SECTION 31 11 00
SITE CLEARING

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section includes the following:
   1. Protecting existing trees and vegetation to remain.
   2. Removing trees and other vegetation.
   3. Clearing and grubbing.
   4. Topsoil stripping.
   5. Removing above-grade site improvements.
   6. Disconnecting, capping or sealing, and abandoning site facilities in place.
   7. Disconnecting, capping or sealing, and removing site facilities.

B. Related Sections include the following:
   1. Demolition: Section 02 41 00.
   2. Topsoil, seeding and sodding: Section 32 91 19.
   3. Construction Facilities and Temporary Controls - Division 1

C. Definitions
   1. 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 weeds, roots, and other deleterious materials.
   2. Facility: Utility structures and system components belonging to utility company including service lines which are used to provide service to utility's customers and product which these facilities convey.
   3. Utility: Company, agency, owner or operator of facility concerned.
   4. ISA: International Society of Arboriculture
   5. OSHA: Occupational Safety and Health Administration

1.02 JOB CONDITIONS

A. General:
   1. Keep dust and noise to a minimum. Adhere to OSHA regulations. Minimize the infiltration of dust onto adjacent properties surrounding the Project site. Conduct demolition, loading and hauling activities in a manner that minimizes the discharge of airborne dust to adjacent properties and walkways.
   2. See Vector (Rodent) Control requirements in Section 02 41 00.

1.03 PRECONSTRUCTION MEETING

A. An on site preconstruction meeting shall be required after the limits of disturbance has been staked out and flagged, but before any clearing or grading begins. The contractor shall contact Fairfax County DPWES prior to commencing construction to verify the limits of disturbance and discuss tree protection and tree care measures.

1.04 SUBMITTALS:

Submit the following for approval in accordance with the General Requirements and with the additional requirements as specified for each:

A. The Contractor is to submit shop drawings and a sample of the tree protection sign as shown in the approved working drawings prior to any demolition work.

B. The Contractor is responsible for submitting 1"=20' scale drawings providing solutions to any potential conflicts not addressed in the demolition or tree protection plans between tree protection zones and those items below. If no plans are submitted, the tree protection zones on the tree protection plan shall be adhered to:

1. Demolition access, loading, recycling and staging areas.
2. Site lighting, electrical conduit runs, or utility runs
3. Removal of utilities
4. Designated staging, stockpile, storage, parking, refueling areas.
5. Additional required sediment and erosion control measures not shown on plans.
6. Note: Concrete wash out areas shall not occur in tree protection zones.

C. Documentation:

1. Permits and releases from each owner of property where debris will be deposited absolving the Authority of responsibility in connection with such disposal.

1.05 QUALITY ASSURANCE:

A. Codes, Regulations, Reference Standards and Specifications:

1. Comply with codes and regulations of the jurisdictional authorities.

B. No construction activity including staging and stockpile shall start until all the tree protection measures and procedures are completed as designated on the demolition and tree protection plans. This work shall be completed by the Contractor and shall be monitored by the Owners' representative. The work of the Contractor shall include but not be limited to the following:

1. Layout of tree protection fence.
2. Participation in pertinent meetings and coordination.
3. Educational sessions for subcontractors about the fines and importance of tree protection zones.
4. Canopy trimming and pruning.
5. Sucker removal.
6. Root protection mat and mulching.
7. Root aeration mat.
8. Tree protection sign installation.
9. Remedial arboricultural measures such as trimming and pruning.

C. Penalties for damage to trees and tree protection zones as follows:

1. $200 per day for each encroachment offense.
2. $200 for breakage of limbs over 2" diameter; $100/diameter inch for limb breakage greater than 2". At Owner's option, remedial activity to repair damage may be substituted for per inch penalty.

D. Tree to be protected that are damaged through signs of more than 25% or more canopy death shall compensate the Owner at $1000.00 per inch diameter of entire tree truck as stated in the tree survey. For example a 30" diameter tree damaged beyond repair will result in a $30,000 fine, plus the removal and replacement of the tree with a approved 3" caliper tree. Tree survey contract drawing shows existing conditions of trees to be saved and shall be the basis for assessment of damages.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Requirements for satisfactory soil materials:
   1. Obtain approved borrow soil materials off-site when satisfactory soil materials are not available on-site.

B. Chain-Link Tree Guards (Tree protection fence): As shown on tree protection contract drawing, consisting of the following:
   1. Chain-link fencing: Nine gauge, two-inch mesh.
   2. Posts: 2.7 lbs. per foot “H” or 1-1/2 inches inside diameter.
   3. Brace rails: 1-5/8 inches outside diameter.
   4. Stretcher bars: 1/4-inch by 3/4-inch.

C. Concrete support slabs: Able to hold tree protection fence upright and in place for the duration of the project.

D. Tree preservation signs: See detail on tree protection contract drawing. Submit shop drawings and sample.

E. Air Spade: Provide air spade equipment that can easily remove subbase material under pavement to a depth of 12 inches minimum without damaging tree roots larger than ½ inch diameter. The tree spade shall have a dirt guard and meet all OSHA standard.

F. Temporary Enclosures and Wrapping: Contractor's option.

G. Topsoil: Additional topsoil will be needed for work north of site near willow trees after pavement is removed. See Section 32 91 19 for topsoil requirements.

H. Mulch: Organic hardwood wood chips. Double ground and composted. Easily biodegradable. Insufficiently or improperly aged mulch containing high bacterial counts or high levels of bark mulch resistant to decomposition will not be accepted.

I. Tree Wound Paint: Standard bituminous product. All cutting of tree limbs shall be approved by Owner’s Representative prior to cutting the limb.

PART 3 - EXECUTION

3.01 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction. For control survey markers within the demolition area, prior to any demolition work, record location(s) and carefully remove marker(s) and give all markers removed to the owner.

B. Provide erosion-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways

C. Conduct tree protection meeting. See section 1.02.

D. Place tree protection fence prior to demolition. Locate tree protection fence according to tree protection contract drawing.

E. Protect existing site improvements to remain from damage during construction.
   1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.02 TREE PROTECTION

A. Erect and maintain tree protection fence throughout construction. Remove enclosures when construction is complete.
   1. Do not store construction materials, concrete clean out areas, debris, or excavated material within tree protection fence area.
   2. Do not permit vehicles, equipment, or foot traffic within tree protection fence area except for normal mowing of grass around oaks south of the site.
   3. Fines of up to $200 per day will be accessed to offenders. See section 1.04 - B.

B. Protect trees shown on the drawing with tree protection fence.

C. Nurture protected trees during the period of this Contract. Water tree using water bags during periods of drought (two weeks without rain) during the summer months June through August.

3.03 UTILITY FACILITIES

A. Locate, identify, disconnect, and seal or cap off facilities indicated to be removed. All utilities within tree protection zones that are to be discontinued shall be abandoned by capping both ends outside the tree protection zone and leaving the utility in place within the tree protection zone.
   1. Owner will arrange to shut off indicated facilities when requested by Contractor.

B. Existing Facilities: Do not interrupt facility service to building connections 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 Engineer not less than two days in advance of proposed facility interruptions.
   2. Do not proceed with facilities interruptions without Engineer's written permission.

C. Excavate for and remove underground facilities indicated to be removed. Do not remove part of the underground facilities within tree protection zones. See section A above.

3.04 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions and grubbing roots.

1. Do not remove trees and grass indicated to remain in the tree protection zone.
2. Where directed by DDOT forestry personnel, 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, roots, obstructions, and debris extending to a depth of 18 inches below exposed subgrade.
4. Use only hand methods for grubbing and removal of pavement within tree protection zones.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated

1. Place fill material in horizontal layers not exceeding 8-inch loose depth, and compact each layer to a density equal to adjacent original ground.

3.05 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. Strip surface soil of unsuitable topsoil, including trash, debris, weeds, roots, and other waste materials.

C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Limit height of topsoil stockpiles to 72 inches.
2. Do not stockpile topsoil within drip line of remaining trees.
3. Stockpile surplus topsoil and allow for respreading deeper topsoil.

3.06 REMOVAL OF TREE BRANCHES:

A. Tree limbs to be removed will be addressed during the preconstruction meeting. No other tree limbs shall be removed without prior approval.

B. All pruning tools used and methods employed shall be in accordance with accepted arboricultural practices performed by competent personnel under the supervision of an ISA Certified Arborist. The Contractor shall notify the landscape architect ten days prior to the beginning of work.

C. All trees pruned shall be pruned in accordance with “Pruning Standards for Shade Trees” Class II: Standard Pruning Specifications (National Arborist Association).

D. Workmen shall not be permitted to climb trees with climbing spurs, but they shall comply with the requirements of good practice and safety in the use of safety ropes.

E. Existing injuries to the bark, trunk, and limbs shall be repaired by properly cutting, smoothing the wood if necessary, tracing the bark to the proper shape to insure rapid healing, using only approved tools and materials.

F. All trimming shall be removed and disposed of by means acceptable to the Engineer. No on-site burning shall be allowed.

G. The Contractor shall be responsible for all damage or injury to property of any character during the tree pruning work resulting from any act, omission, neglect or misconduct, in the manner or method of executing the work satisfactorily.

H. When pruning is completed, the area shall be promptly and thoroughly cleaned up. Existing turf areas which have been injured by the work shall be regraded and sodded, and the entire area, when completed, shall be neat and clean, to the satisfaction of the Engineer.

3.07 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.

3.08 DISPOSAL

A. Coordinate all work with Section 02 41 00.

B. 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.

C. Dispose of debris off site only with permission of property owner where such debris is to be deposited and in accordance with codes and regulations of the jurisdictional authorities, unless specified otherwise in Section 02 41 00.

D. Burning and burying debris on site is prohibited.

3.09 SITE MONITORING

A. The Engineer, DDOT Urban Forestry Inspector and/or Owner’s Representative(s) will conduct periodic site visits to insure compliance with tree preservation requirements. Prompt response shall be made to requests by Owner’s Representatives which effect the survival of trees to be preserved.

3.10 SITE MAINTENANCE

A. The Contractor shall keep all traveled areas watered regularly or apply other approved dust control methods to prevent excessive dust accumulation on foliage of trees to be preserved. The Contractor will be responsible for all costs associated with the removal of excessive dust from the foliage of trees.

B. Concrete washout areas will be in predetermined, agreed upon, designated areas. In particular, no washout shall occur in existing or proposed landscape areas. (Proposed landscape areas are generally along the perimeter of the site.) Any wash out of concrete found in tree protection zones shall be removed and disposed by the appropriate contractor immediately.

END OF SECTION