

June 2018

02 4119 – Selective Structure Demolition

1. General

1.01 Summary

- A. Review NIU Environmental Health & Safety (EHS), Contractor Safety Handbook, http://www.niu.edu/ehs/constructionsafety/Contractor%20Safety%20Handbook_2013.pdf
- B. Contacting the Illinois Historic Preservation Agency if there is a potential for disruption of historic sites or materials as necessary
- C. Consider contacting JULIE prior to any subsurface disturbances as necessary
- D. This section includes:
 - 1. Demolition and removal of selected portions of building or structure.
 - 2. Demolitions and removal of selected site elements.
 - 3. Salvage of existing items to be reused or recycled.
- E. Contractor to remove designated building equipment, fixtures, partitions and components.
- F. Refrigerant Recovery: If refrigerant recovery is needed, the technician must be certified by an EPA approved certification program.

1.02 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 re-installed.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.
- C. Remove and Recycle: Material removed from existing construction not scheduled to be Salvaged or Reinstalled, that is suitable to be reclaimed, reused, adapted, remanufactured, or material that cannot be legally disposed of at a landfill, shall be disposed of off-site at an appropriate recycling facility. All revenue (or expense) generated through recycling will be included in the contractor's Base Bid.
- D. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

- E. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.03 Regulatory Requirements

- A. IEMA ten day notification for demolition provisions
- B. Project sizes greater than one acre, the contractor is required to submit a “Notice of Intent for General Permit to Discharge Storm Water Associated with Construction Activities (NOI)”
- C. IEPA Uncontaminated Soil Certification LPC 663

1.04 Existing Conditions

- A. Conduct demolition to minimize interference with adjacent building and site areas. Maintain protected egress and access at all times.
- B. Provide, erect, and maintain temporary barriers and security devices.

1.05 Project Conditions

- A. Salvageable Items
 - 1. Items to be reused: Items shown to be reused in the remodeled building shall be removed by the General Contractor and properly stored until reinstallation.
 - 2. Items of historic value: Remove and turn over to the Owner all items listed in the salvage schedule to be of historic value. Take care to protect historic items against damage.
 - 3. Other items that may be included in contact.
 - 4. Items of value to Contractor: Other items of salvageable value to the contractor must be transported from the site as they are removed. Storage or sale of items salvaged by the contractor on the site will not be permitted.
- B. Protect existing construction as required to prevent damage during demolition operations. Protection shall be by the General Contractor.
- C. Extermination: The General Contractor shall employ a certified exterminator and maintain entire building in accordance with governing health regulations for rodent and insect control.
- D. Coordination: The General Contractor shall coordinate the work of all contractors. The General Contractor shall determine the timing of demolition operations, use of existing facilities for temporary construction utilities and the location of storage for items salvaged for re-use.

- E. Occupancy:
 - 1. Portions of a building may be occupied during Selective Demolition. Appropriate precautions shall be incorporated to ensure the safety and wellbeing of personnel who may remain in or near the areas of demolition.
 - F. Condition of Structure: Conditions existing at the time of inspection for bidding purposes will be maintained by the Owner insofar as practicable.
 - G. Protection: Ensure the safety of persons working around the area of demolition. Conduct operations to prevent injury to adjacent construction to remain.
 - H. Damages: Promptly repair damages caused to adjacent work by demolition operations.
- 1.06 Materials Ownership
- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
 - B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.
- 1.07 Field Conditions
- A. Owner may occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
 - B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - 1. Before selective demolition, Owner will remove the following items:
 - a). Fire Extinguishers and cabinets.
 - b). AEDs and cabinets
 - c). Mounted First Aid kits and cabinets
 - C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
 - D. Hazardous Materials:

1. Hazardous materials will be removed by Owner before start of the Work.
 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
1. Maintain fire-protection facilities in service during selective demolition operations if required in contract.
 2. Utility Services, and Mechanical/Electrical systems will be shut off and coordinated with the relevant utility company, by the Owner as necessary.
2. Products
- 2.01 Performance Requirements
- 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/ASSE A10.6 and NFPA 241.
- 2.02 Reuse of Existing Materials
- A. Remove existing materials designated for reuse and refinish for relocation in new construction where shown on the drawings.
- B. Provide storage of salvage materials for reuse or turn materials over to owner as scheduled.
- C. Recycle of materials is encouraged
3. Execution
- 3.01 Preparation
- A. Erect and maintain weatherproof closures for exterior openings.
- B. Erect and maintain temporary partitions to prevent spread of dust, fumes, noise, and smoke to provide for Owner occupancy.
1. Dust Controls: Use temporary enclosures and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level. Comply with governing regulations pertaining to environmental protection.

- a). Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.
 2. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations, as directed by Architect or governing authorities. Return adjacent areas to condition existing prior to start of work.
- C. Protect existing items which are not indicated to be altered.
1. Extent of removal is shown on the drawings. Any construction that is shown to remain that is inadvertently removed shall be replaced at the Contractor's expense.
- D. 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.
- E. 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.
- F. 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.
- 3.02 Utility Services and Mechanical/Electrical Systems
- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

- C. Mark location of disconnected utilities. Identify and indicate capping locations on Project Record Documents.
 - D. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR 82 and regulations of authorities having jurisdiction.
- 3.03 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. Utilize the NIU Hot Work Permit:
http://www.niu.edu/ehs/fire/hot_works.pdf
 - 5. 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 portable fire-suppression devices during flame-cutting operations.
 - 6. Maintain adequate ventilation when using cutting torches.
 - 7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 - 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 - 9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 10. Dispose of demolished items and materials promptly. Comply with requirements in Division 01 Section "Construction Waste Management"
 - B. Reuse of Building Elements: Project has been designed to result in end-of-Project rates for reuse of building elements as follows. Do not demolish building elements beyond what is indicated on Drawings without Architect's approval.
 - C. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
Transport items to Owner's storage area designated by Owner.
4. Protect items from damage during transport and storage.

D. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
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.

E. Removed and Recycled Items:

1. Remove material from existing construction not scheduled to be Salvaged or Reinstalled. Material may have the following characteristics:
 - a). Suitable to be reclaimed, reused, adapted or remanufactured.
 - b). Material that cannot be legally disposed of at a landfill.
2. All items for recycling shall be disposed of off-site at an appropriate recycling facility.
3. Recycling suitable material is (at the contractors discretion or required for LEED certification)

F. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, 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.

3.04 Selective Demolition Procedures for Specific Materials

- A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, then remove concrete between saw cuts.
- B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.
- C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

3.05 Disposal of Demolished Materials

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 - 4. Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.06 Cleaning

- A. 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.

3.07 Selective Demolition Schedule

- A. Existing Construction to Be Removed: Refer to construction drawings or as specified by Owner.
- B. Existing Items to Be Removed, Salvaged and Returned to Owner: Specified by Owner.
- C. Existing Items to Be Removed and Reinstalled: Specified by Owner.
- D. Existing Items to Be Removed, Salvaged and Reinstalled: Specified by Owner.
- E. Existing Items to Remain: Refer to construction drawings. Specified by Owner.

End of Division 02 4119

This section of the NIU Design and Construction Standards establishes minimum requirements only.

It should not be used as a complete specification.