

PART E
SPECIFICATIONS

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS, STANDARD DETAILS AND DRAWINGS

- E1.1 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.1.1 *The City of Winnipeg Standard Construction Specifications* is available in Adobe Acrobat (.pdf) format on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division internet site at <http://www.winnipeg.ca/matmgt>.
- E1.1.2 Further to GC:2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.
- E1.2 The following Drawings are applicable to the Work:

Drawing No. Drawing

W.49-H Westridge Community Centre - Whyteridge Satellite Proposed Landscaping Development

GENERAL REQUIREMENTS

E2. SITE ACCESS

- E2.1 Access to the Site will be determined at the pre-construction meeting. This access area shall be provided and maintained by the Contractor at his own expense and approved by the Contract Administrator.
- E2.2 The Contractor shall be restricted to the Site access location and route only so that there is a minimum of disturbance to the existing ground surface. Damage to areas beyond the marked route shall be repaired by and at the expense of the Contractor to the satisfaction of the Contract Administrator.

E3. PERMITS, NOTICES, LICENSES, CERTIFICATES, LAWS AND RULES

- E3.1 Further to GC:6.12, the Contractor shall give all necessary notices, obtain all necessary permits and pay all fees in order that the Work may be carried out. The Contractor shall submit all plans required by any inspection authority and obtain approval of same before proceeding with the Work, and pay any cost attached to the inspection of such plans.
- E3.2 The Contractor shall comply with all laws, ordinances, rules and regulations that would relate to the Work.
- E3.3 All notices, consents, approvals, statements, authorizations, documents or other communications to the City shall be submitted to the Contract Administrator.
- E3.4 All Work shall be performed in compliance with the Manitoba Workplace Health and Safety Act.
- E3.5 All Work shall be performed in compliance with the Manitoba Workplace Health and Safety Fall Protection guidelines.

- E3.6 The Contractor and Subcontractors must be fully aware of all Work involving hazardous materials. All Work must be performed in compliance with the Manitoba Department of Labour Workplace Health and Safety Guidelines and all other applicable codes. The Contractor is responsible for the immediate notification to the Contract Administrator of his/her encountering of suspected hazardous material during their course of Work.

E4. DAMAGE TO EXISTING STRUCTURES AND PROPERTY

- E4.1 Further to GC: 17, all necessary precautions shall be exercised by the Contractor so as not to remove, disturb, or damage any existing trees, shrubs, sod, pavements, streets, roads, boulevards, poles, hydrants, water pipes, gas pipes, electrical wires, cables, conduits, sewers or other existing facilities and equipment at the Site of the Work. For all damage incurred thereto in the performance of the Work, the Contractor shall upon instructions from and to the satisfaction of the Contract Administrator and the owners thereof, either replace and repair such damage, whichever may be deemed necessary in the opinion of, and acceptable to, the Contract Administrator and the owners thereof. The cost of which shall be borne entirely by the Contractor.
- E4.2 The Contractor shall also indemnify and save harmless the City from all claims made directly or indirectly against it in respect to any such damage.
- E4.3 The Contractor's operations shall be limited to the minimum area necessary for undertaking the Work and he shall be responsible for all damage resulting from his work on private property. The Contractor shall take such measures as are necessary to ensure safe and convenient pedestrian ingress and egress is maintained to private properties while he is working near them.
- E4.4 Any damage caused by the negligence of the Contractor or his Sub-Contractors to the adjacent works or properties, shall be promptly repaired by him at his own expense, to the satisfaction of the Contract Administrator.

E5. TEMPORARY UTILITIES

- E5.1 Further to GC:6.12, the Contractor shall make his own arrangements in connection with the temporary use of lighting, power, gas, sewer, water or other utilities, and pay all costs in connection therewith.
- E5.2 All necessary permits, fees and other like expenses as well as the cost of temporary connections to existing facilities shall be arranged and paid for by the Contractor.

E6. LAYOUT OF WORK

- E6.1 The Contractor will set control lines and bench marks by means of stakes, buoys or marks and the Contractor shall make the completed works conform to the lines and marks thus indicated. The Contractor shall furnish all other lines and levels required. The Contractor shall be responsible for the careful preservation of all stakes and marks so set whether relating to his own or to other Work. Care must be taken that the Contract Administrator be notified immediately of the disturbance of any such stakes or marks; the cost of correcting any errors arising out of neglect of the Contractor or his agent or his employees, to so notify the Contractor Administrator shall be borne entirely by the Contractor, as well as the cost of replacing any disturbed stakes or marks.
- E6.2 All layout Work shall be inspected and approved by the Contract Administrator prior to construction.
- E6.3 Before commencing Work the contractor shall satisfy himself as to the meaning and correctness of all stakes and marks and no claims shall be entertained by the City of Winnipeg on account

of any alleged inaccuracies. If any error is suspected in the plans, specifications or the directions of the Contract Administrator, Work shall be discontinued until the errors are rectified, but no claims shall be made on account of any delay occasioned thereby.

E7. SITE RESTORATION

E7.1 Total Performance of the Work shall not be attained until the Contractor has cleaned up the Site and has removed all plant, tools, equipment, waste, debris and surplus foundation earth to the satisfaction of the Contract Administrator. Unless otherwise specified, the Contractor shall restore all areas of the Site beyond the established limit of Work, which have been disturbed by the Contractor's operations to as good as or better than the original condition to the satisfaction of the Contract Administrator. The Contractor shall pay all costs associated with this Work.

E8. TOPSOIL AND SODDING

E8.1 Topsoil & Sodding shall be done in accordance with City of Winnipeg Standard Construction Specification CW 3540 – R2 and CW 3510- R7 respectively

E8.2 The Contractor shall supply turf grass sod with a mineral soil layer containing a minimum of 70% inorganic soil. Salinity rating shall be less than 2.5mmhos/cm. The pH range shall be between 6.0 – 8.0 .Sod supplied shall have been sown in nursery fields with Canada Certified No.1 or Canada Certified No. 2 grass seed meeting the following certified seed blends or mixtures.

(a) A blend composed of one hundred percent (100%) Kentucky Bluegrass (100% Class 2 cultivators as specified below

(b) A mixture of ninety five percent (95%) Kentucky Bluegrass (100% Class 2 cultivators as specified below) and five percent (5%) Creeping Red fescue

Class 2 Cultivators – specified blend of Class 2 cultivators shall consist of equal proportions of any three of the following

Absolute	Allure	Apollo	ArcadiaAscot	Award	Baronie
Baronie	Bartitia	Baruzo	Blacksburg	Caliber	Cardiff
Challenger	Champagne	Chateau	Chicago	Classic	Compact
Conni	Coventry	Dragon	Eclipse	Estate	Fortina
Glade	Haga	Huntsville	Impact	Jefferson	Kenblue
Liberator	Lipoa	Livingston	Limousine	Marquis	Moonlight
Northstar	Nustar	Odyssey	Park	Pepaya	Platini
Rambo	Raven	Rugby	Rugby II	Seabring	Sidekick
SR1200	SR2109	Touchdown	Washington	Wildcat	

E8.3 Any variations to the above referenced seed blends or mixtures shall be approved by the Contract Administrator

E8.4 On embankments and berms, sod shall be placed lengthwise across the face of the slope. On slopes of 1 vertical to 3 horizontal (18 degrees) or steeper, in every second row on the slope and at the foot of the slope, each piece of sod shall be pegged with two minimum 250 mm long wooden pegs driven into the soil layer of the sod. On slopes of 1 vertical to 2 horizontal (26 degrees) or steeper, each piece of sod in every row shall be pegged with two minimum 250 mm long wooden pegs driven into the soil layer of the sod.

- E8.5 Sodding operations shall be completed within two days (48 hours) after placing the sod. This shall be deemed to include watering, rolling, and repairing any visible joints and low, bare or dead spots within the sodded area.
- E8.6 Sod will be accepted after the termination of 30 Calendar Day maintenance period providing it meets the following requirements
- (a) The Work Site is clean and the sodded area is free of any visual obstructions such as leaves
 - (b) The sod is free of dead and bare spots and without more than 10 broadleaf weeds per 50 square metres
 - (c) Grass roots are well anchored into the underlying topsoil and the sodded area has established into a healthy, vigorously growing condition.
 - (d) Sodded areas are free of visible joints.
 - (e) The sod has sufficient shoot density that no surface soil is visible when the grass has been cut to a height of 50 – 60 mm
 - (f) Sodded area has been cut to a height of 50 – 60 mm within 48 hours before the final inspection.
 - (g) Sodded area is free of any turf damaging insects.
- E8.7 Any deficient, damaged or vandalized areas may have to be resodded by the Contractor within three (3) Working Days after receiving notification from the Contract Administrator and the area so resodded.
- E8.8 Contractor will be responsible to carry out scheduled as specified in 9.8 of CW3510 – R7
- E8.9 Topsoil & Sodding will be measured on an area basis and paid at the Contract Unit Price per square metre for “Topsoil & Sodding” The area to be paid for will be the total number of square metres placed and maintained in accordance with this Specification, accepted and measured by the Contract Administrator. Topsoil & Sodding shall be done in accordance with City of Winnipeg Standard Construction Specification CW 3540 – R2 and CW 3510- R7 respectively.

E9. PLANTING BED

- E9.1 Planting bed shall be excavated and material removed to a minimum depth of 275mm in area indicated on drawing W49-H Proposed Landscaping Development. Topsoil shall be done in accordance with City of Winnipeg Standard Construction Specification CW 3540 – R2.
- E9.2 Planting soil shall consist of black top soil, a fertile friable natural loam containing by volume not less than 4% and no more than 25% of organic matter for clay loams, and not less than 2% and no more than 25% for sandy loams, with an acidity value ranging from pH 6.0 to 8.0 and capable of sustaining vigorous plant growth. Top soil is to be free of any mixture of subsoil, clay lumps and free of stones and other extraneous matter. It shall not contain couch or crab grass rhizomes.
- E9.3 Planting soil shall be installed to a depth of 200mm.
- E9.4 Mulch shall be a clean bark or wood chip mulch with chips not less than 15 mm nor larger than 75 mm in size and not less than 75 mm thick. Mulch shall be free of leaves, branches and other extraneous matter.
- E9.5 Mulch will be measured on an area basis and paid at the Contract Unit Price per square metre for “Planting Bed”. The area to be paid for will be the total number of square metres placed and

maintained in accordance with this Specification, accepted and measured by the Contract Administrator.

E10. SUPPLY, PLANTING AND MAINTENANCE OF TREES

E10.1 SECTION 1 – SUPPLY Related Work

Planting and Maintenance requirements of E10.2-Section 2 and E10.3-Section 3 respectively shall apply

E10.1.1 Source Quality Control

1. Trees are to be grown in nurseries under proper cultural practices as recommended by the Canadian Nursery Trades Association.
2. Only those trees will be accepted which have been grown for at least the four (4) previous years in local Manitoba nurseries located in an Agriculture Canada Plant Hardiness Zone designation of 2(a or b) or 3 (a or b) and within a 250 kilometre radius of Winnipeg. Trees that have grown in plant hardiness zones 1 and 4 or greater will be rejected.

E10.1.2 Materials

1. Water shall be potable and free of minerals which may be detrimental to plant growth.
2. Planting soil shall consist of black top soil, a fertile friable natural loam containing by volume not less than 4% and no more than 25% of organic matter for clay loams, and not less than 2% and no more than 25% for sandy loams, with an acidity value ranging from pH 6.0 to 8.0 and capable of sustaining vigorous plant growth. Top soil is to be free of any mixture of subsoil, clay lumps and free of stones and other extraneous matter. It shall not contain couch or crab grass rhizomes.
3. Root ball burlap shall be 150 g Hessian burlap, biodegradable.
4. Anti-desiccant shall be a wax-like emulsion that provides a film over tree leaf surfaces that reduces evaporation but permeable enough to permit transpiration. The City of Winnipeg does not promote the use of anti-desiccant. Use only after consultation with the Contract Administrator.
5. Wound dressing shall be a horticulturally accepted non-toxic, non-hardening emulsion. The City of Winnipeg does not promote the use of wound dressing. Use only after consultation with the Contract Administrator.
6. Wire baskets shall be a horticulturally accepted product designed to carry the weight and to contain a burlap-covered root ball. Minimum diameter basket size shall conform to the same minimum diameter of the tree root ball for the respective minimum tree calliper sizes as detailed in Table 1.
7. Mulch shall be a clean bark or wood chip mulch with chips not less than 15 mm nor larger than 75 mm in size and not more than 20 mm thick. Mulch shall be free of leaves, branches and other extraneous matter.

8. Fertilizer shall be a slow release formulation of low nitrogen and high phosphorus e.g. 10-50-12. Apply quantities at rates stated by product manufacturer and to the satisfaction of the Contract Administrator.

E10.1.3 Tree Material

1. Quality and source of tree material is to comply with Form B: Prices and Table 1 for size and development of plant material and root ball. Measure trees when branches are in their natural position. Height and spread dimensions refer to main body of trees and not from branch tip to branch tip. Trees shall be of No. 1 grade.
2. Nomenclature of specified trees shall conform to the International Code of Nomenclature for Cultivated Plants and is to be in accordance with the approved scientific names given in the latest edition of the Standardized Plant Names.
3. The use of trees requiring treatments as ordered by Agriculture Canada is prohibited.
4. Trees shall be characteristically developed for their species and structurally sound, well branched, healthy and vigorous and densely foliated when in leaf. The tree shall have a healthy, well developed, fibrous root system which may be verified through a testing procedure that destructively samples one or more randomly selected root balls.
5. Trees shall have been root pruned regularly, but not later than one growing season prior to arrival on Site. The Contractor may be required to furnish documentation to the City on his root-pruning program. Trees in excess of 75 mm calliper are to have been half root pruned during each of two successive growing seasons, the latter at least, one growing season prior to arrival on Site.
6. All parts of the trees, especially the lower branches, shall be moist and show live, green cambium tissue when cut.
7. Trees shall have only one, sturdy, reasonable straight and vertical trunk, and a well balanced crown with fully developed leader.
8. Trees shall be free of disease, insect infestation, rodent damage, sun scald, frost cracks, abrasions, unhealed scars, scars exceeding 5 cm in diameter, major forks or crooks in the trunk, broken branches, or angled leaders. Trees having the above defects will not be accepted by the Contract Administrator.
9. Trees having a leader which has developed a sharp angle to the trunk as a result of pruning or trunk damage will not be accepted.
10. Trees exhibiting suppressed, weakly developed branches due to competition from other closely spaced trees in the nursery will not be accepted. Trees exhibiting dead branches will not be accepted.
11. Balled and burlapped trees in excess of a 3 m height must have been dug with large firm ball as specified in TABLE 1: ACCEPTABLE TREE SIZES. Roots in root balls must be comprised of 75% fibrous and feeder root systems. Secure root balls with burlap, heavy twine and rope. For trees 75 mm or more in calliper, wrap ball in double layer of burlap and drum lace with minimum 10 mm diameter rope.

Protect root balls against sudden changes in temperature and exposure to heavy rainfall.

12. Tree spade dug trees shall be dug with mechanized digging equipment with hydraulic spade. Root ball minimum diameter shall be as specified in Table 1. Lift root ball from hole, place in wire basket designed for purpose and line with burlap. Tie basket to ball with heavy rope. Take care not to injure trunk of tree with wire basket ties or rope.
 - a. The use of hydraulic spade to dig tree holes is not acceptable.
13. Use of collected or native trees is not permitted.
14. Substitutions to trees as indicated on Drawing W.49-H Proposed Landscaping Development are not permitted.

TABLE 1
ACCEPTABLE TREE SIZES
DECIDUOUS TREES

Minimum Diameter (Caliper) of Tree 15 cm Above Ground (Six Inches)	Minimum Diameter of Root Ball in Centimetres (Inches) (In Baskets Only)	Acceptable Range in Tree Height in Centimetres (Feet)
40 mm (1.5 inches)	71 cm (28 inches)	182-244 cm (6.0-8.0 Ft.)
45 mm (1.75 inches)	81 cm (32 inches)	182-244 cm (6.0-8.0 Ft.)
50 mm (2.0 inches)	91 cm (36 inches)	182-365 cm (6.0-12.0 Ft.)
65 mm (2.5 inches)	112 cm (44 inches)	305-427 cm (10.0-14.0 Ft.)
75 mm (3.0 inches)	137 cm (54 inches)	305-488 cm (10.0-16.0 Ft.)

NOTE: Metric and English units may not correspond exactly due to rounding procedures.

E10.1.4 Tree Quantity and Size

1. Trees shall be supplied and planted at the quantities and calipers listed on Form B: Prices. Any proposed variations to species, size or calliper of specified trees by the Contractor will require approval from the Contract Administrator.
2. Locations of trees are shown on Drawing W.49-H Proposed Landscaping Development.
3. Any changes in planting locations will be determined on-site by the Contract Administrator.
4. Trees are to conform to the measurements specified in Form B: Prices, except that trees larger than specified may be used if approved by the Contract Administrator.
5. If larger than specified trees are approved for supply and planting by the Contract Administrator, the soil ball for balled and burlapped trees and trees in wire baskets are to be increased in proportion to the size of the tree as herein specified in TABLE 1: ACCEPTABLE TREE SIZES. The Contractor shall provide the Contract

Administrator with evidence that the trees have been appropriately root pruned as per Specification E10.1.3.5 above.

6. Trees shall be measured when the branches are in their normal position. Height dimensions specified are to refer to the main body of the tree and not from branch tip to root base. Where trees have been measured by calliper or diameter, reference shall be made to the diameter of the trunk measured 15 cm above the ground as the tree stands in the nursery prior to lifting. Caliper of tree shall be marked on a tag permanently fixed on one of the branches.

E10.1.5 Shipment and Pre-Planting Care

1. Coordinate shipping of trees and excavation of holes to ensure minimum time lapse between digging and planting.
2. Tie branches of trees securely, and protect trees against abrasion, exposure and extreme temperature change during transit. Avoid binding of trees with rope or wire which would damage bark, break branches or destroy natural shape of tree. Give full support to root ball of trees during lifting.
3. Cover tree foliage with tarpaulin, and protect bare roots by means of dampened straw, peat moss, saw dust or other acceptable material to prevent loss of moisture during transit and storage.
4. Remove broken and damaged roots with sharp pruning shears. Make clean cuts, and cover cuts over 10 mm diameter with a tree wound dressing.
5. Keep roots moist and protected from sun and wind. Heel-in trees which cannot be planted immediately in shaded areas and water well.

E10.2 SECTION 2 – PLANTING

E10.2.1 Workmanship

1. Location of trees will be staked out or painted on Site by the Contractor and verified correct by the Contract Administrator as per Drawing W.49-H Proposed Landscaping Development.
2. The Contractor shall only apply anti-desiccant in accordance with material manufacturer's instructions with prior approval of the Contract Administrator.
3. Coordinate supply and planting operations. Keep Work Site clean and planting holes drained of water. Immediately remove soil or debris spilled onto street pavement, grass or sidewalk.

E10.2.2 Utility Clearances

1. The Contractor shall obtain all above and below ground clearances from all utilities. Clearances shall be obtained in a timely manner so as not to jeopardize the schedule of the complete tree planting operation.

E10.2.3 Planting Time

1. Plant trees only under conditions that are conducive to health and physical conditions of trees.
2. The Contractor shall provide a planting schedule to the Contract Administrator. Extending the planting operations over a long period using limited crew will not be accepted.

E10.2.4 Excavation

1. Excavate planting pits where indicated by stakes or paint marks placed by the Contract Administrator.
2. Protect bottom of excavations against freezing.
3. Remove water which enters excavations prior to planting. Ensure source of water is not ground water or from broken City watermain pipe.

E10.2.5 Installation

1. Planting should be done during periods of suitable weather conditions and in accordance with locally accepted practice.
2. Trees shall be planted within forty eight (48) hours of excavation from the nursery.
3. No tree pit shall be left open at the end of the Contractor's Work Day. Planting program is to be planned to ensure that all approved trees delivered to the Site at designated planting locations are installed and thoroughly watered the same day as delivery.
4. Loosen bottom of planting hole to depth of 100 – 150 mm. Cover bottom of each excavation with minimum of 150 mm topsoil mixture, incorporate with subgrade material.
5. Plant trees vertically. Orient trees to give best appearance in relation to structure, roads and sidewalks.
6. Place trees to depth equal to depth they were originally growing in nursery.
7. With balled and burlapped root balls and root balls in wire baskets, loosen burlap and cut away the top 1/3 without disturbing root ball. Do not pull burlap or rope from under root ball. Non-biodegradable wrapping must be removed.
8. Tamp planting soil around root system in layers of 150 mm eliminating air voids. Frozen or saturated planting soil shall not be used. When 2/3 of planting soil has been placed, fill hole with water. After water has complete penetrated into soil, complete backfilling.

9. Each tree is to have an earth saucer at its base having a diameter as large as the excavation with a 10 cm lip formed at the perimeter of the saucer to retain water.

E10.2.6 Fertilizing

1. When planting is completed, give surface of planting saucer dressing of fertilizer meeting the requirements of Specification E10.1.2(8) Mix fertilizer thoroughly with top layer of planting soil and water in well.

E10.2.7 Pruning

1. The Contractor shall provide a person with a valid Manitoba Arborist's licence for each work crew or Work Site.
2. Prune trees after planting to compensate for loss of roots suffered during transplanting. Postpone pruning of those trees where heavy bleeding may occur, until in full leaf. Employ clean sharp tools and make cuts flush with main and secondary branch collars, smooth and sloping as to prevent accumulation of water.
3. Remove projecting stumps on trunks or main branches. Remove dead and injured branches and branches that rub causing damage to bark. Trim out crown of trees without changing their natural shape. Do not damage lead branches or remove smaller twigs along main branches.

E10.2.8 Watering

1. Trees are to be watered during the planting procedure as described previously, and a minimum of once a week thereafter, or more frequently if required, during the growing season. Regular watering during the Maintenance Period is specified in specification E10.3.6.
2. A complete record is to be kept of each series of waterings for all planted trees noting: 1) location, and 2) date of watering. This record shall be sent bi-weekly to the Contract Administrator.
3. Apply 40 litres of water per 25 mm calliper per application using deep root feeder or low/pressure nozzle and hose. The water stream must not gouge out a hole in the soil and mulch.

E10.2.9 Method of Measurement and Basis of Payment

1. Method of measurement for E10.1 (Section 1) and E10.2 (Section 2) is based on the actual number of trees supplied and installed. The number to be paid for shall be the total number of trees planted in accordance with this specification and excepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.
2. Supply and planting of trees will be paid for at the Contract unit price bid for each tree planted, measured as specified herein which price shall be payment in full for the supply and planting of trees and all other items, exclusive of Maintenance, incidental to the work included in these Specifications.

E10.3 SECTION 3 – MAINTENANCE

Related Work

Supply and Planting requirements of E10.1-Section 1 and E10.2-Section 2 form an integral part to all Work described herein.

E10.3.1 Maintenance Period

1. Undertake maintenance from date of installation up to a period of two years from date of Certificate of Substantial Performance.

E10.3.2 Description of Work

1. Maintain all trees related to the Work of this contract to the satisfaction of the Contract Administrator.
2. Maintenance Work includes:
 - Fertilizing
 - Watering
 - Weed control
 - Pest and disease control
 - Pruning
 - Winter Preparation

E10.3.3 Materials

1. Materials are to conform to the requirements of related Specification in E10.1 Section 1- Supply.

E10.3.4 General Workmanship

1. Program timing of operations to growth, weather conditions and use of Site.
2. Do each operation continuously and complete within reasonable time period.
3. Store equipment and materials off Site.
4. Collect and dispose of debris or excess material on daily basis.

E10.3.5 Fertilizing

1. Supply fertilizer only at frequency, ratio and rates as recommended by manufacturer. Water immediately after fertilizing.
2. Apply fertilizer no later than May 30th of each maintenance year.

E10.3.6 Watering

1. Apply water as required to supplement rainfall and to maintain optimum growing conditions. In general, water once a week to achieve rates as indicated below. Allow soil to dry adequately between watering to prevent over saturation without creating water stress.

2. Subject to the requirements above the Contractor must water a minimum of once a week inclusive between May 1st and October 15th.
3. A complete record is to be kept of each series of waterings for all planted trees noting:
 - a) location; and
 - b) date of watering
4. The Contractor shall submit these records to the Contract Administrator bi-weekly.
5. Apply 40 litres of water per 25 mm calliper per application using deep root feeder or low pressure open flow nozzle and hose. The water stream must not gouge out a hole in the soil and mulch.

E10.3.7 Weed Control

1. Maintain surface of tree pit free of weeds. Do not allow weeds to establish for a period longer than one (1) week.
2. Obtain written approval of Contract Administrator prior to using any herbicides.
3. Do not use dicamba and picloram solutions near trees.

E10.3.8 Pests and Diseases

1. Obtain written approval of Contract Administrator prior to using any pesticide.
2. The Contractor shall obtain and maintain a Pesticide Applicator's Licence and a Pesticide Use Permit for pesticide applications related to the Specification. Copies of supporting documentation must be submitted to the Contract Administrator prior to the commencement of the pesticide application.
3. The use of chemical pesticides is not permitted on City of Winnipeg properties.

E10.3.9 Pruning

1. The Contractor shall provide a person with a valid Manitoba Arborist's Licence for each Work crew or Work Site.
2. Prune trees as required to remove dead, broken or damaged limbs. Prune back to healthy growth while maintaining balanced crown shape.
3. Employ clean sharp tools. Make cuts co-incident with the branch collar near the main stem or branch. Cuts must be smooth and sloping to prevent accumulation of water on cut. Do not leave small stumps ("horns") on trunks or main branches.
4. Prune trees according to accepted horticultural practices as outlined in the Pruning Manual, Publication No. 1505 by Agriculture Canada.

E10.3.10 Winter Preparation

1. Ensure adequate moisture in tree root zones prior to freeze-up.
2. Apply anti-desiccant to evergreen trees susceptible to winter desiccation only as directed by Contract Administrator.

E10.3.11 Maintenance Schedule

1. The Contractor shall provide a complete written Maintenance schedule to Contract Administrator prior to the issuing of the Certificate of Substantial Performance by the Contract Administrator.

E10.3.12 First Year Maintenance – Measurement and Payment

1. Measurement and payment are based on the actual number of trees maintained to the satisfaction of the Contract Administrator as determined by the Contract Administrator following the completion of First Year Maintenance. Payment will be made at the Contract Unit Price for each tree inspected and approved by the Contract Administrator, and will include payment for all costs related to the First Year Maintenance of the trees and all other items incidental to the Work included in these Specifications.

E10.3.13 Second Year Maintenance – Measurement and Payment

Measurement and payment are based on the actual number of trees maintained to the satisfaction of the Contract Administrator as determined by the Contract Administrator following the completion of Second Year Maintenance. Payment will be made at the Contract Unit Price for each tree inspected and approved by the Contract Administrator, and will include payment for all costs related to the Second Year Maintenance of the trees and all other items incidental to the Work included in these Specifications

E11. PROTECTION OF TREES

E11.1 The Contractor shall take the following precautionary steps to avoid damage from his construction activities to existing Boulevard trees within the limits of the construction area

- (a) The Contractor shall not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of trees
- (b) Contract Administrator shall identify the mature tree trunks that shall be strapped with 25 x 150 x 2400 (1" x 6" x 8') wood planks. Smaller trees shall be similar protected using appropriately sized wood planks.
- (c) Excavations shall be carried out in such a manner so as to minimize damage to existing tree branches. Where roots must be cut to facilitate an excavation they shall be neatly pruned at the face of the excavation and coated with an appropriate wound dressing to prevent infection.
- (d) Work on Site shall be carried out in such a manner so as to minimize damage to existing tree branches. Where damage to tree branches does occur, the Contractor shall have a certified Manitoba Arborist prune the damaged branches and coat them with an appropriate wound dressing which cost shall be paid for by the contractor.

E11.2 All damage to existing trees caused by the Contractor's construction activities shall be repaired to the requirements and satisfaction of the City of Winnipeg, Public Works, Parks and Open Space Division, Forestry Branch.

E11.3 No separate measurement or payment will be made for protection of trees. It shall be considered incidental to the contract work

E12. SITE CLEANUP

- E12.1 All pathways, streets, approaches, driveways and properties near the Work Site shall be kept clean at all times by the Contractor
- E12.2 Upon completion of the project, the Contractor shall immediately remove all excess materials and debris from the Work Site.

E13. SAFETY

E13.1 Safety and Health Regulations

E13.1.1 The Contractor shall comply with the following:

- a) The City of Winnipeg's Safety in the Workplace Policy for Alcohol or any Mood or Mind Altering Drug in the Workplace;
- b) The City of Winnipeg Safety Manual;
- c) The Public Works Department's Safety Regulations;
- d) The Province of Manitoba Workplace, Safety and Health Act.

E13.1.2 The Contract Administrator and the City of Winnipeg, Public Works Department's Safety Officer has the authority to enforce all the above listed safety and/or health regulations.

E13.1.3 The Contractor is advised that these safety regulations are available for viewing by contacting the Contract Administrator.

E13.2 Site Safety Procedures

E13.2.1 The Contractor shall be solely responsible for construction and public safety at the Site and for securing the Site at all times to prevent public access.

E13.2.2 The Contractor shall, at his own expense, do whatever is necessary to ensure that when Work is stopped and the Contractor leaves the Site for whatever reason, the Site and Work is made safe, including but not limited to:

- a) The removal and/or safe storage of all construction equipment and materials;
 - b) The equipment installed and/or in the process of installation be completed or secured to ensure that no public hazards exist;
 - c) That all open excavations be filled; and
 - d) That all construction debris and surplus excavation material be removed from the Site.
- (b) The Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.