

**SECTION 32 01 90.1  
ROOT PINNING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Root Pinning
  - 1. WORK: Under these Items, the Contractor shall perform ROOT PINNING, in accordance with the plans, specifications, and as directed by the NYCHA Landscape Architect and the designated representative. Before any root pinning work can begin under this item, the Contractor shall notify the administrating Program Unit Representative a minimum of 48 hours in advance of any work on, or impacting, existing tree roots.

**1.02 RELATED REQUIREMENTS**

- A. For additional requirements, see General Conditions, Division 1, Section 01 56 39 Tree Protection and Section 01 50 00 Temporary Facilities and Controls.

**1.03 SUBMITTALS**

- A. See Section 01 33 00 – Submittal Procedures, for submittal procedures.
- B. Product Data: Provide manufacturer's specifications and descriptive literature, installation instructions, and maintenance information.
- C. Shop Drawings: Indicate plans for each unit or groups of units, elevations with model number, overall dimensions; construction, and anchorage details.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Steel Rebar shall be size No. 4, a minimum of four (4) feet in length, adequate for effective driving depth and meet the requirements of Section B, "Materials and Methods of Construction".
- B. Foam Pipe Insulation shall be a minimum of half (1/2") inch thick and to fit snugly around quarter (1/4") inch pipe.

**PART 3 EXECUTION**

**3.01 PREPARATION**

- A. METHOD:
  - 1. No roots shall be pinned except as directed by and in the presence of the NYCHA representative. Roots greater than 2"-2 1/2" in diameter shall not be pinned. Root Pinning may not be performed when the ground is frozen.
  - 2. Prior to beginning work, the area to be excavated shall be thoroughly wetted, 24 hours in advance, to minimize dust to the greatest extent possible.

**3.02 INSTALLATION**

- A. Special Techniques:
  - 1. All tree roots exposed by the pneumatic or hand excavation operation must be kept constantly moist with burlap covered with plastic sheeting and checked a minimum of two (2) times a day, once in the morning and once in the afternoon, for a maximum of forty-eight (48) hours, until backfill is complete as directed by the NYCHA designated representative. If directed, soaker hoses shall be installed to facilitate properly moist conditions.
  - 2. All soil surrounding the root to be pinned shall be removed cautiously either by hand or with a pneumatic device such as an Air-Spade® CGP System, as manufactured by Concept Engineering Group, Inc. Verona, PA, or approved equal. The Contractor shall provide a compressor unit for operating the pneumatic excavator rated at one hundred fifty standard cubic feet per minute (150 scfm) at ninety pounds per square foot gauge (90 psfg). All excavation shall be as minimal as possible in width and depth to obtain the necessary clearance to allow for the elevation of the root to be altered accordingly and per

the direction of the NYCHA Representative, thereby minimizing the impact on tree roots. Different nozzles may be used on the air spade to expedite the work or minimize the amount of airborne material. Where a pneumatic device is used, care shall be taken to avoid rocks being scattered and inadvertently damaging private or public property. In addition, operators must be equipped with proper protective equipment, in accordance with manufacturer's recommendations.

- a. BENDING: All steel rebar shall be bent cold. Only competent mechanics shall be employed for cutting and bending, and proper appliances shall be provided for such work. The reinforcement shall be bent to the shapes indicated as follows. Bends shall be made around a pin having a diameter not less than six times the minimum thickness of the bar, except that for bar larger than one inch the pin shall not be less than eight times the minimum thickness of the bar. Reinforcement shall be formed to the approximate diameter of the root.
- b. The foam pipe insulation shall be wrapped around each bar and positioned to prevent the steel rebar from directly contacting the root.
- c. Steel Rebar wrapped in pipe insulation shall be spaced not more than two (2) feet apart, perpendicular to the orientation of the root, as determined by the NYCHA designated representative, and driven into the sub grade to a depth that is adequate in permanently pinning the root to the altered elevation.

**END OF SECTION 32 01 90.1**