicles. Wherever work occurs on or near existing roads, at least one lane must be open to traffic at all times.

2. Method and scheduling of required cutting, altering and removal of existing roads, walks and entrances must be approved by the Resident Engineer.
- G. construction stage to determine impact of construction activities on indoor air quality. In addition:
- H. In general, following preventive measures shall be adopted during construction to keep down dust and prevent mold.
1. Dampen debris to keep down dust and provide temporary construction partitions in existing structures where directed by Resident Engineer. Blank off ducts and diffusers to prevent circulation of dust into occupied areas during construction.
 2. Do not perform dust producing tasks within occupied areas without the approval of the Resident Engineer. For construction in any areas that will remain jointly occupied by the medical Center and Contractor's workers, the Contractor shall:
 - a. Provide dust proof barriers to completely separate construction from the operational areas of the hospital in order to contain dirt debris and dust.
 - 1) Unless indicated otherwise or authorized by the Resident Engineer in writing, such barriers shall conform to the construction and fire-rating requirements indicated for temporary construction partitions under FIRE SAFETY article in the section.
 - 2) Barriers shall be sealed and made presentable on hospital occupied side.
 - 3) Install a self-closing rated door in a metal frame, commensurate with the partition, to allow worker access.
 - 4) Maintain negative air pressure at all times.
 - 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.

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Exhaust hoses shall be heavy duty, flexible steel reinforced and exhausted so that dust is not reintroduced to the medical center.

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.

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

I. 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.

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1.6 DISPOSAL AND RETENTION

- A. Materials and equipment accruing from work removed and from demolition of buildings or structures, or parts thereof, shall be disposed of as follows:
1. Reserved items which are to remain property of the Government are identified by attached tags or noted on drawings or in specifications as items to be stored. Items that remain property of the Government shall be removed or dislodged from present locations in such a manner as to prevent damage which would be detrimental to re-installation and reuse. Store such items where directed by Resident Engineer.
 2. Items not reserved shall become property of the Contractor and be removed by Contractor from Medical Center .
 3. Items of portable equipment and furnishings located in rooms and spaces in which work is to be done under this contract shall remain the property of the Government. When rooms and spaces are vacated by the Department of Veterans Affairs during the alteration period, such items which are NOT required by drawings and specifications to be either relocated or reused will be removed by the Government in advance of work to avoid interfering with Contractor's operation. ..

1.7 USE OF EXISTING ELEVATORS

- A. Limited use of existing building elevators is anticipated as follows:
1. The freight elevator can be utilized but requires coordination between the contractor and the COR.
 2. The other building elevators in the facility are passenger elevators and shall be used as such. Use of these elevators will require express written consent by the COR.
 3. The existing one-stop elevator at the current SE building entrance (Room E1562) shall NOT be used for construction operations.

1.8 TEMPORARY TOILETS

- A. Contractor may use existing toilet rooms within the building only if authorized in writing to do so by the Resident Engineer. Contractor shall use only those specific toilet rooms which are indicated in the authorization.
- B. If, at the option of the Resident Engineer, the Contractor is permitted to use existing toilet rooms within the building, the Contractor shall keep such places clean and be responsible for any damage done thereto by Contractor's workmen. Failure to maintain satisfactory condition in toilets will deprive Contractor of the privilege to use such toilets.

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1.9 AVAILABILITY AND USE OF UTILITY SERVICES

- A. Electrical (For Construction and Testing): The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. The amount to be paid by the Contractor for chargeable electrical services shall be the prevailing rates charged to the Government. The Contractor shall carefully conserve any utilities furnished without charge.
1. Obtain electricity by connecting to the Medical Center electrical distribution system. The Contractor, at Contractor's expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines.
- B. Heat: Furnish temporary heat necessary to prevent injury to work and materials through dampness and cold. Use of open salamanders or any temporary heating devices which may be fire hazards or may smoke and damage finished work, will not be permitted. Maintain minimum temperatures as specified for various materials:
1. If written permission is obtained from the Resident Engineer, heat may be obtained by connecting to Medical Center steam or hot water heating distribution system. See Drawings for nearby sources.
- C. Water (for Construction and Testing): Furnish temporary water service.
1. Obtain water by connecting to the Medical Center water distribution system. Provide reduced pressure backflow preventer at each connection. Water is available at no cost to the Contractor.
 2. Maintain connections, pipe, fittings and fixtures and conserve water-use so none is wasted. Failure to stop leakage or other wastes will be cause for revocation (at Resident Engineer's discretion) of use of water from Medical Center's system.

GOVERNMENT-FURNISHED PROPERTY

- D. The Government shall deliver to the Contractor, the Government-furnished property shown on the drawings.
- E. Equipment furnished by Government to be installed by Contractor will be furnished to Contractor at the Medical Center.
- F. Storage space for equipment will be provided by the Government and the Contractor shall be prepared to unload and store such equipment therein upon its receipt at the Medical Center.

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

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SECTION 01 00 11
MEDICAL CENTER REQUIREMENTS

PART 1 - GENERAL

1.1 GENERAL INTENTION:

- A. This document pertains to station policy for construction projects performed at the Veterans Affairs Medical Center, VA Central Iowa Healthcare System. Safety and health concerns are taken seriously at this facility. Both our staff and yours are expected to strictly adhere to the regulations and requirements. This is exceedingly important, since we must be primarily concerned for the safety of our patients. In this regard, OSHA Standards may protect worker safety and health, but they have minimal benefit for protecting the safety and health of our patients, due primarily to their differing medical conditions. Review this information as orientation with your personnel performing work on site.

1.2 REQUIREMENTS:

- A. Security:
1. Secure all construction areas, especially mechanical and electrical rooms against entry of unauthorized individuals including patients.
 2. Notify the Contracting Officer's Representative (COR) for permission to work after hours and weekends. Standard work hours for the medical center are Monday–Friday, 8:00 a.m. to 4:30 p.m.
- B. Key Security:
1. Only a limited number of keys will be issued to the contractor.
 2. Ensure all doors leading to and from construction are either monitored or locked to prevent access to the area from unauthorized persons.
- C. General Safety:
1. Follow all federal, state and local safety and health regulations.
 2. Maintain safety in the construction site/area in accordance with the provisions of the contract that includes the Occupational Safety and Health Administration (OSHA) Regulations; National Electrical Codes; National Fire Protection Association (NFPA) 70, National Electric Code; and NFPA 101, Life Safety Code. Work in a safe manner and take all proper precautions while performing your work. Extra precautions shall be taken when working around persons occupying the building during construction.
 3. Provide Personal Protective Equipment (PPE) for your employees.

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4. Post appropriate signs in specific hazardous areas.
 5. Keep tools, ladders, etc., away from patients to prevent injuries.
- D. Safety Inspections: The professional Occupational Safety and Health staff at this facility will perform safety inspections of all contract operations. Written reports of unsafe practices or conditions will be reported to the COR and Contracting Officer for immediate attention and resolution.
- E. Fire Alarms:
1. The fire alarm system connects all buildings at this facility, and is activated by various heat, duct, manual pull stations and smoke sensors. Manual pull stations are provided at each entrance. Please survey the area in which you are working to locate the manual pull stations.
 2. In the event of a fire alarm sounding, you are to remain in your area, unless medical center personnel (Safety, Nursing or Engineering) instruct otherwise, or unless a fire situation is in your area, in which case you should immediately evacuate.
 3. Any work involving the fire protection systems will require written permission to proceed from the COR.
 4. Do not tamper with or otherwise disturb any fire alarm system components without prior written permission. To do so without written permission will result in an adverse action.
- F. Hazardous Materials:
1. Many of the operations you are scheduled to perform may involve the use of hazardous materials. Prior to locating hazardous materials on site, all Material Safety Data Sheets (MSDS) will be submitted through the COR for evaluation by the facility Safety Officer with sufficient advance notice to allow proper training of staff.
 2. Storage of hazardous materials within buildings will be minimal with only enough on hand to perform daily work tasks. Flammable materials will either be removed from buildings at the end of the work shift or stored in approved flammable storage containers.
 3. Care must be taken to ensure adequate ventilation to remove vapors of hazardous materials in use. Many of the patients being cared for in the facility are susceptible to environmental contaminants, even when odors seem minimal. You will isolate those areas where vapors are produced, and ventilate to the greatest extent possible to reduce the number of complaints.
- G. Airborne Dust Control During Construction:
1. Generation of dust is of major concern for staff and especially in patient occupied buildings. Where operations involve the generation of dust, all efforts will be directed at reducing

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airborne generated dust to the lowest level feasible. This may be accomplished by a number of methods. These include misting the area with water, or use of tools attached to high efficiency particulate air (HEPA) filtering vacuums. Where large amounts of materials may be disturbed, resulting in airborne dust, establishment of full ceiling-to-floor plastic barriers may be required.

2. Classification of Jobs:

- a. CLASS I - Includes, but is not limited to, minor disturbances involving plumbing, electrical, carpentry, ductwork and minor aesthetic improvements.
- b. CLASS II - (projects require barrier precautions) - Includes, but is not limited to, construction of new walls, construction of new rooms, major utility changes, major equipment installation, demolition of wallboards, plaster, ceramic tiles or ceiling and floor tiles, removal of windows, removal of casework, etc.

H. Class I Procedures:

1. Mist (with water) work surfaces to control dust while cutting. Alternatively a high efficiency particulate air vacuum (HEPA) can be used by positioning the vacuum next to the equipment at the use site.
2. Tape doors for activities that produce large amounts of dust, and block off and seal air vents.
3. Cover holes/openings (penetrations), in walls, ceiling, floors or door that cannot be patched or fixed within 4 hours. Only approved fire-rated materials will be used to fill holes in fire/smoke walls.
4. Comply with the OSHA regulations regarding noise and vapor containment.
5. Cleanup and disposal: Construction waste must be contained before transport using plastic bags and/or covered transport receptacle and/or cart and tape covering.
6. Wet mop and/or HEPA vacuum before leaving work area.
7. Place dust mats at entrance and exit of work area, and clean or change daily to prevent tracking of dust into occupied areas.
8. After work completion, remove covering from air vents.

I. Class II (Post Construction Warning Signs):

1. Same procedures as Class I - however, use of a HEPA vacuum is mandatory.
2. Construct all dust barriers before construction begins per the following instructions: For single rooms, seal door/frame with tape and plastic. The sheet should be divided vertically

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with a knife. Flaps should be taped on either side of the single sheet to create a flapped entrance.

3. For larger areas, install an airtight (fire retardant) plastic barrier that extends from floor to ceiling, or seal to prevent dust and debris from escaping. Seal all seams with duct tape. Install barrier partitions to stop movement of air and debris penetrating ceiling envelopes, chases and/or ceiling spaces. Construct entrance with a double flap of plastic to prevent escape of debris; or, if elevator shafts or stairways are within the field of construction, install solid barriers.

J. Contact with Asbestos Containing Materials (ACM):

1. Due to the age of buildings, many contain asbestos containing materials (ACM). Primary ACM uses in the medical center includes floor tile, mastic, piping and HVAC insulation. The medical center has performed a comprehensive asbestos survey and has identified accessible ACM. Some areas contain damaged asbestos and should not be accessed without prior abatement.
2. The most common type of ACM insulation you may encounter includes thermal system insulation (TSI) and floor tile. ACM TSI is generally covered with a cloth wrap or lagging, and the asbestos substrate generally appear white in color. Do not sand, drill, gouge or otherwise disturb this type of insulation. Contractors disturbing or releasing asbestos containing materials will be liable for all damages and cleanup costs.
3. Where disturbance of asbestos is likely, it has been addressed in the contract for removal. If contact with the presence of asbestos is presented, stop all work in the immediate area and immediately contact the COR or Safety Officer to make necessary arrangements for removal.
4. In some areas, asbestos insulation has been identified on elbows, between fiberglass piping insulation, as patching materials among the fiberglass insulation. Fiberglass insulation used in this facility is usually yellow or pink in color, wrapped either by cloth or paper lagging.
5. To protect and ensure all your employees are aware that asbestos containing materials have been used in the construction of this facility, you are required to have them review this section and complete the awareness statement included as Attachment A. Once this documentation has been signed by all employees, forward to the COR for documentation.
6. A complete assessment of asbestos materials and conditions are available for viewing by contacting the facility Safety Officer. Prior to performing work above any ceiling or starting in a new area, consult with the COR concerning existing conditions of ACM.

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7. Some of the areas in the facility are identified as restricted areas due to condition of ACM. These are readily labeled. Do not enter these areas unless first contacting the COR. Entry requirements to these areas are awareness of the hazards, proper protective clothing (coveralls and respirators) and personal monitoring in accordance with OSHA requirements.
8. Submit contractor asbestos awareness statements for all persons working on the site prior to commencing work.

K. Environmental Protection:

1. It may help you to be aware of the seriousness with which the environmental protection requirements of each contract are regarded. Adherence to these requirements is subject to continuing scrutiny from the community and backed by severe penalties, such as fines and incarceration. These environmental requirements will be strictly enforced.
2. No hazardous materials will be disposed of on Government property. All waste will be hauled off-site or disposed in contractor owned and operated waste removal containers.
3. A copy of all waste manifests for special or hazardous wastes will be forwarded to the COR. Environmental requirements will be strictly enforced.

L. Permit Required Confined Spaces:

1. Contractors performing work on this facility will follow all requirements outlined in OSHA Standards for working in confined spaces. There are numerous permits required for confined spaces on this facility. These spaces have been identified. Some spaces have been posted, but the majority have not due to their configuration. A complete listing of these areas is located in the Safety Office.
2. Confined spaces are areas that are large enough to be entered, have limited egress/exit potential and are not designed for permanent human occupancy. If you encounter any space that meets this definition, and if it is a suspected confined space, please contact the COR.
3. Contractors performing work in confined spaces are responsible for compliance with all applicable standards and regulations.

M. Housekeeping:

1. Protect patients and VA personnel in occupied areas from the hazards of dust, noise, construction debris and material associated with a construction environment. Keep work area clear, clean and free of loose debris, construction materials and partially installed work that would create a safety hazard or interfere with VA personnel duties and traffic.

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2. Wet mop occupied areas clean and remove any accumulation of dust/debris from cutting or drilling from any surface at the end of each workday.
3. Make every effort to keep dust and noise to a minimum at all times. Take special precautions to protect VA equipment from damage including excessive dust.
4. Maintain clear access to mechanical, electrical devices, equipment and main corridors. This will ensure access to existing systems in the event of an emergency.
5. Clean area of all construction debris and dust upon completion of demolition and/or renovation.
6. During construction operations, keep existing finishes protected from damage. Cover and protect all carpets during construction. Any carpets or surfaces damaged as a result of construction activities will be replaced at the contractor expense.

N. Hot Work Permits:

1. Any hot work operations including cutting, welding, thermal welding, brazing, soldering, grinding, thermal spraying, thawing pipes or any other similar activity, will require a Hot Work Permit to be obtained by the COR. The Contractor will be responsible for conforming to all Medical Center regulations, policies and procedures concerning Hot Work Permits as outlined below:
 - a. Prior to the performance of hot work in patient-occupied buildings, a request for a Hot Work Permit will be made to the COR.
 - b. The COR will inspect the area and ensure that the requirements of NFPA 241 and OSHA standards have been satisfied. The Hot Work Permit will be granted and will be posted in the immediate area of the work.
 - c. The Hot Work Permit will apply only to the location identified on the permit. If additional areas involve hot work, additional permits must be requested.
 - d. Upon completion of all hot work, the COR will be notified by the responsible individual to perform a re-inspection of the area.
2. Do not use any of the extinguishers in the medical center for standby purpose while conducting hot work. Contractors are required to supply their own Class ABC extinguishers. Medical center extinguishers are only to be used in the event of a fire.

O. Emergency Medical Services: Emergency medical services for stabilization purposes are available for contractors at this facility. For medical emergencies, dial "0" when inside any

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- building. Report the nature of the emergency and location. The operator will dispatch in-house personnel or coordinate an outside emergency assistance based on the nature of the emergency.
- P. Use of Government-Owned Material and Equipment: Use of Government-owned material and equipment is prohibited.
- Q. Superintendent Communications: At all times during the performance of this contract, the Contractors Superintendent is to be available by cellular phone. At the beginning of the contract and prior to beginning any construction, supply the COR with the telephone number for the Superintendent.
- R. Parking: Contractor employees shall be assigned a parking area during the preconstruction meeting.
- S. Traffic:
1. Traffic hazards are minimal at this facility. Drivers should be particularly concerned with pedestrian traffic.
 2. Seat belt use is mandatory on the station.
 3. Federal police officers maintain a 24-hour patrol of the area.
- T. Contractor's Trailers: Contractor's trailers shall be located at the area assigned. All utility connections to the trailer shall be installed at the contractor expense. Trailer removal is required upon completion of the contract.
- U. Smoking: No smoking is permitted in buildings or around hazardous areas. Any smoking inside a government building is subject to a fine without warning.

--- END ---

**SECTION 01 73 29
CUTTING AND PATCHING**

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Cutting
- B. Patching
- C. Minor modifications to assure exposed surfaces retain a finished appearance.

1.2 SUBMITTALS

- A. Product Data: Submit all materials to be used in patching that are not submitted under another Section of this Specification.
- B. Cutting and Patching Proposal:
 - 1. Where cutting or patching is found to be necessary to accomplish the Work as described in the Construction Document, provide a description of the cutting and/or patching to be done and the reason it is required. Include what materials and utilities will be affected.
- C. Approval by the Owner to proceed with cutting and patching does not waive the Owner's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.

1.3 PAYMENT FOR COSTS

- A. Contractor shall be responsible for all costs of cutting and patching specifically stated in or reasonably implied by the Work described in the Construction Documents.
- B. Contractor shall be responsible for all costs of cutting and patching caused by ill-timed or defective work, or work not conforming to contract documents, including costs for additional services of the Architect/Engineer or Owner.

1.4 QUALITY ASSURANCE

- A. Employ skilled workmen to perform cutting and patching. Where work is of a specific trade (such as plaster) engage tradesmen skilled in that trade to execute the Work.
- B. Requirements for Structural Work: Do not cut or patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio.
 - 1. Obtain approval of the cutting and patching proposal before cutting and patching structural elements including, but not limited to, the following:
 - a. Foundation construction.
 - b. Bearing and retaining walls.

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- c. Structural concrete.
 - d. Structural steel.
 - e. Preformed metal panels
 - f. Lintels
 - g. Timber and primary wood framing.
 - h. Structural decking.
 - i. Stair systems.
 - j. Miscellaneous structural metals.
 - k. Equipment supports.
 - l. Piping, conduits, ductwork, vessels and equipment.
2. Where a core drill is required through a floor or wall, verify the location of the concrete webs, steel joints or other structural elements below the slab or inside or on the other side of the wall before drillings and adjust location or request direction from the A/E as necessary.
- C. Operational and Safety Limitations: Do not cut or patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.
- 1. Obtain approval of the cutting and patching proposal before cutting and patching operating elements or safety related systems including, but not limited to, the following:
 - a. Shoring, bracing, and sheeting.
 - b. Primary operational systems and equipment.
 - c. Air or smoke barriers.
 - d. Water, moisture, or vapor barriers.
 - e. Membrane and flashings.
 - f. Fire protection systems.
 - g. Noise and vibration control elements and systems.
 - h. Control systems.
 - i. Communication systems.
 - j. Conveying systems.
 - k. Electrical wiring systems.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Use materials for patching that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.
 - 1. All substitute materials must be approved by the Owner before they may be used on the project.
- B. Use materials whose thermal, chemical or similar properties will not adversely affect the existing materials to remain.
- C. Where new materials are described in this Construction Documents provide patching materials that conform to those specifications in regard to quality unless otherwise indicated.
- D. Where no specific description of materials is found in the Construction Documents, provide materials of Professional or Commercial quality, heavy duty and top quality, meeting the highest commonly used standards in the trade or specialty under which the Work in question would normally be performed.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.
- B. Where the cutting involves elements normally handled by differing trades, before proceeding, coordinate with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- C. To the extent possible, verify what is behind, under or over a surface before cutting or drilling into that surface.

3.2 PREPARATION

- A. Temporary Support: Provide all temporary support of Work to be cut as required to maintain the structural integrity of the remaining construction and as necessary to provide for a safe environment.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the project that might be exposed during cutting and patching operations.

- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Cutting of existing pipe, conduit or ductwork serving the building, which is indicated to be removed or relocated, must be schedule only after adequate provisions have been made to bypass them. Services must be maintained at all times.

3.3 PERFORMANCE

A. General

1. Proceed with cutting and patching in a timely manner as required to prevent delay of the Work.
2. Provide all cutting of existing construction as necessary to provide for installation of other components or performance of other construction activities or the subsequent fitting and patching required to restore surfaces to their original condition.
3. If utilities or structural elements of the construction are encountered which are not specifically noted on the Drawings, immediately inform the Architect/Engineer and await a response before proceeding.

B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction.

1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping.
2. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces.
3. Temporarily cover openings when not in use.
4. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
5. Cut no utilities without specific, written authorization from the Owner.

C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
2. Where removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.
3. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Wherever a patch occurs, refinish the entire surface to a point where the surface changes such as at a corner, a joint, a change in plane or a change in material or color.

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- b. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken area containing the patch, after the patched area has received primer and second coat.
- D. Anchoring to Existing:
- 1. Do not anchor new items or new construction to existing construction in a way that will place an excessive load on the existing construction.
 - 2. Plaster and Gypsum Board
 - a. Do not anchor anything directly to gypsum board or plaster, always anchor to the framing system or substrate to which the gypsum board or plaster is anchored. If necessary open the gypsum board or plaster wall, provide additional blocking and repair the surface.
 - 3. Hollow Masonry
 - a. Do not anchor anything weighing more than 1 pound or capable of resulting in pressure being applied of more than 3 pounds in any direction to the face of hollow masonry.
 - b. Where loads heavier than those listed above must be anchored to hollow concrete block, provide one of the following:
 - 1) Open the core and grout solid at the core into which the anchor is to be placed plus at least one core above and two cores below where the anchor is to be placed. Patch and finish the surface of the block to match surrounding block.
 - 2) Provide a system that engages both walls of the concrete block and provides a rigid spacer/brace in the core between the walls similar to Hilti HIT HY 20 for Masonry Construction.
 - c. Under no circumstances use impact driven fasteners on hollow masonry unless the cores are grouted solid.

3.4 CLEANING

- A. Thoroughly clean areas and spaces where cutting and patching is performed and areas used as access including cleaning piping, metal framing, conduits, ducts and other similar features.
- B. Thoroughly clean and prepare all surfaces before painting or other finishing is applied.
- C. Completely remove paint, mortar, oils, putty and items of similar nature that are not a part of the intended finish.

--- END ---

SECTION 02 41 13
SELECTIVE BUILDING AND SITE DEMOLITION

PART 1 - GENERAL

1.1 DESCRIPTION:

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

1.2 RELATED WORK:

- A. Demolition and removal of roads, walks, curbs, and on-grade slabs outside buildings to be demolished: Section 31 20 00, EARTH MOVING.
- B. Disconnecting utility services prior to demolition: Section 01 00 00, GENERAL REQUIREMENTS.
- C. Reserved items that are to remain the property of the Government: Section 01 00 00, GENERAL REQUIREMENTS.
- D. Environmental Protection: Section 01 57 19, TEMPORARY ENVIRONMENTAL CONTROLS.
- E. Construction Waste Management: Section 017419 CONSTRUCTION WASTE MANAGEMENT.
- F. Related demolition requirements: Section 02 41 19, SELECTIVE DEMOLITION FOR REMODELING.

1.3 PROTECTION:

- A. Perform demolition in such manner as to eliminate hazards to persons and property; to minimize interference with use of adjacent areas, utilities and structures or interruption of use of such utilities; and to provide free passage to and from such adjacent areas of structures. Comply with requirements of GENERAL CONDITIONS Article, ACCIDENT PREVENTION.
- B. Provide safeguards, including warning signs, barricades, temporary fences, warning lights, and other similar items that are required for protection of all personnel during demolition and removal operations. Comply with requirements of Section 01 00 00, GENERAL REQUIREMENTS, Article PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES AND IMPROVEMENTS.
- C. Maintain fences, barricades, lights, and other similar items around exposed excavations until such excavations have been completely filled.

- D. Prevent spread of flying particles and dust. Sprinkle rubbish and debris with water to keep dust to a minimum. Do not use water if it results in hazardous or objectionable condition such as, but not limited to; ice, flooding, or pollution. Vacuum and dust the work area daily.
- E. Before beginning any demolition work, the Contractor shall survey the site and examine the drawings and specifications to determine the extent of the work. The contractor shall take necessary precautions to avoid damages to existing items to remain in place, to be reused, or to remain the property of the Medical Center; any damaged items shall be repaired or replaced as approved by the Resident Engineer. The Contractor shall coordinate the work of this section with all other work and shall construct and maintain shoring, bracing, and supports as required. The Contractor shall ensure that structural elements are not overloaded and shall be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under this contract. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition or removal works. Repairs, reinforcement, or structural replacement must have Resident Engineer's approval.
- F. The work shall comply with the requirements of Section 01 57 19, TEMPORARY ENVIRONMENTAL CONTROLS.

1.4 UTILITY SERVICES:

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

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 DEMOLITION:

- A. Completely demolish and remove buildings and structures, including all appurtenances related or connected thereto, as noted below:
 - 1. As required for installation of new utility service lines.
 - 2. To full depth within an area defined by hypothetical lines located 1500 mm (5 feet) outside building lines of new structures.
- B. Debris, including brick, concrete, stone, metals and similar materials shall become property of Contractor and shall be disposed of by him daily, off the Medical Center to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas specified by the Resident Engineer. Break up concrete slabs below grade that do not

require removal from present location into pieces not exceeding 600 mm (24 inches) square to permit drainage. Contractor shall dispose debris in compliance with applicable federal, state or local permits, rules and/or regulations.

- C. Remove and legally dispose of all materials, other than earth to remain as part of project work, from any trash dumps shown. Materials removed shall become property of contractor and shall be disposed of in compliance with applicable federal, state or local permits, rules and/or regulations. All materials in the indicated trash dump areas, including above surrounding grade and extending to a depth of 1500mm (5feet) below surrounding grade, shall be included as part of the lump sum compensation for the work of this section. Materials that are located beneath the surface of the surrounding ground more than 1500 mm (5 feet), or materials that are discovered to be hazardous, shall be handled as unforeseen. The removal of hazardous material shall be referred to Hazardous Materials specifications.
- D. Remove existing utilities as indicated or uncovered by work and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the Resident Engineer. When Utility lines are encountered that are not indicated on the drawings, the Resident Engineer shall be notified prior to further work in that area.

3.2 CLEAN-UP:

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

--- E N D ---

SECTION 02 41 19
SELECTIVE DEMOLITION FOR REMODELING

PART 1 - GENERAL

1.1 DESCRIPTION:

- A. Minor and partial demolition for carpet removal.

1.2 RELATED WORK

- A. Requirements for isolation of construction areas: Section 01 00 11, MEDICAL CENTER REQUIREMENTS.
- B. Cutting and Patching: Section 01 73 29, CUTTING AND PATCHING
- C. Waster Management: Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT

1.3 SUBMITTALS

- A. Product Data: Submit all materials to be used in patching and in temporary enclosures that are not submitted under another Section of this Specification.
- B. Site Plan showing:
 - 1. Areas for temporary construction, barriers and enclosures.
 - 2. Areas for temporary and permanent placement of removed materials.
 - 3. Plan for closing off or partially closing off exterior access routes.
- C. Demolition Plan: Submit demolition plan to the Resident Engineer including the following:
 - 1. Schedule of utility shut offs, partial closure of access or pathways and other key items which may affect operations of the Facility.
 - 2. Measures planned to reduce noise and vibration and control dust.
 - 3. Sequencing of major portions of the Work, including timing between portions of the Work.
 - 4. Plans for closing off interior portions of the building to remain occupied during construction including submit materials and systems to be used.
- D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.4 PROJECT CONDITIONS

- A. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- B. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as shown.

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2. Report discrepancies to Architect/Engineer before disturbing existing installation.
3. Beginning of demolition work constitutes acceptance of existing conditions.

1.5 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. Code of Federal Regulations (CFR):
 - 29 CFR 1926.....Occupational Safety and Health Standards.
- C. National Fire Protection Association (NFPA):
 - 241Standard for Safeguarding Construction, Alteration, and Demolition Operations.

PART 2 - PRODUCTS

2.1 TEMPORARY CLOSURE MATERIALS

- A. Materials used for barriers, enclosures and other temporary structures may be new or used but must be in serviceable condition, safe and visually free of defect.
- B. Wood in contact with the public must not be an easy source of splinters.
- C. Barriers exposed to the public shall be painted a single color (e.g. not piece of old signs cut up with parts of many colors).
- D. Submit specific closure materials and systems to Resident Engineer for approval.
- E. See also Section 01 00 11, MEDICAL CENTER REQUIREMENTS.

2.2 PATCHING

- A. See Section 01 73 29, CUTTING AND PATCHING for material requirements for patching materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 1. Verify that construction and utility arrangements are as shown.
 2. Report discrepancies to Architect/Engineer and the Resident Engineer before disturbing existing installation.
 3. Beginning of demolition work constitutes acceptance of existing conditions.

3.2 PREPARATION

- A. Do not begin removal until receipt of notification to proceed from Resident Engineer.

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- B. Do not proceed until barriers are in place and negative air pressure is established as described in Section 01 00 11, MEDICAL CENTER REQUIREMENTS.
- C. See Section 01 73 29, CUTTING AND PATCHING for temporary support and protection.
- D. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.3 GENERAL REQUIREMENTS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
- B. Use of explosives is not permitted.
- C. Protect existing structures and other elements that are not to be removed. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 1. Prevent movement or settlement of adjacent structures.
 - 2. Stop work immediately if adjacent structures appear to be in danger and report condition to the Resident Engineer and Architect/Engineer.
- D. Conform to the requirements of Section 01 00 11, MEDICAL CENTER REQUIREMENTS erection and maintenance of temporary barriers and security devices. Separate areas in which demolition is being conducted from other areas that are still occupied.
- E. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
- F. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
- G. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
- H. Obtain written permission from the Resident Engineer for any activity outside the limits indicated on the Drawings, including the path to be used by large construction equipment and trucks and dumpsters to and from the site.
- I. If hazardous materials are discovered during removal operations, stop work and notify Architect/Engineer and Resident Engineer; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

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- J. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Resident Engineer. Obtain required permits before modifying or disabling life safety system including exit pathways.

3.4 SELECTIVE DEMOLITIONS PROCEDURE

- A. Remove existing work as indicated and as required to accomplish new work.
- B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- C. Conform to Section 01 73 29, CUTTING AND PATCHING for all cutting and patching procedures.
 - 1. Repair and patch adjacent construction and finishes damaged during removal work as necessary:
 - a. Surfaces or elements which are scheduled to be removed or remodeled in a later phase of this project must be patched as required to provide stable construction. Patches may be temporary but must be of a nature which will serve until the finish construction scheduled for a later phase of this Project.
 - b. Surfaces or elements not scheduled to be removed or remodeled or refinished in later phases of this project, must be patched and finished in a permanent manner to match existing finishes.
- D. Separate areas in which demolition is being conducted from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions and sound barriers of construction conforming to Section 01 00 11, MEDICAL CENTER REQUIREMENTS and as approved by the Resident Engineer where shown on the drawings and as required to meet project requirements.

3.5 EXISTING UTILITIES

- A. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
 - 1. Protect existing utilities to remain from damage.
 - 2. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
 - 3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.

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4. Verify that abandoned services serve only abandoned facilities before removal.
- B. Cutting of existing pipe, conduit or ductwork serving the building, which is indicated to be removed or relocated, must be scheduled only after adequate provisions have been made to bypass them. Services must be maintained at all times.
- C. Coordinate work with Resident Engineer; notify before starting work and comply with requirements; obtain required permits. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 7 days prior written notification to Resident Engineer.
- D. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities where possible to do so, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- E. Marking of Capped and Abandoned Services: Mark using highly visible tags or flags, protect from damage due to subsequent construction, using substantial barricades if necessary.
 1. At utilities or ductwork to be permanently capped and abandoned, provide a permanent type tag (metal or plastic) attached to the duct, pipe, conduit, etc. near the cap and containing the following information:
 - a. Utility carried (e.g. gas, hot water, return air, 240 V electrical, etc.)
 - b. Original source.
 - c. Original destination.
 - d. Note to which (if either) it is still connected.
 - e. Note whether the pipe, conduit or duct is active or contains anything.
 - f. Date capped.
 2. Utilities or ductwork to be temporarily capped may be tagged with less permanent tags (paper) but must carry the same information.

3.6 CLEANING

- A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access including cleaning piping, metal framing, conduits, ducts and other similar features.

3.7 DEBRIS AND WASTE REMOVAL

- A. Daily remove waste from areas where demolition is occurring.
- B. Keep area around dumpsters and other waste disposal facilities clean.
- C. Do not permit waste materials to blow about the site.

--- END ---

**SECTION 09 65 13
RESILIENT BASE AND ACCESSORIES**

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies the installation of vinyl base.

1.2 RELATED WORK

A. Color and texture: Johnsonite #49, Beige, 6" Base.

1.3 SUBMITTALS

A. Manufacturer's Literature and Data:

1. Description of each product.
2. Base and stair material manufacturer's recommendations for adhesives.
3. Application and installation instructions.

C. Samples:

1. Base: 150 mm (6 inches) long, each type and color.
2. Adhesive: Literature indicating each type.

1.4 DELIVERY

- A. Deliver materials to the site in original sealed packages or containers, clearly marked with the manufacturer's name or brand, type and color, production run number and date of manufacture.
- B. Materials from containers which have been distorted, damaged or opened prior to installation will be rejected.

1.5 STORAGE

- A. Store materials in weather tight and dry storage facility.
- B. Protect material from damage by handling and construction operations before, during, and after installation.

1.6 APPLICABLE PUBLICATIONS

- A. The publication listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):
F1861-08.....Resilient Wall Base

PART 2 - PRODUCTS

2.1 GENERAL

Use only products by the same manufacturer and from the same production run.

2.2 RESILIENT BASE

- A. ASTM F1861, 3 mm (1/8 inch) thick, 100 mm (6 inches) high, Thermoplastics, Group 2-layered. Style B-cove.
- B. Where carpet occurs, use Style A-straight.

C. Use only one type of base throughout.

PART 3 - EXECUTION

3.1 PROJECT CONDITIONS

- A. Maintain temperature of materials above 21° C (70 °F), for 48 hours before installation.
- B. Maintain temperature of rooms where work occurs, between 21° C and 27° C (70°F and 80°F) for at least 48 hours, before, during, and after installation.
- C. Do not install materials until building is permanently enclosed and wet construction is complete, dry, and cured.

3.2 INSTALLATION REQUIREMENTS

- A. The respective manufacturer's instructions for application and installation will be considered for use when approved by the Resident Engineer/COR/COR.
- B. Submit proposed installation deviation from this specification to the Resident Engineer/COR/COR indicating the differences in the method of installation.
- C. The Resident Engineer/COR/COR reserves the right to have test portions of material installation removed to check for non-uniform adhesion and spotty adhesive coverage.

3.3 PREPARATION

- A. Examine surfaces on which material is to be installed.
- B. Fill cracks, pits, and dents with leveling compound.
- C. Level to 3 mm (1/8 inch) maximum variations.
- D. Do not use adhesive for leveling or filling.
- E. Grind, sand, or cut away protrusions; grind high spots.
- F. Clean substrate area of oil, grease, dust, paint, and deleterious substances.
- G. Substrate area dry and cured. Perform manufacturer's recommended bond and moisture test.
- H. Preparation of existing installation:
 - 1. Remove existing base including adhesive.
 - 2. Do not use solvents to remove adhesives.
 - 3. Prepare substrate as specified.

3.4 BASE INSTALLATION

- A. Location:
 - 1. Unless otherwise specified or shown, where base is scheduled, install base over toe space of base of casework, lockers, laboratory, pharmacy furniture island cabinets and where other equipment occurs.

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2. Extend base scheduled for room into adjacent closet, alcoves, and around columns.

B. Application:

1. Apply adhesive uniformly with no bare spots.
2. Set base with joints aligned and butted to touch for entire height.
3. Before starting installation, layout base material to provide the minimum number of joints with no strip less than 600 mm (24 inches) length.
 - a. Short pieces to save material will not be permitted.
 - b. Locate joints as remote from corners as the material lengths or the wall configuration will permit.

C. Form corners and end stops as follows:

1. Score back of outside corner.
2. Score face of inside corner and notch cove.

D. Roll base for complete adhesion.

3.5 CLEANING AND PROTECTION

- A. Clean all exposed surfaces of base and adjoining areas of adhesive spatter before it sets.
- B. Keep traffic off resilient material for at least 72 hours after installation.
- C. Clean and polish materials in the following order:
 1. After two weeks, scrub resilient base with a minimum amount of water and a mild detergent. Leave surfaces clean and free of detergent residue. Polish resilient base to a gloss finish.
- D. Where protective materials are removed and immediately prior to acceptance, replace damaged materials and re-clean resilient materials. Damaged materials are defined as having cuts, gouges, scrapes or tears and not fully adhered.

- - - E N D - - -

SECTION 09 65 16
RESILIENT SHEET FLOORING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This Section specifies the installation of sheet flooring with backing and integral cove base.
- B. Grades of resilient sheet vinyl floor covering without backing having vinyl plastic wearlayer with backing.
- C. Installation of sheet flooring including following:
 - 1. Heat welded seams.
 - 2. Integral cove base: Installed at intersection of floor and vertical surfaces.

1.2 RELATED WORK

- A. Color, pattern and texture: Section 09 06 00, SCHEDULE FOR FINISHES.
- B. Resilient base over base of equipment and casework: Section 09 65 13, RESILIENT BASE AND ACCESSORIES.
- C. Unbacked vinyl (homogenous) sheet flooring with welded seams: Section 09 65 16, RESILIENT SHEET FLOORING.

1.3 QUALITY CONTROL-QUALIFICATIONS:

- A. The Contracting Officer shall approve products or service of proposed manufacturer, suppliers, and installers, and the Contractor shall submit certification that:
 - 1. Heat welded seaming is manufacturers prescribed method of installation.
 - 2. Installer is approved by manufacturer of materials and has technical qualifications, experience, trained personnel, and facilities to install specified items.
 - 3. Manufacturer's product submitted has been in satisfactory operation, on three installations similar and equivalent in size to this project for three years. Submit list of installations.
- B. The sheet vinyl floor coverings shall meet fire performance characteristics as determined by testing products, per ASTM test method, indicated below by Underwriters Laboratories, Inc. (UL) or another recognized testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Critical Radiant Flux: 0.45 watts per sq. cm or more, Class I, per ASTM E648.
 - 2. Smoke Density: Less than 450 per ASTM E662.

- C. The floor covering manufacturer shall certify that products supplied for installation comply with local regulations controlling use of volatile organic compounds (VOC's).

1.4 SUBMITTALS

- A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES, submit following:
- B. Manufacturer's Literature and Data:
 - 1. Description of resilient material and accessories to be provided.
 - 2. Resilient material manufacturer's recommendations for adhesives, weld rods, sealants, and underlayment.
 - 3. Application and installation instructions.
- C. Samples:
 - 1. Sheet material, 38 mm by 300 mm (1-1/2 inch by 12 inch), of each color and pattern with a welded seam using proposed welding rod 300 mm (12 inches) square for each type, pattern and color.
 - 2. Cap strip and fillet strip, 300 mm (12 inches) for integral base.
 - 3. Shop Drawings and Certificates: Layout of joints showing patterns where joints are expressed, and type and location of obscure type joints. Indicate orientation of directional patterns.
 - 4. Certificates: Quality Control Certificate Submittals and lists specified in paragraph, QUALIFICATIONS.
 - 5. Edge strips: 150 mm (6 inches) long each type.
 - 6. Adhesive, underlayment and primer: Pint container, each type.

1.5 PROJECT CONDITIONS

- A. Maintain temperature of floor materials and room, where work occurs, above 18 ° C (65 °F) and below 38 ° C (100 °F) for 48 hours before, during and for 48 hours after installation. After above period, room temperature shall not fall below 13 ° C (55 °F).
- B. Construction in or near areas to receive flooring work shall be complete, dry and cured. Do not install resilient flooring over slabs until they have been cured and are sufficiently dry to achieve a bond with adhesive. Follow flooring manufacturer's recommendations for bond and moisture testing.
- C. Building shall be permanently enclosed. Schedule construction so that floor receives no construction traffic when completed.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to site in original sealed packages or containers; labeled for identification with manufacturer's name and brand.

- B. Deliver sheet flooring full width roll, completely enclosed in factory wrap, clearly marked with the manufacturer's number, type and color, production run number and manufacture date.
- C. Store materials in weathertight and dry storage facility. Protect from damage due to handling, weather, and construction operations before, during and after installation. Store sheet flooring on end with ambient temperatures maintained as recommended by manufacturer.
- D. Store sheet flooring on end.
- E. Move sheet vinyl floor coverings and installation accessories into spaces where they will be installed at least 48 hours in advance of installation.

1.7 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American Society For Testing Materials (ASTM):
 - E648-09.....Critical Radiant Flux of Floor-Covering Systems Using a Radiant Energy Source.
 - E662-09.....Specific Optical Density of Smoke Generated by Solid Materials.
 - F710-08.....Practice for Preparing Concrete Floors and Other Monolithic Floors to Receive Resilient Flooring.
 - F1303-04.....Sheet Vinyl Floor Covering with Backing.
 - F1869-04.....Moisture Vapor Emission Rate of Concrete Subfloor using Anhydrous Calcium Chloride
 - F1913-04.....Sheet Vinyl Flooring without Backing
 - F2170-09.....Determining Relative Humidity in Concrete Floor Slabs using In-situ Probes
- C. Resilient Floor Covering Institute (RFCI):
 - Recommended Work Practices for Removal of Resilient Floor Coverings.

1.8 SCHEDULING

Interior finish work such as plastering, drywall finishing, concrete, ceiling work, and painting work shall be complete and dry before installation. Mechanical, electrical, and other work above ceiling line shall be completed. Heating, ventilating, and air conditioning systems shall be installed and operating in order to maintain temperature and humidity requirements.

1.9 WARRANTY:

Submit written warranty, in accordance with FAR clause 52.246-21, Warranty of Construction requirements except that warranty period shall be extended to include two (2) years.

PART 2 - PRODUCTS

2.1 SHEET VINYL FLOOR COVERINGS

- A. Sheet Vinyl Floor Coverings: Smooth face, minimum thickness nominal 2 mm (0.08 inch). Sheet flooring shall conform to ASTM F1913 and material requirements specified in ASTM F1303, Type II, Grade 1, backing classification not applicable. Foam backed sheet flooring is not acceptable.
- B. Size: Provide maximum size sheet vinyl material produced by manufacturer to provide minimum number of joints. Minimum size width acceptable - 1200 mm (48 inches).
- C. Each color and pattern of sheet flooring shall be of same production run.

2.2 WELDING ROD:

Product of floor covering manufacturer in color shall match field color of sheet vinyl covering.

2.3 APPLICATION MATERIALS AND ACCESSORIES

- A. Floor and Base Adhesive: Type recommended by sheet flooring material manufacturer for conditions of use.
- B. Mastic Underlayment (for concrete floors): Provide products with latex or polyvinyl acetate resins in mix. Condition to be corrected shall determine type of underlayment selected for use.
- C. Base Accessories:
 - 1. Fillet Strip: 19 mm (3/4 inch) radius fillet strip compatible with resilient sheet material.
 - 2. Cap Strip: Extruded flanged zero edge vinyl reducer strip approximately 25 mm (one inch) exposed height with 13 mm (1/2 inch) flange.

2.4 SHEET FLOORING

- A. ASTM F1303, Type II, Grade 1, except for backing requirements. Foam backed sheet flooring is not acceptable.
- B. Minimum nominal thickness 2 mm (0.08 inch); 1800 mm (6 ft) minimum width.
- C. Critical Radiant Flux: 0.45 watts per sq.cm or more, Class I, per ASTM E648.
- D. Smoke density: less than 450 per ASTM E662.
- E. Color and pattern of sheet flooring of the same production run.

2.5 ADHESIVES

Water resistant type recommended by the sheet flooring manufacturer for the conditions of use. VOC not to exceed 50g/L

2.6 BASE CAP STRIP AND COVE STRIP

- A. Extruded vinyl compatible with the sheet flooring.
- B. Cap strip "J" shape with feathered edge flange approximately 25 mm (one inch) wide; top designed to receive sheet flooring with 13 mm (1/2 inch) flange lapping top of flooring
- C. Cove strip 70 mm (2-3/4 inch) radius.

2.7 LEVELING COMPOUND (FOR CONCRETE FLOORS)

Provide cementitious products with latex or polyvinyl acetate resins in the mix.

2.8 PRIMER (FOR CONCRETE SUBFLOORS)

As recommended by the adhesive or sheet flooring manufacturer.

2.9 EDGE STRIPS

- A. Extruded aluminum, mill finish, mechanically cleaned.
- B. 28 mm (1-1/8 inch) wide, 6 mm (1/4 inch) thick, bevel one edge to 3 mm (1/8 inch) thick.
- C. Drill and counter sink edge strips for flat head screws. Space holes near ends and approximately 225 mm (9 inches) on center in between.

2.10 SEALANT

- A. As specified in Section 07 92 00, JOINT SEALANTS.
- B. Compatible with sheet flooring.

PART 3 - EXECUTION

3.1 PROJECT CONDITIONS

- A. Maintain temperature of sheet flooring above 36 °C (65 °F), for 48 hours before installation.
- B. Maintain temperature of rooms where sheet flooring work occurs above 36 °C (65 °F), for 48 hours, before installation and during installation.
- C. After installation, maintain temperature at or above 36 °C (65 °F.)
- D. Building is permanently enclosed.
- E. Wet construction in or near areas to receive sheet flooring is complete, dry and cured.

3.2 SUBFLOOR PREPARATION

- A. Concrete Subfloors: Verify that concrete slabs comply with ASTM F710.
 - 1. Installer shall examine surfaces on which resilient sheet flooring is to be installed, and shall advise Contractor, in writing, of areas which are unacceptable for installation of flooring material. Installer shall advise Contractor which methods are to be used to correct conditions that will impair proper installation. Installation shall not proceed until unsatisfactory conditions have been corrected.

2. Slab substrates dry, free of curing compounds, sealers, hardeners, and other materials which would interfere with bonding of adhesive. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by Resilient Floor Covering Institute recommendations in manual RFCI-MRP.
- B. Broom or vacuum clean substrates to be covered by sheet vinyl floor coverings immediately before installation. Following cleaning, examine substrates to determine if there is visually any evidence of moisture, alkaline salts, carbonation, or dust.
- C. Primer: If recommended by flooring manufacturer, prior to application of adhesive, apply concrete slab primer in accordance with manufacturer's directions.
- D. Correct conditions which will impair proper installation, including trowel marks, pits, dents, protrusions, cracks or joints.
- E. Fill cracks, joints, depressions, and other irregularities in concrete with leveling compound.
 1. Do not use adhesive for filling or leveling purposes.
 2. Do not use leveling compound to correct imperfections which can be corrected by spot grinding.
 3. Trowel to smooth surface free of trowel marks, pits, dents, protrusions, cracks or joint lines.
- F. Clean floor of oil, paint, dust and deleterious substances. Leave floor dry and cured free of residue from existing curing or cleaning agents.
- G. Moisture Testing: Perform moisture and pH test as recommended by the flooring and adhesive manufacturers. Perform test locations starting on the deepest part of the concrete structure. Proceed with installation only after concrete substrates meet or exceed the manufacturer's requirements. In the absence of specific guidance from the flooring or adhesive manufacturer the following requirements are to be met:
 1. Perform moisture vapor emission tests in accordance with ASTM F1869. Proceed with installation only after substrates have a maximum moisture-vapor-emission rate of 1.36 kg of water/92.9 sq. m (3lb of water/1000 sq. ft.) in 24 hours.
 2. Perform concrete internal relative humidity testing using situ probes in accordance with ASTM F2170. Proceed with installation only after concrete reaches maximum 75 percent relative humidity level measurement.
- H. Preparation shall include the removal of existing resilient floor and existing adhesive. Do not use solvents to remove adhesives. Coordinate with Asbestos Abatement Section if asbestos abatement procedures will be involved.

- I. Remove existing resilient flooring and adhesive completely in accordance with Resilient Floor Covering Institute recommendations in manual RFCI-WP. Solvents shall not be used.

3.3 INSTALLATION OF FLOORING

- A. Install work in strict compliance with manufacturer's instructions and approved layout drawings.
- B. Maintain uniformity of sheet vinyl floor covering direction and avoid cross seams.
- C. Arrange for a minimum number of seams and place them in inconspicuous and low traffic areas, but in no case less than 150 mm (6 inches) away from parallel joints in flooring substrates.
- D. Match edges of resilient floor coverings for color shading and pattern at seams.
- E. Where resilient sheet flooring abuts other flooring material floors shall finish level.
- F. Extend sheet vinyl floor coverings into toe spaces, door reveals, closets, and similar openings.
- G. Inform the Resident Engineer/COR of conflicts between this section and the manufacturer's instructions or recommendations for auxiliary materials, or installation methods, before proceeding.
- H. Install sheet in full coverage adhesives.
 1. Air pockets or loose edges will not be accepted.
 2. Trim sheet materials to touch in the length of intersection at pipes and vertical projections; seal joints at pipe with waterproof cement or sealant.
- I. Keep joints to a minimum; avoid small filler pieces or strips.
- J. Follow manufacturer's recommendations for seams at butt joints. Do not leave any open joints that would be readily visible from a standing position.
- K. Follow manufacturer's recommendations regarding pattern match, if applicable.
- L. Installation of Edge Strips:
 1. Locate edge strips under center lines of doors unless otherwise indicated.
 2. Set aluminum strips in adhesive, anchor with lead anchors and stainless steel Phillips screws.
- M. Integral Cove Base Installation:
 1. Set preformed fillet strip to receive base.
 2. Install the base with adhesive; terminate expose edge with the cap strip.

3. Form internal and external corners to the geometric shape generated by the cove at either straight or radius corners.
4. Solvent weld joints as specified for the flooring. Seal cap strip to wall with an adhesive type sealant.
5. Unless otherwise specified or shown where sheet flooring is scheduled, provide integral base at intersection of floor and vertical surfaces. Provide sheet flooring and base scheduled for room on floors and walls under and behind areas where casework, laboratory and pharmacy furniture and other equipment occurs, except where mounted in wall recesses.

3.4 INSTALLATION OF INTEGRAL COVED BASE

- A. Set preformed cove to receive base. Install base material with adhesive and terminate exposed edge with cap strip. Integral base shall be 100 mm (4 inches) high.
- B. Internal and external corners shall be formed to geometric shape generated by cove at either square or radius corners.

3.5 WELDING

- A. Heat weld all joints of flooring and base using equipment and procedures recommended by flooring manufacturer.
- B. Welding shall consist of routing joint, inserting a welding rod into routed space, and terminally fusing into a homogeneous joint.
- C. Upon completion of welding, surface across joint shall finish flush, free from voids, and recessed or raised areas.
- D. Fusion of Material: Joint shall be fused a minimum of 65 percent through thickness of material, and after welding shall meet specified characteristics for flooring.

3.6 CLEANING

- A. Clean small adhesive marks during application of sheet flooring and base before adhesive sets, excessive adhesive smearing will not be accepted.
- B. Remove visible adhesive and other surface blemishes using methods and cleaner recommended by floor covering manufacturers.
- C. Clean and polish materials per flooring manufacturer's written recommendations.
- D. Vacuum floor thoroughly.
- E. Do not wash floor until after period recommended by floor covering manufacturer and then prepare in accordance with manufacturer's recommendations.
- F. Upon completion, Resident Engineer/COR shall inspect floor and base to ascertain that work was done in accordance with manufacturer's printed instructions.

G. Perform initial maintenance according to flooring manufacturer's written recommendations.

3.7 PROTECTION:

- A. Protect installed flooring as recommended by flooring manufacturer against damage from rolling loads, other trades, or placement of fixtures and furnishings.
- B. Keep traffic off sheet flooring for 24 hours after installation.
- C. Where construction traffic is anticipated, cover sheet flooring with reinforced kraft paper properly secured and maintained until removal is authorized by the Resident Engineer/COR.
- D. Where protective materials are removed and immediately prior to acceptance, repair any damage, re-clean sheet flooring, lightly re-apply polish and buff floor.

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