

SECTION 31 10 00 - SITE CLEARING AND EROSION CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Protecting existing vegetation to remain.
 - 2. Removing existing vegetation.
 - 3. Clearing and grubbing.
 - 4. Removing above- and below-grade site improvements.
 - 5. Disconnecting, capping or sealing, and removing site utilities.
 - 6. Temporary erosion and sedimentation control measures.

1.3 DEFINITIONS

- A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials.
- B. Tree Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.

1.4 MATERIAL OWNERSHIP

- A. Except for stripped topsoil to be stockpiled on site or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 SUBMITTALS

- A. Photographs or videotape, sufficiently detailed, of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.
- B. Record drawings, according to Division 01 Section "Project Record Documents," identifying and accurately locating capped utilities and other subsurface structural, electrical, and mechanical conditions.

- C. Minutes of preinstallation conference.

1.6 QUALITY ASSURANCE

- A. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."
- B. Authorities Having Jurisdiction: Conform to requirements of all authorities having jurisdiction.
 - 1. Where conflicts exist between the requirements of the Contract Documents and those of authorities having jurisdiction, the higher quality or more restrictive requirement shall apply.

1.7 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing. Do not proceed with operations until existing utilities are located and clearly marked.
- D. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.
- E. Suspend clearing operations during wet conditions unless otherwise directed by Architect.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM, AASHTO M 145 Soil Classification Groups A-1, A-2-4, A-2-5, and A-3, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
 - 1. Obtain approved borrow soil materials off-site when satisfactory soil materials are not available on-site.

2.2 EROSION CONTROL MATERIALS

- A. Silt Fence Geotextile: Woven geotextile fabric, manufactured for silt fence applications, made from polyolefins or polyesters; with elongation less than 20 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
1. Grab Tensile Strength: 100 lbf; ASTM D 4632.
 2. Permittivity: 0.05 per second, minimum; ASTM D 4491.
 3. UV Stability: 70 percent after 500 hours' exposure; ASTM D 4355.
- B. Silt Fence Post: Steel, either integrally manufactured with the silt fence as part of a complete system or separately provided. Where separately provided, the following shall apply:
1. Steel posts: T or U cross-sectional shape. Minimum weight 1.3 pounds per foot. Minimum length 5 feet. Shall have projections to aid in fastening wire of fabric. Shall have a metal plate welded near the bottom such that, when driven to proper depth, it will be below ground and will aid stability.
 2. Fasteners: Galvanized wire or other fasteners as required for a secure installation.
 3. Maximum Spacing: 6 feet on center.
- C. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
1. Survivability: Class 2; SCDOT Standard Specs
 2. Grab Tensile Strength: 200 lbf; ASTM D 4632.
 3. Sewn Seam Strength: 180 lbf; ASTM D 4632.
 4. Puncture Strength: 80 lbf; ASTM D 4833.
 5. Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4751.
 6. Permittivity: 0.1 per second, minimum; ASTM D 4491.
 7. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.
- D. Metal Posts and Rails: As indicated. Round cold-formed, electric-resistance-welded, steel pipe or tubing, with minimum yield strength of 45,000 psi and with outside dimension, minimum wall thickness, and weight complying with ASTM F 761 for the following fence height and strength and stiffness requirements:
1. Fence Height: 4 feet.
 2. Duty Rating: Medium.
 3. Tube or Pipe Diameter and Thickness: According to ASTM F 761.
- E. Wood Posts and Rails: As indicated. 2 inch x 4 inch framing lumber. Minimum post length 6 feet.
- F. PVC Rails: As indicated. 1" diameter Schedule 40 with solvent cement joints.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.

- B. Locate and clearly flag trees and vegetation to remain or to be relocated.
- C. Protect existing site improvements to remain from damage during construction.
 - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to a Stormwater Pollution Prevention Plan (SWPPP), specific to the site, that complies with EPA 832/R-92-005 or the requirements of authorities having jurisdiction, whichever is more stringent.
- B. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- C. When directed by Architect, remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 UTILITIES

- A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.
 - 1. Owner will arrange to shut off indicated utilities when requested by Contractor.
- B. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Owner, Architect and operating utility not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without the permission of all of the parties noted above.
- C. Excavate for and remove underground utilities indicated to be removed.
- D. Fill depressions caused by utility removal operations with satisfactory soil material unless further excavation or earthwork is indicated and is to be performed immediately. Do not leave depressions overnight.
 - 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.4 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction.
 - 1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
 - 2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.

3. Completely remove stumps and roots greater than 1" in diameter, obstructions, and debris extending to a depth of 24 inches below exposed subgrade.
 4. Use only hand methods for grubbing within tree protection zone.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated and is to be performed immediately. Do not leave depressions overnight.
1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.
1. Remove subsoil and nonsoil materials from topsoil, including trash, debris, weeds, roots, and other waste materials.
- C. Dispose of topsoil as specified for surplus soil material in disposal article below.

3.6 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut length of existing pavement to remain before removing existing pavement. Saw-cut faces vertically.
 2. Paint cut ends of steel reinforcement in concrete to remain to prevent corrosion.

3.7 DISPOSAL

- A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
1. Do not burn or chip demolished or waste materials on Owner's property.
 2. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities.

END OF SECTION 311000