

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.
- E1.1.2 *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>.
- E1.1.3 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.1.4 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:

Laura Secord School Playing Field Renovation

<u>Drawing No.</u>	<u>Drawing</u>
L1	Survey / Contours / Removals
L2	Proposed Grading / Sub-Surface Drainage
L3	Irrigation
L4	Materials / Details

Laura Secord School Front Yard

<u>Drawing No.</u>	<u>Drawing</u>
L5	Development Plan
L6	Layout Plan
L7	Grading Plan / Planting Details
L8	Planting Plan

Laura Secord School Front Yard and Nellie McClung Park

<u>Drawing No.</u>	<u>Drawing</u>
L9	Ornamental Fence

Nellie McClung Park

<u>Drawing No.</u>	<u>Drawing</u>
L10	Existing Conditions / Removals Plan and Development Plan
L11	Layout Plan and Grading Plan

Evanson Tot Lot

<u>Drawing No.</u>	<u>Drawing</u>
L12	Development Plan
L13	Layout Plan and Details
L14	Details
32581B-2	Landscape Structures Inc. - Playstructure

E2. ACCESS TO SITE AND DAMAGE TO EXISTING STRUCTURES AND PROPERTY

- E2.1 Access to the Sites as required by the Contractor shall be provided and maintained by the Contractor at his own expense and approved by the Contract Administrator.

- E2.2 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 City thereof, either replace and repair such damage, whichever may be deemed necessary in the opinion of, and acceptable to, the City thereof and the cost of which shall be borne entirely by the Contractor. The Contractor shall also indemnify and save harmless the City, The Winnipeg School Division and David Wagner Associates Inc. from all claims made directly or indirectly against them in respect to any such damage.
- E2.3 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. 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.
- E2.4 Care shall be taken to protect existing trees and their root systems from damage, compaction, and contamination resulting from construction to the satisfaction of the Contract Administrator. No heavy equipment shall be driven or parked on the area within the drip line of any trees.

E3. PROTECTION OF SURVEY INFRASTRUCTURE

- E3.1 Refer to CW 1130-R1, Site Requirements, Clause 3.14. The Contractor must ensure all Sub-contractors are aware of this clearance procedure and potential restoration costs.

E4. SITE ENCLOSURES

- E4.1 Temporary site enclosures shall be erected and maintained as required for the duration of the construction period.
- E4.2 Laura Secord School Playing Field Renovation:
- (a) Temporary site enclosures shall be erected and maintained for the duration of the construction and maintenance period.
 - (b) Temporary chain link fencing shall be 1.2 m height with pushed poles.
 - (c) Fence shall be installed along the Extent of Construction line, along the school edge of the Site, as shown on the drawings and at any other site opening.
- E4.3 Site enclosures shall be considered incidental to the Contract work.

E5. PROTECTION OF TREES

- E5.1 The Contractor shall take the following precautionary steps to avoid damage from his construction activities to existing trees, including boulevard trees, within the limits of the construction area or Site access:
- (a) The Contractor shall not stockpile materials and soil, or park vehicles and equipment on boulevards within 2 metres of trees.
 - (b) The Contract Administrator shall identify the mature tree trunks that shall be strapped with 25x150x2400mm wood planks.
- E5.2 Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the excavation shall be a

minimum of 2m from the closest edge of the trunk. Where the roots must be cut to facilitate excavation, they shall be pruned neatly at the face of the excavation.

E5.3 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.

E5.4 Tree protection shall be considered incidental to the Contract Work.

E6. EQUIPMENT

E6.1 Contractor shall obtain approval of the Contract Administrator of all machinery and equipment to be used on the Laura Secord School – Playing Field Renovation.

(a) All machinery, used once the rough grades are achieved, must have approved landscape flotation tires, turf tires or tracks.

E7. CANADIAN STANDARDS ASSOCIATION GUIDELINES

E7.1 All playground equipment supplied and the method of installation shall be in accordance with the latest edition of the "National Standard of Canada, CAN/CSA-Z614-03".

E8. BASIS OF PAYMENT

E8.1 Payment for each Item of Work specified under each section shall be paid for at the unit price for those Items as per Prices listed in the Form B: Prices and shall be broken down by Site.

E9. REMOVALS

E9.1 General Description

(a) This specification shall cover the removal of items such as play equipment, site furnishings, paving blocks and fencing as specified on the Drawings.

E9.2 Location and Itemization of Work

(a) Laura Secord School – Playing Field Renovation

(i) Removal of soccer goal posts and baseball backstop.

(b) Nellie McClung Park

(i) Removal of pre-cast concrete pavers and timber edging.

(ii) Salvaging of two benches, wrought iron fence, and bulletin board sign.

(iii) Relocation on site of bus stop bench.

(c) Evanson Tot Lot

(i) Removal of playstructure, sand box, chain link fence, post and chain fence, bench and sign.

E9.3 Execution

(a) Goal posts, baseball backstop, fencing, benches and signs are to be removed including any bases or foundations in their entirety.

(i) The wrought iron fence, two benches and the bulletin board sign from Nellie McClung Park are to be salvaged. The Contract Administrator shall supply name of the City contact person so that the Contractor can arrange to deliver the removed items to the City Yard at 2170 Main Street or other designated location.

- (ii) All other items shall be removed from the sites and disposed of in a safe and legal manner.
- (b) Playstructures are to be removed including any bases or foundations in their entirety. All play equipment is to be destroyed and, under no circumstances, is any of it to be sold or reused. Removals are to be scheduled such that no partial or unsafe structures are left unsecured. Removals are to be scheduled with the installation of new play equipment, so that no park is without play equipment for a period of more than two (2) weeks.
- (c) The bus stop bench at Nellie McClung Park shall be relocated on Site. This item shall be incidental to the Removals for that Site.

E9.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a lump sum basis, for the Items of Work listed below, which price shall include all costs of removal, salvage and disposal.
- (b) Items of Work:
 - (i) Removals
 - (ii) Salvaging of Materials

E10. IRRIGATION SYSTEM

E10.1 General Description

- (a) Further to CW 3530-R3, this specification shall cover the removal of a portion of the existing irrigation system, the salvaging of portions of the old system and the installation of the new irrigation system for the Laura Secord School – Playing Field Renovation.

E10.2 Coordination and Access

- (a) Work shall be coordinated with other sub-contractors who may be working concurrently on the Site.
- (b) The existing control systems are located within Laura Secord School. Access to this equipment is to be coordinated through the Contract Administrator.

E10.3 Maintenance Data and Demonstration Procedures

- (a) Maintenance data for operation and maintenance of the irrigation system and equipment shall be provided to the Contract Administrator.
- (b) The maintenance manual shall include all original manufacturer's warranty certificates, servicing and replacement procedures for all sprinklers and valves, and procedures for blowing out the system in the fall and charging the system in the spring.
- (c) Procedures shall be demonstrated for the Owners as directed by the Contract Administrator.

E10.4 As-Built Plan

- (a) Upon completion of the Work, an as-built plan showing exact locations of all components of the system shall be submitted.
- (b) A control schedule that balances the system hydraulics and watering requirements shall be submitted.

E10.5 Materials

- (a) Irrigation Pipe: 38mm, CW 3530-R3.
- (b) Sprinkler Heads: Toro 2001.

- (c) Sand: mortar sand.

E10.6 Methods

- (a) Further to CW 3530-R3, portions of the existing irrigation system shall be removed as shown on the Drawings and the system capped off for the duration of the construction period.
- (b) Sprinkler heads are to be salvaged and reused in the new installation. Where existing heads are damaged or deemed unsuitable, new heads are to be supplied and installed. Exact numbers of new heads required will not be known until salvage operations are complete.
- (c) The existing system, that is to remain, is to be protected for the duration of the construction period.
- (d) Further to CW 3530-R3, new lines and salvaged / new sprinkler heads are to be installed as shown on the Drawings. Locations are to be staked out by the Contractor and approved by the Contract Administrator prior to installation. The new lines are to be connected to the existing system within the existing irrigation pit.
 - (i) If lines are installed using trenching method, all trenched material is to be removed and disposed of off site, and trenches are to be backfilled with mortar sand.

E10.7 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 removal, salvaging, fittings, connectors and material supply and proper material installation to form a complete operational system. Site restoration shall be considered incidental to the Work.
- (b) Items of Work:
 - (i) Removal/Salvage of Irrigation System
 - (ii) Supply and Installation of New Irrigation Pipe
 - (iii) Installation of Salvaged Irrigation Heads
 - (iv) Supply and Installation of New Irrigation Heads

E11. SITE GRADING

E11.1 General Description

- (a) Further to CW 3110-R7 and CW 3170-R3, this specification shall cover the Site grading, including:
 - (i) The excavation and removal of materials for the construction of grassed and granular playing fields for the Laura Secord School – Playing Field Renovation.
 - (ii) The excavation and removal of materials for the construction of the play areas for Evanson Tot Lot.
- (b) The excavation and preparation of areas for the installation of curbs, paving and new turf are considered incidental to those items of Work.

E11.2 Type 1- Methods - Laura Secord School – Playing Field Renovation

- (a) The Contractor shall stake and protect all Site features, which are to remain.
 - (i) The existing light bases are to be protected.
 - (ii) The baseball backstop at the south end of the field is to be protected.
 - (iii) The baseball granular area is to be protected where no excavation is required.
- (b) The entire construction area is to be excavated or filled to achieve rough grade.

- (i) Rough grade is to be to levels, profiles and contours allowing for surface treatment as indicated on Drawings.
- (c) Wherever the proposed Site grading is to meet existing Site grades, the grades are to match and positive Site drainage is to be maintained.
- (d) Rough grading is to be done only once the irrigation system has been dismantled.
- (e) Work is to be coordinated with the construction of the retaining walls.
- (f) In fill areas, the Contractor shall scarify the existing ground to a minimum depth of 150mm prior to the placement of any fill.
- (g) Compaction shall include the use of sheep's foot or other suitable compaction equipment as approved by the Contract Administrator to achieve a minimum compaction of 95% Proctor Density.
- (h) All surplus materials shall be disposed of as per Clause 9.3 of CW 3110.
- (i) Following rough grading and compaction, the Work area shall be fine graded to provide a maximum deviation of 25mm in 10 metres from the design grade with no low areas to hold water. The finished surface of all disturbed areas shall be dragged smooth in such a manner that there are no loose soil particles greater than 25mm in maximum dimensions.

E11.3 Type 2 - Methods – Evanson Tot Lot

- (a) The entire Site, within the fence lines, is to be stripped of turf, sand and wood edging.
- (b) Play areas are to be excavated to the depth required for the installation of new safety stone and the materials disposed of off site.
- (c) The Site shall be graded to have positive drainage to the front and back of the Site. The Site shall not drain towards the adjacent side properties.

E11.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a square metre basis, for the Items of Work listed below, which price shall include all costs of excavation and removal of materials, and rough and fine grading.
- (b) Items of Work:
 - (i) Type 1 - Site Grading
 - (ii) Type 2 - Site Grading

E12. SUB-SURFACE DRAINAGE

E12.1 General Description

- (a) This specification shall cover the supply and installation of the subsurface drainage system as shown on the Drawings for the Laura Secord School – Playing Field Renovation.

E12.2 Materials

- (a) Drainage Material: mortar sand.
- (b) Drainage Pipe: AKWADRAIN strip drain c/w filter fabric cover, 25x150mm.
- (c) Clean-out Catch Basin: 150mm round single outlet ABS catch basin, Carson TT 101, c/w satin brass fixed/removable grate, Carson TT 822.
- (d) Fittings: All fittings are to be to manufacturer's specifications and sized to fit applications.

E12.3 Methods

- (a) Trenching

- (i) Commence trench excavation after the Site grading has been completed and approved by the Contract Administrator.
 - (ii) Excavate trenches to the dimensions shown on the Drawings or as directed by the Contract Administrator.
 - (iii) All trenched material shall be disposed of off-site.
 - (iv) Repair any non-conforming trenches to the satisfaction of the Contract Administrator.
- (b) Installation of Drainage Pipe and Catch Basins
- (i) Install drainage pipe to line and grade shown on the Drawings or as directed by the Contract Administrator.
 - (ii) Assemble pipe in accordance with manufacturer's specifications so when complete the drainage pipe will have a smooth and uniform invert.
 - (iii) Use the longest pipe length manufactured to reduce the number of joints on the sub-drain.
 - (iv) Commence the installation of the pipe at the drain outlets in the retaining walls and proceed upgrade.
 - (v) Install and connect clean-out catch basins as shown on the Drawings and as per manufacturer's specifications.
- (c) Placement of Drainage Material
- (i) Backfill trenches with mortar sand.
 - (ii) Place drainage material to ensure no damage occurs to the drainage pipe.
- (d) Protection of System
- (i) Construction traffic will not be allowed to travel over the completed sub-drain trench until a minimum of 150mm of the manufactured topsoil mix has been placed over it.
 - (ii) Coordinate the installation of sub-surface drainage system with the spreading of the manufactured topsoil mix to ensure the system is protected.
- (e) Testing
- Water test the completed system prior to sodding.

E12.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a lineal metre basis, for the Items of Work listed below, which price shall include all costs of trenching and removal of materials, fittings, material supply and proper material installation to form a complete operational system. Supply and installation of catch basins, connectors and fittings is considered incidental to the Work.
- (b) Items of Work:
 - (i) Sub-Surface Drainage

E13. TIMBER RETAINING WALLS

E13.1 General Description

- (a) This specification shall cover the supply and installation of timber retaining walls as shown on the Drawings for the Laura Secord School – Playing Field Renovation.

E13.2 Materials

- (a) Timbers: All timbers shall be spruce, pine or fir, No. 2 or better, no wane, bark, twisting, checking or splitting permitted. Wood shall be smooth and free of rough areas. All timbers to be 150 x 150mm with a minimum length of 1400mm.

- (b) Treatment: Bio-Wash Ltd., Natural Deck Oil and Mill Glaze Away.
- (c) Filter Cloth: As per CW 3120-R1, Clause 2.5.
- (d) Granular
 - (i) Base: 19mm \emptyset down crushed limestone.
 - (ii) Wall Backfill: 32mm \emptyset clean stone.

E13.3 Method

- (a) Timbers shall be subject to inspection and approval by the Contract Administrator.
- (b) The wood shall be treated off Site prior to installation and all installation cuts shall be treated. The treatment shall be applied as per the manufacturer's specifications and instructions. Submit treatment product and colour sample for approval prior to application.
- (c) Timbers shall be installed as per Drawings.
- (d) The areas to have retaining walls shall be excavated along both sides of the fence to expose the fence foundations and to provide for adequate installation of the granular materials. Care is to be taken so that the fence is not damaged.
- (e) Base course timbers shall be set on granular base, the depth of which may vary in order to set the timber at the correct grade. Base course grade is to be determined such that the top course of the wall is level across entire length to achieve grades set on Drawings.
- (f) Timbers shall be cut and fitted around existing fence posts and concrete fence bases. Care is to be taken so that the fence is not damaged. The chain link fencing is to be stapled to the timbers to ensure a close and even fit.
- (g) Base course timbers shall be pinned with a minimum of two (2) 19mm \emptyset by 900mm rebar at maximum 1200mm O.C. Other rows of timber above base course shall be securely spiked with a minimum of two (2) 12mm \emptyset by 250mm spikes at maximum 1200mm O.C. All timbers shall be cut neatly for a proper fit with no spaces or gaps between. Finished elevations shall ensure that all timbers are smooth, level, set plumb and spaced uniformly.
- (h) Slots for the installation of the sub-surface drainage system shall be as shown on the Drawings and determined on Site.
- (i) The filter cloth and the drainage system shall be installed and the wall backfilled with granular and sub-grade material as shown on the Drawings.

E13.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a lump sum basis, for the Items of Work listed below, which price shall include all costs of material supply including the granular and filter cloth, sub-grade preparation, and proper material installation. Site restoration Work shall be considered incidental to the Work.
- (b) Items of Work
 - (i) Timber Retaining Wall

E14. TOPSOIL AND FINISH GRADING

E14.1 General Description

- (a) Further to CW 3540-R2, this specification shall cover the supply and installation of:
 - (i) The manufactured topsoil mix for the Laura Secord School – Playing Field Renovation.
 - (ii) The manufactured topsoil mix for all other areas to be sodded and planting beds: Laura Secord School Front Yard, Nellie McClung Park and Evanson Tot Lot.

E14.2 Materials

- (a) Manufactured Topsoil Mix
 - (i) Laura Secord School – Playing Field Renovation: Three-way Mix, 70-20-10 (sand/peatmoss/topsoil).
 - (ii) Sodding and Planting Beds: Three-way Mix, 1/3-1/3-1/3 (sand/peatmoss/topsoil).

- (b) Sand: USGA Golf Greens Sand as supplied by Kachur Sand and Gravel. Particle size distribution as follows:

Particle Size	% of Total
Gravel (2.0-3.4 mm)	<3%
Very Course Sand (1.0-2.0 mm)	<10%
Coarse sand (0.5-1.0 mm)	}<60%
Medium Sand (0.25-0.5 mm)	}
Fine sand (0.15-0.25 mm)	<20%
Very Fine Sand (0.106-0.15mm)	}<5%
(0.05-0.106mm)	}
Silt (0.002-0.05mm)	<5%
Clay (<0.002mm)	<3%

- (c) Peatmoss:
 - (i) Derived from partially decomposed Sphagnum Moss.
 - (ii) Elastic and homogeneous, brown in colour.
 - (iii) Free of wood and deleterious material which could prohibit growth.
 - (iv) Shredded particle minimum size: 5mm.
- (d) Topsoil: As per CW 3540-R2.
- (e) Fertilizer: Industry accepted standard medium containing nitrogen, phosphorous, potassium and any other micro-nutrients suitable to the specific application and as determined by chemical analysis of the manufactured topsoil mix.

E14.3 Source Quality Control

- (a) The Contractor shall supply the Contract Administrator with confirmation of the source and the analysis of the sand being supplied before the manufacture of the three-way mixes.
- (b) The Contractor is responsible for amendments to supply topsoil as specified.
- (c) Testing of the manufactured topsoil mix will be carried out by a testing laboratory designated by the Contract Administrator. Testing shall be for pH, P and K, and for organic matter. Physical Properties, Partical Size Analysis, Saturated Hydraulic Conductivity and Water Retention may be required from Standard Soil Consultants Inc. Sampling, testing and analysis shall be in accordance with provincial standards and other standards as deemed necessary by the Contract Administrator.

E14.4 Methods

- (a) The manufactured topsoil mixes shall be installed as per CW3540-R2 or as directed by the Contract Administrator.
- (b) Laura Secord School Front Yard: Shrub beds shall be excavated and material removed to a minimum depth of 250mm in the areas indicated on the Drawings. The bottom of the bed shall be scarified to depth of 100-150mm.
- (c) Place manufactured topsoil mix to the following depths after settlement:
 - (i) Sodded areas: 100mm except for as noted below.
 - (ii) Planting Beds: min. 200mm.
 - (iii) Laura Secord School – Playing Field Renovation: 150mm.

- (d) Nellie McClung Park: The areas within the existing perennial beds, that are disturbed during construction, are to be cleared of excess granular material and debris, and backfilled with planting soil. This shall be considered incidental to the Work.

E14.5 Basis of Payment

- (a) Payment for Work specified under this section shall be included with the price for sod and plant material except for:
 - (i) Payment for shrub beds at Laura Secord School Front Yard shall be paid for at the contract Unit Price measured by square metre for the Items of Work listed below, which price shall include all costs of excavation and removal of materials, material supply and proper material installation. Mulch is incidental to the planting of plant material.
- (b) Items of Work
 - (i) Shrub Beds

E15. SODDING

E15.1 General Description

- (a) Further to CW 3510-R7, this specification shall cover the supply and installation of sod.

E15.2 Materials and Method

- (a) Type 1 – Sodding
 - (i) Mineral base sod per CW 3510-R7.
 - (ii) Standard sodding and turf repair at Laura Secord School Front Yard, Nellie McClung Park and Evanson Tot Lot.
 - (iii) Manufactured Topsoil Mix shall be as per E14.
- (b) Type 2 – Sodding
 - (i) As per CW 3510-R7.
 - (ii) Sod shall be mineral base, big roll sod for the Laura Secord School – Playing Field Renovation.
 - (iii) Manufactured Topsoil Mix shall be as per E14.

E15.3 Maintenance Period

- (a) The Contractor shall maintain the sod for 60 Calendar Days after the completion of the installation or until such a time as the turf is established in accordance with CW 3510-R7.
- (b) Given Contract Administrator authorization, the Contractor may choose to make operable the irrigation system for use during the maintenance period for the Laura Secord School – Playing Field Renovation.

E15.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a square metre basis, for the Items of Work listed below, which price shall include all costs of material supply, sub-grade preparation, proper material installation, maintenance and all other items incidental to the Work. Payment for Sodding shall be in accordance with the following:
 - (i) Seventy-five (75%) following supply and placement.
 - (ii) Twenty-five (25%) following termination of the maintenance period.
- (b) Items of Work
 - (i) Type 1 – Sodding

- (ii) Type 2 - Sodding

E16. BASEBALL DIAMOND GRANULAR

E16.1 General Description

- (a) This specification shall cover the supply and installation of the baseball diamond granular surfacing for the Laura Secord School – Playing Field Renovation.

E16.2 Materials

- (a) Granular is to be baseball diamond infield mix and shall consist of natural sand and pink-red crushed limestone.

- (i) The colour of the material is imperative as the material is being used to top up existing material.
 - (ii) A sample will be needed to match colour.

- (b) Fine Sand

Metric Sieve Size	% Passing
5000	100
2500	90-100
435	70-90
315	60-80
80	0-3

- (c) "Pink-Red" Crushed Limestone

- (i) 6mm to dust "pink-red" crushed limestone with a minus 80 M.M.S. proportion not exceeding 35%.

- (d) Mixing Requirements

- (i) A mixture of 60% limestone and 40% sand in accordance to the gradation requirements.
 - (ii) Thoroughly bucket mix the two materials at the stated ratio to create a uniform blend of sand products.
 - (iii) After mixing is completed as stated all material must then be final screened through a 0.03mm (1/8") slotted screener, and the gradation requirements for the specified product is 100% passing for the screen.

E16.3 Method

- (a) Baseball granular area, as shown on the Drawings, is to be prepared by the removal of all vegetative materials and debris, repair of any damage caused by the construction on the Site, and the grading of the area to meet the desired grades.
- (b) The existing granular material shall be topped up as required and new granular material evenly spread as required to achieve the design grades as shown on the Drawings for a total minimum depth of 100mm of granular.
- (c) Care is to be taken to keep this area clean and free from contamination by other materials.

E16.4 Basis of Payment

- (i) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a square metre basis, for the Items of Work listed below, which price shall include all costs of material supply, sub-grade preparation, proper material installation.
- (b) Items of Work

- (i) Baseball Diamond Granular

E17. SOCCER GOALS

E17.1 General Description

- (a) This specification shall cover the supply and installation of soccer goals for the Laura Secord School – Playing Field Renovation.

E17.2 Materials and Methods

- (a) Soccer goals shall be Scoremaster SMDM900PC D/MAX Soccer Goals complete with netting, as available from Crozier Agencies. They are to be 2.74m (9').
- (b) Goal post anchors shall be Winnipeg Youth Soccer Net Hold Downs, Product # 72722003, as purchased from the City of Winnipeg. Each goal net shall be anchored with six (6) anchors.
- (c) Goals shall be installed on the Site after the end of the sod maintenance period.

E17.3 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per unit per set basis, 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) Soccer Goals

E18. CONCRETE CURBS

E18.1 General Description

- (a) Further to CW 3310-R8, this specification shall cover the supply and installation of concrete curbs as shown on the Drawings and described as:
 - (i) Type 1 - Fence Curb for Ornamental Fence c/w Widened Corners: Laura Secord School Front Yard and Nellie McClung Park.
 - (ii) Type 2 – Fence Curb for Wood Fence: Evanson Tot Lot.
 - (iii) Type 3 – Edging Curb: Evanson Tot Lot and Nellie McClung Park.
 - (iv) Type 4 – Sand Box Curb: Evanson Tot Lot.

E18.2 Materials and Methods

- (a) All curbs shall be in accordance with CW-3310-R8.
- (b) Type 1 - Fence Curb for Ornamental Fence c/w Widened Corners shall be as shown on Drawing L9. The installation of the fence on the curb shall be coordinated with this Work. The top of the curb shall be level across its length to the grades shown on the Drawings.
- (c) Type 2 - Fence Curb for Wood Fence shall be as shown on Drawing L14. The installation of the fence on the curb shall be coordinated with this Work. The top of the curb shall be level across its length.
- (d) Type 3 – Edging Curb shall be as shown on Drawings L9 and L14. The top grade of the curb shall be determined on Site and approved by the Contract Administrator.
- (e) Type 4 – Sand Box Curb shall be as shown on Drawing L14.
 - (i) The width of the curb is 150mm and 200mm depending on the side. The top of the curb shall be level across its length.
 - (ii) The installation of the fence on the 200mm curb and the installation of the Backless Benches shall be coordinated with this Work.

- (iii) The wood cap shall be installed on two sides of the Sand Box and this shall be considered incidental to the Work. The wood cap is to be as shown on the Drawings. The wood shall be spruce, pine or fir, No. 2 or better, no wane, bark, twisting, checking or splitting permitted. Full lengths of wood shall be used per side and the wood is to be sanded smooth with chamfered edges. The wood shall be treated with Bio-Wash Ltd., Mill Glaze Away and Natural Deck Oil as per manufacturer's specifications.
- (f) Granular base: 19mm \emptyset down crushed limestone.

E18.3 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, sub-grade preparation, and proper material installation. Types 1,2 and 3 shall be measured by the lineal metre and Type 4 shall be lump sum.
- (b) Items of Work:
 - (i) Type 1 - Fence Curb for Ornamental Fence
 - (ii) Type 2 - Fence Curb for Wood Fence
 - (iii) Type 3 – Edging Curb
 - (iv) Type 4 – Sand Box Curb

E19. CONCRETE PAVING

E19.1 General Description

- (a) Further to CW 3310-R8 this specification shall cover the supply and installation of Concrete Paving and Patterned / Stamped Concrete Paving as shown on the Drawings and as:
 - (i) Type 1 - Concrete Paving: Nellie McClung Park
 - (ii) Type 2 - Patterned / Stamped Concrete Paving: Laura Secord School Front Yard and Nellie McClung Park

E19.2 Materials and Methods

- (a) Concrete paving shall be supplied and installed in accordance with CW 3310-R8.
- (b) Concrete paving shall be poured in place and constructed in accordance with dimensions, design grades and lines as shown on the Drawings.
- (c) All cement shall be Type 10, Normal Portland Cement.
- (d) The concrete mix shall have the required strength and workability
 - (i) Minimum Specified Compressive Strength @ 28 days = 32 MPA.
 - (ii) Minimum Cementitious Content = 340 kg/m³
 - (iii) Minimum Water / Cementitious Ratio = 0.45
 - (iv) Slump = 70 +/- 20mm
 - (v) Aggregate Size = 20mm Nominal
 - (vi) Air Content = 5.0% to 8.0%
- (e) Granular base shall be 19mm \emptyset crushed limestone down and be compacted to 100% Standard Proctor density.
- (f) Install 125mm thick concrete paving on 100mm depth of compacted granular base.
- (g) Reinforce concrete with 10m r-bars at 600mm O.C. both ways, minimum 50mm coverage.
- (h) Sawcut control joints to be approved by Contract Administrator prior to implementation.
- (i) Type 1 - Concrete Paving

- (i) Standard City sidewalk concrete paving in accordance with CW 3310-R8.
- (j) Type 2 - Patterned / Stamped Concrete Paving
 - (i) Concrete colour shall be a grey/pewter colour with a charcoal release. Colour to be finalized at a later date. Colour shall be integral throughout paving.
 - (ii) Pattern shall be StampMaster "Forest Floor" TRA-8 or approved alternative.
 - (iii) Contractor is to supply a colour and pattern sample for approval by the Contract Administrator prior to installation.
 - (iv) Sealer shall be Type 1, non-yellowing, solvent based c/w 25% solids. Provide two (2) coats of sealer. The first coat after installation and power washing. The second coat at 28 days after curing of the concrete. Power wash prior to applying the second coat.
 - (v) Installation shall be by a qualified applicator with a minimum of 5 years experience. Three references must be supplied within three (3) Working Days upon request of the Contract Administrator.

E19.3 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a square metre basis, for the Items of Work listed below, which price shall include all costs of supply and installation of granular base, concrete, reinforcing, sealers and control joints. Site restoration work shall be considered incidental to the Work.
- (b) Items of Work
 - (i) Type 1 - Concrete Paving
 - (ii) Type 2 - Patterned / Stamped Concrete Paving

E20. GRANULAR PATHS

E20.1 General Description

- (a) This specification shall cover the supply and installation of Granular Paving including sub-grade preparation at Evanson Tot Lot.

E20.2 Materials and Method

- (a) Granular Paving
 - (i) Sub-base: 100mm depth of 50mm down crushed limestone compacted in two layers over compacted sub-grade.
 - (ii) Base: 50mm depth of 19mm down crushed limestone, compacted.
 - (iii) Top: 25mm of 6mm down crushed limestone, compacted.
- (b) The granular pathways must be constructed to function within proposed drainage patterns.
- (c) The existing granular area between the existing chain link fence and the back lane shall be topped up as required with 6mm down crushed limestone and compacted. This shall be considered incidental to the Work.

E20.3 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a square metre basis, for the Items of Work listed below, which price shall include all costs of material supply, sub-grade preparation, and proper material installation.
- (b) Items of Work:
 - (i) Granular Paths

E21. GRANULAR PLAY SURFACES

E21.1 General Description

- (a) This specification shall cover the supply and installation of Safety Stone and Sand Box Sand at Evanson Tot Lot.

E21.2 Materials

- (a) Safety Stone shall be clean washed 6mm Play Stone as supplied by Glacial Sand and Gravel.
- (b) Sand Box Sand: clean sand box sand.
- (c) Samples of the specified materials shall be submitted for approval to the Contract Administrator at least seven (7) Calendar Days prior to installation.

E21.3 Method

- (a) Play area to receive Safety Stone is to be excavated to the depth required for correct depth of stone.
- (b) Safety Stone shall be installed within the play area to a minimum depth of 250mm.
- (c) The Sand Box shall be filled to a minimum depth of 400mm. Sand may be left in a pile in centre of sand box.
- (d) The installation of the Safety Stone shall be done immediately after the play equipment has been installed.
- (e) Installation shall be done by equipment sized to suit the Work being done and the Stone shall be spread by hand in the immediate vicinity of the play equipment so as not to damage the same.
- (f) The play equipment shall be swept clean as required after installation of the Stone.

E21.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a cubic metre basis, for the Items of Work listed below, which price shall include all costs of material supply, sub-grade preparation, and proper material installation.
- (b) Items of Work
 - (i) Safety Stone
 - (ii) Sand Box Sand

E22. PLAYSTRUCTURES

E22.1 General description

- (a) This specification shall cover the supply and installation of the playstructure and the entrance arch / posts at Evanson Tot Lot.

E22.2 Product

- (a) Playstructure shall be Landscape Structures Inc, Playbooster System # 32581B-2 as shown on the attached playstructure Drawing, as available from Playgrounds-R-U's.
- (b) Entrance Arch / Posts shall be Landscape Structures Inc, Playbooster System to match the playstructure and as shown on the attached Drawing.

E22.3 Materials

- (a) Posts / Caps

- (i) All posts shall be a minimum of 150mm (5") O.D. round tubing. All posts shall be fabricated from aluminum (0.125" min. wall thickness) tubing with a baked-on TGIC polyester powder coating. The powder coating finish shall meet or exceed ASTM standards for hardness, adhesion, impact and salt spray resistance. All fabrication cuts drill holes and weld joints shall be sprayed with a corrosion resistant coating prior to powder coating. The bottom end of the posts is to be sealed with a moisture barrier.
- (ii) Top caps for posts shall be aluminum die cast and powder coated the same as the post colour. All caps shall be factory installed and secured in place with tamper proof, self-sealing rivets.
- (b) Decks
 - (i) All decks shall be manufactured from vinyl-coated perforated steel. Deck heights, shapes and configurations shall be as shown on the Detail Drawings.
- (c) Clamping System
 - (i) All deck, rail and play component clamping systems shall be fabricated from zinc plated, and galvanized steel, stainless steel or aluminum, and baked-on polyester powdercoated to match post colour unless noted on Detail drawings. Tamper proof, corrosion resistant fasteners shall be used to retain clamping systems.
 - (ii) Custom clamps shall be included for the Entrance Arch/Posts to accept the chains.
- (d) Handrails, Safety Rails and Handloops
 - (i) All handrails and safety rails shall be fabricated using a minimum of 29mm (1 1/8") O.D. with 11 GA 0.03mm (0.12") wall thickness steel tubing. After all fabrication activities have occurred including end cuts, drill holes, bends and weld joints, all components shall be hot dipped galvanized and baked-on polyester powdercoated.
 - (ii) Handloops shall be permalene panels.
- (e) Hardware
 - (i) All fasteners shall be socketed and tamper proof in design, and either carbon steel plated with zinc/nickel and iridescent chromate finish or stainless steel.
- (f) Slides
 - (i) Poly slides shall be rotationally moulded from U.V. stabilized linear low density polyethylene. Colours are to be compounded not dry-blended. Slides are to have an adjustable footer to allow for contraction and expansion. Hoods are to have built-in handle.

E22.4 Play Components

- (a) The following components are to be included on the Playstructure:
 - (i) one (1) Double Swirl Poly Slide, 56" deck.
 - (ii) one (1) Cliff Climber, inclined plank with footholds and chain.
 - (iii) one (1) Vertical Ascent Climber, 48" deck.
 - (iv) one (1) Deck to Deck Steps(32" deck difference).
 - (v) one (1) Pilot Panel, solid panel with graphics c/w 2 Steering Wheels.
 - (vi) one (1) Store Panel , ground level.
 - (vii) one (1) Balcony Deck.
 - (viii) one (1) Step Deck.
 - (ix) one (1) 90° Horizontal Ladder c/w Horizontal Ladder Support.
 - (x) one (1) Slant Entrance Panel, ground level.
 - (xi) one (1) SteelX Roof c/w Flag/Pole
- (b) The following components are to be included on the Entrance Arch / Posts:

- (i) Arch
 - (ii) Custom Arch Sign to read "Evanson Tot Lot"
 - (iii) Two (2) Hole Panels
 - (iv) Chains as shown on the Drawings. Chain for the Parks Access shall have a lock provided by the City.
- (c) All playstructures shall have kickplates and handhold panels as required to meet the CAN/CSA -Z614-03.

E22.5 Colours

- (a) Playstructure and Entrance Arch/Posts
- (i) Maroon - Posts
 - (ii) Tan – Clamps, Slides, Sign and Tendertuff
 - (iii) Green with Tan - Panels
 - (iv) Green - Climbers, Overheads and Handholds
 - (v) Green and Maroon - Roof
 - (vi) Red – Flag/Pole

E22.6 Installation

- (a) Playstructures shall be installed as per the Canadian Standards Association Guidelines. Refer to Clause E7. All posts and other vertical items shall be true to vertical. All decks shall be level. For foundations refer to Clause E23.
- (b) Playstructures shall be installed by factory certified installers only and to manufacturer's specifications.
- (c) Installation of playstructures shall be coordinated with associated site development work. Playstructures shall be secured and rendered unusable until safety base is in place.
- (d) Playstructures shall be ordered and installation dates scheduled immediately upon award of Contract.

E22.7 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per unit basis, for the Items of Work listed below, which price shall include all costs of supply and installation. Site restoration work shall be considered incidental to the Work.
- (b) Items of Work:
- (i) Playstructure
 - (ii) Entrance Arch / Posts

E23. FOUNDATIONS

E23.1 All playground equipment posts, bases and anchors are to be set in concrete footings or piles to ensure stability and prevent frost heaving. The current Standard Construction Specifications of the City of Winnipeg, CW 2160-R6 -Concrete to be Used in Underground Works, is to be utilized in the installation of the concrete works for all below ground components.

E23.2 The specific concrete requirements shall be:

- (a) Sulfate resistant, Type 50 Cement
- (b) 28 day compressive strength of 30 Mpa
- (c) maximum aggregate size of 40mm, nominal
- (d) slump 90 20mm

- (e) maximum water/cement ratio 0.45

E23.3 Installation

- (a) Contractor shall notify the Contract Administrator at least 48 hours prior to installation of concrete, so that footings may be inspected in advance of concrete being poured.
- (b) Playstructure posts shall have a minimum 300mm (12") diameter concrete footing and shall be centred in the concrete footing to provide a minimum 50mm (2") band of concrete on all sides.
- (c) Work under this section is considered incidental to the installation of playstructures and site furniture.

E24. ORNAMENTAL FENCING

E24.1 General Description

- (a) This specification shall cover the supply and installation of ornamental fencing at Laura Secord School Front Yard and Nellie McClung Park, as specified on the Drawings.

E24.2 Quality Control

- (a) All workmanship and all materials finished and supplied under this Specification are subject to close and systematic inspection by the Contract Administrator including all operations from the selection and production of materials through to final acceptance of the Contract. The Contractor shall be wholly responsible for the control of all operations incidental thereto notwithstanding any inspection or approval that may have been previously given. The Contract Administrator reserves the right to reject any materials or works which are not in accordance with the requirements of this Specification.

E24.3 Shop Drawings

- (a) The Contractor shall furnish the Contract Administrator with five (5) copies of shop drawings for all aluminum fabrication works. Two (2) approved copies will be returned to the Contractor.
- (b) Shop drawings shall indicate the aluminum layout and miscellaneous metal sizes, dimensions, bolt, drilling locations, connections, information relevant to fabrication and erection of aluminum Contract. Shop welds shall be distinguished on the drawings by AWS welding symbols. All drilling, cutting, and field welding shall be indicated.
- (c) Review of shop drawings in no way relieves the Contractor of the final responsibility for correctness of the dimensions, sizes, fabrication details, errors made therein or for changes made from the Contract Administrator's drawings or specifications not covered by the Contractor's written notification to the Contract Administrator. No reprint of the Contract Administrator working drawings shall be used as the shop drawing.

E24.4 Materials

- (a) All materials supplied under this specification shall be of a type approved by the Contract Administrator, and shall be subject to inspection and testing by the Contract Administrator.
- (b) Aluminum Fencing
 - (i) Posts, pickets and horizontal bars and rings shall be aluminum alloy 6351-T6. Materials shall be sized as shown on the Drawings. Bases shall be aluminum alloy mounting plates. Posts shall be welded to the mounting plates.
 - (ii) Colour shall be black.
- (c) Aluminum Finishes
 - (i) Finish exposed surfaces of aluminum components in accordance with Aluminum Association Designation System for aluminum finishes 1980.

- (ii) Exposed aluminum section shall be given an anodic oxide treatment in accordance with Aluminum Association Specification AA-M12C22A42/44. (#29 Black) to obtain an architectural class 1 anodic colour coating.
- (iii) Appearance and properties of anodized finishes designated by the Aluminum Association as Architectural Class 1 shall meet the requirements of CGSB 63-GP-2M+Amdt April, 1986 for coating Class 1.

E24.5 Methods

- (a) Workmanship shall be accordance with industry standards, and quality control shall be exercised related to the assembly connection requirements, setting, welding and grinding, trimming, sandblasting, co-ordination of fasteners, alignment and adjusting.
- (b) Aluminum Fence
 - (i) Fabrication of all fence members shall be accordance with the Drawings. The Contractor shall verify that the dimensions suit the as-built conditions for concrete posts and curbs. Once the shop drawings have been approved, the fencing shall be fabricated with all welds ground smooth. The fencing shall be shop finished. The fence shall be installed straight and plumb as shown on the Drawings.
 - (ii) Any surfaces damaged during installation shall be touched-up to the approval of the Contract Administrator.

E24.6 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a lineal metre basis, for the Items of Work listed below, which price shall include all costs of material supply, and proper material installation. The corner posts shall be considered incidental to the Work.
- (b) Items of Work:
 - (i) Ornamental Fencing

E25. WOOD FENCING

E25.1 General Description

- (a) This specification shall cover the supply and installation of wood fencing at Evanson Tot Lot, as specified on the Drawings.

E25.2 Quality Control

- (a) All workmanship and all materials finished and supplied under this Specification are subject to close and systematic inspection by the Contract Administrator including all operations from the selection and production of materials through to final acceptance of the Contract. The Contractor shall be wholly responsible for the control of all operations incidental thereto notwithstanding any inspection or approval that may have been previously given. The Contract Administrator serves the right to reject any materials or works which are not in accordance with the requirements of this Specification.

E25.3 Shop Drawings

- (a) The Contractor shall furnish the Contract Administrator with five (5) copies of shop drawings for fence works. Two (2) approved copies will be returned to the Contractor.
- (b) Shop drawings shall indicate posts, plates and fasteners as required. Shop welds shall be distinguished on the drawings by AWS welding symbols. All drilling, cutting, and field welding shall be indicated.
- (c) Review of shop drawings in no way relieves the Contractor of the final responsibility for correctness of the dimensions, sizes, fabrication details, errors made therein or for

changes made from the Contract Administrator's drawings or specifications not covered by the Contractor's written notification to the Contract Administrator. No reprint of the Contract Administrator working drawings shall be used as the shop drawing.

E25.4 Materials

- (a) All materials supplied under this specification shall be of a type approved by the Contract Administrator, and shall be subject to inspection by the Contract Administrator.
- (b) Fence Posts
 - (i) Fence posts shall be standard, continuous weld, schedule 40 steel pipe, hot dipped galvanized, not less than 73mm outside diameter.
 - (ii) Fence posts are to be as shown on the Drawings. They are to have base plates for those posts to be installed on the concrete curbs and plates to connect to wood shall be as shown on Drawings.
 - (iii) Posts that are to be set in the ground shall be a minimum of 1200mm longer than the height of the fence. Other posts shall be of the length required for the situations shown on the Drawings.
 - (iv) Fence post closest to Evanson Street is to have a loop welded on to accept the chain from the Entrance Arch/Post.
- (c) Wood Fence
 - (i) All wood shall be full dimension spruce, pine or fir, no wane, bark, twisting, checking or splitting permitted. Wood shall be smooth and free of rough areas.
- (d) Wood Finish
 - (i) The wood fence shall be treated with two coats of Behr "Deck Plus" semi-transparent stain. The colour is to be "Mountain Spruce" or as approved by the Contract Administrator.

E25.5 Methods

- (a) Fence posts are to be installed as shown on Drawings. Posts with base plates are to be anchored onto curbs to the required heights. Posts that are to be set into the ground shall be installed by the direct burial/push method.
- (b) Post locations are to be determined by first determining strategic post locations at curb changes. Posts are to be located at equal spacing as much as possible
- (c) Fence Contract is to be coordinated with the Concrete Curbs. The line of the fence is to be along the centre line of the curbs and the fence is to be straight along its entire length.
- (d) The new fence is to meet the existing chain link fence at the corner at the back lane with no space between.
- (e) Top of fence is to be level along its entire length. Bottom of fence is to vary with the different site conditions.
- (f) All fasteners shall be galvanized and adequately sized to do the job intended. All fastening shall be done in a neat and orderly fashion.
- (g) One intent of the fence is to keep the play stone and sand in the park, and the fence shall be constructed to further this intent.

E25.6 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a lineal metre basis, 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) Wood Fencing

E26. SITE FURNITURE

E26.1 General Description

- (a) This specification shall cover the supply and installation of site furniture as specified on the Drawings.

E26.2 Location of Work

- (a) Nellie McClung Park
 - (i) Benches – three (3)
 - (ii) Games Tables- two (2)
 - (iii) Waste Receptacle - one (1)
 - (iv) Commemorative Sign Block - one (1)
- (b) Evanson Tot Lot
 - (i) Benches – two (2)
 - (ii) Backless Benches – two (2)
 - (iii) Waste Receptacle - one (1)

E26.3 Materials and Method

- (a) Waste Receptacles shall be Metal Slat Type SCD-119, painted black. This item is to be purchased from the City of Winnipeg and will require pick-up and installation.
- (b) Games Tables
 - (i) DuMor, Inc. Site Furnishings, Game Table 78-33PL, recycled plastic. They shall have three (3) seats. They shall have the embedment support option S-1. Colour shall be Black for the metal and Redwood for the recycled plastic. Tables are to be installed according to Drawings and manufacturer's specifications.
- (c) Benches shall be:
 - (i) DuMor, Inc. Site Furnishings, Bench 88-60PL, recycled plastic. They shall be 1.8M (6') in length and have arm rests. They shall have the embedment support option S-1. Colour shall be Black for the metal and Redwood for the recycled plastic. Benches are to be installed according to Drawings and manufacturer's specifications.
- (d) Backless Benches shall be:
 - (i) DuMor, Inc. Site Furnishings, Bench 103-60PL, recycled plastic. They shall be 1.8M (6') in length. They shall have the embedment support option S-1. Colour shall be Black for the metal and Redwood for the recycled plastic. Benches are to have leg extensions welded on as required to meet installation requirements as shown on the Drawings. Bench seats are to be cut at angle required to make 45° angle and edges are to be sanded smooth. Benches are to be joined together such that there is no pinch point between them and as approved by the Contract Administrator.
- (e) Commemorative Sign Block
 - (i) Tyndall stone block, natural rough direct from quarry bed, sized as shown on the Drawings, c/w one smooth face cut on a 45° angle.
 - (ii) Block shall be subject to inspection and approval by the Contract Administrator prior to installation.
 - (iii) Block is to sit level on the concrete paving and care is to be taken during installation not to damage the paving or curbs.
- (f) Benches, tables and waste receptacles are to be installed before the installation of concrete paving. Tops of concrete footings are to be 200mm below finished grade of all paving. Provide a 12mm thick fibreboard sleeve around the top 200mm of the post frame

where it meets the concrete paving. Site furnishings are to be kept clean of any concrete. Any damaged surfaces shall be touched-up to the approval of the Contract Administrator.

E26.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per unit basis, for the Items of Work listed below, which price shall include all costs of material supply, and proper material installation. Site restoration work shall be considered incidental to the Work.
- (b) Items of Work:
 - (i) Waste Receptacles
 - (ii) Games Tables
 - (iii) Benches
 - (iv) Backless Benches
 - (v) Commemorative Sign Block

E27. PRUNING

E27.1 General Description

- (a) This specification shall cover the pruning of trees and shrubs at Nellie McClung Park.

E27.2 Qualifications

- (a) Staff is to have Canadian Nursery Landscape Association certificate.

E27.3 Tool Maintenance

- (a) Tools are to be clean and sharp throughout the pruning operations. Tools that tear or crush bark are not to be used.
- (b) Tools are to be disinfected before each plant is pruned.
- (c) Tools are to be disinfected before each cut on diseased plants.

E27.4 Disinfectant

- (a) 20% solution of sodium hypochlorite or 70% solution of ethyl alcohol.

E27.5 Pruning

- (a) Dead, dying, diseased and weak growth shall be pruned from plant material as designated by the Contract Administrator.
- (b) In particular, two large trees have low hanging branches, which are to be removed, and one large shrub requires extensive removal of dead wood.
- (c) Contractor shall use proper pruning standards and procedures as outlined in Ontario Ministry of Agriculture, Food and Rural Affairs "Pruning Ornamentals" #483-1992 and as directed by the Contract Administrator.
- (d) Pruned material shall be collected and disposed of off site.

E27.6 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a lump sum basis, for the Items of Work listed below, which price shall include all pruning as directed on Site.
- (b) Items of Work:
 - (i) Pruning

E28. PLANT MATERIAL

E28.1 General Description

- (a) This specification shall cover the supply and installation of trees and shrubs and all materials incidental to their installation at Laura Secord School Front Yard and Evanson Tot Lot.

E28.2 Materials

- (a) Plant Material
 - (i) Quality and source is to comply with Canadian Standards for Nursery Stock, Seventh Edition of Canadian Nursery Landscape Association (C.N.L.A.) referring to 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 top to branch top. Use trees of No. 1 grade. Trees are to have only one, sturdy, reasonably straight and vertical trunk, and a well balanced crown with fully developed leader.
 - (ii) Trees are to be free of disease, insect infestation, rodent damage, sun scald, frost cracks, abrasions, unhealed scars, scars exceeding 5cm 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.
 - (iii) Nursery stock is to be grown in nurseries under proper cultural practices as recommended by the C.N.L.A. Only nursery stock grown for at least the last four (4) years in nurseries located in an Agriculture Canada Plant Hardiness Zone of 2 (a or b) or 3 (a or b) will be accepted. Nursery stock that has grown in plant hardiness zones 1 and 4 or greater will be rejected.
 - (iv) Plant Specification Lists – on Drawings for each Site.
- (b) Planting soil is to Specification E14.
- (c) Water is to be potable and free of minerals which may be detrimental to plant growth.
- (d) Fertilizer is to be a slow release formulation of low nitrogen and high phosphorus e.g. 10-50-12 Apply quantities at rates stated by product manufacturer.
- (e) Staking shall be as shown on Drawings.
- (f) Mulch shall be clean bark or wood chip mulch with chips not less than 15mm or larger than 75mm in size and not more than 20mm thick. Mulch shall be free of leaves, branches and other extraneous matter..

E28.3 Method

- (a) Trees and shrubs are to be planted according to Drawings and to Details on L7.
- (b) 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 planting operation.
- (c) Coordinate shipping of nursery stock and excavation of holes to ensure minimum time laps between digging and planting. Tie branches of nursery stock securely, and protect plants against abrasion, exposure and extreme temperature change during transit. Avoid binding of plants with rope or wire which would damage bark, break branches or destroy natural shape of plant. Give full support to root ball of nursery stock during lifting. Cover plant 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. Remove broken and damaged roots with sharp pruning shears. Make clean cuts, and cover cuts over 10mm diameter with a tree wound dressing.

- (d) Location of nursery stock will be staked out or painted on Site by the Contractor and approved the Contract Administrator prior to planting.
- (e) The Contractor shall coordinate operations, keeping the Site clean and the planting holes drained. The Contractor shall immediately remove soil or debris spilled onto street pavement, grass or sidewalk.
- (f) Installation shall be done during periods of suitable weather conditions and in accordance with locally accepted practice. Trees are to be planted within forty-eight (48) hours of excavation from the nursery. No tree pit is to be left open at the end of the Contractor's Work Day. The planting program is to be planned to ensure that trees delivered to the Site at designated planting locations are installed and thoroughly watered the same day as delivery.
- (g) Loosen bottom of planting hole to depth of 100-150mm. Cover bottom of each excavation with minimum of 150 mm topsoil mixture, incorporate with sub-grade material.
- (h) Plant trees vertically. Orient trees and shrubs to give best appearance in relation to structure, roads and sidewalks. Place nursery stock to depth equal to depth they were originally growing in nursery. 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. Tamp planting soil around root system in layers of 150mm eliminating air voids. Frozen or saturated planting soil is unacceptable. When 2/3 of planting soil has been placed, fill hole with water. After water has completely penetrated into soil, complete backfilling.
- (i) Each tree is to have an earth saucer at its base having a diameter as large as the excavation with a 10cm lip formed at the perimeter of the saucer to retain water. When planting is completed, give surface of planting saucer dressing of fertilizer and mix fertilizer thoroughly with top layer of planting soil and water in well.
- (j) Trees are to be staked as per Details.
- (k) Shrub beds shall be in accordance with E14. Shrubs shall be planted as per details.
- (l) Each tree is to have wood chip mulch spread over the earth saucer to 75mm depth. Shrub beds at Laura Secord School Front Yard shall have wood chip mulch to a depth of 75mm.

E28.4 Maintenance Period

- (a) Refer to E29.

E28.5 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per unit basis, for the Items of Work listed below, which price shall include all costs of material supply, and proper material installation. The supply and installation of mulch shall be considered incidental to the Work. Payment for Plant Material shall be in accordance with the following:
 - (i) Seventy-five (75%) following supply and placement.
 - (ii) Twenty-five (25%) following termination of the maintenance period.
- (b) Items of Work
 - (i) Little Leaf Linden
 - (ii) Prairie Spire Ash
 - (iii) Pygmy Caragana
 - (iv) Dwarf Ninebark
 - (v) Alpine Currant
 - (vi) Rosa Rubrifolia
 - (vii) Scarlet Pavement Rose

- (viii) Goldflame Spirea
- (ix) Froebel Spirea
- (x) Fairy Queen Spirea
- (xi) Meyer Lilac
- (xii) Highbush Cranberry
- (xiii) Bishop's Goutweed

E29. PLANT MATERIAL MAINTENANCE

E29.1 Maintenance Period

- (a) The Contractor shall undertake maintenance of all plant material from the date of installation up to a period of 60 Calendar Days from the date of Certificate of Substantial Performance.
- (b) In general the maintenance shall not commence prior to May 1st and/or terminate after October 30th of each year. In the event of an early spring, whereby 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.
- (c) In the event that plant material requires replacement under the warranty period, the 60 day maintenance period for the replaced material shall commence on the date of replacement.

E29.2 Description of Work

- (i) Irrigate weekly or as required during the growing season following installation by saturating the soil in the root zone area to a depth of 400mm. Water when rainfall is less than 25mm per week for more than three weeks. Irrigate prior freeze-up.
- (ii) Apply 2:1:2 soluble fertilizer to root zone of plants in the early spring not later than May 30th. Irrigate to saturate the soil in the root zone area to a depth of 500mm. Apply additional fertilizers as per standard horticultural practice. Apply at manufacturer's specified rates. Retain and submit material purchase records for all pertinent substances.
- (iii) Cultivate soil in earth saucer lightly at beginning of growing season and apply mulch to maintain installed depth of mulch. Weed as necessary during the entire growing season.
- (iv) Undertake disease and insect control programs as required to control known and serious pests. Obtain approval from Contract Administrator prior to using any pesticide. The use of chemical pesticides is not permitted on City of Winnipeg properties. Retain and submit material purchase records for all pertinent substances.
- (v) Prune trees during dormant season if possible. Remove dead, diseased, crossing, weak, crowded and unsightly or unshapely branches. Do not head back or shear to control shape.
- (vi) Repair all damage to plant material immediately following the discovery of damage and check and re-secure stakes as required.
- (vii) Record all activities on a daily basis. Submit reports to the Contract Administrator on a monthly basis.

E29.3 Basis of Payment

- (i) The payment of the maintenance shall be incidental to the Plant Material.