# PART 1 - GENERAL

## 1.1 SUMMARY

A. Section includes:
1. Demolition and removal of buildings, including removal of foundations.
2. Demolition and removal of structures.
3. Demolition and removal of site improvements.
4. Demolition and removal of capped and abandoned site utilities.
5. Demolition materials recycling requirements: The Work of this contract shall provide for a minimum of 50% by weight of the solid waste generated in the Work to be diverted from landfill disposal through a combination of re-use and recycling activities.
6. This section includes requirements for submittal of:
   a. Contractor's Waste Management and Recycling Plan prior to the commencement of the Work.
   b. Contractor's quantitative reports for demolition waste materials generated by the Contractor, as a condition of approval of progress payments.
7. For LEED Projects: This project will be certified for a Leadership in Energy and Environmental Design (LEED) rating from the U.S. Green Building Council. A minimum of 50% recycling of demolition debris is required to meet the LEED requirements for this project, per Materials and Resources Credit 2.1 or 2.2. One point is assigned for 50%, one additional point for 75%--project discretion issue.

## 1.2 DEFINITIONS

A. Remove: Remove and legally dispose of items, except those identified for use in recycling, re-use, and salvage programs.

B. Environmental Pollution and Damage: The presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human or animal life; affect other species of importance to humanity; or degrade the utility of the environment for aesthetic, cultural or historical purposes.

C. Inert Fill: A permitted facility that accepts inert waste such as asphalt and concrete exclusively for the purpose of disposal.

Inert Solids/Inert Waste: Non-liquid solid waste including, but not limited to, soil and concrete that does not contain hazardous substances or soluble pollutants at concentrations in excess of water-quality standards established by a regional water board and does not contain significant quantities of decomposable solid waste.

D. Class III Landfill: A landfill that accepts non-hazardous materials such as household, commercial, and industrial waste, resulting from construction, remodeling, repair, and demolition operations. A Class III landfill must have a solid waste facilities permit from the governing state/local entity.

E. Demolition Waste: Building materials and solid waste resulting from construction, remodeling, repair, cleanup, or demolition operations that are not hazardous. This

term includes, but is not limited to, asphalt concrete, Portland cement concrete, brick, lumber, gypsum wallboard, cardboard and other associated packaging, roofing material, ceramic tile, carpeting, plastic pipe, and steel. The materials may include rock, soil, tree stumps, and other vegetative matter resulting from land clearing and landscaping for construction or land development projects.

F. Chemical Waste: Includes petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, organic chemicals and inorganic wastes.

G. Recycling: The process of sorting, cleansing, treating and reconstituting materials for the purpose of using the altered form in the manufacture of a new product. Recycling does not include burning, incinerating or thermally destroying solid waste.

H. Reuse: The use, in the same or similar form as it was produced, of a material which might otherwise be discarded.

I. Solid Waste: All putrescible and nonputrescible solid, semisolid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, dewatered, treated, or chemically fixed sewage sludge which is not hazardous waste, manure, vegetable or animal solid and semisolid wastes, and other discarded solid and semisolid wastes. "Solid waste" does not include hazardous waste, radioactive waste, or medical waste as defined or regulated by State law.

## 1.3 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain property of the Trustees, demolished materials shall become the Contractor's property and shall be removed, recycled, or disposed from Project site in an appropriate and legal manner.

B. Arrange a meeting no less than ten (10) days prior to demolition with the Construction Administrator and other designated representatives to review any salvagable items to determine if the Trustees wants to retain ownership, and discuss Contractor’s Waste Management and Recycling Plan.

## 1.4 SUBMITTALS

A. Submittals for Construction Document phase:
   1. Qualification Data: For demolition firm.

B. Submittals for Demolition phase:
   1. Proposed dust-control measures.
   2. Proposed noise-control measures.
   3. Schedule of demolition activities indicating the following:
      a. Detailed sequence of demolition and removal work, including start and end dates for each activity.
      b. Dates for shutoff, capping, and continuation of utility services.

4. If hazardous materials are encountered and disposed of, landfill records indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
5. Contractor's Waste Management and Recycling Plan:
   a. Review Contract Documents and site conditions and estimate total Project C&D materials to be generated, names of landfills where Project C&D materials would normally be disposed of. Indicate types and quantities of materials under the Work that are anticipated to be feasible for on-site processing, and source-separation for re-use or recycling. Indicate procedures that will be implemented in this program to effect jobsite source-separation, such as, identifying a convenient location where dumpsters would be located, signage to identify materials to be placed in dumpsters, etc.,
   b. Contact Construction Administrator for a list of local reuse and recycling organizations and companies.
   c. Prior to commencing the Work, Contractor's Waste Management and Recycling Plan. Submit in format provided (Section 02060A). Waste Management and Recycling Plan must include, but not be limited to, the following:
      1) Contractor's name and project identification information;
      2) Procedures to be used;
      3) Materials to be re-used and recycled;
      4) Estimated total quantities of materials generated in Project;
      5) Names and locations of landfills, re-use and recycling facilities/sites;
      6) Tonnage calculations that demonstrate that Contractor will re-use and recycle a minimum of 50%-75% by weight of C&D materials generated in the Work.
   d. Contractor's Waste Management and Recycling Plan must be approved by Construction Administrator prior to the Start of Work.
   e. Contractor's Waste Management and Recycling Plan will not otherwise relieve the Contractor of responsibility for adequate and continuing control of pollutants and other environmental protection measures.

6. Contractor's Reuse, Recycling, and Disposal Report
   a. Submit Contractor's Reuse, Recycling, and Disposal Report on the form provided (Section 02060B) with each application for progress payment. Failure to submit the form and its supporting documentation will render the application for progress payment incomplete and delay progress payments. If applicable, include manifests, weight tickets, receipts, and invoices specifically identifying the Project for re-used and recycled materials:
      1) On-site crushing of asphalt and concrete for use off-site;
      2) Reuse of building materials or salvageable items;
      3) Source-separated recycling facilities;
      4) Mixed debris recycling facilities;
      5) Recycling of material, including soils, as landfill alternative daily cover;
      6) Delivery of soils or mixed inerts to an inert landfill or other use;
      7) Disposal of soils or other materials at a landfill or transfer station;
      8) Other (describe);

b. Contractor's Reuse, Recycling, and Disposal Report must quantify all materials generated in the Work, disposed in Class III Landfills, or diverted from disposal through recycling. Indicate zero (0) if there is no quantity to report for a type of material. As indicated on the form:
   1) Report disposal or recycling either in tons or in cubic yards: if scales are available at disposal or recycling facility, report in tons; otherwise,
   2) report in cubic yards. Report in units for salvage items when no tonnage or cubic yard measurement is feasible.
   3) Indicate locations to which materials are delivered for reuse, salvage, recycling, accepted as daily cover, inert backfill, or disposal in landfills or transfer stations.
   4) Provide legible copies of weigh tickets, receipts, or invoices that specifically identify the project generating the material. Said documents must be from recyclers and/or disposal site operators that can legally accept the materials for the purpose of re-use, recycling, or disposal:

      Indicate project title, project number, progress payment number, name of company completing the Contractor's Report and compiling backup documentation, the printed name, signature, and daytime phone number of the person completing the form, the beginning and ending dates of the period covered on the Contractor's Report, and the date that the Contractor's Report is completed.

7. At Project closeout:
   a. Record drawings: Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.

8. For LEED Projects: LEED Letter Template: Materials and Resources Credit [2.1] [2.2] Construction Waste Management
   a. Complete and sign LEED Letter Template in format provided under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program. Prepare Letter Template on company letterhead.
      1) Certify that the project has completed a waste management plan and diverted construction, demolition, and landclearing waste to uses other than landfill.
      2) Provide quantities of diverted materials and means of diversion in the table provided in the LEED Letter Template.
      3) Indicate how and where waste was diverted.
      4) Indicate quantities of waste diverted in tons [or cubic yards].
      5) Letter Template will calculate: Total quantity of diverted waste, total quantity of waste, and the percentage of waste diverted.
      6) For projects where 50% of waste is diverted, one LEED credit will be achieved; where 75% is diverted, two LEED credits will be achieved.
      7) Include name, organization, role in project, provide signature and date completed.

1.5 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Engage a licensed demolition contractor and an experienced firm that has successfully completed demolition Work similar to that indicated for this Project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before starting demolition. Comply with hauling and disposal regulations of authorities having jurisdiction. Obtain and pay for all permits required.

C. Pre-demolition Conference: Conduct conference at Project site.
   1. Review the environmental goals of this Project with Contractors, subcontractors, and waste haulers and make a proactive effort to increase awareness of these goals among all labor forces on site.

1.6 PROJECT CONDITIONS

A. Buildings to be demolished will be vacated and their use discontinued before start of Work.

B. Storage or sale of removed items or materials on-site will not be permitted without advance written approval from Owner's Representative.

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 demolition and recycling required.

C. Survey condition of the building to determine whether removing any element might result in a structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during demolition.
   1. Retain a licensed and qualified civil or structural engineer to provide analysis, including calculations, necessary to ensure the safe execution of the demolition work.

D. Perform surveys as the Work progresses to detect hazards resulting from demolition activities.

3.2 PREPARATION

A. As part of the project scope, the Contractor shall prepare all drawings, documents, and applications and shall obtain all government agency approvals and permits required for demolition activities.

B. Conduct demolition operations and remove C&D materials to ensure minimum interference with roads, streets, walks, and other adjacent occupied and utilized facilities.
   1. Do not close or obstruct streets, walks, or other adjacent occupied or utilized facilities without permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

C. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area.
   1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
      a. Maintain temporary protection to people at exterior areas of the existing building where decorative medallion removal work is being done.
   2. Protect existing site improvements, appurtenances, and landscaping that are designated to remain in place.

D. Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of buildings to be demolished and adjacent buildings to remain.
   1. Strengthen or add new supports when required during progress of demolition.

3.3 EXPLOSIVES

A. Explosives: Use of explosives will not be permitted.

3.4 ENVIRONMENTAL CONTROLS

A. Comply with federal, state and local regulations pertaining to water, air, solid waste, recycling, chemical waste, sanitary waste, sediment and noise pollution.

B. Protection of Natural Resources: Preserve the natural resources within the project boundaries or restore to an equivalent condition.
   1. Confine demolition activities to areas defined by public roads, easements, and work area limits indicated on the drawings.
      a. Temporary Construction: Remove indications of temporary construction facilities, such as haul roads, work areas, structures, stockpiles or waste areas.
   2. Water Resources: Comply with applicable regulations concerning the direct or indirect discharge of pollutants to underground and natural surface waters.
      a. Oily Substances: Prevent oily or other hazardous substances from entering the ground, drainage areas, or local bodies of water in such quantities as to affect normal use, aesthetics, or produce a measurable ecological impact on the area.
         1) Store and service construction equipment at areas designated for collection of oil wastes.
   3. Dust Control, Air Pollution, and Odor Control: Prevent creation of dust, air pollution and odors.

a. Use temporary enclosures and other appropriate methods to limit dust and dirt rising and scattering in air to lowest practical level.
b. Store volatile liquids, including fuels and solvents, in closed containers.
c. Properly maintain equipment to reduce gaseous pollutant emissions.

4. Noise Control: Perform demolition operations to minimize noise.
   a. Repetitive, high level impact noise will be permitted only between the hours of 7:00 a.m. and 6:00 p. m. Repetitive impact noise on the property shall not exceed the 85 dB, measured at 100 feet from the source of the noise. During finals week, the noise level shall not exceed 70 dB, measured at 100 feet from the source of the noise.
   b. Provide equipment, sound-deadening devices, and take noise abatement measures that are necessary to comply with the requirements of this Contract.
   c. At least once every five successive working days while work is being performed above 55 dB noise level, measure sound level for noise exposure due to the demolition. Measure sound levels on the 'A' weighing network of a General Purpose sound level meter at slow response. To minimize the effect of reflective sound waves at buildings, measurements may be taken three to six feet in front of any building face. Submit the recorded information to the State noting any problems and the alternatives before mitigating actions.
5. Salvage, Re-Use, and Recycling Procedures
   a. Identify re-use, salvage, and recycling facilities: Contact Construction Administrator to obtain a list of local reuse organizations and C&D recycling companies.
   b. Develop and implement procedures to re-use, salvage, and recycle demolition materials, based on the Contract Documents, the Contractor's Waste Management and Recycling Plan, estimated quantities of available materials, and availability of recycling facilities. Procedures may include on-site recycling, source-separated recycling, salvage, and/or mixed debris recycling efforts.
   c. Identify materials that are feasible for salvage, determine requirements for site storage, and transportation of materials to a salvage facility.
   d. Source-separate new construction, excavation and demolition materials including, but not limited to the following types:
      1) Asphalt
      2) Concrete, Concrete Block, Concrete Masonry Units (CMU), Slump Stone (Decorative Concrete Block), and Rocks
      3) Asphalt Concrete
      4) Paper: Bond, Newsprint, Cardboard, Paper, Packing Materials, and Packaging
      5) Cement Fiber Products: Shingles, Panels, Siding
      6) Paint
      7) Rigid Foam
      8) Glass
      9) Plastics
      10) Carpet and Carpet Padding
      11) Beverage Containers
      12) Insulation
      13) Gypsum Board

14) Porcelain Plumbing Fixtures
15) Fluorescent Light Tubes: per Department of Toxic Substances Control Regulations
16) Green Materials (i.e. tree trimmings and land clearing debris)
17) Metal (ferrous and non-ferrous)
18) Red Clay Brick
19) Soil
20) Wood, Clean Dimensional Wood, Pallet Wood
21) Sheet Wood: Plywood, Oriented Strand Board (OSB), Particle Board
22) Other materials as appropriate

e. Develop and implement a program to transport loads of mixed (commingled) demolition materials that cannot be feasibly source separated to a mixed materials recycling facility whenever available.

6. Disposal Practices and Waste Hauling:
   a. Legally transport and dispose of materials that cannot be delivered to a source-separated or mixed recycling facility to a transfer station or disposal facility that can legally accept the materials for the purpose of disposal.
   b. Use a permitted waste hauler or Contractor's trucking services and personnel. To confirm valid permitted status of waste haulers, contact the state or local waste management agency.
   c. Become familiar with the conditions for acceptance of new construction, excavation and demolition materials at recycling facilities, prior to delivering materials.
   d. Deliver to facilities that can legally accept new construction, excavation and demolition materials for purpose of re-use, recycling, composting, or disposal.
   e. Do not burn, bury or otherwise dispose of rubbish and waste materials on project site.
7. Re-Use and Donation Options: Implement a re-use program to the greatest extent feasible. Options may include:
8. Revenue:
   a. Revenues or other savings obtained from recycled, re-used, or salvaged materials shall accrue to Contractor unless otherwise noted in the Contract Documents.
   b. Remove and transport C&D materials in a manner that will prevent spillage on adjacent surfaces, streets, and areas or dust being emitted into the atmosphere.
   c. Clean adjacent streets of dust, dirt, and C&D materials caused by demolition operations. At the end of each work day, return adjacent areas to condition existing before start of demolition.

## 3.5 DEMOLITION

A. Building Demolition: Demolish buildings completely and remove from the site. Use methods required to complete Work within limitations of governing regulations and as follows:
   1. Locate demolition equipment throughout the building and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
   2. Demolish concrete and masonry in sizes that will be suitable for acceptance at recycling or disposal facilities.

3. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
4. Break up and remove concrete slabs on grade in small sizes, suitable for acceptance at recycling or disposal facilities, unless otherwise shown to remain.
5. Remove all disconnected, abandoned utilities on site.

B. Below-Grade Construction: Demolish foundation walls and other below-grade construction, as follows:
1. Completely remove below-grade construction, including foundation walls and footings.
2. Break up and completely remove below-grade concrete slabs, in small sizes, suitable for acceptance at recycling or disposal facilities.
3. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations to street level with satisfactory soil materials.

C. Damages: Promptly repair damages to adjacent facilities caused by demolition operations.

3.6 HANDLING OF DEMOLISHED MATERIALS

A. General: Promptly re-use, salvage, recycle, or dispose of demolished materials. Do not allow demolished materials to accumulate or be stored on-site for more than fourteen (14) days.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off the Trustees' property and legally reuse, salvage, recycle, or dispose of materials.

END OF SECTION