

## SECTION 02 41 10

### DEMOLITION AND SITE CLEARING

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION

- A. This section specifies all site preparation Work, demolition and removal of site improvements, utilities, other structures and debris shown.

##### 1.2 RELATED WORK

- A. Safety Requirements: 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. Environmental Protection: Section 01 57 19, TEMPORARY ENVIRONMENTAL CONTROLS.
- E. Waste Management: Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT.
- F. Demolition and removal of roads, walks, curbs, and on grade slabs: Section 31 20 00, EARTH MOVING.

##### 1.3 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 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 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES AND IMPROVEMENTS.
- C. Maintain fences, barricades, lights, and other similar items around exposed excavations until such excavations have been completely filled.
- 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 tracking from the Work area daily.

- E. In addition to previously listed fire and safety rules to be observed in performance of Work, include following:
  - 1. 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.
  - 2. Keep hydrants clear and accessible at all times. Prohibit debris from accumulating within a radius of 15 feet of fire hydrants.
- F. Before beginning any demolition Work, survey the site and examine the Drawings and Specifications to determine the extent of the Work. Take necessary precautions to avoid damage to existing items to remain in place, to be reused, or to remain the property of the Cemetery. Any damaged items shall be repaired or replaced as approved by the COR. Coordinate the Work of this Section with all other Work and construct and maintain shoring, bracing, and supports as required. Repairs, reinforcement, or structural replacement must have COR's approval.
- G. The Work shall comply with the requirements of Section 01 57 19, TEMPORARY ENVIRONMENTAL CONTROLS.
- H. The following practices are prohibited within tree and plant protection zones:
  - 1. Storage of construction materials, debris, or excavated material;
  - 2. Moving or parking vehicles or equipment.
  - 3. Foot traffic.
  - 4. Erection of sheds or structures.
  - 5. Impoundment of water.
  - 6. Excavation or other digging unless otherwise indicated.
  - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
  - 8. Do not direct vehicle or equipment exhaust toward protection zones.
  - 9. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

#### 1.4 UTILITY SERVICES

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

#### 1.5 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Monitoring Well (Piezometer) abandonment plan and materials (Products).

## PART 2 - PRODUCTS

### 2.1 GROUT

- A. Cement-bentonite-sand grout mixed to the following proportions:

<u>Component</u>	<u>Percent by Weight</u>
Cement	40
Bentonite	30
Sand	30

Sufficient water shall be added and mixed to obtain a thick, pumpable slurry weighing approximately 14 lbs/gallon. Cement shall be Type I portland cement per ASTM C150. Bentonite shall be of a type approved for subsurface exploration. Sand shall be a clean, natural sand of hard, strong, durable grains with not more than 10 percent passing the No. 100 sieve per ASTM D2487. Water shall be potable.

### 2.2 TREE PROTECTION FENCE

- A. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch maximum opening in pattern and weighing a minimum of 0.4 lb/ft.; remaining flexible from minus 60 to plus 200 deg F; inert to most chemicals and acids; minimum tensile yield strength of 2,000 psi and ultimate tensile strength of 2,680 psi; secured with plastic bands or galvanized-steel or stainless-steel wire ties; and supported by tubular or T-shape galvanized-steel posts spaced not more than 96 inches apart.
1. Height: 48 inches.
  2. Color: High-visibility orange, nonfading.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed.
1. Locate and clearly identify trees, shrubs, and other vegetation to remain. Flag each tree trunk at 54 inches above the ground.
  2. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
  3. Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people from easily entering protected areas. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.
  4. Set or drive posts into ground one-third the total height of the fence without concrete footings. Where a post is located on existing paving or concrete to remain, provide appropriate means of post support acceptable to COR.

5. Maintain protection zones free of weeds and trash.
6. Maintain protection-zone fencing in good condition and remove when construction operations are complete and equipment has been removed from the site.
7. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
8. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by COR.
9. Perform repairs of damaged trunks, branches, and roots within 24 hours according to an arborist's written instructions.
10. Replace trees and other plants that cannot be repaired and restored to full-growth status with similarly-sized trees and plants, as determined by COR.
11. Soil Aeration: Where directed by COR, aerate surface soil compacted during construction. Aerate 10 feet beyond drip line and no closer than 36 inches to tree trunk. Drill 2-inch diameter holes a minimum of 12 inches deep at 24 inches on center. Backfill holes with an equal mix of augered soil and sand.

### 3.2 SITE CLEARING

- A. General: Remove trees, shrubs, grass, and other vegetation, pavements, improvements, or obstructions, as required, to permit installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated. Removal includes digging out and off-site disposal of stumps and roots.
  1. Cut minor roots and branches of trees indicated to remain in a clean and careful manner, with a hand saw, where such roots and branches obstruct installation of new construction.
- B. Erosion Control: Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways. Install fiber roll, silt fence, and inlet protection as shown and as per requirements of the Storm Water Pollution Prevention Plan (SWPPP), prior to any soil disturbance activities. Provide temporary seeding as required by the SWPPP.
- C. Maintain site controls in accordance with SWPPP and repair as directed by COR to sustain compliance with NPDES permit. Maintain all records, perform inspections, and provide reporting as required by the SWPPP.
- D. Topsoil: Topsoil is defined as friable clay loam surface soil found in a depth of not less than 6 inches. Satisfactory topsoil is reasonably free and/or screened of subsoil, clay lumps, stones, and other objects over 1 inch in diameter, and without weeds, roots, and other objectionable material.
  1. Strip topsoil to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material. Remove heavy growths of grass from areas before stripping.
    - a. Where existing trees are indicated to remain, leave existing topsoil in place within drip lines to prevent damage to root system.

2. Stockpile topsoil in storage piles in areas indicated or directed. Construct storage piles to provide free drainage of surface water. Cover storage piles and provide perimeter protection to prevent wind and/or water erosion in accordance with the SWPPP. Refer to Section 32 90 00, PLANTING for soil amendments required prior to spreading topsoil.
    - a. Stockpile shall be contained with erosion and sediment controls (silt fence or fiber roll) and stabilized if undisturbed in accordance with the SWPPP.
  3. Dispose of unsuitable or excess topsoil as specified for disposal of waste material only after approval of the COR.
- E. Clearing and Grubbing: Clear site of trees, shrubs, and other vegetation, except for those indicated to be left standing.
1. Completely remove stumps, roots, and other debris protruding through ground or subgrade surface.
  2. Use only hand methods for grubbing inside drip line of trees indicated to remain.
  3. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.
    - a. Place fill material in horizontal layers not exceeding 6 inches loose depth, and thoroughly compact each layer to a density equal to adjacent original ground.
- F. Removal of Improvements: Remove existing above grade and below grade improvements as indicated and as necessary to facilitate new construction.
- G. Abandonment or removal of certain underground pipe or conduits may be indicated on Drawings and is included under Work of this Section. Removing abandoned underground piping or conduits interfering with construction is included under this Section.
1. Cut, cap, and plug piezometer as indicated in Drawings. Cut riser pipe to a minimum of 12 inches below crypt subgrade. Plug with grout to the subgrade level.
  2. Contractor shall identify and procure, including preparation of any necessary documentation and payment of any necessary fee, any permits required for the abandonment of the piezometers.
- H. Continue maintenance of erosion controls in compliance with the SWPPP until the Work is completed and the threat of erosion is gone by either ground surface stabilizer or when lawn "grow-in" is at 85% complete. Temporary erosion control devices shall not be removed until the area is certified as being stabilized by the Qualified Inspector.

### 3.3 DEMOLITION

- A. Debris, including concrete, stone, and similar materials shall become property of Contractor and shall be disposed of by him daily, off the Cemetery Property to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas specified by the COR with applicable protection measures per the SWPPP requirements. Break up concrete slabs below grade

and remove from the site. 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 or subgrade, shall be included as part of the lump sum compensation for the Work of this section. Materials that are located beneath the surface or subgrade of the surrounding ground more than 5 feet, or materials that are discovered to be hazardous, shall be handled as unforeseen. The removal of hazardous material shall be referred to Hazardous Materials Specifications.
- C. Burning is not permitted on the property.
- D. Remove existing utilities as indicated or uncovered by Work and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the COR. When Utility lines are encountered that are not indicated on the Drawings, the COR shall be notified prior to further Work in that area.
  - 1. Coordinate with the Cemetery Director and COR for shut down of existing irrigation system. Irrigation system will not be permitted to be shut down for more than one (1) single day at a time or other duration as approved by the COR which will not impede operations at the Cemetery.
  - 2. Cap and provide temporary irrigation as required by the COR and/or Cemetery Director.
  - 3. Provide temporary irrigation or hand or truck watering to existing vegetation impacted by temporary irrigation system shut-downs.

#### 3.4 CLEAN UP

- A. 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 Cemetery 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.

END OF SECTION