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HWDSB Front End 2026-132-P02234

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PART 1 GENERAL

1.1 Description of work

- .1 Project title: **Prince of Wales Elementary School**
- .2 The work for this contract comprises of **removals, grading, asphalt paving, play equipment, site furnishings, and plantings.**
- .3 The project sites are located at 77 Melrose Ave. in Hamilton Ontario.

1.2 Related Work

- .1 Division 1 specifications apply to all Work of this contract.

1.3 Contract Method

- .1 Construct the Work as per the Owner's Contract terms.

1.4 Measurement

- .1 Work constructed under a unit price contract will be measured in the units specified in the unit price schedule.

1.5 Sequence of Work

- .1 Work to be performed in specific stages to accommodate the requirements of the Owner and use of site during construction.

1.6 Use of Premises by the Contractor

- .1 Unrestricted use of site until Substantial Completion.
- .2 Coordinate use of premises under direction of the Owner.
- .3 Lottridge St. and Melrose Ave. N to be used for access.
- .4 Smoking, vaping, drugs and alcohol are not permitted on School property. Anyone seen doing these will be removed from the property and not allowed back.

- .5 Access to school washrooms is not available. Vendors need to have their own portable toilet. Location to be provided by successful vendor and reviewed/approved by HWDSB via email prior to construction.

1.7 **Owner furnished items**

- .1 Responsibilities of the Owner:
 - .1 Inspect deliveries jointly with Contractor.
 - .2 Issue minutes for meetings.
 - .3 Process progress certificates and change orders.
- .2 Responsibilities of the Contractor:
 - .1 Designate submittals and delivery date for each product in progress schedule.
 - .2 Receive and unload products at site.
 - .3 Inspect deliveries jointly with the Owner, if requested, record shortages, and damaged or defective items.
 - .4 Handle products at site, including un-crating and storage.
 - .5 Protect products from damage, and from exposure to elements.
 - .6 Assemble, install, connect, adjust, and finish products.
 - .7 Pay for testing as noted in the specifications.
 - .8 Provide installation inspections required by public authorities.
 - .9 Repair or replace items damaged by Contractor or his Subcontractors on site.
 - .10 Arrange and pay for delivery to site in accordance with Progress Schedule.
 - .11 Arrange for replacement of damaged, defective or missing items.
 - .12 Arrange for manufacturer's field services; arrange for and deliver manufacturer's warranties to the Owner in accordance with Section 01780 - Closeout Submittals.

END OF SECTION

PART 1 GENERAL

1.1 Schedules Required

- .1 The Contractor shall submit Construction Schedule including milestones for each major item of work or operation:
 - .1 Shop drawings and product data.
 - .2 Samples.
 - .3 Owner furnished products.
 - .4 Product delivery schedule.
 - .5 Shutdown and closure activity.
- .2 Include dates for commencement and completion of each major element of construction.

1.2 Format

- .1 Prepare schedule in the form of a horizontal Gantt bar chart.
- .2 Provide a separate bar for each major item of work or operation.
- .3 Format and identification for listings to correspond with the *Schedule of Contract Unit Prices*.

1.3 Submission

- .1 Submit Construction Schedule at the pre construction Meeting on site.
- .2 The Owner will review schedule and return the reviewed copy for revisions.
- .3 Resubmit finalized schedule within 5 days after return of review copy.
- .4 Distribute copies of revised schedule to:
 - .1 Owner.
 - .2 Job site office.
 - .3 Subcontractors.
 - .4 Other concerned parties.
 - .5 Instruct recipients to report to Contractor immediately, any problems anticipated by timetable shown in schedule.

1.4 Progress Photographs

- .1 Submit electronic copy of colour digital photography in .jpg format, standard resolution.
- .2 Identification: name and number of project and date of exposure indicated.
- .3 Frequency: monthly with progress payment claim and prior to backfilling any underground work.
- .4 Locations of viewpoints determined by the Owner.

END OF SECTION

PART 1 GENERAL

1.1 Related Sections

- .1 Section 01320 - Construction Progress Documentation
- .2 Section 01450 - Quality Control
- .3 Section 01780 - Closeout Submittals

1.2 Administrative

- .1 Submit to the Owner submittals listed for review in the first meeting agenda. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Work affected by submittal shall not proceed until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to the Owner. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.
- .6 Notify the Owner, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify that field measurements and affected adjacent Work are co-ordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by the review of the submittals by the Owner.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by the Owner review.
- .10 Keep one reviewed copy of each submission on site.

1.3 Shop Drawings and Product Data

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of Work.
- .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .3 Adjustments made on shop drawings by the Owner are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to the Owner, and obtain a change order, prior to proceeding with Work.
- .4 Make changes in shop drawings as the Owner may require, consistent with Contract Documents. When resubmitting, notify the Owner in writing of any revisions other than those requested.
- .5 Accompany submissions with transmittal letter containing:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data. (i.e. Subcontractor, supplier, manufacturer).
 - .6 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number
 - .3 Name and address of:
 - .1 Subcontractor
 - .2 Supplier
 - .3 Manufacturer
 - .7 Contractor's seal, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .8 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.

- .6 Standards.
- .7 Wiring diagrams.
- .8 Single line and schematic diagrams.
- .9 Relationship to adjacent work.

- .6 After review by the Owner, distribute copies.
- .7 Submit 6 prints of shop drawings for each requirement requested in the specification Section or as the Owner may reasonably request.
- .8 Submit 3 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by the Owner where shop drawings will not be prepared due to standardized manufacture of product.
- .9 Supplement standard information to provide details applicable to project.
- .10 If upon review by the Owner, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.4 Progress Photographs

- .1 Submit progress photographs in accordance with Section 01320 - Construction Progress Documentation.

1.5 Samples

- .1 Submit for review samples as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to site or site office.
- .3 Notify the Owner in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by the Owner are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to the Owner, and receive change order, prior to proceeding with Work.
- .6 Make changes in samples which the Owner may require, consistent with Contract Documents.

- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

END OF SECTION

PART 1 GENERAL

1.1 References

- .1 Uniform Traffic Control Devices for Canada, (UTCD), latest edition distributed by Transportation Association of Canada.

1.2 Protection of Public Traffic

- .1 Comply with requirements of Acts, Regulations and By-laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.
- .2 When working on travelled way:
 - .1 Place equipment in position to present minimum of interference and hazard to travelling public.
 - .2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.
 - .3 Do not leave equipment on travelled way overnight.
- .3 Do not close any lanes of road without approval of the Owner. Before re-routing traffic erect suitable signs and devices in accordance with instructions contained in Part D of UTCD.
- .4 Keep travelled way graded, free of pot holes and of sufficient width for required number of lanes of traffic.
 - .1 Provide minimum 7 m wide temporary roadway for traffic in two-way sections through Work and on detours.
 - .2 Provide minimum 5 m wide temporary roadway for traffic in one-way sections through Work and on detours.
- .5 As directed by the Owner, provide gravelled detours or temporary roads to facilitate passage of traffic around restricted construction area.
- .6 Provide and maintain road access and egress to property fronting along Work under Contract and in other areas as indicated, unless other means of road access exist that meet approval of the Owner.

1.3 Informational and Warning Devices

- .1 Provide and maintain signs, and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.

- .2 Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in Part D, Temporary Conditions Signs and Devices, of UTCD manual.
- .3 Place signs and other devices in locations recommended in UTCD manual.
- .4 Meet with the Owner prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of the Owner.
- .5 Continually maintain traffic control devices in use by:
 - .1 Checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
 - .2 Removing or covering signs which do not apply to conditions existing from day to day.

1.4 Control of Public Traffic

- .1 Provide competent flag persons, trained in accordance with, and properly equipped as specified in, UTCD manual in following situations:
 - .1 When public traffic is required to pass working vehicles or equipment which block all or part of travelled roadway.
 - .2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.
 - .3 When workmen or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
 - .4 Where temporary protection is required while other traffic control devices are being erected or taken down.
 - .5 For emergency protection when other traffic control devices are not readily available.
 - .6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.

1.5 Operational Requirements

- .1 Maintain existing conditions for traffic throughout period of contract.

END OF SECTION

PART 1 GENERAL

1.1 References and Codes

- .1 Perform Work in accordance with National Building Code of Canada (NBC) and Landscape Ontario Standards, including all amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Meet or exceed requirements of:
 - .1 Contract documents.
 - .2 Specified standards, codes and referenced documents.

1.2 Hazardous Material Discovery

- .1 Should any hazardous material be encountered in course of demolition work, immediately stop work and notify the Owner.

1.3 Permits

- .1 Specific building and servicing permits required for the work are to be applied for and paid for by the Owner, as noted in the specifications and form of tender. The contractor will coordinate with Owner inspection staff as necessary to secure approval for installed works subject to these permits.

END OF SECTION

PART 1 GENERAL

1.1 Related Sections

- .1 Section 01330 - Submittal Procedures.
- .2 Section 01780 - Closeout Submittals.

1.2 Inspection

- .1 Allow the Owner access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Provide timely request for inspection if Work that is designated for testing, inspecting or verification as specified or required by current regulations.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 The Owner may order any part of Work to be examined if Work is suspected not to be in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction.

1.3 Independent Inspection Agencies

- .1 Independent inspection/testing Agency will be engaged by the Contractor with the Owner's approval for purpose of inspecting and/or testing portions of Work.
- .2 The Contractor will directly engage a geotechnical testing company to provide compaction testing of new pavement areas and concrete testing for new concrete, as well as QP services for removal of fill from site. This will be paid through the cash allowance.

- .3 The Contractor will directly engage a CSA inspection company for the review of the play equipment and safety surfacing.
- .4 Provide equipment required for executing inspection and testing by appointed agencies.
- .5 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .6 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised at no cost to the Owner.
- .7 Contractor to pay costs for all retesting and re inspection associated with failed tests.

1.4 Access to Work

- .1 Allow inspection/testing agency access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate with inspection/testing agency to provide reasonable facilities for such access.

1.5 Procedures

- .1 Notify appropriate agency and the Owner in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in first meeting agenda. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.6 Quality of Work

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are

employed. Immediately notify the Owner if required Work is such as to make it impractical to produce required results.

- .2 Do not employ anyone unskilled in their required duties. The Owner reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with the Owner, whose decision is final.

1.7 Rejected Work

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by the Owner as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.

1.8 Reports

- .1 Reports by testing agency will be distributed directly to the Owner by the Testing agency.

1.9 Tests and Mix Designs

- .1 Furnish test results and mix designs as may be requested.

1.10 Mock-ups

- .1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of all Sections required to provide mock-ups.
- .2 Remove mock-up at conclusion of Work. Mock-ups may remain as part of the Work, when acceptable to the Owner.

1.11 Equipment and Systems

- .1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.

END OF SECTION

PART 1 GENERAL

1.1 Related Sections

- .1 Section 01520 - Construction Facilities.
- .2 Section 01560 - Temporary Barriers and Enclosures.

1.2 Installation and Removal

- .1 Provide temporary utilities and controls in order to execute work expeditiously.
- .2 Remove from site all such work after use.

1.3 Dewatering

- .1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

1.4 Water Supply

- .1 Provide continuous supply of potable water for construction use.
- .2 Arrange for connection with appropriate utility company and pay all costs for installation, maintenance and removal.
- .3 Pay for utility charges at prevailing rates.

1.5 Temporary Power and Light

- .1 Provide and pay for temporary power during construction for temporary lighting and operating of power tools as required.
- .2 Arrange for connection with appropriate utility company. Pay all costs for installation, maintenance and removal.
- .3 Provide and maintain temporary lighting throughout project, as required.

1.6 Temporary Communication Facilities

- .1 Provide and pay for temporary communication lines as necessary for own use and use by the Owner.

1.7 Fire Protection

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.
- .2 Burning rubbish and construction waste materials is not permitted on site.

END OF SECTION

PART 1 GENERAL

1.1 Related Sections

- .1 Section 01510 - Temporary Utilities.
- .2 Section 01560 - Temporary Barriers and Enclosures.

1.2 References

- .1 Canadian General Standards Board (CGSB)
 - .1 Current CGSB 1-GP-189M, Primer, Alkyd, Wood, Exterior.
 - .2 Current CGSB 1.59, Alkyd Exterior Gloss Enamel.
- .2 Canadian Standards Association (CSA)
 - .1 Current CAN3-A23.1-/A23.2, Concrete Materials and Methods for Concrete Construction/Method of Test for Concrete.
 - .2 Current CSA-0121-M, Douglas Fir Plywood.
 - .3 Current CAN/CSA-Z321, Signs and Symbols for the Occupational Environment.

1.3 Installation and Removal

- .1 Provide construction facilities in order to execute work expeditiously.
- .2 Remove from site all such work after use.

1.4 Site Storage/Loading

- .1 Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with a weight or force that will endanger the Work.

1.5 Construction Parking

- .1 Parking will be permitted on site during summer, after school hours and on weekends. Parking during the school year/day will require the successful vendor to provide a location for review/ approval by HWDSB.
- .2 Provide and maintain adequate access to project site.

- .3 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and clean and make good damage resulting from Contractors' use of roads.

1.6 Security

- .1 Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays.

1.7 Equipment, Tool and Materials Storage

- .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.

1.8 Sanitary Facilities

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances. No access to school facilities is available.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.9 Construction Signage

- .1 Provide and erect construction signs provided by the Owner immediately after pre-construction meeting.
- .2 No other signs or advertisements, other than warning signs, are permitted on site.

END OF SECTION

PART 1 GENERAL

1.1 Related Sections

- .1 Section 01353 - Special Procedures Traffic Control
- .2 Section 01510 - Temporary Utilities
- .3 Section 01520 - Construction Facilities

1.2 References

- .1 Canadian General Standards Board (CGSB)
 - .1 Current CGSB 1.189M, Primer, Alkyd, Wood, Exterior.
 - .2 Current CGSB 1.59, Alkyd Exterior Gloss Enamel.
- .2 Canadian Standards Association (CSA)
 - .1 Current CSA-O121-M, Douglas Fir Plywood.

1.3 Installation and Removal

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.

1.4 Protection Fencing/Hoarding

- .1 Erect temporary site enclosure as per drawings using 1.8 m high temporary metal fence (Moduloc or equivalent). Provide one lockable truck gate. Maintain fence in good repair.
- .2 Provide barriers around trees and plants designated to remain as noted. Protect from damage by equipment and construction procedures with temporary metal fence.
- .3 Once play equipment is installed, provide and maintain a 1.8m temporary metal fence around play area until a successful CSA audit is provided.

1.5 Guard Rails and Barricades

- .1 Provide secure, rigid guard rails and barricades around deep excavations.

1.6 Sediment Control Fencing

- .1 Provide install and secure prefabricated sediment control fencing to prevent sediment migration off site as indicated on drawings. See detail:

SEDIMENT CONTROL FILTER FABRIC FENCE

1.7 Access to Site

- .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

1.8 Public Traffic Flow

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect the public.

1.9 Fire Routes

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

1.10 Protection for Off-Site and Public Property

- .1 Protect surrounding private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

1.11 Protection of Adjacent Buildings

- .1 Provide protection for finished and partially finished adjacent buildings and equipment during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.
- .3 Be responsible for damage incurred due to lack of or improper protection.

END OF SECTION

PART 1 GENERAL

1.1 Fires

- .1 Fires and burning of rubbish on site is not permitted.

1.2 Disposal of Wastes

- .1 Project to be conducted in compliance with the general "reduce, reuse and recycle" procedures to protect our environment.
- .2 Do not bury rubbish and waste materials on site.
- .3 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

1.3 Drainage

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.4 Site Clearing and Plant Protection

- .1 Protect trees and plants on site and adjacent properties where indicated.
- .2 Construct protective hoarding around trees and shrubs adjacent to construction work, storage areas and trucking lanes as shown on drawings.
- .3 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .4 Minimize stripping of topsoil and vegetation.

- .5 Restrict tree removal to areas indicated on drawings.

1.5 Work Adjacent to Waterways

- .1 Do not operate construction equipment in waterways.
- .2 Do not use waterway beds for borrow material.
- .3 Do not dump excavated fill, waste material or debris in waterways.
- .4 Design and construct temporary crossings to minimize erosion to waterways.
- .5 Do not skid logs or construction materials across waterways.
- .6 Avoid indicated spawning beds when constructing temporary crossings of waterways.

1.6 Pollution Control

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment to local authorities emission requirements.
- .3 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

END OF SECTION

PART 1 GENERAL

1.1 Related Sections

- .1 Section 01450 - Quality Control

1.2 Reference Standards

- .1 Conform to standards, in whole or in part as specifically requested in specifications.
- .2 If there is question as to whether any product or system is in conformance with applicable standards, the Owner reserves right to have such products or systems tested to prove or disprove conformance.
- .3 The cost for such testing will be born by the Contractor.
- .4 Conform to latest date of issue of referenced standards in effect on date Contract signing, except where specific date or issue is specifically noted.

1.3 Quality

- .1 Products, materials, equipment and articles (referred to as products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.
- .2 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is a precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .3 Should any dispute arise as to quality or fitness of products, decision rests strictly with the Owner based upon requirements of the Contract Documents.
- .4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item in the Work.

- .5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.4 Availability

- .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of products are foreseeable, notify the Owner of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In event of failure to notify the Owner at commencement of Work and should it subsequently appear that Work may be delayed for such reason, the Owner reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.5 Storage, Handling and Protection

- .1 Handle and store products in manner to prevent damage, contamination, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.

- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Remove and replace damaged products at own expense and to satisfaction of the Owner.
- .9 Touch-up damaged factory finished surfaces to the satisfaction of the Owner. Use touch-up materials to match original. Do not paint over name plates.

1.6 Transportation

- .1 Pay costs of transportation of products required in performance of Work.
- .2 Pay for transportation costs of products supplied by the Owner. Pick-up, load, unload, handle and store such products.

1.7 Manufacturer's Instructions

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Obtain written instructions directly from manufacturers.
- .2 Notify the Owner in writing, of conflicts between specifications and manufacturer's instructions, so that the Owner may establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes the Owner to require removal and reinstallation at no increase in Contract Price or Contract Time.

1.8 Coordination

- .1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.9 Remedial Work

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner neither to damage nor to put at risk any portion of Work.

1.10 Location of Fixtures

- .1 Consider location of drains, fixtures, outlets, and mechanical and electrical items indicated as approximate.
- .2 Inform the Owner of conflicting installation. Install as directed.

1.11 Fastenings

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent electrolytic action between dissimilar metals and materials.
- .3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.12 Fastenings - Equipment

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

- .2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use stainless steel for exterior areas.
- .3 Bolts may not project more than one diameter beyond nuts.
- .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.13 Protection of Work in Progress

- .1 Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated without written approval of the Owner.

1.14 Existing Utilities

- .1 Work within the municipal R.O.W. is to be completed by Owner others, excepting fine grading and sodding and identified pathway connections.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

END OF SECTION

PART 1 GENERAL

1.1 Related Sections

- .1 Section 01110 - Summary of Work.
- .2 Section 01330 - Submittal Procedures.

1.2 Preparation

- .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2 After uncovering, inspect conditions affecting performance of Work.
- .3 Beginning of cutting or patching means acceptance of existing conditions.
- .4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
- .5 Provide protection from elements for areas which may be exposed by uncovering work; maintain excavations free of water.

1.3 Execution

- .1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.
- .2 Fit several parts together, to integrate with other Work.
- .3 Uncover Work to install ill-timed Work.
- .4 Remove and replace defective and nonconforming Work.
- .5 Remove samples of installed Work for testing.
- .6 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.
- .7 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.

- .8 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools are not allowed on masonry work without prior approval by the Owner.
- .9 Restore work with new products in accordance with requirements of Contract Documents.
- .10 Fit Work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .11 Refinish surfaces to match adjacent finishes: For continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.
- .12 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

END OF SECTION

PART 1 GENERAL

1.1 Related Section

- .1 Section 01780 - Closeout Submittals

1.2 Project Cleanliness

- .1 Maintain Work site in tidy condition, free from accumulation of waste products and debris, including that caused by the Owner or other Contractors.
- .2 Remove waste materials from site at regularly scheduled times.
- .3 Do not burn waste materials on site.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide and use clearly marked separate bins for recycling if applicable.
- .6 Remove waste material and debris from site at end of each working day.
- .7 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .8 Provide adequate ventilation during use of volatile or noxious substances.
- .9 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .10 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.
- .11 Keep all environmental dust to a minimum.

- .12 Sweep streets used for park access as required to maintain free of mud and dirt.

1.3 Final Cleaning

- .1 When Work is Substantially Completed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris and leave Work clean and suitable for occupancy.
- .3 Prior to final review, remove surplus products, tools, construction machinery and equipment.
- .4 Remove stains, spots, marks and dirt from all surfaces.
- .5 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .6 Remove dirt and other disfiguration from exterior surfaces.
- .7 Sweep and wash clean paved areas.
- .8 Clean and check drainage systems.

END OF SECTION

PART 1 GENERAL

1.1 Related Sections

- .1 Section 01780 - Closeout Submittals

1.2 Inspection

- .1 The Owner and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.

1.3 Substantial Completion

- .1 A declaration of Substantial Completion is issued by the Owner when the Owner considers deficiencies and defects to have been corrected and the requirements of Contract have been substantially performed.
- .2 The date of issuance of the declaration of Substantial Completion by the Owner shall be the date for commencement of the warranty period and commencement of the lien period.

END OF SECTION

PART 1 GENERAL

1.1 Related Sections

- .1 Section 01330 - Submittal Procedures.
- .2 Section 01450 - Quality Control

1.2 Submission of Spare Parts and Special Tools

- .1 Provide spare parts and special tools, in quantities as supplied by the manufacturer.
- .2 Provide spare parts to the Owner as supplied by manufacturer. Ensure spare parts, maintenance materials and special tools provided to the Owner are new, undamaged or defective, and of same quality and manufacture as products provided in Work.
- .3 Provide items with tags identifying their associated function and equipment.
- .4 Deliver to location as directed by the Owner; place and store.

1.3 Submission of Operating and Maintenance Manual

- .1 Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- .2 Prior to Substantial Performance of the Work, submit to the Owner two final copies of operating and maintenance manuals in English.
- .3 If requested, furnish evidence as to type, source and quality of products provided.

1.4 Format of Operating and Maintenance Manual

- .1 Organize data in the form of an instructional manual.
- .2 Arrange content by systems, under Section numbers and sequence of Table of Contents.

- .3 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .4 Text: Manufacturer's printed data, or typewritten data.

1.5 Contents of Operating and Maintenance Manual

- .1 Table of Contents
- .2 Project Information:
 - .1 Project Title.
 - .2 Date of submission.
 - .3 Names, addresses, and telephone numbers of Consultant and Contractor with name of responsible parties.
 - .4 Schedule of products and systems, indexed to content of volume.
- .3 For each product or system list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .4 Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .5 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .6 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- .7 Spare Parts listing: include complete listing of spare parts submitted to the Owner.
- .8 Special tools listing: include complete listing of special tools submitted to the Owner.
- .9 Materials and Finishes:
 - .1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for reordering custom manufactured products.

- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .10 Equipment and Systems:
 - .1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
 - .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
 - .3 Include installed colour coded wiring diagrams.
 - .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and any special operating instructions.
 - .5 Maintenance Requirements: include routine procedures and guide for troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
 - .6 Provide servicing and lubrication schedule, and list of lubricants required.
 - .7 Include sequence of operation by controls manufacturer.
 - .8 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - .9 Provide installed control diagrams by controls manufacturer.
 - .10 Provide Contractor's coordination drawings, with installed colour coded piping diagrams.
 - .11 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
 - .12 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .11 Final "As-Built" Survey.

- .1 Submit site survey certificate certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.
 - .2 Submit a final "as built" topographic survey by a certified Ontario Land Surveyor in AutoCAD format, tied to the Owner's horizontal control. Scope of information to be covered by the survey as documented in the "Pre-Construction Meeting Minutes".
- .12 Contractor's Field Notes:
 - .1 Information recorded on black line opaque drawings provided by the Owner including:
 - .1 Measured depths of elements of foundation in relation to finish first floor datum.
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by change orders.
 - .6 Details not on original Contract Drawings.
 - .7 References to related shop drawings and modifications.
 - .2 Specifications: legibly mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by addenda and change orders.
- .13 Warranties:
 - .1 Separate each warranty with index tab sheets keyed to Table of Contents listing.
 - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION

PART 1 GENERAL

1.1 General

- .1 All existing features, weeds, shrubs, trees, roots, and stumps shall be cleared and grubbed as shown on the Drawings.
- .2 Contractor to install and maintain Terrafix Terrafence sediment control filter fabric fence (or approved equivalent), as illustrated in the drawings. Contractor to remove fence following project completion.

1.2 Scope of Work

- .1 Furnish all labor, materials, equipment and related items required to complete the work indicated on the Drawings and/or as specified in the Specifications. The items of work, shall include, but not be limited to:
 - .1 Removal, disposal or transplant of trees and other materials;
 - .2 Install and maintain appropriate erosion control and protection fencing.
 - .3 Install and maintain tree protection fencing.
 - .4 Install and maintain construction fencing.
 - .4 Pulverizing (Rotodarium or equivalent) of existing sodded/vegetated areas.

1.3 Related Work

- .1 Related work in other sections of these Specifications include but is not limited to:
 - .1 Topsoil & Finish Grading
 - .2 Poured in Place Concrete Paving
 - .3 Asphalt Paving
 - .4 Site Specialites

1.4 Utilities

- .1 The contractor is responsible to confirm location of all utilities prior to the commencement of work. If unexpected conditions arise, stop work and immediately notify the landscape architect.

1.5 Measure for Payment

- .1 Payment will be made as per the Form of Tender line items identified. Payment includes removal and disposal of materials.

PART 2 PRODUCTS

2.1 Products and Equipment

- .1 Sediment control fencing to be Terrafix Terrafence, or approved equivalent.
- .2 Construction fencing to be Moduloc or approved equivalent.
- .3 Tree protection fencing and signage as per the details.

PART 3 EXECUTION

3.1 Weed and Grass Removal

- .1 Existing turf as illustrated on the plans to be pulverized in place (Rotodarium or equivalent.)
- .3 No herbicides are to be used.

3.2 Clearing and Grubbing

- .1 Remove all imperishable debris that would be unsuitable for bearing including, but not limited to rocks, concrete pipe, residential waste and existing construction.

3.4 Protection

- .1 Protect benchmarks, iron bars and other reference points, and existing work from damage or displacement. If disturbed or destroyed, replace at Contractor's expense. Any benchmarks or survey control points that are disturbed by the work shall be re-surveyed by a Licensed Ontario Land Surveyor. Said benchmark or control point shall be restored by said Licensed Ontario Land Surveyor in accordance with professional standards of practice.
- .2 Construction access is to be off of Bowden Drive. Contractor to repair and restore any damage to silt fence, curbs, sidewalk or sod upon completion of project.

3.5 Protection Fencing

- .1 Contractor to install sediment control fence and replace as required. Erect Terrafix Terrafence (or approved equivalent) as illustrated on drawing.
- .2 Sediment control fence to be erected and maintained for the full duration of construction, inspected after every major rain event, and inspected, at a minimum, once every three weeks. Refer to detail on drawing.
- .3 Install and maintain construction fencing for the duration of construction, Moduloc or approved equivalent, as illustrated. Construction fencing surrounding play area to be installed once play equipment is installed until a successful CSA audit (by others) is achieved.
- .4 Install and maintain tree protection fencing as per plan details.

3.7 Disposal

- .1 Remove and dispose of all materials off site unless otherwise noted on the

- .2 Drawings.
No on-site burning will be permitted.

1 GENERAL

1.1 Related Sections

- .1 Section 02315 - Excavation, Trenching and Backfilling.

1.2 Measurement for Payment

- .1 Site grading will be paid in lump sum based on the estimated volumes listed.

1.3 References

- .1 American Society for Testing and Materials (ASTM)
 - .1 Current ASTM D698, Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (600 kN-m/m³).

1.4 Existing Conditions

- .1 Verify underground and surface utility lines and buried objects that are indicated on drawings.

1.5 Protection

- .1 Protect existing fencing, trees, landscaping, natural features, bench marks, buildings, pavement, surface or underground utility lines which are to remain as indicated on drawings. If damaged, restore to original or better condition.
- .2 Protect newly graded and filled areas from washouts and settlement caused by rain and water drainage. Correct any damage as necessary.
- .3 Maintain access roads to prevent accumulation of construction related debris on roads.
- .4 Place filter fabric over catch basins and manholes to prevent clogging with sediment during the rough and fine grading operations.

2 PRODUCTS

2.1 Materials

- .1 Excavated or graded material existing on site may be suitable to use as fill for grading work with the approval of the Owner.
- .2 Fill material : Type in accordance with Section 02315 - Excavating, Trenching and Backfilling.

- .3 Silt Fencing in accordance with Section 02100 – Site Preparation.

3 EXECUTION

3.1 Stripping of Topsoil

- .1 Do not handle topsoil while in wet or frozen condition or in any manner in which soil structure is adversely affected as determined by the Owner.
- .2 Commence topsoil stripping of areas as indicated on drawings after site has been cleared and temporary silt protection fencing has been properly installed.
- .3 Strip topsoil to depths noted on the drawings.
- .4 Do not mix topsoil with subsoil.
- .5 Stockpile on site.

3.2 Rough Grading

- .1 Rough grade to levels, profiles, and contours allowing for surface treatment as indicated on drawings.
- .2 Rough grade to specific depths below finish grades as per applicable details.
- .3 Grading shall be completed with a Laser Grading System or GPS based system.
- .4 Place fill material in maximum 250mm lifts.
- .5 Slope rough grade away from buildings.
- .6 Grade slopes for landscape areas to a maximum of 3:1 unless otherwise specified on drawings.
- .7 Grade ditches and swales to depths indicated on drawings. Ensure gradient transitions are smooth and drain in the direction indicated on drawings.
- .8 Prior to placing fill over existing ground, scarify surface to depth of 150 mm. Maintain fill and existing surface at approximately same moisture content to facilitate bonding.
- .9 Compact filled and disturbed areas to maximum dry density to ASTM D698, as follows:

- .1 85% under landscaped areas.
 - .2 Refer to appropriate specifications for pavement areas.
 - .10 Do not disturb soil within dripline of trees and shrubs to remain.
 - .11 Finished subgrade surface to be free of debris or stones larger than 50mm diameter.
 - .12 Remove surplus material and material unsuitable for fill, grading or landscaping off site at Contractor's expense.
- 3.3 Verification of Constructed Rough Grade
- .1 Provide grade control, and verify that grades are correct. If discrepancies occur, notify the Owner and do not commence work until instructed by the Owner.
 - .2 Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials.
 - .3 Obtain approval from Owner of subgrade before commencing with placement of topsoil.

END OF SECTION

1 GENERAL

1.1 Related Work

- .1 No related work

1.2 Materials

- .1 Contractor will use imported topsoil. Fertilizer is to be delivered to the job site with manufacturer's labels intact. All material to be approved by the project co-ordinator.

1.3 Scheduling of Work

- .1 Schedule placing of topsoil and finish grading to permit sodding or seeding operations under optimum soil moisture and weather conditions.

1.4 Measurement for Payment

- .1 Payment for rough grading will be paid by lump sum based on estimated volumes. Payment for fine grading and amendments will be paid on a per square meter basis included into the cost of other items, including sodding.

2 PRODUCTS

2.1 Materials

- .1 Topsoil shall be: friable, neither heavy clay nor of very light sandy nature containing minimum of 4% organic matter to a maximum of 20% by volume. Free from subsoil, roots, grass, weeds, toxic materials, stones, foreign objects and with an acidity range (pH) of 5.5 to 7.5.

Soil for the growing medium of the re-constructed soccer field shall additionally have a maximum 40% silt + clay content and shall be tested by a recognized lab to demonstrate suitability to grow turf.

- .2 Planting soil for planting trees and shrubs: mix 9 parts topsoil with 1 part peatmoss. Incorporate bonemeal into planting soil at rate of 3 kg/m³ of soil mixture.

- .3 Peatmoss:

- .1 Derived from partially decomposed fibrous or cellular stems and leaves of species of Sphagnum Mosses.
- .2 Elastic and homogeneous, brown in colour.
- .3 Free of wood and deleterious material which could prohibit

- growth.
- .4 Shredded particle minimum size: 5mm.
- .4 Fertilizer:
 - .1 Complete commercial synthetic slow release fertilizer with minimum 35% water soluble nitrogen.
 - .2 Formulation ratio: 6-14-14 at 10lbs per 1000 sq feet incorporated into the rootzone.
- .5 Bonemeal:
Raw, steamed bonemeal, finely ground with a minimum analysis of 3% nitrogen and 20% phosphoric acid.

3 EXECUTION

- 3.1 Spreading of Native/Imported Topsoil/Planting Soil
 - .1 Spread topsoil after Landscape Architect has inspected and approved subgrade.
 - .2 Spread topsoil with adequate moisture in uniform layers over approved, unfrozen subgrade, where sodding and planting is indicated.
 - .3 Apply topsoil to following depths:
150 mm of topsoil for sodded areas
600mm for planting areas
 - .4 Manually spread topsoil/planting soil around trees, shrubs and obstacles.
- 3.2 Application of Fertilizer
 - .1 Mix fertilizer thoroughly to full depth of topsoil.
- 3.3 Finish Grading
 - .1 Fine grade and loosen top soil. Eliminate rough spots and low areas to ensure positive drainage. Prepare loose friable bed for sodding and planting areas, by means of cultivation and subsequent raking.
 - .2 Roll with 50 kg roller, minimum 900 mm wide, to consolidate leaving surface smooth, uniform, firm against deep foot printing, and with a fine loose texture to approval of Landscape Architect.
- 3.4 Restoration of Stockpile Sites
 - .1 Restoration of stockpile sites to include grading, seeding and sodding where required to match proposed surface treatment.
- 3.5 Surplus Material
 - .1 Dispose of materials not required off site.

End of Section

1 GENERAL

1.1 Related Sections

- .1 Section 02311 - Site Grading
- .2 Section 02312 - Topsoil and Finish Grading
- .3 Section 02620 - Sub-drainage.

1.2 References

- .1 Canadian General Standards Board (CGSB)
 - .1 Current CAN/CGSB-8.1, Sieves, Testing, Woven Wire, Inch Series.
 - .2 Current CAN/CGSB-8.2, Sieves, Testing, Woven Wire, Metric.
- .2 Canadian Standards Association (CSA)
 - .1 Current CAN/CSA-A23.1, Concrete Materials and Methods of Concrete Construction.
- .3 Ontario Provincial Standard Details:
 - .1 OPSD 509.010
 - .2 OPSD 600.110
 - .3 OPSD 310.010.

1.3 Measurement for Payment

- .1 Measurement for excavation, trenching and backfill will be included with the specific item of installed work or furnishing as noted in the contract unit price schedule.

1.4 Definitions

- .1 Excavation classes: two classes of excavation will be recognized; common excavation, and rock excavation.
 - .1 Rock: any solid material in excess of 0.25 m³ and which cannot be removed by means of mechanical excavating equipment having a 0.95 to 1.15 m³ bucket. Frozen material not classified as rock.
 - .2 Common excavation: excavation of materials of whatever nature, which are not included under definitions of rock excavation.
- .2 Unclassified excavation: excavation of deposits of whatever character encountered in Work.
- .3 Topsoil: material capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding.

- .4 Waste material: excavated material unsuitable for use in Work or surplus to requirements.
- .5 Borrow material: material obtained from locations outside area to be graded, and required for construction of fill areas or for other portions of Work.
- .6 Unsuitable materials:
 - .1 Weak and compressible materials under excavated areas.
 - .2 Frost susceptible materials under excavated areas: coarse grained soils containing more than 20% by mass passing 0.075 mm sieve.
- .7 Unshrinkable fill: very weak mixture of Portland cement, concrete aggregates and water that resists settlement when placed in utility trenches, and capable of being readily excavated.

1.5 Protection of Existing Features

- .1 Existing buried utilities and structures:
 - .1 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.
 - .2 Prior to commencing excavation work, notify applicable owner or authorities having jurisdiction, establish location and state of use of buried utilities and structures. Owners or authorities having jurisdiction to clearly mark such locations to prevent disturbance during work.
 - .3 Confirm locations of buried utilities by obtaining a certified utility stakeout.
 - .4 Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered.
 - .5 Where utility lines or structures exist in area of excavation, obtain direction of the Owner before removing or re-routing.
 - .6 Record location of maintained, re-routed and abandoned underground lines.
 - .7 Protect surface features from damage while work is in progress. In event of damage, immediately make repair to approval of the Owner.

1.6 Shoring, Bracing and Underpinning

- .1 Protect existing features in accordance with applicable local regulations and as specified by a qualified professional engineer.

2 PRODUCTS

2.1 Materials

- .1 Type 1 and Type 2 fill: properties to the following requirements:
 - .1 Crushed, pit run or screened stone, gravel or sand.

- .2 Gradations to be within limits specified when tested to current ASTM C 136 and ASTM C 117. Sieve sizes to current CAN/CGSB-8.1.
- .2 Type 3 fill: selected material from excavation or other sources, approved by the Owner for use intended, unfrozen and free from rocks larger than 75 mm, cinders, ashes, sods, refuse or other deleterious materials.
- .3 19mm diameter clear stone
- .4 Clean sand
- .5 Granular topping (limestone screenings):
 - .1 Screenings: hard, durable, crushed stone particles, free from clay lumps, cementation, organic material, frozen material and other deleterious materials.
 - .2 Gradations:

Sieve Designation	% Passing
9.5 mm	100
4.75 mm	50-100
2.00 mm	30-65
0.425 mm	10-30
0.075 mm	5-10
- .4 Topsoil per Section 02312 - Topsoil and Finish Grading
- .5 Impervious fill
- .6 Unshrinkable fill: proportioned and mixed to provide:
 - .1 Maximum compressive strength of 0.4 MPa at 28 days.
 - .2 Maximum Portland cement content of 25 kg/m³
 - .3 Minimum strength of 0.07 MPa at 24 h.
 - .4 Concrete aggregates: to CAN/CSA-A23.1.
 - .5 Portland cement: Type 10.
 - .6 Slump: 200 mm.

3 EXECUTION

3.1 Site Preparation

- .1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.
- .2 Cut pavement or sidewalk neatly along limits of proposed excavation in order that surface may break evenly and cleanly.

3.2 Stockpiling

- .1 Stockpile fill materials on site. Stockpile granular materials in manner to prevent segregation.
- .2 Protect fill materials from contamination.

3.3 Excavation

- .1 Excavate to lines, grades, elevations and dimensions as indicated.
- .2 Remove asphalt, concrete, masonry, paving, walks, demolished foundations and rubble and other obstructions encountered during excavation.
- .3 Excavation must not interfere with normal 45d splay of bearing from bottom of any footing.
- .4 Do not disturb soil within dripline of trees or shrubs that are to remain. If excavating through roots, excavate by hand and cut roots with sharp axe or saw.
- .5 For trench excavation, do not excavate more than 30 m of trench in advance of installation operations and do not leave open more than 5 m at end of day's operation.
- .6 Dispose of surplus and unsuitable excavated material off site.
- .7 Do not obstruct flow of surface drainage or natural watercourses.
- .8 Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.
- .9 Notify Owner when bottom of excavation is reached.
- .10 Remove unsuitable material from trench bottom to extent and depth as directed by Owner.
- .11 Obtain Owner approval of completed excavation.
- .12 Correct unauthorized over-excavation with no additional cost to the Owner as follows:
 - .1 Fill under bearing surfaces and footings with concrete specified for footings.
 - .2 Fill under other areas with Type 2 fill compacted to not less than 98 % of corrected maximum dry density.

- .13 Hand trim, make firm and remove loose material and debris from excavations. Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil. Clean out rock seams and fill with concrete mortar or grout to approval of the Owner.

3.4 Fill Types and Compaction

- .1 Use fill of types as indicated or specified. Compaction densities are percentages of maximum densities obtained from corrected maximum dry density.

3.5 Backfilling

- .1 Use suitable vibratory compaction equipment.
- .2 Do not proceed with backfilling operations until the Owner has inspected and approved installations.
- .3 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.
- .4 Do not use backfill material which is frozen or contains ice, snow or debris.
- .5 Place backfill material in uniform layers not exceeding 150 mm compacted thickness up to grades indicated. Compact each layer before placing succeeding layer.
- .6 Backfill around installations.
- .7 Place unshrinkable fill in areas as indicated. Consolidate and level unshrinkable fill with internal vibrators.
 - .1 Place bedding and surround material per specific details.
 - .2 Do not backfill around or over cast-in-place concrete within 48 hours after placing of concrete.
 - .3 Place layers simultaneously on both sides of installed work to equalize loading.
 - .4 Where temporary unbalanced earth pressures are liable to develop on walls or other structures:
 - .1 Permit concrete to cure for minimum 28 days or until it has sufficient strength to withstand earth and compaction pressure and approval obtained from the Owner; or
 - .2 if approved by The Owner, erect bracing or shoring to counteract unbalance, and leave in place until removal is approved the Owner.
- .8 Use temporary plating to support traffic loads over unshrinkable fill for initial 24 hours.

3.6 Restoration

- .1 Upon completion of work, remove waste materials and debris, trim slopes, and correct defects as indicated.
- .2 Replace topsoil as indicated.
- .3 Clean and reinstate areas affected by work to condition existing before excavation.
- .4 Reinstate prescribed surface materials to elevation existing before excavation.
- .5 Reinstate road pavement, sidewalks, lawns and plantings to condition existing before excavation.
- .6 Comply with Detail OPSD 600.110 to reinstate concrete curbs.
- .7 Comply with Detail OPSD 310.010 to reinstate concrete sidewalks.
- .8 Use temporary plating to support traffic loads over unshrinkable fill for initial 24 hours.

END OF SECTION

1 GENERAL

1.1 Comply with all the requirements of the General Conditions.

1.2 Related Work

.1 Section 02312 Topsoil & Finish Grading

1.3 Work Included

- .1 Supply and place and compact granular base courses.
- .2 Supply and erect forming to levels and layout indicated on Grading Plan.
- .3 Supply and place reinforcing materials.
- .4 Supply, place and finish concrete within forming.

1.4 Delivery, Storage and Handling

- .1 Deliver materials as required for immediate installation.
- .2 Protect reinforcing from dirt and damage at all phases of the operation.

1.5 Sample

- .1 The Contractor shall provide a job site sample of 2 square metres (one for each colour and pattern) to be approved by the Contract Administrator prior to the start of construction. Said sample shall be the standard for the balance of the work installed and shall be protected against damage until final approval from the Contract Administrator. The Tendered Item is to include all supply of all required material, placing, finishing, and disposal upon approval.

1.5 Testing and Inspection

- .1 The Owner shall retain the services of a Geotechnical Engineer to test and confirm in writing the suitability of the sub base, including bearing capacity and compaction PRIOR to the installation of concrete. The contractor will coordinate all testing.
- .2 The Owner shall retain the services of an Agency to provide the following written test results to determine conformance with the specifications:
 - .1 A standard strength test for concrete placed but not less than one test for concrete placed each day - each strength test sample will consist of three cylinders with proper identification and field data - one specimen will be tested at 7 days and 28 days - cylinders will be field cured prior to shipping to the test laboratory;
 - .2 One standard air entrainment test for each standard strength test;
 - .3 One or more standard slump tests with each standard strength test.Additional testing for each truckload placed may be required, as deemed necessary.

1.6 Job Conditions

.1 Existing Conditions:

The Contractor shall make himself aware of all factors which shall affect the work including existing installations, underground services, use and access of adjoining property by the Owners and the general public. Failure to take note of any factor will not be a cause for a claim for additional payment by the contractor over and above the amount quoted in the tender.

.2 Protection:

The Contractor shall comply with requirements of the latest issue National Building Code, the Ontario Occupational Health and Safety Act and the applicable by-laws of the governing municipality related to safety of the public and workers.

1.7 Measure for Payment

- .1 Payment will be made based on the areas listed in the Unit Schedule. Unit price shall include excavation and concrete base.

2 PRODUCTS

2.1 Materials

.1 Concrete:

Ready mix design based on the Canadian Safety Association (CSA) specification A-23. Course aggregate shall have maximum size 20 mm. Air Content by volume at time of placing shall be 5 to 7 percent. Minimum compression strength after twenty eight days shall be twenty eight megapascals. (Mpa).

- .2 Air entrainment admixtures to conform to the latest issue of American Society for Testing Materials (ASTM) Standard C-260).

- .3 Water should be clean and potable.

- .4 Reinforcements 10 mm diameter, 150 x 150 welded wire mesh to be made discontinuous at all expansion joints, to current CSAG30.5.

- .5 Expansion joint to be pre-moulded joint filler: bituminous impregnated fibreboard to current ASTM D 1751.

- .6 Other materials shall be as specified by CSA specification A-23.

3 EXECUTION

3.1 Inspection

- .1 Examine surfaces on which the work of this section is to be installed. Report any defects to the Landscape Architect before commencing work.

3.2 Installation

- .1 Sub Grade:
Blade sub grade to conform to lines, grades and sections as shown on the drawings. Compact sub grade to a uniform density at optimum moisture content. Remove all soft or yielding material, replace with Class "B" materials. Compact to density of surrounding material - abrupt variations in density are not acceptable.
- .2 Base Course:
Place granular base course of Class "A" material to depth shown on the drawings. Place and spread base course in layers not to exceed 200 mm., compacting layer at its optimum moisture content to a density of not less than 98 percent as measured by the Standard Proctor Test. Finished surfaces of granular base course shall be smooth and conform to the lines, grades and cross sections shown on the drawings. Tolerance of the cross section or longitudinal profile shall not exceed 13 mm. when measured with a 3000 mm. straight edge.
- .3 Joints:
Expansion joint filler to be cut to full cross sectional shape of structure leaving 10 mm. below finished surface of concrete:
 1. At generally 5500 mm. intervals and not more than 8000 mm. intervals but not in front of driveways.
 2. At the beginning and end of curved sections.
 3. Where the concrete paving abuts curbing or other rigid structures.
Install control joints at 2000 mm. intervals with present tool or post set masonry saw.
- .4 Layout and Drainage:
Consult dimensions, angles and elevations indicated on Site, Landscape and Grading Plan. Sidewalk slopes - ideal 2.0 percent, minimum 1.5 percent, maximum 2.0 percent. Cross slopes - ideal 2 percent, minimum 1.5 percent, maximum 5 percent.
6. Placing Concrete:
Place concrete in uniform layers of continuous lengths between expansion joints.

An expansion joint is required where placing has been suspended for 30 minutes.

7. Finishing:
Wood float and broom finish with a 300mm rough brush edge on all sides.
8. Curing:
Cure concrete by keeping exposed surfaces continually moist for not less than seven consecutive days after placing for normal Portland Cement. Cure for not less than three consecutive days when High Early Strength Portland Cement is used. Apply proprietary membrane after concrete has set to inhibit water leaching during curing. Remove curing agent at end of curing period.

3.3 Clean Up

- .1 Upon completion of the work, clean up and remove from the site all surplus materials and debris resulting from this work.
- .2 Restore any disturbed areas to its original condition.

END OF SECTION

1 GENERAL

- 1.1 Comply with all the requirements of the General Requirements.
- 1.2 Related Work
 - .1 Section 02311 Site Grading
 - .2 Section 02312 Topsoil & Finish Grading
 - .3 Section 02315 Excavating, Trenching and Backfilling
- 1.3 Obtain approval of all layout work for asphalt paving and finished grade elevations as marked on grade stakes, prior to commencing paving work.
- 1.4 Measurement for Payment

Asphalt paving will be measured as noted in the contract unit price schedule, including all excavation, base preparation, compaction and all incidental items required to complete the installation as shown on the drawings and details.
- 1.4 Testing and Inspection
 - .1 The contractor shall retain the services of a Geotechnical Engineer to test and confirm in writing the suitability of the sub base, including bearing capacity and compaction PRIOR to the installation of asphalt. The contractor shall coordinate all testing. Testing to be conducted for this section of work is as follows:
 - .1 subgrade to be minimum 95% Standard Proctor Density
 - .2 granular A compacted to 100% Standard Proctor Density
 - .3 granular B compacted to 100% Standard Proctor Density
 - .2 The contractor shall retain the services of an Agency acceptable to the Owner to provide written test results to determine conformance with the specifications: Testing to be conducted for this section of work is as follows:
 - .1 asphalt to be tested for content and grain size and mix
- 1.5 Protection
 - .1 Protect all other work from damage and contamination resulting from asphalt work.
 - .2 Make good all damages and clean up contaminated areas at no extra cost.

2 PRODUCTS

- 2.1 Asphalt shall be hot-mixed, hot-laid; install HL 3/HL 4 asphalt, as described in the details.

- 2.2 Granular base courses shall be free of organic or other deleterious substances and shall conform with Section 02315 Excavation, Trenching and Backfilling.

3 INSTALLATION

3.1 Site Preparation

- .1 Layout all asphalt paving areas and set finished grades by means of grade stakes clearly marked. Report all discrepancies between site conditions and drawings at once. Ensure that positive, adequate surface run-off is provided.
- .2 Obtain approval of layout and finished grades before proceeding with work.
- .3 Excavate to the minimum specified depths, after compaction, as shown on drawings. Maintain sub-grade parallel to finished grade in all cases.
- .4 Remove soft areas in sub-grade and backfill and compact with approved granular; fill all low areas with approved, compacted granular material at a minimum compacted depth of 150 mm.
- .5 Compact sub-grade uniformly to minimum 95% Standard Proctor Density.
- .6 Place granular materials to depths shown on drawings and as required by Soils Engineer. Place and compact granular in layers not exceeding 100 mm in depth. Maximum depth of 150 mm of granular A. Extend granular base 300mm beyond limit of asphalt.
- .7 Keep materials clean and free of deleterious materials at all times.
- .8 Maintain final grade of granular base course parallel to finished grade.

- 3.2 Place asphalt courses only when the temperatures at the surface are thirty-five degrees Fahrenheit minimum and rising. Suspend paving operations when the temperature drops below the minimum specified above.

- 3.3 Compaction of asphalt mixtures shall be carried out as soon as possible, after spreading of the mixture, as it will bear the roller without checking or undue displacement.

- 3.4 Start rolling parallel to the centre line at the lower side and proceed towards the centre of the pavement course, overlapping on successive trips by at least half

- the width of the rear wheel. Alternate trips of the roller shall be of slightly different lengths and shall be staggered.
- 3.5 Finish rolling shall be accomplished with a minimum number of passes, producing a satisfactory surface.
- 3.6 Start finish rolling longitudinally at the higher edge and proceed towards the lower edge.
- 3.7 Use hot tampers for hand tamping adjacent to curbs, catch basins, manholes and similar structures and in all areas which cannot be covered by the roller.
- 3.8 Finished pavement shall be smooth, true to line and level and free from depressions exceeding 6 mm as measured with a 2.75 metre straight edge paralleling the centre line.
- 3.9 Low or defective areas shall be cut out immediately and replaced with fresh hot mixture, placed and compacted to blend with surrounding areas and thoroughly bonded to it.
- 3.10 Hand tamp edges to 45 degree angle where asphalt adjoins grass or planted areas. Temporarily remove any obstructions interfering with hand tamping operations and restore when operation is complete.
- 3.11 Maintenance
- .1 Maintain all asphalt paving from time of installation until acceptance.
 - .2 Keep paving clean at all times, sweep, scrub and/or scrape and hose down paved areas which have been contaminated by dirt, mud, etc.
- 3.12 Warranty
- .1 Warranty all workmanship and materials for a period of two (2) years from the date of Substantial Completion.
 - .2 Repair all cracks or settlement which occurs during the Warranty period at no additional cost to the Owner.
 - .3 Upon notification by the Owner, repair or make good failure, deterioration or damage to the Owner's satisfaction
- 3.13 Clean Up
- .1 After completion of paving, clean all areas and structures such as curbs, walls, catch basin gratings, manhole covers, etc. from all contamination resulting from paving operations.

END OF SECTION

1 GENERAL

- 1.1 Section Includes
 - .1 Provision of all labour, materials, equipment and incidental services necessary to supply and install site furnishings.
- 1.2 Protection of Existing Features
 - .1 Building and surface features.
 - .1 Protect surface features which may be affected by work from damage while work is in progress. In the event of damage, immediately make repair to the approval of the landscape architect.
- 1.3 Measure for payment
 - .1 Items will be paid for as per the Unit Schedule. Payment includes installation, excavation (as required) and all materials, labour and incidentals required to complete the work.

2 PRODUCTS

2.1 Materials

- .1 Artificial Turf by Synlawn synlawn.com (Or Approved Equal)
Model: SynPlay 48 (+pad)
Install as per manufacturer's instructions.
- .2 Precast Concrete Seat Wall by ED'S Concrete www.edsconcrete.ca
(Or Approved Equal)

Series: Watari Bench
Model: WA-CUR
Finish: Smooth
Colour: Standard Gray
Installation as per manufacturer's specifications.

Series: Watari Bench
Model: WA-STR
Finish: Smooth
Colour: Standard Gray
Installation as per manufacturer's specifications.
- .3 Chalk Board supplied by Nature's Instruments (1-877-733-7456) or
Approved Equal.
Model No. NI-PG-301-01
Installed as per manufacturer's instructions.

- .4 Armourstone to be installed as per detail on L4.
- .5 Climber play equipment by Henderson Playground (www.hendersonplay.com)
 Cubist Climber 4
 To be installed as per manufacturer's specifications. Provide independent CSA
 report confirming full compliance with CSA requirements.

3 EXECUTION

3.2 Installation

- .1 Install as per manufacturer's instructions or as per the details identified on drawings
 L4.
- .2 Prior to installation provide layout to the approval of the landscape architect.

1 GENERAL

1.1 Related Work

- .1 Section 02312: Topsoil and finish grading

1.2 Source Quality Control

- .1 Obtain Landscape Architect's approval of plant material at source.
- .2 Notify Landscape Architect of source of material at least 7 days in advance of shipment. No work under this Section is to proceed without approval.
- .3 Acceptance of plant material at its source does not prevent rejection on site prior to or after planting operations.

1.3 Measure for Payment

- .1 Payment will be unit price for supply and installation of trees and shrubs. Installation includes:
 - .1 Excavations for planting.
 - .2 Supply of peat moss and fertilizer for planting.
 - .3 Tree and shrub placement as shown on planting details.
 - .4 Staking and guying as per specification.
 - .5 Mulching.

1.4 Shipment and Pre-Planting Care

- .1 Coordinate shipping of plants and excavation of holes to ensure minimum time lapse between digging and planting.
- .2 Tie branches of trees and shrubs securely and protect plant material against abrasion, exposure and extreme temperature change during transit. Avoid binding of plant stock with rope or wire which would damage bark, break branches or destroy natural shape of plant. Give full support to root ball of large trees during lifting.
- .3 Cover plant foliage with tarpaulin, and protect roots by means of dampened straw, peatmoss, sawdust, or other acceptable material to prevent loss of moisture during transit and storage.
- .4 Remove broken and damaged roots with sharp pruning shears.
- .5 Keep roots moist and protected from sun and wind. Heel in trees and shrubs, which cannot be planted immediately, in shaded areas and

water well. Heeled in trees and shrubs are to be kept to a minimum on-site. Landscape Architect must be notified prior to any on-site storage of materials.

1.5 Guarantee

- .1 Provide a written guarantee, signed and issued to the owner stating that the plant material as itemized on the plant list is guaranteed against defects for a period of twelve (12) months from the date of Acceptance.
- .2 End-of-warranty inspection will be conducted by the Landscape Architect.
- .3 Landscape Architect reserves the right to extend Contractor's warranty responsibilities for an additional one year if, at end of initial warranty period, leaf development and growth on trees and shrubs is not sufficient to ensure future survival.

1.6 Replacements

- .1 If any plant material is found either dead or not in satisfactory health as determined by the Landscape Architect, it will, upon request, be immediately removed from the site and replace as soon as conditions permit during the normal planting season.
- .2 Replace dead plant material immediately.
- .3 Extend warranty on replacement plant material for a period equal to the original warranty period.
- .4 Continue such replacement and warranty until plant material is accepted by the Landscape Architect.

2 PRODUCTS

2.1 Materials

- .1 Water: potable and free of minerals which may be detrimental to plant growth.
- .2 Stakes: Wood stakes 40 x 40 x 5 x 2440 mm.

- .3 Guy Wires: steel wire strand at following size.
 - .1 Shrubs and trees under 75 mm caliper use No. 12 galvanized wire (not on podium deck)
- .4 Tree Rings: fabricated from 3 mm galvanized wire encased in two ply reinforced 12 mm diameter rubber garden hose or equivalent.
- .5 Tree Wrapping Material:
Not Applicable
- .6 Mulch: Submit sample prior to shipping to site for approval by Landscape Architect:
 - .1 Shredded bark mulch: free of small branches, leaves and varying in size with no pieces thicker than 12 mm.
- .7 Anti-desiccant: Wax-like emulsion to provide film over plant surfaces reducing evaporation but permeable enough to permit transpiration.
- .8 Fertilizer: 6-24-24 at 12lbs per 1000sq ft incorporated to half rootball depth, and to the dripline of trees.
- .9 Peatmoss:
 - .1 Derived from partially decomposed fibrous or cellular stems and leaves of species of Sphagnum Mosses.
 - .2 Elastic and homogeneous, brown in colour.
 - .3 Free of wood and deleterious material which could prohibit growth.
 - .4 Shredded particle minimum size: 5 mm.

2.2 Plant Material

- .1 Quality and Source:
Comply with Guide Specification for Nursery Stock, latest edition of Canadian Nursery Trades Association referring to size and development of plant material and root ball. Measure plants when branches are in their natural position. Height and spread dimensions refer to main body of plant and not from branch tip to branch tip. Use trees and shrubs of No. 1 grade.

.2 Additional plant material qualifications:

- .1 Plant material obtained from areas with milder climatic conditions from those of site acceptable only when moved to site prior to the breaking of buds in their original location and heeled-in, in a protected area until conditions suitable for planting.
- .2 Use trees and shrubs with strong fibrous root system free of disease, insects, defects or injuries and structurally sound. Use trees with straight trunks, well and characteristically branched for species. Plants must have been root pruned regularly, but not later than one growing season prior to arrival on site.
- .3 Large trees must have been half root pruned during each of two successive growing seasons, the latter at least one growing season prior to arrival on site.
- .4 Plant material that has come out of dormant stage and is too far advanced will not be accepted unless prior approval obtained.

.3 Cold Storage:

Approval required by Landscape Architect for plant material which has been held in cold storage.

.4 Container Grown Stock:

- .1 Acceptable if containers large enough for root development. Trees and shrubs must have grown in container for a minimum of one growing season but not longer than two. Root system must be able to "hold" soil when removed from container. Plants that have been root bound are not acceptable. Container stock must be fertilized with slow releasing fertilizer.

.5 Balled and Burlapped:

Coniferous and broad-leafed evergreens over 500 mm tall must be dug with soil ball.

Deciduous trees in excess of 3 m height must have been dug with large firm ball. Root balls must include 75% of fibrous and feeder root system. This excludes use of native trees grown in light sandy or

rocky soil. Secure root balls with burlap, heavy twine and rope.
For large trees: wrap ball in double layer of burlap and drum lace with minimum 10 mm dia. rope. Protect root balls against sudden changes in temperature and exposure to heavy rainfall.

- .6 Substitutions:
Substitutions to plant material as indicated on planting plan are not permitted unless written approval has been obtained from Landscape Architect as to type, variety and size. Plant substitutions must be of similar species and of equal size as those originally specified.

3 EXECUTION

3.1 Workmanship

- .1 Obtain approval prior to excavating.
- .2 Apply anti-desiccant in accordance with material manufacturer's instructions.
- .3 Coordinate operations. Keep site clean and planting holes drained. Immediately remove soil or debris spilled onto pavement.

3.2 Planting Time

- .1 Plant deciduous plant material during dormant period before buds have broken. Plant material noted for spring planting must be planted in dormant period.
- .2 Plant material imported from region with warmer climatic conditions may only be planted in early spring.
- .3 When permission has been obtained to plant deciduous plant material after buds have broken, spray plants with anti-desiccant to slow down transpiration prior to transplanting.
- .4 Plant evergreens in spring before bud break.
- .5 When permission has been obtained, trees and shrubs, and ground covers growing in containers may be planted throughout growing season.
- .6 Plant only under conditions that are conducive to health and physical

conditions of plants.

- .7 Provide planting schedule:
Extended planting operations over long period using limited crew will not be accepted.

3.3 Excavation

- .1 Individual shrubs:
excavate planting holes 250 mm deep and at least 250 mm wide.
- .2 Small trees (up to .30 m):
excavate holes 450 mm deep with diameter of 300 mm greater than root spread or root ball.
- .3 Large trees:
excavate to depth of 500 mm with width of 750 mm greater than diameter of root ball. In heavy soils, increasing planting holes by 50 mm for each 100 mm of root ball diameter.

3.4 Planting

- .1 Plant trees and shrubs vertically with roots placed straight out in hole. Orient plant material to give best appearance.
- .2 Place plant material to depth equal to depth they were originally growing in nursery.
- .3 With balled and burlapped root balls, loosen burlap and cut away minimum top 1/3 without disturbing root ball. Do not pull burlap or rope from under root ball. With container stock, remove entire container without disturbing root ball. Non-biodegradable wrappings must be removed.
- .4 Tamp planting soil around root system in layers of 150 mm eliminating air voids. Frozen or saturated planting soil is unacceptable. When 1/3 of planting soil has been placed, fill hole with water. After water has completely penetrated into soil, complete backfilling with mixture of planting soil, peatmoss and 1:4:2 slow release fertilizer.
- .5 Build 100 mm deep saucer around outer edge of hole to assist with maintenance watering.

- .6 When planting is completed, give surface of planting saucer dressing of 1:2:2 fertilizer at rate of 12 kg/100 m.² Mix fertilizer thoroughly with top layer of planting soil and water in well.

3.5 Tree Support

- .1 Tree support is shown on planting details.

3.6 Pruning

- .1 Prune trees and shrubs after planting where damage has occurred during shipping or planting. Postpone pruning, of those trees where heavy bleeding may occur, until in full leaf. Employ clean sharp tools and make cuts flush with main branch, smooth and sloping as to prevent accumulation of water. Remove projecting stubs on trunks or main branches. Remove dead and injured branches and branches that rub causing damage to bark, without changing the plants natural shape. Do not damage lead branches or remove smaller twigs along main branches.

3.7 Mulching

- .1 Obtain approval of planting material installations before mulch is applied. Loosen soil in planting beds and pits and remove debris and weeds. Spread mulch to a minimum thickness of 100 mm. Mulch material susceptible to blowing must be moistened down and mixed with topsoil before applying or will not be acceptable.
- .2 Mulch material sample must be provided to the landscape consultant for approval prior to the successful contractor shipping the material to the site.

3.8 Maintenance

- .1 Water twice a week for first 4 weeks and then sufficiently thereafter to maintain optimum growing conditions (assumed to be once every two weeks thereafter from June through to September). Ensure adequate moisture in root zone at freeze-up.
- .2 Spray plants to combat pests and diseases, as required. Do not use DDT or sprays prohibited by Agriculture Canada.

- .3 Keep stakes and guy wires in proper repair.
- .4 Provide adequate protection against winter damage including damage caused by rodents.
- .5 Maintain plant material from date of planting up to end of warranty period.
- .6 Remove trunk wrapping at end of warranty period.

3.9 Acceptance

- .1 Trees, shrubs and ground covers must be healthy and in a vigorous growing condition at the time the final inspection review for the landscape components of the project is requested.
- .2 Trees, shrubs and ground covers planted in the fall will be evaluated for final acceptance in the following spring one month after start of growing season.

End of Section

Appendix A – Construction School Specific Information Sheet Sample

In addition to the terms and conditions of the Contract Documents, the Contractor shall follow the protocols of the Construction Site Specific Information Sheet, sample provided below.

A completed version of this document, with site specific content, will be provided to the Contractor at the pre-construction meeting.

Construction School Specific Information Sheet

1. School Information:

School Name: Prince of Wales Elementary School

Bell Times

Morning (School Entry): 8:30 AM

Afternoon (School Dismissal): 2:50 PM

Aftercare Program Dismissal: 6:00 PM

Caretaking Phone Number: 000-000-0000

***After-Hours Emergency Number:** 905-667-3079

****Caretaking Hours**

September to June 6:00 AM – 10:00 PM

December Holiday Break 6:00 AM – 2:00 PM

March Break 6:00 AM – 2:00 PM

July to August 6:00 AM – 2:00 PM

Saturday / Sunday CLOSED

Account Code: HP0000

Security Panel Code: 0000

*Please call the After-Hours Emergency Number noted above if issues arise outside of Caretaking Hours. These would include unanticipated interruption of services, issues with building or room access, fire alarm or security concerns, etc.

**Caretaker hours are not guaranteed. Please confirm with the HWDSB project supervisor prior to any work taking place, and then on a weekly basis throughout the duration of the project.

2. School Entry for afterhours, school holidays or closures:

Please follow these steps upon entry to the building outside of caretaker hours and on school holidays or closures:

1. Call API Alarm Inc. at 1-877-787-5237 and notify them in advance of the day(s) and time(s) that access to the building will be required. They will require the HP code noted above.
2. Disarm the security panel when arriving.
3. Arm the security panel when leaving.
4. Call API to verify that the building is armed and secure.

BE YOU. BE EXCELLENT.

Construction School Specific Information Sheet

Failure to follow this procedure outside of caretaker hours and on school holidays or closures will result in an automatic dispatch of a security guard to the building to verify who has entered/exited the building. Security costs associated with the dispatch of a security guard for failing to follow the procedure will be expensed to the contractor responsible for the incident.

3. Protocol for Work Impacting Fire Alarm System or Devices

The contractor is to follow this procedure when the fire alarm system is impacted.

A. References and Definitions:

Fire Alarm Control and Testing Service Provider: Hamilton Fire Control

Fire Alarm and Security System Monitoring Service Provider: API Alarm Inc.

Fire Watch: An hourly patrol of areas that are not protected/monitored by the fire alarm system. These include but are not limited to, a disconnected device, a covered device, a bypassed device, or device in trouble. The general contractor is responsible for fire watch in all construction areas. Caretaking staff are responsible for fire watch in all other areas of the school. Fire watch is to be recorded in a Fire Watch Log.

Fire Watch Log: The general contractor is to document and maintain a written log confirming fire watch has been conducted hourly. This log is to remain on site for the duration of the project. This written log is maintained separate from the caretaking fire watch log. The caretaking log is digitally recorded within the Boards asset management system (eBase).

B. Mandatory Pre-Construction Site Meeting with Hamilton Fire Control

1. Contractor to request a meeting prior to mobilization with Michael Fleet from Hamilton Fire Control (HFC), the project supervisor from HWDSB, the facility operation supervisor from HWDSB and the head caretaker to review any work that will affect the fire alarm system. This can be coordinated by the project supervisor upon request.

Contact: Michael Fleet - Hamilton Fire Control

Phone: (905) 527-7042

Email: michael@hamiltonfirecontrol.ca

2. Contractor to minute the meeting and submit to the project supervisor and Michael Fleet from HFC for review within 48 hours of the site-walk-through.

Construction School Specific Information Sheet

C. Mandatory Construction Protocol if the Fire Alarm System is Impacted

1. Contractor to follow procedures discussed and documented from the pre-construction site meeting with Hamilton Fire Control.
2. If devices are impacted during occupied hours:
 - Per the Fire Safety Plan, contractor to notify API that they'll be on Fire Watch (in the area of the impacted devices only). API will not take any action; the notification is for information purposes only.
 - Contractor to either take the device offline or protect/cover it. Fire watch (in the area of the impacted device only) is required in either of these scenarios. If the alarm goes off during work, all occupants, including contractors, are to evacuate the building and the fire department will be dispatched.

If hot work is taking place, prior to the above-noted steps:

- Contractors are required to advise HWDSB at least 24 hours before any hot work is scheduled to take place.
 - The contractor is required to provide a hot work permit to HWDSB at the same time.
3. If devices are impacted outside of occupied hours, and the contractor is the only party in the building:
 - The same protocol above is to be followed.
 4. If the system or specific devices will not be operational while the school is completely vacant (i.e. overnight or on a weekend when no Work is taking place):
 - No action required.

The system is not to be bypassed (device(s) or full system). The system is NOT to be put on test. The only time the system will be put on test and the school will be on Fire Watch is if the system is being tested.

In the event a fire alarm device is activated, all occupants of the school, including contractors, must evacuate the school. The fire department will be dispatched. The contractor will be responsible for all fire department costs resulting from construction.

4. Please follow these steps for planning any service (electrical, gas, water) shutdowns:

A. Internal Localized System/Service Shutdowns:

Construction School Specific Information Sheet

1. Localized shutdowns **require minimum 3 days' notice** to HWDSB project supervisor for coordination with the school facility and staff.
2. Shutdowns must be completed outside of school bell times/operational hours which vary by facility and must be scheduled for evenings after 6:00 PM, weekends or board holidays.
3. If a shutdown will impact the security system, the contractor shall contact API Alarm Inc. at 1-877-787-5237 and notify them in advance of the day(s) and time(s) of the shutdown.
4. If a shutdown impacts the fire alarm system, the contractor shall follow the Fire Alarm Bypass Protocol, section 4 above.
5. If required, the contractor is to coordinate with Board vendor/s to be on site to ensure boilers, roof top units, heat pumps, etc. are functioning properly after service disruption has concluded.
 - Chamberlain Building Services Inc - info@chbs.ca, 905-664-1914 or
 - Union Boiler Company Limited - info@unionboiler.com, 905-528-7977
6. Process will vary based on services shutdown and ability to localize shutdown.

B. Complete School System/Service Shutdowns:

1. Complete building shutdowns **require minimum 5 days' notice** to HWDSB project supervisor.
2. Shutdowns must be completed outside of school bell times/operational hours which vary by facility and must be scheduled for evenings after 6:00 PM, weekends or board holidays.
3. Contractor to contact API Alarm Inc. at 1-877-787-5237 and notify them in advance of the day(s) and time(s) of shutdown.
4. During the shutdown, the contractor is responsible for following Fire Alarm Bypass Protocol, section 4 above.
5. The contractor is to coordinate with Board vendor/s to be on site to ensure boilers, roof top units, heat pumps, etc. are functioning properly after service disruption has concluded.
 - Chamberlain Building Services Inc - info@chbs.ca, 905-664-1914 or
 - Union Boiler Company Limited - info@unionboiler.com, 905-528-7977
6. HWDSB project supervisor will coordinate with other HWDSB departments to ensure all systems (IIT, security, communications) are up and running after service disruption has concluded.
7. If required, HWDSB project supervisor will coordinate with City of Hamilton staff if site has shared facilities such as recreation centre, community centre, pool or library, etc.
8. Process will vary based on service shutdown.

Construction School Specific Information Sheet

C. Heating and Cooling System Shutdowns:

1. Heating and cooling system shutdowns **require minimum 5 days' notice** to HWDSB project supervisor
2. Shutdowns must be completed outside of school bell times/operational hours which vary by facility and must be scheduled for evenings after 6:00 PM, weekends or board holidays.
3. The contractor is to coordinate with Board vendor/s to be on site to ensure boilers, roof top units, heat pumps, etc. are functioning properly after service disruption has concluded.
 - Chamberlain Building Services Inc - info@chbs.ca, 905-664-1914 or
 - Union Boiler Company Limited - info@unionboiler.com, 905-528-7977
4. If the boiler system is drained, the contractor upon refilling the system, is responsible for coordinating Board approved chemical treatment vendor to treat water.
 - Aquarian Chemicals Inc - info@aquarianchemicals.com, 905-825-3711
5. Process will vary based on services shutdown and ability to localize shutdown.

D. Asbestos Abatement and Designated Substance Related Work:

1. Designated substance related work **requires minimum 5 days' notice** to HWDSB project supervisor.
2. Designated substance related work in occupied areas must be completed outside of school bell times/operational hours which vary by facility and must be scheduled for evenings after 6:00 PM, weekends or Board holidays.