

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 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.1.3 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

- L-1 BASKETBALL COURT ASPHALT PAVING REPLACEMENT

E2. DEMOLITION / ROUGH GRADING

- E2.1 In general terms demolition will involve the removal of existing asphalt paving, granular base, minor amounts of concrete paving, and salvaging of one basketball and two dropshot posts.
- E2.2 The cost for all demolition / rough grading is to be included in the unit price form, of the most applicable Work area, or description. No separate payment will be made for this Work.

E3. ASPHALT PAVING

- E3.1 This specification supplements and amends C.W. 3110 Sub-Grade, Sub-Base and Base Course Construction, C.W. 3130 Supply and Installation of Geotextile Fabric, C.W. 3170 –R3 Earthwork and Grading and C.W. 3410-R5 Installation of Asphalt Concrete Pavement Works.
- E3.2 The demolition and removal of all existing paving, granular base and earthwork is to be included in the unit price for all new asphalt paving.
- E3.3 Geotextile fabric will only be utilized if silt is encountered.
- E3.4 The bidder is made aware the full areas of “C” and “B” and partial amounts of area “A”, asphalt paving, may be deleted if necessary to meet the budgetary constraints.
- E3.5 Granular subbase shall be 19mm diameter crushed limestone down, compacted to 100% Standard Proctor Density. Sub-grade shall be compacted to 95% Standard Proctor Density.
- E3.6 Costs for compaction testing of the sub-grade and granular base is not the responsibility of the Contractor, and will be scheduled through the contract administrator.
- E3.7 The Contractor shall provide a smooth and straight sawcut line, between areas where existing paving is to be removed, and areas where it will remain.
- E3.8 The Contractor is responsible for repairing and sod damage at the south end of the site. Where sod had to be replaced it shall be done in accordance to City of Winnipeg Standards. No separate payment will be made for sodding repairs. Any new sod shall slope down to the existing sod at a maximum 5% slope.

E3.9 Payment for new asphalt paving will be based on a per square metre cost, and shall include all demolition cost to remove the existing surface and subgrade materials, compaction of the sub-grade, and installation of the granular subbase, installation of the asphalt paving, and any sodding repairs.

E4. CHAIN LINK FENCING

E4.1 This specification supplements and amends C.W. 3550-R2 Chain Link Fencing

E4.2 Fence shall be 1200 mm height, with knuckled top and bottom fabric.

E4.3 Payment will be made on a lump sum basis, as identified in the Unit Price Forms.

E5. RECYCLED IMPACT CURB

E5.1 This specification covers the supply and installation of recycled curbing to be installed around all four tree pits and between the tree pits (behind the benches) as shown in details 3, 5 drawing L1.

E5.2 Materials

- (a) Curbing shall be XPotential Products, or approved equal, Impact Curb, 133mm height x 200mm width (5 ¼" x 8"). Note: this product is available at Rona or other distributors.
- (b) Stakes shall be Landscape Structures Tuff-timber galvanize steel stakes, 750mm)30" length. For information contact Playgrounds-R-U's 632-7000.

E5.3 The Contractor shall install the curbing to the shapes shown on Detail 3 – L1, and construction detail 5 – L1.

E5.4 Sawcut new asphalt paving flush with inside face of all new curbing.

E5.5 Fasten each section of curb to grade with a minimum of 2 stakes per section.

E5.6 Mitre cut all corner connections and grind off any sharp edges.

E5.7 Cost for curbing will be paid for on a lump sum basis, as shown in the unit price forms.

E6. PLANT MATERIAL

E6.1 Description: This specification shall cover the supply and installation of nursery grown trees, shrubs and perennials.

E6.2 Materials

E6.2.1 General

- (a) Trees shall be the size and variety noted on the plant list located at the end of this section. Plant material which does not have the specified root ball diameter will be rejected.
- (b) All nursery stock supplied shall be Canadian prairie nursery grown, of the species and sizes indicated on the drawings. Quality shall be in accordance with the latest "Guide Specification for Nursery Stock of the Canadian Nursery Trades Association".
- (c) Any nursery stock dug from native stands, wood lots, orchards or neglected nurseries and which have not received proper cultural maintenance as advocated by the Canadian Nursery Trades Association, shall be designated as "collected plants". The use of "collected plants" will not be permitted unless approved by the Contract Administrator.
- (d) The Contract Administrator reserves the right to inspect the plant material at their original source, and to instruct the supplier on root and branch pruning requirements.
- (e) Nomenclature of specified nursery stock shall conform to the International Code of Nomenclature for Cultivated Plants and shall be in accordance with the approved scientific names given in the latest edition of standardized Plant Names. The names of varieties not names therein are generally in conformity with the names accepted in the nursery trades.

- (f) Plants larger than specified may be used if approved by the Contract Administrator. The use of such plants shall not increase the Contract price.
- (g) All nursery stock shall be measured when the branches are in their normal position. Height and spread dimensions specified refer to the main body of the plant and not from branch tip.
- (h) Where trees are measured by calliper (cal.), reference is made to the diameter of the trunk measured 300 mm above ground as the tree stands in the nursery.
- (i) All nursery stock shall be well branched, true to type, structurally sound, possess a well developed, undamaged root system and shall be free of disease, insect infestations, rodent damage, sunscald, frost cracks and other abrasion or scare to the bark. All parts of the nursery stock shall be moist and show live, green cambium when cut.
- (j) All trees shall have one only, sturdy, reasonably straight and vertical trunk and a well balanced crown with fully developed leader. All evergreens shall be symmetrically grown and branched from ground level up, and must be balled and burlapped unless noted otherwise on the plant list. At least one plant of each variety supplied shall bear a tag showing both the botanical and common name of the plant.

E6.2.2 Protection of Stock

- (a) All nursery stock shall be well protected from damage and drying out from the time of digging until the time of planting on site. All roots shall be cleanly cut; split roots are not acceptable.
- (b) Nursery stock shall be transplanted with care to prevent damage. Branches shall be carefully tied in such a manner so as not to break or damage trunks. Points of contact with equipment shall be padded. All nursery stock, which cannot be planted immediately upon arrival at the site, shall be well protected to prevent drying out and shall be kept moist until commencement of planting.

E6.2.3 Topsoil Backfill Mix

- (a) Backfill mix shall be screened garden soil mixture of two parts black loam topsoil, one part milled peat moss and one part sharp sand.

E6.2.4 Stakes

- (a) T-rail iron stakes 40 x 40 x 5 x 2440 mm long, primed with 1 brush coat of black zinc rich plant paint to CGSB 1-GP-181B. Paint section of stake above ground with 1 coat of green enamel paint.

E6.2.5 Tree Rings

- (a) Fabricated from 3 mm galvanized wire encased in two ply reinforced 12 mm dia. rubber garden hose of equivalent.

E6.2.6 Anti-Desiccant

- (a) Wax-like emulsion to provide film over plant surfaces reducing evaporation, but permeable enough to permit transpiration.

E6.2.7 Wound Dressing

- (a) Horticulturally accepted non-toxic, non-hardening emulsion.

E6.2.8 Wood Chip Mulch

- (a) Shall be standard tree limbs and leaves chippings, containing a maximum of 5% conifer branches.

E6.3 Construction Methods

E6.3.1 General

- (a) Planting pits shall be excavated to the full width of the opening between the curbing with vertical sides to a minimum depth of 610 mm (24"). The excavated tree pits shall be refilled with backfill mix (E7.2.3). Hand dig pits where required to protect asphalt paving.

E6.3.2 Installation

- (a) Upon excavation of the tree pits, and protection of any underground utility lines, the holes shall be backfilled with a topsoil mixture to a depth to permit adequate installation and stabilization of the plant material.
- (b) Each balled specimen shall be handled with great care, to ensure that the root balls will not be broken. Burlap shall be folded back only at the top and sides. Broken roots of deciduous stock shall be pruned back prior to planting.
- (c) After inserting the tree and filling the planting hole with topsoil, water shall be poured in until the pit is thoroughly soaked. Filling of the hole shall then be completed and the fill-in soil shall be packed firmly around the roots, leaving a concave surface for convenient watering 75 mm below rounding and grade elevation. After filling, the planting shall be watered at frequent intervals.
- (d) Planting shall be done during periods suitable to weather conditions and locally accepted practice. All nursery stock shall be set plumb in the centre of pits and at levels as shown on the planting details after settlement has taken place.
- (e) Nursery stock shall be faced to give the best appearance or relationship to adjacent structures and to the approval of the Contract Administrator.
- (f) Wood chip mulch shall be installed over the tree rootball to a minimum 100mm (4") depth, as shown on the drawings.

E6.3.3 Pruning

- (a) All deciduous trees shall be pruned immediately after planting. The amount of pruning shall be limited to the minimum necessary to remove dead or injured branches and to compensate for the loss of roots as a result of transplanting operations. Pruning shall be done in such a manner as to preserve the natural character of the plants. Leaders shall not be removed. Only clean, sharp tools shall be used. All cuts shall be clean and flush, leaving no stubs. Cuts, bruises or scars on the bark shall be traced back to living tissue and removed. The affected areas shall be shaped so as not to retain water and all cuts of more than 25 mm in diameter shall be painted with approved tree paint.

E6.3.4 Staking

- (a) All trees shall be staked using metal two (2) T-BAR stakes per tree. The tree trunk shall be completely encircled and protected with two rubber tree rings and secured to each tree stake. Top of each tree stake shall be at the same elevation above finished grade, approximately 1200 – 1500 mm height.

E6.4 Maintenance and Guarantee of Nursery Stock

- (a) The Contractor shall provide all watering, weeding, tightening and repairing tree stakes and rings, removal of dead material and all repairing tree stakes and rings, removal of dead material and all other maintenance operations required for two years after the date of the Certificate of Total Performance. See E8 for additional information.
- (b) The Contractor shall agree and guarantee to replace and replant any nursery stock found dead and/or in poor condition two years from the date of the Certificate of Total Performance, at his cost. "Poor condition" shall be interpreted as meaning nursery stock on which branches are dying, or have not shown satisfactory growth of leaves.
- (c) Exempted is nursery stock damaged by accidental causes or vandalism, which stock shall be replaced at the cost of the Owner.
- (d) All required replacements shall be by plants of at least the same size and species as specified, and shall be supplied and planted in accordance with the original drawings and Specifications, and the replaced material shall carry an additional two-year guarantee and maintenance period.

E6.5 Method of Measurement

- (a) Trees will be measured on a unit basis. The number to be paid for shall be the total number of each type and size of tree supplied and installed in accordance with the Specification and accepted by the Contract Administration.

E6.6 Basis of Payment

- (a) The supply and installation of trees will be paid for at the Contract unit price for each tree, measured as specified herein, which price shall be payment in full including all costs for the tree, tree pit and topsoil backfill, tree stakes, tree rings, pruning, two year maintenance, and all other items incidental to the Work included in this Specification.

PLANT LIST

Quantity	Common Name/botanical name	Size / Remarks
4	American Basswood / <i>Tilia americana</i>	Min. 100 mm caliper, 3660mm ht. Single straight trunk. Specimen quality. Well branched head above 1830mm ht. Minimum 975 mm dia. rootball. Two stakes per tree. Note: American Elm, Patmore or Green Ash, is an acceptable substitution, however quantities must be sufficient enough to plant all quantities at each school.

E7. TREE MAINTENANCE SCHEDULE

E7.1 Description: This specification shall cover the landscape maintenance requirements for all trees and associated tree pits.

E7.2 Related Work: Plant material and tree pits are specified elsewhere in this Specification and form an integral part to all Work described herein.

E7.3 Maintenance Period: Undertake maintenance from the date of installation for a period of two years past the date of Total Performance.

E7.4 Description of Work

- (a) Maintain trees shown on the drawings, to the satisfaction of the Contract Administrator
- (b) Work includes:
 - Fertilizing
 - Watering
 - Weed Control of tree pits, wood chip mulch areas
 - Pest and disease control
 - Pruning
 - Mulching
 - Tree support and tie adjustment
 - Winter protection

E7.5 Protection

- (a) Prevent damage to fencing, other trees, landscaping, bench marks, building, pavement, surface and underground utility facilities.

E7.6 Materials

- (a) Materials are to conform to the requirements of related specifications.

E7.7 Maintenance Requirements

- (a) Condition of Equipment

Prior to the commencement of tree and shrub planting, the Contractor will be required to arrange to have the equipment to be supplied under this Contract inspected by the Contract Administrator to verify that the equipment is in good operating condition and meets the requirements of the Specifications.

- (b) Replacement Equipment

The supply of replacement equipment of equal or larger size, if regular units are under repair, will be the responsibility of the Contractor.

- (c) General Workmanship

Program timing of operations to growth, weather conditions and use of site.

Do each operation continuously and complete within reasonable time period.

Store equipment and materials off-site.

Collect and dispose of debris or excess material on daily basis.

E7.8 Fertilizing

- (a) Apply fertilizer no later than May 30th of each maintenance year.

E7.9 Watering

- (a) The Contractor shall acquire and pay for all water from off site sources.
- (b) 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.
- (c) Subject to the requirements above, the Contractor must water at least once a week inclusive between May 1st and October 30th. A complete record is to be kept of each series of waterings for all planted and transplanted trees, noting: 1) location, and 2) date of watering. This record is to be given to the Contract Administrator when requested.
- (d) Apply 40 litres of water per 25mm caliper, 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.
- (e) Apply 4 litres of water per shrub per application.
- (f) The Contractor shall maintain all sodded areas for 30 days from the Contract completion.

E7.10 Weed Control

- (a) Maintain surface of tree pit, shrub bed and mulched areas, free of weeds. Do not allow weeds to establish for a period longer than one (1) week.
- (b) Do not use dicamba and picloram solutions near trees.

E7.11 Pests and Diseases

- (a) Obtain written approval of Contract Administrator prior to using any pesticide.
- (b) Control pests and disease through pruning or application of pesticides. Use species specific pesticides where possible. Use only pesticides of low mammalian toxicity. Strictly follow manufacturer's written instructions.

E7.12 Pruning

- (a) The Contractor shall provide a person with a valid Manitoba tree Pruner's License for each Work crew or Work site.
- (b) Prune trees as required to remove dead, broken or damaged limbs. Prune back to healthy growth while maintaining balanced crown shape.
- (c) Employ clean sharp tools. Make cuts coincident 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 little stumps ("horns") on trunks or main branches.
- (d) Prune trees according to accepted horticultural practices as outlined in the Pruning Manual, Publication No. 1505 by Agriculture Canada.

E7.13 Mulching

- (a) Add mulch as required to maintain 100 mm thickness.

E7.14 Tree Supports and Tie Adjustments

- (a) Maintain tree supports and ties in proper repair.
- (b) Remove supports and ties as directed by Contract Administrator.
- (c) Straighten any tree which is leaning.

E7.15 Winter Protection

- (a) Ensure adequate moisture in tree zones prior to freeze-up.
- (b) Apply anti-desiccant to evergreen trees susceptible to winter desiccation as directed by Contract Administrator.

E7.16 Maintenance Schedule

- (a) The Contractor shall provide a complete written maintenance schedule to the Contract Administrator prior to the commencement of the two year maintenance period, and must provide weekly reports of

all maintenance to the City of Winnipeg, Forestry Department, within one week of the maintenance being provided.

E7.17 Maintenance Period

- (a) The two year maintenance period shall be based on a six month growing season per year. The two year maintenance program will consist of a total of 12 months of maintenance. In general the maintenance shall commence on May 1st and terminate on October 30th of each year. In the event of any early spring, whereby the weather conditions are conducive to plant growth, the Contractor shall start the maintenance period at such time as they deem necessary. However, the City of Winnipeg, Forestry Branch, must be notified prior to commencing the maintenance period. Where the maintenance Contract is started prior to May 1st, the actual number of days that the plant material is maintained prior to May 1st will be deducted from the October 30th completion period.

E7.18 Cost of Two Year Maintenance Period

- (a) The cost for the Two Year Tree Maintenance Period is to be included in the unit price of each tree, Item: 11 in the Unit Price Forms.

E8. SITE FURNITURE

E8.1 General Description

- (a) This specification shall cover the supply and installation of site furniture.
- (b) The bidder is made aware that the quantity of each item awarded may be less than the quantity shown in the unit price forms, in order to meet budgetary concerns.
- (c) All site furniture is to be installed in the location shown on the drawings, or as field located by the school principal. The Barkman Picnic tables will be located at the northwest corner of the school site by the parking lot, and the locations are not shown on the drawing. Any damage to the existing facilities, as a result of installing the furniture is to be corrected to pre construction conditions.
- (d) One of the existing basketball post is to be relocated, as well as both (2) dropshots. Contractor shall remove existing equipment and concrete footings.

E8.2 Materials and Method

- (a) Picnic Tables
 - (i) Barkman Concrete round picnic table, model 45-45000-10 with one piece seat. Quantity required three (3). For information contact Wayne Wiebe at Barkman Concrete at tel. 667-3310
- (b) Benches shall be:
 - (i) Backless benches shall be Landscape Structures , Model 141683D, 1800 long, inground mount. Seat to be TenderTuff "Tan" colour and frame to be "Brown" colour. Benches are to be installed according to manufacturer's specifications. For information contact Playgrounds-R-U's at tel. 632-7000. Quantity required four (4).
 - (ii) Benches with backs shall be Landscape Structures , Model 141683A, 1800 long, inground mount. Seat to be TenderTuff "Tan" colour and frame to be "Brown" colour. Benches are to be installed according to manufacturer's specifications. For information contact Playgrounds-R-U's at tel. 632-7000. Quantity required three (3).
- (c) Basketball Posts
 - (i) Sportsplay Equipment Inc., Basketball Post Model 543-619, Backboard Model 543-002. For information contact Playgrounds-R-U's at tel. 632-7000. Quantity required one set (1), two posts.
- (d) All benches are to be installed in concrete footings to manufacturer's requirements.
- (e) Install Basketball Post and Drop Shot in concrete footings as per manufacturer's recommendation. The Drop Shot shall be installed in a minimum 450 mm (18") diameter by 1530 mm (5") deep concrete footing. The Basketball Post shall be installed in a minimum 450 mm (18") diameter by 1530mm (5') deep concrete footing. Top of concrete shall be flush with existing paving. Repair

all asphalt damage as a result of footing installation. Install backboard and dropshot hood after concrete has cured a minimum 7 days.

E8.3 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the unit price for the "Items of Work" listed below, which price shall include all costs of material supply, and proper material installation.
- (b) Items of Work:
 - (i) Relocate two (2) dropshots
 - (ii) Remove two (2) existing basketball posts and reinstall one
 - (iii) Supply and install two (2) new basketball posts
 - (iv) Supply and install four (4) backless benches
 - (v) Supply and install three (3) benches with backs.
 - (vi) Supply and install three (3) picnic tables.