

**SECTION 02 41 00
DEMOLITION**

PART 1 - GENERAL**1.1 DESCRIPTION:**

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

1.2 GENERAL NOTE ON ALL PROJECT DEMOLITION:

- A. Demolition is general in nature as indicated by the Statement of Work, drawings, and/or specifications. Therefore details, dimensions, and construction materials are rarely provided. It is the responsibility of the Contractor to determine by their means and methods the amount of necessary demolition needed in performance of their contract.
- B. Unless stated otherwise demolition shall constitute removing finish materials and other items necessary in the performance of the contract down to the structural members.
- C. Finish flooring to be removed may have several layers of flooring below it and an acoustical ceiling may have a plaster ceiling immediately above it or separated by a measurable distance. These are deemed to be normal conditions of existing construction at the Medical Center and shall be removed in accordance with Paragraph B above.
- D. The Contractor may request to perform exploratory demolition or inspections at the time of the bid. Such requests shall be submitted in writing to the Contracting Officer and copied to the COR and the Medical Center. Such requests shall indicate the type of demolition/inspections to be performed, tools to be used, and the estimated time needed to perform. Upon receipt of the request the Contracting Officer and COR may require the Contractor to repair their exploratory demolition at the Contractor's expense immediately following such exploratory demolition/inspections. It will be the COR's responsibility to coordinate with the Contractor and the Medical Center the date, time, and repairs (if needed) once the request for exploratory demolition or inspections have been granted by the Contracting Officer in coordination with the COR and Medical Center.

1.3 RELATED WORK:

- A. Safety Requirements: Section 01 35 26 Safety Requirements Article, ACCIDENT PREVENTION PLAN (APP).
- 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, DISPOSAL AND RETENTION.
- D. Lead Paint: Section 02 83 33.13, LEAD-BASED PAINT REMOVAL AND DISPOSAL.
- E. Environmental Protection: Section 01 57 19, TEMPORARY ENVIRONMENTAL CONTROLS.
- F. Construction Waste Management: Section 017419 CONSTRUCTION WASTE MANAGEMENT.
- G. Infectious Control: Section 01 35 26, SAFETY REQUIREMENTS, SUBSECTION 1.12, INFECTION CONTROL.
- H. Infection Control Risk Assessment (ICRA) included as an attachment to the Statement of Work.

1.4 PROTECTION:

- A. Perform demolition in such manner as to eliminate hazards to persons and property; to minimize interference with use of adjacent areas, utilities and structures or interruption of use of such utilities; and to provide free passage to and from such adjacent areas of structures. Comply with requirements of section 01 00 00, GENERAL REQUIREMENTS.
- 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,
- C. Maintain fences, barricades, lights, and other similar items around exposed excavations until such excavations have been completely filled.
- D. Provide enclosed dust chutes with control gates from each floor to carry debris to truck beds and govern flow of material into truck. Provide overhead bridges of tight board or prefabricated metal construction at dust chutes to protect persons and property from falling debris.
- E. Prevent spread of flying particles and dust. Sprinkle rubbish and debris with water to keep dust to a minimum. 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.
- F. In addition to previously listed fire and safety rules to be observed in performance of work, include following:
 - 1. No wall or part of wall shall be permitted to fall outwardly from structures.
 - 2. Maintain at least one stairway in each structure in usable condition to highest remaining floor. Keep stairway free of obstructions and debris until that level of structure has been removed.
 - 3. Wherever a cutting torch or other equipment that might cause a fire is used, provide and maintain fire extinguishers nearby ready for immediate

- use. Instruct all possible users in use of fire extinguishers. Refer to the Medical Center's policy on Cutting, Welding, and Other Hot Work
4. Keep hydrants clear and accessible at all times. Prohibit debris from accumulating within a radius of 15 feet of fire hydrants.
 - G. Before beginning any demolition work, the Contractor shall survey the site and examine the drawings and specifications to determine the extent of the work. The contractor shall take necessary precautions to avoid damages to existing items to remain in place, to be reused, or to remain the property of the Medical Center; any damaged items shall be repaired or replaced as approved by the COR. The Contractor shall coordinate the work of this section with all other work and shall construct and maintain shoring, bracing, and supports as required. The Contractor shall ensure that structural elements are not overloaded and shall be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under this contract. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition or removal works. Repairs, reinforcement, or structural replacement must have COR's approval.

1.5 FIRE-RATED RESTORATION:

- A. All demolition which alters the integrity of any fire-rated floor, ceiling, or partition shall be repaired to restore the integrity as deemed acceptable by the COR.
- B. Where a non-rated penetration is found and used by the Contractor in a fire-rated floor, ceiling, or wall system the Contractor shall be responsible for restoring the existing penetration to its intended fire rating as if they had made the penetration themselves.
- C. Refer to the Medical Center's policy on Above Ceiling Entry and Wall Construction Permit.

1.6 UTILITY SERVICES:

- A. Demolish and remove outside utility service lines shown or indicated in the Statement of Work to be removed.
- B. Remove abandoned outside utility lines that would interfere with installation of new utility lines and new construction.
- C. Refer to the Medical Center's policy on Dig Permits.

1.7 SCHEDULE OF SELECTIVE DEMOLITION ACTIVITIES: Indicate the following:

- A. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Medical Center operations are uninterrupted.
- B. Interruption of utility services. Indicate how long utility services will be interrupted.
- C. Coordination for shutoff, capping, and continuation of utility services.
- D. Use of elevator and stairs.
- F. Locations of proposed dust- and noise-control temporary partitions and means of egress.
- G. Coordination of Medical Center's continuing occupancy of portions of existing building.
- H. Means of protection for items to remain and items in path of waste removal from building.

1.8 QUALITY CONTROL:

- A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- B. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.
- C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Standards: Comply with ANSI A10.6 and NFPA 241.
- E. Predemolition Conference: Conduct conference at Project site to comply with requirements. Review methods and procedures related to selective demolition including, but not limited to, the following:
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.

3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

1.9 PROJECT CONDITIONS:

- A. Medical Center staff, patients, and visitors will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Medical Center's operations will not be disrupted.
- B. Hazardous Materials: It is unknown whether hazardous materials will be encountered in the Work.
 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify the COR.

PART 2 - PRODUCTS (NOT USED)**PART 3 - EXECUTION****3.1 EXAMINATION:**

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to the COR.
- E. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.
- F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS:

- A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
- B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. The COR will arrange to shut off indicated building services/systems when requested by Contractor.
 - 2. Arrange to shut off indicated utilities with utility companies.
 - 3. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 4. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

3.3 PREPARATION:

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 - 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling.
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL:

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain a fire watch and portable fire-suppression devices during flame-cutting operations.
 5. Maintain adequate ventilation when using cutting torches.
 6. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 9. Dispose of demolished items and materials promptly.
- B. Removed and Salvaged Items: (when applicable)
 1. Clean salvaged items.
 2. Coordinate with the COR and Contracting Officer to store items in a secure area.
- C. Removed and Reinstalled Items: (when applicable)
 1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
 2. Protect items from damage during transport and storage.
 3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections,

supports, and miscellaneous materials necessary to make item functional for use indicated.

- D. Existing Items to Remain: When indicated in the Statement of Work, drawings, or specification protect construction indicated to remain against damage and soiling during selective demolition. When permitted by COR, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL:

- A. 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 property to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas specified and agreed to in the Logistic Plan. Break up concrete slabs below grade that do not require removal from present location into pieces not exceeding 24 inches square to permit drainage. Contractor shall dispose debris in compliance with applicable federal, state or local permits, rules and/or regulations.
- B. 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 5 feet 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 5 feet, or materials that are discovered to be hazardous, shall be handled as unforeseen.

3.6 CLEAN-UP:

On completion of work of this section and after removal of all debris, leave site in clean condition satisfactory to COR. Clean-up shall include off the Medical Center property 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.

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