

Section 1900

Building Demolition

PART 1: General

1.1 *Summary* –

- 1.1.1 Furnish all labor, materials, tools, equipment, and services for Demolition, as indicated, in accordance with provisions of Contract Documents.
- 1.1.2 Completely coordinate with work of other trades.
- 1.1.3 Work includes:
 - 1.1.3.1 Demolition of structures or portions of structures indicated.
 - 1.1.3.2 Removal of demolition debris.
 - 1.1.3.3 Protection of construction to remain, including:
 - 1.1.3.3.1 Utilities to remain.
 - 1.1.3.3.2 Other items indicated.
 - 1.1.3.3.3 Salvage of items.

1.2 *Definitions* –

- 1.2.1 *Demolish* – Completely remove and legally dispose of off-site.
- 1.2.2 *Recycle* – Recovery of demolition waste for subsequent processing in preparation for reuse.
- 1.2.3 *Salvage* – Carefully detach from existing construction, in a manner to prevent damage, and deliver to ECUA ready for reuse. Include fasteners or brackets needed for reattachment elsewhere.
- 1.2.4 *Remove* – Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- 1.2.5 *Remove and Salvage* – Detach items from existing construction and deliver them to ECUA ready for reuse.
- 1.2.6 *Remove and Reinstall* – Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- 1.2.7 *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.

1.3 Submittals –

1.3.1.1 *Demolition Plan* – Contractor shall submit a plan for the required demolition activities for each structure.

- 1.3.1.1.1 The plan shall discuss the sequence of operations, description of the methods, and equipment to be used for each operation, removal, temporary storage, and disposition of demolished materials. ECUA may require that the Contractor submit a detailed schedule of the work to be conducted.
- 1.3.1.1.2 Contractor is required to coordinate with ECUA and compile a list of items to be removed and salvaged. Include list with demolition plan.
- 1.3.1.1.3 Contractor is required to submit photograph(s) and/or video which shows the existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by building demolition operations.
- 1.3.1.1.4 When applicable, Contractor is to submit a detail outlining special measures proposed to protect adjacent building(s) to remain.
- 1.3.1.1.5 ECUA may require Contractor to provide an engineer's report documenting that proposed demolition methods are safe and will not result in an unplanned or uncontrolled collapse.

1.3.1.2 *Miscellaneous Submittals* – Contractor shall provide copies of receipts documenting the transportation and disposal of all demolished material.

1.4 Quality Assurance –

- 1.4.1 Contractor shall conduct work in accordance with OSHA and EPA requirements and shall comply with governing EPA notification regulations prior to the start of demolition.
- 1.4.2 Conduct work in accordance with ANSI A10.6 and NFPA 241.
- 1.4.3 Use only firms or individual trades qualified to perform work required under this section.

1.5 Project Conditions –

1.5.1 Preliminary investigations –

- 1.5.1.1 Contractor shall perform investigations prior to demolition to detect hazards that may result from demolition activities.
- 1.5.1.2 Conditions which would be apparent by such investigation will not be allowed as cause for claims for extra costs.

1.5.2 *Condition of existing structures to be demolished* –

- 1.5.2.1 ECUA assumes no responsibility for actual condition of structures to be demolished.

- 1.5.2.2 Conditions existing at time of inspection for bidding purposes will be maintained by ECUA insofar as practicable.
- 1.5.2.3 Contractor shall notify ECUA Project Manager, Engineer of Record, and/or Architect of discrepancies between existing conditions and the Plans prior to proceeding with demolition.
- 1.5.3 *Permits* – Before start of work contractor shall obtain and pay for permits required by authorities having jurisdiction and notify interested utilities companies.
- 1.5.4 *Approval of Local Authorities* – Contractor shall obtain approval of authorities having jurisdiction for work which affects existing means of ingress/egress to the project site as well as authorities which have environmental or municipal jurisdiction.
 - 1.5.4.1 Review with and obtain approval of authorities for temporary construction which affects such areas.
 - 1.5.4.2 Obtain approval of fire authorities, if necessary.
- 1.5.5 *Hazardous Materials and Toxic Wastes* – Contractor shall separate, store and dispose of Hazardous Materials and Toxic Wastes in accordance with local and EPA regulations and additional criteria listed below:
 - 1.5.5.1 Disposal of fluorescent tubes to open containers is not permitted.
 - 1.5.5.2 Disposal of ballasts and other building elements containing PCBs to open containers is not permitted.
 - 1.5.5.3 Disposal of building elements containing mercury to open containers is not permitted.

PART 2: Execution

2.1 *Preparation* –

- 2.1.1 Contractor shall coordinate with ECUA and other indicated utility suppliers whose infrastructure services the site or structure(s) to be demolished.
 - 2.1.1.1 Arrange to shut off indicated utilities with utility suppliers. ECUA will arrange to shut off indicated utilities when requested by Contractor.
 - 2.1.1.2 If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, Contractor is to provide temporary utilities that bypass buildings and/or structures to be demolished and that maintain continuity of service to other buildings and/or structures.
 - 2.1.1.3 Subsequent to any necessary bypass being setup, pipe or conduit for existing services shall be cut a minimum of 24 inches below grade or cut off pipe or conduit in walls or partitions that are to remain. Cap, valve, or plug and seal remaining portion of pipe or conduit according to the requirements of ECUA and other authorities having jurisdiction.

2.1.2 Review record documents of existing construction provided by ECUA, if available. ECUA does not guarantee that existing conditions are same as those indicated in the record documents.

2.1.3 Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged. Provide this information as a written list to the ECUA Project Manager or Engineer of Record.

2.2 *Pollution Controls –*

2.2.1 Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations.

2.2.2 Return adjacent areas to condition existing prior to start of work.

2.3 *Items to be Salvaged for ECUA –*

2.3.1 Remove salvage items at appropriate stage of demolition, but early enough to prevent damage to them by demolition operations. Salvage items per list included in demolition plan which was coordinated with ECUA.

2.3.2 Remove salvage items as a unit:

2.3.2.1 Clean, list, and tag for storage.

2.3.2.2 Protect from damage.

2.3.2.3 Salvage each item with auxiliary or associated equipment required for operation.

2.3.3 Historic items, relics, antiques, and similar object including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to ECUA that may be uncovered during demolition remain the property of ECUA.

2.3.4 Carefully salvage in a manner to prevent damage and promptly return to ECUA.

2.4 *Items to be Salvaged for Contractor –*

2.4.1 Items of salvage value to Contractor may be removed from structure as work progresses. Contractor must receive written permission from ECUA for the items Contractor wishes to salvage.

2.4.2 Transport salvaged items from site as they are removed in a timely manner. If items are not removed in a timely manner ECUA reserves the right to remove the salvaged items from the site.

2.4.3 Storage or sale of removed items not permitted on site.

2.5 *Items to be Removed and Reinstalled –* Remove items designated for re-use.

2.5.1 Tag, protect from damage, store if required, and deliver to locations designated.

2.5.2 Brace mechanical equipment attached to flexible mountings until reinstallation.

2.6 General Demolition Procedures –

2.6.1 Demolition of Entire Structures or Portions of Structures –

- 2.6.1.1 Demolish and remove from site as indicated on the plans or as directed by ECUA Project Manager.
- 2.6.1.2 Use such methods as required to complete work within limitations of governing regulations.

2.6.2 Adherence to Demolition Plan – Start and complete work as established by approved demolition plan; operational procedures and sequence of work are optional provided Contract schedule is maintained.

2.6.3 Protection of Property to Remain –

- 2.6.3.1 Contractor is to coordinate with ECUA and other utility providers in order to maintain existing infrastructure that may be at risk of damage during demolition operations. Items of interest to ECUA may include, but are not limited to, wellheads, piping, fences, pumps, generators, hardscape, landscaping, treatment equipment, and other mechanical equipment.
- 2.6.3.2 If demolition is in the vicinity of a well head protection area, Contractor must coordinate with ECUA Project Manager specific to the protection of the wellhead.
- 2.6.3.3 Contractor is to perform demolition operations in a manner that protects the existing items of interest to ECUA or other parties. Any damage to these items during demolition shall be the responsibility of the Contractor to repair or recover in a timely manner at no cost to ECUA.
- 2.6.3.4 Conduct operations to prevent damage by falling debris or other cause to adjacent buildings, structures, and other facilities as well as persons.
- 2.6.3.5 Provide interior and exterior shoring, bracing, or support to prevent movement, settlement or collapse of structures.

2.6.4 Contractor shall conduct operations to ensure minimum interference with roads, walks, entrances, exits, and other adjacent occupied facilities.

- 2.6.4.1 Do not close or obstruct private drives, walks or other occupied or used facilities unless approved in writing.
- 2.6.4.2 Do not close or obstruct public thoroughfares or walks unless approved by authorities having jurisdiction.
- 2.6.4.3 Do not obstruct exits from existing facilities without approval of authorities having jurisdiction.
- 2.6.4.4 Provide alternate routes around closed or obstructed traffic ways upon receiving prior approval from the authority having jurisdiction.

2.6.5 Contractor shall provide covered passageways where necessary to ensure safe passage of persons in or near areas of work.

- 2.6.6 Contractor shall provide barricades and/or safety lights as required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- 2.6.7 Contractor shall maintain existing utilities that are indicated to remain.
 - 2.6.7.1 Keep in service, and protect against damage during demolition.
 - 2.6.7.2 Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by ECUA Project Manager.
 - 2.6.7.3 Provide temporary services during interruptions to existing utilities, as acceptable to ECUA and other utility supplier(s).
- 2.6.8 *Structural Demolition –*
 - 2.6.8.1 Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
 - 2.6.8.2 Maintain fire watch during and for at least 48 hours after flame cutting operations.
 - 2.6.8.3 Maintain adequate ventilation when using cutting torches.
 - 2.6.8.4 Proceed with demolition of structural framing members systematically from higher to lower level.
 - 2.6.8.5 Demolish concrete and masonry in small sections.
 - 2.6.8.6 Perform removal to avoid excessive loads on supporting walls, floors or framing.
- 2.7 *Excavation –* When conditions exist that soils on site contain chemicals of concern, ECUA Project Manager may provide the Contractor specific directive on how to handle the excavation and disposal of contaminated soils.
- 2.8 *Backfill –*
 - 2.8.1 Backfill and uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.
 - 2.8.2 Completely fill below-grade areas and voids resulting from building or site demolition operations with satisfactory soil materials according to backfill requirements in Section 2100, Earthwork, of the latest edition of the ECUA Engineering Manual.
- 2.9 *Protection of Occupied Facilities to Remain –*
 - 2.9.1 Protect occupants from injury and discomfort.
 - 2.9.2 Provide temporary dustproof partitions between demolition areas and occupied areas.
 - 2.9.2.1 In public areas use clean, painted, minimum ½ - inch (13 mm) thick, plywood.
 - 2.9.2.2 Where authorities having jurisdiction require, use fire rated construction.

2.9.3 Provide temporary weather protection and insulation as necessary to prevent damage to existing facilities and discomfort to persons in occupied areas.

2.9.3.1 Insulation value: RSI 3.5 R 19.

2.10 *Pollution Controls* – Contractor is to utilize proper erosion and pollution control methods in order to maintain an orderly site found suitable to the ECUA Project Manager. Erosion control measures shall be used to maintain sediment on site and minimize the risk of offsite transportation of sediment.

2.11 *Clean-Up and Disposal of Demolition Materials* –

2.11.1 Contractor shall remove debris, rubbish, and materials resulting from demolition operations.

2.11.1.1 Remove from site; legally dispose of off-site.

2.11.1.2 Burning or burying demolition material on-site is prohibited. Any burning or burying shall be done in an approved manner at off-site locations only when appropriate permits and approvals have been obtained.

2.11.1.3 Remove and transport demolished material in a manner that prevents spillage on roads and adjacent areas. Immediately report any spilled material.

2.11.1.4 Costs of disposal are the responsibility of the Contractor.

2.11.1.5 Do not store or sell Contractor salvaged items or materials on site.

2.11.1.6 Clean up other debris resulting from this work.

2.11.2 Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations.

2.11.3 Return adjacent areas to a condition existing prior to start of work.