2571
PLANT INSTALLATION AND ESTABLISHMENT

Revised 03/30/2009

2571.1 DESCRIPTION

This work consists of furnishing, planting and establishing trees, shrubs, vines, and perennials of the species, variety, grade, size, or age, and root category specified, at the locations designated in the Plan. It may include planting or transplanting plants furnished by the Department.

The Contractor shall comply with the current edition of the "Inspection and Contract Administration Manual for Mn/DOT Landscape Projects," published by the Mn/DOT Landscape Architecture Unit, as the measurable minimum and maximum criteria and standard for plant installation and establishments operations.

2571.2 MATERIALS

A Nursery Plant Stock……..……3861

Plants of the species specified shall be furnished in the variety, grade, and size, or age indicated.

A1 Investigations and Supply of Planting Stock and Materials

By submitting a Proposal and accepting award of the Contract, in accordance with 1205 (Examination of Plans, Specifications, Special Provisions, and Site of Work), the Contractor assures familiarity with the Project site and Contract documents, commitments from suppliers, and delivery of the plant stock and materials required to complete the Contract.

A2 Plant Stock and Materials Documentation

The required documentation shall verify that the plants are in conformance with the Project requirements.

(a) At or prior to the Preconstruction Conference, the Contractor shall furnish the Engineer with a Mn/DOT preliminary Certificate of Compliance for Plant Stock, Landscape Materials, and Equipment.

(b) At least one week prior to plant stock delivery to the Project, the Contractor shall furnish the Engineer with:

1) A copy of a valid nursery stock (dealer or grower) certificate registered with the Minnesota Department of Agriculture and/or a current nursery certificate/license from a state or provincial Department of Agriculture for each plant stock supplier.
2) A copy of the most recent Certificate of Nursery Inspection for each plant stock supplier.
3) Documentation certifying that all plant material shipped from out-of-state nursery vendors subject to state and federal quarantines (including but not limited to Emerald Ash Borers, Gypsy Moths and Japanese Beetles) is free from currently regulated pests. To determine if Minnesota vendors are subject to quarantines, call the MDA Supervisor of Nursery Inspection and Export Certification at 651-201-6388.
4) An updated Certificate of Compliance that is signed by the Contractor's authorized representative.

(c) Upon plant stock and materials delivery to the Project, the Contractor shall furnish the Engineer with:

1) Bills of lading or shipping documents for all plant stock and landscape materials delivered to the Project.
2) An updated and signed Certificate of Compliance, if necessary, to reflect any further deviations from Project requirements.

(d) As a condition for authorization of payments, the Contractor shall furnish the Engineer with vendor invoices or billing statements for all plant stock and materials used on the Project.

Work performed with plant stock, materials, and equipment that has been misrepresented in the documentation will be considered unauthorized work. If required documentation is not supplied as specified, subsequent work may be unauthorized and Mn/DOT may assess a daily charge of $200.00, on a Calendar Day basis, until the Contractor is in compliance.

A3 Substitutions

Substitutions may be allowed in accordance with 1605 (Substitute Materials). Before requesting substitutions, the Contractor shall provide written documentation that specified plants are not available (wholly or partially in sufficient quantities to meet Contract requirements) from the individual suppliers on the Partial List of Nursery Dealers and Growers in the most current "Inspection and Contract Administration Manual for Mn/DOT Landscape Projects." The Engineer, in consultation with the project designer, may authorize specific substitute plants or may extend the Contract time to ensure availability of the specified plants. The general requirements for substitutions will be equal to or better than the initially specified materials.

B Department Furnished Stock and Transplant Stock

Department furnished stock and transplant stock shall be obtained from sources designated in the Plan or Special Provisions.

C Incidental Materials and Work

Materials and work (whether specified, non-specified, replacement, or miscellaneous) that is considered incidental to payment for the individual plant installation pay items and for which no direct payment is made.

C1 Specified Incidental Materials and Work

The Contractor shall supply, install, and maintain specified incidental materials as required for plant installation and establishment in accordance with the Special Provisions, Plan and Standard Planting Details.

C2 Non-specified Incidental Materials and Work

The Contractor may supply, install, and maintain non-specified incidental materials for plant installation and establishment success in accordance with product labeling, manufacturer’s instructions, and all applicable laws, regulations and ordinances.

C3 Replacement Materials and Work

Replacements consist of materials and work required in replacing unacceptable or missing plants, materials and incidental items in accordance with the Special Provisions, Plan and Standard Planting Details. Replacement materials and work shall be equal to or better than the initially specified materials and work.

C4 Miscellaneous Incidental Materials, Equipment and Work

Miscellaneous incidental materials, equipment, and work include mobilization, traffic control, protection and restoration of vegetation and property, layout and staking, soil cultivation, temporary erosion control, mowing, and application of herbicides, insecticides, fungicides, water and anything else necessary to install, maintain and establish the plants as specified and in a healthy, vigorous, and weed-free condition.

2571.3 CONSTRUCTION REQUIREMENTS

A General

A1 Landscape Specialist

A Landscape Specialist, "Certified" by Mn/DOT, shall be on the Project site at all times to perform or directly supervise plant installation and establishment work. "Certified Landscape Specialist" documentation shall be supplied at or prior to the Preconstruction Conference. The "Certification" is obtained by completing a 1-day Mn/DOT Landscape Project Inspection and Administration training class and passing a written test administered by the Mn/DOT Landscape Architecture and Forestry Units. Full certification is valid for a period of 3 years and provisional certification may be obtained for a period of 1 year by passing a test without completion of a training class.

A2 Notices by Contractor

The Contractor shall notify the Engineer at least 3 days prior to any planned deliveries of initial and replacement planting stock to the Project site to allow for inspection scheduling. The Contractor shall notify the Engineer at least 24 hours in advance of beginning or changing any distinct operations. The Contractor's notice must include the Project number, Engineer's name, notification date, intended dates and times for the operation(s), and the approximate location(s) where work is intended to begin. The Contractor shall provide notifications in writing by confirmable e-mail or facsimile transmission.

A3 Unauthorized Work and Penalties for Non-compliant Operations

Work performed without required and acceptable documentation and notifications, without supervision by a "Certified Landscape Specialist", without conducting required and acceptable competency tests, or in conflict with the working hours of 1803 (PROSECUTION OF WORK) will be considered as unauthorized work. In the case of non-compliant operations, Mn/DOT may assess a daily charge of $200.00, on a Calendar Day basis, until the Contractor is in compliance.

A4 Required Equipment

The Contractor shall provide equipment conforming to 1805 (Methods and Equipment) and shall have the following available on the Project at all times:

(a) At least one portable compaction tester capable of measuring compaction in the soil to a minimum depth of 450 mm (**18 inches**).
(b) At least one soil recovery probe for assessment of soil moisture conditions.
(c) At least one tree caliper with measurement readings in inches.

B Preconstruction Work

Preconstruction Work involves:

1) Attending a Preconstruction Conference
2) Submitting all required preconstruction documentation.
3) Mobilizing for work on the site including the movement of equipment and supplies to the Project.
4) Protecting existing vegetation, resources, and property in accordance with the Plan, Special Provisions, and 1712 (Protection and Restoration of Property), 2031 (Field Office and Laboratory), 2557 (Fencing), and 2572 (Protection and Restoration of Vegetation).

C Staking Planting Holes and Beds

The planting locations and layouts shown in the Plan are approximate. The Contractor shall stake the exact locations and layouts for the Engineer's approval. To remedy unanticipated localized problems and seasonal conditions that may hinder plant establishment, the Contractor may request the Engineer's approval to relocate

plantings, to make plant substitutions, or to modify soil or drainage characteristics in accordance with the Standard Planting Details and options shown in the Plan.

The Contractor shall locate plantings so that:

(a) A minimum clear sight distance of 360 m (**1200 feet**) exists in front of all traffic signs and extends 15 m (**50 feet**) beyond the signs.

(b) Trees remain outside of the safety clear zones and safety sight corners and lines shown in the Plan.

D Preparing Planting Holes and Planting Beds

The Contractor shall not work in planting hole and bed areas when soil moisture is greater than field capacity to prevent site compaction and damage.

D1 Utilities

The Contractor shall conform to 1507 (Utility Property and Service) before cultivating soil or excavating holes on the Project. The Contractor may request the Engineer's approval to relocate plantings to avoid unanticipated conflicts with utilities.

D2 Weed Control and Soil Cultivation

Herbicide application may begin in spring or fall and shall be applied to actively growing vegetation. Before cultivating individual planting hole and bed areas, the Contractor shall kill all turf and weed growth within the limits of all planting areas that will receive mulch in accordance with the following steps:

Step 1. Mow existing vegetation to no less than 75 mm (**3 inches**) at least one week prior to any herbicide spraying. Remove the cuttings. The vegetation shall be allowed to re-grow to a height of at least 100 mm (**4 inches**) and no more than 200 mm (**8 inches**) prior to applying the herbicide.

Step 2. At least 3 days prior to herbicide application, submit labels of all intended herbicides and a copy of a valid MN Pesticide Applicator License (Categories A & J are required) to the Engineer.

Step 3. Spray and kill all turf and weeds (top growth and roots), within designated areas only, using a non-selective, non-residual post emergence herbicide containing 41% glyphosate as the active ingredient. Personnel licensed by the Minnesota Department of Agriculture and experienced in the use of chemical pesticides shall perform the work in accordance with the manufacturer's instructions and recommendations. The herbicide shall be applied to dry foliage on actively growing vegetation. The application shall be made in August or early September preceding a specified fall or spring Plant Installation Period (PIP), or in late April or early May if August or September application is not possible for the spring PIPs that are typically specified. If precipitation occurs within 6 hours after herbicide application, the Contractor may need to re-apply herbicide.

Step 4. Prior to proceeding with soil cultivation work and to the satisfaction of the Engineer, the Contractor shall schedule and perform a "Competency Test". A satisfactory "Competency Test" must demonstrate acceptable soil cultivation , incorporation of soil additives, compaction levels, and soil drainage in one planting bed area and one individual tree planting area.

Step 5. Prior to placing specified soil additives, deep cultivate the planting hole and bed areas by thoroughly loosening the soil to a minimum depth of 300 mm (**12 inches**) and a compaction level of not more than 1400 kPa (**200 psi**) to this depth, as measured from the finished grade elevation of the soil. Use of a spading machine shall be required to uniformly de-compact, loosen, and cultivate roadside planting soils to the required thresholds without causing differential zones of hardpan and excessively compacted soil. The Engineer may approve other equipment if requested by the Contractor to address site constraints. Planting hole cultivation will not be required for machine moved tree transplanting (hydraulic spade-type) other than loosening the soil outside the soil ball perimeter in accordance with the Standard Planting Details in the Plan.

Step 6. Unless otherwise specified, add 100 mm (**4 inches**) of Grade 2 compost, in accordance with 3890 (Compost) and other specified soil additives, over the cultivated planting hole and bed areas and

thoroughly incorporate it to a minimum depth of 300 mm (**12 inches**) as measured from the finished grade elevation of the soil.

Step 7. Use a compaction tester to ensure that compaction, in the planting hole and bed areas, does not exceed 1400 kPa (**200 psi**) to a minimum depth of 400 mm (16 inches). If it becomes evident that the Contractor's operations have resulted in zones of hardpan or excessively compacted soil, the Contractor shall repeat the deep cultivation step or shall de-compact the subsoil in accordance with 2105.3G (Finishing Operations, Compaction Correction) and specific to requirements for turf establishment areas. This work shall be provided at no expense to the Department.

Step 8. The Contractor shall be responsible for ensuring adequate drainage in the planting hole and bed areas. When the Contractor has reason to suspect a drainage problem, they shall perform a percolation test by filling a 400 mm (**16"**) deep planting hole with water and measuring the time it takes for the water to drain from the hole. Adequate drainage will be considered equal to or greater than a percolation rate of 12 mm (½") per hour. In the case of inadequate drainage, the Contractor shall be responsible for requesting approval from the Engineer to either relocate or delete affected planting locations or to proceed with Extra Work by using one or a combination of the Planting Details for Poorly Drained Soils as shown in the Plan.

Step 9. Temporary erosion control measures shall be applied in accordance with the NPDES permit, SWPPP notes, and 2573 (Storm Water Management). Type 6 wood chip mulch may be used at a depth of no more than 25 mm (1 inch) for temporary erosion control in prepared planting bed areas.

D3 Wet Soils, Rock, and Debris

If excessively wet soils, bedrock, or excessive quantities of boulders and construction debris are encountered, the Contractor may request the Engineer's approval to relocate or delete plantings or to modify soil or drainage characteristics in accordance with the alternative options in the Standard Planting Details shown in the Plan.

E Delivery and Storage of Plants

The Engineer will provide for inspection and acceptance of plant stock delivered to the Project in accordance with the "Inspection and Contract Administration Manual for Mn/DOT Landscape Projects" and 3861 (Plant Stock) prior to installation.

Plant stock shall be installed on the day of delivery to the Project site unless temporary storage methods are employed. Prior to being installed, the roots of all plants shall be kept completely covered with a moisture-holding material (wood chips, straw, sawdust, moss, or soil) that is kept thoroughly and continuously moist and protect from drying winds, direct sunlight, excessive heat, freezing, low humidity, inadequate ventilation, and animal or human harm.. Plants with damage, that has occurred or has been discovered during temporary storage, will become unacceptable. Plants shall not remain stored from one planting season to the next.

E1 Pruning - Top Growth and Roots

Immediately prior to planting, the Contractor shall prune, as necessary, the roots of bare root plants (except seedlings) and the top growth of deciduous plants. Broken or badly bruised roots and dry root tips shall be cut back to sound, healthy tissue. Pruning shall be employed to remove dead, rubbing, damaged, diseased and suckering branches and to improve plant symmetry, structure, and vigor. Coniferous trees and shrubs shall be pruned only to the extent of removing damaged growth or a competing leader.

The Contractor shall use good horticultural practices in accordance with the "Inspection and Contract Administration Manual for Mn/DOT Landscape Projects" and the Standard Planting Details in the Plan.

The Contractor shall not prune oak trees during the oak wilt season (April, May, June, and July) to prevent the spread of oak wilt disease. Any accidental cuts or wounds to oaks shall be immediately treated with a wound dressing in accordance with the Standard Planting Details in the Plan. The Contractor shall have wound dressing material on the Project at all times during the oak wilt season.

E2 Buried Root Flares

Container grown and balled and burlapped plant stock will be considered unacceptable if furnished with more than 100 mm (**4 inches**) of soil depth above the root flare. Plants furnished with 100 mm (**4 inches**) or less excess soil above the root flare may be acceptable if the excess soil can be removed without damaging the root system of the plants.

E3 Excessive Roots

Reject containerized or balled and burlapped plants with roots extending **4 inches** or more beyond the container or burlap.

F Installation of Plants

F1 General

(a) Prior to proceeding with plant installation work and to the satisfaction of the Engineer, the Contractor shall schedule and perform a "Competency Test" demonstrating acceptable plant installation methods (in accordance with the Plan and Standard Planting Details) for each plant pay item and root category applicable to the Project. The test shall include handling plants, digging holes and beds, installing plants, initial watering, installing applicable protection materials, and mulching.

(b) Prior to digging planting holes, the Contractor shall rake temporary erosion control wood chip mulch off all prepared planting areas to prevent wood chip contamination of the planting soil in the holes. Wood chip mulch, used as temporary erosion control, may be re-spread around plants in up to a 25 mm (1 inch) depth following plant installation if newly provided and acceptable Type 6 mulch is applied over the top to the depth specified in the Standard Planting Details in the Plan.

(c) The Contractor shall dig all planting holes to the configuration and minimum dimensions shown in the Standard Planting Details in the Plan but shall not work in planting holes and beds when soil moisture is greater than field capacity.

(d) The Contractor shall be responsible for ensuring adequate drainage in the planting hole and bed areas. When the Contractor has reason to suspect a drainage problem, they shall perform a percolation test by filling a 400 mm (**16"**) deep planting hole with water and measuring the time it takes for the water to drain from the hole. Adequate drainage will be considered equal to or greater than a percolation rate of 12 mm (½") per hour. In the case of inadequate drainage, the Contractor shall be responsible for requesting approval from the Engineer to either relocate or delete affected planting locations or to proceed with Extra Work by using one or a combination of the Planting Details for Poorly Drained Soils as shown in the Plan.

F2 Individual Plant Stock Types and Installation Requirements

The Contractor shall install plants in conformance with the steps and requirements shown in the Standard Planting Details in the Plan and specific to each individual Plant Stock type.

G Watering

At all times during the Plant Installation Period, the Contractor shall have sufficient watering equipment and forces available to completely water all plants as often as necessary to maintain adequate but not excessive soil moisture in the root zones.

Within 2 hours of installation, each plant’s backfill soil will be thoroughly saturated with water. After settling, the Contractor will provide additional backfill as needed to fill in the voids.

H Mulch

Planting bed soils shall be fine graded and leveled with hand tools prior to placing mulch. Mulch material shall be placed as shown in the Standard Planting Detail in the Plan no later than seven days after plant installation. Placement of mulch that is contaminated with soil or other materials and inconsistent with the requirements of 3882 (Mulch Materials) will be considered unacceptable and shall be removed from the Project.

I Protection of Installed Trees

The Contractor shall use protective materials to better ensure healthy growth and survival of installed trees.

I1 Staking and Guying

(a) Unless staking and guying is required in the Plan, the Contractor shall only stake and guy trees when necessary to maintain the trees in a plumb condition. Circumstances that may warrant staking and guying include excessive soil moisture, light-textured soil, steep slopes, exposure to excessive wind, and the likelihood of vandalism. Staking and guying shall be installed in accordance with the Standard Planting Details in the Plan.

(b) The Contractor shall remove all staking and guying within 1 year of initial installation.

I2 Rodent Protection

The Contractor shall place rodent protection around all deciduous, pine and larch trees in accordance with the Standard Planting Details in the Plan unless specified otherwise.

I3 Tree Painting

The Contractor shall paint trees in accordance with the Standard Planting Details in the Plan.

I4 Seedling Tree Shelters

The Contractor shall install seedling tree shelters in accordance with the Plan and Standard Planting Details.

J Cleanup and Restoration Work

Cleanup and restoration work shall be accomplished on an ongoing basis and as the final step of the initial planting operations. The Contractor shall:

(1) Remove all excess materials and debris from the Project.

(2) Repair turf in all disturbed areas or with seed mixes as specified in the Plan or to match in place turf.

- a) Immediately prior to sowing seed or laying sod, prepare soil as specified in 2575.3B (Soil Preparations). Use a compaction tester to verify soil compaction does not exceed 1400 kPa (**200 psi**) to a minimum depth of 300 mm (**12 inches**). If the Contractor's operations create a hardpan or excessively compacted soil, the Contractor shall conduct subsoiling operations in accordance with 2105.3G (Finishing Operations, Compaction Correction) to reduce the compaction. This work shall be provided at no expense to the Department.
- b) Uniformly broadcast a Type 4 Natural Base fertilizer (3881.2B4) at a rate so Nitrogen is applied at a rate of 43 pounds per acre.
- c) Lay sod or uniformly broadcast seed at 1.5 times the rate specified in Table 2575-1, Seed Mixture Application Rates. Seed shall be in accordance with the requirements of 3876 (Seed) and seeding shall occur in accordance with Table 2575-2, Season of Planting.
- d) Rake and firm the seeded areas to ensure seed/soil contact.
- e) Broadcast or disc anchor Type 1 mulch in all seeded areas.

(3) Install erosion control measures as necessary to prevent erosion.

K Plant Establishment Period

K1 Establishment Period

A Plant Establishment Period (PEP), of at least 2 calendar years, begins on the date on which all of the initial planting operations on the Project have been satisfactorily completed and continues until final acceptance of the Project, unless specified otherwise.

K2 Establishment Work

The Contractor shall keep plants in a healthy growing condition, using good horticultural practices, continuously throughout the establishment period and shall submit Mn/DOT Landscape Contractor Scouting reports in accordance with K2a(1). Plant establishment work shall be performed regularly throughout the growing seasons (April through October) and as necessary during the dormant seasons (November through March). The Engineer may use random inspection throughout the Plant Establishment Period to verify compliance. If plants are not maintained as required and/or the reports are not submitted as required, the Contractor will be considered non-compliant.

The Engineer may assess a daily charge of $200.00 for non-compliance, on a calendar day basis, until the Contractor achieves compliance.

K2a All Plants

In plant establishment work, the Contractor shall:

(1) Scout to assess the condition of the plants and the planting site and any factors that may influence a plant's health, vigor, and establishment success. The Contractor shall scout these conditions at least every two weeks during the growing season and at least every month during the dormant season.

(2) The Contractor shall submit a written scouting report to the Engineer, via e-mail, by the 1st and 15th of each month during the growing season (April through October) and by the 1st of each month during the dormant season (November through March). The report frequency and content will be used by the Engineer to assess plant establishment compliance. The report shall include the Project number; Engineer's name; name of Contractor's responsible scout or representative; date(s) any work was performed; work location(s); work completed; prevailing weather conditions; soil moisture assessments; insect, animal, vehicular, weather or other damage; disease problems; treatment recommendations and assessment of overall plant conditions including weed competition and control. The report may include scanned copies of the Plan sheets with the Contractor's notes and/or copies of the report form found in the "Inspection and Contract Administration Manual for Mn/DOT Landscape Projects".

(3) Maintain adequate (but not excessive) soil moisture in conformance with 2571.3G and watering guidelines shown in the Plan's Standard Planting Details.

(4) Repair, adjust, or replace staking and guying, mulch material, planting soil, rodent protection, seedling tree shelters, tree paint, and other incidental items in conformance with the Plan.

(5) Maintain healthy, vigorous plants free from harmful insects, fungus, and disease.

(6) Remove dead, dying, and unsightly plants. Furnish and install replacement plants in accordance with 2571.2K2b

(7) Maintain plants in a plumb condition at the appropriate planting depth.

(8) Maintain all planting areas in a weed-free condition.

(a) Remove all weeds (top growth and roots) within the mulch limits by hand pulling (pre-watering is advised). Ensure weeding operations do not contaminate the mulch or project with weed seed, weed-laden soil or propagating weed parts. Remove all State and County-regulated noxious weeds to at least 900 mm (3 feet) beyond the mulch limits.

Remove all weed parts or weed-laden materials from the Project in such a manner as to avoid the spread of weed infestations.

(b) Spray application of chemicals for weed control in the mulched planting areas will not be permitted during the plant establishment period. A non-selective, non-residual post emergence herbicide containing 41 percent glyphosate, as the active ingredient, may be applied with a surfactant on a spot treatment basis with a brush or wick applicator. A broad-spectrum dichlobenil based granular (pre-emergent) herbicide may also be applied, in conformance with product labeling and manufacturer's recommendations, to try and further residual weed control.

(c) Weed whipping and weed clipping will not be accepted as weed control.

(d) Mow turf bands around and to at least 900 mm (**3 feet**) beyond the mulch limits and to a height no shorter than 100 mm (**4 inches**) whenever turf height exceeds 230 mm (**9 inches**) adjacent to the mulched planting areas.

(e) Mow all areas of turf that are installed as part of the Project requirements when the growth exceeds a height of 500 mm (**18 inches**). Mow to a height of 150-300 mm (**6 -12 inches**). It is anticipated that mowing may be necessary as early as June and as late as September. The Contractor shall control State and County-listed noxious weeds at all times.

(9) Prune to remove dead, rubbing, damaged or diseased branches, unwanted suckers, and to improve plant form and structure.

(10) Prevent or repair rutting and any other damage that may lead to soil erosion and weed infestation.

(11) Perform plant establishment operations consistent with proper plant care and horticultural practices.

(12) Remove all excess material, obsolete temporary erosion control devices, and debris from the Project.

K2b Replacement Requirements

Within the first year of the 2-year plant establishment period, the Contractor is responsible for determining which plants need to be replaced based upon compliance with Project requirements. The Contractor shall conduct any plant replacement operations during the month of May within the first year of the plant establishment period. At least one week prior to anticipated plant replacements, the Contractor shall submit a summary report of proposed plant replacements to the Engineer. The report shall include, by attachment, copies of plan sheets with the proposed replacement quantities and locations clearly identified and a Mn/DOT Certificate of Compliance for all Plant Stock, Landscape Materials, and Equipment. The Contractor shall also clearly mark the plants to be replaced with brightly colored paint in the field.

The Contractor shall, at no extra expense to the Department replace dead, defective, or missing plants and all incidental materials in accordance with initial installation requirements, including those lost due to accidents, vandalism, theft, rodent damage, damage caused by Contractor, or as ordered by the Engineer. Replacement plants and incidental materials shall be equal to or better than the initially specified material.

When less than a full year remains in the plant establishment period, the Contractor shall not replace plants unless the plant establishment period is extended by a Supplemental Agreement or Change Order to provide for at least one full year of establishment care.

L Acceptance of Work

For acceptance at full payment, each plant shall meet all specified requirements, including the criteria listed in the current edition of the "Inspection and Contract Administration Manual for Mn/DOT Landscape Projects".

L1 Acceptance of Preconstruction Work

The Engineer will accept the preconstruction work after the Contractor has: secured commitments for required materials (Mn/DOT Certificate of Compliance for Plant Stock, Landscape Materials, and Equipment),

participated in a Preconstruction Conference, obtained the Engineer's approval for the progress schedule, moved equipment and supplies to the Project site, and provided for protection of existing plants if necessary.

L2 Acceptance of Preparation of Planting Holes and Beds

The Engineer will accept the preparation of planting holes and beds after the Contractor has satisfactorily completed a competency test and all other specified staking, initial weed control, soil cultivation with incorporation of additives, and temporary erosion control work.

L3 Acceptance of Initial Planting Operation

The Engineer will provisionally accept initial planting operations based upon 1) satisfactorily completed competency test, 2) installation of all individual plants, 3) all incidental material and work items (initial watering, tree protection materials, mulching, etc.) required as part of the initial planting operation.

L4 Final Acceptance

(a) As a condition for terminating the plant establishment period and conducting the final inspection, the Engineer may require the Contractor to bring the plant establishment work into compliance.

On or about the date on which the plant establishment period is terminated, the Engineer will make a final inspection of the Project.

The Engineer will make a determination as to which plants will be accepted for payment at the Contract unit prices, at a reduced payment, or at no payment.

Upon final acceptance, the Contractor will not be required to provide any further care for the plantings.

(b) Final acceptance will be made upon completion of the 2 year plant establishment period and a final inspection of the completed Project.

2571.4 METHOD OF MEASUREMENT

All plants will be measured separately by the number of acceptable plants for each bid item as listed in the Payment Schedule.

A Payment Schedule

Payment for plant installation and establishment will be made on the basis of the following schedule:

Item No.	Item	Unit
2571.501	Coniferous tree (size & root category)……	tree
2571.502	Deciduous tree (size & root category)……	tree
2571.503	Ornamental tree (size & root category)……	tree
2571.504	Coniferous shrub (size & root category)……	shrub
2571.505	Deciduous shrub (size & root category)……	shrub
2571.506	Vine (age or size & root category)……	vine
2571.507	Perennial (age or size & root category) ……	plant
2571.541	Transplant tree (spade size (1))……	tree
2571.544	Transplant shrub……	shrub
2571.546	Transplant vine……	vine
2571.547	Transplant perennial……	plant

NOTE: State Root Category: -Seedling, -Bare Root, -Machine Moved - Container Grown - Balled & Burlapped
(1) Spade size 1.1 m (42 inch), 1.5 m (60 inch), 1.9 m (78 inch), 2.1 m (85 inch), 2.3 m (90 inch).

2571.5 BASIS OF PAYMENT

Payment for plant installation and establishment, at a percentage of the Contract price per item unit of measure, will be compensation for all costs relating to furnishing, installing, and maintaining, the required plants and associated incidental materials as specified and shown in the Plan.

If the Engineer requires additional materials and work beyond that specified or shown in the Contract, the Contractor will receive compensation for the additional materials and work as Extra Work.

A Initial Payment

Initial payment of up to but not exceeding 70 percent of the Contract unit price will be paid in partial payment amounts for satisfactory completion of the following work:

A1 Preconstruction Work

Up to but not exceeding 10 percent of the Contract amount for the plants to be planted.

A2 Preparation of Planting Holes and Beds

Up to but not exceeding 15 percent of the Contract amount for the plants to be planted.

A3 Initial Planting Operation

Up to but not exceeding 45 percent of the Contract amount for the plants planted.

B Interim Payment

At the end of the first calendar year of the plant establishment period, and upon assessment of the Contractor's work and satisfactory compliance with the plant establishment requirements, the Engineer may authorize up to, but not exceeding, 15 percent of the Contract price, per item unit of measure, as an interim partial payment for the plants planted. The Engineer will not authorize an interim partial payment if the Contractor has not maintained satisfactory compliance with the plant establishment requirements.

C Final Payment

Final payment will be made after final inspection and final acceptance of the completed Project at the end of the plant establishment period. Final payment may involve full payment, reduced payment, or no payment for the individual plants.

The amount of the initial and interim payments will be deducted from the final payment to the Contractor.

Any percentage of initial and interim payment that is withheld may continue to be withheld from the final payment.

Any assessments charged during the Contract period will not be reimbursed at final payment.

If the final voucher shows that the total of all initial and interim payments made exceeds the total amount due the Contractor, the Contractor shall promptly refund the overpayment. Final payment shall conform to 1908 (Final Payment).

C1 Full Payment

Full payment up to 100 percent of the Contract unit price will be made for the individual plant that is acceptable at final inspection if the Contractor has met the following requirements:

(a) Acceptance of the preconstruction work.
(b) Acceptance of the preparation of the planting hole or bed.
(c) Acceptance of the initial planting operations.
(d) Satisfactory compliance with all plant establishment work requirements and the plant has received the minimum of 2 years of acceptable plant establishment care or, in the case of a replacement plant, the replacement plant has received the minimum of 1 year of acceptable plant establishment care.

C2 Reduced Payment

Reduced payment for the individual plant, at up to a percentage of the Contract unit price or at no payment, will be made in accordance with TABLE 2571-1.

TABLE 2571-1. Plant Installation and Establishment Condition of Acceptance

Condition of Acceptance	Total Payment Percentage
The plant is acceptable upon final inspection and the work • met initial installation requirements and • was in compliance with all plant establishment requirements upon final inspection but was not kept in compliance throughout the plant establishment period.	85%
The plant is acceptable upon final inspection and the work • met initial installation requirements but • was not in compliance with the plant establishment requirements upon final inspection.	70%
The plant is acceptable upon final inspection and the work • was discovered to be out of compliance with vegetation protection or plant installation requirements.	Payment to the extent the Engineer determines acceptable for compensation.
The plant is not acceptable upon final inspection but the work • met initial installation and subsequent plant establishment requirements.	40%
The plant is not acceptable upon final inspection and the work • was discovered to be out of compliance with initial installation requirements or was out of compliance with plant establishment requirements.	0 %

D Bonus Payment

A bonus payment of 10 percent of the total final Contract price per plant will be paid when 90 percent or more of all plants installed within the initial Plant Installation Period (PIP) as specified in the Contract or as modified by the Engineer and all Contract operations have been acceptable continuously throughout the Contract period. Any replacements made within the initial PIP are considered initially installed plants.