

SECTION 02 41 00
SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 DESCRIPTION:

- A. This section specifies selective demolition and interior portions of the building, including utility demolition, removal of all debris from the site.

1.2 SUMMARY:

- A. Repair procedures for selective demolition operations.
- B. Removal of all debris from the site.
- C. Non-destructive removal of materials, items, components and equipment for reuse or salvage as shown on the drawings, or as requested by the Resident Engineer. Repair and modification of existing door openings, or rooms as shown on the drawings and as required for installation of new work.
- D. Construction of dust barriers, barricades, or temporary partitions where shown on the drawings or where required for separation from occupied spaces or activities.
- E. The work of this Section includes, but is not limited to, the removal of the existing electrical conduit and equipment, doors and frames as required for the new electrical equipment, conduit, doors and frames, fire extinguishers, etc. and other work as shown on the drawings. Removal shall be to the extent required, and in a manner as necessary to install the work. Furnish and install all additional materials as may be required to maintain the existing appearance of walls and finishes in areas being disturbed.
- F. The work of this Section includes, but is not limited to, the phased demolition of occupied areas on various floors and rooms of the building, for removal and rerouting of electrical services, as required for the new work shown. This work must be scheduled and coordinated with the Resident Engineer. The adjacent spaces and rooms will be occupied by staff and patients and other functions, which must remain in operation during the demolition and follow-up reconstruction work. Provide temporary partitions as required to contain demolition dust, and noise within the work areas. Work inside Electrical Closets may be performed by erecting dust barricades being placed over the closet door openings. The route of demolition removal debris shall be as shown or as designated by the Resident Engineer.

- G. The work of this section includes the removal of doors and frames to secured spaces. Work shall be sequenced such that openings can be completely replaced or secured at the end of each workday.
- H. In no cases shall exit doors from occupied rooms be closed off unless work is being preformed.

1.3 RELATED WORK:

- A. Safety Requirements: Section 00 72 00, GENERAL CONDITIONS, Article, ACCIDENT PREVENTION.
- 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. Phased work sequence on the occupied floors and spaces for coring floors or walls: Section 01 00 00 "GENERAL REQUIREMENTS".
- E. Infectious Control: Section 01 00 00, GENERAL REQUIREMENTS, Article 1.7, INFECTION PREVENTION MEASURES.
- F. Recycling Reconstruction Waste Procedures: Section 01 74 19 "CONSTRUCTION WASTE MANAGEMENT".

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 00 72 00, 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 1.9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES AND IMPROVEMENTS.
- C. Provide vertical equipment lift on exterior of building to transport debris to truck beds and govern flow of material into truck. Provide overhead bridges of tight board or prefabricated metal construction to protect persons and property from falling debris.
- 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. In addition to previously listed fire and safety rules to be observed in performance of work, include following:

1. Maintain access to existing stairways and other exits at all times during construction operations. Keep stairways and exits free of obstructions and debris at all times.
 2. 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.
- F. Before beginning any demolition work, the Contractor shall survey the construction area 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. The Contractor shall ensure that structural elements are not overloaded due to accumulation of the existing demolition materials or equipment. Provide new steel reinforcement for existing concrete floor slab construction as indicated on the drawings where the floor slab is cored or cut for penetration of new piping or ductwork.
- G. The work shall comply with the requirements of Section 01 00 00, GENERAL REQUIREMENTS, Article 1.7 INFECTION PREVENTION MEASURES.

1.5 UTILITY SERVICES:

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

1.6 DEFINITIONS:

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged or removed and reinstalled.

1.7 MATERIALS OF OWNERSHIP:

- A. Except for items or materials indicated to be reused, salvaged, reinstalled or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from project site.

1.8 SUBMITTALS:

- A. Proposed Dust Control and Noise Control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.
- B. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 - 2. Interruption of utility services.
 - 3. Coordination for shutoff, capping and continuation of utility services.
 - 4. Use of elevator and stairs.
 - 5. Locations of temporary partitions and means of egress.
 - 6. Coordination of Owner's continuing occupancy of portions of existing building.
- C. Inventory: After selective demolition is complete, submit a list of items that have been removed, salvaged and delivered to Owner.
- D. Predemolition Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be constructed as damage caused by selective demolition operations. Submit before work begins.

1.9 QUALITY ASSURANCE:

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI A10.6 and NFPA 241.

1.10 PROJECT CONDITIONS:

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition as Owner's operations will not be disrupted. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.
 - 1. Demolition phasing shall be scheduled by the Contractor with the approval of the Architect/Engineer and Owner.
- B. Maintain access to existing corridors, stairs and other adjacent occupied or used facilities.
 - 1. Do not close or obstruct walkways, corridors or other occupied or used facilities without written permission from authorities having jurisdiction.

2. The removal of debris and construction traffic will be limited to the designated routes that shall be resolved with and approved by the Owner.
- C. Owner assumes no responsibility for condition of areas to be selectively demolished.
 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- D. Hazardous Materials: Hazardous materials may be present in building adjacent to work areas to be selectively demolished. A report on the presence of hazardous materials is on file with the Owner for review and use. Examine report to become aware of locations where hazardous materials are present.
 1. Do not disturb hazardous materials or items suspected of containing hazardous materials.
- E. Storage of sale of removed items or materials on-site will not be permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect against damage during selective demolition operations.
 1. Maintain fire protection facilities in service during selective demolition operations.
- G. Prior to the removal of any existing fluorescent light fixtures within the project work limits, the fluorescent lamps and fixture ballasts shall be inspected, removed, stored and disposed of as described below:
 1. Fluorescent lamps: The fluorescent lamps shall be removed from the fixtures prior to the fixture being removed and shall be:
 - a. Removed from the lighting unit packed in a way to prevent breakage during handling, transportation and storage.
 - b. The Contractor shall transport and temporarily store the packaged fluorescent lamps in a "safe" storage area as designated by the Resident Engineer.
 - c. Fluorescent lamps may be packaged together, if provided with positive protection from breakage.
 - d. If a lamp is broken during removal or in handling, the broken material shall be cleaned up, placed in a separate secure container, marked as "broken bulb(s)" and transported with other bulbs to the designated storage area.
 2. Ballasts:
 - a. The fluorescent light ballast shall be visually inspected to determine if the ballasts product label or case has verbiage stating that the ballasts "contains no PCBs".

- b. If there is no label or if the label is unreadable, and the unit is enclosed in a sealed metal jacket, it shall be considered hazardous and shall be removed from the lighting fixture by disconnecting or cutting attached brackets and/or wiring and placed in a sealable metal container and transported and temporarily stored at a storage area as designed by the Resident Engineer.
- 3. Ballasts which are PCB free are not regulated by the EPA and shall be removed from the Medical Center and legally disposed of by the Contractor.

1.11 WARRANTY:

- A. Existing Warranties: Remove, replace, patch and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 - REPAIR MATERIALS:

- A. Use repair materials identical to existing materials.
 - 1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 2. Use materials whose installed performance equals or surpasses that of existing materials.
- B. Comply with material and installation requirements specified in individual Specification Sections.

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 Resident Engineer.
- E. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES

- A. Existing Utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.

- B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.
 - 1. Provide at least 72 hours' notice to Owner if shutdown of service is required during changeover.
- C. Utility Requirements: Locate, identify, disconnect and seal or call off indicated utilities serving areas to be selectively demolished.
 - 1. If utility services are required to be removed, relocated or abandoned, before proceeding with selective demolition provide temporary utilities that bypass area of selective demolition and that maintain continuity of service to other parts of building.
 - 2. 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.
- D. Utility Requirements: Refer to Divisions 21 through 28 Sections for shutting off, disconnecting, removing and sealing or capping utilities. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.3 PREPARATION:

- A. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damaged 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.
- B. Temporary Enclosures: Provide temporary enclosures for protection of existing building and construction, in progress and completed, from exposure, foul weather, other construction operations and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.

- C. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.

3.4 POLLUTION CONTROLS:

- A. Dust Control: Use water mist, temporary enclosures and other suitable methods to limit spread of dust and dirt. Comply with governing environmental protection regulations.

1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding and pollution.

2. Wet mop floors to eliminate trackable dirt and wipe down walls and doors of demolition enclosure. Vacuum carpeted areas.

- B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

1. Remove debris from elevated portions of building by use of existing elevators designated by the Resident Engineer. Protect elevator from damage.

- C. Cleaning: Clean adjacent structures and improvements of dust, dirt and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.5 SELECTIVE DEMOLITION, GENERAL:

- A. The work of this section is to be performed in a manner that maximizes salvage and recycling of materials and includes the dismantling and removal of the materials listed below (acceptable end users are indicated in parentheses). All materials dismantled and removed are to be separated, set aside and prepared for reuse, as specified, and stored or delivered to collection point for reuse, remanufacture, or recycling, as specified, and to the maximum extent economically feasible.

1. Doors (can be salvaged for other projects).
2. Metal (can be separated for recycling).
3. Electrical and plumbing fixtures and fittings (can be salvaged).

- B. The items listed below have unique or may have regulated disposal requirements and are to be removed and disposed of in the manner dictated by law or in the most environmentally responsible manner. Typical concerns are listed in parentheses:

1. Fluorescent light ballasts manufactured prior to 1978 (PCB).
2. Fluorescent lamps (Mercury).

3. Refrigeration, air conditioning and other equipment containing refrigerants (CFC recovery).
 4. Batteries (lead, acid, mercury).
 5. Paints, solvents and other hazardous fluids.
 6. Corrugated cardboard.
- C. 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 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 remaining 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 fire watch and portable fire suppression devices during flame cutting operations.
 5. Maintain adequate ventilation of phased demolition areas. Review methods and materials to be used in demolition work with the Owner prior to beginning the work. Methods and materials used in the work which will produce noxious fumes and odors shall not be used in areas adjoining rooms occupied by patients and functions which must remain in operating during the demolition reconstruction work.
 6. Remove decayed, vermin-infested, or otherwise dangerous or suitable materials and promptly dispose of off-site.
 7. 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.
 10. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.

D. Existing Facilities: Comply with Owner's requirements for using and protecting elevators, stairs, walkways, loading docks, building entries and other building facilities during selective demolition operations.

E. Removed and Salvaged Items: Comply with the following:

1. Use caution during removal of salvaged items to eliminate possibility of damage to such items. All existing items, equipment, materials and fixtures shall remain the property of the Owner. All reusable items salvaged during demolition operations shall be retained for Owner's inspection. Only items so inspected and rejected by the Owner shall be disposed. All other such items shall be turned over to Owner for his disposition.
2. Clean salvaged items.
3. Pack or crate equipment items after cleaning. Identify contents of containers.
4. Store items in a secure area until delivery to Owner.
5. Transport items to Owner's storage area designed by Owner.
6. Protect items from damage during transport and storage.

F. Removed and Reinstalled Items: Comply with the following:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. 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.

G. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Resident Engineer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.6 PATCHING AND REPAIRS:

- A. General: Promptly repair damage to adjacent construction caused by selective demolition.
- B. Repairs: Where repairs to existing surfaces are required, patch to product surfaces suitable for new materials.
- C. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

D. Floors and walls: Where walls or partitions that are demolished extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish color, texture and appearance.

1. Patch with durable seams that are as invisible as possible Provide materials and comply with installation requirements specified in other Sections of these specifications.
2. Where patching occurs in a painted surface, apply primer and intermediate paint coats over patch and supply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces.
3. Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

E. Ceilings: Patch, repair or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.

3.7 DISPOSAL OF DEMOLISHED MATERIALS:

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

- - - E N D - - -