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| TO:<br><br>Final Plan Review Bureau<br><br><b>SUPERSEDED</b><br><b>BY EI 93-007 EFFECTIVE 11/18/93</b>   | <h2 style="text-align: center;">ENGINEERING INSTRUCTION</h2> <p style="text-align: center;">NEW YORK STATE DEPARTMENT OF TRANSPORTATION</p> SUBJECT: SECTION 611 - PLANTING<br><br>Subject Code: #7.27-1-611 |            |            |                       |
| Distribution: <table style="width: 100%; text-align: center;"> <tr> <td>30 Main Office</td> <td>32 Regions</td> <td>34 Special</td> </tr> </table>                       | 30 Main Office   | 32 Regions | 34 Special | Code: <u>EI 91-03</u> |
| 30 Main Office   | 32 Regions   | 34 Special |            |                       |
| APPROVED:<br><br><br>_____<br>David H. Fassler, Director, Landscape Architecture Bureau | Date: <u>3/1/91</u><br><br>Supersedes:   |            |            |                       |

This Engineering Instruction transmits revisions to Section 611 - Planting of the Standard Specifications, and supersedes Section 611 of the 1990 NYSDOT Standard Specifications.

Our present planting practices have been generally successful. However, this new specification should improve the health, vigor and survival rates of planted trees, shrubs, vines and groundcovers without changing project design schedules or increasing construction costs.

The new specification more clearly identifies the requirements and procedures for planting on Department projects, while giving designers the flexibility they have requested to adapt their projects to local conditions.

Also, the special expertise of the Department's Regional Landscape Architects is called upon for decisions that are inherently landscape architectural, botanical, horticultural or similarly specific.

Questions regarding this instruction or the specification may be directed to Mark Woods of the Landscape Architecture Bureau at (518) 457-4460.

This Engineering Instruction will become effective with the letting of June 20, 1991.

## SECTION 611 — PLANTING

**611-1 DESCRIPTION.** This work consists of furnishing, planting and caring for plants as specified in the contract documents. This work shall include all care of planting operations and establishment necessary to complete the work as specified.

### 611-2 MATERIALS

**611-2.01 Plants.** Trees, shrubs, vines, groundcovers and special plants shall be as specified under §713-06 and as further specified in the contract documents. The Contractor shall be responsible for furnishing the vendor with a copy of the appropriate contract documents containing the plant material specifications.

**611-2.02 Planting Materials.** Organic materials, fertilizer, mulch and materials for the protection of plants shall be as specified under §713, Landscape Development Materials and as further specified in the contract documents.

Water shall be as specified under §712-01, Water.

Planting soil shall be unamended existing soil excavated from the plant pit unless one of the following alternates is specified elsewhere in the contract documents.

- Alternate 1. Amended soil excavated from the plant pit.
- Alternate 2. §713-01, Topsoil.
- Alternate 3. §713-01, Topsoil thoroughly premixed with fertilizer and/or organic matter at the specified rates.

### 611-3 CONSTRUCTION

#### 611-3.01 General.

**A. Planting Season.** The planting season(s) shall be as specified in the contract documents. No planting shall be done when the soil is frozen or otherwise in an unsatisfactory condition for working as determined by the Engineer.

**B. Obstructions Below Ground.** The Contractor shall verify the locations of underground tanks, utilities and other nonmovable obstructions. Where nonmovable obstructions are encountered, the plant pits shall be relocated, as directed by the Regional Landscape Architect.

**C. Delivery.** The Contractor shall notify the Engineer at least two full working days before intended delivery of plants or planting materials to the site. The Engineer shall be furnished a legible copy of the certificates of inspection of plants as specified in §713-06 and a copy of the invoice for each shipment showing point of origin, sizes, quantities and kinds of materials supplied. Plants which fail to meet the specifications, as determined by the Regional Landscape Architect, will be rejected. All rejected plants shall be promptly removed from the project site.

**D. Storage.** All plants shall be properly protected from mechanical damage and drying out. Such protection shall include the time when the plants are in transit, being handled or in temporary storage. When bare root plants are not planted immediately upon receipt they shall be puddled and heeled in. The bundles of heeled in plants shall be opened and the plants shall be spaced separately. The roots of heeled in plants shall be covered with soil and watered. Balled plants shall have their earth balls protected by earth, mulch or straw, or they may be heeled in. All plants not planted immediately shall be watered as approved by the Regional Landscape Architect.

#### 611-3.02 Ground Preparation.

**A. Layout.** The locations for plants or the outline of areas to be planted shall be staked or marked out on the ground by the Contractor to the satisfaction of the Regional Landscape Architect before any plant pits or plant beds are dug.

**B. Undesirable Material.** When rock, construction debris or other undesirable material is encountered while digging, the material shall be removed to the depth and width necessary to obtain the specified plant pit diameter and depth, or the plant pit may be relocated as directed by the Regional Landscape Architect.

**C. Plant Pit Diameter.** The minimum plant pit diameter shall bear the following relationship to the diameter of the root spread or root balls of the plants to be planted in them, unless otherwise specified in the contract documents.

#### Root Spread/Root Ball Diameter

under 24"  
from 24" to 48"  
over 48"

#### Plant Pit Diameter

Twice the root spread or root ball diameter.  
Equal to the root spread or root ball diameter plus two feet.  
One and one half times the root spread or root ball diameter.

The sides of the plant pits shall be loose and friable at the time of planting.

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**D. Plant Pit Depth.** The depth of all plant pits shall allow the root balls to sit on undisturbed subgrade unless otherwise specified in the contract documents. Pit depth for bare root plants shall be as specified in the contract documents.

**E. Planting Beds.** Plants in planting beds shall either be planted in individual plant pits, or the entire planting bed shall be excavated and backfilled with planting soil as specified in the contract documents. Existing vegetation shall be removed from all planting beds as specified in the contract documents or as directed by the Regional Landscape Architect.

**F. Drainage.** Where an impervious layer of soil is encountered during the excavation of plant pits or beds, all such soil shall be removed to a depth as approved by the Engineer and the pits or beds shall be backfilled with acceptable planting soil.

**G. Disposal of Excess Soil.** Excess soil shall be removed immediately and disposed of in disposal areas designated in the contract documents or at an on-site or off-site location, consistent with law, rule or regulation, and as approved by the Engineer.

### 611-3.03 Setting Plants.

**A. General.** All plants shall be set plumb at such a level that they bear the same relation to the surface of the surrounding ground as they bore to the ground from which they were dug. Planting soil shall be carefully backfilled into plant pits in layers not to exceed 4 inches in depth, and shall be tamped to prevent voids and settling before additional planting soil is placed. Thorough watering shall accompany backfilling of planting soil unless otherwise approved. A saucer shall be formed around each plant pit as specified in the contract documents.

**B. Balled Plants.** Following placement in the plant pit, balled plants shall have all natural burlap cloth, ropes, wire baskets, twine, and nonbiodegradable woven and nonwoven fabrics completely removed from the upper one third (1/3) sides and top of the root ball to a maximum depth of 18 inches. There is no requirement to remove the fabric or basket from the bottom of the root ball.

**C. Container Grown Plants.** Container grown plants shall be removed from their containers. Roots which are matted or entangled shall be straightened or cut and removed. Encircling roots shall be cut in a vertical direction.

**D. Bare Root Plants.** Roots of bare root plants shall be properly spread out in a radial position and planting soil shall be carefully worked in among them. All dead, broken, frayed and twisted roots shall be cleanly cut off.

**E. Wrapping.** When wrapping is specified in the contract documents, the wrapping material shall be a single layer of burlap bandage or paper. The wrapping shall extend from the ground line to the height of the first branch, and be wound spirally upwards from the ground line, overlapping 1 and 1/2 inches. The wrapping shall be securely tied in place with biodegradable twine at 15 inch intervals, or by other means approved by the Regional Landscape Architect.

**F. Staking, Guying and Anchoring.** No tree shall be staked, guyed or anchored, unless otherwise specified in the contract documents. When staking is specified, stakes shall be placed in the plant pit prior to backfilling.

**G. Pruning.** Plants pruned before their arrival will be rejected unless such pruning is specified in the contract documents. Pruning at the time of planting shall be limited to the removal of dead, conflicting and broken branches; and to other pruning consistent with good horticultural practice unless otherwise specified in the contract documents or as directed by the Regional Landscape Architect.

**H. Mulching.** Where mulching is specified, it shall completely cover the area of the plant pit or planting bed to the depth specified in the contract documents. Mulch shall be placed at the time of planting.

**I. Fertilizing.** When specified, fertilizer shall be applied within plant saucers and/or plant beds.

**611-3.04 Restoration.** Areas disturbed by the planting operations shall be restored by disposing of excess soil, stones and rubbish such as twine, pruned limbs, tree wrap, containers, burlap and wire baskets as approved by the Engineer. Existing turf areas disturbed by planting operations shall be restored to a satisfactory condition which may include topsoil, regrading, fertilizing, seeding and mulching. All waste material generated as a result of the work shall be properly disposed of in accordance with law, rule or regulation, and in a manner approved by the Engineer.

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### 611-3.05 Care of Planting.

**A. General.** Care of planting shall begin immediately after each plant is planted and shall continue until the final acceptance of the contract and as required under §611-3.06, Period of Establishment. Care of planting shall consist of keeping the plants in a healthy growing condition by watering, weeding, cultivating, pruning, tightening of guys if staked, remulching, applying approved antidesiccants and pesticides, and by other operations as necessary.

**B. Care of Planting Work Schedule.** The Contractor shall prepare and submit a Care of Planting Work Schedule to the Engineer for approval. The schedule shall identify how and when all other work specified under §611-3.05, Care of Planting will be accomplished. Exceptions to the approved schedule shall be subject to advance written approval of the Engineer.

**C. Watering.** All plants shall be watered at the directed times and at the rates specified in the contract documents, or as ordered by the Engineer. Each watering shall provide not less than five gallons of water per plant pit or five gallons of water per square yard of planting bed. Payment for the furnishing and applying of water shall be as stated in §611-5, Basis of Payment.

**D. Weeding.** All plant pits and planting beds shall be maintained weed free by methods approved by the Regional Landscape Architect.

**E. Remulching.** All plant pits and planting beds shall be remulched as necessary to maintain the required depth specified in the contract documents.

**F. Pruning.** All dead, injured or diseased wood shall be removed in accordance with good horticulture practice and as approved by the Regional Landscape Architect.

**G. Remedial Measures.** In the event of the threat of serious damage from insect or diseases, the plants shall be treated by preventative or remedial measures according to good horticultural practice as approved or as directed by the Regional Landscape Architect.

**H. Anti-desiccants.** When specified in the contract documents, plants shall be sprayed with an anti-desiccant meeting the requirements of §713-08, Materials for the Protection of Plants. The anti-desiccant shall be applied according to the manufacturer's recommendations to thoroughly cover all above ground parts.

**I. Removal and Replacement.** At the conclusion of the essential portion of the planting work all plants shall be in a healthy, unimpaired and undamaged condition as determined by the Regional Landscape Architect. All plants that are dead, missing, or in an unhealthy or badly impaired condition, as determined by the Regional Landscape Architect, shall be removed and replaced with new, healthy plant material as specified. All planting to be completed or replaced shall be planted not later than the next succeeding planting season as specified in the contract documents.

### 611-3.06 Period of Establishment.

**A. General.** The Contractor shall be required to continue the work specified under §611-3.05, Care of Planting for a period of one year following the satisfactory completion of all of the planting on the contract as confirmed in writing by the Engineer, or for the duration of the contract, whichever is later. The Period of Establishment applies to all planting unless otherwise specified.

**B. Period of Establishment Work Schedule.** The Contractor shall prepare and submit a Period of Establishment Work Schedule to the Engineer. The schedule shall describe how all work specified under §611-3.06 A. General shall be accomplished. The schedule shall be approved by the Engineer prior to the beginning of the Period of Establishment.

**C. Contract Acceptance.** In the event the Contractor requests acceptance of the contract and the Period of Establishment is not yet complete, the State, if approved by the Commissioner, may pay over to the Contractor monies retained under provisions of Section 38 subdivision 7 of the Highway Law upon receipt of certified check or securities as are listed in subdivision 3 of section 139 of the State Finance Law, in the amount of at least double the value of the uncompleted work under Period of Establishment.

For the purpose of determinations for contract acceptance prior to completion of the work under "Period of Establishment," the value of the work required under "Period of Establishment," including necessary replacement, shall be considered as a sum equal to 10% of the price bid for the item of planting unless otherwise specified.

**D. Insurance.** When all work in the contract excepting §611, Planting, has been completed and accepted, the Contractor agrees to procure and maintain for the duration and purposes of any such work of establishment, and at the Contractor's own expense, insurance in accordance with the provisions of §107-06, Insurance.

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**E. Requirements.** At the conclusion of the Period of Establishment the Contractor shall remove all stakes, guy wires and tree wrappings unless otherwise approved. All plants in an unhealthy or badly impaired condition, as determined by the Regional Landscape Architect, shall be removed and replaced or removed and noted for replacement at the next succeeding planting season.

**F. Conclusion of the Period of Establishment.** These requirements shall not prevent the release of the retained monies as herein defined at the expiration of the Period of Establishment. However, a certified check or securities, as previously described, equal to at least double the value of any uncompleted work will be required. No work other than replacement will be required after the conclusion of the Period of Establishment.

**611-4 METHOD OF MEASUREMENT.** Planting will be measured as the number of plants of each kind, size or quality as set forth in the contract documents which are counted in place as having been completed and accepted.

**611-5 BASIS OF PAYMENT.** The unit price bid for each plant of each kind, size or quality, as set forth in the contract, which has been acceptably planted shall include the cost of all labor, equipment, materials and incidentals, including watering and planting soil to complete the work specified.

Furnishing water and watering plants as required under §611-3.05, Care Of Planting will be paid for under the pay item 615.0301 Watering Vegetation when this item is specified in the contract documents. No separate payment will be made for water used in the initial planting operation, as required in §611-3.03 A. No separate payment will be made for water used during the Period of Establishment unless otherwise specified in the contract documents.

Progress payments for work satisfactorily performed in the excavation and backfilling of plant pits and plant beds may be made in amounts not to exceed twenty percent (20%) of the unit price bid for the respective plants.

**Payment will be made under:**

| Item No. | Item                               | Pay Unit |
|----------|------------------------------------|----------|
| 611.01   | Planting — Major Deciduous Trees   | Each     |
| 611.02   | Planting — Minor Deciduous Trees   | Each     |
| 611.03   | Planting — Coniferous Trees        | Each     |
| 611.04   | Planting — Deciduous Shrubs        | Each     |
| 611.05   | Planting — Evergreen Shrubs        | Each     |
| 611.06   | Planting — Vines and Groundcovers  | Each     |
| 611.07   | Planting — Special Plant Materials | Each     |

Refer to the Contract Proposal for full item number and full description.