

To: SUPERSEDED BY EI 12-001 EFFECTIVE 9/6/12		New York State Department of Transportation ENGINEERING INSTRUCTION	EI 08-013
Title: REVISIONS TO STANDARD SPECIFICATIONS-PLANTING			
Distribution: ☒ Manufacturers (18) ☒ Consultants (34) ☒ Local Govt. (31) ☒ Contractors (39) ☒ Agencies (32)		Approved:  Daniel D'Angelo, PE Deputy Chief Engineer, Design 3/28/08 Date	

ADMINISTRATIVE INFORMATION:

- This Engineering Instruction (EI) is effective beginning with projects submitted for the letting of 09/04/08.
- This EI modifies EI 06-004.

PURPOSE:

This EI issues revised Section 610 *TURF AND WILDFLOWER ESTABLISHMENT*, Section 611 *PLANTING*, §713-07 *Rolled Erosion Control Products and Soil Stabilizers* and adds two new sections §713-09 *Mycorrhizal Fungi* and §713-10 *Moisture Retention Additive*.

TECHNICAL INFORMATION:

- Change §610 and §611 to allow for additional soil amendments to the planting soil, as well as revisions suggested by Construction.
- Slope requirements for §713-07 *Rolled Erosion Control Products and Soil Stabilizers* Class III, Type A & Type B were changed from 1:2 or flatter to 1:1 or flatter.
- §713-09 *Mycorrhizal Fungi* was added to the materials portion of our specification to be paid for under 610.0112 *Mycorrhizal Fungi*.
- §713-10 *Moisture Retention Additive* was added to the materials portion of our specification to be paid for under pay item 610.0113 *Moisture Retention Additive*.

IMPLEMENTATION:

The Design Quality Assurance Bureau (DQAB) will insert the attached shelf notes for Section 610, Section 611, §713-07 *Rolled Erosion Control Products and Soil Stabilizers*, §713-09 *Mycorrhizal Fungi* and §713-10 *Moisture Retention Additive* into contract proposals beginning with projects submitted for the letting of 09/04/08 containing pay items 209.2001, 209.2002, 610.0110, 610.0111, 610.0112, 610.0113, 610.0203, 610.03 and 610.04.

Revised Specifications: Sections 610 and 611 are being revised in their entirety. Subsection 713-07 is being revised.

New Specifications: Subsection 713-09 *Mycorrhizal Fungi* and subsection 713-10 *Moisture Retention Additive*.

New Item No.'s:

610.0110	Applying Fertilizer
610.0111	Applying Limestone
610.0112	Applying Mycorrhizal Fungi
610.0113	Applying Moisture Retention Additive

BACKGROUND:

- The change in §713-07 *Rolled Erosion Control Products and Soil Stabilizers* Class III, Type A & B is being made after a review of current research. Rolled Erosion Control Products that are acceptable for use as Class III can now be used on slopes 1:1 or flatter where before the acceptable slope was 1:2 or flatter.
- The addition of a new material requirement for Mycorrhizal Fungi is being added to address recent studies which deal with the dynamics of a natural soil system. The addition of mycorrhizal fungi to planting medium has benefits for both plants and turf incorporated in our projects by increasing root growth. Increased root growth results in improved phosphorous and calcium nutrient uptake. Quicker root growth establishment results in greater plant and turf survival rates, making plants and turf better able to withstand drought and other stresses.
- The addition of a new material to improve the moisture retention of the soil for stressed conditions will help reduce the problems of poorly structured soils. These additives applied at manufacturer's recommended rates have been proven to greatly improve the water available for plant growth which will increase the success of plant and turf establishment and reduce plant mortality.

CONTACT:

Direct questions regarding this EI to Gary Glath at 518/457-5286 or gglath@dot.state.ny.us.

Make the following changes to Section 610 of the Standard Specifications of May 4, 2006.

Replace SECTION 610 Planting in its entirety with:

SECTION 610 - TURF AND WILDFLOWER ESTABLISHMENT

610-1 DESCRIPTION. The work covered by this section includes work necessary to establish and care for turf and wildflowers.

610-1.01 Applying Soil Amendments. The work consists of furnishing and placing soil amendments as specified at the locations indicated in the contract documents or where directed by the Engineer.

610-1.02 Establishing Turf. The work consists of preparing ground surfaces for seeding; furnishing and installing fertilizer, seed, mulch, and mulch anchorage on areas indicated in the contract documents or where directed by the Engineer. The work also consists of producing a satisfactorily established turf and caring for the turf as specified.

610-1.03 Establishing Wildflowers. The work consists of preparing ground surfaces for seeding; furnishing and installing seed, mulch and mulch anchorage on areas indicated in the contract documents or where directed by the Engineer. The work shall consist of producing a satisfactory establishment of wildflowers and caring for wildflowers as specified.

610-2 MATERIALS

All materials used shall comply with the requirements specified in the following subsections of Section 700 *Materials and Manufacturing*.

Water	712-01
Topsoil	713-01
Limestone	713-02
Fertilizer	713-03
Seeds	713-04
Trees, shrubs and vines, groundcovers and special plants	713-06
Rolled Erosion Control Products and Soil Stabilizers	713-07
Materials for the Protection of Plants	713-08
Mycorrhizal Fungi	713-09
Moisture Retention Additive	713-10
Wood Fiber Mulch	713-11
Mulch Anchorage	713-12
Pesticides	713-13
Organic Material	713-15
Straw	713-19

Turf establishment materials shall be as follows:

Fertilizer	713-03 Type No. 3 10-6-4 (50% N-UF)	
Seeds	713-04 and as follows:	
Name	Variety	Wt. of Pure Live Seed Per m2
Red Fescue (<i>Festuca rubra</i>)	Commercial	6.0 g
Perennial Ryegrass (<i>Lolium perenne</i>)	Commercial	3.4 g
White Clover (<i>Trifolium repens</i>)	Commercial	
	Max. 25% hard seed	<u>0.6 g</u>
Total		10.0 g

610-3 CONSTRUCTION DETAILS

610-3.01 Incorporating Soil Amendments. Soil amendments, including fertilizer, limestone, mycorrhizal fungi, and/or moisture retention additive shall be incorporated as described in the contract documents. When mycorrhizal fungi are specified, it shall be applied in accordance with the manufacturer's recommendations. Amendments shall be evenly spread over the surface of turf or wildflower areas, applied within plant saucers or applied over the plant beds as appropriate, at the rates recommended by the manufacturer or as specified in the contract documents. The method of application shall ensure an even distribution. When hydraulic application is used, the minimum rate of water shall be 0.5 L/m^2 unless otherwise specified in the contract documents.

610-3.02 Establishing Turf

A. Rates. Application rates for turf establishment materials shall be specified in the contract documents. When no rates for establishing turf are specified in the contract documents, the following shall apply:

Fertilizer	-	90 g/ m ²
Seed	-	10 g pure live seed/m ²
Mulch	-	0.5 kg/m ²
Mulch Anchorage	-	Manufacturer's recommended rate

B. Limitations. The Contractor shall notify the Engineer at least 2 work days before the start of any seeding operation and shall not begin the work until the Engineer has given permission. When sodding and turf establishment are to be done in the same general areas, the sodding shall be done first, and equipment used during turf establishment shall not damage the sodded areas.

C. Inoculation of Leguminous Seeds. All seeds of leguminous plants requiring inoculation shall be inoculated prior to mixing or sowing unless otherwise specified or approved or unless accompanied by a certificate of preinoculation. When seeds requiring inoculation are to be sown dry, the inoculants shall be applied in accordance with its accompanying instructions and the seeds allowed too dry sufficiently for proper handling. Seeds shall be sown within thirty hours after this treatment. When seeds requiring inoculation are to be sown by water pressure, the inoculants may be added to the water and seed mixture, together with limestone and/or fertilizer as specified, providing the pH of the solution does not exceed 8.

D. Ground Preparation and Seeding. All turf establishment areas shall be approved by the Engineer prior to seeding. Areas to be seeded with turf seeds shall be maintained at approved grades. Irregularities that will hold water shall be eliminated as directed. Weed growth that may adversely affect germination or growth shall be removed or controlled prior to seeding. Limestone, fertilizer and seeds in the amounts specified shall be evenly distributed on the areas to be seeded. All mechanical equipment used for soil preparation for seeding shall be as approved. Equipment shall pass parallel to the contours unless otherwise approved except that crawler tractors shall pass at right angles to the contours.

Establishing turf shall be done using Method No. 1, unless Method No. 2 is specified. Regardless of the method used, the finished surface of any area that is seeded shall not be rougher, more uneven or have more or larger stones, clods, roots, or other foreign materials than the area it adjoins. In built up and residential areas hand raking will usually be necessary to produce the required smoothness and uniformity, particularly where grading and turf establishment is to be adjacent to lawns.

Method No. 1. Areas to be seeded shall be scarified sufficiently to break up the surface crust immediately before seeding except where, in the judgment of the Engineer, the ground is already loose and friable as immediately following grading. Where topsoil is not specified, all

loose stones and other objects over 50 mm in greatest dimension, or other sizes as specified, shall be removed and disposed of as approved. All embedded stones and other objects protruding more than 50 mm above the surface, or other heights specified, shall also be removed and disposed of as approved. Where topsoil is specified the maximum loose stone size shall be 50 mm or as otherwise specified under §613-2. Unless otherwise specified in the contract documents, only limestone and/or fertilizers may be mixed together with the seeds (including legume inoculants when required) immediately before sowing. Any method of sowing that does not injure the seeds in the process of spreading will be acceptable.

Method No. 2. Areas to be seeded shall be harrowed, disked, or otherwise completely pulverized. All stones and other undesirable material over 25 mm in greatest dimension or other sizes as specified shall be removed and disposed of as approved. Fertilizer and/or limestone as specified shall be uniformly distributed on the area to be seeded. Seeds shall be distributed uniformly by any approved method that does not injure the seeds in the process of spreading. Following distribution, seeds shall be incorporated into the soil to a depth not exceeding 5 mm by raking, rolling brush or chain harrowing, or any other approved method.

E. Mulching. Straw mulch: Straw mulch shall be spread uniformly in a continuous blanket of sufficient thickness to hide the soil from view, taking care not to over apply. Straw mulch may be spread by hand or by machinery. Straw mulch may not be spread before seeding turf nor later than 72 hours after seeding turf unless otherwise approved or directed. Anchorage is required unless otherwise specified in the contract documents. Straw mulch and mulch anchorage shall be applied separately from seeds unless otherwise specified in the Contract Documents.

Wood fiber mulch: Wood fiber mulch may only be used if seeding is performed during the periods specified or if otherwise approved. Wood fiber mulch shall be applied to the thickness recommended by the manufacturer or as approved in the field.

F. Liability. When any seeded area has failed for any reason to produce a satisfactorily established turf after a suitable period of time has elapsed, the Contractor shall repeat the work until a satisfactory growth of turf has been established at no additional expense to the State.

G. Care during Construction. The Contractor shall care for seeded turf areas until contract final acceptance. Care shall consist of providing protection against traffic and repairs to any seeded turf areas damaged by wind, water, fire, traffic or other causes. Damaged areas shall be repaired to re-establish the condition and grade of the area prior to seeding and shall then be refertilized, reseeded and remulched.

Method No. 1. The Contractor shall mow all turf establishment areas seeded under Method No. 1 that are on 1 on 3 or flatter slopes unless otherwise directed by the Engineer. Such turf areas shall be mowed to a height of 100 mm when growth reaches 150 mm and thereafter as directed by the Engineer.

Method No. 2. The Contractor shall mow all turf establishment areas seeded under Method No. 2 to a height of 75 mm after initial growth reaches 125 mm, and then once a week thereafter unless otherwise approved. Clippings from the first mowing shall be removed.

610-3.03 Establishing Wildflowers

A. Rates. Application rates for wildflower establishment materials shall be as specified in the contract documents.

B. Limitations. The Contractor shall notify the Engineer at least 2 work days before the start of any seeding operation and shall not begin the work until the Engineer has given permission.

C. Inoculation of Leguminous Seeds. The Contractor shall inoculate leguminous seeds in accordance with §610-3.02C. Inoculation of Leguminous Seeds.

D. Ground Preparation and Seeding. All wildflower establishment areas shall be approved by the Engineer prior to seeding. Areas to be seeded with wildflower seeds shall be maintained at approved grade. Irregularities that will hold water shall be eliminated. Weed growth that may adversely affect wildflower germination or growth shall be removed or controlled prior to seeding as specified. Seeds in the quantities specified shall be evenly distributed on the areas to be seeded. All mechanical equipment used for soil preparation or seeding shall pass parallel to the contours unless otherwise approved except that crawler tractors shall pass at right angles to the contours. Areas to be seeded shall be scarified sufficiently to break up the surface crust immediately before seeding except where the ground is already loose and friable as immediately following grading. All stones and other objects over 50 mm in greatest dimension or other sizes as specified shall be removed and disposed of as approved. Any method of sowing that does not injure the seeds in the process of spreading will be acceptable. The finished surface of any area that is seeded shall not be rougher, more uneven or have more or larger stones, clods, roots, or other foreign materials than the area it adjoins.

E. Mulching. When mulch is specified, it shall be spread uniformly in a continuous blanket taking care not to over apply. Mulch may be spread by hand or by machinery. Mulch shall not be spread before or later than 72 hours after seeding wildflowers. Anchorage is required unless otherwise specified in the contract documents. Seed, mulch and mulch anchorage shall be applied separately, unless otherwise specified.

F. Liability. When any seeded area has failed for any reason to produce a satisfactorily established growth of wildflowers after a suitable period of time, the Contractor shall reseed such areas until a satisfactorily established growth of wildflowers has been established at no additional expense to the State.

G. Care of Wildflowers During Construction. The Contractor shall care for the seeded wildflower areas until final acceptance of the contract or as required under §610-3.04. *Care of Wildflowers* shall consist of keeping the wildflowers in a healthy growing condition by watering, controlling weeds, and by any other necessary operations. Care shall also consist of providing protection against traffic by providing approved warning signs or barricades, and shall consist of repairs to any seeded wildflower area damaged by wind, water, fire, traffic or other cause. Damaged areas shall be repaired to re-establish the condition and grade of the area prior to seeding and shall be reseeded and remulched. The Contractor shall mow wildflower establishment areas once a year in the autumn after the seed heads have matured.

610-3.04 Period of Establishment for Wildflowers. The Period of Establishment for Wildflowers shall begin immediately following the satisfactory completion of all the wildflower seeding. The Contractor shall continue the work specified under §610-3.03 G. *Care of Wildflowers During Construction* for a period of one year or until the contract is complete, whichever is later.

The Department may issue contract final acceptance and allow the Contractor to complete the Period of Establishment in accordance with §109-10 *Uncompleted Work Agreements*. For the purpose of an Uncompleted Work Agreement, the value of the work required under "Period of Establishment", including necessary reseeding, shall be considered as a sum equal to 10% of the price bid for the item of Establishing Wildflower unless otherwise specified.

At the conclusion of the Period of Establishment the Contractor shall remove any trash or debris from the wildflower planting area. Areas that have failed to produce an established growth of wildflowers shall be reseeded in accordance with the contract documents. No work other than re-grading to establish condition of the area, reseeding and remulching will be required after the conclusion of the Period of Establishment for Wildflowers.

610-4 METHOD OF MEASUREMENT

610-4.01 Incorporating Soil Amendments. Incorporated soil amendments will be measured in kilograms of soil amendments applied, measured to the nearest whole kilogram.

610-4.02 Establishing Turf. Establishing turf will be measured as the number of square meters of surface area that have been satisfactorily seeded.

610-4.03 Establishing Wildflowers. Establishing wildflowers will be measured as the number of square meters of surface area that have been satisfactorily seeded.

610-5 BASIS OF PAYMENT

610-5.01 Applying Soil Amendments. The unit price bid per kilogram shall include the cost of all labor, equipment, materials and incidentals, including water necessary to complete the work as specified.

610-5.02 Establishing Turf. The unit price bid per square meter shall include the cost of all labor, equipment, materials and incidentals, including water necessary to complete the work as specified.

610-5.03 Establishing Wildflowers. The unit price bid per square meter shall include the cost of all labor, equipment, materials and incidentals, including water and watering necessary to complete the work as specified.

Payment will be made under:

Item No.	Item	Pay Unit
610.0110	Applying Fertilizer	Kilogram
610.0111	Applying Limestone	Kilogram
610.0112	Applying Mycorrhizal Fungi	Kilogram
610.0113	Applying Moisture Retention Additive	Kilogram
610.0203	Establishing Turf	Square Meter
610.03	Establishing Wildflowers	Square Meter
610.04	Compost	Cu.Meter

Make the following changes to Section 611 of the Standard Specifications of May 4, 2006.

Replace SECTION 611 Planting in its entirety with:

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

All materials used shall comply with the requirements specified in the following subsections of Section 700 *Materials and Manufacturing*.

Water	712-01
Topsoil	713-01
Fertilizer	713-03
Wood Chips	713-05
Trees, shrubs and vines, groundcovers and special plants	713-06
Materials for the Protection of Plants	713-08
Mycorrhizal fungi	713-09
Moisture Retention Additive	713-10
Wood Fiber Mulch	713-11
Pesticides	713-13
Organic Material	713-15

611-3 CONSTRUCTION

611-3.01 General.

- A. *Planting Season.*** The planting seasons 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.
- B. *Obstructions below Ground.*** The Contractor shall verify the locations of underground utility facilities and other nonmovable obstructions. Where nonmovable obstructions are encountered, the plant pits shall be relocated, as directed by the Engineer.
- C. *Delivery.*** The Contractor shall notify the Engineer at least two full work days before intended delivery of plants or planting materials, to the site. The Engineer shall be furnished legible copies of the certificates of inspection of plant materials and a copy of the invoice for each shipment showing point of origin, sizes, quantities, sizes, and kinds of materials supplied. Plants which fail to meet the specifications will be rejected.
- D. *Storage.*** All plants shall be properly protected from damage and drying out. Such protection shall include the time when the plants are in transit, being handled or in temporary storage. Bare root plants not planted immediately shall be puddled and heeled in by protecting the roots with earth, mulch or straw. The bundles of heeled in plants shall be opened and the plants shall be spaced separately. All plants not planted immediately shall be watered.

611-3.02 Ground Preparation

- A. *Layout.*** Locations for plants and outlines of areas to be planted shall be staked or marked out on the ground by the Contractor before any plant pits or plant beds are dug.

- B. Undesirable Material.** Any rock, construction debris or other undesirable materials encountered while digging 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 Engineer.
- C. Plant Pit Diameter.** Unless otherwise specified in the contract documents, 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:

TABLE 611-1 REQUIRED PLANT PIT DIAMETER	
Root Spread/Root Ball Diameter	Plant Pit Diameter
under 0.6 m	Twice the root spread or root ball diameter
from 0.6 m to 1.2 m	Equal to the root spread or root ball diam. plus 0.6 m
over 1.2 m	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.

- D. Plant Pit Depth.** The depth of all plant pits shall allow the root ball to sit on undisturbed subgrade at a depth that allows the upper-most root of the ball to be visible. Pit depth for bare root plants shall be as specified in the contract documents. Refer to Standard Sheet 611-1.
- 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.
- 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. Planting Soil.** Planting soil shall be unamended existing soil excavated from the plant pit unless one of the following alternates is specified in the contract documents.
- Alternative 1.* Amended existing soil excavated from the plant pit.
- Alternative 2.* Unamended approved topsoil.
- Alternative 3.* Amended approved topsoil thoroughly premixed with specified soil amendments at the specified rates.

Amendments as listed in §713 and specified shall be applied to the planting soil within the plant saucers or over the plant beds, unless otherwise specified in the contract documents.

611-3.03 Setting Plants

- A. General.** All plants shall be set plumb at such a level that their root flair is level or slightly higher than the surrounding elevation. Planting soil shall be carefully backfilled into plant pits in layers not to exceed 0.1 meter in depth, not placed over the top of the root ball, and shall be tamped to prevent voids and settling before additional planting soil is placed. Thorough watering shall accompany backfilling of planting soil. A saucer shall be formed around each plant pit as specified in the contract documents. Refer to Standard Sheet 611-1.

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 (a) sides and top of the root ball to a maximum depth of 0.5 meter. The fabric or basket on the bottom of the root ball need not be removed.

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. Plants in liners should have the liners cut vertically every 50 mm around the ball of the plants.

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 40 mm. The wrapping shall be securely tied in place with biodegradable twine at 0.4 meter intervals, or by other means approved by the Engineer.

F. Staking, Guying and Anchoring. Staking of plants shall be as specified. When staking is required, it shall be done according to the details on Standard Sheet 611-1, unless otherwise specified or approved in the field.

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 arboricultural practice.

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. Keep mulch away from the trunk of the plant.

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. No debris shall be buried in plant pits. Existing turf areas disturbed by planting operations shall be regraded, then topsoiled and seeded as approved in the field. The Contractor shall dispose of all waste material generated as a result of the work.

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. Each watering shall provide not less than 20 L of water per plant pit. 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 Engineer.

E. Remulching. All plant pits and planting beds shall be remulched as necessary to maintain the required depth.

F. Pruning. All dead, injured or diseased wood shall be removed in accordance with good horticulture practice.

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.

H. Antidesiccants. When specified in the contract documents, plants shall be sprayed with an antidesiccant meeting the requirements of §713-08 *Materials for the Protection of Plants*. The antidesiccant 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. All plants that are dead, missing, or in an unhealthy or badly impaired condition shall be removed and replaced with new, healthy plant material. All planting to be completed or replaced shall be planted not later than the next succeeding planting season.

611-3.06 Period of Establishment. The Contractor shall continue the work specified under §611-3.05 Care of Planting for a period of one year following the satisfactory completion of the planting, or for the duration of the contract, whichever is later. The Period of Establishment applies to all planting unless otherwise specified.

The Contractor shall prepare and submit a Period of Establishment Work Schedule to the Engineer describing when all work conducted during the Period of Establishment will be accomplished. The schedule shall be approved by the Engineer prior to the beginning of the Period of Establishment.

The Department may issue contract final acceptance and allow the Contractor to complete the Period of Establishment in accordance with §109-10 *Uncompleted Work Agreements*. For the purpose of an Uncompleted Work Agreement, the value of the work required under Period of Establishment, including necessary replacement, will be considered as a sum equal to 10% of the price bid for the item of planting.

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 shall be removed and replaced or removed and noted for replacement at the next succeeding planting season. 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 successfully planted.

611-5 BASIS OF PAYMENT. The unit price bid for each plant shall include the cost of all labor, materials and equipment including watering and planting soil to complete the work.

Furnishing water and watering plants as required under §611-3.05 Care Of Planting will be paid for under the pay item for 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. No separate payment will be made for water used during the Period of Establishment, unless otherwise stated 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
611.0101XY	Planting - Major Deciduous Trees	Each
611.0201XY	Planting - Minor Deciduous Trees	Each
611.0301XY	Planting - Coniferous Trees	Each
611.0401XY	Planting - Deciduous Shrubs	Each
611.0501XY	Planting - Evergreen Shrubs	Each
611.0601XY	Planting - Vines & Groundcovers	Each
611.0701XY	Planting - Special Plant Materials	Each

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

Make the following changes to §713-07 ROLLED EROSION CONTROL PRODUCTS AND SOIL STABILIZERS of the Standard Specifications of May 4, 2006 as modified by EI 06-004.

Replace §713-07 Class III (Permanent) Type A-D as follows:

Class III (Permanent Nondegradable synthetic [fibers, filaments, or nettings] which may be supplemented with degradable natural fiber components).

Type A. A TRM mat for use on slopes 1:1 or flatter or in channels. Products shall have the ability to protect soil from hydraulically induced shear stresses under bench scale conditions for at least 95 Pa at 13mm soil loss.

Type B. A TRM mat for use on slopes 1:1 or flatter or in channels. Products shall have the ability to protect soil from hydraulically induced shear stresses under bench scale conditions for at least 150 Pa at 13mm soil loss.

Type C. A TRM mat (which includes a composite) for slopes 1:1 or flatter or in channels. Products shall have the ability to protect soil from hydraulically induced shear stresses under bench scale conditions for at least 110 Pa at 13 mm soil loss.

Type D. A TRM mat (which includes a composite) for slopes 1:1 or flatter or in channels. Products shall have the ability to protect soil from hydraulically induced shear stresses under bench scale conditions for at least 150 Pa at 13 mm soil loss.

Make the following changes to vacant §713-09 of the Standard Specifications of May 4, 2006.

Replace §713-09 Vacant with:

713-09 MYCORRHIZAL FUNGI

SCOPE. This specification covers the materials requirements for mycorrhizal fungi.

MATERIALS. Mycorrhizal fungi shall be approved commercially available products.

PACKAGING. Mycorrhizal fungi shall be delivered in the manufacturer's standard containers. Containers shall include a label stating the name of the material, application rates, expiration date, the net weight of the contents, and the manufacturer's name.

BASIS OF ACCEPTANCE. The manufacturer's label or certification indicating compliance with these specifications shall be the basis of acceptance. The Engineer reserves the right to reject any material that has become caked or otherwise damaged. All manufacturers' labels shall have an expiration date. The date on the label shall be within the current year of application.
Make the following changes to vacant §713-10 of the Standard Specifications of May 4, 2006.

Replace §713-10 Vacant with:

713-10 Moisture Retention Additive

SCOPE. This specification covers the material requirements for moisture retention additive.

MATERIALS. Moisture retention additives shall be approved commercially available products.

PACKAGING. Moisture retention additives shall be delivered in the manufacturer's standard containers. Containers shall include a label stating the name of the material, application rates, expiration date, the net weight of the contents, and the manufacturer's name.

BASIS OF ACCEPTANCE. The manufacturer's label or certification indicating compliance with these specifications shall be the basis of acceptance.