



Invitation to Tender

INVITATION TO TENDER NO. PS20200764 (the "ITT")

CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT

Issue Date: July 22, 2020

Issued by: City of Vancouver, as represented by its Vancouver Board of Parks and Recreation (the City")

IN RESPECT OF

BEACONSFIELD PARK PLAYGROUND RENEWAL

Tenders are to be addressed to the Supply Chain Management office, 4th Floor, City of Vancouver, 453 West 12th Avenue, Vancouver, British Columbia, Canada, V5Y 1V4, and received at bids@vancouver.ca prior to 3:00pm, Vancouver Time (as defined in Note 3 below), on Thursday, August 20, 2020 (the "Closing Time").

Tenders will be not be publicly opened. Tender results can be found within 48 hours of the Closing Time at the following website:

<http://vancouver.ca/doing-business/unverified-tender-results.aspx>

NOTES:

1. Tenders must be received at the email addressed specified above prior to the Closing Time.
2. "Vancouver Time" will be conclusively deemed to be the time indicated in the electronic timestamp the Tender receives upon receipt at the email address specified herein, which is in turn synchronized to Network Time Protocol (NTP) provided by the National Research Council of Canada adjusted to local Pacific Time Zone.
3. The City of Vancouver is open on business days from 8:30 a.m. to 4:30 p.m., Vancouver Time, and is closed Saturdays, Sundays, and holidays.
4. DO NOT SUBMIT TENDERS BY FAX.
5. All queries related to this ITT should be submitted in writing to the attention of:

Jason Lo, Contracting Specialist

Email: jason.lo@vancouver.ca

(the "Contact Person")

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CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
PART A - INTRODUCTION

1.0 OVERVIEW OF PROJECT

- 1.1 The City of Vancouver as represented by its Vancouver Board of Parks and Recreation (the "City") invites Tenders for the playground replacement work at Beaconsfield Park.
- 1.2 The Work generally includes, but is not limited to:
- Demolition of existing playground; and
 - Construction of new playground, and associated improvements
- 1.3 The Work Site is located at **3215 Slocan St, Vancouver**, British Columbia. The Work Site is further described in the Tender Documents, including the Site Map included as part of **Appendix 3**.
- 1.4 The purpose of this ITT is to select a Tenderer with the capability and experience to efficiently and cost-effectively perform and complete the Work.
- 1.5 IF A POTENTIAL TENDERER BELIEVES THAT THE CITY MAY BE UNABLE TO SELECT IT DUE TO A CONFLICT OF INTEREST, BUT IS UNCERTAIN ABOUT THIS, THE POTENTIAL TENDERER IS URGED TO CONTACT THE CONTACT PERSON AS SOON AS POSSIBLE WITH THE RELEVANT INFORMATION SO THAT THE CITY MAY ADVISE THE POTENTIAL TENDERER REGARDING THE MATTER. SEE SCHEDULE "L" FOR AN INDICATION OF THE TYPES OF CONFLICTS OF INTEREST THAT OFTEN ARISE.

2.0 SUSTAINABILITY

- 2.1 The City's Procurement Policy, Ethical Purchasing Policy and related Supplier Code of Conduct found at <http://vancouver.ca/doing-business/selling-to-and-buying-from-the-city.aspx> align the City's approach to procurement with its corporate social, environmental and economic sustainability values and goals. They evidence the City's commitment to maximize benefits to the environment through product and service selection, and to ensure safe and healthy workplaces, where human and civil rights are respected. Each Tenderer is expected to adhere to the supplier performance standards set forth in the Supplier Code of Conduct.
- 2.2 A Contractor is to provide environmentally sensitive products or services wherever possible. Where there is a requirement that a Contractor supply materials, and where such materials may cause adverse environmental effects, each Tenderer should indicate the nature of the hazard(s) in its Tender. Furthermore, each Tenderer should advise the City of any known alternatives or substitutes for such materials that would mitigate such adverse effects.

3.0 TENDER DOCUMENTS

- 3.1 The Tender Documents consist of the following:
- (a) Part A - Introduction, and its appendices:
 - (i) Appendix 1 - Optional Information Meeting Attendance Form;
 - (ii) Appendix 2 - Response Notification Form; and
 - (iii) Appendix 3 - Site Map, Specification and Drawings;
 - (b) Part B - Terms and Conditions of ITT Process;

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PART A - INTRODUCTION

- (c) Part C - Form of Tender (including all schedules),
- (d) Part D - Form of Agreement (including all schedules);
- (e) the Specifications (available separately and to be incorporated into the Contract when finalized);
- (f) the Drawings (available separately and to be incorporated into the Contract when finalized);
- (g) all addenda or amendments to the ITT, and all questions and answers in connection with the ITT, issued in writing by the City prior to the Closing Time, as well as any addenda, amendments or questions and answers issued in writing by the City after the Closing Time and accepted in writing by the Tenderers.

3.2 Specifications and Drawings will be made available on the City's website at <https://bids.vancouver.ca/bidopp/openbid.htm> and by searching for the ITT's reference number PS20200764.

4.0 OPTIONAL INFORMATION MEETING

- 4.1 Tenderers are required to attend the optional information meeting (the "Optional Information Meeting") on July 30, 2020 commencing at 2:00 pm (PST).
- 4.2 The location of the Optional Information Meeting will be: **3215 Slocan St**, Vancouver, British Columbia at the existing playground.
- 4.3 Tenderers are asked to pre-register for the Optional Information Meeting by submitting the Optional Information Meeting Attendance Form (Appendix 1) to the Contact Person by email prior to July 28, 2020.

5.0 ADMINISTRATIVE REQUIREMENTS

- 5.1 Tenderers are asked to indicate their intentions to submit Tenders by submitting the Response Notification Form (Appendix 2) to the Contact Person by email on or before August 13, 2020.
- 5.2 It is the sole responsibility of each Tenderer to check the City's website at <http://vancouver.ca/doing-business/open-bids.aspx> regularly for addenda, amendments and questions and answers related to this ITT, which the City may issue at any time during the process, and for any reason, at its discretion.

6.0 CONDUCT OF ITT - INQUIRES AND CLARIFICATIONS

- 6.1 The City will have conduct of this ITT, and all communications are to be directed only to the Contact Person named on the cover page. Any communication from potential Proponents to City staff other than the contact person regarding the content of this RFP may lead to disqualification of the Proponent from this RFP process, at the City's sole discretion.
- 6.2 It is the responsibility of each Tenderer to thoroughly examine the Tender Documents and satisfy itself as to the full requirements of this ITT and their acceptability to the Tenderer.
- 6.3 The City welcomes inquiries, requests for clarification or comments from registered Tenderers. All inquiries or comments to the City must be in written form only. All inquiries, requests for clarification and comments must be e-mailed to jason.lo@vancouver.ca prior to 3:00 p.m. Vancouver Time, August 13, 2020, and must in each case be addressed to the attention of the

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PART A - INTRODUCTION

Contact Person. In response to inquiries, requests for clarification or comments, the City, in its sole discretion, may make amendments to this ITT or may issue questions and answers to all Tenderers who have submitted a Response Notification Form and post them on the City's website.

7.0 ELIGIBILITY TO PARTICIPATE - Intentionally Deleted

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CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
APPENDIX 1 (PART A) - INFORMATION MEETING ATTENDANCE FORM



CITY OF VANCOUVER
Purchasing Services

Invitation to Tender No. PS20200764

To acknowledge your intent to attend the Optional Information Meeting and to ensure that you receive the required information, please submit this form to the person identified below in accordance with the ITT:

Jason Lo
City of Vancouver
Email: jason.lo@vancouver.ca

Your details:

Tenderer's Name:

"Tenderer"

Address:

Telephone:

Key Contact Person:

E-mail:

We will attend the Optional Information Meeting for: ITT No. PS20200764, "Contractor for Beaconsfield Park Playground Replacement".

Signature

Name of Authorized Signatory (Please print)

E-mail Address (Please print)

Date

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CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
APPENDIX 2 (PART A) - RESPONSE NOTIFICATION FORM



CITY OF VANCOUVER
Purchasing Services

Invitation to Tender No. PS20200764

To acknowledge your intent to submit a Tender and to ensure that you receive the required information, please submit this form to the person identified below in accordance with the ITT:

Jason Lo
City of Vancouver
Email: jason.lo@vancouver.ca

Your details:

Tenderer's Legal

Name:

"Tenderer"

Address:

Telephone:

Key Contact Person:

E-mail:

We **WILL** ☐ / **WILL NOT** ☐ submit a Tender in response to ITT No. PS20200764, "Contractor for Beaconsfield Park Playground Replacement" on or before the Closing Time.

Signature

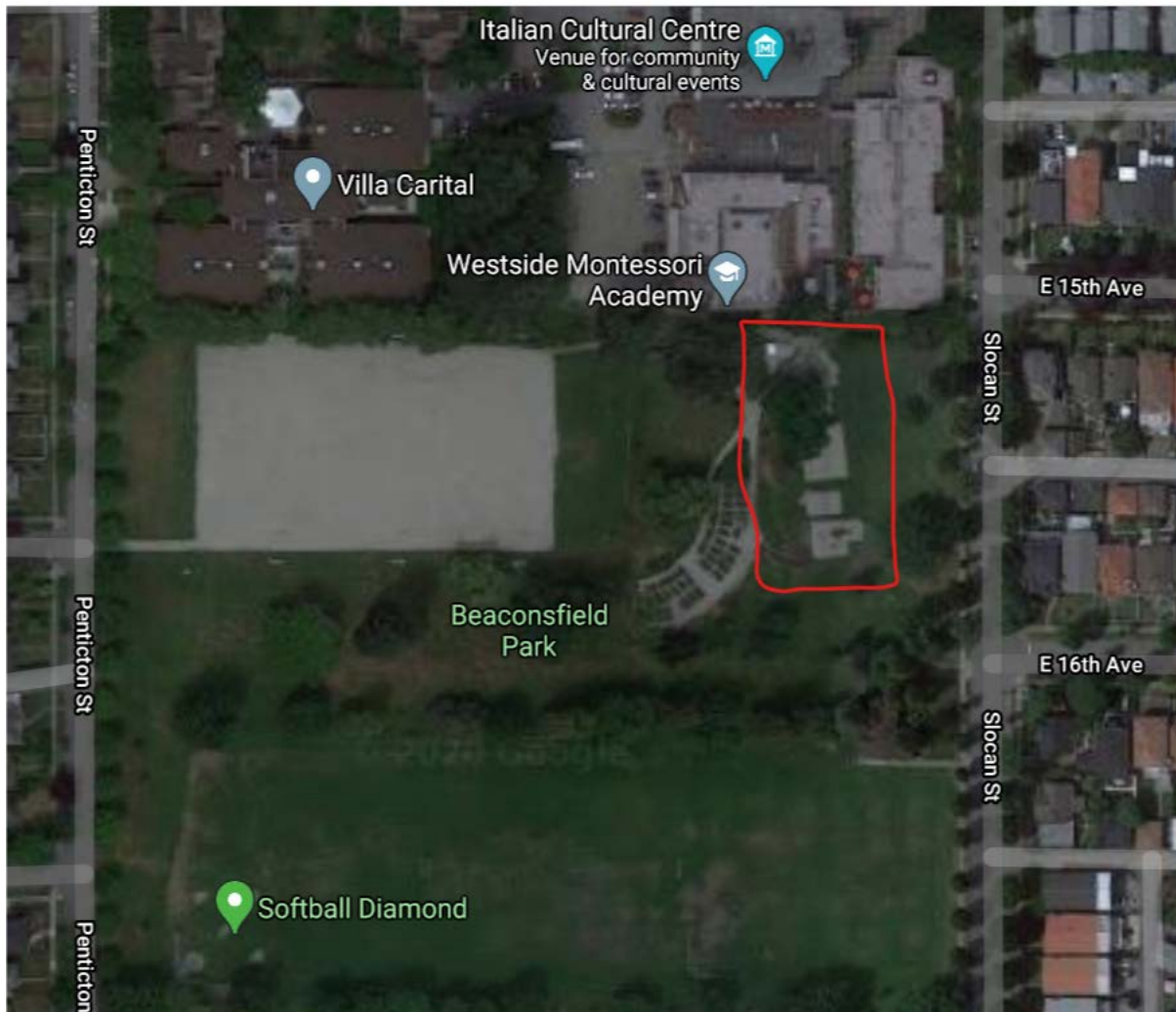
Name of Authorized Signatory (Please print)

E-mail Address (Please print)

Date

APPENDIX 3 - SPECIFICATIONS & DRAWINGS

Beaconsfield Park Site Map:



The following is the list of Specifications dated July 20, 2020 for Beaconsfield Park Playground Replacement:

Specifications for Beaconsfield Park Playground Replacement

00 65 00	Contract Closeout
01 33 23	Shop Drawings and Product Data
01 89 13	Site Preparation and Grading
02 41 13	Selective Site Demolition
03 10 00	Concrete Forming and Accessories
03 20 00	Concrete Reinforcing
03 33 00	Cast-In-Place Concrete -Non Flatwork
03 35 00	Concrete Finishing
03 35 10	Abrasive Blast Finish

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APPENDIX 3 (PART A) - SITE PLAN

05 70 00	Miscellaneous Metal
06 40 13	Exterior Architectural Woodwork
11 68 13	Play Equipment
31 23 10	Excavation and Backfill
32 01 56	Tree Protection
32 01 90	Landscape Maintenance
32 12 16	Hot Mix Asphalt Paving
32 13 13	Cast In Place Concrete Paving
32 37 00	Exterior Site Furnishings
32 91 13	Growing Medium
32 92 21	Hydraulic Seeding (Hydroseeding)
32 93 10	Plant and Planting
33 46 16	Subsurface Drainage Systems

Specifications to be read in conjunction with Landscape Drawings

Drawings for Beaconsfield Park Playground Replacemet

Landscape Plans

L1.1	Overall Site Plan
L1.2	Existing Conditions and Demolition Plan
L1.3	Materials and Layout Plan
L1.4	Grading and Drainage Plan
L1.5	Planting Plan

Landscape Details

L2.1	Landscape Details
L2.2	Landscape Details
L2.3	Landscape Details
L2.4	Landscape Details
L2.5	Landscape Details

BEACONSFIELD PLAYGROUND

Vancouver B.C.

landscape specifications.

Issued for Tender

July 20th, 2020

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01 89 13	Site Preparation and Grading	8
02 41 13	Selective Site Demolition	8
03 10 00	Concrete Forming and Accessories	5
03 20 00	Concrete Reinforcing	3
03 33 00	Cast-In-Place Concrete-Non Flatwork	8
03 35 00	Concrete Finishing	3
03 35 10	Abrasive Blast Finish.....	3
05 70 00	Miscellaneous Metal.....	5
06 40 13	Exterior Architectural Woodwork.....	4
11 68 13	Play Equipment.....	8
31 23 10	Excavation and Backfill	7
32 01 56	Tree Protection.....	7
32 01 90	Landscape Maintenance	10
32 12 16	Hot Mix Asphalt Paving.....	8
32 13 13	Cast In Place Concrete Paving	9
32 37 00	Exterior Site Furnishings.....	3
32 91 13	Growing Medium	13
32 92 21	Hydraulic Seeding (Hydroseeding)	8
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Specifications to be read in conjunction with Landscape Drawings

Prepared for: Vancouver Board of Parks and Rec

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Final Review, delivery of Bonds and Guarantees, submittal of Maintenance Manual, and Project Record Documents, Delivery of Release of Liens, and Warranty.

PART 2: PRODUCTS (Not Applicable)

PART 3: EXECUTION

3.1 Final Review

- .1 Final Review will not be made until all work within this contract is completed. The Contractor shall notify Owner's Representative in writing at least five (5) days prior to date on which work will be ready for final review. Any delay in making Final Review shall not relieve the Contractor of responsibility for work, nor shall the Owner be held responsible for damages or claims for compensation due to continuing maintenance or other work occasioned by such delay. If the Owner's Representative making the final review finds the work so far from completion to make a later visit necessary, or that undue delay in making final review is incurred, Contractor shall, if determined by the Owner, be liable for expenses to Owner incurred by reason of such delay or re-review.

3.2 Delivery of Bonds, Release of Liens, and Guarantees

- .1 Bonds, Release of Liens, and Guarantees shall be provided for those portions of this work where required by specific sections or as determined in the General Conditions of the Supplementary Conditions. Submittal of releases and guarantees shall comply with conditions of the Contract.

3.3 Acceptance of Completed Work

- .1 When all work required by the Contract Documents for this project has been performed, furnished, and/or installed as specified in each specific section, acceptance of work covered by the Contract will be given by means of a Certificate of Completion and until such acceptance the Contractor will be responsible for work covered by the Contract. Contractor's responsibilities will cease, except as provided by the guarantees, when acceptance of the work is given.

3.4 Operation and Maintenance Instructions

- .1 The Contractor shall furnish one (1) digital version in current PDF file format and two (2) paper hard copies of complete sets of manuals, containing the manufacturer's instructions for maintenance and operation of each item of equipment and apparatus furnished under the Contract and any additional data specifically required under the Specifications for each division of the work. The manuals shall be arranged in the order that these items appear in the Specifications and shall be indexed, substantially bound and titled. Manuals shall be project specific and shall not include items that are not a part of this project.
- .2 Manuals shall be delivered to the Owner's Representative prior to application for final payment and as a condition of approval of final payment.

3.5 Contractor's Guarantee

- .1 The Contractor shall deliver to the Owner's Representative upon completion of all work under the Contract, a written guarantee addressed to the Owner on the Contractor's letterhead. This guarantee shall be made to cover a period of one year from date of acceptance of all work under the contract as determined by the Owner's Representative.
- .2 Guarantees from Contractor shall be supported as required in the Specification Section individual guarantees from each trade or subcontractor and manufacturer for supplier covering work. Where specific sections of the Specifications call for longer guarantees, these time periods shall so be stated. Guarantees shall be delivered to the Owner's Representative prior to application for final payment and as a condition of approval of final payment.

3.6 Project Record Documents

- .1 Throughout the progress of the work, maintain an accurate record of all changes in the Contract Documents.
- .2 Record Documents shall be protected from loss, damage, or deterioration until completion of the work and transfer of data to the final Record Documents.
- .3 All entries to the Record Documents shall be made within 48 hours of receipt of information.
- .4 Upon completion of work, and as a condition of Acceptance of Work, transfer the recorded changes to a set of Record Documents and submit to the Owner's Representative. This will include, but not be limited to, as-built drawings in digital format using current PDF, AutoCAD file formats as well as printed hard-copies.

SAMPLE WRITTEN GUARANTEE LETTER

Date: _____
Re: _____ (Title of Project)

Name and Address of Owner

[Enter VPB Project Manager's Name]:

The undersigned attest to the Owner that the Contractor will guarantee materials, equipment and workmanship under this contract, that the Contractor will remedy any defects and pay for any damage to related work and building contents resulting from said defects, which shall occur for a period of one (1) year from the date of certification of final completion by the Owner's Representative.

This guarantee shall not be construed as to shorten the life of specific guarantees/warranties/bonds as required elsewhere under this contract.

During this period, upon written notice to do so, the Contractor will proceed with due diligence, at the Contractor's expense, to properly replace any defective materials and/or equipment and to perform any labor necessary to correct any defect in the work.

In the event that the Contractor fails upon reasonable notice to remedy such defects, the Owner may furnish such materials or labor as necessary to place work in the condition required by the Contract Documents, and the Contractor agrees to reimburse the Owner fully and promptly for his expense.

Signature and Name of Contractor

ATTEST: (Signature must be notarized)

END OF SECTION 00 65 00

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read interpreted and coordinated with all other parts.

1.2 Description

- .1 This section specifies general requirements and procedures for the Contractor to make submissions of shop drawings, product samples and other submittals to Owner's Representative for review. Additional specific requirements for submissions are specified in individual sections. Submissions may include:
 - .1 Shop Drawings.
 - .2 Product Data.
 - .3 Product Samples
 - .4 Mock-Ups.

1.3 Submission Requirements

- .1 Coordinate each submission with requirements of work and Contract Documents. Individual submission will not be reviewed until all related information is available.
- .2 The Owner's Representative review of submittals made by the Contractor shall not relieve the Contractor from the responsibility for complying with contract drawings or specifications, unless the Contractor has secured the written approval of the Owner's Representative for all deviations.
- .3 Owner's Representative review for submittals shall not relieve the Contractor from responsibility for error and omissions in the submittals.
- .4 Submittals shall contain only those items specified and shall not include items which are not provided for under this contract unless they are clearly marked and/or voided as not being part of the contract.
- .5 Comply with progress schedule for a timely submission of submittals as they relate to work progress. Coordinate submittal of related items.
- .6 Allow 10 working days for Owner's Representative review of each submission.
- .7 Maintain submittal log to ensure timely and complete submittals.
- .6 Accompany submissions with transmittal letter containing:
 - .1 Date

- .2 Project title and number
- .3 Contractor's name, address, telephone and facsimile
- .4 Contact person's name and position
- .5 Identification and quantity of each shop drawing, product data, and sample (if requested or required)
- .6 Other pertinent data
- .7 Submissions shall include:
 - .1 Date and revision dates
 - .2 Project title and number.
 - .3 Name, address telephone, facsimile, and contact person of:
 - .1 Subcontractor
 - .2 Supplier
 - .3 Manufacturer
 - .4 Contractor's stamp, signed by Contractors authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents. Submittals, which do not contain this information, will be returned without being examined and shall be considered rejected.
- .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 Operating weight
 - .8 Wiring diagrams
 - .9 Single line and schematic diagrams
 - .10 Relationship to adjacent work
 - .11 Materials
 - .12 Finishes
- .9 After Owner's Representative review and written approval distribute copies to persons necessary to complete the work. Ensure one copy of reviewed submission is kept on site.

1.4 General Requirements

- .1 Work affected by the submittal shall not proceed until review is complete.
- .2 Present shop drawings, product data, samples, and mock-ups in the same units used in the contract documents.
- .3 Where items or information is not produced in SI Metric units converted values are accepted.

- .4 Contractor's responsibility for errors and omissions in submission is not relieved by Owner's Representative review and/or approval of submissions.
- .5 Notify Owner's Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .6 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Owner's Representative review of submission, unless Owner's Representative gives written acceptance of specific deviations.
- .7 Make any changes in submission which Owner's Representative may require consistent with Contract Documents and resubmit as directed by Owner's Representative.
- .8 Notify Owner's Representative, in writing when resubmitting, any revisions other than those requested by Owner's Representative.

1.5 Shop Drawings

- .1 Shop drawings: are defined as original drawings, or modified standard drawings, catalogue information, illustrations, schedules, performance charts, brochures and other product data provided by Contractor, to illustrate details of portions of Work, which are specific to project requirements.
- .2 Adjustments made on shop drawings by the Owner's Representative are not intended to change the Contract Price. If adjustments affect the value of work, state such in writing to the Owner's Representative prior to proceeding with work.
- .3 Submission of reproductions for each requirement requested can be made by email using the current digital PDF file format.
- .4 Faxed shop drawings are not acceptable.
- .5 Include a cross-reference of shop drawing information to applicable portions of Contract Documents.
- .6 Engineered shop drawings are to be provided if requested on the drawings.

1.6 Samples

- .1 Samples: examples of materials, equipment, quality, finishes, workmanship.
- .2 Deliver samples prepaid to the Owner's Representative's business address.
- .3 Where colour, pattern or texture is criterion submit full range of samples.
- .4 Adjustments made to samples by the Owner's Representative are not intended to change the Contract Price. If adjustments affect the value of work, state such in writing to the Owner's Representative prior to proceeding with work.
- .5 Reviewed samples will become standard of workmanship and material against which installed work will be verified.

1.7 Mock-Ups

- .1 Mock-ups: field-erected example of work complete with specified materials and workmanship.

- .2 Erect mock-ups at locations acceptable to Owner's Representative.
- .3 Adjustments made to mock-ups by the Owner's Representative are not intended to change the Contract Price. If adjustments affect the value of work, state such in writing to the Owner's Representative prior to proceeding with work
- .4 Reviewed mock-ups will become standards of workmanship and material against which installed work will be verified.

1.8 Shop Drawing, Mock-Up and Sample Review

- .1 The review of shop drawings, mock-ups and samples by the Owner's Representative is for the sole purpose of ascertaining conformance with the general concept. This review shall not mean that the Owner's Representative approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of responsibility for requirements of the construction and contract documents. Without restricting the generality of the foregoing, the Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of the work of all subtrades.

PART 2: PRODUCTS (Not Applicable)

PART 3: EXECUTION (Not Applicable)

END OF SECTION 01 33 23

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to prepare the site suitable for subsequent work indicated in the contract documents, including but not limited to:
 - .1 Preservation and protection of existing plants, site features and intertidal habitat.
 - .2 Draining of wet areas of the site by means of temporary ditches, pumping and other means approved by the Owner's Representative.
 - .3 Tree removal and removal of tree roots only where explicitly shown on drawings and as required to obtain satisfactory base for paving.
 - .4 Stripping and disposal of all existing materials to prepare for path and base as detailed. All other deleterious materials, including unsuitable material under areas to be filled, shall be treated as over excavation.
 - .5 Stripping and removal of all deleterious materials.
 - .6 Stripping and stockpiling topsoil (if any).
 - .7 Grading of the site, including the importation of and relocation of fill to create compacted subgrades as required for subsequent work as detailed and specified.
 - .8 Work from existing conditions and grades shown on plans.
 - .9 Placing approved fill, subbase, base and associated materials as detailed.
 - .10 Finished grading of the site for landscaping including unit concrete pavers, C.I.P. concrete paving, asphalt paving, irrigation, sodding, seeding and planting.

1.3 Related Work

- .1 Subsurface Drainage Section 33 46 16
- .2 Growing Medium Section 32 91 13

1.4 Quality Assurance

- .1 Codes and Standards: Perform backfilling work in compliance with applicable requirements of governing authorities having jurisdiction.
- .2 Inspection: The Owner's Representative or his representative is to inspect and approve all stages of the work. The Contractor shall give forty-eight (48) hours notice to the Owner's Representative when inspection is required.

1.5 Job Conditions

- .1 Use all means necessary to control dust, dirt and debris on and near the worksite, including Construction Access Route (C.A.R.), caused by the Contractor's operations. Thoroughly moisten all surfaces, when necessary, to prevent dust being a nuisance in adjoining areas.
- .2 Use all means to protect all materials of this Section before, during and after installation. Protect all trees designated to remain. Make good any damage. **Follow Vancouver Park Board Tree Protection Guidelines as required.** Protect existing fencing, walls, curbs, sidewalks, pavement, benchmarks, surface or underground utilities that are to remain. Notify the Owner's Representative immediately if any damage occurs. Restore to original or better condition, unless directed otherwise.
- .3 Protect adjacent construction and all surrounding properties, including municipal streets, sidewalks, above and under ground services.
- .4 Obtain approval from Owner's Representative on designated Construction Access Route (C.A.R.) Ensure C.A.R. is appropriately signed and maintained during course of construction. Remediate to original condition prior to Substantial Performance.
- .5 Maintain any existing fence barriers currently on site surrounding areas of preserved existing vegetation. Do not enter areas of preserved existing vegetation without the approval of the Owner's Representative.

1.6 Site Conditions

- .1 Start of work shall signify acceptance of site as satisfactory and no claim will be recognized for extra work nor any allowance made for defective work due to site conditions.
- .2 Investigate the site to verify information shown in Contract Documents. **Verify that existing grades are as shown on Drawings and notify Owner's Representative immediately of any discrepancies.**
- .3 Review existing site conditions with regard to subsurface conditions. Data on indicated subsurface conditions is not intended as representations or warrants of continuity of such conditions. Additional test borings and other exploratory operations may be made by Contractors at no cost to the Park Board. Notify Owner's Representative prior to carrying out any such work.

1.7 Testing and Approvals

- .1 A testing agency will be retained by the Owner or its representative to perform periodic testing of the subgrade preparation if required, to ensure the requirements of the Contract and General Conditions are being met. The Contractor at no extra cost to the contract shall provide any retesting due to non-conformance.
- .2 Cooperate and assist as required the testing agency in the execution of their work.

1.8 Materials Definitions

- .1 The terms “subgrade”, “subbase”, and “base”, wherever used in the contract documents shall mean materials that meet the requirements stated herein for each class of material.

1.9 Submittals

- .1 If required, provide representative samples for subbase, base, drain rock (clear crush), quarry tailings, rip-rap or any another aggregate materials used on site, at least fourteen (14) days before scheduled time of delivery to site.

PART 2: PRODUCTS

2.1 Subgrade

- .1 Subgrade is a dense surface that has been proof rolled as specified and which has been treated to eliminate all soft or spongy areas. Compaction and uniformity of subgrade shall be subject to approval by the Owner's Representative.
- .2 Subgrade may be existing, undisturbed material resulting from cutting or may be built up using Type 1 fill or Type 2 fill, depending on the applications.

2.2 Fill

- .1 Fill material shall be natural mineral material of a consistent quality throughout, free from foreign matter such as construction debris, plant and grass seeds, organic matter (except within limits shown for Type 1) and pests, and meeting the requirements set out for Type 1 or Type 2 fill, depending on the application.
- .2 Obtain the Owner's Representative's approval of fill material before delivering to the site if imported, or before moving on site if native. **If imported material is approved for use, supply Owner's Representative with written notification a minimum of thirty (30) days prior to beginning fill operations a complete statement of origin, compensation, suitability, environmental clearance and proposed location of all deposits that is intended for imported fill.**
- .3 Fill shall be classed as Type 1 or Type 2, depending on its application and shall meet the following requirements for each type:

TYPE	APPLICATION	REQUIREMENTS
Type 1	Under planted and grass areas	Maximum aggregate size 200mm evenly graded, containing not more than 20% fines (clay and silt) and not more than 5% organic matter, or as approved by the Owner's Representative.
Type 2	Under subbase for pathways, paved areas, structures	Maximum aggregate size 200mm evenly graded, containing not more than 15% fines passing a No. 200 (0.075mm) sieve

		when tested according to ASTM designation C-136. The Owner's Representative may approve alternatives.
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2.3 Subbase

- .1 Subbase shall be crushed granular aggregate composed of inert, clean, tough, durable particles capable of withstanding the effects of handling, spreading and compaction without excessive degradation or production of deleterious fines. The aggregate shall be reasonably uniform in quality and free from an excess of flat or elongated pieces.
- .2 All subbase aggregate shall have a gradation within the limits set out herein when tested according to ASTM designation C-136.

Sieve Size (mm)	Total Percent Passing
75.0	100
37.5	60 - 100
20.0	40 - 80
9.5	30 - 60
4.75	20 - 45
2.36	15 - 35
1.18	10 - 25
0.300	4 - 16
0.075	2 - 9

2.4 Drain Rock, Clear Crush

- .1 5mm to 19mm uniform clear crush.

2.5 Filter Fabric

- .1 Needle-punched, non-woven filter fabric, Nilex 4551 as manufactured by Nilex, or pre-approved equivalent.

2.6 Base

- .1 20mm diameter minus domestic or imported material below all paved surfaces. Material shall be free of organic and other deleterious material with the following particle size breakdown:

Sieve Size (mm)	Total Percent Passing
20.0	100
9.5	60 - 95
4.75	40 - 70
2.36	30 - 60
1.18	20 - 45

0.300 8 - 45

0.075 2 - 9

2.7 Construction Fencing

- .1 Metal fencing is required around the entire construction site. Fencing to be a minimum of 1.8m in height. Fencing to be "Modu-Loc" or equivalent, and is to be approved by Owner's Representative before installation. The Contractor is to ensure fencing is secure at all times, so as to prevent intrusion into the construction site by any unauthorized persons. Panels to be pinned to the ground and bolted together. Contractor is responsible for maintaining the integrity of the fencing in a vertical position at all times. Fencing is to be reviewed by the Owner's Representative before the start of any construction activities and is to remain in place until Final Acceptance.

PART 3: EXECUTION

3.1 Limits Of Work

- .1 Before starting work identify the limits of work on site by accurate survey. Prior to grading, excavating or trenching the Contractor shall locate and expose all utility lines, drain pipes and all other services which are within the areas of this work, and where the existing services are located less than 300mm below the proposed depth of trenching or excavation, such existing services shall be exposed by hand and adequately marked and protected. All separation distance requirements of the local authorities having jurisdiction over the service shall be observed.
- .2 Take all measures necessary to prevent the following activities outside the limits of work except as authorized by the Owner's Representative:
 - .1 Travel of equipment and vehicles
 - .2 Storage of materials or equipment
 - .3 Stockpiling of soil or excavated materials
 - .4 Burning
 - .5 Excavating or trenching
 - .6 Cutting of roots or branches
 - .7 Disposal or spilling of toxic matter

3.2 Tree Removal

- .1 Remove trees only as shown on the plan, or as requested by the Owner's Representative. Remove all debris from site. Remove all roots and parts that would be detrimental to the construction.

- .2 Strip topsoil, surface silts and organics, down to approved subgrade. Remove topsoil, surface silts and organics from the site, except for clean topsoil approved by the Owner's Representative for stockpiling for future use.

3.3 Unsuitable Material

- .1 Remove from the site all material unsuitable for use as fill.

3.4 Drainage

- .1 Drain and/or dewater all areas to be regraded using methods acceptable to the Owner's Representative and local environmental authorities having jurisdiction.
- .2 Slope rough grades away from any building envelopes/ structures at a minimum 2%, unless specifically shown on drawings or directed by Owner's Representative.

3.5 Excavation And Filling

- .1 Cut, fill and import material as required to create subgrades as detailed and specified herein.
- .2 Remove all deleterious material and ponded water from the site.
- .3 Compact exposed ground surface beneath all fill areas with a minimum 5 ton vibrator roller, except in "soft" landscape areas, i.e. areas to receive grass or planting.
- .4 Any soft or spongy areas shall be sub-excavated, removed and replaced with granular subbase material. Such fill shall be placed in maximum 200mm lifts and compacted to the densities required for Type 1 or Type 2 fill.
- .5 Scarify existing grades to a minimum depth of 150mm prior to placing of fill. Move excavated material intended for reuse as fill directly from the cut to the fill area, spread and compact to the required densities.
- .6 Place fill in maximum 200mm lifts and compact each lift to the following Standard Proctor Densities, to ASTM D698 using approved vibratory compaction equipment, prior to placing subsequent layers as follows:
Type 1 Fill: 95% Standard Proctor Density (S.P.D.).
Type 2 Fill: 98% Standard Proctor Density (S.P.D.).
- .7 Compact fill materials only when the moisture content is suitable for obtaining the specified density. If moisture content is too low, apply water by means of approved distribution. If moisture content is too high, dry the fill material by blading, disking, or other approved method. **DO NOT OVER COMPACT FILL TYPE 1.**
- .8 Excavated material used as Fill Type 2, shall be overlaid with a minimum of 200mm of subbase, compacted to 98% Standard Proctor Density.

3.6 Grading

- .1 **DO NOT GRADE SOIL WHEN SOIL IS WET.** Uniformly grade areas within limits of grading under this Section. Smooth finished surface within specified tolerances, compact with levels or slopes between elevations as shown, or between such points and existing grades.
- .2 Grade areas to drain away from structures and to prevent ponding. Finish surfaces free from irregular surface changes and to allow for specified depths of base courses and finished materials.
- .3 Remove particles larger than 100mm diameter from the surface leaving a smooth compacted surface to required subgrade.
- .4 Compact subgrade as required, to stated densities in the above section.

3.7 Subbase And Base

- .1 Ensure base materials and existing surface are at approximately the same moisture content to facilitate bonding.
- .2 Install subbase, base, and filter fabric as detailed. Place in maximum 200mm lifts and compact to minimum 98% Standard Proctor Density (S.P.D.).
- .3 Finish to subgrades as detailed, suitable for subsequent installation of path and base, structures and paving.

3.8 Tolerances

- .1 Maximum subgrade tolerance is $\pm 25\text{mm}$ when checked with a 3 m straight edge placed in any direction, and the subgrade shall not be consistently above or below the design grades.

3.9 Maintenance

- .1 Protect newly graded areas from traffic, erosion, and standing water and free of debris. Provide temporary drainage ditches from graded areas as required.
- .2 The site surface shall always be contoured to direct precipitation and run-off to drainage ditches or slopes leading away from the work area. Surfaces shall always be left graded smooth and rolled with a smooth drum roller to minimize infiltration of water and subsequent deterioration of material due to excessive moisture content. The surface shall never be left with undrained depressions or with a rough texture.
- .3 Repair and re-establish grades in settled, eroded and rutted areas to specified tolerances.
- .4 Repair and make good and clean up any damage and/or debris to municipal roads and streets caused by work of this Contract. Obtain and pay for all permits required for use of municipal roads and streets.

3.10 Cleaning

- .1 Remove excess excavated material, trash, debris and waste materials and dispose of off site as directed by Owner's Representative at no additional cost to the Board.

END OF SECTION 01 89 13

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary for the demolition and removal of all materials as indicated in the contract documents.
- .2 Concrete shall be broken into pieces 200 mm and remain on site to be buried with fill material as shown on the drawing.
- .3 The work shall include all coordination required for the shut-off, isolation and capping of all utilities such as water, sewer, electricity, telephone and gas services.

1.3 Related Work

- .1 Tree Protection Section 32 01 56

1.4 Quality Assurance

- .1 Demolition to be carried out in accordance with Vancouver Building Bylaw, latest edition and all regulatory authorities as applicable.
- .2 Procedures and methods of demolition shall be to the approval of the Owner's Representative and Owner.
- .3 Codes and Regulations: Do all demolition work according to the requirements of the Vancouver Building By-law and WorkSafeBC Accident Prevention Regulations, and the Canadian Construction Safety Code.

1.5 Qualifications

- .1 Qualifications of Workers: Provide a Supervisor who shall be present at all times during the demolition work and who shall be thoroughly familiar with the work required and who shall direct and coordinate all work.
- .2 All areas of responsibility for demolition and cutting shall be thoroughly coordinated by the Contractor.
- .3 Provide one (1) person on site who is responsible for maintaining the safety barriers and protection of the workers and the public. Provide the name of this person to the Owner's Representative.
- .4 Any changes in personnel must be reported to the Owner's Representative.

- .5 Each subtrade is required to coordinate its work with the work of this section as to the amount of demolition work required and as to termination conditions to be left at the junction of existing work to remain.
- .6 Each subtrade shall be responsible to ensure that all demolition and cutting does not destroy more than is required, or what is needed for future construction.
- .7 Any demolition and cutting carried beyond the necessary requirements shall be the responsibility of the Contractor, and shall be reinstated at no cost to the Owner.

1.6 Job Conditions

- .1 The Contractor shall provide for temporary connections to power and water and drainage lines as required. No outages, limitations or obstructions shall be permitted unless with the prior approval of the Owner.
- .2 The Contractor shall contact the Owner and/or Owner's Representative prior to any service interruptions and obtain permission for interruption at a specific time.
- .3 The Contractor shall take the necessary precautions to fully protect existing surfaces against damage from demolition and/or removal of existing work.

1.7 Permits

- .1 If a demolition permit is required the Contractor shall be responsible for obtaining this permit.

PART 2: PRODUCTS (Not Applicable)

PART 3: EXECUTION

3.1 Hazardous Materials

- .1 Carefully examine work to be removed. Report the presence of hazardous materials or potentially hazardous materials to the Owner immediately.
- .2 Hazardous materials are not to be disturbed if located or suspected until their presences has been reported to the Owner. Vancouver Park Board will be responsible for the removal of any hazardous materials if they were not identified and included in the base contract.

3.2 Inspection of Existing Conditions

- .1 Carefully examine areas to be demolished. Report any discrepancies with the Contract Documents to the Owner's Representative immediately.

- .2 The Contractor shall accept the site as it exists and will be responsible for all demolition work as required.
- .3 The Contractor shall visit the site at their own expense prior to the submission of tenders and take whatever time is required to ascertain existing site conditions and surrounding features related to the proposed demolition and ensure that conditions are suitable for execution of the work.
- .4 No additional sums of money will be allowed for any items resulting from lack of familiarity with the site conditions. Report any discrepancies to the Owner's Representative.
- .5 Arrange for a site visit together with Owner to examine existing site conditions adjacent to demolition. Take pictures of any existing damage and record them in writing to avoid any disputes at a later date.

3.3 Protection

- .1 The Owner shall be saved harmless by the Contractor from any loss, damage, death or injury occurring through neglect, carelessness or incompetence of the Contractor, or the handling or condition of the Contractor's equipment.
- .2 Existing trees shall be fully protected at all times during the work of this Section as required.
- .3 Immediately make all repairs and replacements to adjacent existing works caused by the Work of this Section.
- .4 Provide temporary enclosures for securing the work area and the maintenance of any services necessary to the proper and efficient operation of the project.
- .5 Protect site improvements such as sidewalks, curbs, existing landscaped and asphalt areas and all interior finishes that lie along the path of removal.
- .6 Conduct construction operations with minimum interference to existing buildings operations, adjacent buildings, adjacent public or private roadways, parking lots, sidewalks and access facilities in general. Keep such areas free of material debris and equipment at all times.
- .7 The Contractor shall provide any hoardings, barricades, warning signs and lights, as necessary, for the protection of all people and property on and adjacent to the site as specified herein or by WorkSafeBC. The Contractor shall alter, adapt, maintain, relocate and remove these additional barricades, etc. as necessary due to the work.
- .8 All barricades provided by the Contractor shall be removed from the site upon completion of the work and any damage caused repaired to the satisfaction of the Owner.
- .9 Prevent movement, settlement or damage to existing building, finishes, services, walks, paving and parts of existing building to remain. Provide shoring and bracing as required. Make good any damage and be liable for injury caused by demolition.
- .10 Provide necessary temporary weather protection with dust screens if and when required to protect existing adjacent buildings from dust penetration during demolition work.
- .11 Protect adjacent work from damage, staining, disfigurement caused by the work of this section.

- .12 Promptly as the work proceeds, and on completion, keep the premises clean and free from rubbish, debris, surplus materials and equipment.
- .13 At the end of each days work, leave the work area and surrounds in a safe condition so that no parts are in danger of toppling or falling.

3.4 Demolition

- .1 Remove materials from demolition promptly as the demolition work progresses. Materials shall not be sold, buried or burned at the site. The Contractor shall be assumed to have allowed for any credit that may be obtained for such materials.
- .2 Temporary stockpiling of demolished materials that are required to be removed from the site is not permitted. All demolition materials from excavations must be removed from site daily.
- .3 The Contractor is responsible for disposing of demolition materials in a legal manner.
- .4 Carry out all necessary temporary bracing and supporting to as required during demolitions.
- .5 Prevent debris from blocking surface drainage inlets and systems that must remain in operation.
- .6 Carry out all demolitions and making good. Patch and make good to a standard at least equal to that of adjacent surfaces when related work is completed.
- .7 Any items containing PCBs should be stockpiled in a safe location. The Owner should be notified and will arrange subsequently removal and disposal of items if not included in the base contract.
- .8 No heavy equipment causing excessive vibrations to the existing structures are permitted.
- .9 Make cut clean, true, smooth edges. Make patches inconspicuous in final assembly.
- .10 Demolish existing walls with care, do not damage adjacent surfaces noted to remain.
- .11 Remove existing millwork fixtures, services, and building components where required.
- .12 Remove existing asphalt and concrete paving, concrete curbs as required for new site development.
- .13 Remove existing site services and catch basins as noted.
- .14 Subsurface structure: remove all subsurface foundations, piles and pile caps as per the contract documents.
- .15 Refer to moving plans for equipment moving requirements.
- .16 Complete demolition work to produce clean exposed sub-grade where demolition is indicated. Remove extraneous materials.
- .17 Large boulders or rocks over two feet diameter shall remain on site unless otherwise noted by Owner's Representative.
- .18 Drilling through concrete and masonry shall be carried out using diamond drills.
- .19 Procedures and methods of drilling, coring and/or cutting shall be to the approval of the Owner.

3.5 Debris

- .1 Condemned material becomes the Contractor's property and must be removed completely from the site. Keep clean all areas in use at all times.
- .2 Contractor shall be held responsible for all costs, penalties, summonses and notices arising from the failure to comply with the keeping of the adjacent site, local roads, and thoroughfares clean and free from debris and damages caused by debris and demolition work.

3.6 Cleaning

- .1 Upon the completion of all demolition work remove all equipment, materials, and debris. Leave the area clean.

END OF SECTION 02 41 13

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to install erect, and strip all formwork and false work for cast-in-place concrete as indicated in the contract documents.

1.3 Related Work

- | | | |
|----|--------------------------------|------------------|
| .1 | Shop Drawings and Product Data | Section 01 33 23 |
| .2 | Concrete Reinforcement | Section 03 20 00 |
| .3 | Cast-In-Place Concrete | Section 03 33 00 |
| .4 | Concrete Finishing | Section 03 35 00 |

1.4 Reference Standards

- .1 Concrete formwork shall conform to the requirements of the following standards unless otherwise required by this specification:
 - .1 B.C. Building Code: Current Edition.
 - .2 CAN3-A23.1-M90 Concrete Materials and Methods of Concrete Construction.
 - .3 CAN/CSA-A23.3 Code for the Design of Concrete Structures for Buildings.
 - .4 CAN/CSA S269.3 Design, Fabrication, Erection and Use of Concrete Formwork.
 - .5 ACI 347 Recommended Practice for Concrete Formwork.
 - .6 WorkSafeBC - Section 34.28
- .2 Where the standard is referred to in this specification it shall mean the documents specified in this clause and their referenced documents.

1.5 Quality Assurance

- .1 Concrete formwork fabrication and erection shall be done by experienced and competent personnel having adequate training and equipment for all phases of the work specified.

1.6 Quality Control

- .1 Where slopes illustrating 'positive drainage' on a horizontal surface either as labels or spot elevations are indicated on construction drawings the Contractor shall construct the formwork as required to ensure that when the concrete is placed the formwork does not hinder the finishing of concrete to achieve positive drainage.

1.7 Submittals

- .1 The Contractor shall submit to the Owner's Representative three (3) copies of shop drawings illustrating the form tie layout for all concrete surfaces exposed to view.
- .2 The Contractor shall submit to the Owner's Representative three (3) copies of product data for form material to be used.

PART 2: PRODUCTS

2.1 General

- .1 Products shall satisfy the requirements of the standard unless otherwise specified or indicated on the Contract drawings.

2.2 Forms for concrete:

- .1 Non-Exposed Concrete Surfaces: Plywood, shiplap or dimensional lumber, for rough-form finish in accordance with CAN/CSA A23.1-94, Section 24, Item 24.3.2.
- .2 Architectural Concrete Surface (concrete surfaces exposed to view): as per CSA A23.1-94 24.3.3
- .3 Form work for smooth, form finish concrete shall have a form facing material which will provide smooth, hard, uniform texture on the concrete.
- .4 The form material may be medium density overlay (MDO) plywood, tempered concrete – form-grade hardboard, metal, plastic, paper or other material capable of producing smooth finish.
- .5 Material with raised grain, torn surfaces, worn edges, patches, dents, or other defects that will impair the texture of the concrete surface shall not be used.
- .6 Acceptable products include but are not limited to:
 - .1 Multipour MDO Form Panel,
 - .2 B-Matte 333 MDO Form Panel
- .7 Form material thickness shall be sufficient to ensure that finished concrete work is true to lines, shapes, angles and finishes indicated on the Contract drawings. Minimum thickness of form material shall be 19 mm (3/4"). Ensure that the same type of formwork material is used throughout the entire scope of the project.

- .8 Form Release Agents: Concrete form release shall be composed of an organic chemical that reacts with the alkali content of concrete to form a release film, along with providing an inert barrier to provide double separation. Acceptable materials include but are not limited to:
 - .1 Duogard Concrete Form Release Agent by W.R. Meadows
 - .2 Eco-Coat by W R Meadows
- .9 Form ties complete with precast concrete plugs shall leave no metal within 25 mm (1") of the concrete surface. Acceptable products include but are not limited to:
 - .1 Meadow Burke Snap Ties,
 - .2 Dayton Superior Plastic Snap Ties with Plastic Cone
 - .3 Void Form: Closed cell expanded polystyrene (EPS) voiding. Acceptable products include but are not limited to:
 - .1 Korolite Type 2, Mansonville Plastics, Surrey, BC,
 - .2 Korvoid, Mansonville Plastics, Surrey, BC (where compressive loads exceed 110 Kpa (16psi))
 - .3 Plastispan, Plasti-Fab EPS

PART 3: EXECUTION

3.1 Design Of Formwork, Falsework and Reshoring

- .1 The Contractor shall assume full responsibility for the design of form work and ensure structural adequacy of the forms to withstand all concrete and construction loads.
- .2 As a minimum, the work shall conform to CAN/CSA-A23.1, Section 24 for regular work (concrete surfaces not exposed to view) and CAN/CSA-A23.1, Section 28 for architectural concrete (concrete surfaces exposed to view).
- .3 Forms shall be so constructed that the finished concrete will conform to the shape, dimensions and tolerances as specified in the drawings. As required they shall also incorporate the cambers specified on the structural drawings.
- .4 The strength and rigidity of forms shall be such that they will not leak mortar or result in visible irregularities in the finished concrete, but in any case the deflection of facing materials between studs as well as deflection of studs and walers shall be in accordance with the CAN/CSA S269.3.
- .5 Where concrete is exposed to view, forms are to be laid out so that joints are kept to a minimum and located in an orderly and symmetrical arrangement where possible.
- .6 Unless otherwise indicated on the construction drawings the location of form ties shall be evenly spaced and in straight horizontal and vertical lines. Prior to the start of work in this section the Contractor shall provide the Owner's Representative a shop drawing illustrating the spacing and location of form tie holes.

- .7 The Contractor shall take care to ensure not to exceed the live load of the structure with any construction or shoring loads.
- .8 The Contractor is responsible for monitoring the curing time and related strength of the concrete. These shall be factored into the scheduling, staging and progress of all concrete work.

3.2 Form Work Construction

- .1 Construct formwork using appropriately sized timber or steel members, braces, walers, ties, etc. to ensure that the forms will not deflect, blow out, or deform as a result of concrete load.
- .2 Contractor shall ensure that where a positive slope is indicated on the construction drawings that the form work is constructed to achieve this slope. This includes but is not limited to cast in place concrete stair form construction.
 - .1 The Contractor shall clearly indicate, using an indelible line the entire length of the stair tread the elevation of the back of the stair tread.
 - .2 Prior to the placement of concrete using the line layout noted and the finished elevation of the top of the riser formwork the Contractor shall illustrate to the Owner's Representative that the formwork has been constructed to allow for positive drainage to the lines and levels indicated on the construction drawings from the back of the tread to the nose of the tread.
- .3 Install all inserts including cant and reveal strips, anchors, ties, bolts, nailers, anchor bolts, embedded plates, indicated on the contract documents and/ or required by other trades. Ensure cant and reveal strips are true to line and grade and joints are butt tight and smooth.
- .4 Provide all voids: openings and block outs indicated on the contract documents and/ or required by other trades.
- .5 Openings that have not specifically been indicated on the structural engineer's drawings must be approved in writing by the structural engineer.
- .6 Joints and corners shall be constructed so that they will not leak as a result of pressure from freshly placed concrete. Caulk as required.
- .7 The Contractor shall ensure that all forms not treated with a form release agent are to be kept evenly moist to prevent shrinkage. Wet the surface of untreated forms just prior to placing concrete.
- .8 Form release agent shall be applied in strict accordance with the manufacturers written instructions.

3.3 Removal of Formwork

- .1 Forms shall not be removed until concrete has attained sufficient strength to ensure that no damage or continuity of concrete will occur when forms are removed.

- .2 The structural engineer shall advise the Contractor as to the duration of cure time required prior to the removal of suspended formwork.
- .3 The Contractor shall use wooden wedges when prying directly against face of concrete during form removal. Do not pry directly against concrete surface.
- .4 Carefully remove form ties to avoid marking concrete. Unless otherwise indicated on the construction drawings plug and grout form tie holes to prevent rust staining. Ensure grout is finished smooth and flush to finished face of concrete.
- .5 Thoroughly clean and retreat forms prior to reuse.

3.4 Architectural Concrete Formwork

- .1 With respect to these specifications Architectural Concrete refers to concrete surfaces that are exposed to view. In addition to requirements of this section and those outlined in Section 28 of CAN/CSA-A23.1, formwork for architectural concrete shall specifically address the following:
 - .1 Formwork shall be constructed so that finished concrete surface will be free from any imperfections as a result of, but not limited to, misalignment or warping of forms, misalignment or warping of plywood or steel elements, inadequate tightness of forms, mortar leakage and any texture imparted by formwork.
 - .2 Maintain true right-angled corners for all exposed edges of concrete, unless otherwise indicated.
 - .3 The pattern for form ties shall be in accordance with the approved shop drawings.
 - .4 Back all edges of forms and brace to assure that mortar leakage is eliminated.
 - .5 Thoroughly inspect all forms prior to reuse. Do not reuse forms when surfaces that will come in contact with concrete have been damaged to the extent that the finished surface will not conform to the specifications.

3.5 Cleaning

- .1 Rubbish and debris resulting from work of this section shall be collected regularly, and removed from the project site and properly disposed.

END OF SECTION 03 10 00

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to install reinforcing steel as indicated in the contract documents.

1.3 Related Work

- .1 Concrete Formwork Section 03 10 00
- .2 Cast-in-Place Concrete Section 03 33 00

1.4 Reference Standards

- .1 Except as stated otherwise, all work shall conform to the following:
 - .1 B.C. Building Code Current Edition.
 - .2 City of Vancouver Building Bylaw No. 6134.
 - .3 CAN/CSA-A23.2 Methods of Tests for Concrete
 - .4 CAN/CSA-A23.3 Code for the Design of Concrete Structures for Buildings.
 - .5 CAN/CSA- A23.1 Concrete Materials and Methods of Concrete Construction
 - .6 CAN/CSA G30.5-M Welded Steel Wire Fabric for Concrete Reinforcement.
 - .7 CAN/CSA G30.12-M Billet-Steel Bars for Concrete Reinforcement.
 - .8 CAN/CSA W186-M Welding of Reinforcement Bars in Reinforced Concrete Construction.
 - .9 ACI manual of Standard Practice for Detailing
- .2 Where the standard is referred to in this specification it shall mean the documents specified in this clause and their referenced documents.

1.5 Inspection

- .1 All steel for the section shall be placed before pouring of concrete is begun and inspected by Owner's Representative or other designated staff by owner .

1.6 Testing and Approvals

- .1 As per Section 03110 - Concrete/Reinforcement Testing.

1.7 Submittals

- .1 Submit mill certificates properly correlated to the materials in accordance with CAN/CSA G30.18.

PART 2: PRODUCTS

2.1 General

- .1 Products shall satisfy the requirements of the standard unless otherwise specified herein or on the drawings.

2.2 Materials

- .1 Reinforcing bars will conform to CAN/CSA G30.18, Grade 400 R, unless otherwise specified herein or on the drawings.
- .2 Reinforcing not in accordance with the above standards shall not be used.
- .3 Reinforcing bars to be welded will conform to CAN/CSA G30.18, Grade 400 W.
- .4 Welded wire fabric will conform to CAN/CSA G.30.5, size and gauges as shown on the drawings.
- .5 Welded wire fabric for slabs will be delivered in flat sheets only.
- .6 Accessories: tie wire, hangers, bolsters, bar supports and spacers adequate for strength and support of reinforcing construction conditions.
 - .1 Use non-staining supports for architectural concrete.

PART 3: EXECUTION

3.1 General

- .1 All phases of concrete reinforcement work shall be in accordance with the standard unless otherwise specified herein or on the drawings. Workers who are skilled and experienced in their trade shall do the work.
- .2 The Contractor shall notify the Owner's Representative at least 48 hours before any concrete is placed in order that an inspection may be made.
- .3 Ship bundles of bar reinforcement, clearly identified in accordance with the bar list.

3.2 Fabrication

- .1 Fabricate reinforcing to CSA-A23.1.
- .2 Reinforcing bars will be cold bent. Bars will not be straightened or rebent.
- .3 Splices in reinforcing bars at locations not shown on the Drawings must be submitted for review by the Owner's Representative. Such splices will conform to the standards.

3.3 Placing

- .1 Reinforcing of size and shapes shown on the Drawings will be accurately placed in accordance with the Drawings and the requirements of the standard.
- .2 Reinforcement shall be adequately supported by chairs, spacers, support bars, hangers, or other accessories, and secured against displacement within the tolerances permitted in the standard. Support devices contacting surfaces exposed to the exterior shall be non-corroding.
- .3 Reinforcing bars that are not part of the structural design or drawing, and whose only function is supporting other reinforcing in lieu of other support accessories, will be considered as accessories.
- .4 Clean reinforcement before concrete is placed.
- .5 Contractor to coordinate a site meeting for the Owner's Representative to review reinforcing steel and placing before concrete is placed. A minimum of 48 hours notice is required for this review meeting.

3.4 Welding

- .1 Any welding of reinforcing steel shall be in accordance with CAN/CSA W186.
- .2 Copies of the Canadian Welding Bureau approved welding procedure and certificate of current operator qualification shall be submitted to the Owner's Representative prior to commencement of welding

END OF SECTION 03 20 00

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to install architectural cast in place concrete as indicated in the contract documents.
- .2 Install all anchor bolts, embedded metal, inserts, hangers, etc. supplied by other project trades to be cast into concrete. The Contractor shall be responsible for the correct positioning, depth, exposure and installation of these elements.
- .3 Install all openings, sleeves, block outs, etc. required by other trades and indicated on the construction drawings. The Contractor shall be responsible for the correct positioning, depth and installation of these elements.

1.3 Related Work

- | | | |
|----|------------------------|------------------|
| .1 | Concrete Reinforcement | Section 03 20 00 |
| .2 | Concrete Formwork | Section 03 10 00 |
| .3 | Concrete Finishing | Section 03 35 00 |

1.4 Reference Standards

- .1 Unless otherwise noted concrete work shall conform to the requirements of the following standards:
 - .1 B.C. Building Code Current Edition
 - .2 CSA CAN3-A23.1.
 - .3 CAN/CSA-A23.2 Methods of Tests for Concrete.
 - .4 CAN/CSA-A23.3 Code for the Design of Concrete Structures for Buildings.
- .2 A copy of the standard shall be kept by the Contractor on site for the duration of the work.

1.5 Submittals

- .1 A minimum of two (2) weeks prior to the start of work in this section the Contractor shall submit to the Owner's Representative the following information:
 - .1 Written confirmation of the mix design criteria from the concrete batch plant. Confirmation shall also be sent to the project Testing Agency.
 - .2 Shop drawings indicating the layout of all form ties.

1.6 Quality Assurance

- .1 To ensure consistency in the mix design; colour and finished appearance the supply of concrete and aggregate to be used in the concrete mix shall be from a single source throughout the duration of work of this Contract.
- .2 Quality of Finish: The quality of finish shall be such that, when the forms are stripped, it meets the standards set out below, without further finishing work other than sandblasting as required, and clean-up.
- .3 Concrete finishes shall exhibit sharp, accurate definition at corners, arises, reglets and the like, generally free of chipped or spalled areas and within dimensional tolerances set out in CAN/CSA A23.1/A23.2-00, except in the instance of "bug holes" or "honey-combing", in which a maximum of 5 mm diameter holes will be allowed. Members shall be visually straight. Major defects will necessitate replacement. The judgement as to what constitutes major defects will be by the Owner's Representative.
- .4 Concrete finish shall be uniform in colour.
- .5 Plane surfaces without protuberances, indentations, ridges or bulges.
- .6 Abrasive blasted surfaces shall have uniform depth of cutback, distribution of aggregate and colour and texture matching the sample panel designated by the Owner's Representative
- .7 Under no circumstances shall repair to any architectural concrete be undertaken without the Owner's Representative written consent. Concrete members that are repaired without written consent may be classified as defective work at the discretion of the Owner's Representative.

1.7 Testing and Approvals

- .1 All required sampling, preparation of specimens and testing shall be performed by an independent testing agency appointed by the Owner's Representative. The testing agency shall report any procedures that are contrary to the specifications or accepted practice to the Owner's Representative.
- .2 Testing will be paid for by the Contractor. The testing agency shall submit all results directly to the Owner's Representative.
- .3 The cost of supplying the material for samples shall be borne by the Contractor. The Contractor shall provide adequate notice and coordinate the scheduling of all concrete placements with the testing agency. The Contractor shall cooperate with the testing agency during the sampling process.
- .4 The testing agency shall perform the following:
 - .1 Review mix designs to ensure conformance with the specifications. Provision of a written report to the Owner's Representative.
 - .2 Test cement and aggregate for conformance with the material requirements of the specification.

- .3 Supply cylinder moulds, sample the concrete, make and cure test cylinders and perform compressive strength tests in accordance with specification standards.
- .4 Carry out slump and air content tests for each concrete test in accordance with specification standards.
- .5 Take three (3) test cylinders for each 25 cubic Metres (33 cubic yards) or fraction thereof for each class of concrete placed in any one day. In no case shall any one class of concrete be represented by less than three (3) tests.
- .5 All cylinders shall be made from concrete taken from the forms.
- .6 The Owner's Representative at their discretion may reduce or eliminate the test cylinders to be taken for minor pours or pours not of structural significance.
- .7 The testing agency shall perform the following tests on the each set of cylinders:
 - .1 Compression test of one (1) of the cylinder specimens after seven (7) days.
 - .2 Compression test of the remaining two (2) cylinders of each group after twenty eight (28) days.
 - .3 One (1) twenty-eight (28) day strength test result shall be calculated from the average of the compressive strength tests of the two (2) companion cylinders.
- .8 The testing agency shall provide certified copies of the test result to the Owner's Representative. The test results shall meet the requirements of the mix designs indicated on the Contract documents.
- .5 Should any test indicate concrete below strength, the Owner's Representative shall have the right to stop work on the suspect area until subsequent tests are made. The Contractor shall bear the cost of such required tests. Should all tests indicate below strength concrete, the Contractor shall remove this portion of the work at the Owner's Representatives request. The removal and replacement of this work by the Contractor shall be at no expense to the Owner.

1.8 Protection

- .1 Cold and hot weather requirements to CAN/CSA A23.1.

PART 2: PRODUCTS

2.1 Concrete Mixing Materials

- .1 Portland Cement: to CAN/CSA-A5.
- .2 Aggregates: fine and coarse to CAN/CSA-A23.1
- .3 Water: potable to CAN/CSA-A23.
- .4 Air entraining admixtures: To requirements of ASTM C260. Acceptable products include but are not limited to:
 - .1 N.V.R, Sternson Ltd.
 - .2 Darex AEA, Grace Construction Materials

- .3 MB-VR, Master Builders
- .5 Chemical Admixtures: To CAN/CSA-A266.2. The Owner's Representative shall approve use in writing.
- .6 Calcium Chloride: As a raw material or as a constituent in other admixtures, shall not be used unless approved in writing by the Owner's Representative.
- .7 Curing Compound: To requirements of ASTM C309 spray applied liquid containing a fugitive dye to be applied in accordance with manufacturers written instructions.
 - .1 Curing compounds shall be compatible with other specified floor hardeners, covering adhesives and waterproofing compounds.
 - .2 The use of other curing methods including the use of burlap and sheet materials shall be at the discretion of the Owner's Representative.
- .8 Form Release Agents: Concrete form release shall be composed of an organic chemical that reacts with the alkali content of concrete to form a release film, along with providing an inert barrier to provide double separation. Acceptable materials include but are not limited to:
 - .1 Duogard Concrete Form Release Agent by W.R. Meadows
 - .2 Eco-Coat by W R Meadows
 - .3 No Hold Concentrate, Grace Construction Materials
- .9 Joint Fill Material: Fibre Board: 12mm (1/2") pre-moulded bituminous impregnated fibre board to ASTM D 1751. Acceptable materials include but are not limited to:
 - .1 Flexcell, Sternson
 - .2 027 Fibre Expansion Joint, W R Meadows
- .10 Backer Rod: Closed cell, polyurethane foam to ASTM C 1330, Type C. For Joint widths up to 19mm (3/4") diameter of rod shall be 3mm (1/8") larger than the joint width.
- .11 Joint Sealant: Shall be self-levelling, non sag, two (2) part polyurethane type, conforming to CGSB 19.24-M80, Type II, Class B. Acceptable products include:
 - .1 Sika; Sikaflex-2C NS Mix TG
 - .2 Iso-Flex 880 GB self leveling
 - .3 Sonneborn SL2
- .12 Colour from standard range as indicated on the Contract Drawings.
- .13 Primers and bond breakers as required to install the joint sealant system shall be in strict accordance with sealant manufacturers written recommendations.

2.2 Mix Designs

- .1 Unless otherwise noted on the Contract documents the concrete mix design shall meet the following requirements:

- .1 Ramps, stairs, and curbs:

Minimum 28 Day Strength	32 MPa
Slump	75mm, (3"), +/- 20mm (3/4")
Maximum Aggregate Size	19mm (3/4")
Water Cement Ratio	0.45
Air Content	5 – 8%
Exposure Class	C-2

- .2 Walls and Columns: **DOUBLE CHECK STRUCTURAL SPECIFICATIONS**

Minimum 28 Day Strength	28 MPa
Slump	75mm, (3"), +/- 20mm (3/4")
Maximum Aggregate Size	19mm (3/4")
Water Cement Ratio	0.55
Air Content	4 – 7%
Exposure Class	F-2

PART 3: EXECUTION

3.1 General

- .1 Concrete Supply: Concrete shall only be supplied by a ready-mix concrete plant indicated by the Contractor in the submittals provided as part of the approval for work of this section.
- .2 The transport of concrete in non-agitating equipment is not permitted without the prior written permission of the Owner's Representative.
- .3 Concrete shall be discharged to the specified on site locations no longer than one and one half (1.5) hours after the introduction of the mixing water to the cement and aggregates.

3.2 Openings and Inserts

- .1 The Contractor is responsible for the coordination with all trades in the setting of all slots, sleeves, openings, fasteners, block outs, bolts, dowels, hangers, inserts, conduits, clips, etc., that described or detailed in the Contract documents.

3.3 Preparation for Concrete Pour

- .1 Owner's Representative Review: A minimum of 48 hours prior to the placement of concrete the Owner's Representative shall review the following elements:
- .1 Layout and construction of formwork.
- .2 Layout and placement of reinforcing.

- .2 Inserts and Block Outs: The Contractor shall have all inserts, anchors, embed items, etc. positioned or close at hand to ensure a seamless, efficient concrete placement operation.
- .3 The Contractor is to review with the Owner's Representative procedures, reference lines, form construction and other practices that will be employed to ensure that concrete that is placed in areas where the Contract documents require a positive slope to ensure drainage will after final surface finishing achieve the specified slopes.

3.4 Addition of Water

- .1 To conform to CAN/CSA–A23.1.18.4.3.
- .2 In brief – no water from the truck system or elsewhere shall be added after the initial introduction of the mixing water at the batch plant. The only exception shall be as follows:
 - .1 At the start of discharge if the measured slump of the concrete is less than that specified and no more than sixty (60) minutes have elapsed from the time the concrete was loaded at the batch plant to the start of discharge, then at the discretion of the Owner's Representative up to 12 litres per cubic metre (3 gallons per cubic yard) of water may be added to concrete in the ready mix truck. The resulting concrete must satisfy the mix design requirements of the Contract documents.

3.5 Placing of Concrete

- .1 Concrete shall be deposited in the forms as close as is practicable to its final position to avoid segregation due to re handling.
- .2 Place concrete in generally horizontal, level lifts to a maximum depth of 300 mm (12"). Ensure the free fall of concrete does not exceed 1.5 Metres (5'-0").
- .3 Consolidate each lift of concrete thoroughly and uniformly by means of vibrators or finishing machines. The resultant mix should be a dense, homogeneous structure closely bonded to the reinforcing.
- .4 Vibrators shall be internal type having a minimum frequency of 7,000 revolutions per minute. A spare vibrator shall be readily accessible during all placement operations.
- .5 Ensure that the placing of concrete and the subsequent vibration process does not disturb reinforcing, location of inserts and block outs or the position of the forms.
- .6 Concrete shall not be placed during rain or snow unless Contractor has reviewed procedures for providing adequate protection to finished surfaces with the Owner's Representative. All procedures, equipment, tarps and overhead cover to be in place prior to the start of concrete placement.

3.6 Curing and Protection

- .1 Curing: Concrete shall be cured in accordance with CAN/CSA 23.1.

- .2 Unless otherwise indicated slabs shall be cured using curing compound specified. Coverage rates and method of application shall be as per manufacturers written instructions.
- .3 Freshly placed concrete shall be protected from the effects of sunshine, drying winds, cold, heat, and flowing water including rain by the use of adequate tarpaulins or other suitable materials to cover completely or enclose freshly finished surfaces, until the end of the curing period.

3.7 Finishes

- .1 Prior to final finishing, unless otherwise indicated on drawings tie holes shall be filled, formed surfaces shall be treated in accordance with CAN/CSA-A23.1. 24.
- .2 Final concrete finishes shall be as detailed in Contract documents.

3.8 Concrete Joints

- .1 Joints are to occur at regular intervals as required by the existing conditions, no further than 9 M (30 ft) apart unless noted otherwise.
- .2 Joint locations in beams or walls shall be approved by the Owner's Representative prior to their installation. Ensure proper key and dowels or extensions of reinforcing are provided at all joints.
- .3 The Contractor shall seek the approval of the Owner's Representative for installation of joints not indicated in the Construction documents.

3.9 Joint Fill and Sealant

- .1 Provide joint fillers and sealant to all joints unless otherwise indicated in the Contract documents.
- .2 Ensure that all joints are thoroughly prepared and cleaned of all foreign material that may impair the proper function of the joint of adhesion of the sealer. Cleaning procedures shall be in accordance with the manufacturers written instructions.
- .3 Unless otherwise indicated in the Contract documents or required by the sealant manufacturer the joint fill material shall terminate 12mm (1/2") below the top of the joint. The resultant space shall be space shall be filled with joint sealer in accordance with the manufacturers written instructions.

3.10 Patching

- .1 The Owner's Representative shall review all "bug holes" or "honey-combing", prior to any remedial work performed by the Contractor. Repair of these types of defects shall be as per CAN/CSA-A23.1.24.2. Patching and remedial work shall be performed by the Contractor at no cost to the Owner.

- .2 No other patching or repair of concrete surface shall be allowed. Defective work identified by the Owner's Representative shall be completely removed and replaced at no cost to the Owner.

3.11 Flood Test

- .1 Immediately upon removal of the formwork of cast-in-place improvements or placement of precast concrete elements, a flood test shall be conducted by the Contractor in the presence of the Owner's Representative to ensure proper drainage of all concrete improvements. Improvements subject to a flood test shall include but are not limited to all stairs and ramps. The flood test shall consist of the application of a volume of water sufficient to allow the visual verification of all slopes and drainage patterns and ensure that ponding does not occur. The volume of water necessary to facilitate testing and the determination of the success or failure of the flood test shall be at the discretion of the Owner's Representative.
- .2 Should the concrete not meet the grade tolerances of the Contract documents or ponding is evident after a flood test the Contractor shall at the discretion of the Owner's Representative completely remove and replace all concrete. Grinding, partial removal and patching to resolve ponding or insufficient grade is not acceptable.

END OF SECTION 03 33 00

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to install architectural finish, rough formed finish and the installation of anti graffiti coatings on cast in place concrete.

1.3 Related Work

- | | | |
|----|--------------------------------|------------------|
| .1 | Shop Drawings and Product Data | Section 01 33 23 |
| .2 | Concrete Reinforcing | Section 03 20 00 |
| .3 | Cast-In-Place Concrete | Section 03 33 00 |
| .4 | Abrasive Blast Finish | Section 03 35 10 |

1.4 Reference Standards

- .1 Concrete finishes shall conform to the requirements of the following standards unless otherwise required by this specification:
 - .1 CSA/CAN3-A23.1, Concrete Materials and Methods of Concrete Construction

1.5 Submittals

- .1 Manufacturers product information sheets for all component parts of the concrete installation including but not limited to, coloured, or stained concrete.
- .2 Quality control procedures for coloured or stained concrete.

PART 2: PRODUCTS

2.1 Concrete Materials: In accordance with CSA/CAN3-A23.1.

2.2 Bonding Agent: Formulated for bonding new concrete to cured concrete. Acceptable materials include but are not limited to:

- .1 Daraweld C, Grace Construction Materials
- .2 Polymer Bonding Agent, Target
- .3 Concresive Liquid LPL, Master Builders

2.3 Non-shrink Grout for Patching: Acceptable materials include but are not limited to:

- .1 Embeco Mortar, Master Builder's,

- .2 Fast- Set Patching Concrete, Target
- 2.4 **Integral Liquid Colour Additive:** Iron oxide pigment suitable for sandblasted concrete that will produce a uniform, consistent colour. Colour pigment shall be permanent, inert, stable in atmospheric conditions, sun fast, weather resistant, alkali resistant, lime proof and non-bleeding. Particle size shall be 95 to 99% minus 325 mesh.
 - .1 Acceptable products include; SGS Color-Flo Liquid Colours, by Solomon Colors, Springfield, Illinois, sgs@solomoncolor.com or pre approved equal.
 - .2 Colour as indicated on Contract drawings.
- 2.5 **Anti Graffiti Coating:** All walls exceeding a height of 0.60M shall be protected with an Anti Graffiti Coating. Acceptable suppliers and proprietary products include;
 - .1 CBR 501-AG Anti Grffiti Coating by Broda Stains and Coatings, as supplied by CBR Products, 102-876 Cordova, Vancouver BC. (604) 254.3325.
 - .2 Pre approved equal

PART 3: EXECUTION

3.1 Finishing of Concrete Surfaces

- .1 Architectural Concrete Finish (concrete surfaces that are exposed to view):
 - .1 Surface finishing shall conform to CAN 3-A23.1-M94, Section 24, Finishing of Formed Surfaces, Clause 24.3.3, Smooth Form Finish.
- .2 Rough Form Finish: All concealed concrete surfaces.
 - .1 Surface finishing shall conform to CAN 3-A23.1-M94, Section 24, Finishing of Formed Surfaces, Clause 24.3.2, Rough Form Finish. Patching to be done in accordance with clause 24.2 Patching.
- .3 Sandblast Surface Finish: On concrete surfaces noted on drawings per Section 03 35 10.

3.2 Repairs to Defects

- .1 Architectural concrete shall have a pleasing appearance, free of defects, with minimal colour and texture variation when viewed at a distance of 6 metres (20'-0").
- .2 Should the variation in colour and texture or the appearance of defect(s) including but not limited to honeycombing, rock pockets, chips, cracks, spalls, fins and stains exceed the tolerance of the specification or CAN3 - A23.1-M94, which ever is more onerous the concrete work will be rejected. At the discretion of the Owner's Representative rejected concrete, at no cost to the owner will be demolished and replaced by the Contractor.
- .3 Grinding or repair of stair treads to facilitate positive drainage will not be accepted. Contractor at no expense to the Owner will completely remove and replace all stair systems that exhibit ponding of water on the stair treads.

- .4 At the discretion of the Owner's Representative the Contractor may be given the opportunity to provide in writing accompanied by product information and cut sheets, a detailed methodology of repair of defective concrete. The methodology should reference the manufacturers written instructions for each product and procedure and shall clearly outline the full process for repair of defective work.
- .5 Should the Owner's Representative approve the defect repair methodology a trial repair will be carried out on the mock up. In the event the mock up was incorporated into the finished work a discrete location will be chosen by the Owner's Representative for testing of the defect repair.
- .6 The acceptance of the repair shall be at the sole discretion of the Owner's Representative. Should the repair not be acceptable to the Owner's Representative the Contractor shall, at no cost to the owner demolish, and replace the defective work.

3.3 Application of Anti Graffiti Coating

- .1 Unless otherwise indicated in the specifications or on the contract drawings anti graffiti coating to be applied to all exposed vertical concrete surfaces.
- .2 Surface preparation and application in strict accordance with the manufacturers technical data and application instruction sheet.

3.4 Protection

- .1 Protect architectural concrete from any damage by the elements and defacement of any nature during construction operation.
- .2 All corners and surfaces subject to possible damage shall be suitably protected with boards or hoardings.
- .3 The Contractor shall make adequate provision to keep all exposed concrete free from laitance caused by spillage, leaking forms or other contaminants. In no event shall laitance be allowed to penetrate, stain or harden on surfaces that have been sandblasted.
- .4 Adequate protection shall be given to all exposed reinforcing steel in architectural concrete to prevent staining of surfaces of concrete due to rust and corrosion. If any rust or corrosion does occur it shall be removed immediately to avoid permanent staining.

3.5 Cleaning

- .1 Rubbish, debris and demolition material resulting from work of this section shall be collected regularly, removed from the project site and properly disposed.
- .2 Repair, remove and clean all drips or smears resulting from the work of this section on exposed, finished surfaces or surfaces to be subsequently finished.

END OF SECTION 03 35 00

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary for abrasive blasting of surfaces as indicated in the contract documents.
- .2 The work shall include but is not limited to the following components:
 - .1 Concrete Walls and Cheek Walls
 - .2 Concrete Seat Walls and Steps
 - .3 Concrete Planters
 - .4 Concrete Banding
 - .5 Cast in Place Concrete Walks, and Miscellaneous Flat Work

1.3 Related Work

- | | | |
|----|--------------------------------|------------------|
| .1 | Shop Drawings and Product Data | Section 01 33 23 |
| .2 | Concrete Forming | Section 03 10 00 |
| .3 | Reinforcing Steel | Section 03 20 00 |
| .4 | Cast-In-Place Concrete | Section 03 33 00 |

1.4 Reference Standards

- .1 All work and material shall conform to Chapter 9 of CPCA/MPDA Specification Manual (latest edition) and as herein specified.

1.5 Qualifications

- .2 This Contractor shall have a record of satisfactory performance in the trade and shall maintain a qualified crew of abrasive blasters throughout the duration of the work.

1.6 Requirements of Regulatory Agencies

- .1 Applicable Provincial, municipal regulations and environmental requirements shall be fully maintained during abrasive blasting operations.
- .2 WorkSafe BC safety regulations shall be strictly adhered to in all respects. Specific emphasis shall be placed on monitoring and adhering to permissible noise levels and air borne particulate levels.

1.7 Job Conditions

- .1 Equipment used in abrasive blasting operations shall be properly muffled. All dust shall be completely controlled during the operation.
- .2 Protect surrounding and adjoining work by adequately covering with tarpaulins or other necessary protective covering. At no cost to the Owner, make good any damage caused by failure to provide suitable protection.

PART 2: PRODUCTS

2.1 Materials

- .1 Abrasives shall conform to The International Concrete Repair Institute No. 310.2R-2013
- .2 Material and material gradation will be selected by the Abrasive blasting Subcontractor to achieve finishes described in the construction drawings and details, implemented on the mock up panels and approved by the Owner's Representative.

2.2 Product Delivery, Storage and Handling

- .1 Deliver materials to the site in unopened, weather tight packaging that is clearly marked with the manufacturers name and product information.
- .2 All materials shall be protected from the rain and excessive moisture, sit on pallets and stored in a location that will not impact other trades working on the site.

PART 3: EXECUTION

3.1 Inspection

- .1 The Contractor shall inspect all surfaces to be abrasive blasted and report to the Owner's Representative in writing any defects or elements that will hinder the completion of abrasive blast operations. Commencement of work indicates acceptance for the above condition.
- .2 Prior to start of work of this section the Contract shall ensure that the Owner's Representative has reviewed and accepted all surfaces to be abrasive blasted.

3.2 Finish

- .1 Abrasive blasting finishes shall be light, medium and heavy abrasive blast finishes as called up on details and drawings. The exact finish of abrasive blast will be governed by matching samples reviewed by the Owner's Representative.
- .2 Refer to drawing for location, type and extent of abrasive blast finishes.

3.3 Abrasive Blast Operation

- .1 All abrasive blasting required on this project shall be carried out by the air-blasting method.
- .2 Concrete shall have cured for a minimum of twenty one (21) days prior to abrasive blasting.
- .3 Abrasive blasting operation shall yield uniform texture and colour to all surfaces. The texture and colour shall match the approved mock up panels.

3.4 Cleaning

- .1 During the progress of the work keep the premises free from any unnecessary accumulation of tools, equipment, surplus materials and debris.
- .2 Upon completion of the work remove all excess materials and clean all surfaces.

END OF SECTION 03 35 10

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to install miscellaneous metalwork items as indicated in the contract documents.

1.3 Related Work

- .1 Site Furnishings Section 32 37 00

1.4 Reference Standards

- .1 Conform to CAN3-S16.1-M for design of steel structures, unit stresses and workmanship.
- .2 Handrails and balustrades when installed shall conform to local municipal loading requirements. Maximum deflection 1/360 of the span.

1.4 Quality Assurance

- .1 Welding work to conform to CSA Standard W59 and shall only be performed by organizations and operators qualified under CSA Welding Qualification Code, CSA W47.
- .2 Electrodes to conform to CSA Standard W48.
- .3 Painted finishes of exterior galvanized metal to conform with requirements of Section 09 96 00. Surface preparation for painting of exterior exposed steel to conform to Steel Structural Painting Council Standards - refer also to Section 09 96 00.

1.5 Submittals

- .1 Submit shop drawings of all miscellaneous metalwork for review by Owner's Representative. Completely detail items indicating all dimensions, materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcements and fixing details and accessories. **Confirm all dimensions on site prior to fabrication.**
- .2 Submit shop drawings in accordance with General Condition GC 34 as amended under Supplementary Conditions and Section 01 33 23 (as applicable).
- .3 Do not commence fabrication of miscellaneous metal items until shop drawings are reviewed/stamped by the Owner's Representative.

- .4 Shop drawings for metal balustrades, railings and guardrails, including all connection detailing, shall be sealed by a Professional Engineer registered in the province of B.C.

1.7 Protection

- .1 Use all means necessary to protect miscellaneous metal before, during and after installation and to protect the installed work and materials of all other items until Substantial Completion.
- .2 In the event of damage immediately make all repairs and replacements necessary to the approval of the Owner's Representative at no extra cost.

1.9 Quality Assurance

- .1 Prior to commencement of any work of this Section, the contractor is required to make contact with the designated Owner's Representative properly authorized to make project decisions, and to determine schedule of inspections required and parties to be present for review/approval.
- .2 All work is to be presented at fabricator's shop for inspection of workmanship and materials prior to arrival on site and/or forwarding to paint shop for finishing work. Notify Owner's Representative a minimum of **forty-eight (48) hours** prior to all required inspections.

PART 2: PRODUCTS

- 2.1 **Steel:** shall be one of the following types as designated on the drawings or specified herein.

- .1 Structural steel, miscellaneous steel shapes, conforming to CAN3-G40.21-98, Grade 300W, 44W for flat shapes.
- .2 Seamless hollow structural sections, conforming to CAN3-G40.21, Grade 50W, Type H.
- .3 Pipe, schedule 40 standard weight, conforming to ASTM Specification A53, Grade A. Include galvanized sleeves for setting verticals, as required. Bends as detailed.

- 2.2 **Bolts, Nuts and Washers:** In accordance with material and size requirements of CAN3-S16.1-94M.(ASTM A307).

- 2.3 **Galvanizing:** Hot dipped galvanizing with zinc coating 610 grams per square meter area conforming to CSA G164-M92.

- 2.4 **Galvanized Metal Primer:** Shall conform to CGSB 1-GP-198-95 Cementitious Primer for Galvanized Surfaces.

- 2.5 **Non-Galvanized Ferrous Metal Primer:** Shall conform to CGSB 1-GP-40M or 1-GP-132M90 Zinc Chromate Primer for Low Moisture Sensitivity.

- 2.6 **Grout:** For fill at pipe sleeves and other locations use a, non-shrink, non-metallic, non-corrosive, flowing, 24h, MPa.15, pullout strength 7.0 MPa grout for setting metal posts.

- 2.7 Concrete Inserts:** Threaded or wedge type galvanized ferrous castings, either malleable iron to ASTM A47, or cast steel to ASTM A27 Standards. Provide bolts, washers and shims as required hot-dip galvanized as specified.
- 2.8 Fastenings:** Supply and install all hardware as required for installation. Installation hardware shall be sized to suit the material to which railings and other miscellaneous metal items are attached and shall meet the loading requirements. Hilti sleeve/chemical anchors as noted by Engineer. Submit samples for approval.
- 2.9 Angles, Clips, Channels etc.:** Provide all angles, anchors, clips, plates, channels, etc. required to support or fix items of work installed by other sections save where specifically excepted and supply and fix any other miscellaneous ironwork required in the work.
- 2.10 Delivery**
- .1 All miscellaneous metal items delivered to the site shall be tagged and supplied with sufficient information for identification and fixing in correct location.
 - .2 Arrange delivery in such sequence and manner to permit the most efficient and economical performance of this section of work.
- 2.11 Approved Equals**
- .1 All items as specified or pre-approved equals.

PART 3: EXECUTION

3.1 Examination

- .1 Examine all details of the work as related to this section and other sections. Ensure that all conditions are suitable to provide a complete and satisfactory installation or be responsible for any additional costs involved.
- .2 Carefully inspect all surfaces and the work of other trades as it relates to the work of this Section for defects and discrepancies and report it to the Owner's Representative.

3.2 Fabrication

- .1 Verify all dimensions on site prior to proceeding with shop fabrication.
- .2 Fabricate all work in accordance with details shown on drawings and reviewed/stamped shop drawings.
- .3 Fabricate items from steel unless otherwise noted.
- .4 Where possible, fit and shop assemble work, ready for erection.
- .5 Fit and shop assemble in largest practical sections for delivery to the site.
- .6 Fabricate and assemble miscellaneous metal items true, square and free from warpage or other defects.

- .7 Items to be fixed to concrete or masonry with expansion shields, expansion bolts or self-drilling anchors. Fixing to be of correct size to suit load being imposed.
- .8 Design, fabrication and workmanship shall conform to CAN3-S16.1-M94.
- .9 Welding shall conform to CSA W59-M89.
- .10 Use self-tapping shake-proof flat-headed screws on items requiring assembly by screws or as indicated.
- .11 Grind smooth all exposed welds, sharp edges, angles and corners.
- .12 Ensure exposed welds are continuous for length of each joint.
- .13 Bolted work shall be carefully tightened with threads of bolts nicked to prevent subsequent loosening, unless work indicated is noted as removable.
- .14 Drill or punch all holes required for the attachment of work of other trades and bolted connections.
- .15 Provide smooth exposed surfaces with all fastenings and connections hidden where possible.
- .16 Curved work shall be true to radii shown.
- .17 Galvanize all steel noted on drawings after fabrication of Sections prior to delivery to site.

3.3 Shop Preparation and Priming

- .1 All metal items shall be hot-dipped galvanized, primed and painted to requirements of Section 09900 - Aliphatic Urethane except where shown otherwise.
- .2 Apply one shop coat of primer to all miscellaneous metal items, except any items specified to be factory finished and any concrete encased items.
- .3 Prepare all miscellaneous metal for priming to Steel Structural Painting Council Standards; S.S.P.C. SP-1-82 Solvent Cleaning, followed by S.S.P.C. SP-6-85 Commercial Blast Cleaning.(if applicable and recommended by Owner's Representative). Refer to SSPC Manuals, Guide to Good Painting Practices Volumes 1 and 2 for complete details.
- .4 Apply primer in accordance with manufacturer's directions.
- .5 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, and grease. Do not paint when temperature is lower than 7 degrees Celsius.
- .6 Clean surfaces to be field welded; do not paint.

3.4 Preparation for Powder Coating

- .1 Thoroughly descale all steel work after fabrication. Remove roughness and irregularities by grinding and clean wire brush. Remove oil and grease from steel surfaces.
- .2 Do not coat surfaces that are to be field welded.
- .3 Coat steel as soon as possible after cleaning.

3.5 Erection

- .1 Erect metalwork square, plumb, straight and true, accurately fitted, with tight joints and intersections.
- .2 Provide suitable means of anchorage acceptable to Owner's Representative, such as dowels, anchor chips, bar anchors, expansion bolts and shields, and toggles. Ensure that items cast into concrete or built into masonry are given to the appropriate trades together with setting templates.
- .3 Execute all metal work in a thorough and workmanlike manner according to best shop practices. Material cut from stock to be sheared or parted straight and all debarred. Where cuts are burned, grind off clean and true to line. Exposed welding or welding in fitted surfaces to be ground smooth or fileted as required. Fabricate all items accurately, true to line and dimension.
- .4 Make field connections with bolts to CAN3-S16.1-M84, or weld.
- .5 Hand items over for casting into concrete or building into masonry to appropriate trades together with setting templates.
- .6 Touch up rivets, field welds, bolts and burnt or scratched surfaces after completion or erection with appropriate primer.
- .7 Touch up galvanized surfaces with zinc primer where burned by field welding - refer to Section 09900. Ensure that all welds have been ground smooth and flush prior to applying zinc primer.
- .8 Fastenings shall be concealed where possible, sizes and spacing as indicated on the drawings, and shall conform to local municipal requirements, CSA Specifications and best trade practices to give permanent stability and good appearance. Avoid staining, scratches, damage and distortion of materials.
- .9 Fix in place with epoxy grout where applicable. Remove excess epoxy grout by approved means, leaving the surface around each handrail base smooth and clean.

3.6 Installation

- .1 Install handrails in concrete by inserting over spigot as detailed, formed in concrete. Secure with stainless steel bolts, drilling concrete and installing wedge anchors, two per connection or as otherwise detailed. Support in accurate final location, plumb and level.

3.7 Powder Coating (if applicable):

- .1 Powder coating shall be carried out in shop by a pre- approved powder coating company. Minor marks in powder coating due to delivery and storage shall be promptly repaired by an approved method-confirm with Owner's Representative prior to repair. Damaged surfaces determined to be unacceptable for on-site repair shall be removed and re-coated at the plant.
- .2 Submit colour sample to the Owner's Representative, size of sample at least 100mm x 100mm. Final colour shall match approved samples.

- .3 Apply powder coating to match approved sample, leaving final surfaces uniform. Hard and dry and free from foreign matter and other flaws. Repair flawed items completely; patching will not be acceptable.

3.8 Site Maintenance/Clean Up

- .1 The job site shall be kept in a neat, clean and orderly condition at all times during the installation process.
- .2 Erection/installation of all miscellaneous metal shall be continuous so that the amount of exposed/unprotected/incomplete work at the end of each workday is minimized. Any unsafe conditions created by work of this Section shall be barricaded and marked with high visibility marking tape to current WorkSafeBC requirements.
- .3 Any damage to paving, planting or any other structure/element due to work of this Section shall be immediately repaired at the Contractor's expense to satisfaction of Owner's Representative.
- .4 Remove and dispose of off site all surplus material, excess excavated materials, trash, debris, residue and waste material from the work of this Section.

END OF SECTION 05 70 00

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to install exterior architectural wood work as indicated in the contract documents.
 - .1 Upright Logs
 - .4 Playground Log Edging
 - .3 Play Hut

1.3 Related Work

- .1 Cast-in-Place Concrete Section 03 33 00
- .2 Growing Medium Preparation and Placement Section 32 91 13

1.4 Reference Standards

- .1 Exterior wood, wood sizes and surface finish shall conform to the following:
 - .1 NLGA – National Lumber Grades Authority - Latest Edition, Standard Grading Rules of B.C. Coast Dimension Lumber Grades.
 - .2 WCLIB – West Coast Lumber Inspection Bureau
 - .3 WRCLA – Western Red Cedar Lumber Association
 - .4 IWPA – International Wood Products Association
 - .5 BC Building Code – Current Edition

1.5 Submittals

- .1 Samples:
 - .1 Wood: Submit two 600mm (24") long samples of each wood member element forming a finished surface. Samples are to be clearly labeled with wood type, grade, origin and member dimension.
 - .2 Fasteners, Plates and Connectors: Product information sheet and one (1) representative sample of each element.
 - .3 Hardware: Product information sheet and one (1) representative sample of each element. Sample, if approved may be used in the final installation.

- .2 Shop drawings: Shop drawings shall illustrate details necessary for fabrication and erection of the component parts including location, type, size and detail of all fastening systems.
- .3 Mock Ups: Prior to the complete fabrication of exterior architectural elements provide a full-scale mock-up the following elements:
 - .1 Countersunk and plugged fastener.
 - .2 Wood treatment sample

1.6 Quality Assurance

- .1 Qualifications of Contractor and Crew:
 - .1 The Contractor performing work of this section shall have a successfully completed the Interprovincial Standards Exam and hold Interprovincial Red Seal status as a carpenter. Prior to the start of work of this section the Contractor shall; provide the Owner's Representative with written confirmation that he will maintain a crew with at least one carpenter holding Red Seal status.
- .2 Erection methods and procedures shall meet the minimum standards set out by the BC Building Code. Where this specification exceeds this standard the specification shall govern.

PART 2: PRODUCTS

2.1 Lumber

- .1 Lumber Grades
 - .1 Shall conform with the NGLA latest edition Standard Grading Rules of B.C. Coast Dimension Lumber Grades.
 - .2 All S4S unless otherwise indicated.
 - .3 Moisture content (MC) at time of installation shall be in accordance with the NLGA current standards.
 - .1 19% or less kiln dried or air seasoned for structural or appearance graded.
 - .4 All lumber shall be straight, sound, and free of splits, warps and cracks.
- .2 Western Red Cedar:
 - .1 Decking - Western Red Cedar, S4S, WRCLA 'Custom' Clear or better, unseasoned. NOTE: Good quality, some knots, but knots are tight.

.3 Pressure Treated Lumber

***NOTE: ACQ is the default pressure treated wood. CCA treated wood is not to be specified.
All fasteners for ACQ treated wood must be stainless steel.***

- .1 Pressure-treated members shall be cut and machined prior to application of preservative. Where precutting is not feasible then untreated surfaces exposed due to cutting or boring shall be thoroughly soaked with the same preservative used in the initial treatment.
- .2 All lumber which has been pressure-treated shall bear the inspection and classification label of the Underwriter's Laboratories of Canada as well as documentation confirming treatment meets or exceeds standards specified.
- .4 ACQ (Alkaline Copper Quat) treated Hem Fir to CSA 080-97
 - .1 Deck Joists and Beams – CSA 080.2, Use category UC3.2, Residential Product Group C, ACQ – C.
- .5 Exotic Hardwood Decking This includes Ipe and other tropical hardwoods
 - .1 IWPA Premium AD S4S E4E, species as indicated on the contract drawings. Average moisture content not exceeding 12.
- .6 End Sealer: Non-toxic wax based end sealer. Acceptable products include Anchorseal 2 by the UC Coatings Corporation, Ipe Seal distributed by Goodfellow Inc. Richmond BC or pre approved equal.
- .7 Galvanizing Touch Up: zinc rich (minimum 96% zinc) paint or powder aerosol spray. Acceptable products include Zinga and Zingaspray as supplied by Zinga – USA (www.zinga-usa.com) or pre approved equal.

2.2 Fasteners

- .1 All fasteners and metals to meet the following standards:

- .1 Fasteners - Hot Dip Galvanized to ASTM A153 (Class C or D).
- .2 Metal Hangers and Plates – Hot dipped galvanized to ASTM A653 G185 continuously galvanized sheet metal or ASTM A123 batch galvanizing after fabrication.
- .3 Stainless Steel - Fasteners, metal hangers and plates – Type 304.
- .4 Organic Polymeric Coated Electroplated Fasteners, Metal Hangers and Plates – Provide product information for Owner's Representative review prior to use.
- .5 Electroplated galvanized fasteners are not acceptable.

2.3 Miscellaneous Hardware

- .1 Hinges, hasps, door knobs, locksets and other miscellaneous elements to be suitable for exposed outdoor use and compatible with use and material indicated on contract drawings.

2.4 Adhesives

- .1 Exterior Waterproof Wood Glue (non load bearing applications): Exceed ANSI/HPVA Type I water resistant specifications, non-toxic, solvent clean, water clean up. Acceptable products include; Titebond III as manufactured by Franklin International, Columbus Ohio.
- .2 Construction Adhesive: Synthetic rubber base, non-flammable, water resistant adhesive. Acceptable products include; Lepage PL9000 Premium Construction Adhesive as manufactured by Henkel Canada, Mississauga Ontario.

2.5 Moisture Break

- .1 Moisture Break; Foamsealr foam sill gasket by Owens Corning or approved equal.

PART 3: EXECUTION

3.1 Installation

- .1 Install members to lines, levels and elevations indicated.
- .2 Space members uniformly ensuring adequate allowance for material expansion.
- .3 Unless otherwise noted on drawings or details ease all edges of wood members.
- .4 Use hot-dipped galvanized, stainless steel or approved non-corrosive fasteners. Unless otherwise noted on drawings fasteners sizes and types shall be as follows:

19mm (3/4") members or thinner	Casing Nails
38mm (1 1/2") members	Screw
89 mm (3 1/2") or larger	Bolt and washer, threaded rod bolt and washer assembly

- .5 Touch up all areas of galvanized steel that have been marred, scratched or compromised during installation.

- .6 Unless otherwise indicated use joist hangers and connecting plates for structural members hidden from view.
- .7 Where indicated on drawings for fastener to be countersunk the finish surface of the top of the fastener shall be set at least 6mm (1/4") below the finish surface of the wood member.
- .8 Where indicated on the drawings for fastener to be countersunk and plugged the species of wood for the plug shall match the species of wood for the constructed element. All plugs shall be glued in place, be of sufficient thickness to allow for a durable finish, finished flush with surrounding finished surface.
- .9 Where wood is in direct contact with concrete or non-porous materials provide a continuous foam gasket moisture break between the two materials.

3.2 Cleaning

- .1 Upon completion remove from the site all waste and residue from work of this section.
- .2 Pressure Treated Wood: dispose of at approved facility.
- .3 Untreated Wood: dispose of at approved wood recycling facility.

END OF SECTION 06 40 13

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to play equipment with required safety zones as indicated in the contract documents.

1.3 Related Work

- .1 Fibar System 300 Specification
- .2 Concrete Forming and Accessories Section 03 10 00
- .3 Concrete Reinforcing Section 03 20 00

1.4 Qualifications

- .1 The Playground Equipment installer shall have a minimum of five (5) years proven record of satisfactory performance and experience on projects of similar size and scope and shall maintain a qualified crew with at least one (1) Canadian Certified Playground Inspector throughout the duration of the work who shall be qualified with the CPRA.
- .2 Qualifications of Workers:
 - .1 Only competent skilled trades people holding the designation Canadian Certified Playground Inspector's who are thoroughly experienced with the material and methods specified may perform any playground installation work specified under the work of the Section.
 - .2 General labour type activities related to playground equipment installations may be performed by labourers and trades helpers who are thoroughly experienced with preparation procedures provided they work under the direct supervision of a skilled Canadian Certified Playground Inspector.
 - .3 Certification must be presented to the Owner's Representative or designated representative within 48 hours upon request, and produce written proof of such. A skilled Canadian Certified Playground Inspector shall be present at all times during the execution of the playground installation work.

1.5 Quality Assurance

- .1 All layout, materials and work must meet or exceed requirements of the latest edition of the CSA standard CAN/CSA-Z614-14 Children's Play spaces and Equipment and the IPEMA (International Play Equipment Manufacturers Association) standard.

- .2 Hazardous materials such as asbestos, polychlorinated byphenyls (PCB's) and lead based paints are not permitted on site.
- .1 A copy of the CSA standard CAN/CSA-Z614-14 Children's Play Spaces and Equipment shall be kept on site for the duration of the construction schedule.
- .2 Should modifications to the CSA Guidelines occur, and then the modifications shall govern.

1.6 Protection

- .1 Protect all play equipment and components against damage during shipping, handling, storage and installation, and until Final Acceptance.
- .2 Provide protected storage of play equipment prior to installation off the ground and free from dampness.
- .3 Provide all necessary facilities/equipment for handling and lifting site furnishings-play equipment into final location.1 Take all reasonable measures to protect surrounding or adjoining work or as requested by the Owner's Representative, including all material, plant and real property related to the Work against loss or damage from any cause.
- .4 Safety: The Contractor will be responsible for all aspects of job safety at the work site as per the contract documents. All work must be carried out in a safe and responsible manner. Where applicable, Workers Compensation Board "Industrial Health and Safety Regulations" must be followed.
- .5 Contractor is responsible for ensuring adequate public safety in his work area at all times. No operating equipment is to be left unattended and the work area is to be left in a safe, secure condition at the end of each workday. Ensure that any partially installed play equipment is adequately signed with warning signs stating "CONSTRUCTION AREA - KEEP OFF" and that the overall area is properly barricaded by fences or approved guards from public access until Final Acceptance.

1.7 Submittals

- .1 Provide shop drawings of all play equipment, and obtain Owner's Representative's approval prior to manufacture. Shop drawings shall show overall dimensions, layout, height relationships, and footing and anchoring methods adapted as necessary to the requirements of this project. Shop drawings shall show clearances to the edge of play area to meet the CSA Standards. The provided installation instructions and maintenance instructions shall be "project" specific containing component information that is part of the playground design. A "generic" package of installation instruction and maintenance instructions is not acceptable. Shop Drawings will become part of the Maintenance Manual.
- .2 Submit a copy of the supplier's warranty statement stating all exclusions. The warranty certificate shall be filled out/completed by the Contractor/Supplier acknowledging the Vancouver Park Board (with site location) as the Owner.

- .3 Submit completed Schedule A - Sample Inspection Report Form to the Owner's Representative upon completion of the project. See Schedule A below.
Maintenance Manual/Kit: Prior to and as a condition of Substantial Performance the Contractor shall submit a project specific maintenance manual/kit for all Project Play Equipment. This manual shall:
 - .1 Provide information to establish the frequency of inspections.
 - .2 Describe preventative maintenance and repair procedures.
 - .3 Provide copies of project specific inspection Report Forms for each play component shown on the Drawings.
 - .4 A reproducible copy of the as constructed Play Component System produced by the Contractor or supplier/manufacture.
 - .5 Provide 2 sets of any special tools or wrenches necessary to adjust or replace any special vandal resistant fasteners.
 - .6 Provide a PVC repair kit for repair of minor PVC damage.
 - .7 Provide an anti-graffiti chemical cleaner for removal of paint, ink or other forms of graffiti from the various surfaces/materials used on the play structure.
 - .8 A primer and matching colour touch-up kit compatible with the original manufacturer's finishing system.
 - .4 The Contractor/manufacture shall submit with their bid a list of all variances from these specifications.
 - .5 Provide all necessary templates for location of fixing devices prior to pouring of concrete bases.

1.8 Guarantee

- .1 The play equipment and complete installation shall be warranted for three (3) full years from the date of Substantial Performance. Repair or replace any faulty work or parts within 7 days after notification by the Park Board. Do not permit dangerous conditions in or around the play equipment. Refer also to inspection requirements Item 3.4.2 of this Specification.

PART 2: PRODUCTS

2.1 General

- .1 All materials shall have demonstrated record of durability in the playground or similar outdoor settings.
- .4 Site Specificity of Design - Equipment selection is based on specific program requirements, physical constraints within the site, and public input. Requests for Product Substitution will be subject to certain subjective criteria including (in no particular order):
 - .1 Similarity to specified play structure components

- .2 Footprint
- .3 Colour Availability
- .4 Geometry
- .5 Apparent Mass and/or Visual Density
- .6 Proven Performance Record
- .7 Variance - The Contractor/manufacturer shall submit with their bid a list of all variances from these specifications.

2.2 Play Equipment

- .1 Play equipment shall be CSA-approved manufactured units, consisting of the components shown in the drawings, and all incidental components required for a proper warranted installation. As shown in the drawings or pre-approved equal.
- .2 Colour of play components: select from manufacturer's standard colour range - as shown in Landscape Drawings.
- .3 Play equipment shall be as specified on Landscape Drawings, install as per manufacturers specifications.

2.3 Resilient Play Area Safety Surfacing

- .1 Sand: shall be medium WASHED play sand as supplied by Lafarge. Submit 1litre sample for approval.
- .3 Engineered Wood Fibre/Chip: Fibar System 300 complete w/ FibarMat, FibarFelt and FibarDrain as supplied/installed by RecTec Industries, or pre-approved equal.
- .4 Rubber Surfacing: Landsafe as supplied by Marathon Surfaces Inc, Surrey, B.C. or pre-approved equal. 5 year minimum warranty as a performance requirement. Colours as shown in Landscape Drawings

2.4 Approved Equals

- .1 All items shall be as specified or approved equals.

PART 3: EXECUTION

3.1 Preparation and Layout

- .1 Examine the areas and conditions under which work of this Section will be performed. Verify safety zones of all equipment before setting posts in concrete footings. Do not proceed until conditions detrimental to proper and timely completion of the work have been satisfactorily corrected and thus meet the manufacturer's instructions and the requirements. Beginning work constitutes acceptance of conditions as satisfactory.

- .2 Before installing play equipment or safety surfacing, verify that the subgrades are uniform, smooth, well drained and set at correct elevations to allow for installation of specified depth of resilient safety surfacing to the correct finished grade.
- .3 Lay out the play equipment in the designated area to ensure compliance with safety zone clearances. Stake the locations of all equipment/site furnishings and obtain the approval of the Owner's Representative prior to installation. Lay out play equipment locations with flags and short lengths of string as required/requested by Owner's Representative. Obtain Owner's Representative approval before proceeding. Install with the required safety clearances between play equipment units and to retaining curb or other objects. The layout shall be in accordance with the drawings. Alternative layouts shall be approved by the Owner's Representative.

3.2 Installation of Compound Structures and Independent Activities

- .1 Install play equipment and resilient safety surfacing in strict adherence to manufacturer's instructions, level and plumb and maintaining recommended safety clearances. Adapt footing and anchoring methods as necessary to the requirements and specific site conditions of this project in accordance with approved shop drawings and in such fashion that work of other Sections is not damaged. Layout all equipment prior to construction.
- .2 Provide all concrete footings as required to properly place the equipment components. It is the Contractor's responsibility to adjust drainage pipe or other new utility locations to accommodate the equipment footings.
- .3 Place specified depths and areas of resilient safety surfacing as per detail drawings.

3.3 Protection

- .1 During construction of the play equipment structures, provide PVC web fence material in sufficient quantities and wrap the structures to prevent public access onto the equipment. Maintain the fencing wrap after completion of the play equipment and safety surfacing installation through completion of the project.

3.4 Inspections

- .1 Provide a min. 48 hours notice in order to schedule all inspections. Delay claims filed by the Contractor resulting from failure to provide adequate notice of inspection required will not be entertained. All aspects of this work shall be subject to inspection by the Owner's Representative or their designated inspector. Inspector/approval points shall be of a frequency sufficient to ensure adequate Quality Control in accordance with this specification and will occur thorough the duration of the Contract. The Contractor must supply access to the work for the Owner's Representative or their Inspector. As a minimum, inspections will occur as follows:
 - .1 Upon arrival of play equipment to the site.

- .2 After staked layout of proposed play equipment locations.
- .3 After play equipment anchor post installation.
- .4 Upon Final Acceptance/Assumption by the Vancouver Park Board.
- .2 The Contractor is required to visit the site a minimum of two (2) times during the warranty period to ensure all play equipment/site furnishings are performing satisfactorily/functioning as intended and perform any maintenance services required. The first visit is to occur approximately six (6) months after the Assumption Date by the Board and the second visit is to occur approximately two (2) weeks prior to the end of the warranty period.

3.5 Site Maintenance/Clean Up

- .1 The job site shall be kept in a neat, clean and orderly condition at all times during the installation process.
- .2 Footing excavation and backfilling shall be continuous so that the amount of open excavation at the end of each workday is minimized. Any open trench or other excavations shall be barricaded and marked with high visibility marking tape to current WorkSafeBC requirements.
- .3 Any damage to paving, planting or any other structures/elements due to settlement of improperly compacted footings shall be immediately repaired at the Contractor's expense to the satisfaction of the Owner's Representative.
- .4 Remove and disposal of offsite all surplus material, excess excavated materials, trash, debris and waste material from the work of this Section. This clean up shall include removal of all delivery packaging.

Schedule A: Inspection Report Form

Park Name: _____
Inspection Date: _____
Inspector's Name: _____

Location: _____
Time: _____

Individual Equipment Components	Equipment									
	Toddler Swing	Junior Swing	Tire Swing	Spiral/ Straight Slide	Spring Toys	See-Saws	Climbing Structures	Merry Go- Rounds	Composite Structure	Composite Structure
Chains										
S-Hooks/C-Hooks										
Seats/Tire/Belts										
Hanger Bearings										
Grease Fittings										
Stability/Tilting										
Exposed Concrete										
Entanglement Points										
End/Center Fittings										
Chain Covers										
Hand Rails										
Support Bars/Legs										
Fastening Point/Areas										
Sidewalls/Bedway										
Entrapment Point/Areas										
Sharp Edges/Points										
Stair/Steps										
Plastic Component Cracking/Damage										
Spring/Bars										
Handles										
Pivot Points										
General Site										

	Toddler Swing	Junior Swing	Tire Swing	Spiral/ Straight Slide	Spring Toys	See-Saws	Climbing Structures	Merry Go- Rounds	Composite Structure	Composite Structure 2	Safety Surfacing	General Site
Nuts and Bolts												
Ground Clearance												
Locking Devices												
Wood Checks/Splits (max. 19mm)												
Protrusions												
Caps/Plugs												
Protective Surfaces Borders												
Equip. Spacing/ Encroachment												
Bench Seats												
Debris/Broken Glass												
Asphalt Paths												
Fencing												
Condition: Satisfactory T												
Condition: Requires Attention X												

Other Comments:

END OF SECTION 11 68 13

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to excavate and backfill for all landscape paved areas, footings, walls, etc. indicated on contract drawings.
- .2 The work shall include but is not limited to the following areas:
 - .1 Excavation of subgrade
 - .2 Grading operations to attain sub grade design grades
 - .3 Import and placement and compaction of granular fill materials
 - .4 Compaction testing
 - .5 Removal and disposal of excess material off site

1.3 Related Work

- .1 Cast-In-Place Concrete Section 03 33 00
- .2 Hot Mix Asphalt Paving Section 32 12 16

1.4 Reference Standards

- .1 Contractor is responsible for complying with all current Work Safe BC requirements for site safety related to the scope of work in this section. This includes but is not limited to protection of personnel and site safety procedures related to open excavation.
- .2 All work under this section shall conform to the requirements of the American Society for Testing and Materials, Standards as referenced herein.

1.5 On and Off Site Construction Maintenance

- .1 Contractor shall be responsible for implementation, maintenance, and decommissioning of vehicle wheel wash facility. Decommissioning of wheel wash facility includes but is not limited to fill and grading of affected area to the satisfaction of the Owner's Representative.
- .2 Contractor shall be responsible for cleaning of adjacent municipal streets, private streets and driveways affected by vehicle movements on site or to and from the site.
- .3 Contractor shall be responsible for implementing and maintaining dust control measures for all on site activities of this section. Dust control measures shall meet all local bylaws and regulations.

1.6 Site Access

- .1 The Contractor shall be responsible for ensuring that there is minimal disruption of vehicle and pedestrian traffic flow on adjacent existing roads during work of this section.
- .2 The Contractor shall be responsible for providing warning signs, flashing lights, flag people barricades, etc. to ensure vehicle and pedestrian movement associated with the site or adjacent to the site meets all applicable municipal, provincial or federal requirements.

1.7 Protection

- .1 Prior to commencing any excavation work the contractor shall establish the location of any existing active buried utility or service lines, including service entry points. Mark these locations clearly on site to prevent accidental disturbance during the work.
- .2 Any utility or service which is presently in use, or not established as abandoned but which must be moved or otherwise disturbed, shall be referred to the utility or service company concerned so that they may advise on, co-ordinate, inspect necessary operation for relocation.
- .3 Costs incurred by any disturbance of existing active utilities and service lines, not called for under the contract documents, shall be borne by the Contractor.
- .4 Any damage done including settlement or collapse to existing active services caused by inadequate measures taken by the Contractor to prevent such disturbances shall be rectified immediately by the Contractor at no cost to the Owner.
- .5 The Contractor shall protect all adjacent structures and surfaces including but not limited to roadways and sidewalks from damage, direct or incidental as a result of work of this section.
- .6 The Contractor shall make good all damages to adjacent structures and surfaces including but not limited to roadways and sidewalks as a result of work of this section to the satisfaction of the Owner's Representative.

1.9 Deposits

- .1 The Contractor shall at no cost to the Owner shall obtain all damage and/ or crossing deposits required by the municipal, provincial, federal or utility to carry out the work of this section.

1.10 Tests and Approvals

- .1 The Contractor shall at no cost to the Owner and as part of the work of this section perform, or cause to be performed, all tests, inspections and approvals.

- .2 Should the test, inspection or approval require a representative sample of the material or workmanship the Contractor shall at no cost to the Owner supply the labour and materials necessary to provide the sample or test.
- .3 Should the test or inspection indicate that the material or work completed does not conform to the specifications the Contractor shall at no cost to the Owner promptly remove this work, dispose of it off site and re-execute it in accordance with the Contract Documents. The remedial work shall include retesting as required to establish conformance with the Contract Documents.

1.11 Submittals

- .1 Prior to the start of work for this section the Contractor shall submit the following to the Owner's Representative for review;
 - .1 Sieve analysis of granular material
 - .2 Source for supply of all materials (source shall be used throughout duration of project). Should a change of material source be proposed during work; provide samples and sieve analysis from proposed source.
 - .3 Company name, address and contact information for material testing company.
 - .4 Confirm in writing to the Owner's Representative that he/she has verified the locations of all underground services.
 - .5 Obtained in writing and submitted to the Owner's Representative at no Cost to the Owner permission from adjacent property owners and/or municipality to carry out work beyond the property limits of this contract if required to carry out the work of this section.
 - .6 Notify the Owner's Representative for on site review of sub grade preparation work forty-eight (48) hours prior to commencement of import, placement and grading operations.

PART 2: PRODUCTS

2.1 General

- .1 Review and approvals by a Geotechnical Engineer engaged by the Contractor shall be signed and sealed and submitted to the Owner's Representative prior to use of this material.

- 2.2 **Native Material Fill:** Will be considered but must be reviewed and approved by either the project Geotechnical Engineer or should a Geotechnical Engineer not be part of the project team a Geotechnical Engineer engaged by the Contractor at no cost to the Owner.

- .3 Pit Run Gravel:** To be well graded granular material, substantially free from clay lumps, organic matter and other extraneous material, screened to remove all stones in excess of maximum diameter specified in material description, e.g. (300mm Pit Run Gravel, 200mm Pit Run Gravel and 100mm Pit Run Gravel). Recycled concrete free from contaminated and other extraneous materials conforming to the specified gradations may be used as pit run gravel.

Sieve Size (mm)	Percent Passing
(300)	100
(200)	100
(100)	100
75	100
50	70-100
25	50-100
4.75	22-100
2.36	10-85
0.075	2-8

- .4 Granular Sub Base:** Shall be 75 mm (3") minus, clean, granular material free of organic material conforming to following gradation limits:

Sieve Size (mm)	Percent Passing
80	100
75	55-100
4.8	30-100
38	60-100
19	35-80
9.5	26-60
4.75	20-40
2.36	15-30
1.18	10-20
0.6um	5-15
0.3um	3-10
0.075um	0-5

- .5 Granular Base:** The 19 mm (3/4") crushed granular base shall consist of sound, durable particles, free from clay, organic material or other deleterious matter, evenly graded, to meet the following gradation requirements.

Sieve Size (mm)	Percent Passing
19	100
12.5	75-100
9.5	60-90
4.75	40-70
2.36	27-55
1.18	16-42
0.60	8-30
0.30	5-20
0.15	5-15
0.074	2-8

- .6 River Sand:** River sand to be free of organic material, salt and foreign objects and conform to the following gradation:

Sieve Size (mm)	Percent Passing
19	100
4.75	80-100
0.6	20-80
0.15	0-20
0.075	0-8

PART 3: EXECUTION

3.1 Excavation

- .1 All excavation and waste discharge permits shall be undertaken in accordance with the City of Vancouver's Policy and Standard Operating Procedure- Soil and Excavation Water Contamination Management.
- .2 Grade to elevations and dimensions indicated on contract documents or required by the work of this section or related sections.
- .3 Ensure that work of this section provides sufficient space to permit erection of forms, site elements and miscellaneous elements of related sections.
- .4 Excavation shall to ensure that the placement of fill materials are minimized.
- .5 Contractor shall phase his operation so that a stable slope at the edge of excavation is maintained all times. Where sloping of the sides of excavations are not possible the Contractor shall implement appropriate safety measures in accordance with current WCB of BC requirements.
- .6 During excavation, stockpile material suitable for backfill in a neat manner and sufficient distance from the trench to avoid slides and cave-ins.
- .7 All excavated materials not required or suitable for backfill shall be removed and wasted as indicated or as directed. Grade as required to prevent surface water from flowing into trenches or other excavations. Remove any accumulated water by pumping or other approved method.
- .8 All exposed excavation faces shall be protected from weather with appropriate tarps or plastic sheeting as soon as possible after being cut.
- .9 Remove all boulders, rock and stones larger than 150 mm (6") in diameter from excavated surfaces encountered during excavation. Fill cavities created with crushed granular base material compacted to 95% Modified Proctor Density.
- .10 Bottom of excavation to be level, free from loose material and debris.
- .11 Protect excavations against freezing. Frozen areas shall be thawed and protected from further frost until subsequent work has been completed.
- .12 All necessary precautions shall be taken to preserve all materials outside the required excavations in an undisturbed condition.
- .13 Costs incurred as a result of deterioration caused by activities or neglect of the Contractor or and fill required for over excavation as a result of action by the contractor are the responsibility of the contractor.

3.2 Placement of Granular Fill Material

- .1 Prior to the backfill operation of site excavation ensure the following actions have been completed:
 - .1 Concrete foundation walls and footings shall have reached specified strength unless otherwise approved by the Owner's Representative.
 - .2 All backfill materials shall have been inspected and approved by the Geotechnical Engineer.
 - .3 Each component of the backfill operation shall have been inspected and approved to by the Geotechnical Engineer at the time of placement.
 - .4 Compaction density tests shall have been completed and tests results reviewed and approved by the Geotechnical Engineer.
- .2 Place crushed granular sub-base in maximum 300 mm (1'-0") lifts to depths indicated on drawings. Compact each lift to 95% Modified Proctor Density.
- .3 Place granular base in maximum 150 mm (6") lifts to depths shown on the drawings. Compact each lift to 95% Modified Proctor Maximum Density.
- .4 Place all native material fill in uniform 300 mm (1'-0") compacted lifts to depths indicated on drawings. Compact each lift to 95% Modified Proctor Density.
- .5 Ensure that granular fill material is placed to the full width of the excavation, in uniform lifts, shaping each lift to smooth, even contours.
- .6 Ensure the placement and compaction of crushed granular sub-base and granular base does not segregate or degrade the aggregate.
- .7 Apply water as necessary during compaction to obtain specified density. If material is excessively moist aerate by scarifying with suitable equipment until moisture content is suitable for compaction.
- .8 Mechanical compaction equipment shall be used with extreme caution to prevent any undue pressure on foundation work. Do not use motorized compaction equipment directly adjacent to foundation or retaining walls.
- .9 Where backfill is required on both sides of foundation walls it shall be placed and compacted simultaneously on both sides of the wall.
- .10 All sub grade whether disturbed or undisturbed, shall be compacted to 95% Modified Proctor Density.
- .1 Soft areas or areas that do not meet specified compacted densities shall be over excavated and filled with compacted crushed granular base as required to obtain the specified compaction density.

3.3 Grading Subgrade and Granular Fill

- .1 Site sub grade shall be shaped to lines and elevations indicated on contract drawings.

- .2 Finished surface of sub grade and granular fill material shall have no irregularities exceeding 10 mm (3/8") when checked with a 3 M straight edge placed in any direction. Correct all sub grade and granular fill surface irregularities by loosening and adding or removing sub grade or granular fill material until surface is within specified tolerance. Correcting sub grade deficiencies by manipulating granular fill material is not acceptable.
- .3 Shaping of sub grade shall ensure uniform slope transitions with rounded, smooth profiles between changes in elevations
- .4 Ensure that sub grade preparation allows for depth of granular fill and finished materials as indicated on contract drawings.

3.4 Dewatering

- .1 All excavation and waste discharge permits shall be undertaken in accordance with the City of Vancouver's Policy and Standard Operating Procedure- Soil and Excavation Water Contamination Management.
- .2 Pump or otherwise continuously remove all water that has accumulated in excavation during the progress of the Work.
- .3 Do not divert water onto adjacent property.
- .4 Ensure that sediment control devices are in place as per municipal or provincial regulations prior to the start of dewatering operations. Do not divert dewatering effluent to natural water bodies.

3.5 Cleaning

- .1 Clean up and remove from the site, as the work proceeds any debris and waste material or rubbish resulting from the work of this section.
- .2 Transport all surplus excavated materials, fill materials, and debris off site to an approval disposal area.

END OF SECTION 31 23 10

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted, and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to protect existing trees on site, adjacent properties, and on adjacent road right-of-way and sites as indicated in the contract documents, including but not limited to:
 - .1 Survey and layout for locations of protective barriers.
 - .2 Installation, maintenance, adjustment during construction, and final removal of protective barriers and signs.
 - .3 Pruning as approved by the Owner's Representative including hand excavation and root pruning.
 - .4 Watering, fertilizing, and all other measures directed by the Owner's Representative as required to maximize the health and prospects for survival of the trees.

1.3 Related Work

- .1 Growing Medium Preparation and Placement Section 32 91 13

1.4 Reference Standard

- .1 City of Vancouver Tree Protection By-Law. (OR CITY OF VANCOUVER TREE PROTECTION BY-LAW 7347 OVERRIDDEN BY SPECIFICATIONS STATED HEREIN).
- .2 International Society of Arboriculture standards.
- .3 ANSI A300 Tree Pruning Guidelines

1.5 Definitions

- .1 The "Tree Protection Area" (T.P.A.) shall be established on site under the direction of the Owner's Representative. It must be demarcated on site and fenced off from all impacts of construction. The T.P.A. is defined as the "dripline", which is a line drawn vertically to the ground from the furthest horizontal extent of the canopy branches as measured around the full circumference of the tree. Minor adjustments may be required to this rule to meet site species/specific conditions. Confirm T.P.A. on site with Owner's Representative. In addition to the T.P.A. definition the following shall be minimum distances for protection barrier fencing from the trunk.

Diameter at height of 140cm (cm)	Minimum distance of protection barrier fencing from trunk (cm)
10	60
20	120
30	180
40	240
50	300
80	480
100	600

- .2 Excavation, soil stabilizing measures, shoring (if necessary) and related work shall be planned and executed such that no excavation or other construction activities occur within the Tree Protection Area. A variance may be obtained from the Board provided that the location, materials and methods are approved and supervised by the Owner's Representative.
- .3 No Owner approvals for root pruning beyond the limits of the T.P.A. are required. All severed or fractured roots over 2cm in diameter outside the T.P.A. are to be neatly cut back a min of 5 cm above damage with a clean, sharp tree pruning saw.

1.6 Qualifications

- .1 All pruning operations shall be carried out or under the direction of an I.S.A. Certified Arbourist using clean sharp pruning tools,

1.7 Quality Assurance

- .1 Inspection: The Contractor shall give at least forty-eight (48) hours notice to the Owner's Representative of the timing for root pruning, branch pruning, installation of protective barrier, and all other tree protection measures. The protective barrier shall be accurately located on site, prior to starting any hand excavation or root pruning. The Park Board Arbourist shall do or supervise all root pruning, branch pruning, etc. within the T.P.A. (The Park Board Arbourist shall be present when all work is being done along the line of the protective fence).
- .2 Where requested, all root pruning and branch pruning shall be done to recognized arboriculture industry standards by an I.S.A. Certified Arbourist or Tree Surgeon under direct supervision of the Owner's Representative.

PART 2: PRODUCTS

2.1 Protective Barrier

- .1 Orange plastic web snow fencing, 1.2m high "Tenax", as supplied by Ronco Sales Ltd., or pre-approved equal. Posts, minimum 75mm dia. or square wood posts or steel "Tee-Bar" posts minimum 1.8m lengths. Posts maximum 2.4m o.c.

2.2 Tree Protection Area Signs

- .1 Tree Protection Area signs shall be signs at least 900mm x 450mm, on painted plywood or other acceptable weather resistant material, stating:

TREE PROTECTION AREA, DO NOT REMOVE OR MOVE FENCE DURING
CONSTRUCTION:

No Dumping No Burning

No Storage No Cutting

No Machinery No Toxic Substances (paint, solvents, fuel, oils)

TO REPORT VIOLATIONS PHONE: 604-257-8400

2.3 Water, Fertilizers, Miscellaneous

- .1 Water, fertilizers and miscellaneous materials shall be as specified in other sections of the specification and as directed by the Owner's Representative.

2.4 Stakes and Fasteners

- .1 Wood Stakes: 38 x 89 ACQ treated wood or No. 1 grade cedar stakes.
- .2 Metal Stakes: 50mm diameter schedule 40 galvanized steel pipe or 1.8 (6'-0") long studded or drilled T Posts.
- .4 Zip Straps: 140mm (5.5") long, black, nylon lock straps.
- .5 Drain Tile: 150mm (6") diameter Schedule 40 PVC (polyvinyl chloride) perforated pipe conforming to ASTM D 1784.
- .6 Burlap: 10 ounce, untreated, woven, natural jute based burlap.

2.5 Fill Materials

- .1 Type 1 Fill: Clean, angular, crusher run natural stone, free from shale, clay, friable materials, roots and vegetable matter, and conforms to the following gradations:

Sieve Size	Percent Passing
50mm	100
20mm	95 - 100
13mm	75 - 90
10mm	57 - 83
No. 4	37 - 61

- | | |
|---------|---------|
| No. 16 | 12 - 32 |
| No. 32 | 8 - 23 |
| No. 200 | 5 - 10 |
- .2 Type 2 Fill: Clean river pump sand and gravel material, free from silt, clay, loam, friable, or soluble materials and vegetable matter.
- .3 Type 3 Fill: Approved premixed growing medium per Section 32 91 13
- .4 Clear Stone: Shall consist of clean, round, washed stone. Acceptable material includes 10 mm (3/8") rock conforming to the following gradations.

Sieve Size	Percent Passing (10mm)
14mm	100
10mm	85 - 100
5mm	10 - 30
2.5mm	0 - 10
1.25mm	0 – 5

PART 3: EXECUTION

3.1 Protective Barrier Fence Erection

- .1 Before starting site work, install a clearly visible continuous protective barrier fence at the approved lines for the "Tree Protection Area" (T.P.A.) (locations as shown on Drawings). Maintain this barrier until Substantial Performance and remove from the site at that time. Support snow fencing on steel posts driven vertically into the ground, at 2.4m on centre, or as otherwise approved by the Owner's Representative.

3.2 Tree Protection Area Signs

- .1 Install Tree Protection Area signs as specified on the protective barrier fence. For large areas, install a minimum of four signs, one each side of the T.P.A. Signs shall be well secured by 'Zap Strap' or similar method and shall be maintained in place until Substantial Performance.
- .2 Take all measures necessary to prevent the following activities within tree protection areas except as authorized by the Owner's Representative.
- .1 Storage of materials or equipment.
 - .2 Stockpiling of soil or excavated materials.
 - .3 Burning of any kind.
 - .4 Excavation or trenching.
 - .5 Cutting of roots or branches.
 - .6 Travel of equipment or vehicles.
 - .7 Disposal or spillage of toxic matter.

3.3 Root Pruning

- .1 Before the start of any machine excavation, hand excavate along the established limit of excavation and prune all roots along the line. Cuts shall be clean, using approved arboriculture practice using clean, sharp pruning tools.
- .2 Trees to be transplanted shall be root pruned as directed by the Owner's Representative.

3.4 Branch Pruning

- .1 Do not prune any retained tree to compensate for reduction of roots unless specifically instructed by the Owner's Representative.

3.5 Watering And Fertilizing

- .1 Retained trees shall be watered thoroughly and deeply, as necessary to supplement rainfall to maintain plant turgidity without prolonged saturation of the root zone. The method, amount and frequency of watering shall be as recommended by the Owner's Representative. **SPEC NOTE: TAILOR WATER SCHEDULE SPECIFIC TO PROJECT:** Suggested Summer Watering Schedule: The T.P.A. is to be watered via sprinkler, soaker hose, or by tank with a watering wand at least three times per week during June, July, August, and September or as directed by the Owner's Representative.
- .2 Fertilize Retained Trees to stimulate regeneration of lost roots and foliage. Fertilization program only as recommended by the Owner's Representative.

3.6 Excavation Around Trees and Shrubs

- .1 Excavation within drip line of trees shall be in strict accordance with those areas indicated on the contract documents or as directed by the Owner's Representative.
- .2 Excavation for New Construction within Drip Line of Tree(s):
 - .1 Hand excavate to minimize damage to root systems.
 - .2 Use narrow tine spading forks to probe and comb soil to expose roots.
 - .3 Relocate roots into backfill areas whenever possible. If large, main lateral roots are encountered, expose beyond excavation limits as required to bend and relocate without breaking.
- .3 Utility trenching Within the Drip Line of a Tree(s):
 - .1 Tunnel under and around roots by hand digging.
 - .2 Do not cut main lateral roots.
 - .3 Cutting of smaller roots that interfere with installation of new work shall be done with clean, sharp pruning tools.

- .4 Roots encountered immediately adjacent to the location of new construction that are not readily maneuvered to beyond the excavation area shall be cut 150mm (6") back from new construction.
- .5 Protection of Exposed Roots: Do not allow exposed roots to dry out prior to placement of permanent cover. Provide one of the following temporary remedial measures:
 - .1 Provide temporary earth cover using Type 3 fill.
 - .2 Pack with four (4) layers of wet, untreated burlap. Maintain dampness.
- .6 Temporarily support and protect exposed roots from damage until permanently relocated and covered with backfill. Water backfill around roots to eliminate voids and air pockets.
- .7 When directed by the Owner's Representative, pruning operations may include the removal of limbs to restore natural shape or reduce the area of the crown of the tree(s) or shrub(s). No crown pruning shall be undertaken without the consent of the Owner's Representative.
- .8 Trees and shrubs to remain are to be thoroughly watered as required to maintain a healthy condition throughout the construction period. Contractor to document all watering operations and submit to the Owner's Representative one (1) copy of documentation at substantial performance.

3.7 Raising Grade Around Existing Trees

- .1 DO NOT RAISE GRADES within or adjacent to the tree protection zone unless authorized by Owner's Representative.
- .2 Drain Tile Installation: Install drain tile on existing grade as follows:
 - .1 Layout drain tile in a spoke like arrangement consisting of eight (8) horizontal lines radiating out from the trunk of the tree to the limit of branch spread. Horizontal line to be approximately 150 mm (6") from base of trunk.
 - .2 Slope drain tile at a minimum of 1% away from trunk of the tree to the limit of branch spread. Connect ends of each of the spokes laterally around the perimeter of the tree to form a continuous, uninterrupted circle.
 - .3 Install vertical drain tile at each end of each spoke. Vertical drain tile to extend to proposed finished grade (vertical drain tile provides a means of aeration and watering).
 - .4 Owner's Representative to review drain tile installation prior to backfill operation.
- .3 Drain Tile Backfill:
 - .1 Type 1 Fill: place a minimum of 150mm (6") cover around perimeter of drain tile.
 - .2 Type 2 Fill: place a Type 2 Fill to minimum depth of 150mm (6") over the Type 1 Fill.
 - .3 Type 3 Fill: place Type 3 Fill in 150 mm (6") lifts to raise grade specified elevations. Ensure allowance is made for depth of growing medium.

- .4 Fill vertical drain tiles with Clear Stone. Ensure Clear Stone are flush with top of drain tile.

3.8 Lowering Grade Around Existing Trees

- .1 DO NOT LOWER GRADES within or adjacent to the tree protection zone unless authorized by Owner's Representative.
- .2 Lowering Grade:
 - .1 Carefully excavate by hand from limit of drip line of branch spread to proposed grade until the specified gradient has been achieved.
 - .2 Re bury or prune and remove roots as per the instructed by the Owner's Representative.
 - .3 Construct a growing medium dike at dripline to retain water. Dike to be constructed at each individual tree location unless instructed otherwise by Owner's Representative.
- .3 Excavation Through Root Area: If excavation through root area is required, excavate around roots by hand.

3.9 Surplus Material

- .1 Remove surplus material from site and dispose of at approved disposal area.

END OF SECTION 32 01 56

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to install of hot-mix asphalt concrete paving on base and subbase(s) materials, on grade as indicated in the contract documents.
- .2 Restore all existing asphalt paving if damaged or deteriorated due to work of this Contract.

1.3 Related Work

- .1 Site Preparation and Grading Section 01 89 13

1.4 Reference Standards

- .1 Materials, mix designs, testing and application procedures shall comply with the requirements of the British Columbia Road Builders and Heavy Construction Association Specification for Hot-Mix Asphalt Concrete Pavement, revised June 1989.
- .2 Materials, mix designs, testing and application procedures shall comply with the requirements of the (MMCD) Master Municipal Specification Section 32 12 16 Hot Mix Asphalt Concrete Paving.
- .3 Sampling Mineral Aggregates ASTM D75
- .4 Sampling Bituminous Mixtures ASTM D79
- .5 Sieve Analysis of Aggregates ASTM D136
- .6 Specific Gravity of Aggregates ASTM C127 and ASTM C128
- .7 Determination of Bitumen Content ASTM D1097
- .8 Bulk Density of Compacted Asphalt Concrete Paving Mixtures ASTM D2726
- .9 Marshall Procedures for the Preparation and Testing of Bituminous Mixtures ASTM D1559
- .10 Quantity of Bitumen Absorbed by Aggregates - "Maximum specific Gravity of Bituminous Mixtures" ASTM D2041

1.5 Submittals

- .1 Submit sieve analysis for grading of both base and subbase materials.
- .2 Submit hot mix asphalt design and trial mix test results to the Owner's Representative for review at least one week (7 days) **prior to** commencement of work of this Section. See Item 1.10 also.

1.6 Site Conditions

- .1 Start of work shall signify acceptance of site as satisfactory and no claim will be recognized for extra work nor any allowance made for defective work due to site conditions.
- .2 Investigate the site to verify information shown in Contract Documents. **Verify that existing grades are as shown on Drawings and notify Owner's Representative immediately of any discrepancies.**
- .3 Review existing site conditions with regard to subsurface conditions. Data on indicated subsurface conditions is not intended as representations or warrants of continuity of such conditions. Additional test borings and other exploratory operations may be made by bidders at no cost to The Board. Notify Owner's Representative prior to carrying out any such work.

1.7 Protection

- .1 Verify locations of all underground utility and drainage lines. Take all necessary precautions to protect unit precast paving, curbs, utilities and other site elements and work of other trades. Make good any damage to the satisfaction of Owner's Representative at no additional cost.
- .2 Immediately report any damage to the site or danger to persons on/near site to all concerned parties (Owner's Representative).
- .3 Prior to commencement of work of this section, erect warning signs at all locations where the public may gain entrance to the project site. Provide all necessary construction barricades as requested by Owner's Representative to protect the public from accidents occurring during construction.

1.8 Quality Assurance

- .1 Installation shall be by an installer with at least 5yrs. min. experience in placing hot-mix asphalt concrete paving on projects of similar size/scope. The contractor must be prepared to advise of previous work by submission of a written list if requested by Owner's Representative.

1.9 Environmental Conditions

- .1 Do not install hot-mix asphalt concrete pavement, base, or subbase during heavy rain or snowfall, cool temperatures or other unsuitable conditions as determined by Owner's Representative. Place paving under favourable weather conditions; with temperatures exceeding 4 degrees Celsius. Base and subbase surface should be dry and stable. **Air temperature must be at least 5 degrees Celsius to place asphalt mixtures. (Air temperature must be 10 degrees and rising for tennis and sport courts)**
- .2 Do not install asphalt concrete paving on frozen, wet, muddy or rutted base(s).

- .3 Examine substrates and notify Owner's Representative of any deficiencies related to compaction or incorrect grades or slopes. Ensure deficiencies are corrected prior to commencement of work of this Section.
- .4 Use Oil Soak Blotters in catch basin spillways and elsewhere as directed to avoid spilling oil into site drainage system(s) or adjacent watercourses.
- .5 Allow asphalt concrete paving to completely cure prior to washing the surface to avoid spilling oil into site drainage system(s) or adjacent watercourses.

1.11 Testing and Approvals

- .1 The Contractor shall provide Owner's Representative with min. 48 hrs. notice to arrange for inspections and compaction tests.
- .2 An independent testing agency shall be appointed and paid for by the Contractor to perform sieve analysis and density testing to confirm compliance with this Specification. Test results shall be submitted directly to the Owner's Representative. Items to be tested shall include but not necessarily be limited to the following:
 - .1 Density testing of subgrade, subbase(s), base and asphalt.
 - .2 Benkleman Beam Testing may be required prior to paving.
 - .3 Asphalt cores for density analysis.

Note: Additional density testing may be requested by Owner's Representative at any time after placement of base course(s)/asphalt concrete paving to confirm compliance with the contract documents. **Any additional tests will be at Owner's expense.**
- .3 Prior to commencing work of this Section, mix designs shall be submitted to Owner's Representative for approval. The contractor shall furnish sufficient evidence the proposed mix will produce satisfactory results to Owner's Representative (if requested). **Design of the Asphalt Mixes shall be supplied by the Owner's Representative where applicable.**

PART 2: PRODUCTS

2.1 Hot-Mix Asphalt Concrete

- .1 Refer to Master Municipal Specification Section 02512 Hot-Mix Asphalt Concrete Paving and COV Supplemental Specifications to Master Municipal Specifications, current edition (COV Engineering Standards and Detail Dwgs.) for asphalt cement, aggregates and gradations, sand equivalents, abrasion, absorption, mineral fillers and all aspects of the mix design.

- .1 Reclaimed Asphalt Pavement (RAP): Crush and screen so that 100 % of reclaimed asphalt pavement material passes the 37.5mm screen prior to mixing. Max. allowable RAP in any Mix Design will be 20% by mass. Higher percentage of RAP may be accepted by Owner's Representative if Contractor demonstrates that supplier can produce mix meeting requirements of the specification.
- .2 **Do not change job-mix without prior approval of Owner's Representative. If change in material source is required, Contractor shall submit new mix formula for review/approval.**

2.2 Base

- .1 Refer to Master Municipal Specification Section 02226 Aggregates and Granular Materials and COV Supplemental Specifications to Master Municipal Specifications, current edition (COV Engineering Standards and Detail Dwg.).

2.3 Subbase

- .1 Refer to Master Municipal Specification Section 02226 Aggregates and Granular Materials and COV Supplemental Specifications to Master Municipal Specifications, current edition (COV Engineering Standards and Detail Dwg.).

PART 3: EXECUTION

3.1 Plant And Mixing Requirements

- .1 Refer to Master Municipal Specification Section 02512 Hot-Mix Asphalt Concrete Paving and COV Supplemental Specifications to Master Municipal Specifications, current edition.

3.2 Base Inspection

- .1 Prior to commencement of hot-mix asphalt concrete paving the granular base shall be inspected by Owner's Representative and the Contractor. Provide min 48 hrs. notice prior to desired paving time to allow for inspection to be scheduled. Areas of work to receive hot-mix asphalt concrete paving shall be examined and unsatisfactory conditions reported to Owner's Representative; **commencement of work shall imply acceptance of conditions.** If Owner's Representative have doubts about acceptability of the base, a Benkleman Beam Test may be ordered and work is not to proceed until such testing has been approved. The contractor shall provide a loaded single axle truck with a rear axle load of 8165 kg to be used in conducting tests.
- .2 Any areas which are found to be soft or wet shall be excavated and backfilled with the granular subbase and base as specified.

- .3 The subgrade shall be well drained. Verify that the subgrade is dry, uniform, even and ready to support subbase, base and asphalt concrete paving and the intended loads. Base course shall be examined for adequate compaction and uniform surface. The base course to be compacted to 95% Modified Proctor Density.
- .4 Verify the gradients and elevations of the subgrade and base are correct to allow installation as per the details and meet the intended finished grades. **Notify Owner's Representative of any discrepancies prior to proceeding with installation.**

3.3 Preparation Of Subgrade And Placing Base Courses

- .1 Prepare subgrade to requirements of Section 01 89 13 Site Preparation and Grading.
- .2 Place compacted aggregate base course on compacted subgrade to finished depths as detailed.
- .3 The sub-base or subgrade as detailed shall be compacted to 95% Modified Proctor Density.

3.4 Placing And Compacting Asphaltic Concrete

- .1 Place depth of asphalt concrete to thicknesses, grades and lines as shown on the contract documents or as directed by Owner's Representative. To be placed in compacted lifts of specified thicknesses. **Arrange for and complete paving in a continuous operation, avoid delays in laying parallel strips.**
- .2 Placing Conditions:
 - .1 Place asphalt mixtures only when air temperature is above 5 degrees Celsius (10 degrees and rising for tennis and sport courts)
 - .2 When temperature of surface on which material is to be placed falls below 10 degrees Celsius, provide additional rollers as necessary to obtain required compaction before cooling.
 - .3 Do not place hot-mix asphalt concrete when pools of standing water exist on surface to be paved, during rain or snow or when the surface is damp. Refer to 1.9 Environmental Conditions.
- .3 Machine place asphalt to specified compacted thickness (maximum lifts of 50mm after compaction) over compacted and graded aggregate base. Some areas may require thicker applications to fill in low spots and to ensure positive drainage. **Hand place/tamp as required around all site fixtures.**
- .4 When asphalt concrete meets site fixtures, furnishings, concrete walls, walks or other flare the asphalt upwards around the base of fixture to ensure water drains away from the fixture and is in compliance with the overall grading and drainage plans for the Project.

- .5 Commence rolling and/or manual compaction immediately after the bearing capacity is adequate to support the required compaction equipment, without undue displacement of material or surface cracking. Rolling and/or compaction shall be carried out in compliance with the Standards noted in Item 1.3. Hand tampers may be used at all inaccessible areas. Compaction in these locations shall be to the Owner's Representative's approval.
- .6 Along building walls, curbs, gutters, headwalls, manholes and similar locations not accessible to a roller, thorough compaction shall be obtained by means of hot hand or smaller mechanical tampers before the mixture has set. At all contacts of this nature, the joints between these structures and the surfacing must be effectively tack coated with an emulsified asphalt.
- .7 The finished surface is to be smooth and rolling to allow for positive drainage of all areas.
- .8 **Notify Owner's Representative min. 48 hrs. prior to flooding to arrange for inspection.** Flood the entire asphalt concrete surface area after placement to ensure positive drainage in accordance with the grading plans.
- .9 **Make all necessary repairs to ensure positive drainage. Deflecting, ponding or other surface grading problems shall be corrected by cutting out the affected area and replacing with new asphalt; mixes and lift depths to match the original specification. Make good any surfaces over repaired asphalt to the satisfaction of the Owner's Representative. Final repair process subject to review/approval with Owner's Representative.**
- .10 All asphalt concrete pavement edges shall have a uniform, beveled, tidy and straight appearance. **Border planks or sawcut edges are not acceptable.**
- .11 Both Lower and Upper Course asphalt concrete joints shall be homogeneous with the rest of the surface and carefully matched for texture and elevation. All joints which are rejected by the Owner's Representative are to be cut out and redone to Owner approval. Asphalt joints to be done in accordance with the Standards referenced in Item 1.3 of this Specification.

3.5 Existing Asphalt

- .1 Repair all existing asphalt concrete that has been damaged/broken or eroded due the Work of this Contract.
- .2 Where new asphalt concrete paving abuts existing asphalt concrete paving make good all cracked, damaged or eroded areas to a distance of 600mm back from the intersection to provide a uniformly graded, smooth and solid transition with the new work.
- .3 Where existing asphalt is to be overlaid, prior to installing asphalt concrete mix, the surface shall be cleaned of loose or foreign material and tack coated in accordance with Section 02547 of the MMCD.

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3.7 Finished Tolerances

- .1 Finished asphalt paving surface shall be within 6mm of design elevation but not uniformly high or low.
- .2 Finished asphalt surface shall have no surface irregularities exceeding 6mm when checked with a 3m straight edge placed in any direction (3mm in 3m for tennis and sport courts).
- .3 The final surface elevation of asphalt pavement shall be 3-7mm above adjacent drainage inlets, grates, concrete collars, concrete curbs, walks or gutters or channels after compaction/rolling to compensate for minor settling. **Confirm with the Owner's Representative.**

3.8 Thickness Tolerance

- .1 The minimum asphalt concrete pavement thickness specified herein shall mean the average compacted thickness as determined from cores taken as dictated by the Owner's Representative from random locations around the site area being paved. The Contractor is to repair the core hole locations.
- .2 The average thickness of cores shall equal or exceed the specified pavement thickness and no individual core shall be more than 5mm less than the specified thickness detailed.
- .3 Any paved surface area failing the core thickness testing criteria shall receive a minimum 12mm lift of Upper Course Asphalt.

3.11 Site Maintenance/Adjustments And Cleaning

- .1 Correct any surface irregularities that develop or have been noted prior to completion of rolling process by first loosening the surface mix and removing or adding material as required.
- .2 If irregularities or defects remain after final compaction, remove the surface course immediately and lay new material to form a true and even surface. Compact immediately to specified density.
- .3 Surplus material shall be cleared away and removed from the work site.
- .4 Excess material remaining on the Lower Course surface shall be brushed away and removed from the work site, prior to installing the Upper Course.
- .5 After removal of excess material/debris check final elevations for conformance with the drawings.

END OF SECTION 32 12 16

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to install Portland cement concrete walks with finish as indicated in the contract documents.
- .2 Work of this section includes but is not limited to the supply, testing, provision of tooled joints, and or sawcut joints curing and finishing of horizontal concrete surfaces.
- .3 Scope of this section includes all formwork, the supply and installation of reinforcing, expansion joint fillers and joint sealants, aggregate required for complete installation.

1.3 Related Work

- | | | |
|----|--------------------------------|------------------|
| .1 | Excavation and Backfill | Section 31 23 00 |
| .2 | Cast in Place Concrete | Section 03 33 00 |
| .3 | Concrete Forms and Accessories | Section 03 10 00 |
| .4 | Concrete Reinforcing | Section 03 20 00 |
| .5 | Concrete Finishing | Section 03 35 00 |
| .6 | Abrasive Blast Finish | Section 03 35 10 |

1.4 Reference Standards

- .1 CAN/CSA-A23.1, Concrete Materials and Methods of Concrete Construction
- .2 CAN/CSA-A23.2, Methods of Test for Concrete
- .3 CAN/CSA-A23.4, Architectural Concrete
- .4 A23.1-09/A23.2-09, Concrete materials and methods of concrete construction/Test methods and standard practices for concrete

1.5 Testing and Approval

- .1 A qualified testing agency paid by the Contractor and approved by the Vancouver Park Board shall be appointed to prepare mix designs, perform field quality tests and test and report on concrete strength.
- .3 Where tests or inspections reveal work not in accordance with the Contract requirements, the Contractor shall pay costs for additional inspections or tests required by the Owner's Representative to verify acceptability of current work.

- .4 Testing shall be carried out for slump and air content for every truckload of concrete prior to the placement of any concrete. Cast specimens for compressive strength testing at seven (7) and twenty eight (28) days (one (1) specimen tested at seven (7) days and the average of 2 specimens at 28 days) in accordance with CAN/CSA-A23.2. Test results shall be provided to the Owner's Representative for review and records.
- 5 Concrete testing will be scheduled by the Contractor. Any concrete testing conducted by the Owner does not relieve the Contractor or Concrete Supplier of the responsibility to maintain their own quality assurance programs.

1.7 Qualifications

- .1 Performance of work of this section shall only be carried out by skilled workers with a minimum of three (3) years experience in this type of work and finishing.

PART 2: PRODUCTS

2.1 Materials

- .1 Concrete mixes and materials: Shall be in accordance with CAN/CGSB A-A23.1, Table 5, Alternative 1 of CAN/CSA-A23.1 with the following criteria specific to this Section:
 - .1 Submit proposed mix designs to Owner's Representative a minimum of three (3) days prior to concrete placement.

Type 1 and 2- Broom and Abrasive Blast Finish Concrete

Slump	80mm, (3"), +/- 20mm, (3/4")
Air entrainment	5% to 8% (14-20mm aggregate)
Maximum aggregate size	14mm (9/16")
Water to Cement ration (W/C)	0.45 max
Minimum 28 day compressive strength	32Mpa
Exposure Class	C2

- .2 Non-staining type form release agent: chemically active release agents containing compounds that react with free lime to provide water soluble soap.
- .3 Expansion Joint Material: 13mm (1/2") Resilient, flexible, non-extruding, expansion-contraction joint filler. Cellular fibers securely bonded together, uniformly saturated with asphalt. When compressed to half of original thickness, recover to a minimum of 70 percent of original thickness. Joint filler shall conform to ASTM D1751. Acceptable suppliers include by W R Meadows ; or other pre approved equal.
- .4 Bond Break Tape: Masking tape, width to suit joint size.
- .5 Joint Cleaner; xylol, methyl ethyl ketone or non-corrosive type recommended by sealant manufacturer and compatible with joint filler.
- .6 Joint Primers; shall be type recommended by caulk sealant manufacturer.

- .7 Joint Sealant: Non sag, Self-leveling two (2) part polyurethane type, conforming to CGSB 19.24-M80, Type 1, Class B. Colour as selected by Owner's Representative from standard range. Acceptable products include Sikaflex-2c NS Mix TG, manufactured by Sika or preapproved equal.
- .9 Form Release Agent: Eco-Coat by W R Meadows; or other pre approved equal.
- .10 Curing Compound: Vocomp – 20 water based curing and sealing compound by W R Meadows; or other pre approved equal.
- .11 Curing Blanket: Non staining material capable of retaining sufficient moisture to ensure optimal wet cure conditions as per CAN/CSA-A23.1. Burlap and Poly will not be accepted. Acceptable products include;
 - .1 Ultra Cure NCF as manufactured by McTech Group Inc. (www.ultracure.net) or pre approved equal
 - .
- .12 The following materials shall not be used unless pre approved in writing by the Owner's Representative;
 - .1 Calcium chloride either as a raw material or constituent of another admixture.
 - .2 Super plasticizing admixtures

PART 3: EXECUTION

3.1 Subgrade Preparation

- .1 Sub grade preparation to lines and levels indicated on the Contract drawings related to finished grade. Contractor to allow for sufficient excavation to include build up and thickness of specified granular materials and finish materials.
- .2 Compact to minimum 95% Modified Proctor Density in compliance with ASTM D698 (all following references to density imply compliance with ASTM D698).

3.2 Granular Subbase and Crushed Granular Base Course

- .1 Place sub base and crushed granular base material to design grade as shown on drawings. Material to be compacted to 95 % MPD.
- .2 Where depths exceed 150 mm (6") ensure crushed granular sub base and granular sub base material are placed in 150 mm (6") lifts, compacting to 95% MPD between the placement of each lift.
- .3 Owner's Representative to review compacted crushed granular base prior to placing forms for concrete flat work or control devices for extruding equipment.

3.3 Formwork

- .1 Steel forms free from twists and warps following lines and shapes indicated on detail drawings.
- .2 Wood forms to be of select dressed lumber, straight and free from defects and thoroughly cleaned following lines and shapes indicated on detail drawings.
- .3 Flexible forms to be used for all curves less than 6.0m (20'-0"), radius, or as required to form smooth curve. Ensure transition at tangent of curve is true and smooth.
- .4 Set forms to line and grade as shown on drawings, free from waves or irregularities in line or grade.
- .5 Set special forms as required around catch basins, manholes, poles or other objects as shown on drawings.
- .6 Tolerances:
 - a. Maximum horizontal deviation: 6mm (1/4")
 - b. Maximum vertical deviation: 6mm (1/4")
 - c. Maximum deflection from horizontal or vertical alignment to be 6mm in 3m (1/4" in 10'-0")
- .7 Adequately brace forms to maintain specified tolerances after concrete is placed.
- .8 Ensure forms are clean, free from extraneous material prior to the application of form release agent. Form release to be applied as per manufacturers written instructions.

3.4 Owner's Representative Review

- .1 **Obtain Owner's Representative's approval prior to placing concrete.**

Notify Owner's Representative a minimum of forty-eight (48) hours in advance of concrete placement for review of formwork. Owner's Representative review to include but is not limited to:

 - .1 Forms are properly set at required horizontal and vertical alignment,
 - .2 Forms are sufficiently rigid,
 - .3 Forms are clean and ready for placement of concrete.

3.5 Concrete Placement

- .1 Concrete Mix Equipment; Concrete shall be delivered to the site in transit mix trucks from a commercial batch plant that conforms to CAN/CSA-A23.1.
- .2 Concrete Placing; In accordance with CAN/CSA-A23.1. Do not place concrete during rain or on wet or frozen base.
- .3 Do not place concrete when air temperature appears likely to fall below 5 degrees Celsius (41 degrees F) within 24 hours, unless specified precautions are taken. Provide Owner's Representative with written construction process of concrete placement for work undertaken in these conditions.
- .4 Schedule concrete placement to ensure sufficient daylight hours available to permit edging and finishing. Place concrete within 1.5 hours of batching time.

- .5 Install mesh or rebar reinforcing at mid depth of concrete slab. Place concrete as per CAN/CSA -A23.1.
- .6 Moisten crushed granular base immediately prior to placing concrete.
- .7 Place concrete in forms, ensuring no segregation of aggregate. Vibrators shall be adequately powered and sufficiently intense to cause the concrete to compact readily into place. Systematically apply vibrators at such intervals that the zones of influence of the vibrator overlap. Insert the vibrator vertically into the concrete long enough to ensure that the concrete is properly compacted. Do not apply vibrator directly to the reinforcing steel or to the forms. Employ a sufficient number of vibrators so that the required rate of placement vibration throughout the entire volume of each layer of concrete is achieved. Keep one spare vibrator at site for emergency use.
- .8 Concrete to be placed in continuous operation until entire panel (expansion joint to expansion joint) or section has been completed.
- .9 The Contractor shall notify all trades sufficiently in advance to ensure that provision is made for openings, inserts and fasteners. He shall cooperate with all trades in the forming and setting of all slots, sleeves, bolts, dowels, hangers, inserts, conduits, clips, etc., whether they are in his scope of work or not. Depress concrete locally around drains to facilitate drainage.
- .10 Discontinue placement at expansion, construction or isolation joints only.

3.6 Addition of Mix Water

- .1 Mix water addition shall be in strict accordance with CAN/CSA A-A23.1, clause 18.4.3. No water from the truck system or elsewhere shall be added after the initial introduction of the mixing water for the batch except when, at the start of discharge, the measured slump of the concrete is less than specified and no more than 60 minutes have elapsed from the time of batching to the start of the discharge. In this case water may be added by the producer up to an amount not exceeding 12 litres per cubic metre (2 gallons per cubic yard). The resulting concrete must satisfy the specified requirements.

3.7 Expansion Joints

- .1 Unless otherwise indicated on drawings form transverse expansion joints at both ends of curb returns and at a maximum spacing of 10m for sidewalks, at each end of driveway crossings and at tangent points on circular walk.
- .2 Extend through full depth of concrete and terminate 12 mm (1/2") below finished surface to allow for approved sealant. Apply bond break tape before applying sealant.

3.8 Pre-Molded Joint Filler and Expansion Joint Sealant for Exposed Aggregate Paving

- .1 Locate and install construction joints and pre-molded expansion joints as provided by pattern break indicate on design drawings and at junction with other surfaces. Care shall be taken to construct clean joints free from any foreign material that will impair the proper function or the material.
- .2 Unless shown otherwise, pre-molded joint filler shall extend for the full depth of the joint. Pre-molded joint filler shall terminate 12 mm below the top of the joint. Fill 12mm space with joint expansion joint sealer in accordance with the manufacturers instructions. Apply bond breaker tape before applying sealant if integrated fibreboard is used.

3.8 Control Joints

- .1 Tooled Control Joints:
 - .1 At locations indicated on contract drawings construct control joints at maximum 1.5m (5'-0") intervals.
- .2 Sawn Control Joints;
 - .1 At locations indicated on contract drawings as soon as the concrete can be cut without raveling. Typically this occurs no later than sixteen (16) hours after placing. Contractor shall, through the mockup procedure satisfy himself that the typical cure time is sufficient and adjust as required to ensure joints can be cut without ravelling.
- .3 Construct control joints whether saw cut or tooled to minimum 1/4 depth of concrete section at point of cut or as otherwise shown on project details.

3.9 Isolation Joints

- .1 Form isolation joints around all poles, hydrants, manholes and all structures or fixed objects located within the concrete section by using approved expansion joint material.
- .2 Form longitudinal isolation joints between sidewalk and abutting curb and gutter, abutting utility strips, abutting structures using expansion joint material.
- .3 Use expansion joint material to form isolation joints between sidewalks and abutting walls and structures.

3.10 Caulking Sealant

- .1 Caulking to be applied no earlier than fourteen (14) days after placement of concrete unless specified by the manufacturer of caulking sealant.
- .2 Ensure that all surfaces of the joint to be caulked sealed are clean and dry prior to start of caulking sealing operation.
- .3 Joint faces shall be primed, expansion joint material covered with bond break tape prior to the application of caulking sealant material.

- .4 Take all necessary precautions to ensure that primer does not stain concrete surface and that caulking sealant material is applied as per the manufacturers instructions within the confines of the joint. Clean all excess caulking from concrete surfaces.

3.11 Finishing

- .1 Pre finish surface of concrete sidewalks and utility strips to smooth surface with magnesium or wood float trowel.
- .2 The finish to concrete surfaces shall be as noted on contract drawings.
 - .1 Type 1 Concrete Finish: Broom to areas indicated on contract drawings shall form light broom marks as per approved mockup perpendicular to the path of travel.
 - .2 Type 2 Concrete Finish: Abrasive blast finish to areas indicated on contract drawings as per approved mockup.
 - .3 Alternate finishes as per approved mockup to areas indicated on contract drawings or if noted on contract drawings to match adjacent finish.
- .3 Grooves, scoring or saw cutting used for aesthetic purposes as shown on the drawings or as directed by Owner's Representative, to be marked with proper tools or saw cut to depths shown on drawings.
- .5 When contract drawings indicate broom finish round edges of joints with steel edging tool to a width of 50mm (2") around perimeter of each panel or as shown and described on drawings.
- .6 Under no circumstances is concrete to be overworked by troweling, dusted with dry cement or finished with a mortar coat.
- .7 Finished surface to be as specified, match the approved mockup and to satisfaction of Owner's Representative. Sections of cast in place concrete pavement that do not conform to this specification section, do not match the mockup or are not to the satisfaction of the Owner's Representative shall be removed and replaced by the Contractor at no cost to the Owner.

3.12 Curing

- .1 Type 2 Concrete Finish: revise as necessary for particular project.
 - .1 Moist cure and protect concrete to CAN/CSA-A23.1, Clause 7.4, and as directed by this specification. Curing compounds for are not an acceptable substitute for Type 2 concrete.
 - .2 Curing Blanket; completely cover concrete to be cured as soon as the concrete can bear the weight of moist burlap.
 - .3 Ensure curing blanket overlaps of a minimum of 150mm (6") between panels and 300mm (12") minimum overlap at edge of concrete slab and is in direct contact with concrete surface.

- .4 Thoroughly wet the curing blanket and keep saturated during the curing period with water spray fine enough to avoid damage to the concrete surface.
- .5 Contractor to ensure that curing blanket is kept wet at all times during the seven (7) day cure period.
- .2 Type 1 Concrete Finish:
 - .1 Apply curing compound as per manufacturer's written instructions.
- .3 When temperature is below 5 degrees Celsius (41 degrees F) take measures necessary to ensure that the ambient air temperature around the concrete is not less than 10 degrees Celsius (50 degrees F) for at least 72 hours. Protect from freezing for at least another 72 hours or such time as required to ensure proper curing of concrete. Admixtures are not be used for prevention of freezing.

3.13 Defective Concrete and Patching

- .1 Concrete surface to be free from open texturing, voids, and projections.
- .2 Repair of defective concrete work:
 - .1 Repair defective areas while concrete is still plastic, otherwise wait until curing is completed.
 - .2 Prior to undertaking any repairs provide the Owner's Representative with a written description of repair method complete with product data sheets.
 - .3 At the discretion of the Owner's Representative and at no cost to the Owner, the Contractor shall remove and replace concrete deemed 'defective' and 'unrepairable'.
 - .4 Defects and areas requiring repair as indicated by the Consultant
- .3 Grinding to repair imperfections and incorrect slope is unacceptable.
- .4 All areas deemed unacceptable by the Owner's Representative shall be removed from joint line to joint line, e.g. full panel.

3.14 Protection

- .1 Protect freshly finished concrete from dust, rain or frost by using tarpaulins or other suitable protective coverings. Keep clear of finished surface.
- .2 Place and maintain suitable barriers to protect finished concrete from equipment, vehicles or pedestrian traffic.
- .3 Provide personnel as required to prevent vandalism until concrete has set.
- .4 Do not run vehicles or construction equipment on concrete for at least 7 days or as directed by Owner's Representative.
- .5 Keep traffic that would affect and/or otherwise disturb the curing procedures off the finished surfaces for the full cure period of twenty-eight (28) days.

3.15 Flood Test

- .1 Immediately upon removal of the formwork of cast-in-place concrete, a flood test shall be conducted by the Contractor in the presence of the Owner's Representative to ensure proper drainage of all concrete flatwork. The flood test shall consist of the application of a volume of water sufficient to allow the visual verification of all slopes and drainage patterns and ensure that ponding does not occur. The volume of water necessary to facilitate testing and the determination of the success or failure of the flood test shall be at the discretion of the Owner's Representative.
- .2 Should the concrete not meet the grade tolerances of the Contract documents or ponding is evident after a flood test the Contractor shall at the discretion of the Owner's Representative completely remove and replace all concrete. Grinding, partial removal and patching to resolve ponding or insufficient grade is not acceptable.

3.16 Acceptance

- .1 Prior to acceptance of finished concrete the following conditions will be met;
 - .1 Owner's Representative shall have reviewed concrete batch design and test results provided by the contractor.
 - .2 Concrete shall have full 28 day cure.
 - .3 All irregular, cracked or otherwise defective sections to be removed and replaced to satisfaction of Owner's Representative. The extent of removal will be at a minimum to the nearest joint.
 - .4 All stains, marks and discolouration as a result of spills or drips shall have been removed.
 - .5 Finish of concrete matches the accepted sample panels.

3.17 Cleaning

- .1 Promptly, as the work proceeds and on completion, clean up and remove from the site any debris, waste material and rubbish resulting from work of this section.
- .2 Clean spills and excess concrete from adjacent horizontal and vertical surfaces.

END OF SECTION 32 13 13

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to install exterior site furniture as indicated in the contract documents.

1.3 Related Work

- .1 Cast-in-Place Concrete Section 03 33 00

1.4 Requirements Included

- .1 Furnish all labour, materials, equipment and services necessary to supply and install tree grates, benches, bike racks and trash receptacles.

1.5 Guarantee

- .1 The Contractor hereby warrants that the Site Furnishings and their installation will remain free of defects and in good condition in accordance with the General Conditions.

PART 2: PRODUCTS

2.1 Bike Racks: As shown on Landscape Drawings.

2.2 Benches: As shown on Landscape Drawings.

2.3 Picnic Tables: As shown on Landscape Drawings.

PART 3: EXECUTION

3.1 *Installation*

- .1 Bike Racks:
 - .1 Assemble and install bench in accordance with manufacturer's instructions.
 - .2 Bolt to concrete footing, and, or paving, as per manufacturer's specifications with 20 mm (3/4") Galv. bolts.
 - .3 Use galvanized fittings.
 - .4 Touch-up damaged finishes to the acceptance of Owner's Representative.
- .2 Bench:
 - .1 Assemble and install bench in accordance with manufacturer's instructions.
 - .2 Bolt to concrete footing, and, or paving, as per manufacturer's specifications with 20 mm (3/4") Galv. bolts.
 - .3 Touch-up damaged finishes to the acceptance of Owner's Representative.
- .3 Picnic Tables:
 - .1 Assemble and install picnic tables in accordance with manufacturer's instructions.
 - .2 Bolt to concrete footing, and, or paving, as per manufacturer's specifications with 20 mm (3/4") Galv. bolts.
 - .3 Touch-up damaged finishes to the acceptance of Owner's Representative.

END OF SECTION 32 37 00

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to install growing medium and mulch as indicated in the contract documents. Growing medium for landscape areas.

1.3 Related Work

- | | | |
|----|---------------------------------|------------------|
| .1 | Excavation Backfill and Grading | Section 31 23 10 |
| .2 | Hydraulic Seeding | Section 32 92 21 |
| .3 | Plants and Planting | Section 32 93 10 |
| .4 | Subsurface Drainage Systems | Section 33 46 16 |

1.4 Reference Standards

- .1 Conform to the requirements of the latest editions of the following standards and legislation:
 - .1 BCSLA/BCLNA British Columbia Landscape Standard
 - .2 Canadian System of Soil Classification
 - .3 Canadian National Master Construction Specification, 32 91 19.13 Topsoil and Grading.

1.5 Materials Definitions

- .1 For the purpose of this specification the term “growing medium” shall mean a mixture of mineral particulates, micro organisms and organic matter which provides a suitable medium capable of supporting the intended plant growth.

1.6 Types And Locations of Growing Medium

- .1 Provide and install the following types of growing medium at the locations shown for each type:
- .2 Growing medium types:
 - .1 TYPE A On Site/Imported Soil
 - .2 TYPE B Growing Medium

1.7 Review

- .1 Verify the size, location and depth of all existing site services and sub-surface utilities prior to commencement of the work. Repair all damage as result of failure to perform adequate review at no cost to the Vancouver Park Board.
- .2 Notify Owner's Representative when the site is prepared for growing medium placement. Do not place growing medium until subgrades have been reviewed and approved.
- .3 Provide at least two days (48 hours) notice in advance of each required reviewed.

1.8 Testing

- .1 Submit to the Owner's Representative a copy of growing medium analysis from a laboratory approved by the Owner's Representative. The analysis shall be of tests done on the proposed growing medium from samples taken at the supply source within three weeks immediately prior to soil placement. Cost of initial analysis and subsequent tests to ensure compliance with specification shall be borne by the contractor. **Results of these tests shall be presented to the Owner's Representative for review BEFORE any growing medium delivery to site.** Pond/In-stream growing medium placed prior to the review of test results by the Owner's Representative will result in rejection of pond/In-stream growing medium and subsequent removal of material by the contractor at no cost to the owner.
- .2 The analysis will include measurement of percent sand, fines, (silt and clay), and organic matter to total 100%, pH, lime required to achieve pH 6.5, water soluble salts, total carbon to total nitrogen ratio, total nitrogen and available levels of phosphorus, potassium, calcium and magnesium
- .3 The analysis shall outline the testing laboratory's recommendations for amendments, fertilizer and other required modifications to make the proposed growing medium meet the requirements of this specification.
- .4 At the discretion of the Owner's Representative submit up to two additional samples at intervals outlined by the Owner's Representative of pond/in-stream growing medium taken from material delivered to site. Samples shall be taken from a minimum of three random locations and mixed to create a single uniform sample for testing. Results of these tests shall be presented to the Owner's Representative for review.
5. Test reports for landscaping soils containing biosolids shall be submitted to demonstrate the finished product meets the BC Organic Matter Recycling Regulation's (OMRR) "Biosolids Growing Medium" standards; and, be supported by a documented review by a Qualified Professional as defined by OMRR

Organic Matter Recycling Regulation

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/18_2002

- .6 Failure to satisfy these contractual requirements could result in the contractor being required to remove unacceptable growing medium at their expense.

1.9 Submittals

- .1 Submit to the Owner's Representative a copy of an analysis by an approved independent soil-testing laboratory. Acceptable laboratories include; Benchmark Laboratories Nanaimo, Ltd. Nanaimo, BC (250-585-2555), Pacific Soil Analysis Inc., Richmond, BC (604.273.8226) or pre-approved equal. The analysis shall be of tests done on the proposed growing medium and additives proposed for the work from samples taken at the supply source, within three weeks immediately prior to growing medium placement. Costs of the initial analysis, and subsequent tests to ensure compliance with the specification shall be borne by the Contractor. Failure to submit soils analysis is cause for immediate rejection and possible removal of any placed growing medium.
- .2 The analysis shall include a breakdown of the following components: total nitrogen by weight, available levels of phosphorous, potassium, calcium, magnesium, soluble salt content, organic matter by weight, % sand, % fines (silt and clay) and pH value. In addition, the analysis shall clearly indicate the Project Name, Date Tested and Contractor's Name.
- .3 Submit with the above analysis, the testing laboratory's recommendations for amendments, fertilizers and other modifications to make the proposed growing medium meet the requirements of this specification.

1.10 Samples

- .1 Submit to the Owner's Representative one composite sample of each type of proposed growing medium for each different application within the project (e.g. lawns, shrubs, urban agriculture planter). Each sample shall be a composite of at least three samples from the proposed source and shall be at least one (1) litre in volume.
- .2 Urban Agriculture Growing Medium: Submit to the Owner's Representative confirmation that the organic material component of the Urban Agriculture Growing medium is derived from an organic source free of heavy metals, contaminants, animal or plant chemical additives or supplements. The confirmation shall be in the form of a letter on company letterhead or written confirmation from provincial or regulatory agency.
- .3 At the discretion of the Owner's Representative, submit up to two additional samples, including samples of proposed additives to the growing medium from material delivered to the site as required to ascertain compliance with this specification. Results of these tests shall be submitted to the Owner's Representative for approval.
- .4 After the completion of the soils analysis, a one litre sample of the completed/mixed growing medium, including all amendments shall be submitted at least twenty-one (21) days before placement of growing medium to allow for evaluation of samples and testing for noxious weed content by Owner. Owner's Representative will advise of test results.
- .5 Samples of each growing medium type shall be submitted to the Owner's Representative in zip lock plastic bags clearly marked with the date, project name, sample name and supplier name and telephone number.

- .6 Organic Material: One composite sample or each organic material type. Sample shall be a composite of at least three samplings from the proposed source, and shall be at least one (1) litre in volume.

1.11 Quality Assurance

- .1 Advise Owner's Representative of sources of growing medium to be utilized on this Project a minimum of thirty days (30) prior to starting work of this Section.
- .2 Carry out growing medium preparation and placement such that the final product matches the standard set by the samples submitted, within a range of variation that may reasonably be expected with good quality control while incorporating the recommendations for amendment by the testing laboratory.
- .3 The Vancouver Park Board may appoint an independent testing laboratory to ascertain compliance with this specification and to recommend modifications to make the growing medium meet the requirements of this specification.

PART 2: PRODUCTS

2.1 General

- .1 Product Handling
 - .1 Do not move or work growing medium or additives when they are excessively wet, extremely dry, frozen, mixed with ice and/or snow, or in any manner which will adversely affect growing medium structure. Growing medium whose structure has been destroyed by handling under these conditions will be rejected and shall be replaced by the contractor at no cost to the owner.
 - .2 Protect growing medium and additives against extreme wetting by rain or other agents, and against contamination by weeds and insects.
 - .3 Deliver fertilizer and other chemicals in manufacturer's original containers. Protect against damage and moisture until incorporated into the work.
 - .4 Stockpile materials in bulk form in paved areas and provide protection by storing under roof or tarpaulins. Take all necessary precautions to prevent contamination of component materials from wind blown soils, weed seeds and insects. Contamination of individual components may result in rejection, if used.
 - .5 All growing medium will be delivered to site **premixed** from a recognized growing medium source ensuring consistency throughout the mix.
- 2 Approved Equals
 - .1 All items as specified or pre-approved equals.

2.2 On Site /Imported Soil (Type A)

- .1 On site-imported soil shall be friable "A Horizon" topsoil to the requirements of the B.C. Landscape Standard, stripped and stockpiled on site in an approved location. Stripping and stockpiling work shall be such that the soil is not damaged or contaminated. (Refer to Product Handling).
- .2 Mineral particle sizes shall be within the following ranges by weight:
100% shall pass a 10 mm (3/8") sieve.
Maximum of 10% shall pass a #200 sieve. (Silt and clay)
Soil shall be of a sandy loam or loamy sand texture containing between 3% and 15% organic matter (dry weight basis). Soil shall be virtually free from subsoil, wood including woody plant parts, weeds, stones over 30mm, pests, undesirable grasses or weeds, and seeds or parts thereof and foreign objects. Soil shall be free from crabgrass, couch grass, *Equisetum*, convolvulus or other weeds or seeds or parts thereof.
- .3 Soil shall be suitable for modification by screening and additives to meet the requirements for Screened Growing Medium (Type B as specified) except where specified and approved for use as unscreened On Site Soil (Type A).

2.3 Additives

- .1 Manure: Well rotted farm animal manure or compost, to the requirements of the BCSLA/BCLNA B.C. Landscape Standard. Animal manures and compost often have excessive levels of water-soluble salts. The growing medium shall be leached via fresh water from the irrigation system or through natural rainfall until an electrical conductivity of 3.0mmho/cm or less is achieved.
- .2 Compost: A uniform blend of natural source-separated organic materials, composted such that it is brown-black in colour and has carbon to nitrogen ratio of 25 to 1 or lower. pH 6 to 7. Substantially free from subsoil, pests, roots, wood, construction debris, undesirable grasses or weeds, and seeds or parts thereof. Free from toxic materials, crabgrass, couch grass, *Equisetum*, weeds, and seeds or parts thereof. The Owner does not allow use of any paper fibre amended compost products. Approved Suppliers include Fraser Richmond Biocycle and Stream Organics.
- .3 Sand: Approved medium river pump sand, well washed and free of contaminants, chemical and organic matter. Gradation of particle sizes shall fall within the following range ("Percent" to be reported as the mass of the particles whose size is less than the designated sieve opening but greater than the next designated sieve opening):

USBS Sieve Sieve Size

<u>Number</u>	<u>(mm)</u>	<u>Percent Class</u>
4	4.76	0 - 3 Fine gravel
10	2.00	0 - 20 Very coarse sand
18	1.00	0 - 20 Coarse sand
35	0.50	60 - 80 Medium sand
60	0.25	0 - 40 Fine sand
140	0.105	0 - 4 Very fine sand

- 270 0.063 0 - 2 Silt & clay
- .4 Sand shall have a saturated hydraulic conductivity between 100 mm. and 300 mm. per hour. Test conditions shall be for saturated sand, 15 blows compaction.
- .5 Sand shall have:
- Organic content < 0.5% by weight.
- Water Soluble Salt content < 0.5mmhos/cm
- Ph of between 5.0 and 7.0
- .6 Available copper, zinc and manganese following acid digest test in 0.1N HC1 and shaken for ½ hour shall be less than 25 PPM when analysed by atomic absorption spectroscopy.
- .7 Peat moss: Is not to be used.
- .8 Wood Residuals: Content of wood residuals such as fir or hemlock sawdust shall not cause a Carbon to Nitrogen ratio higher than 25:1. Cedar or redwood sawdust shall not be present in the growing medium mix.
- .9 Dolomite Lime: Approved commercial brands for horticultural purposes, coarsely ground; containing not less than 20% calcium by weight.

2.4 Fertilizers

- .1 Standard commercial brands, meeting the requirements of the Canada Fertilizer Act, packed in waterproof containers, clearly marked with the name of the manufacturer, weight and analysis.
- .2 Generally Fertilizers must be those fertilizers specified in the soils analysis report/ recommendations. Contractor shall not make any substitutions without prior written approval from Owner's Representative.

2.5 Growing Medium (Type B)

- .1 Growing Medium shall be predominantly sand based and screened with additives and fertilizers as required to make it meet the following specifications:
- .1 Substantially free from roots, sticks, building materials, wood chips, chemical pollutants and other extraneous materials.
- .2 Population of plant pathogenic nematodes: maximum 1000 per litre for any single species.
- .3 Maximum requirement of dolomite lime to required pH: 50kg/100M2.
- .4 Salinity: maximum saturation extract conductivity of 3.0 mmho/cm @25 deg. C
- .5 Fertility:
- Total Nitrogen 0.4-0.8% by weight
- Available Phosphorous 70-80 ppm
- Available Potassium 150-250ppm
- .6 Cation Exchange Capacity: 30-50 meq.
- .7 Carbon to Nitrogen Ratio: max. 40:1
- .8 pH:

- | | | |
|--|----------------|------------|
| | Lawns | 6.0 to 7.0 |
| | Planting Areas | 5.5 to 6.0 |
- .9 Boron: the concentration in the saturation extract shall not exceed 1.0 ppm
- .10 Sodium: the sodium absorption ratio (SAR) as calculated from analysis of the saturation extract shall not exceed 8.0
- .11 Total Nitrogen shall be 0.2% to 0.6% by weight.
- .12 Available phosphorous shall be 20-100 ppm
- .13 Available potassium shall be 50-250 ppm.
- .14 Tolerances: Samples of growing medium taken just before planting shall have the specified properties to within the tolerances of plus or minus 20% of the stated values, except for salinity, which shall be less than the stated limit.
- .15 The textural properties and organic content shall be have the following composition AFTER MIXING (BY DRY WEIGHT):
- .2 For PLANTING BEDS growing medium shall consist of the following AFTER MIXING (% BY DRY WEIGHT):
- 80- 88% round sand (>0.05mm-<2mm)
 - 3 % max silt (>0.0002mm - <0.05mm)
 - 2 % max clay (<0.002mm)
 - Total fines max 5%
 - 12-15% organic matter
 - pH 5 .0 to 6.0
- Nutrient Content:
- Nitrogen 0.2 - 0.6%
 - Phosphorus: 50 -150ppm
 - Potassium 50 - 300 ppm
 - C/N ratio max 25 : 1
- .3 For LAWN AREAS growing medium shall consist of the following AFTER MIXING (% BY DRY WEIGHT):
- 85- 92% round sand (>0.05mm-<2mm)
 - 3 % max silt (>0.0002mm - <0.05mm)
 - 2 % max clay (<0.002mm)
 - Total fines max 5%
 - 8- 10% organic matter
 - pH 6 .0 to 6.5
- Nutrient Content:
- Nitrogen 0.2 - 0.6%
 - Phosphorus: 50 -150ppm
 - Potassium 50 - 300 ppm
 - C/N ratio max 25 : 1

2.6 Organic Material

- .1 Organic Material (non urban agriculture):
 - .1 Shall be, fully composted material that does not contain cedar or redwood bark or wood, black/brown in colour.
 - .2 Organic component shall not contain mushroom manure compost or mushroom starter.
 - .3 Acceptable suppliers include
 - Veratec Group, Chilliwack, BC (Formerly Yardworks)
 - Harvest Power Canada Ltd., Richmond, BC (Soil Amender), (Formerly Fraser Richmond Soil and Fibre Ltd.)
 - Eco-Soil Recycling, Surrey, BC
- .2 Organic Material (urban agriculture):
 - .1 Shall be derived from an organic source free of sewage biowaste, heavy metals, contaminants, animal or plant chemical additives or supplements.
 - .2 The material shall be fully composted material that does not contain cedar or redwood bark or wood, black/brown in colour.
 - .3 Organic component shall not contain mushroom manure compost or mushroom starter.
 - .4 Acceptable suppliers include
 - Veratec Group, Chilliwack, BC (Formerly Yardworks)
 - Harvest Power Canada Ltd., Richmond, BC (Soil Amender), (Formerly Fraser Richmond Soil and Fibre Ltd.)
 - Eco-Soil Recycling, Surrey, BC
- .3 Organic Material (biosolids):
 - .1 Landscaping soils containing biosolids shall meet the BC Organic Matter Recycling Regulation's (OMRR) "Biosolids Growing Medium" standards; and, be supported by a documented review by a Qualified Professional as defined by OMRR
 - .2 Acceptable suppliers include Veratec, Chilliwack, BC (Formerly Yardworks Supply, Ltd), Harvest Power Canada Ltd. – British Columbia (Formerly Fraser Richmond Soil and Fibre Ltd.) (Soil Amender), Richmond, B.C., Eco-Soil , Langley BC, or pre-approved equal.

2.7 Construction Adhesive

- .1 PL 200 Construction Adhesive by OSI Sealants Inc. or approved equal.

2.8 Drainage Medium

- .1 Drain Rock or Torpedo Gravel: Shall consist of clean round stone or crushed rock. Acceptable material includes 19 mm (3/4") drain rock or torpedo gravel conforming to the following gradations.

SIEVE SIZE	PERCENT PASSING (19MM)	PERCENT PASSING (TORPEDO)
25mm	100	
19mm	0-100	
9.5mm	0-5	100
4.75mm	0	50-100
2.36mm		10-35
1.18mm		5-15
0.60mm		0-8
0.30mm		0-5
0.15mm		0-2

2.9 Filter Fabric

- .1 Needled, non-woven polypropylene mat. Nilex 4545 by Nilex Geotechnical Projects, Burnaby, B.C.

PART 3: EXECUTION

3.1 Subgrade Preparation

- .1 All excavation shall be undertaken in accordance with the City of Vancouver's Policy and Standard Operating Procedure- Soil and Excavation Water Contamination Management.
- .2 Request a review of the subgrade conditions and obtain approval of the Owner's Representative to placing any growing medium.
- .3 On Grade Planting Area:
- .1 Scarify compacted subgrade to a minimum depth of 200mm (8") immediately before placing growing medium.
 - .2 Verify that subgrades are at the proper elevations before placing growing medium.
 - .4 Placement of growing medium implies acceptance of subgrade conditions.
 - .5 Remove debris, roots, branches stones in excess of 50mm dia. and other deleterious materials as directed by Owner's Representative.
 - .6 Remove any soil contaminated with calcium chloride, toxic materials or petroleum products.
 - .7 Remove any materials that protrude 25mm above the surface.
 - .8 Dispose of removed material off site.

- .9 Review sub grade conditions to ensure that there is proper drainage in all planting areas and tree pits. Perform a percolation test as needed to confirm proper drainage.
- .4 Structural Slab Planting Area:
 - .1 Verify planter drains and or slab drains have been installed.

3.2 Placement of Drainage Medium – Drain Rock

- .1 Verify that architectural slab membrane, protection board, insulation, etc. has been approved by the Owner's Representative prior to the placement of drainage medium.
- .2 Place drainage medium over entire planter bottom ensuring consistent depth as per construction details.
- .3 Place filter fabric over the entire finished surface of drainage medium. Ensure seams are overlapped as per manufacturers recommendations.
- .4 Ensure filter fabric fits tight to face of planter wall. Take care during loading of growing medium to ensure filter fabric is not dislodged.

3.3 Importing Procedures for Prepared Growing Medium

- .1 **Imported Growing Medium:** Growing medium shall be imported and stockpiled on site in a location approved by the Owner's Representative.
 - .1 Carry out stock piling operation such that the growing medium structure is not compromised through compaction, vibration or other actions.
 - .2 Stock piled growing medium shall be protected from rain, drying and contaminants.
 - .3 Growing medium shall be free of subsoil, pests, roots, wood, construction debris, undesirable grasses including crabgrass or couch grass, noxious or weeds and weed seeds or parts thereof foreign objects and toxic materials. Presence of these contaminants shall be grounds for rejection of growing medium and replacement at no cost to the Owner.

3.4 Preparation of Growing Medium

- .1 Mixing/screening of growing medium on site is not allowed. All growing medium is to arrive pre-mixed with the exception of addition of the following components that are to be applied at rates indicated in the growing medium analysis recommendations:
- .2 Thoroughly mix using mechanical mixing/screening equipment the constituent growing medium components and recommended additives. Resulting mixture will have a particle size class and properties that match the requirements of this specification.
- .3 No hand mixing will be accepted unless specifically approved by the Owner's Representative.

3.5 Placing Growing Medium

- .1 Do not place growing medium until Owner's Representative has reviewed drainage medium installation.
- .2 Ensure that irrigation lines to be installed have been reviewed by the Owner's Representative prior to the placing of growing medium.
- .3 Growing medium shall be moist but not wet when placed (25% of field capacity). It shall not be handled in anyway if it is wet or frozen.
- .4 Place all growing medium to the required finished grades with adequate moisture in uniform lifts of 100mm to 150mm compacted to 80MPD during dry weather, over drainage medium where planting is indicated.
- .5 Except where drawings or details show otherwise, place to the following minimum and/or maximum depths and levels (measured after initial settling of growing medium):
 - .1 Tree Planting Areas on grade maximum 900mm (36") and shall conform to the following additional parameters:
 - .1 Planting hole shall be minimum 300mm (12") wider than rootball on all sides.
 - .2 Planting hole shall be minimum depth of root ball. Undisturbed soil below rootball to be compacted to 100MPD.
 - .3 Each tree shall have access to minimum 30m³ growing medium volume and minimum 15m³ growing medium volume per tree within connected volumes.
 - .4 The required growing medium volume may be accommodated with varying soil depths between 900mm (36") and 250mm (10") outside the area defined by the planting hole. The growing medium volume must have a direct relationship to the mature drip line with outward adjustment for columnar species.
 - .2 Shrub and Groundcover Areas on grade 450mm (18") minimum depth.
 - .3 Low or High Traffic Lawn Areas on grade 250mm (10") minimum depth.
 - .4 Urban Agriculture 450mm (18") or to within 25mm or 1" of the top of the planter.
- .6 If subgrade/subsoil drains rapidly increase soil depths as directed by Owner's Representative to ensure adequate moisture retention.
- .7 On slab depth of growing medium to achieve finished grades in all cases. Growing medium depths are not to exceed maximum allowed for by the structural engineer. Voiding, sand fill or additional growing medium may be used where required build-up over the drainage layer exceeds the required minimum depths stated above.
 - .1 For Lawn Areas Flush with adjacent surfaces after initial settlement.
 - .2 For Planting Areas As detailed on drawings. Crown all planting beds.
 - .3 Refer to drawings for top of slab and finished elevations, as applicable.
- .5 Crown or slope for positive surface drainage as shown on the drawings.

3.6 On Site Application of Amendments

- .1 Ensure minimum 7 days separation time between the application of any lime treatment or fertilizers and plant material installation.
- .2 Addition of amendment components shall be at the rates indicated in the growing medium analysis recommendations via the following methods:
- .3 Fertilizers
 - .1 This material shall be applied with mechanical spreaders over the entire planting area
 - .2 Rake fertilizers into top 50mm minimum of the placed growing medium.
- .4 Lime
 - .1 This material shall be applied with mechanical spreaders over the entire planting area and mixed thoroughly into the top 100mm (4") of the growing medium prior to fine grading.
 - .2 Do not apply by hand.
 - .2 Ensure line does not come in contact with the nitrogen - phosphate - potash fertilizers during amending process.
- .5 Organic Matter
 - .1 Organic matter shall be top-dressed and cultivated into the top 150 -200mm (6"-8") of the growing medium prior to fine grading.

3.7 Finish Grading

- .1 Manually fine grade growing medium installation to contours and elevations shown on drawings or as directed by Owner's Representative. Tolerance for finish grading to be 5mm.
- .2 Eliminate rough spots and low areas to ensure positive drainage.
- .3 Finish Grade of growing medium shall be 25 mm (1") from finished elevation of adjacent curb or planter wall unless otherwise noted on drawings
- .4 Leave surface smooth, uniform, firm against deep foot printing, with a fine loose texture.

3.8 Weed Control

- .1 Ensure all weeds and weed roots that have germinated during the course of work of this section have been eliminated from growing medium.
- .2 Provide the Owner's Representative with a written methodology outlining of weed removal seven (7) days prior to starting weed removal operations.

3.9 Mulching

- .1 Place mulch over all growing medium except grass areas. Moisten uniformly and spread to a consistent settled depth of 50mm in tree and shrub planting areas, 25mm in ground cover areas.

3.10 Acceptance

- .1 Owner's Representative will inspect and test growing medium and determine acceptance of material as placed, depth and finish grading prior to any planting or sodding operations commencing.
- .2 Approval of placed growing medium subject to additional soil test analysis if requested. Costs for additional testing of placed growing medium shall be at the Contractor's expense.

3.11 Cleaning

- .1 All excess materials and other debris resulting from growing medium preparation and placement operations shall be disposed of off site.
- .2 Ensure all discolouration of adjacent surfaces caused by growing medium placement have been removed. Ensure all paved areas, tops of planters, and adjacent surfaces have been thoroughly cleaned to the satisfaction of the Owner's Representative.

END OF SECTION 32 91 13

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to install plants by hydroseeding to all areas identified or disturbed by the work of this contract.

1.3 Related Work

- | | | |
|----|-----------------------|------------------|
| .1 | Landscape Maintenance | Section 32 01 90 |
| .2 | Growing Medium | Section 32 91 13 |
| .3 | Plants and Planting | Section 32 93 10 |

1.4 Reference Standards and Requirements of Regulatory Agencies

- .1 Conform to the requirements of the latest editions of the following standards and legislation:
 - .1 BCSLA/BCLNA British Columbia Landscape Standard
 - .2 British Columbia Standard for Turfgrass Sod
 - .3 British Columbia Weed Control Act
 - .4 Canada Seed and Fertilizer Act
 - .5 Canada Pest Control Products Act

1.5 Submittals

- .1 Submit dealer guarantee statements of composition of the mixture and the percentages of purity and germination of each variety of grass seed.
- .2 Submit the original seed containers which clearly identify the manufacturer's guarantee of seed analysis.
- .3 Submit completed Schedule A - Application Record to the Owner's Representative.
- .4 Provide all product data for seed, mulch, tackifier and fertilizer as required and as requested by the Owner's Representative.
Submission in writing if requested by Owner's Representative fourteen (14) days prior to commencing Work of this Section:
 - .1 Size of truck slurry in litres.
 - .2 Amount of material to be used per tank based on size of slurry tank.

- .3 Number of tank loads required per hectare to achieve specified slurry mixture per hectare.

1.6 Protection

- .1 Protect all seeded areas against trespassing and from damage at all times until Acceptance. If any seeded areas are damaged, they shall be repaired as required to satisfaction of Owner's Representative.
- .2 Comply with COV pesticide/herbicide control regulations regarding application of herbicides to control noxious weeds. Ensure all manufacturer's recommendations regarding application are strictly adhered to.

1.7 Testing and Approvals

- .1 Notify Owner's Representative at least forty eight (48) hours before installing seed for inspection of finished grades. Do not hydroseed until grades are approved by Owner's Representative.
- .2 Obtain approval in writing from the Owner's Representative for application of any chemical vegetation controls. Comply with applicable federal, provincial and municipal legislation and regulations.

1.8 Conditions for Acceptance

- .1 The conditions for acceptance of hydroseeded lawn areas and for turning over the hydroseeded areas to the Vancouver Park Board for subsequent maintenance are:
 - .1 Substantial Performance for the entire project shall have been declared.
 - .2 Hydroseeded lawn areas shall have been maintained as specified for a min. of 55 days. Hydroseeded lawn shall be mown as specified (to a height of 38mm) no more than two days before inspection for Acceptance.
 - .3 The hydroseeded lawn shall be uniformly healthy, in a vigorous growing condition, representative of a dense stand of grass, with all deficiencies corrected to the approval of the Owner's Representative. Lawn shall have no evidence of noxious weeds.
- .2 Inspection and Acceptance by the Board: Notify the Owner's Representative at least 48 hours in advance to schedule inspection of the entire landscape ready for Acceptance. Acceptance by the Board will only be given provided Maintenance as per Item 3.4 has been carried out and other Conditions of Item 1.8 have been met.

1.10 Time of Seeding

- .1 The seeding shall be done during periods which are most favourable for the establishment of a healthy stand (of grass) and at times designated by the Board in accordance with the construction schedule and activities and coordinated with the local weather conditions.

- .2 No seeding shall be done when the soil is frozen, covered by frost or when there is standing or flowing water on the site, nor if the wind speed is greater than 5 km/h.
- .3 The seeding operations shall be completed before September 30, of the calendar year.

1.11 Guarantee

- .1 All workmanship and materials covered under Work of this Section shall be guaranteed for a period of ONE (1) full year from the date of Substantial Performance.

PART 2: PRODUCTS

2.1 General

- .1 Product Handling
 - .1 All grass seed, hydraulic mulch fertilizers and related materials shall be stored in a dry, weatherproof storage place and shall be protected from damage by heat, moisture, rodents or other causes until time of use. Care shall be taken that labels and other identification(s) are not removed or defaced in any fashion.

2.2 Fertilizer

- .1 Granular Fertilizer: Standard approved brands delivered in original containers, bearing manufacturer guaranteed analysis, dry and free-flowing, organic base, conforming to the applicable Provincial Fertilizer Laws, not less than 19% Nitrogen, 19% Phosphoric Acid and 19% Potash (19-19-19), or as otherwise required based on growing medium test results and time of application.
- .2 Slow-Release Fertilizer: Prills designed to release nutrients over a period of months. Agriform 16-7-12 plus iron or equivalent.

2.3 Grass Seed

- .1 Shall be fresh, clean, new crop certified Canada #1 or better seed, in accordance with Government of Canada "Seeds Act", with a minimum germination of 75% and a minimum purity of 97%. Supplied in standard containers with the following information provided: suppliers name and address, lot number/year of production, net weight (mass), names and percentages of individual seed species and percentage of pure seed. Composed of the following varieties in the proportions and testing the minimum percentages of purity and germination indicated:
 - 10% Common Kentucky Bluegrass
 - 25% Common Creeping Red Fescue
 - 25% Common Chewings Fescue
 - 40% Turf Type Perennial Ryegrass

As supplied and mixed by: a recognized, pre-approved seed distributor acceptable to the Owner.

- .2 Areas into which any other varieties of seed have been introduced will not be accepted. The Owner reserves right to test seed for purity and germination rate.

2.4 Mulch

- .1 Hydroseeding Mulch: Hydroseeding solution shall contain a mulch of dry virgin wood cellulose fibre specifically designed for hydraulic seeding, containing no growth or germination inhibiting factors, and dyed green with a water activated non-toxic dye for visual metering during application; "Ecofibre" as manufactured by Canfor or pre-approved equivalent. In addition:
 - .1 The Owner does not accept any mulches made from recycled materials such as paper, saw dust, cardboard or pulp residue.
 - .2 Mulch shall be capable of dispersing in water to form a homogeneous slurry and remaining in such a state when agitated or mixed with other specified materials. In addition it shall be capable of forming an absorptive mat ground cover allowing water percolation into underlying growing medium.
 - .3 It shall be free of weeds and other foreign material and shall be supplied in packages bearing the manufacturer's label clearly indicating weight and product name.

2.5 Tackifier

- .1 M-Binder (Mesh Organic Soil & Mulch Binder)

2.6 Water

- .1 Clean potable water (as supplied by Municipality) free of any impurities which would inhibit germination or otherwise adversely affect growth or be harmful to the environment.

2.7 Weed Control

- .1 Manual weed control is the preferred method in COV and may be the only permitted methodology. Confirm with Owner's Representative. If chemical vegetation control is permitted, use herbicides of type and at an application rate as required to achieve the desired control. Use only standard commercial herbicide products registered for sale and use in Canada under the Pest Control Products Act. Do not use herbicides containing sodium chlorate unless specifically authorized by the Owner's Representative. Do not use herbicides containing 2, 4, 5,-T in public areas or where there is a possibility of contaminating ditches draining to irrigation or potable water and only as permitted by the COV.

2.8 Approved Equals

- .1 All items as specified or pre-approved equals.

PART 3: EXECUTION

3.1 Soil Preparation

- .1 Grades:
 - .1 Areas to be seeded shall be at grades shown at the time of seeding, free of “humps and hollows”. Crown or slope for surface drainage and eliminate all low spots or depressions. Ensure that growing medium is placed to required depths and tolerances as specified and detailed in the Contract Documents and spread evenly over the approved subgrade. Ensure the growing medium is firm against footprints, loose in texture and free of all stones, roots branches etc as required under Section 02920 Growing Medium Preparation and Placement.
 - .2 Restore all areas to be seeded that are misshapen or eroded to specified condition, grade, slope as directed just prior to seeding. Minor adjustment and refinement of finish grade to be made as directed by Owner’s Representative.
 - .3 Obtain Owner's Representative’s approval of finish grading prior to proceeding.
 - .4 Ensure smooth finish on all surfaces and finished grades as shown on the drawings and as specified herein.
- .2 Clearing: Remove all weeds, briars, debris and other refuse and deleterious materials which may be detrimental to the growth of the grass.
- .3 Cultivation: as required to minimum depth of 100mm.
- .4 Moisture: ensure areas to be seeded are moist to minimum depth of 150mm before seeding.

3.2 Application

- .1 Apply with equipment designed for hydraulic seeding, a uniform solution in water of:
 - Seed as specified 24.4kg/1000 square meters
 - Fertilizer Type and Rate as required by soil testing analysis.
 - Fibre Mulch 250kg/1000 square meters
 - Tackifier Not required on flat areas or slopes up to 25%
6 kg/1000 sq. meters on slopes from 26%-35%.
(increase to 8 kg/1000 sq. meters on slopes greater than 35%)
- .2 Ensure uniform distribution of the solution over the entire area, with adequate discharge pumps, hoses and gun nozzles.

- .3 Take precautions to protect planting beds, walks, roads, buildings and other site features such as signs, guardrails, fences, and utilities against spraying with the solution. Thoroughly clean any surface which is sprayed with the solution where not intended to the satisfaction of the Owner's Representative.
- .4 Do not perform work under adverse field conditions such as wind speeds over 5 km/h, frozen ground or ground covered with snow, ice or standing water
- .5 Apply seed in a uniform workmanlike and continuous fashion until completed. Seed which has been in the hydraulic seeder more than 2 hours shall be considered dead and must be replaced.
- .6 Submit completed Schedule A - Application Record to the Owner's Representative on a daily basis.
- .7 No vehicular traffic will be permitted on areas to be seeded. All unreachable work or work under difficult control conditions shall be completed with use of hoses.
- .8 Ensure a minimum overlap of 450mm between applications to form uniform surfaces.

3.3 Supplementary Fertilizer Application

- .1 Prior to Acceptance, at a time approved by the Owner's Representative, apply fertilizer formulation as recommended for the season at manufacturer's recommended rates evenly to all sodded areas. Water thoroughly.

3.4 Maintenance

- .1 Perform maintenance of the hydroseeded areas from time of seeding (date of installation) to date of Acceptance by the Board. Work to include: watering, cultivation, fertilizing, cutting, weeding, and all other measures necessary to ensure germination and development of a uniform, dense, healthy stand of grass.
- .2 Begin maintenance immediately after installation and continue until Acceptance by the Board of all hydroseeded lawn areas. Maintenance shall consist of all measures necessary to keep lawn healthy, in a vigorous growing condition and all other measures necessary to ensure germination and development of a uniform, dense, healthy stand of grass. Maintenance shall include, but shall not be limited to the following:
 - .1 Mowing shall be carried out at regular intervals as required to maintain grass at a maximum height of 60mm. (2-1/2"). Not more than 1/3 of the blade shall be cut at any one mowing. Edges of lawn areas shall be neatly trimmed. Heavy clippings shall be removed immediately after mowing and trimming.
 - .2 Watering shall be carried out when required and with sufficient quantities to maintain optimum soil moisture level for germination and continued growth of grass. Control watering to prevent washouts.
 - .3 Rolling shall be carried out when required to remove any minor depressions or irregularities.

- .4 Weed control shall be carried out when the density of weeds reaches 10 broadleaf weeds or 50 annual weedy grasses per 37 sq. M. (400 square feet).
- .5 Weed control, whether manual or chemical, shall reduce the density of weeds to zero. If chemical, apply in strict accordance with the manufacturer's recommendations and to the standards specified herein.
- .6 Any seeded areas showing deterioration or bare spots shall be repaired immediately. All areas shall be top dressed and over seeded with a seed mix matching the original seed mix.
- .7 All seeded areas shall be adequately protected with warning signs, temporary wire, twine or mesh fences as dictated by Owner's Representative. Fencing shall be maintained in good condition to provide a continuous barrier until Acceptance. Except as otherwise required by the work of this Contract, the fencing shall be removed from the site upon Acceptance/Assumption by the Owner.

3.5 Cleaning

- .1 Remove from the site all surplus materials and other debris resulting from seeding operations.
- .2 Flush all walks, pavement and any area surface sprayed with solution clean to the satisfaction of the Owner's Representative.

SCHEDULE A - HYDROSEED APPLICATION RECORD (SAMPLE)

Project Name/Owner's Contract No.: _____

Owner's Representative _____ Weather Conditions _____

Date: _____

Contractor Foreman: _____ Size of Crew: _____

Month: _____

<i>Time</i>	<i>Load No.</i>	<i>Seed Mix/ Flower Mix</i>	<i>Fertilizer</i>	<i>Mulch</i>	<i>Tackifier</i>

END OF SECTION 32 92 21

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to install plant material as indicated in the contract documents.

1.3 Related Work

- | | | |
|----|-----------------------|------------------|
| .1 | Landscape Maintenance | Section 32 01 90 |
| .2 | Growing Medium | Section 32 91 13 |
| .3 | Hydraulic Seeding | Section 32 92 21 |

1.4 Quality Assurance

- .1 All materials and work shall conform to the latest edition of the following standards or as otherwise specified:
 - .1 CNTA (Landscape Canada) Canadian Standards for Nursery Stock – Current Edition
 - .2 BCLNA Standard for Container Grown plants – Current Edition
 - .3 BCSLA/BCLNA British Columbia Landscape Standard – Current Edition
 - .4 Perennial Plant Association Standards for herbaceous perennial plants
 - .5 ANSI A-300 Tree Pruning Guidelines
 - .6 Urban Tree Foundation/ISA Guideline Specifications For Nursery Tree Quality, current version

1.5 Source Quality Control

- .1 Seven (7) days prior to the Owner's Representative review of plant material at source the Contractor shall confirm in writing availability of plant material noted on Plant List.
- .2 Plant material will be supplied from nurseries who are certified by the Clean Plants program, Canadian Nursery Certification Institute (CNCI), current certification standard <http://cleanplants.ca/>. The certification shall include but is not limited to the requirements of the current active module(s), e.g. P. Ramorum module. The certification must extend to all fields and allied nursery operations where plant material is sourced. Only nurseries, fields and allied nursery operations that are certified will be permitted to supply plant material for this project.

- .3 Plant Material Review at the source nursery
 - .1 Contractor request for review of the plant material at source nursery to be a minimum of seven (7) days prior to scheduled review.
 - .2 Owner's Representative shall make one (1) visit to source nursery for review of plant material for entire project.
 - .3 If review in more than one location becomes necessary, the Contractor shall reimburse the Owner's Representative for the additional time required at the current hourly rates of the Staff personnel.
 - .4 Shipping of plant material to project site shall not proceed until Owner's Representative has reviewed the plant material at the source nursery.
 - .5 All plants are subject to review and may be rejected for failure to comply with this specification at any time until Acceptance. Immediately replace rejected material and remove from the site at no cost to the Owner.
 - .6 Trees required for the work **must be reviewed and tagged by the Owner's Representative at (the place of growth) before being dug.** Inspection and tagging at the place of growth shall not affect the right to reject such trees on or after delivery thereof to the site.
 - .7 Plants required for the work **must be reviewed by the Contractor before being prepared for delivery.** Inspection shall not affect the right to reject such plants on or after delivery thereof to the site.
 - .8 **Plants arriving on site must be reviewed by the Owner's Representative prior to off-loading.** Provide minimum 48 hours notice to schedule review.
 - .9 The Contractor or his authorized representatives shall be present during all required reviews as specified or as may be required.
- .4 Plant Material Review at Project Site
 - .1 All plant material shall be reviewed at the project site by the Owner's Representative prior to planting.
 - .2 Plant material that is rejected by the Owner's Representative shall be immediately removed from the site and replaced at the Contractors expense.
- .5 Imported Plant Material
 - .1 Plant material imported from out of province and out of country shall be accompanied with necessary federal and provincial permits and import licenses.
 - .2 The Contractor shall conform to all federal and provincial laws and regulations with regard to horticultural inspection of domestic and imported plant material.
- .6 Condition of Plant Material
 - .1 Plant rootballs and containers shall be completely free of noxious weeds and volunteer plants including, but not limited to, Horsetail and Morning Glory.
- .7 Plant material grown or supplied in Fabric Containers are not acceptable.

1.6 Submittals

- .1 Confirmation Plant List
 - .1 Contractor shall provide in writing to the Owner's Representative a minimum of seven (7) days prior to review of plant material at the source nursery a plant list confirming the quantity, botanical name, common name and size of plants specified.
- .2 Prior to the review of plant material by the Owner's Representative the Contractor shall submit written documentation with CNCI certification stamp stating that the nursery has undergone all components of a certification program and has been audited to verify that all components are properly implemented. The documentation submitted shall include but is not limited to the nurseries CNCI Clean Plants certification number.
- .3 Substitutions
 - .1 Contractor shall provide in writing to the Owner's Representative a minimum of seven (7) days prior to review of plant material at the source nursery a list of proposed substitutions for review.
 - .1 Substitutions in plant material will not be considered unless written proof is submitted thirty (30) days prior to scheduled installation stating a specified plant cannot be obtained within the specified area of search.
 - .2 Plant substitutions shall be of similar genus and species and of equal or greater size as those originally specified. The list shall contain the following information:
 - .1 Botanical name, common name of the specified plant
 - .2 Botanical name, common name of the proposed substitute plant
 - .3 Pot size, plant size and calliper of trees to be substituted
 - .3 Upon submission of such proof, a proposal will be considered for using the nearest equivalent size or variety with an equitable adjustment of the Contract price.
- .4 Planting Schedule
 - .1 Contractor shall provide in writing to the Owner's Representative upon award of the Contract a detailed planting schedule outlining dates and duration of planting operations.
 - .2 Revisions to the Planting Schedule as a result of delays of any kind shall be submitted to the Owner's Representative in a timely manner prior to the start of planting operations.
- .5 Composted Mulch: Contractor to submit a one (1) litre sample of Composted Mulch to the Owner's Representative for review prior to shipment to the site.
- .6 Prepared Growing Medium: Contractor to submit a one (1) litre sample of the Prepared Growing Medium to the Owner's Representative for review prior to shipment to the site.
- .7 Antidesicant: Contractor to submit three (3) copies of manufacturer product data and specification for Owner's Representative review.

1.7 Acceptance

- .1 The conditions for Acceptance of landscape areas and for turning over the landscape areas to the Owner for subsequent maintenance are:
 - .1 Growing medium quality, fertility levels, depths and surface grading have been completed to the requirements of Section 32.91.13.
 - .2 Plant quantities, sizes, quality and locations are as shown in the Contract Documents or as otherwise approved by the Owner's Representative.
 - .3 Substantial Performance for the complete project shall have been declared.
 - .4 All plants shall be installed at the correct elevation relative to finished grade, healthy, in a vigorous growing condition and established to the satisfaction of the Owner's Representative.
 - .5 Trees will be assessed for acceptance only when in leaf, and not when in a dormant state.
 - .6 All deficiencies with regard to landscape work shall have been rectified.
 - .7 All trees are staked where required.
 - .8 **Landscape areas shall have been maintained for at least 55 days.** All planted areas are free of all visible weeds and substantially free from underground weed seeds or parts thereof, to the requirements of Section 32 01 90 Landscape Maintenance (as Applicable).
 - .9 Mulch has been placed as required. All areas not to receive mulch are in a cultivated, loose, friable condition where water can freely permeate the surface.
- .2 The date of Acceptance shall be as determined by the Owner's Representative base upon the Inspection for Acceptance. Contractor shall request inspection for Acceptance, giving at least 48 hours notice.

1.8 Warranty

- .1 Replace for a period of one (1) year after Substantial Performance of the project, all unsatisfactory plant material **and continue to replace such plant material until the replacement is acceptable to the OWNER'S REPRESENTATIVE**, at no cost to the Owner. This warranty will apply to all plant material, whether supplied by Contractor or Owner.
- .2 This guarantee is based on adequate maintenance by the Owner after Acceptance. The Contractor will not be responsible for plant loss due to extreme climatic conditions such as abnormal freezing temperatures or hail which occur after Acceptance. The Contractor shall be responsible for plant loss due to inadequate acclimatization of plants for their planted location.
- .3 Adequacy of acclimatization and existence of extreme climatic conditions shall be as determined by an **independent Owner's Representative** on the basis of plant variety, location, recorded temperatures for the locale, time of planting and other factors pertinent to the situation.

1.9 Plant Material Replacements

- .1 The Contractor shall remove from the site and immediately replace any plant material that has been determined by the Owner's Representative to have died or failed to grow in a satisfactory manner during the warranty or maintenance period.
- .2 The Contractor shall extend the warranty on this replacement plant material for one (1) year from the date of replanting.
- .3 The Contractor shall continue such replacement and warranty of plant material until the Owner's Representative has determined that the 'Conditions for Final Acceptance' have been met.

1.10 Permits

- .1 Obtain and pay for all permits required for the work, including such permits as may be required for planting and related work on municipal property (e.g. street trees).

PART 2: PRODUCTS

2.1 General

- .1 Area of Search: Area of search for specified plant material shall include the Lower Mainland of British Columbia, Vancouver Island, Washington and Oregon States, except as noted on the plant list.
- .2 Provenance: All plant material used on this project shall be hardy in this climate. Plant types have been selected with this as a criteria. This Contractor shall guarantee that plant material supplied has equal provenance, i.e.: it is developed from cuttings or seeds collected in an area of similar climatic characteristics. Submit proof of equal provenance to Owner's Representative upon request.
- .3 Plants or seeds purchased for Park Board projects are to be free of neonicotinoid ("neonics") or other nicotinic Acetylcholine receptor agonists. Pesticides covered by this specification include but are not limited to clothianidin, dinotefuran, flupyradifurone, imidacloprid, thiamethoxam, sulfoxaflor, thiacloprid, and acetamiprid."

2.2 Plant Material

- .1 Plant material shall be of the sizes and quantities as shown in plant lists on Landscape Drawings and shall be nursery grown unless specifically described as "collected". **All "non-specimen" plantings specified in the Plant List(s) are specified according to the Canadian Nursery Trades Association Canadian Standards for Nursery Stock and the BCLNA Standard for Container Grown Plants.**
- .2 In particular, plant material shall conform to the following CNTA Standards:

- .1 "Nursery stock shall be true to name, type and form and representative of their species or variety. In addition they shall be of the size and grade and quality stated".
 - .2 "Quality shall be normal for the species when grown under proper cultural conditions viable, substantially free from pests and disease, and undamaged".
 - .3 "Roots shall not be subject to long exposure to drying winds, sun or frost, between digging and delivery".
 - .4 Root balls and soil in containers shall be free from pernicious perennial weeds."
 - .5 Roots shall be transplanted or root pruned at least once within the year prior to planting.
 - .6 Take precautions during digging, handling and shipping of plant material to avoid injury to plants and root systems.
 - .7 Plants for use when symmetry is required shall be matched as nearly as possible.
 - .8 Plants shall not be pruned prior to delivery.
 - .9 All plants shall be measured when the branches are in the normal position. Measurements shall be as set out in the BCLNA Standard for Container Grown Plants. Calliper of trees shall be measured 12 inches above the ground.
 - .10 Trees shall have straight trunks with a single leader intact. There shall be no abrasion of the bark and no fresh cuts of limbs over 1-1/4" that have not completely calloused over.
 - .11 Where trees are to be in a formal arrangement or occur in consecutive order, they shall be carefully measured as to height and spread and tagged with a number before delivery to the site. These trees shall be correspondingly identified on plan to assure symmetry and expeditious handling.
 - .12 Plants larger in size than specified in the itemized plant list may be used if approved; but the use of larger plants shall not increase the Contract price. If the use of larger plants is approved, the ball of earth or spread of roots shall be increased in proportion to the size of the plant.
 - .13 The size specified is the size of plant required at the time of delivery to the construction site. Sizes shown are minimum sizes.
- .3 Container dimensions shall be as defined in the B.C. Landscape Standard 1997 Edition.

2.3 Tree Ties

- .1 Flat woven polypropylene material. 20 mm (3/4") wide, 544 Kg. (1200lb), break strength. Arbor Tie by Deep Root, or approved equal. Submit sample for approval to protect bark or other types approved by the Owner. Generally they shall be of a material that will not damage the bark. Tree tie material shall be at least 25mm(1") in width and shall remain pliable in all weather conditions. They shall permit a reasonable degree of movement by the tree under normal loading conditions/forces such as wind without detrimental effects. Rubber tree buckles, or galvanized wire with rubber hose will not be accepted.

2.4 Burlap

- .1 Shall be untreated, free from toxic contaminants and of sufficient strength to hold the rootball in a compact, stable mass that does not move relative to the main stem(s) of the tree or shrub.

2.5 Wire Baskets

- .1 Non-galvanized metal basket designed and manufactured for the purpose of tree moving. Basket shall be shaped to ensure that the root ball will allow a stable planting condition in accordance with standards noted.

2.6 Water

- .1 potable and free of minerals that are detrimental to plant growth.

2.7 Composted Mulch

- .1 9mm (3/8") Composted Mulch, black/brown in colour with no cedar or redwood bark or wood material manufactured by Yard Works, Richmond, BC, Eco-Soil ,Langley BC Fraser Richmond Bio-Cycle, Richmond, B.C. or pre-approved equal.

2.8 Anti-desiccant

- .1 Wax-like emulsion that will provide a transpiration reducing film over the plant surface. Moisturin by GSI Horticultural, Bend, Oregon, (541) 383-0222 or approved equal.

2.9 Tree Trunk Protection

- .1 Extrusion mold process, polyethylene with UV protectors: "Arborgard" manufactured by DeepRoot products Canada, Inc., Vancouver, B.C., or pre-approved equal.

2.10 Tree Guy Anchors/ Tree Guy System

- .1 Direct burial or screw type disc guy anchor and guy system. The Arrow Anchor by Tree-Guy/ Tree Guy System, Santa Anna, California (800) 624-1116, or approved equal.

2.10 Stakes and Stake Fasteners

- .1 **Fir, standard or better, 75mm x 75mm x 3000mm long.** Stake fasteners shall be hot dipped galvanized or stainless steel.

2.11 Flagging Tape

- .1 30mm (13/16") wide 'Red' PVC flagging tape by Identi-Tape, Boulder, CO or approved

PART 3: EXECUTION

3.1 Planting Season

- .1 Plant only during the season or seasons that are normal for such work, as determined by weather conditions and as approved by the Owner's Representative. Plants planted before or after any stipulated dates will be rejected. **Tree planting is not permitted between June 30th and September 30th regardless of irrigation. Shrub, ground cover planting or sodded or seeded lawn installation between June 30th and September 30th is not accepted unless the project is irrigated.**
- .2 Do not plant during freezing, abnormally hot, dry or wet weather or when damaging climatic conditions can be anticipated.
- .3 The Contractor will be responsible for death or deterioration of plants caused by exposure to damaging climatic conditions, planting under conditions itemized above or inadequate acclimatization of plant material.

3.2 Planting Schedule

- .1 All planting operations shall be done in a timely manner in accordance to the 'Planting Schedule'.
- .2 'Planting Schedule' shall be updated as required by the Contractor to coincide with status of site and coordination with other trades. Provide the Owner's Representative with up dates to the schedule as required throughout the planting process.

3.3 Delivery

- .1 Dig and handle all plant material in a manner suitable for each species to prevent injury to or removal of fibrous roots. All plant material delivered with broken or loose root balls or containers will be rejected by the Owner's Representative and replaced by the Landscape Contractor at no additional cost to the Owner.
- .2 Take precautions to avoid burning of plants by sun or wind during handling and transporting.
- .3 Keep root balls and container soil moist prior to delivery by covering with bark mulch, wet straw or soil and water as required to ensure moist root balls.
- .4 Coordinate the delivery of plant materials with work of other trades and other site activities.
- .5 Off load the plant materials at the site as designated by the Owner's Representative.
- .6 All plant material shall be acclimatized to the final location before delivery and planting. The Contractor will be held responsible for plant losses caused by inadequate acclimatization.

3.4 Plant Layout

- .1 Locate plants according to the Planting Plan for approval of plant location and orientation. Notify the Owner's Representative, giving 48 hours notice, when plant layout will be ready for review. At this time the Owner's Representative may make adjustments in plant locations and orientation prior to planting.
- .2 Stake location of all major trees for approval to positioning. Notify the Owner's Representative at least 48 hours before planting of major trees. **The Owner's Representative must be present** during planting of major trees to ensure proper orientation and location.
- .3 Anti-desiccant shall be applied only as directed by the Owner's Representative. Application of anti-desiccant shall be in accordance with manufacturer's instructions.
- .4 Coordinate planting operations with other trades and project schedule.

3.5 Excavation

- .1 Existing Utilities; The Contractor is responsible for confirming the location and extent of existing utilities prior to the start of all planting operations. All attempts should be made to ensure that utility services are maintained to all on and off site parties through out the entire planting operation.
- .2 For all trees, excavate tree pits with vertical sides, depth to be of sufficient size to contain root ball, min 600mm x 10m² surface area of growing medium or as detailed, directed by Owner's Representative.
- .3 Scarify the sides of tree pits.
- .4 **Test all tree pits for poor drainage as directed by Owner's Representative.** Fill each tree pit with a minimum of 20 litres (5 gallon) of water. Water should freely drain through subsoil within ten (10) minutes. If poor drainage or percolation is encountered report this condition immediately to the Owner's Representative for acceptable remedial measures. Measures such as auguring holes through the impervious layers and backfilling with approved clean rounded drain rock or sand, raising the planting grade, or adding dedicated drain lines connected to the subsurface drainage system will be considered.
 - .1 Notify Owner's Representative if tree pits in any soil condition do not drain freely or if tree pit fills with ground water.
 - .2 There shall be no standing water in the bottom of tree pit at time of planting.
- .5 Protect bottom of tree pit(s) against freezing.
- .6 Ensure tree pits and plant beds are kept well drained and free of contaminants and construction debris.
- .7 Excavate hole in growing medium sufficient to receive root ball. Excavation of the subgrade below the root balls of trees shall be only as necessary to permit the bottom of the root ball to sit on undisturbed material or compacted fill such that the top of the root ball remains at the proper finished grade. Disturbed subgrade or fill below the root ball shall be compacted to prevent settlement of the tree after planting. Remove excess material from the site.

- .8 Remove excavated subsoil material from site, or use on site in an approved manner. Obtain prior approval from Owner's Representative.

3.6 Planting Procedure

- .1 Planting operations shall be carried out under conditions that are conducive to healthy, vigorous growth of plant material.
- .2 Planting operations shall not be carried out when the growing medium is frozen, mixed with ice and/or snow, saturated or compacted to levels that exceed this specification.
- .3 Plant material shall be planted vertical, straight and plumb at locations staked in field and or noted on landscape plans.
- .4 Ensure orientation of plant material will give best appearance in relation to views from adjacent buildings, roads, walks or use areas.
- .2 Install all plants at height grown in Nursery. Allow for settling of the growing medium after planting. The grade that the plant was grown in the nursery shall be used as the indicator for proper growing medium and plant elevation relationship. Top of root ball elevation shall match the elevation of adjacent growing medium elevation.
- .3 Plants shall be set plumb in the planting beds or in the center of the pits, except where the plant's character requires variation. Obtain approval from Owner's Representative.
- .4 Backfill around root ball with prepared growing medium, tamping and watering to ensure firm support for the plant and eliminating all air pockets around the root ball. Ensure water penetration into the root balls during planting procedures.
- .5 Remove all string, rope, burlap and other restricting elements out to the perimeter of the root ball. Cut all wire basket handles flush with the top ring or fold back down into the planting hole. Do not remove wire baskets. Ensure no wires from the basket protrude into the top 100mm of the growing medium.
- .7 Ensure a 150mm (6") deep saucer around all trees for the full width of the planting pit.

3.7 Fertilizer Application

- .1 Place fertilizer as per recommendations of soil analysis and to requirements of Section 32 91 13.

3.8 Tree Stabilization

- .1 Stake and Tie trees immediately after planting if specified and only as directed by the Owner's Representative. Trees damaged as a result of delayed staking shall be replaced.
- .2 Trees shall stand plumb on completion of this operation.
- .3 Stakes and ties shall be installed such that injury to bark will not occur.
- .4 Ensure guy pins and stakes are placed out beyond the root ball. Trees that have had root balls penetrated by guy pins and stakes will be rejected.
- .5 Tie one (1) to two (2) flagging tape flags to all guy wires at a height that is clearly visible.

3.9 Tree Trunk Protection

- .1 Trees in lawn areas shall have trunk protection.
- .2 Place tree trunk protection around base of tree trunk as per manufacturer instructions.
- .3 Trees 100mm (4") calliper or less shall have one protector. Do not interlock ends of tree protector.
- .4 Trees greater than 100 mm (4") calliper shall have a minimum of two interlocked protectors. Do not interlock outside ends.

3.10 Tree Rings

- .1 Trees in lawn areas shall have 750mm (30") tree rings cut around the base of each tree. The tree rings shall be true circles centered on the trunk of the tree.
- .2 Have sod removed and area mulched as per specifications.
- .3 Trees in seeded areas shall have 750mm (30") tree rings cut around the base of each tree once seeded areas have been accepted by the Owner's Representative. The tree rings shall:
 - .1 Be true circles centered on the trunk of the tree.
 - .2 Have grass removed and area mulched as per specifications.

3.11 Pruning

- .1 Prune trees and shrubs after planting operation only as directed by Owner's Representative.
- .2 Prune only as directed by Owner's Representative.
- .3 Tree pruning is to be performed in accordance with the best practices published on the International Society of Arboriculture's (ISA) website (www.treesaregood.org).
- .4 Branch removal should be limited to necessary clearance pruning for public and electrical safety and the removal of dead, diseased, and/or defective wood to improve tree health and/or structure.
- .5 Street trees are to be pruned and maintained in accordance with Illuminating Engineering Society of North America (IES) standards for Roadway Lighting.
- .6 Each shrub planted shall be pruned to preserve the natural character of the plant and in a manner appropriate to its particular requirements in the landscape design.
- .7 All soft wood sucker growth and all broken or badly bruised branches shall be removed with a clean cut.
- .8 All pruning shall be done with proper, sharp pruning tools. All pruning cuts to be made protecting the branch collar.
- .9 All pruning cuts shall be made with pruning saws or hook and blade pruning tools designed and manufactured for pruning operations. Anvil-type pruning tools shall not be used in any pruning operations.
- .10 Do not damage the branch collar.

- .11 Do not damage the leader or lead branches. Plants which have had the main leader or lead branches damaged or removed will be rejected and replaced by the Contractor at no cost to the Owner.
- .12 Do not remove minor twig branches along the main structural branches.

3.12 Applying Mulch

- .1 Prior to the application of composted mulch;
 - .1 Reset all plants that have settled so that relationship of nursery grade of root ball to finish grade of growing medium is as per specification
 - .2 Manually remove all weeds and weed roots from root balls and adjacent growing medium.
 - .3 Remove all deleterious material and debris from planting areas.
 - .4 All fine grading is complete, the growing medium is loose and friable
 - .5 The Owner's Representative has reviewed of all planting areas.
- .2 Spread composted mulch to minimum depth of 50 mm (2").
 - .1 Ensure finish composted mulch layer is a minimum of 12mm (1/2") below adjacent hard landscape surfaces and edges.
 - .2 Ensure mulch is kept 125 mm (5") away from tree trunks and 75 mm (3") away from stems of shrubs.

3.13 Maintenance

- .1 Begin maintenance at time of planting and continue for a minimum of fifty-five (55) days or until Acceptance which ever is greater, at which time the Owner will take over maintenance.
- .2 If for any reason the Contractor elects, on his own without the written consent of the Owner's Representative to suspend maintenance operations he is to provide the Owner's Representative written notice of such action. Any damages or requirement for the replacement of plant material that as a result of the suspension of maintenance operations shall be the borne by the Contractor at no cost to the Owner.
- .3 Maintenance of plant material includes but is not limited to watering at intervals sufficient to maintain healthy, vigorous growth, weeding of plant beds and tree pits, cultivating of growing medium, pruning, only if requested, treatment of insects, moulds, fungi or disease to the Level 2 "Groomed" as per the BCNLA Landscape Standard, Current Edition or as directed by Owner's Representative.
- .4 Plant material shall be deep watered at least once per day when temperatures exceed 25 degrees Celsius (77 degrees F).
- .5 Contractor to ensure adequate moisture in plant root zone prior to winter freeze-up.
- .6 Ensure tree guards, stakes, flagging tape on tree guy wire and tree ties are kept secure, taught and in proper repair.

3.14 Finish Grading

- .1 All planted areas and all growing medium shall be fine graded after placing to the finished elevations and contours as detailed and specified herein. Surfaces shall be true to intended grades, smooth, uniform, and firm against deep foot printing, with a fine loose surface texture. Ensure all rough spots and low areas are eliminated to ensure positive surface drainage. Adjust grades to accommodate for mulch as specified/detailed.

3.15 Cleaning

- .1 All excess materials and other debris resulting from planting operations shall be removed from the job site.
- .2 Flush all walks and paved areas and rake all lawn areas clean to the satisfaction of the Owner's Representative.

END OF SECTION 32 93 10

PART 1: GENERAL

1.1 General Requirements

- .1 Refer to Division 1, General Requirements.
- .2 This section of the specification forms an integral part of the Contract Documents and is to be read, interpreted, and coordinated with all other parts.

1.2 Description

- .1 Supply all products, labour, equipment, and services necessary to install a completely operating drainage system as indicated in the contract documents.

1.3 Related Work

- | | | |
|----|------------------------------|------------------|
| .1 | Site Preparation and Grading | Section 01 89 13 |
| .2 | Excavation and Backfill | Section 31 23 10 |
| .3 | Growing Medium | Section 32 91 13 |
| .4 | Plants and Planting | Section 32 93 10 |

1.4 Submittals

- .1 Record Drawings: Submit a suitably scaled reproducible copy of the "as-constructed" condition of the system. This drawing should be professionally drawn or produced with the use of computer-aided drafting/design (CADD) where possible. All components of the subsurface drainage system shall be shown as installed with clear measurements provided from an identifiable reference point.
- .2 Submit one graphic sieve analysis of the proposed bedding material and a one litre sample of the proposed drain rock.
- .3 If an alternative is proposed to any specified drainage components, submit samples and or manufacturer's data sheets for approval by Owner's Representative.

1.5 Protection

- .1 Protect existing buildings, equipment, sidewalks, landscape reference points, monuments, markers and other completed work. Make good any damage resulting from work of this Contract at no expense to the Board.
- .2 Do not park vehicles on the site in areas where the work will be undertaken without express written consent of the Board. Utilize only such equipment/vehicles essential for construction of the system.
- .3 Trenching and other excavations for vaults, valve boxes etc. are not to be left open during non-work hours of operation unless they are protected to current WorkSafeBC Standards. Cover/mark/protect, as necessary, all open excavations to ensure public safety.

1.6 Site Conditions

- .1 Existing Conditions/Underground Services: Verify the existence and location of all on site utilities/underground services by hand digging or use of an electronic toning device or M-Scope. Mark the location of all buried cables, conduits, pipes etc. **prior to any trenching**. Cooperate with the Board and utility companies to keep their respective utilities in operation. Notify Owner's Representative immediately for directions as to the procedure should any piping utilities be encountered during excavation.
- .2 Site Preparation: Prior to the work of this Section, carefully inspect any installed work of other trades or contractors and verify all such work is complete to the extent that this work may commence properly.
- 3 Field Measurements: Make all measurements in the field and adjust the design to meet the on site conditions to ensure precise fit of items in accordance with the original design.
- .4 Discrepancies: In the event of a major discrepancy, errors or conflicts between the drawings and the actual site conditions, immediately notify Owner's Representative as to procedure before proceeding with work.
- .5 Repair to Underground Services: Repair all damage to underground services caused by the work of this Contract. Damage to services that are shown on the drawings or have been brought to the Contractor's attention in the field prior to commencement or during construction of the work shall be repaired in entirety at the Contractor's expense. Damage to services that were clearly unforeseen/unknown of existence (provided that all reasonable measures were undertaken by the Contractor to ascertain the existence of these services) shall be repaired in accordance with the Changes clause of the General Conditions. Notify Owner's Representative of damage immediately.

PART 2: PRODUCTS

2.1 Drain Pipe

- .1 Perforated Pipe: 100mm dia. **CSA** SDR-35 Rigid Perforated Drain Pipe.
- .2 Solid Pipe: 250 mm dia. SDR 35 Rigid Non Perforated Drain Pipe.
- .3 All pipes and fittings that are polyvinyl chloride (PVC) must conform to CSA B182.1-96M.

2.2 Drainage Structures

- .1 Area Drains: **The Park Board does not accept any plastic (PVC) drains or drainage structures.** Area drains should be designed for outdoor use, complete with square bolt-down cast iron or bronze grate and sediment bucket. Product to be heavy-duty grade and by Zurn, or pre-approved equivalent. All area drains shall be sized for area and to be a minimum of 8 inches square.

- .2 Lawn Basins/Catch Basins: Precast concrete barrels, lids and riser rings to ASTM C478 complete with galvanized steel rungs (where specified), sized to suit application and a minimum diameter of 600 mm. As supplied by Ocean Construction Supplies **or pre-approved equivalent**. Cast Iron grate and frame by Dobney Foundry (typical, No. B26 B grate and frame for 600 dia. precast concrete barrels, or equivalent).
- .3 Drain Rock: 19 to 25 mm (3/4"-1") diameter clear gravel drain rock (uniform clear crush or round free) and free of silt, sand and clay with the following gradations:
- | Sieve size | % Passing (by weight) |
|-----------------|-----------------------|
| 25 mm (1 in) | 100 |
| 19 mm (3/4 in) | 0 - 100 |
| 12.5 mm (No. 8) | 0 - 30 |
| 9.5 mm (No. 16) | 0 - 3 |
- .4 Filter Gravel: Shall be bird's-eye clean gravel with 98% passing the 7.5mm (5/16") sieve, 95% retained by the 4.76 sieve and less than 1% passing the 2.36mm sieve. The material will be clean free of organic, oil, grease or toxic materials.

2.3 Filter Fabric

- .1 The Owner does not incorporate filter fabric in its subsurface drainage systems in lawn or planted areas.

2.4 Clean-Outs

- .1 Clean-outs are required all drain lines.

2.5 Approved Equals

- .1 All items as specified or pre-approved equivalents.

PART 3: EXECUTION

3.1 Inspection and Layout

- .1 Provide Owner's Representative 48 hours advance notice for inspection and approval of all subgrade prior to placing drain lines. Report any unsatisfactory conditions to Owner's Representative.
- .2 Layout the piping and drainage structure locations with flags or stakes and obtain the Owner's Representative's approval before proceeding. The layout shall be in accordance with the drawing(s). Route piping to take into account site elevation changes and locate drainage structures to maximize run-off collection. Alternative layouts shall be approved by Owner's Representative and indicated on the Record Drawings.

- .3 Coordinate exact locations of lines, clean-outs and structures, with planting locations to avoid conflicts and damage to plants during installation. Stake locations for approval by Owner's Representative. Verify grades for all drainage components.
- .4 Closing in Uninspected Work:
 - .1 Obtain approval of Owner's Representative before backfilling any sections of the subsurface drainage system.
 - .2 Any work closed in before inspection will be required to be exposed for inspection at no extra cost to the Owner.

3.2 Installation Specification

- .1 All excavation shall be undertaken in accordance with the City of Vancouver's Policy and Standard Operating Procedure- Soil and Excavation Water Contamination Management.
- .2 Area Drains: Excavate as required and perform all inlet and outlet connections as per drawings and or manufacturer's recommended installation methods. Backfill with drain rock and install as per details.
- .3 Lawn Basins: Excavate as required and perform all inlet and outlet connections as per drawings and or manufacturer's recommended installation methods. Backfill with drain rock and install as per details.
- .4 Clean-Outs: Excavate as required and perform all inlet and outlet connections as per drawings and or manufacturer's recommended installation methods. Backfill with drain rock and install as per details.
- .5 Trenching and Drain Pipe Installation:
 - .1 Open excavation shall be carried out in a safe and orderly manner and in accordance with the requirements of the Workers' Compensation Act of B.C. Approved shoring shall be used where required for safe working conditions.
 - .2 All trenches are to be hand or machine excavated. All trenches shall be dug on the alignment and to the depth required as shown on the drawings and as stated herein. Trenches are to be straight with uniform slopes to the bottom of all trenches.
 - .3 Where the pipes are to be laid in sub-surface material the trench shall be excavated to a depth at least 100 mm below the bottom of the pipe elevation or as detailed. **The tops of pipes are to be a minimum of 500 mm (20 in) below the final grades.**
 - .4 Prior to backfilling, all lines, connections and fittings shall be inspected by Owner's Representative where required.
 - .6 Trenches shall be at least 600mm away from paving stones or other hard surfaces to avoid undermining such surface or its edge retention.

- .7 Backfilling shall take place in an orderly fashion. Place drain rock material to the full width of the trench bottom, with minimum bedding depth to be 100 mm. Shape bed true to grade to provide continuous, uniform bearing surface for pipe. After pipe is in place, backfill to allow for a minimum of 200 mm of drain rock over the surface of the pipe. Place a uniform 75 mm of bird's eye gravel on top of drain rock. The remainder of the backfill to finish grade shall be with growing medium free of rocks and other unsuitable materials that could damage the pipe or create unusual settling conditions.
- .8 Compact the growing medium to the same density as the native material in the trench sidewalls to prevent differential settlement.
- .9 Contractor is responsible to repair all trenches which have settled below the adjacent grade for a period of one (1) year from date of Substantial Performance.
- .10 **The Owner does not accept any material refuse such as pipe pieces, rags, fittings or other waste left as backfill in any trenches.**
- .11 No drainage line shall be directly over and parallel to another drainage line or service line of any other trade. Ensure minimum horizontal and vertical clearance requirements as dictated by Canadian Electrical Code for all piping installations near any electrical conduit/service.
- .12 **Perforated and Solid SDR Pipe:** Place bedding and/or drain rock material and install pipe in locations shown as per details and plans. Comply with all the manufacturer's printed data and recommendations regarding pipe installation, cleaning, fitting preparation and correct joining techniques.
- .13 All pipe inverts shall be installed within 15mm of design grades and bedded to provide uniform falls to drain structures.

3.3 Site Maintenance/Clean-Up

- .1 The job site shall be kept in a neat, clean and orderly condition at all times during the installation process.
- .2 Trenching, laying pipe and backfilling shall be continuous so that the amount of open trenching at the end of each workday is minimized. Any open trench or other excavations shall be barricaded and marked with high visibility marking tape to current WorkSafeBC requirements.
- .3 Any damage to paving, planting or any other structures/elements due to settlement of improperly compacted trenches shall be immediately repaired at the Contractor's expense to satisfaction of Owner's Representative.
- .4 Remove and dispose of off site all surplus material, excess excavated materials, trash, debris and waste material from the work of this Section.

END OF SECTION 33 46 16

Beaconsfield Park Playground Renewal

3215 SLOCAN STREET - VANCOUVER, BC

Owner

CLIENT
Vancouver Board of Park and Recreation - CITY OF VANCOUVER
2099 Beach
Vancouver BC, Canada
V6G 1Z4

Contact: Lehran Hache - Project Manager

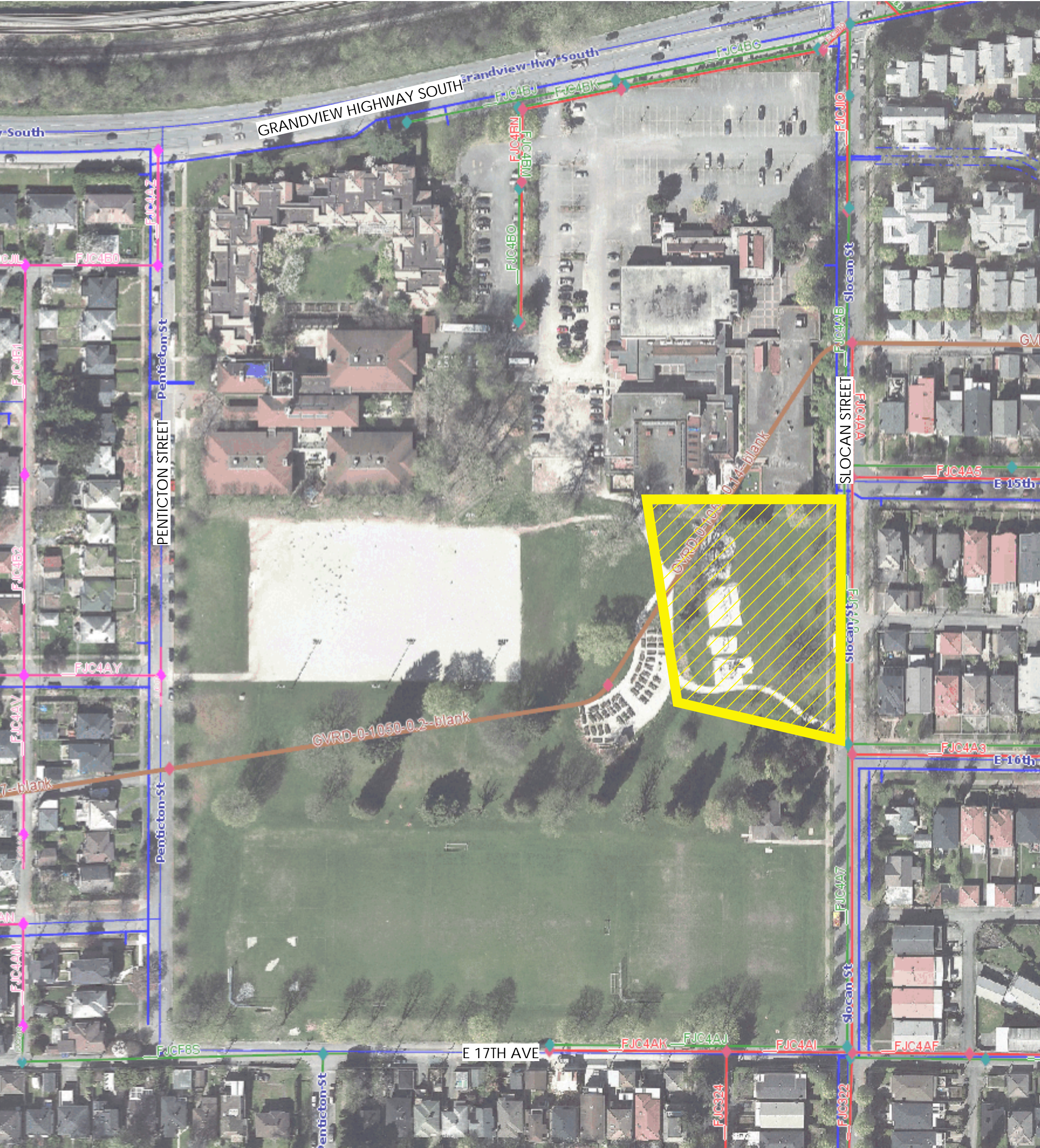
Consultants

LANDSCAPE ARCHITECT
Durante Kreuk Ltd.
102 - 1637 W 5th Avenue
Vancouver BC, Canada
V6J 1N5

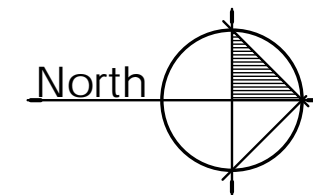
Contact: Kyle Labow - Project Manager

Drawing List

LANDSCAPE PLANS		
L1.1	OVERALL SITE PLAN	1:200
L1.2	EXISTING CONDITIONS AND DEMOLITION PLAN	1:100
L1.3	MATERIALS AND LAYOUT PLAN	1:100
L1.4	GRADING AND DRAINAGE PLAN	1:100
L1.5	PLANTING PLAN	1:100
LANDSCAPE DETAILS		
L2.1	LANDSCAPE DETAILS	AS SHOWN
L2.2	LANDSCAPE DETAILS	AS SHOWN
L2.3	LANDSCAPE DETAILS	AS SHOWN
L2.4	LANDSCAPE DETAILS	AS SHOWN
L2.5	LANDSCAPE DETAILS	AS SHOWN



Key Plan



-	2020 07 20	Issued for Tender
-	2020 06 12	Pre-Tender Review
-	2020 01 10	90%
-	2019 03 15	50%
no.:	date:	Item:

Revisions:



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Project:

Beaconsfield Park
Playground

Drawn by: KS/KL

Checked by: KS/SV

Date: 2019 04 02

Scale:

Drawing Title:

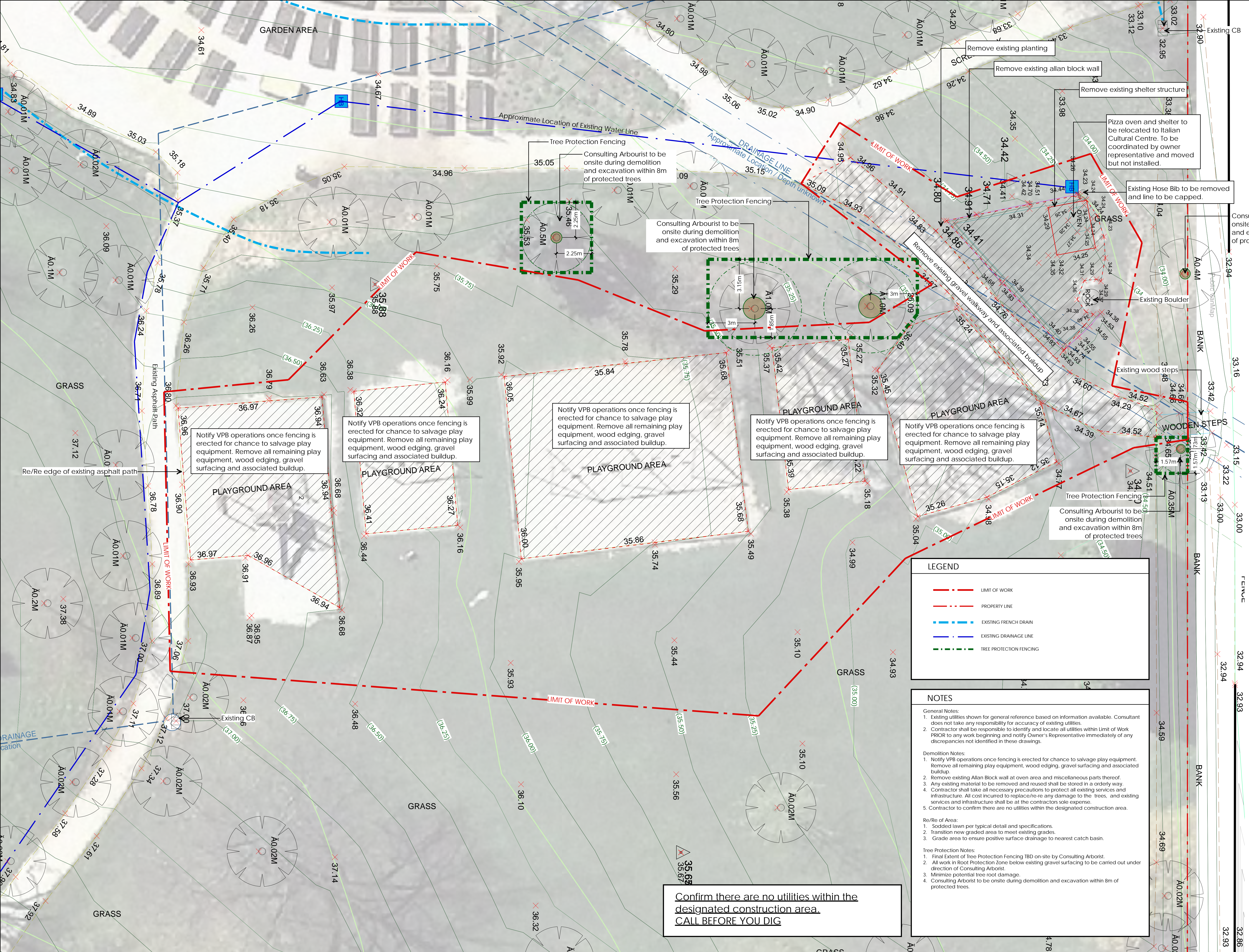
Overall Site Plan

Project No.:

18059

Sheet No.:

L1.1



North

2020 07 20

Issued for Tender

2020 06 12

Pre-Tender Review

2020 06 05

Progress Review

2020 01 10

90%

2019 03 15

50%

no.: date:

Item:

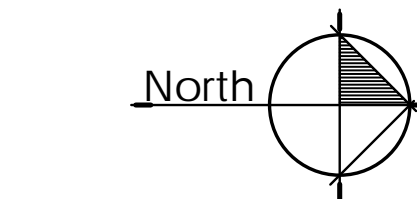
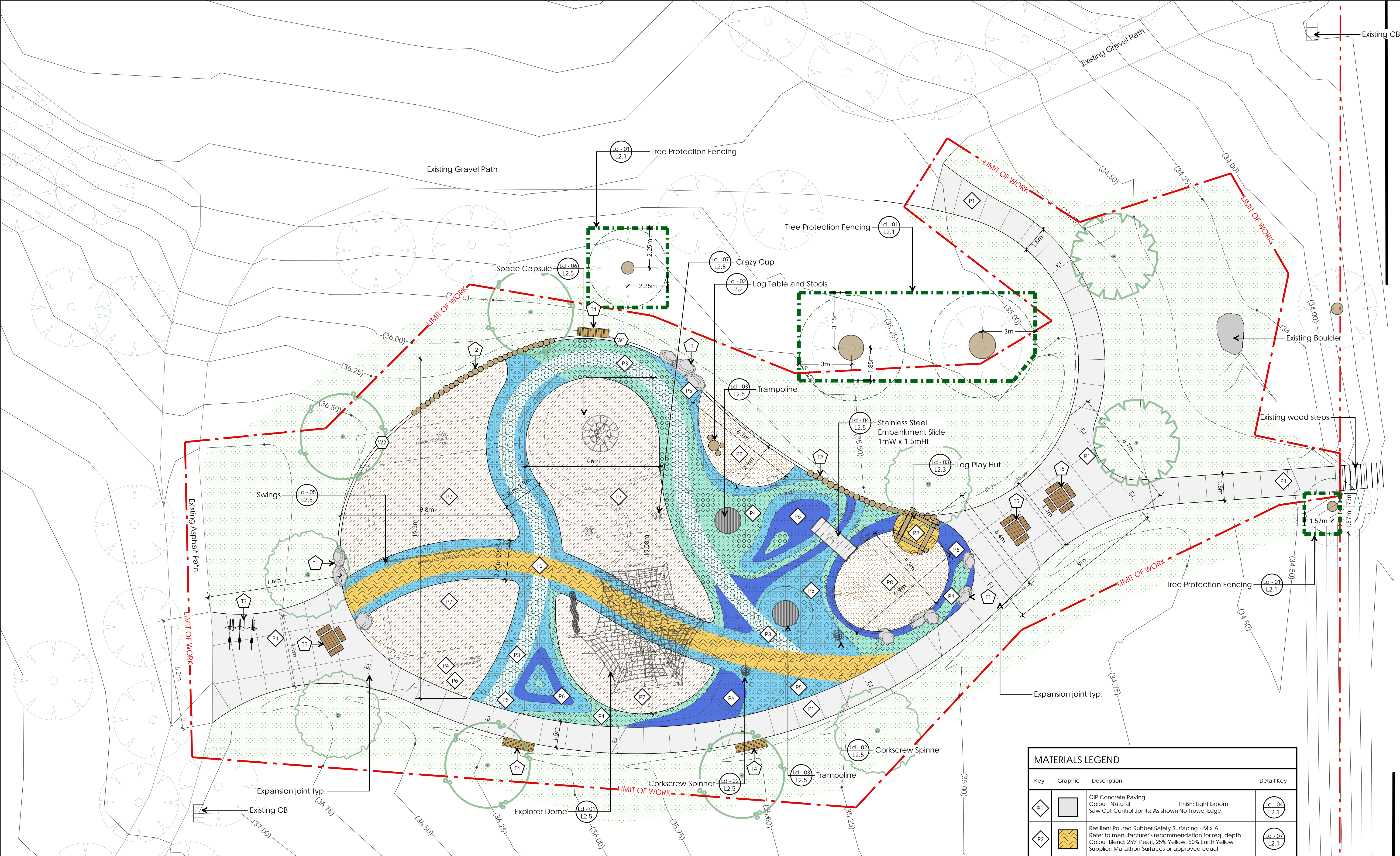
Revisions:

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Project:	
Beaconsfield Park Playground	
Drawn by:	KS/KL
Checked by:	KS/SV
Date:	2020 01 10
Scale:	1:100
Drawing Title:	
Existing Conditions and Demolition Plan	
Project No.:	18059
Sheet No.:	L1.2



Revisions:

-	2020 07 20	Issued for Tender
-	2020 06 12	Pre-Tender Review
-	2020 06 05	Progress Review
-	2020 01 10	90%
-	2019 03 15	50%

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Project:

Beaconsfield Park
Playground

Drawn by:

KS/KL

Checked by:

KS/SV

Date:

2020 01 10

Scale:

1:100

Drawing Title:

Materials and Layout
Plan

Project No.:

18059

Sheet No.:

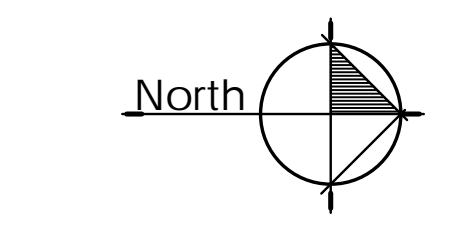
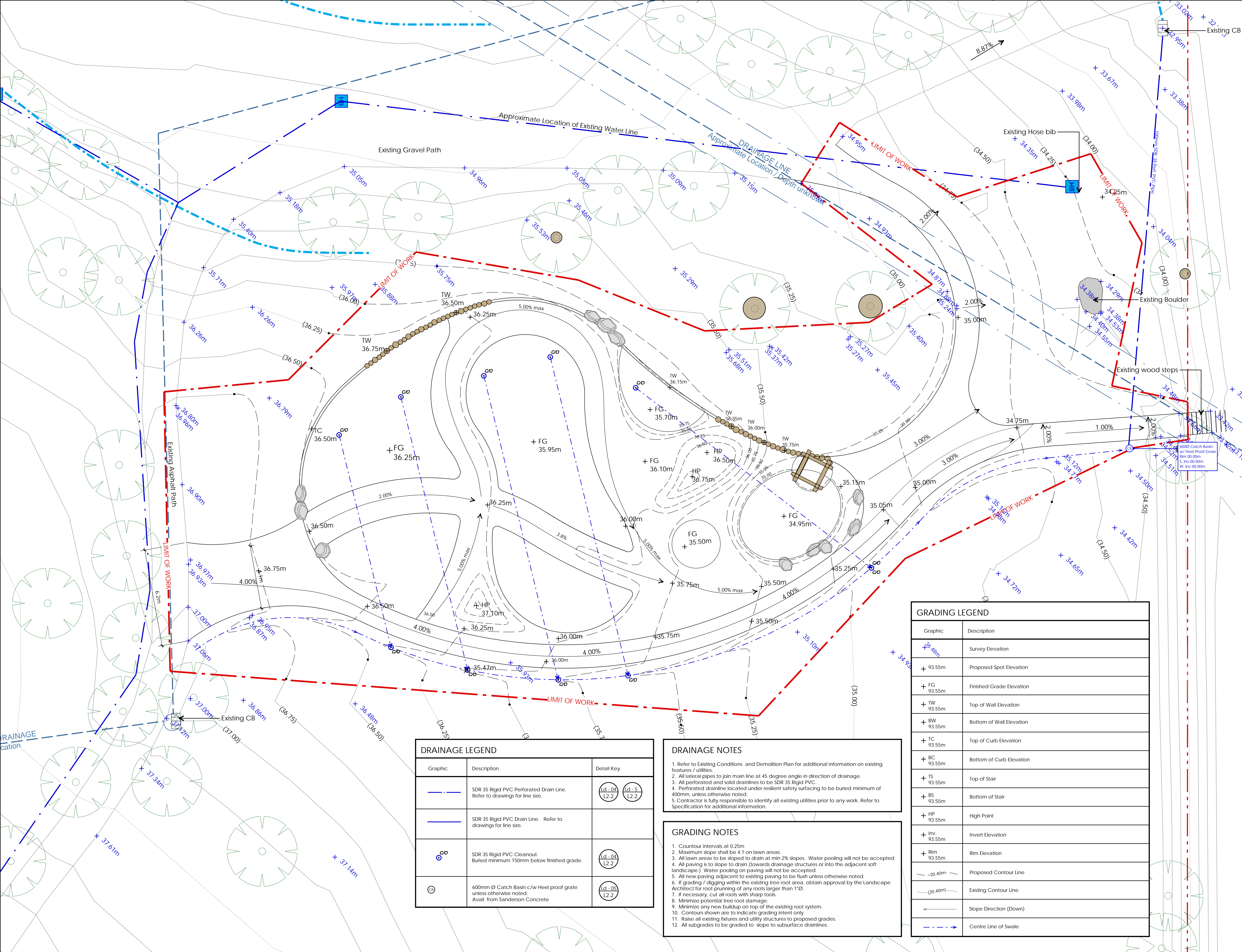
L1.3

WALL AND CURB TYPE SCHEDULE		
Key	Description	Detail Key
W1	152mm wide CIP Concrete Band	(Ld - 01) L2.2
W2	152mm wide CIP Concrete Curb	(Ld - 02) L2.2
NOTES		
1. All walls exceeding a height of 0.60m shall be protected with an Anti Graffiti Coating. Acceptable suppliers and proprietary products include: CBR 501-AG Anti Graffiti Coating by Broda Stains and Coatings, as supplied by CBR Products, 102-676 Cordova, Vancouver BC (604) 252 3325 or Pre approved Equal		

COMPONENT LEGEND			
Key	Graphic	Description	Detail Key
T1		Rounded Boulders 400-900mm overall height. Locate and install onsite as per plan and detail drawings. Owner supplied from Kent Yard. Contractor responsible for pickup. Owner's representative to approve placement of boulders at time of installation.	(Ld - 01) L2.4 (Ld - 02) L2.4
T2		Upright Logs 250mm-400mm diameter Owner representative to approve placement at time of installation.	(Ld - 01) L2.3
T3		Bike Racks Qty: 3. Colour: Yellow Model: Surface Mount Owner Supplied, Contractor Installed	(Ld - 06) L2.4
T4		Benches Qty: 3 Model: Surface-Mount Owner Supplied, Contractor Installed	(Ld - 04) L2.4

COMPONENT LEGEND contd.			
Key	Graphic	Description	Detail Key
T5		Picnic Tables Model: Frances Andrew Kingston T44-4413, Surface-Mount Colour: Red Qty: 2 Owner Supplied, Contractor Installed	(Ld - 06) L2.4
T6		Picnic Tables Model: Frances Andrew Kingston T44-4414, Surface-Mount(Qty:1) Colour: Seascape Qty: 1 Owner Supplied, Contractor Installed	(Ld - 06) L2.4

MATERIALS LEGEND			
Key	Graphic	Description	Detail Key
P1		CIP Concrete Paving Colour: Natural Saw Cut Control Joints: As shown No.Trowel Edge	(Ld - 04) L2.1
P2		Resilient Poured Rubber Safety Surfacing - Mix A Refer to manufacturer's recommendation for req. depth Colour Blend: 25% Pearl, 25% Yellow, 50% Earth Yellow Supplier: Marathon Surfaces or approved equal	(Ld - 07) L2.1
P3		Resilient Poured Rubber Safety Surfacing - Mix B Refer to manufacturer's recommendation for req. depth Colour Blend: 50% Turquoise Blue, 50% Pearl Supplier: Marathon Surfaces or approved equal	(Ld - 07) L2.1
P4		Resilient Poured Rubber Safety Surfacing - Mix C Refer to manufacturer's recommendation for req. depth Colour Blend: 100% Turquoise Blue Supplier: Marathon Surfaces or approved equal	(Ld - 07) L2.1
P5		Resilient Poured Rubber Safety Surfacing - Mix D Refer to manufacturer's recommendation for req. depth Colour Blend: 100% Blue Grey Supplier: Marathon Surfaces or approved equal	(Ld - 07) L2.1
P6		Resilient Poured Rubber Safety Surfacing - Mix E Refer to manufacturer's recommendation for req. depth Colour Blend: 100% Rainbow Blue Supplier: Marathon Surfaces or approved equal	(Ld - 07) L2.1
P7		Engineered Wood Fibre 305mm depth min. Refer to Manufacturer Recommendation Refer to Specification	(Ld - 06) L2.1
P8		Play Sand Refer to Specification	(Ld - 06) L2.1



-	2020 07 20	Issued for Tender
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-	2020 01 10	90%
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Project:
**Beaconsfield Park
Playground**

Drawn by:	KS/KL
Checked by:	KS/SV
Date:	2020 01 10
Scale:	1:100
Drawing Title:	

**Grading and Drainage
Plan**

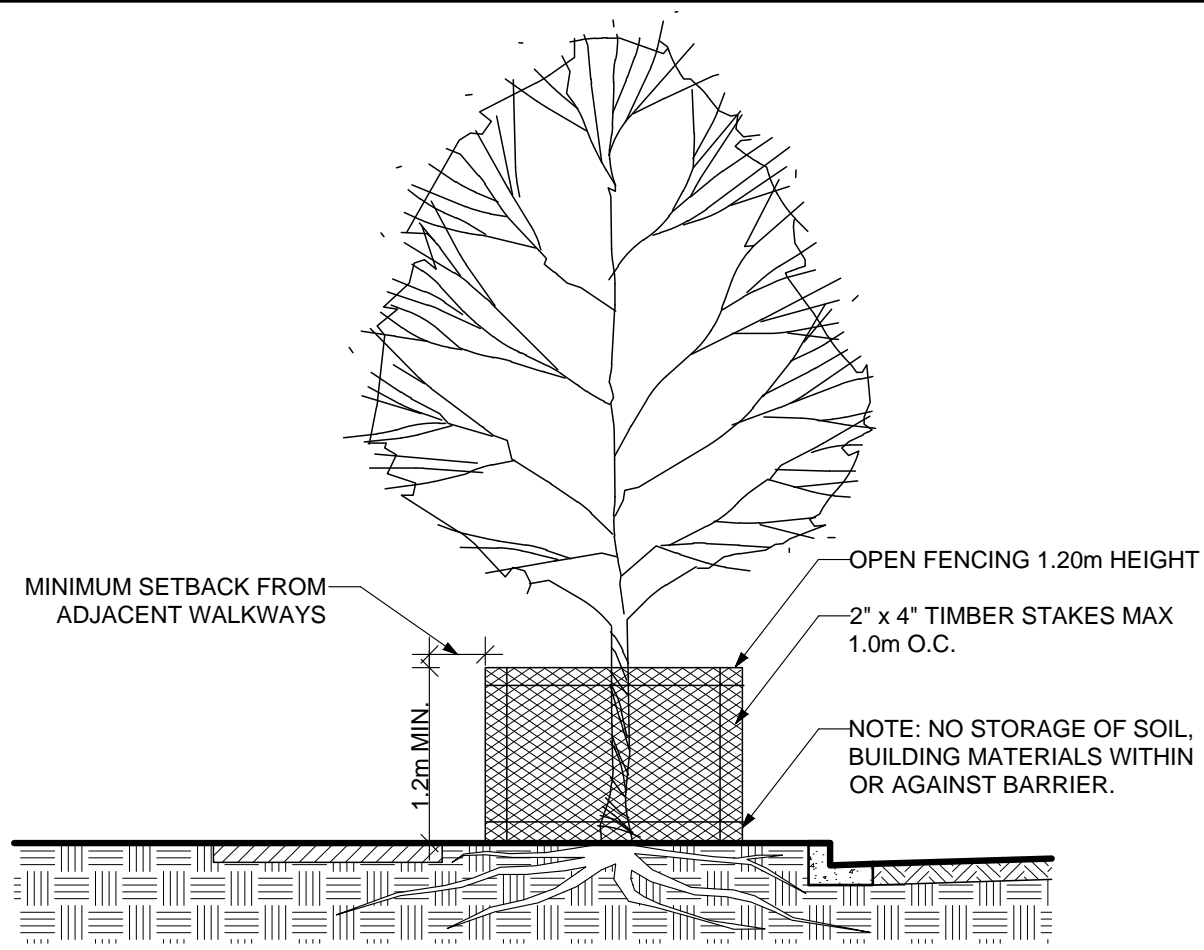
Project No.:	18059
Sheet No.:	

GRADING LEGEND	
Graphic	Description
	Survey Elevation
	Proposed Spot Elevation
	Finished Grade Elevation
	Top of Wall Elevation
	Bottom of Wall Elevation
	Top of Curb Elevation
	Bottom of Curb Elevation
	Top of Stair
	Bottom of Stair
	High Point
	Invert Elevation
	Rim Elevation
	Proposed Contour Line
	Existing Contour Line
	Slope Direction (Down)
	Centre Line of Swale

DRAINAGE LEGEND		
Graphic	Description	Detail Key
	SDR 35 Rigid PVC Perforated Drain Line. Refer to drawings for line size.	
	SDR 35 Rigid PVC Drain Line. Refer to drawings for line size.	
	SDR 35 Rigid PVC Cleanout. Buried minimum 150mm below finished grade.	
	600mm Ø Catch Basin c/w Heel proof grate unless otherwise noted. Avail. from Sanderson Concrete	

- DRAINAGE NOTES**
1. Refer to Existing Conditions and Demolition Plan for additional information on existing features / utilities.
 2. All lateral pipes to join main line at 45 degree angle in direction of drainage.
 3. All perforated and solid drainlines to be SDR 35 Rigid PVC.
 4. Perforated drainline located under resilient safety surfacing to be buried minimum of 400mm, unless otherwise noted.
 5. Contractor is fully responsible to identify all existing utilities prior to any work. Refer to Specification for additional information.

- GRADING NOTES**
1. Contour intervals at 0.25m
 2. Maximum slope shall be 4:1 on lawn areas.
 3. All lawn areas to be sloped to drain at min 2% slopes. Water pooling will not be accepted
 4. All paving is to slope to drain (towards drainage structures or into the adjacent soft landscape). Water pooling on paving will not be accepted
 5. All new paving adjacent to existing paving to be flush unless otherwise noted.
 6. If grading / digging within the existing tree root area, obtain approval by the Landscape Architect for root pruning of any roots larger than 1"Ø.
 7. If necessary, cut all roots with sharp tools.
 8. Minimize potential tree root damage.
 9. Minimize any new buildup on top of the existing root system.
 10. Contours shown are to indicate grading intent only.
 11. Raise all existing fixtures and utility structures to proposed grades.
 12. All subgrades to be graded to slope to subsurface drainlines.

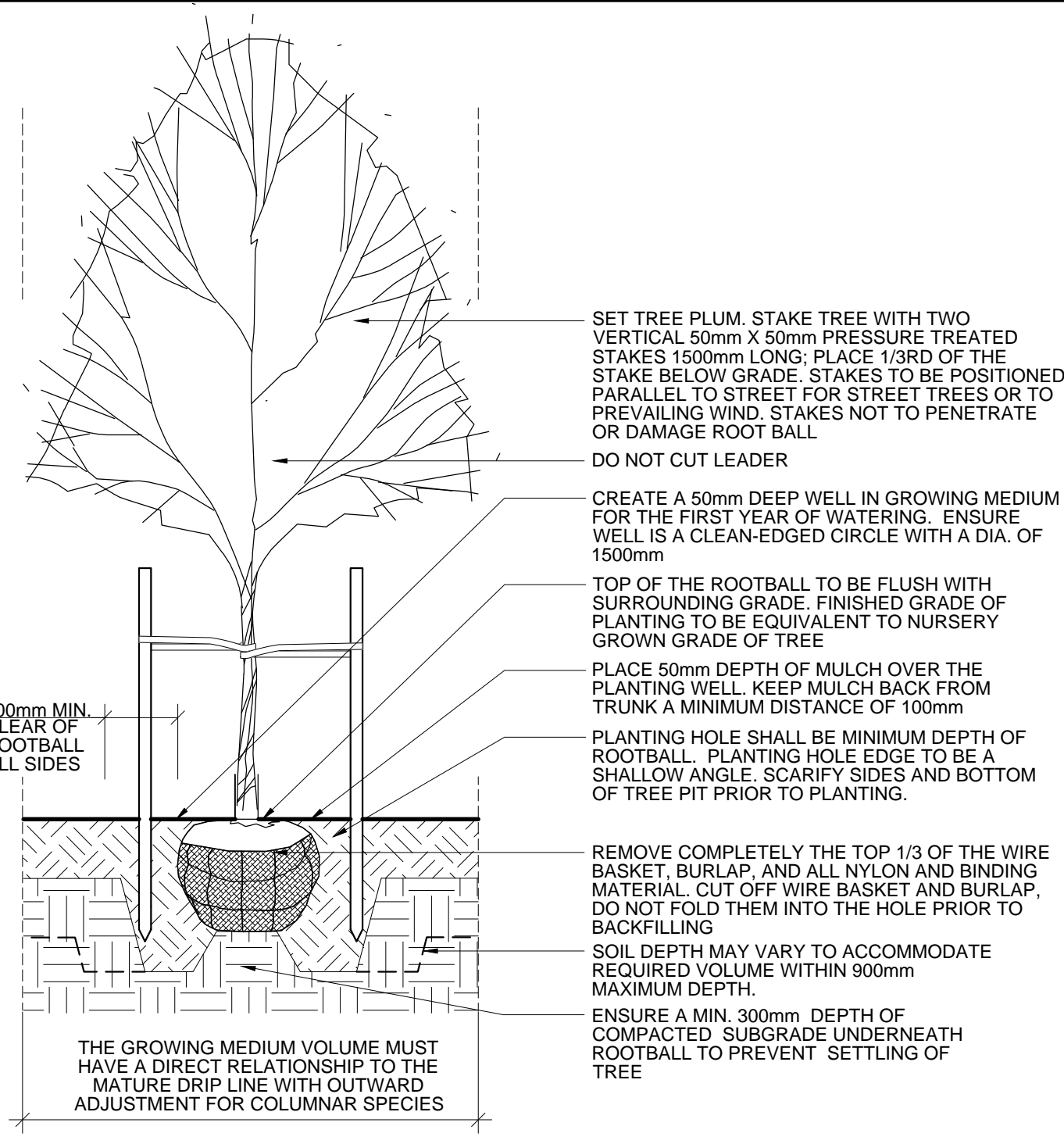


SCHEDULE A - TREE PROTECTION BARRIER		
TREE PROTECTION DISTANCE TABLE		
TRUNK DIAMETER		MINIMUM DISTANCE
CM	FT	FROM TRUNK (METERS)
20	0.6	1.2
25	0.8	1.5
35	1.0	2.1
40	1.2	2.4
45	1.3	2.7
50	1.5	3.0
55	1.7	3.3
60	2.0	3.6
75	2.5	4.5
90	3.0	5.0
100	3.3	6.0

NOTE:
TREE PROTECTION BARRIERS MUST BE AT LEAST 1.20m IN HEIGHT AND CONSTRUCTED OF EITHER SNOW FENCING SECURELY FASTENED TO 2x4 TIMBER STAKES, OR METAL STAKES SPACED NO FURTHER THAN 1.00m APART.

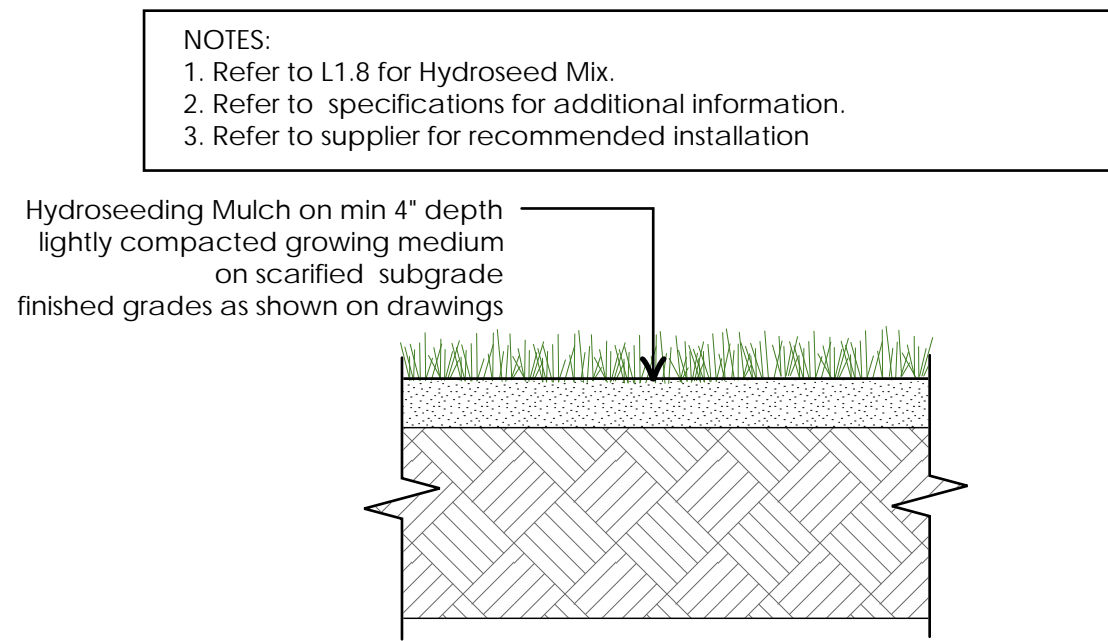
Ld - 01 TREE PROTECTION BARRIER FENCING - COV STANDARD

L2.1 Scale NTS



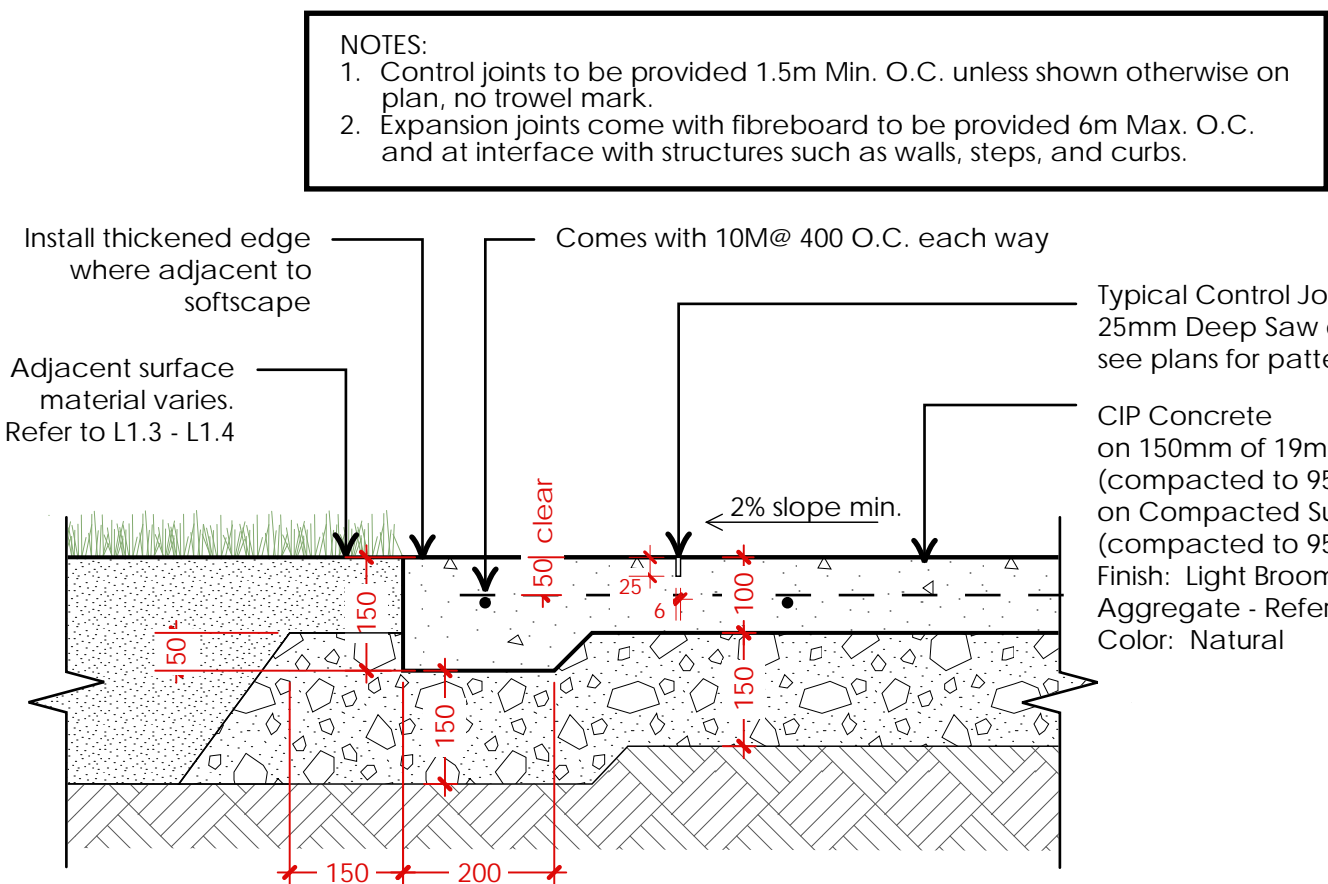
Ld - 02 TYPICAL TREE PLANTING - COV STANDARD

L2.1 Scale NTS



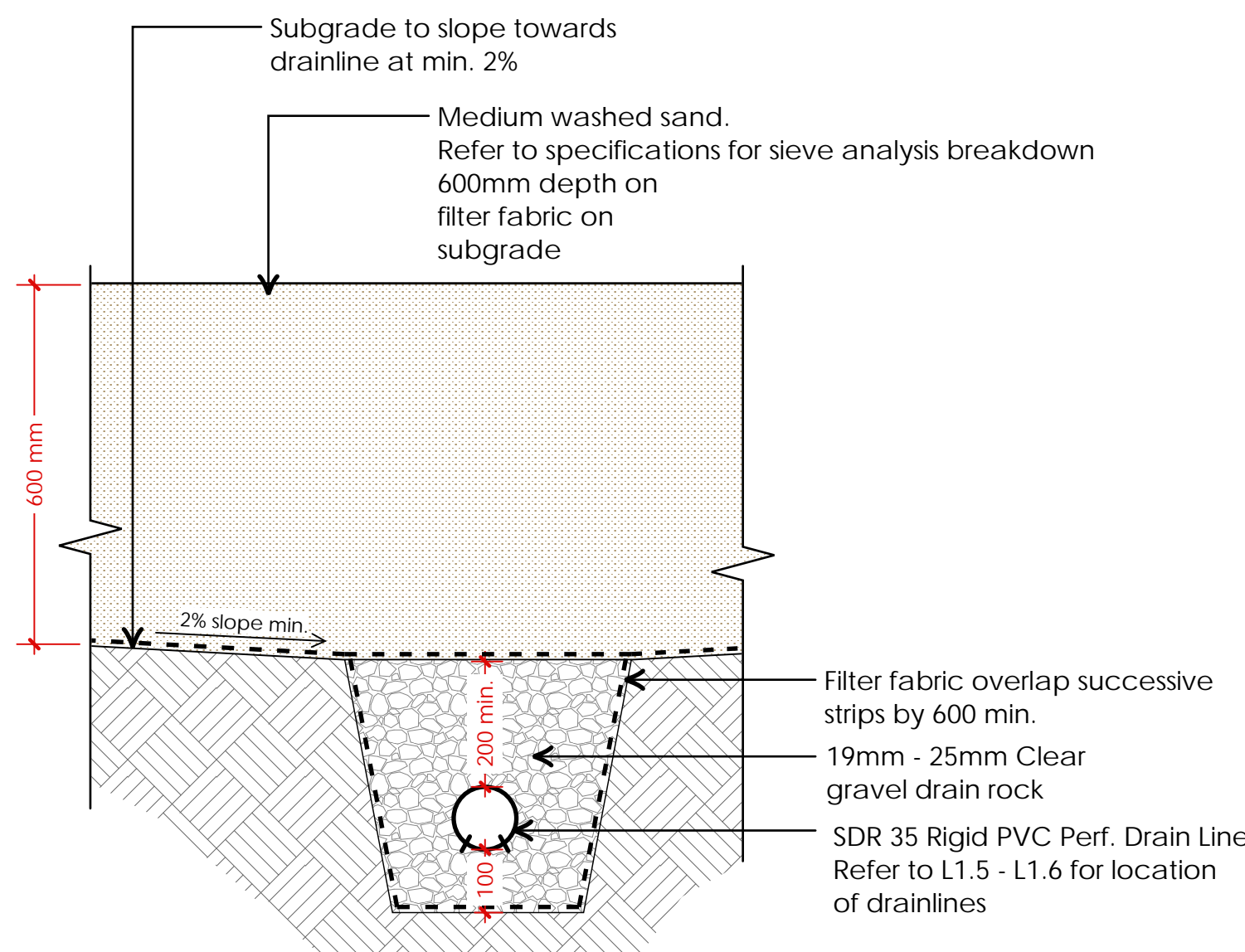
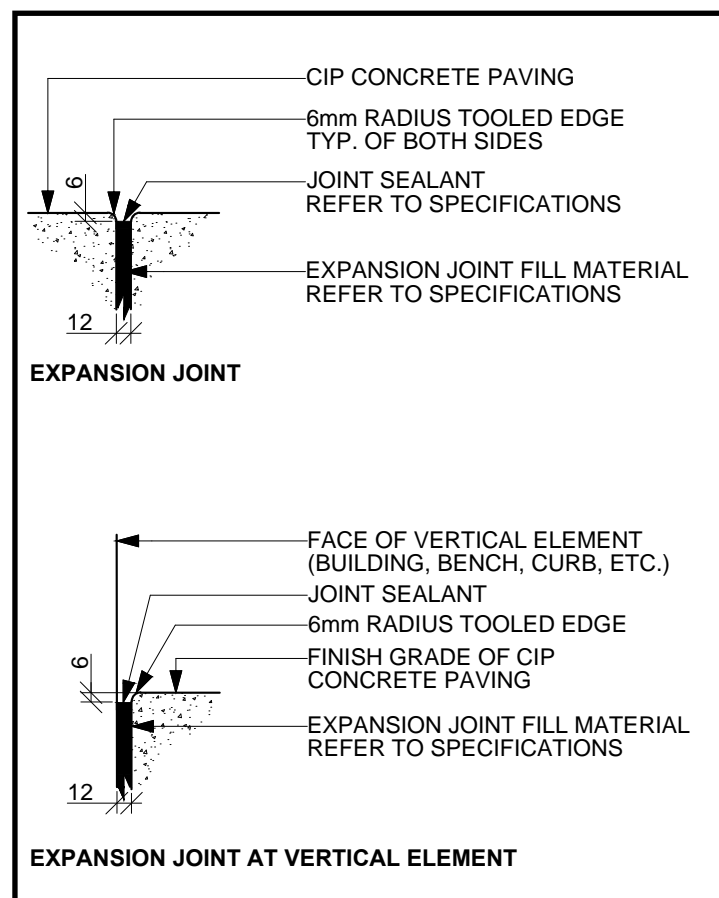
Ld - 03 HYDROSEED ON GRADE

L2.1 Scale 1:10



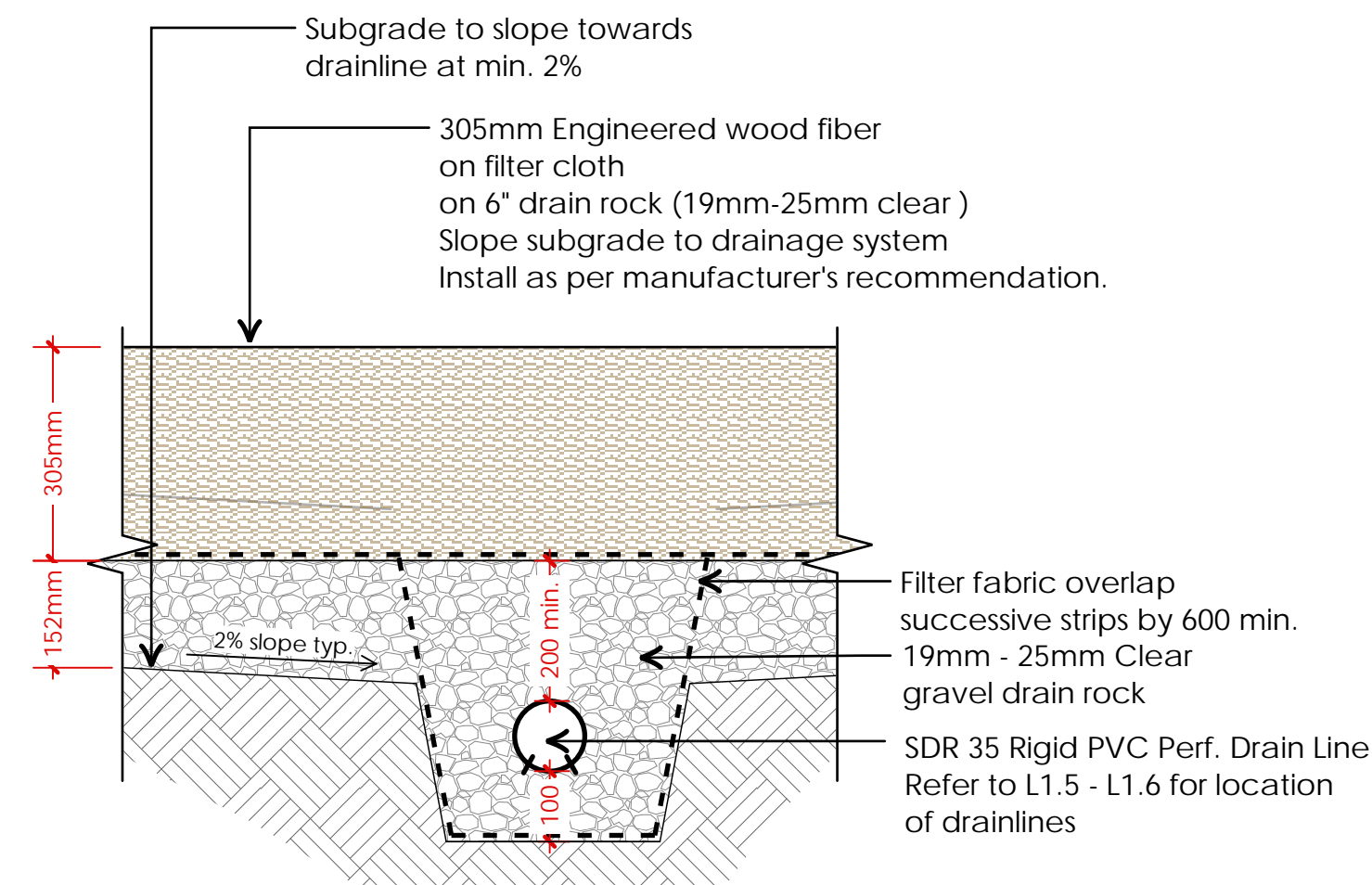
Ld - 04 TYPICAL C.I.P. CONCRETE PAVING

L2.1 Scale 1:10



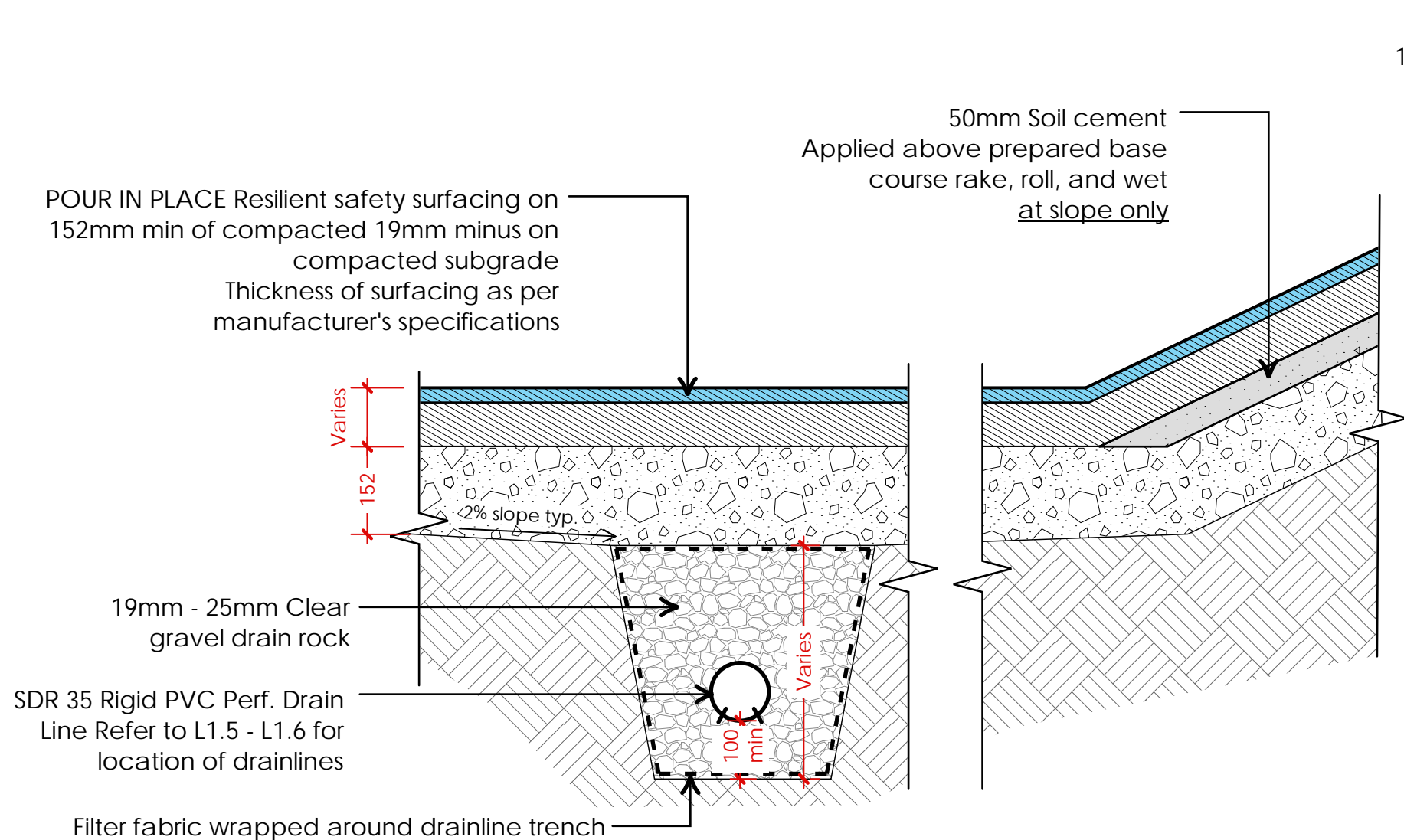
Ld - 05 SAND PLAY AREA

L2.1 Scale 1:10



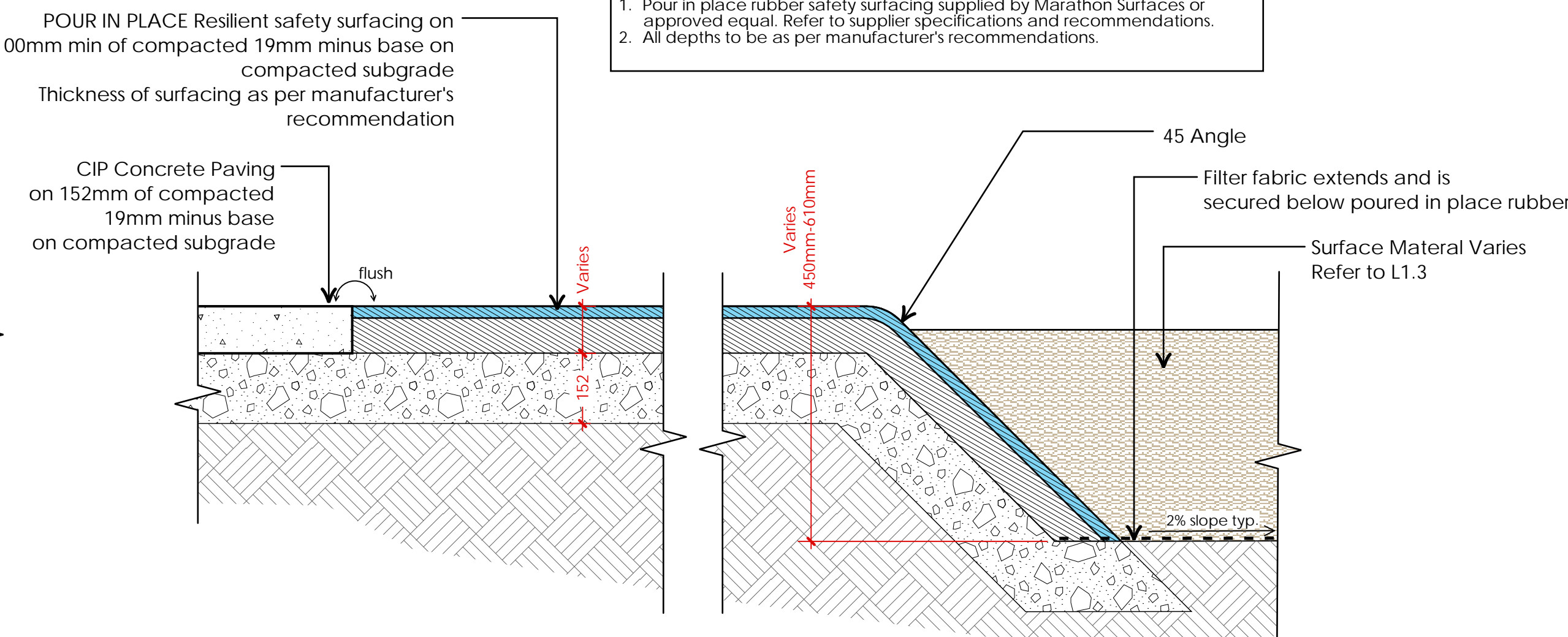
Ld - 06 ENGINEERED WOOD FIBRE

L2.1 Scale 1:10



Ld - 07 RESILIENT POURED IN PLACE RUBBER SAFETY SURFACING

L2.1 Scale 1:10



NOTES:
1. Pour in place rubber safety surfacing supplied by Marathon Surfaces or approved equal. Refer to supplier specifications and recommendations.
2. All depths to be as per manufacturer's recommendations.

- 2020 07 20 Issued for Tender
- 2020 06 12 Pre-Tender Review
- 2020 01 10 Tender Review
- 2019 04 10 50%
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Revisions:

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Project:

Beaconsfield Park
Playground

Drawn by: KS/SV/KL

Checked by: KS/SV

Date: 2020 01 10

Scale: As Shown

Drawing Title:

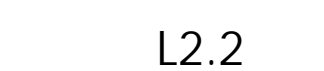
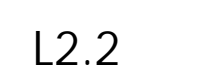
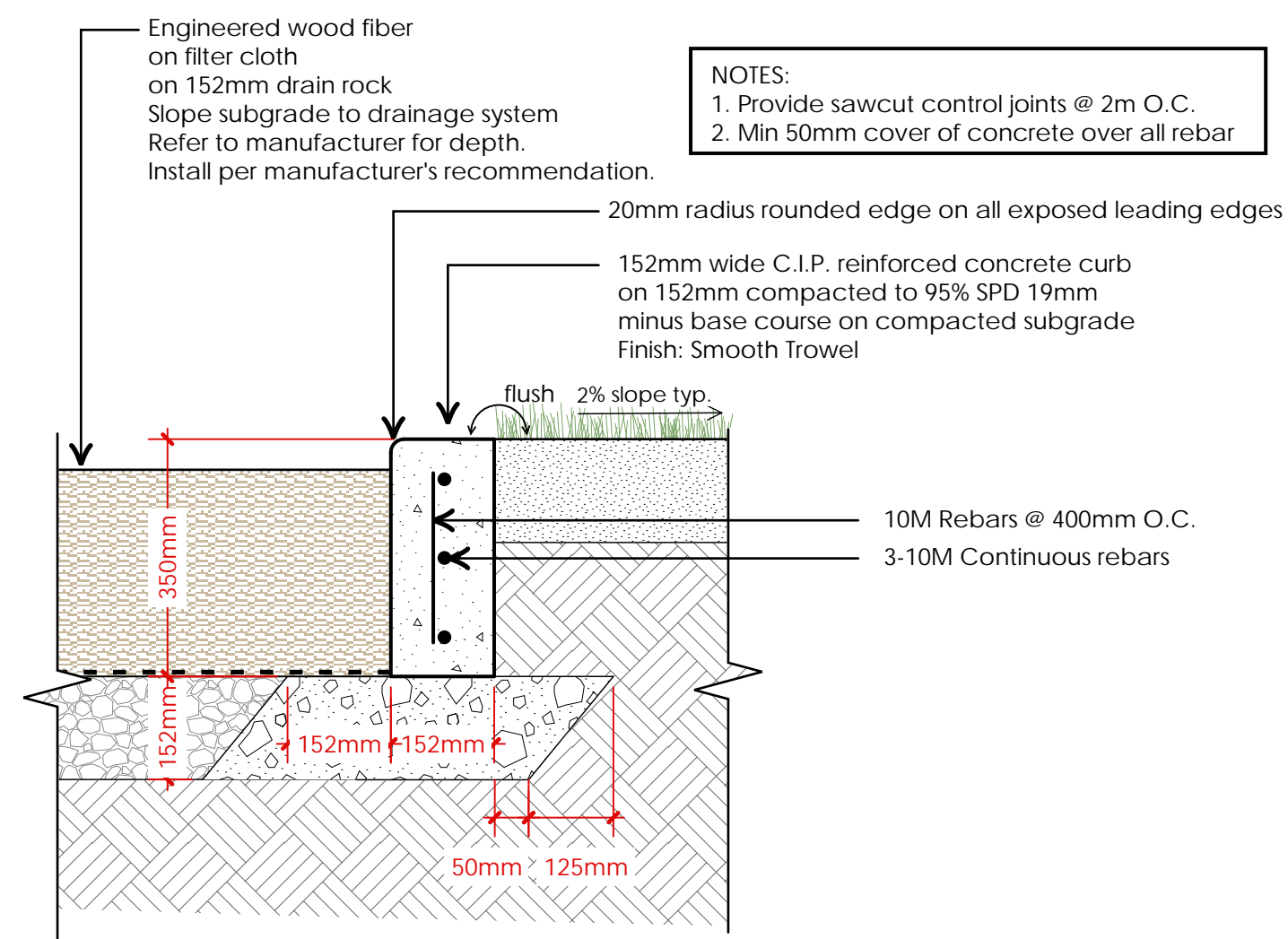
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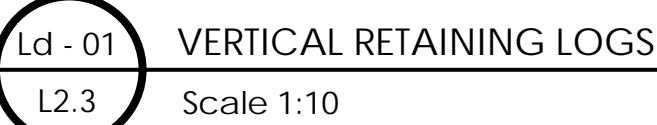
Project No.:

18059

Sheet No.:

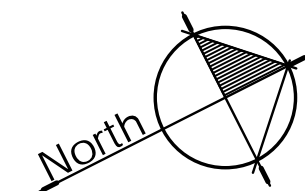
L2.1



Revisions:

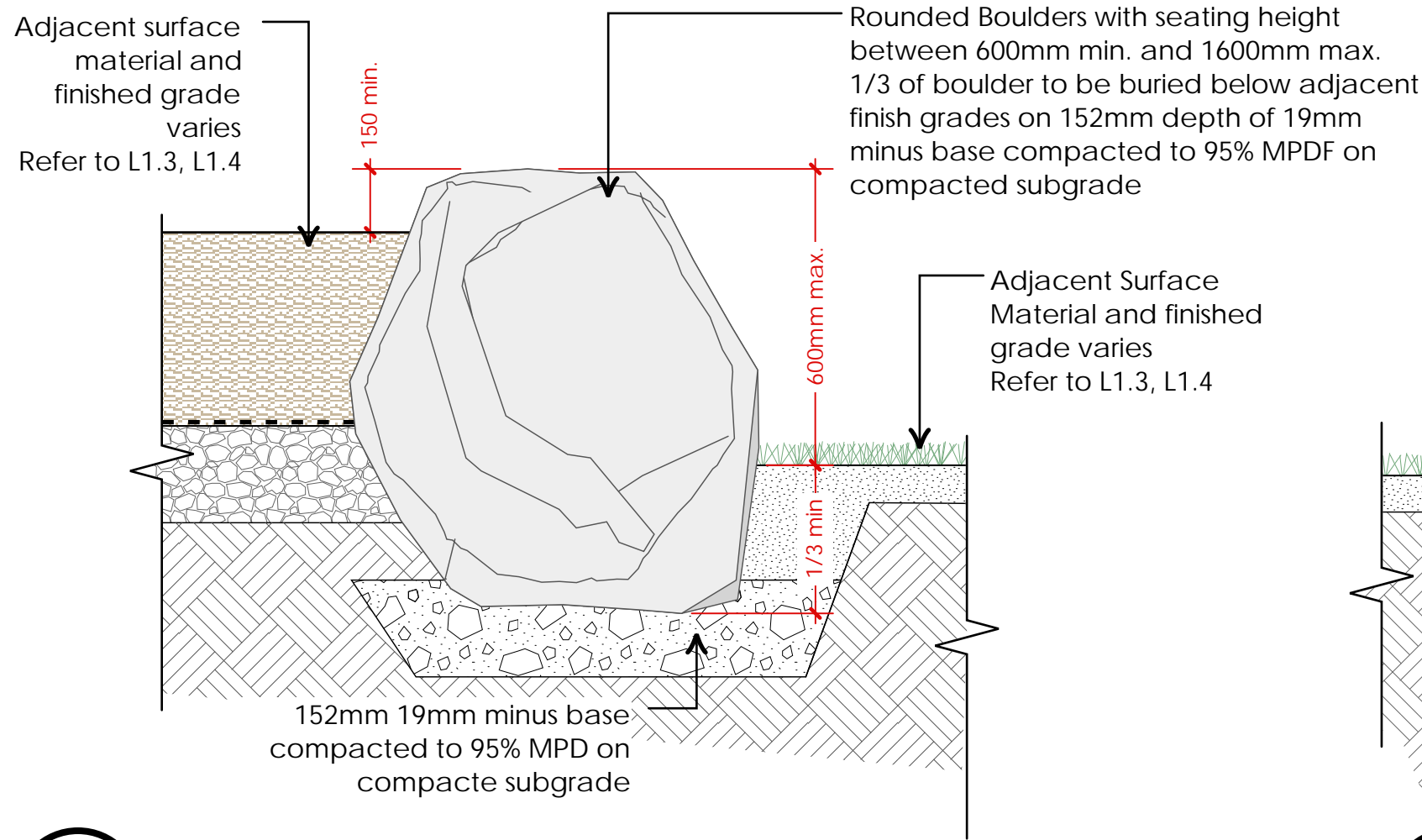
Beaconsfield Park Playground

- Ld - 03 LOG PLAY HUT
L2.3 Scale 1:20



Sheet No.:

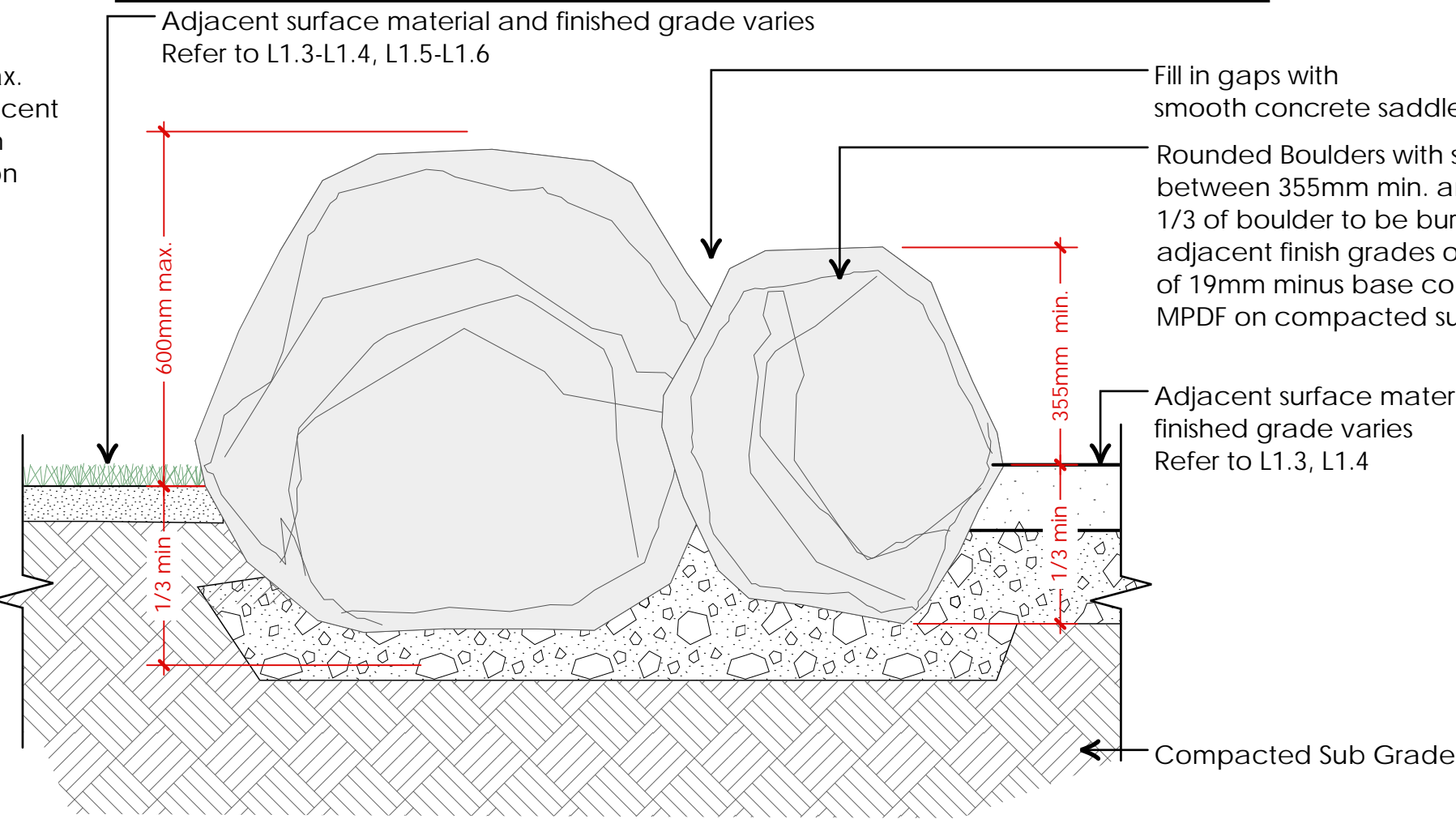
NOTES:
1. All boulders for this project are owner supplied.
2. Contractor shall be responsible to pick-up from Kent Yard and install per detail below.
3. No cracked or broken edges shall be exposed above finish grade.
4. Final placement to be reviewed and approved by Landscape Architect and VBPR Project Manager.
5. Ensure stability of all boulders
6. Where boulders abut a concrete seat-wall or concrete curb, boulders to be integrally cast into concrete
7. Set boulders 1/3 to 1/2 diameter below grade.



Ld - 01 TYPICAL BOULDER RETAINING

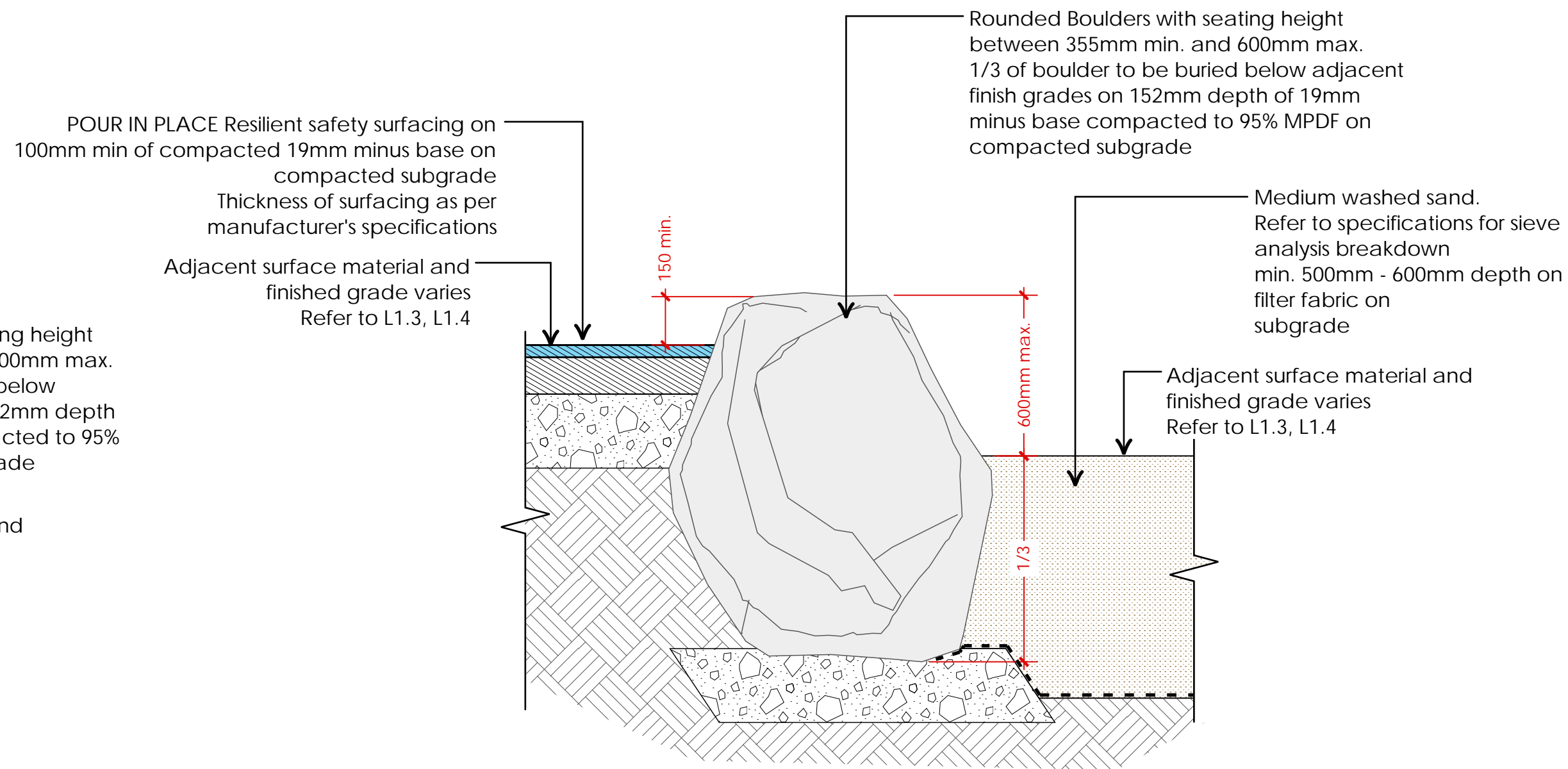
L2.4 Scale 1:10

NOTES:
1. All boulders for this project are owner supplied.
2. Contractor shall be responsible to pick-up from Kent Yard and install per detail below.
3. No cracked or broken edges shall be exposed above finish grade.
4. Final placement to be reviewed and approved by Landscape Architect and VBPR Project Manager.
5. Ensure stability of all boulders
6. Where boulders abut a concrete seat-wall or concrete curb, boulders to be integrally cast into concrete
7. Set boulders 1/3 to 1/2 diameter below grade.



Ld - 02 TYPICAL BOULDER

L2.4 Scale 1:10



Ld - 03 TYPICAL BOULDER RETAINING AT SAND AREA

L2.4 Scale 1:10

- 2020 07 20 Issued for Tender
- 2020 06 12 Pre-Tender Review
- 2020 01 10 Tender Review
- 2019 04 10 50%
no.: | date: | item:

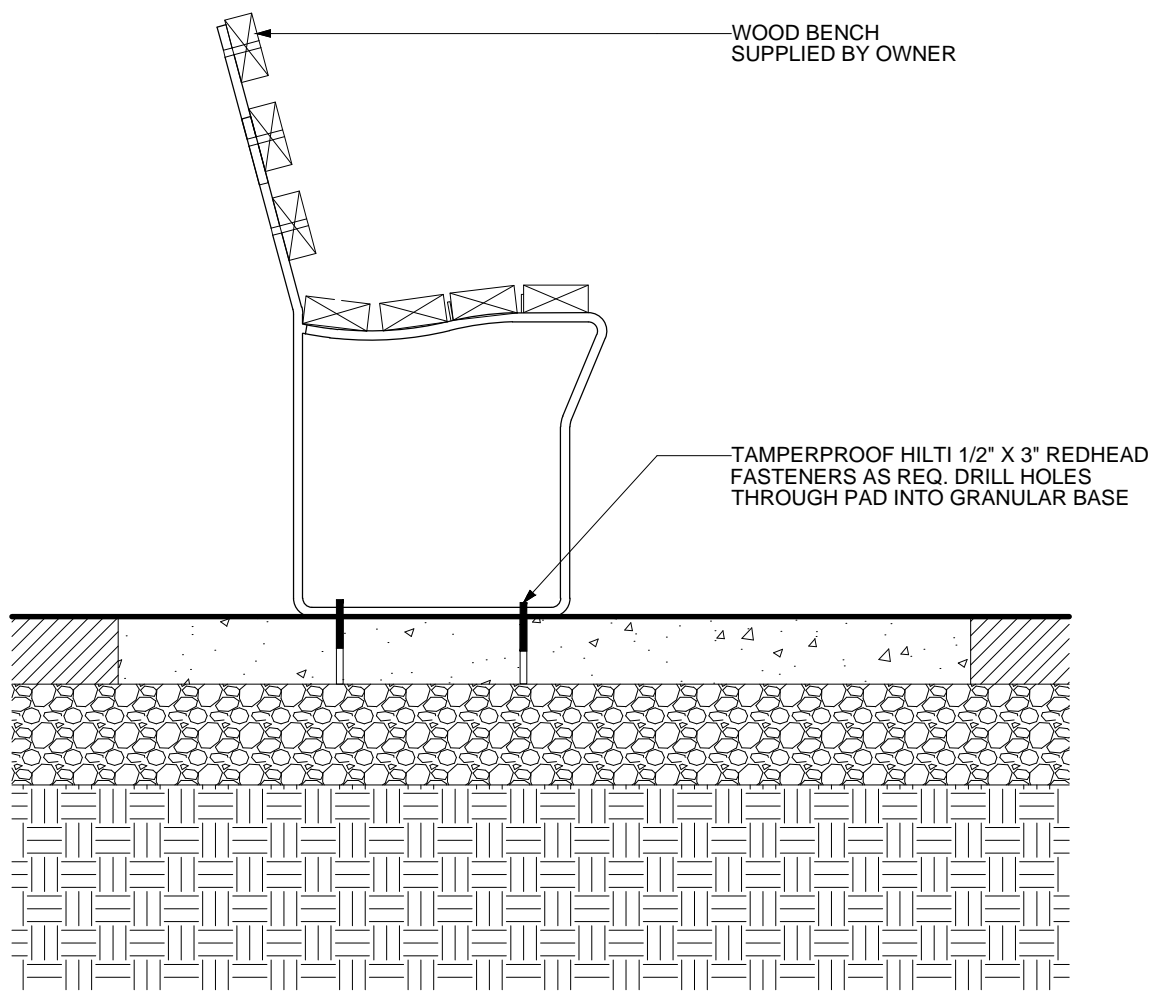
Revisions:

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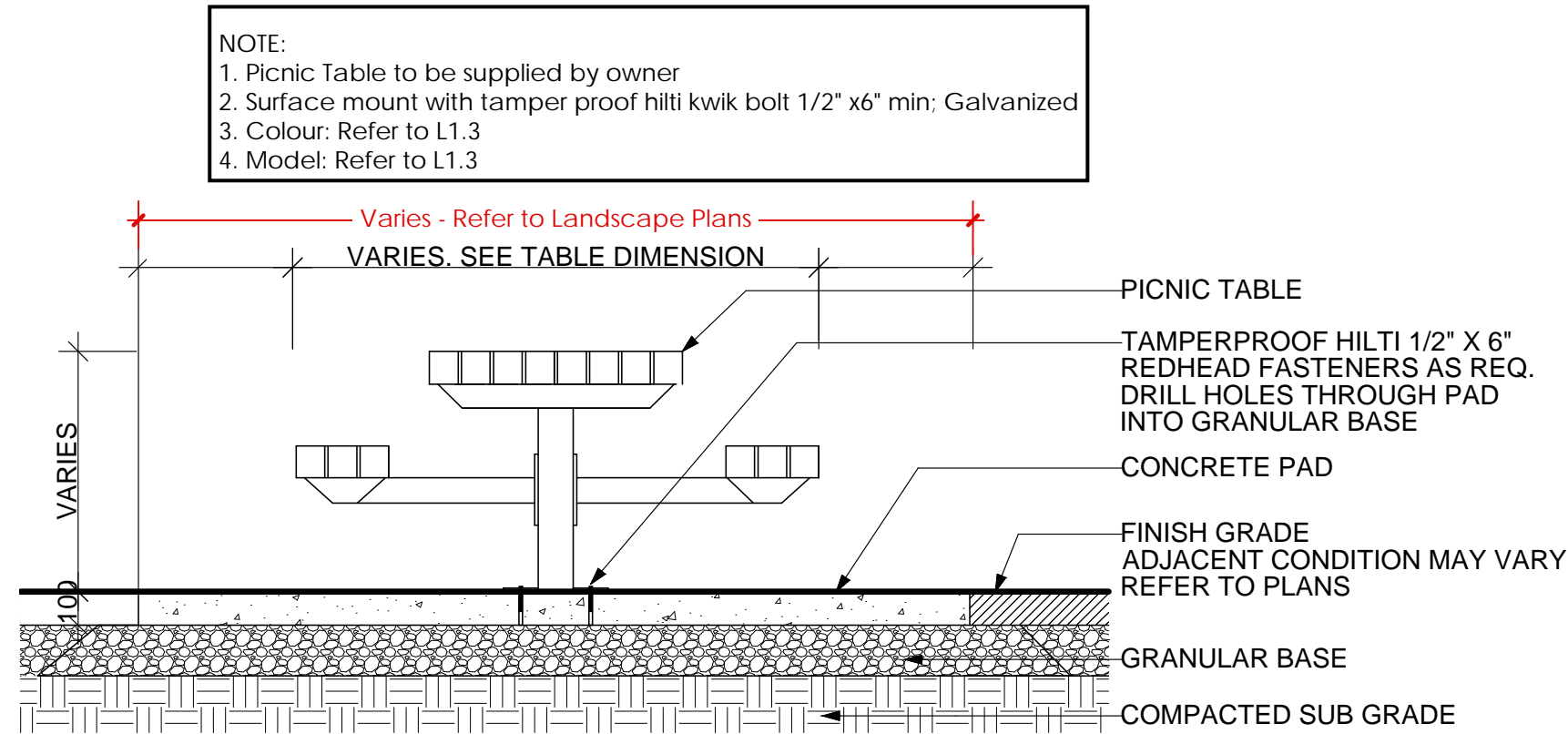
Project:

Beaconsfield Park
Playground



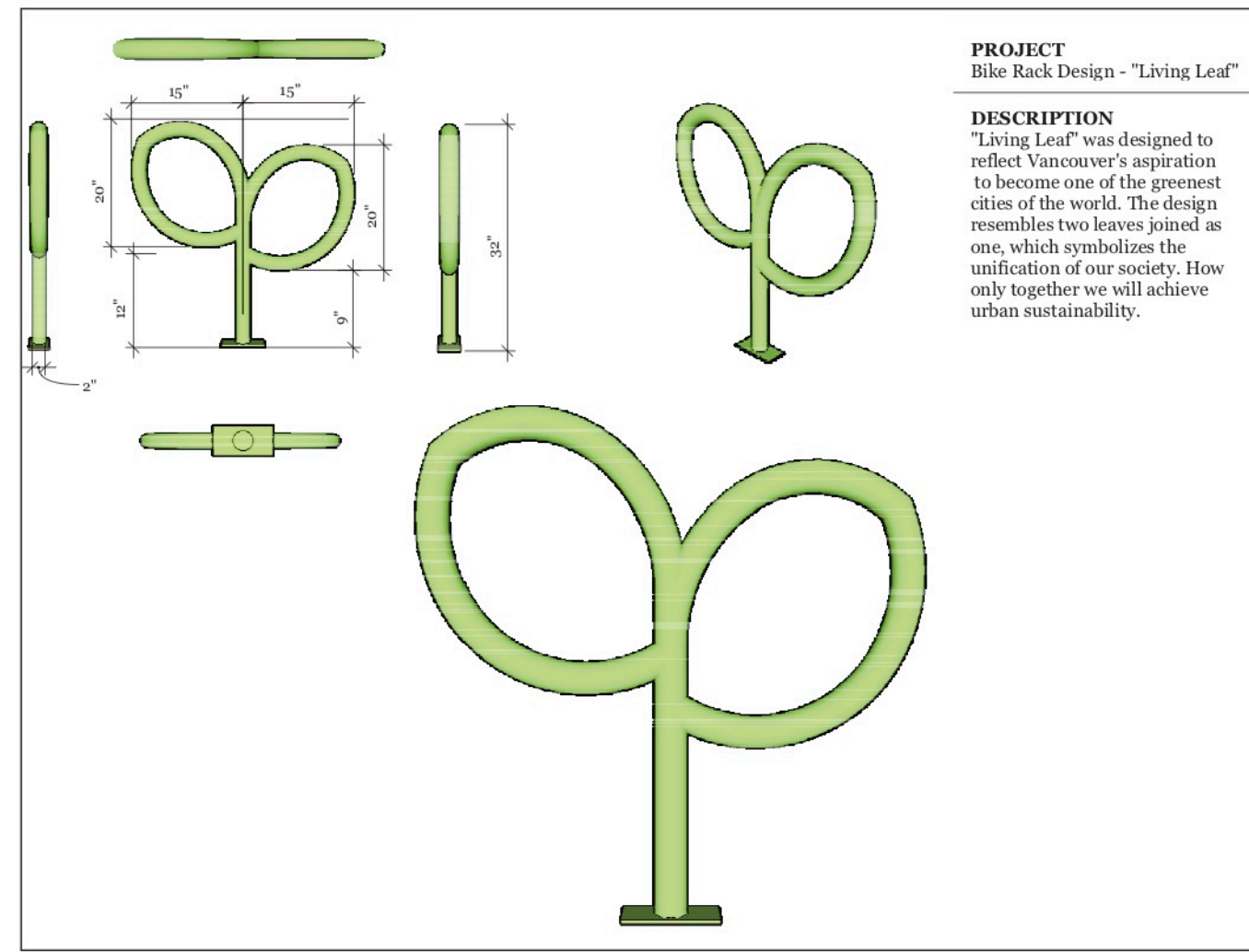
Ld - 04 STANDARD BENCH INSTALLATION

L2.4 Scale NTS



Ld - 05 STANDARD PICNIC TABLE INSTALLATION

L2.4 Scale NTS



LIVING LEAF

“Living Leaf” was designed to reflect Vancouver’s aspiration to become one of the greenest cities of the world. The design resembles two leaves joined as one, which symbolizes the unification of our society. How only together we will achieve urban sustainability.

Product Name: Viva Vancouver Bike Rack - Living Leaf
Size: 34" W x 34" H
Manufacturer: Fleet and Manufacturing Services
Colour: TBC
Mounting Instructions: Racks to be anchored to concrete sidewalk with 1-1/2" galvanized Hilti Kwik Bolt 3 with 3" minimum embedment. Nuts must be tac welded to bolts or installed with tamper proof nuts, bolts, nails, screws or approved equal. Mounting hardware will not be supplied.
Bike rack to be supplied by owner.

Ld - 06 STANDARD BIKE RACK INSTALLATION

L2.4 Scale NTS

Drawn by: KS/SV/KL

Checked by: KS/SV

Date: 2020 01 10

Scale: As Shown

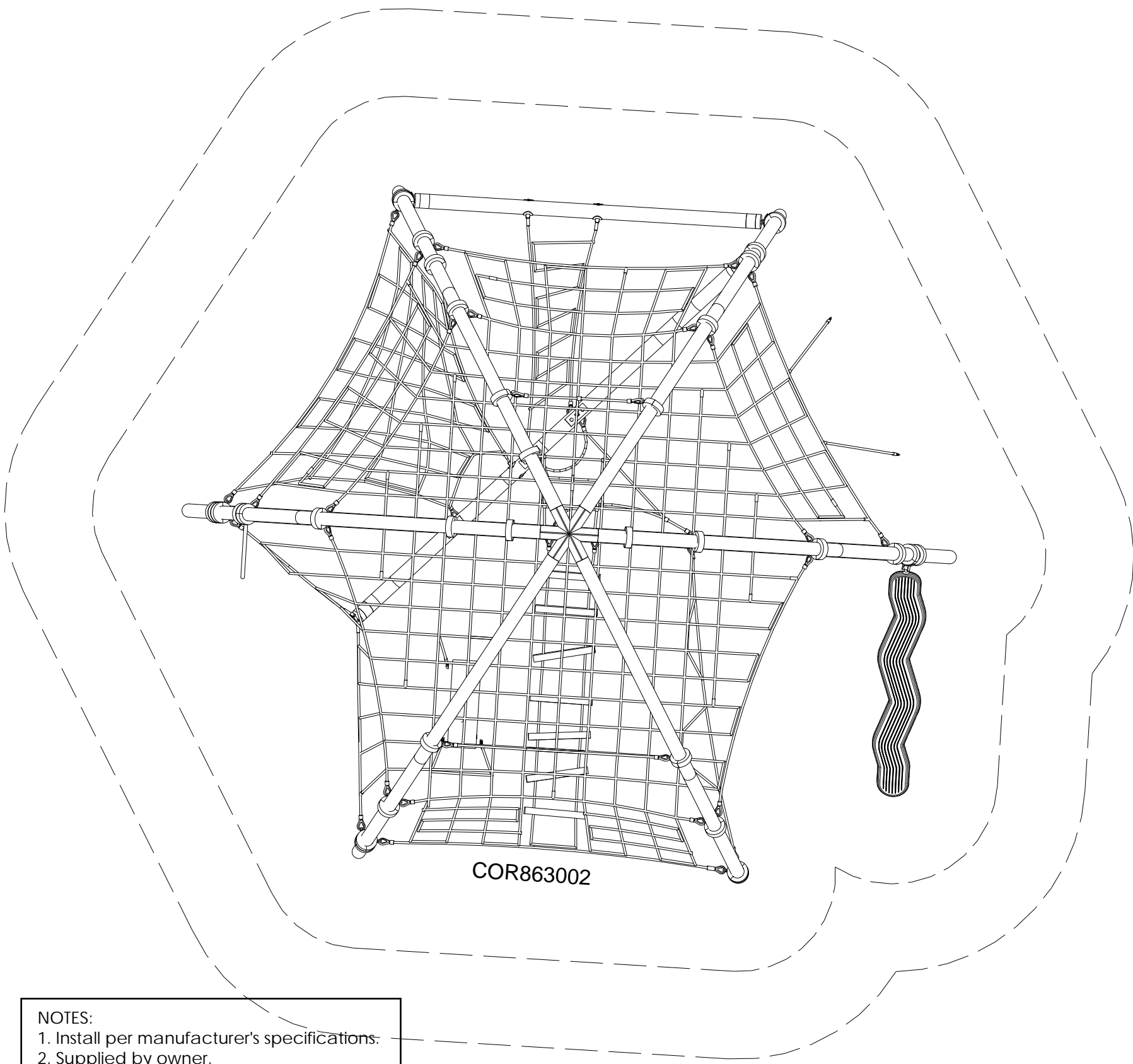
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Landscape Details

Project No.:

18059

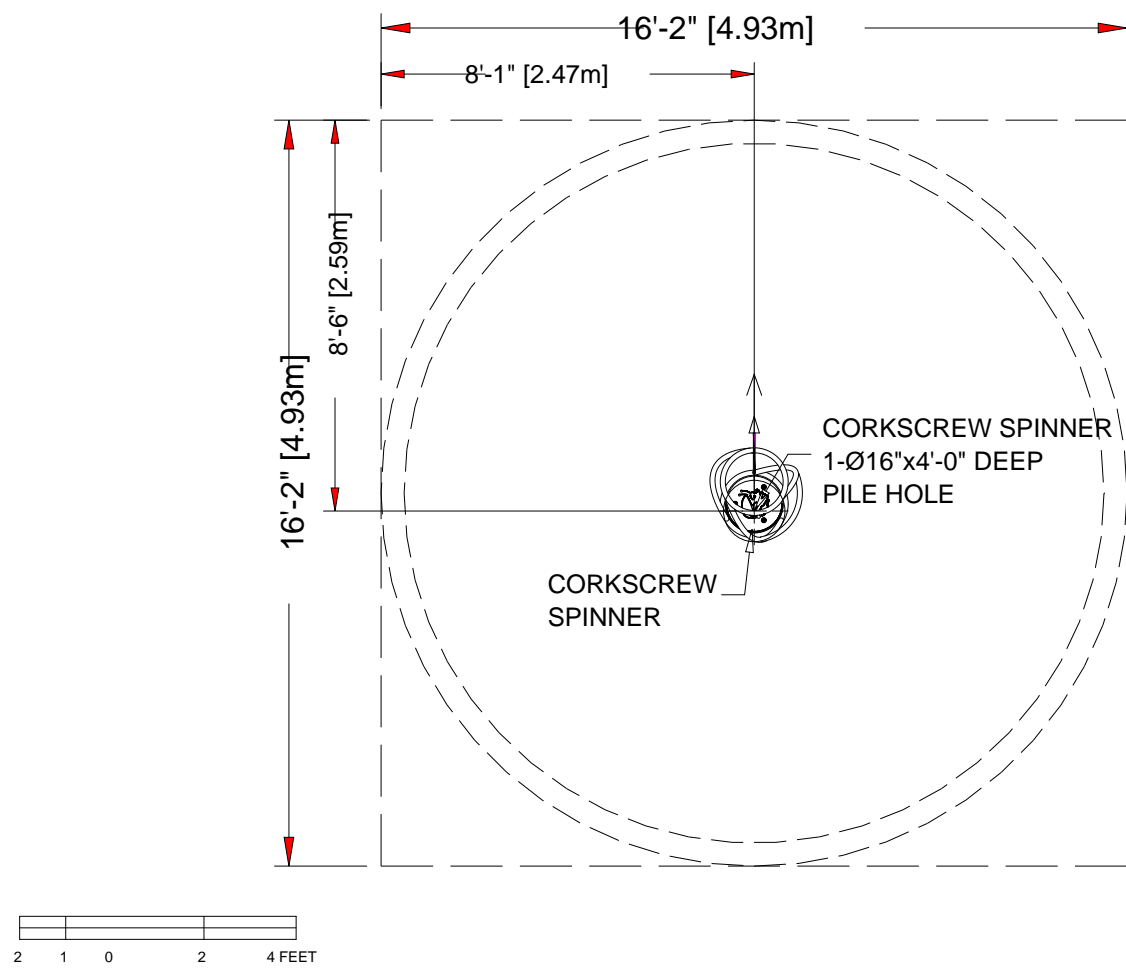
Sheet No.:



NOTES:
1. Install per manufacturer's specifications:
2. Supplied by owner.

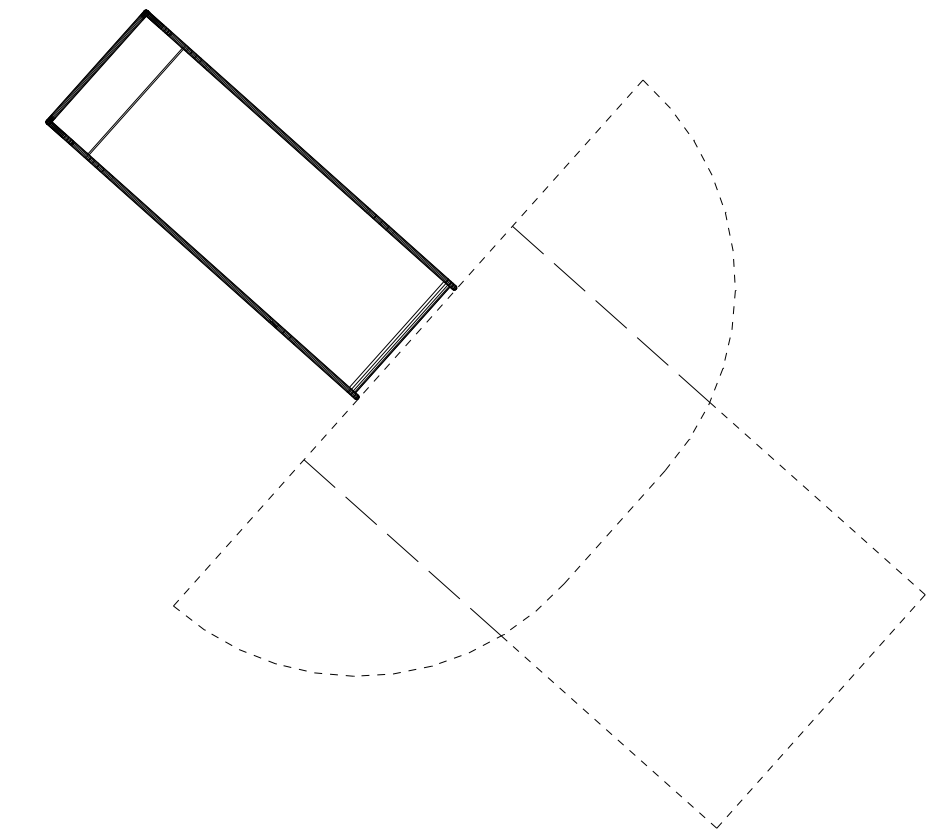
Ld - 01 KOMPAN EXPLORER DOME COR863002 SUPPLIED BY RECTEC
L2.5 Scale 1:50

NOTES:
1. Install per Manufacturer's specifications



Ld - 02 CORKSCREW SPINNER BY BLUE IMP, SUPPLIED BY SWING TIME DISTRIBUTORS
L2.5 Scale 1:50

DRAWINGS AND SPECIFICATIONS ARE
PROPERTY OF S.F. SCOTT MANUFACTURING.
THIS DRAWING MAY NOT BE REPRODUCED
IN WHOLE OR IN PART WITHOUT THE
PRIOR WRITTEN CONSENT OF
THE ENGINEERING DEPARTMENT.



Ld - 04 KOMPAN CCC STAINLESS STEEL EMBANKMENT SLIDE 1.5m x 1mW - SUPPLIED BY RECTEC
L2.5 Scale 1:20

NOTES:
1. Install per Manufacturer's specifications
2. Post/top bar colour: Sage Green



NOT TO BE INSTALLED ON CHANNEL

(2) - Belts
(1) - Baby Bucket
(1) - ADA Seat

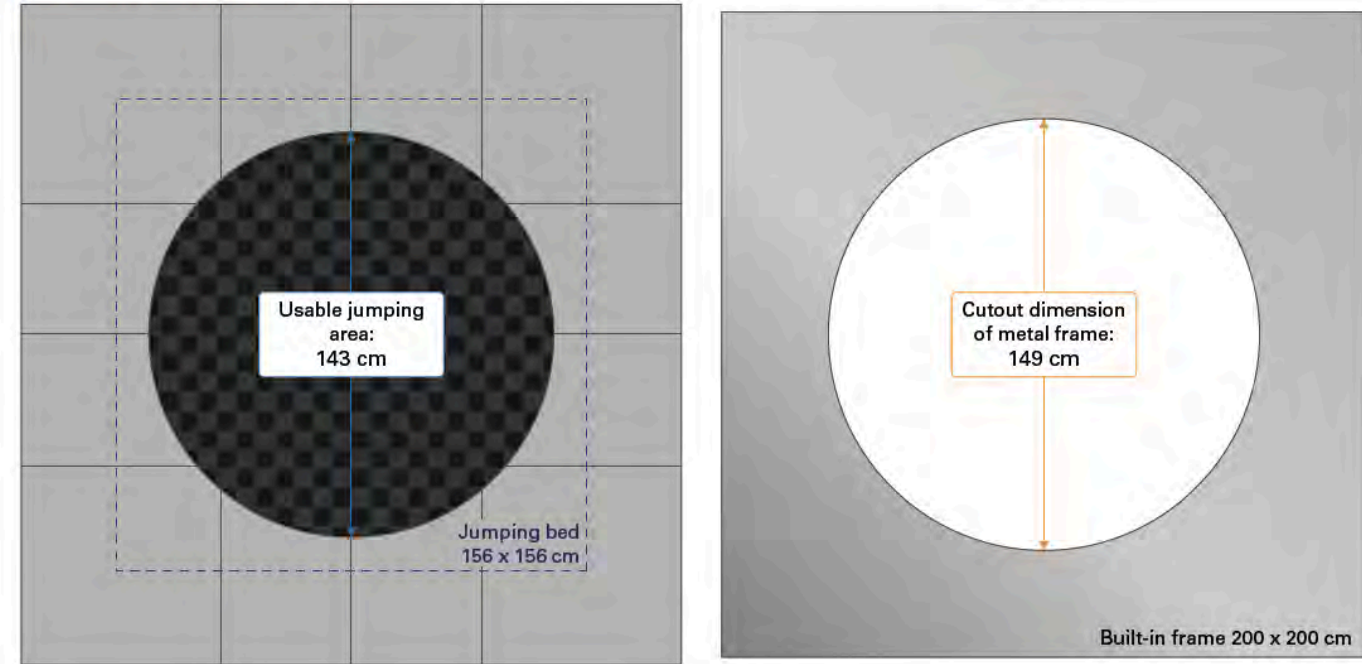
Ld - 05 BLUE IMP L210 SINGLE POST DOUBLE BAY SWINGS SUPPLIED BY SWING TIME DISTRIBUTORS
L2.5 Scale 1:50

NOTES:
1. Install per Manufacturer's specifications
2. Poured in Place rubber surfacing to extend to jumping surface

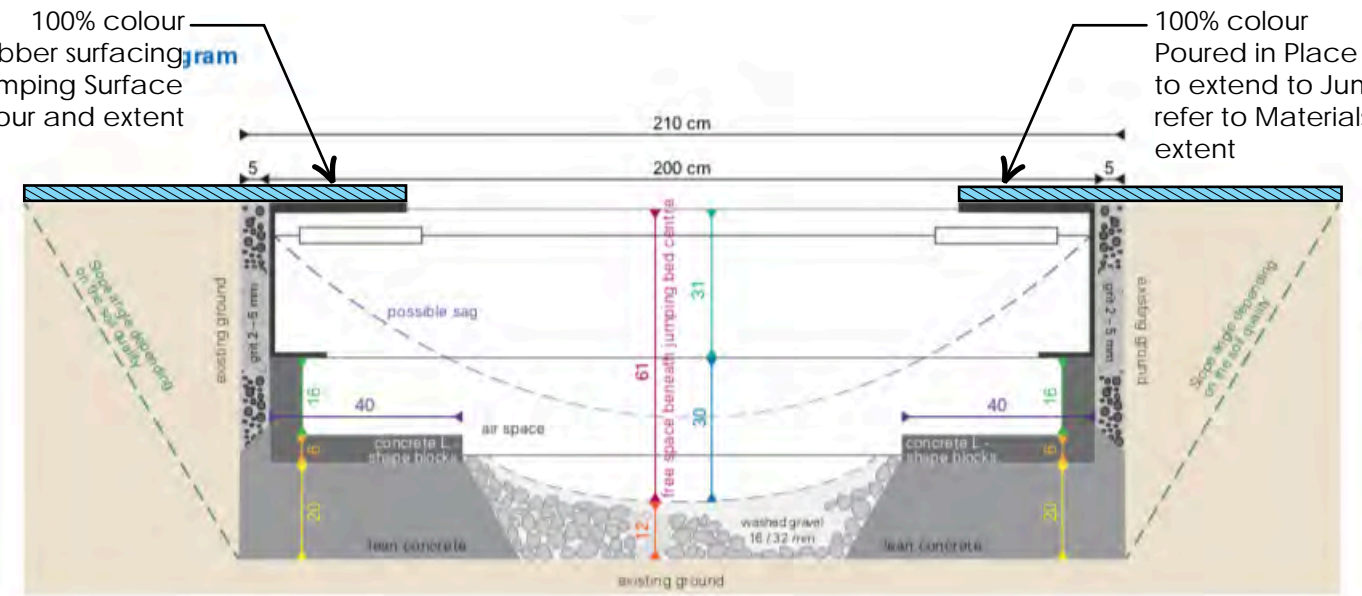
KidsTramp Loop XL - 97012; 97112

Jumping area with Eurotramp Impact Protection Sys.:

Cutout dimension of metal frame:



100% colour
Poured in Place rubber surfacing
to extend to Jumping Surface
refer to Materials Plan for colour and extent



Ld - 03 TRAMPOLINE (EUOTRAMP) SUPPLIED BY RECTEC
L2.5 Scale NTS

2020 07 20 Issued for Tender
2020 06 12 Pre-Tender Review
2020 01 10 Tender Review
2019 04 10 50%
no.: date: Item:

Revisions:

durante kreuk Ltd.
102 - 1637 West 5th Avenue
Vancouver BC V6J 1N5
t: 604 684 4611
f: 604 684 0577
www.dkl.bc.ca

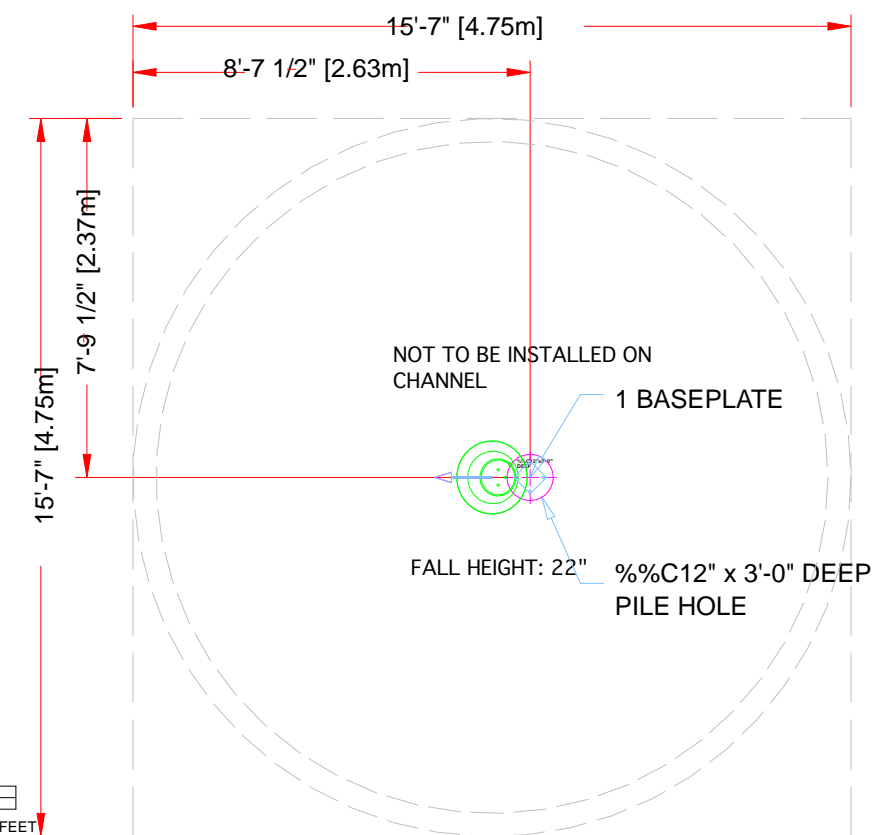


Project:

Beaconsfield Park
Playground

NOTES:
1. Install per Manufacturer's specifications

Ld - 06 SPACE CAPSULE BY BLUE IMP, SUPPLIED BY SWING TIME DISTRIBUTORS
L2.5 Scale NTS



Ld - 07 CRAZY CUP BY BLUE IMP, SUPPLIED BY SWING TIME DISTRIBUTORS
L2.5 Scale 1:50

Drawn by: KS/SV/KL

Checked by: KS/SV

Date: 2020 01 10

Scale: As Shown

Drawing Title:

Landscape Details

Project No.:

18059

Sheet No.:

L2.5

1.0 DEFINITIONS AND INTERPRETATION

1.1 Definitions

The following capitalized terms have the meanings set out below when used in the Tender Documents, unless the context requires otherwise:

- (a) **"City"** means the City of Vancouver as represented by its Vancouver Board of Parks and Recreation;
- (b) **"Closing Time"** has the meaning set out on the cover page of this ITT;
- (c) **"Contract"** means a contract substantially in the form of Part D - Form Agreement, to be entered into between the City and a successful Tenderer;
- (d) **"Contractor"** means a Tenderer, the Tender of which the City has accepted, and which Tenderer has consequently entered into a Contract;
- (e) **"Drawings"** means the portion of the Tender Documents consisting of the graphic and pictorial representations of the Work or Work requirements;
- (f) **"Engineer"** means the architect, engineer or other professional consultant who will act as the City's agent for the purpose of managing and administering a Contract, who may be an employee of the City or an independent consultant engaged by the City on its behalf;
- (g) **"Form of Tender"** means the form of tender in Part C - Form of Tender to this ITT on which Tenderers are to complete their Tenders;
- (h) **"GST"** means the tax payable and imposed pursuant to Part IX of the *Excise Tax Act* (Canada), as amended or replaced from time to time;
- (i) **"Information and Privacy Legislation"** includes the *Freedom of Information and Protection of Privacy Act* (British Columbia) and the regulations thereunder;
- (j) **"Losses"** means, in respect of any matter, all:
 - (i) direct and indirect; and
 - (ii) consequential,

claims, demands, proceedings, losses, damages, liabilities, deficiencies, costs and expenses (including without limitation, all legal and other professional fees and disbursements, interest, penalties and amounts paid in settlement, whether from a third person or otherwise);
- (k) **"Notice of Award"** has the meaning set out in Part C - Form of Tender;
- (l) **"Notice to Proceed"** has the meaning set out in Part C - Form of Tender;
- (m) **"PST"** means the provincial sales tax payable and imposed pursuant to the *Provincial Sales Tax Act* (British Columbia), as amended or replaced from time to time;

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- (n) **"Specifications"** means the portion of the Tender Documents consisting of the written requirements and standards for products, systems, workmanship, quality, and the services necessary for the performance of the Work;
- (o) **"Tender"** means a tender submitted to the City in response to this ITT, or as used in Part C - Form of Tender, a particular such entity;
- (p) **"Tender Contract"** means the contract between the City and each Tenderer governing the ITT process;
- (q) **"Tender Documents"** means the documents identified as such in Part A - Introduction;
- (r) **"Tenderer"** means an entity eligible to participate in this ITT process;
- (s) **"Tender Price"** means the amount stipulated by the Tenderer in the space provided therefor in the Form of Tender, including all applicable taxes, which price, for greater certainty, is the Tenderer's proposed Contract Price to complete all of the Work;
- (t) **"Work"** means the total construction and related services required by the Tender Documents; and
- (u) **"Work Site" or "Site"** means the area or areas on or about the City's property where the Work is to be carried out.

All other capitalized terms used in this ITT have the meanings given to them elsewhere in the ITT.

1.2 Interpretation

- (a) In the Tender Documents, any reference to the masculine, the feminine or the neuter includes the others unless the context requires otherwise. Also, any reference to the singular includes the plural where appropriate.
- (b) If there is a conflict between or among (i) the Specifications and Drawings and (ii) the other Tender Documents, the other Tender Documents shall prevail over the Specifications and Drawings.
- (c) In these Tender Documents, the word "should" and the terms "is asked to" and "are asked to" are used to denote actions or Tender inclusions that, while not mandatory, are strongly recommended. In contrast, the terms "will", "shall", "must", "is to", "are to", "is required to" and "are required to" are used to denote mandatory requirements of the ITT. If a Tenderer is uncertain as to whether or not a particular action or Tender inclusion is mandatory, the Tenderer should submit an inquiry to the Contact Person.

2.0 SUBMISSION INSTRUCTIONS

- 2.1 Each Tenderer must complete its Tender on the Form of Tender and submit its Tender in accordance with the instructions set forth on the cover page of the ITT and elsewhere herein.
- 2.2 Any Tender received after the Closing Time may be returned unopened to the Tenderer.
- 2.3 Faxed Tenders and/or other documents will not be accepted.
- 2.4 Each Tender must be signed by an authorized signatory or authorized signatories of the Tenderer (as necessary for due execution on behalf of the Tenderer). Each Tender by a

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company or partnership should specify the full legal name of the legal entity submitting the Tender.

- 2.5 All blank spaces in the Form of Tender should be filled in and all schedules completed. Any failure by a Tenderer to complete the Form of Tender may result in preference being given to competing Tenderers. All prices and notations should be legibly written in a non-erasable medium. Erasures, interlineations or other corrections should be initialled by an authorized signatory of the Tenderer.
- 2.6 Subject to any alternatives or options in respect of which the City requests pricing or other information in a Schedule to the Form of Tender, Tenders are to be all inclusive and without qualification or condition.
- 2.7 The City may, at any time and for any reason, extend the Closing Time by means of a written amendment published on the City's website, as set out in Part A - Introduction.
- 2.8 A Tenderer that has already submitted a Tender may amend its Tender prior to the Closing Time: a) by submitting an amendment identifying a plus or minus variance to the Tenderer's Tender Price; or b) by sending in a completely new Tender, clearly indicating it replaces the previously submitted Tender. Any such revision must clearly identify the ITT number and the Closing Time. A Tender revision submitted as aforesaid shall effectively amend the Tender and the City shall only review and evaluate the Tender as amended.
- 2.9 The City will not be responsible for any cost incurred by any Tenderer in preparing a Tender.

3.0 BONDS

- 3.1 Tenders will be irrevocable and each offer made therein shall remain open for acceptance by the City for a period of ninety (90) calendar days after the Closing Time. Each Tender must be accompanied by a bid bond valid for a period of ninety (90) calendar days commencing on the Closing Time, payable to the "City of Vancouver as represented by its Vancouver Board of Parks and Recreation", in the amount of ten percent (10%) of the Tender Price, and not a dollar amount, as a guarantee of the due execution of a Contract and the delivery of the performance bond and labour and material payment bond required by the Form of Tender. The forms of these bonds are to be those issued by the Canadian Construction Documents Committee as follows:

Bid Bond: CCDC 220 (latest)

Performance Bond: CCDC 221 (latest)

Labour and Material Payment Bond: CCDC 222 (latest)

- 3.2 Since Tenders are to be submitted via email as a result of present circumstances, the City will accept scanned copies of bid bonds that otherwise meet the requirements of this ITT, provided such scanned copies are accompanied by an acknowledgement letter from the applicable surety company indicating that the scanned copy of the bid bond submitted will be recognized by the surety as an original copy.
- 3.3 Each Tender must be accompanied by a "Consent of Surety", substantially in the form provided as a schedule to the Form of Tender, duly completed by a surety company authorized and licensed to carry on business in British Columbia.

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- 3.4 The bid bonds of unsuccessful Tenderers will be returned to them upon request of the Tenderer at any time after the Contract is awarded. The bid bond of the Tenderer to whom the award is made will be returned upon request of the Tenderer following: execution of the Contract; delivery of a performance bond for 50% of the Tender Price and a labour and material payment bond for 50% of such price; commencement of the Work; and compliance with any other conditions set out in the Form of Tender. The cost of all bond premiums must be included in the Tender Price.
- 3.5 All bonds must be issued by a surety company authorized and licensed to carry on business in British Columbia.

4.0 TENDER PRICE

- 4.1 Subject to any adjustment for changes to the Work, which is approved by the City in accordance with the Tender Documents or Contract Documents, the Tender Price shall be the maximum compensation owing to the Contractor for the Work and the Contractor's compensation shall cover and include all profit and all costs of supervision, labour, material, equipment, overhead, financing and all other costs and expenses whatsoever incurred in performing the Work.
- 4.2 If unit prices or other price breakdowns are requested in a schedule to the Form of Tender, such information **must** be included in the Tender. Furthermore, if such unit prices or other price breakdowns are requested in a schedule to the Form of Tender, such amounts may be used to compute interim progress payments and will be reviewed by the City in its evaluation of Tenders; therefore Tenderers should ensure that such amounts accurately reflect their costs for each item. A Tenderer may be required to justify any submitted unit price or other price breakdown.
- 4.3 If an itemized breakdown of the Tender Price is requested in a schedule to the Form of Tender, the City may delete any items in order to meet any budget limitation and award a Contract for only the remaining items to a Tenderer who is agreeable thereto.

5.0 ACCEPTANCE OF TENDERS

- 5.1 Despite anything to the contrary contained in the Tender Documents:
- (a) Tenderers are notified that the lowest or any Tender need not necessarily be accepted and the City reserves the right to reject any and all Tenders at any time, or cancel the ITT process, without further explanation or to accept any Tender that is considered advantageous to the City.
 - (b) Acceptance of any offer made within a Tender is contingent on funds being approved and a contract award being made by, or pursuant to authority delegated by, **Vancouver Park Board's Board of Commissioners** and the compliance of the Tenderer with the conditions required to be satisfied upon receipt of a Notice of Award.
 - (c) Tenders which fail to conform to the Tender Documents may or may not be disqualified or rejected. The City may or may not waive any non-compliance with the Tender Documents, including any material non-compliance, irregularity or anomaly, and including any non-compliance as to the timing of delivery of anything required by the Tender Documents, and may at its sole discretion elect to retain for consideration Tenders which are non-conforming because they do not contain the content or form required by the Tender Documents or because they have not complied with the process for submission set out in this ITT.

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- (d) Where the City is of the view, in its sole discretion, that there is an ambiguity or other discrepancy which cannot be discerned or resolved from examining the contents of a Tender, then whether or not such an ambiguity or discrepancy actually exists on the face of the Tender, the City may, prior to any Contract award, solicit clarification from the Tenderer or accept clarification from the Tenderer on any aspect of the Tender. Such clarification may include the acceptance of any further documents or information which will then form part of the Tender. The soliciting or accepting of such clarification (whether or not solicited) by the City will be without any duty or obligation of the City to advise any other Tenderers or to allow them to vary their Tender Prices as a result of the acceptance of clarification from any one or more Tenderers and the City will have no liability to any Tenderer as a result of such acceptance of clarification.
- (e) The award of any Contract will be based on an evaluation of the Tenders by the City to determine which, in the City's opinion, offer the best overall value to the City. The City expects to place the greatest emphasis on price; however, the City may take into account other factors affecting value, including those concerning quality, service or sustainability, or Tenderers' past work, reputations or experience. The City may also focus, where relevant, on the overall net impact of a Tender (or an offer therein) on the finances of the City (including both capital and operating costs). Therefore, the City may accept a Tender other than the lowest Tender.
- (f) If the City determines that all Tender Prices are too high, all Tenders may be rejected.
- (g) The City may, prior to any Contract award, agree, with the Tenderer considered to provide best value or any one or more Tenderers, to certain changes to the scope of the Work or certain changes to Contract conditions, in each case without having any duty or obligation to advise any other Tenderers or to allow them to vary their Tender Prices as a result of such changes, and the City will have no liability to any other Tenderer as a result of such changes. However, each Tender must be a tender in respect of the Work set forth herein, to complete that Work, under an agreement in the form of the Form of Agreement included as Part D of the ITT, and not propose variations thereto.
- (h) Each Tenderer acknowledges and agrees that the City will not be responsible for Losses incurred by the Tenderer as a result of or arising out of submitting a Tender, or due to the City's acceptance or non-acceptance of its Tender, or any part thereof, or any breach by the City of the Tender Contract between the City and the Tenderer, or arising out of any Contract award not being made in accordance with the express or implied terms of the Tender Documents.
- (i) The City may award a Contract on the basis of policies and preferences not stated in the Tender Documents or otherwise than as stated in the Tender Documents.
- (j) Prior to any Contract award, a Tenderer may be required to demonstrate financial stability. Should the City so request, a Tenderer may be required to provide annual financial reports or a set of financial statements prepared by an accountant.
- (k) City guidelines or policies that may be applicable to the ITT will not give rise to legal rights on the part of any Tenderer, Contractor, subcontractor, supplier, or other person as against the City and will in no case create any liability on the part of the City. For certainty, the City's Procurement Policy, as amended or replaced from time to time, is now agreed to be an internal guideline document and creates no legal rights or obligations with respect to this ITT.

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- (l) The City may reject any Tender by a Tenderer that has engaged in collusion with another Tenderer or otherwise attempted to influence the outcome of the ITT other than through the submission of its Tender.
- (m) The City may elect, in its sole discretion, to accept for consideration Tenders that contain conditions or qualifications that are in the nature of corrections of typos or resolutions of internal inconsistencies in this ITT or the Form of Agreement in Part D, or that represent immaterial changes to the Form of Agreement in Part D and do not consist of changes of substance or changes to allocations of risk, or with respect to the scope of any Work, that are for the avoidance of doubt only and do not suggest any deviation from the requirements of the ITT. This Section 5.1(m) is a reservation of rights for the benefit of the City and no Tenderer may rely on this paragraph to qualify its Tender.

6.0 AWARD OF CONTRACT

- 6.1 Award of a Contract will be subject to approval by, or pursuant to authority delegated by, **Vancouver Park Board's Board of Commissioners** and the Tenderer's compliance with the conditions required to be met upon receipt of the Notice of Award.
- 6.2 Any successful Tenderer will become a Contractor and will be required to sign a Contract with the City, subject to any amendments approved by the City in writing.

7.0 EXAMINATION OF TENDER DOCUMENTS

- 7.1 Each Tenderer should examine the Tender Documents and must also satisfy itself of the extent of the Work. Each Tenderer must make its own estimate of the facilities and difficulties attending the performance and the completion of the Work.
- 7.2 No allowance will be made on behalf of a Contractor for any error, omission or negligence on the Contractor's part or for non-compliance with the requirements of the foregoing clause 7.1.

8.0 SITE EXAMINATION/PRE-SUBMISSION DUE DILIGENCE BY TENDERER

- 8.1 Tenderers should make a careful examination of the Work Site and investigate and satisfy themselves at their own risk and expense as to all matters relating to the nature and extent of the Work, the means of access to the Work Site, the extent of required coordination with public use of adjacent areas, and any and all matters which are referred to in the Specifications and Drawings and other Tender Documents, or which are necessary for the full and proper completion of any Work or are required by the conditions under which it must be performed. No allowance will be made subsequently for any error, negligence, interpretation, or misinterpretation on a Contractor's part.
- 8.2 The City and the Engineer do not make any representations or warranties concerning the completeness or accuracy of Work Site and geotechnical information (if any) provided in or with the Tender Documents, and each Tenderer must evaluate such information as part of its overall assessment of actual Work Site conditions.
- 8.3 If any Tenderer wishes to evaluate any Work Site conditions, and, for that purpose, requires access or documents from the City beyond the access and documents already provided for in this ITT, the City encourages the Tenderer to submit a written request to the City as far in advance of the Closing Time as is possible. The City will then consider whether or not to facilitate the request. In response to such a request, the City may elect to, itself, undertake a particular study and distribute the results to all Tenderers.

9.0 INTERPRETATION AND CLARIFICATIONS

- 9.1 If any Tenderer is in doubt as to the correct interpretation of any part of the Specifications, Drawings, or other Tender Documents, the Tenderer should request an interpretation of the same from the City by the time stated in Part A - Introduction, Section 6.3. In the absence of such a request, the Tenderer's Tender will be presumed to be based upon the interpretation that may be subsequently given in accordance with the Contract Documents, after award of a Contract.
- 9.2 Prior to the Closing Time, requests for clarification of the Specifications, Drawings, or other Tender Documents may be answered in writing by the City and sent to all prospective Tenderers who have submitted a Response Notification Form on or before the indicated deadline. The City is not responsible for any other explanations or interpretations of the Specifications, Drawings or other Tender Documents.

10.0 PRODUCT APPROVAL

- 10.1 Wherever any material, machinery, equipment or fixture (any "Product") is specified or shown in the Tender Documents by reference to a proprietary item, product or model number, catalogue number, manufacturer or trade name or similar reference, each Tenderer obligates itself to submit its Tender and, if applicable, accept award of a Contract based upon the use of such Product. Use of any such reference in the Tender Documents is intended to establish the measure of quality which the City (or its Engineer) has determined to be requisite and necessary for the Work. Where two or more Products are shown or specified, the Contractor has the option of which to use.
- 10.2 For approval of Products other than those specified, a Tenderer should submit a request in writing to the City at least five business days prior to the Closing Time. Requests must clearly define and describe the Product for which approval is requested. Requests should be accompanied by manufacturer's literature, specifications, drawings, cuts, performance data or other information necessary to completely describe the items. Approval by the City will only be in the form of an addendum to the Specifications issued by the City.
- 10.3 Approvals of Products, as noted in clause 10.2 above, shall only be deemed effective insofar as the Products conform to the Specifications.

11.0 INSURANCE

- 11.1 Each Tenderer should ensure that it can maintain the insurance described in the Form of Agreement (Part D).
- 11.2 The Tenderer should complete and submit the "Certificate of Existing Insurance" attached as a Schedule to the Form of Tender, together with the "Undertaking of Insurance" attached as a Schedule to the Form of Tender.
- 11.3 Following Contract award, a successful Tenderer will be required to complete a "Certificate of Insurance" for the Work, a copy of which is attached as a schedule to the Form of Tender.

12.0 WORKSAFEBC

- 12.1 The Tenderer should ensure that it can comply with all WorkSafeBC requirements, as described in the Form of Agreement (Part D).

13.0 LABOUR RATES AND EQUIPMENT

- 13.1 Tenderers must provide, if requested in a schedule to the Form of Tender, the force account labour and equipment rates setting out the all-inclusive hourly rates for all applicable types of equipment as well as the all-inclusive hourly rates for all applicable categories of labour, which rates will then apply pursuant to any Contract.

14.0 LISTS OF SUBCONTRACTORS AND SUPPLIERS

- 14.1 Tenderers should provide, if requested in a schedule to the Form of Tender, lists of proposed subcontractors and suppliers, specifying the name and address of, and the portion of the Work to be completed by, or the equipment or materials to be supplied by, each proposed subcontractor or supplier.
- 14.2 The City reserves the right to object to any of the proposed subcontractors or suppliers listed in a Tender. If the City objects to a listed subcontractor or supplier, then the City will permit a Tenderer to propose a substitute subcontractor or supplier acceptable to the City. A Tenderer will not be required to make such a substitution and, if the City objects to a listed subcontractor or supplier, the Tenderer may, rather than propose a substitute subcontractor or supplier, consider its Tender rejected by the City and, by written notice, withdraw its tender. The City shall, in that event, return the Tenderer's bid security.

15.0 TAXES AND FEES

- 15.1 The successful Tenderer will be required to obtain and pay for any applicable municipal, provincial and federal permits and licences necessary for the proper completion of the Work. The City will not be liable in any manner for the same, and the successful Tenderer agrees to indemnify and save the City harmless from and against all claims and Losses in relation to obtaining and paying for any applicable municipal, provincial and federal permits and licences necessary for the proper completion of the Work.
- 15.2 Each Tenderer's Tender Price (and each other price offered by the Tenderer in its Tender, if applicable) must, unless otherwise expressly stated, be inclusive of all applicable municipal, provincial, federal and other taxes, and all customs and excise duties and other assessments and charges, including sales taxes assessed upon the sale of goods and services to the City under the Contract, and the successful Tenderer agrees to indemnify and save the City harmless from and against all claims which shall be made with respect thereto.

16.0 NON-RESIDENT WITHHOLDING TAX

- 16.1 Tenderers are advised that, if the Contractor is not a resident of Canada, federal tax legislation may require that a certain percentage of any Contract Price otherwise payable to the Contractor be withheld by the City and remitted to the Receiver-General for Canada. The percentage required to be withheld and remitted varies depending on, among other things, the country of residence, the provisions of any applicable tax treaties and the nature of the payment. Non-resident Tenderers may contact the Vancouver office of the Canada Revenue Agency for further details. Under any Contract, any and all money so withheld and remitted shall be treated as a payment to the Contractor against the Contract Price.

17.0 NO CLAIM AGAINST THE CITY

- 17.1 The Tenderer acknowledges and agrees that the City will not be responsible for any Losses incurred by the Tenderer, including, without limiting the generality of the foregoing, any Losses incurred by the Tenderer directly or indirectly caused by any act or omission of the City

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or breach of any agreement or duty by the City, express or implied, and by submitting a Tender each Tenderer shall be deemed to have agreed that it has no claim whatsoever.

- 17.2 The Tenderer now indemnifies and will protect and save the City and any of its employees, advisors or representatives (including the Engineer) harmless from and against all Losses, in respect of any claim or threatened claim by any of its subcontractors, or materials or equipment suppliers alleging or pleading:
- (a) a breach of the Tender Contract by the City or any of its employees, advisors or representatives (including the Engineer);
 - (b) an unintentional tort, of the City or any of its employees, advisors or representatives (including the Engineer), occurring in the course of conducting this ITT; or
 - (c) liability on any other basis related to the ITT or the Tender Contract.

18.0 DISPUTE RESOLUTION

- 18.1 Any dispute relating in any manner to this ITT, except only disputes arising between the City and any Tenderer to whom the City has made an award of a Contract, which arise under such Contract, will be resolved by arbitration in accordance with the *Commercial Arbitration Act* (British Columbia), amended as follows:
- (a) The arbitrator will be selected by the City's Director - Supply Chain Management;
 - (b) Sections 17.1 and 17.2 above will:
 - (i) bind the arbitrator, the Tenderer and the City; and
 - (ii) survive any and all awards made by the arbitrator; and
 - (c) The Tenderer will bear all costs of the arbitration.

19.0 CONFIDENTIALITY AND PRIVACY

- 19.1 Each Tender, once submitted to the City, will be held in accordance with the City's role as a public body required under Information and Privacy Legislation to protect or disclose certain types of records according to certain statutory rules. Each Tender, upon submission to the City, will be received and held in confidence by the City, unless and to the extent that it is or must be disclosed pursuant to Information and Privacy Legislation or other applicable legal requirements, and except that the City may publicly disclose information about or from Tenders, including without limitation names and prices, in the course of publicly reporting to the Vancouver City Council about the ITT.
- 19.2 If unsuccessful, a Tenderer, at the City's request, shall destroy or return all copies and originals (in any format or medium) of the Tender Documents.

20.0 RELEASE OF INFORMATION RESTRICTED

- 20.1 The release of information about Tenders is restricted. Tenderers can obtain information concerning the names of the other Tenderers who have submitted a Tender and the Tender Price shown on each Form of Tender at the following website within 48 hours of the Closing Time. However, no other information is anticipated to be disclosed by the City.

<http://vancouver.ca/doing-business/unverified-tender-results.aspx>

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PART C - FORM OF TENDER

Tender of:			
	Legal Name of Person, Partnership or Corporation (the "Tenderer")		
Business Address:			
Postal or Zip Code:			
Cheques Payable to/Remit to Address:			
Postal or Zip Code:			
Key Contact Person:			
Telephone No.:			
E-mail:			
Tax Registration Numbers (as applicable):			
Dun & Bradstreet Number (if available):		WorkSafeBC Account Number:	
City of Vancouver, as represented by its Vancouver Board of Parks and Recreation Business License Number (or, if available, Metro West Inter-municipal Business License Number):		Date, Jurisdiction and Form of Organization (as applicable):	

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
PART C - FORM OF TENDER

1.0 TENDER PRICE AND SCHEDULE

Having carefully read and examined the Tender Documents, and having agreed to the terms and conditions set out in Parts A and B of the ITT, the undersigned Tenderer (for purposes of this Tender, the "Tenderer") offers to complete the Work and to furnish all plant, tools, equipment, labour, products, material and supervision necessary therefor, and to enter into an agreement in the form of the Form of Agreement set forth as Part D of the ITT to execute the Work, for the Tender Price specified below.

ITT NO. <u>PS20200764</u>
The Tender Price (including all costs, taxes and fees)(as per Schedule A), is _____ dollars and _____ cents (\$ _____)
The Tender Price <u>includes all PST and GST.</u>

The Tenderer's offer to complete all of the Work is an offer made according to the following schedule:

- (a) Work will begin by **September 8, 2020**, subject to the City issuing a Notice to Proceed.
- (b) Substantial performance of the Work will occur by **November 25, 2020**
- (c) Total performance of the Work will occur by **December 9, 2020**

2.0 ELECTRONIC PAYMENTS ACKNOWLEDGEMENT

If awarded a contract, the Tenderer agrees that all payments to be made by the City will be by electronic funds transfer, and the Tenderer will provide the City with the necessary banking information to facilitate this process.

3.0 IRREVOCABILITY; NOTICE OF AWARD

The Tenderer agrees that this Tender will be irrevocable and open for acceptance by the City for a period of ninety (90) calendar days commencing on the Closing Time, even if the Tender of another Tenderer is accepted by the City. If within this period the City delivers a written notice by which the City accepts the Tender (a "Notice of Award"), the Tenderer will, within ten (10) Working Days of the receipt of the Notice of Award, deliver to the City:

- (a) a performance bond and a labour and material payment bond, each in the amount of fifty percent (50%) of the Tender Price, issued by a surety licensed to carry on the business of suretyship in the province of British Columbia, and in a form acceptable to the City;
- (b) a detailed construction schedule consistent with the preliminary construction schedule included in this Tender, which indicates the timing of the major activities of the relevant Work and provides sufficient detail of the critical events and their inter-

INVITATION TO TENDER NO. PS20200764
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PART C - FORM OF TENDER

relationship to demonstrate such Work will be performed by the relevant completion date stated in this Tender;

- (c) a detailed traffic management plan addressing vehicular and pedestrian movement, safety and access with specific detailing on methods, signage and materials used to maintain Work Site operations and access to staff and public users of the Work Site;
- (d) a detailed Work Site-specific safety and health plan addressing as a high-level overview the health and safety issues including, but not limited to hazards, mitigation measures, site orientations, safety meetings, first aid attendant requirements, and training requirements and record keeping;
- (e) a WorkSafeBC number and a "clearance letter" confirming that the Tenderer is in WorkSafeBC compliance;
- (f) a valid City of Vancouver business licence;
- (g) banking details to support payments by Electronic Funds Transfer (EFT); and
- (h) a completed and signed Certificate of Insurance (in the form attached as a schedule to this Form of Tender) indicating that all of the insurance coverage required by the Contract is in place.

4.0 NOTICE TO PROCEED

The Tenderer agrees that upon the City's receipt and acceptance (in the City's discretion) of the required submissions listed above, the Tenderer will, within two (2) Working Days, execute and return to the City the Contract and the other Contract Documents requiring execution (in each case, as prepared by the City for execution) and, upon the City's receipt and acceptance thereof, the City may deliver to the Tenderer a "Notice to Proceed", and the Tenderer will:

- (a) commence the relevant Work within two (2) Working Days of the receipt of the Notice to Proceed or such longer time as may be otherwise specified in the Notice to Proceed; and
- (b) issue, post, and copy the City on the "Notice of Project" as and when required under section 20.2 of the *Occupational Health & Safety Regulation* (BC Regulation 296/97).

5.0 CONDITIONS

- (a) The Tenderer agrees that if the Tenderer receives a Notice of Award or a Notice to Proceed and fails or refuses to comply with the requirements stated in the foregoing clause 3.0 or clause 4.0, as the case may be, then such failure or refusal will be deemed to be a repudiation of the Tender Contract and refusal to enter into the relevant Contract and the City may, on written notice to the Tenderer, award the Contract to another party. It is further agreed that, as full compensation on account of damages suffered by the City because of such failure or refusal, the bid security shall be forfeited to the City in the amount equal to the lesser of:
 - (i) the face value of the bid security; and
 - (ii) the amount by which the Tender Price is less than the amount for which the City contracts with another party to perform the Work.

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
PART C - FORM OF TENDER

- (b) The lowest or any submitted tender will not necessarily be accepted. The City reserves the right to reject this Tender at any time without further explanation or to accept any Tender considered advantageous to the City.
- (c) The schedules attached to this Form of Tender form an integral part of the same.

6.0 ADDENDA, AMENDMENTS AND QUESTIONS AND ANSWERS

The Tenderer acknowledges receipt of the following addenda, amendments and questions and answers to the Tender Documents:

Addendum No.
Amendment No.
Questions and Answers No.

The Tenderer agrees that it thoroughly understands and accepts the terms and conditions contained therein.

7.0 CERTIFICATION

The Tenderer represents and warrants that this Tender complies in all respects with the Tender Documents.

8.0 LABOUR

The above stated price is based on the Work under the Contract being performed by union/non-union labour. (Delete "union" or "non-union" as applicable).

9.0 CONTRACT TERMS IN THE ITT

Without limitation, the Tenderer expressly agrees with the City to all of the terms and conditions set forth in Part A and Part B of the ITT and is bound thereby.

SIGNED on behalf of the Tenderer this _____ day of _____ 20____ by _____ the _____ duly authorized signatory or signatories of the Tenderer:

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
PART C - FORM OF TENDER

Per: _____

Name and Title: _____

Per: _____

Name and Title: _____

If the Tenderer has a corporate seal, the corporate seal should be applied in the space below:

If the Tenderer is an individual, a proprietorship or a partnership, the above signature(s) should be witnessed:

Witness signature

Witness name

Witness address

SCHEDULE "A"

SCHEDULE OF QUANTITIES AND PRICES

EACH TENDER MUST COMPLETE THIS SCHEDULE A, AS AMENDED, IN FULL. EACH PAGE OF THIS SCHEDULE A MUST BE INITIALLED BY THE SIGNATORIES OF THE FORM OF TENDER. TENDERS MUST NOT BE SUBMITTED WITHOUT A COMPLETED, DULY EXECUTED SCHEDULE A.

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE "A" (PART C - FORM OF TENDER)

The Tender Price to complete all of the Work is apportioned in accordance with the following table. The prices shown in each of the numbered rows of the table shall include (i) all labour, material and other costs, (ii) overhead and profit, (iii) PST, and (iv) all other taxes, duties, assessments, charges and fees, *except for GST*. GST shall be shown separately on the row provided therefor.

NOTE: Prices must be PST-inclusive. Only GST is to be shown as a separate line item.

The sum of the amounts shown in the table below **MUST** equal the Tender Price stipulated in the space provided in the Form of Tender which, for greater certainty, is the Tenderer's proposed Contract Price for a Contract to complete all of the Work.

EVERY ROW OF THE BELOW TABLE MUST BE COMPLETED WITH A DOLLAR AMOUNT, EVEN IF THAT DOLLAR AMOUNT IS \$0.

Item	Description	Total Price (including PST)
1.0	Project Start Up	
1.1	General Conditions and Mobilization	\$
1.2	Site Review/Survey	\$
2.0	Construction - General	
2.1	Site Preparation Installation and removal of tree protection fencing / hoarding, installation and maintenance of erosion and sediment control, silt fencing and all related works (complete).	\$
2.2	Removals Including clearing and disposal of vegetation, and organic materials, play surfacing and associated build-up, edging and un-salvaged play equipment, concrete block wall and flatwork, gravel path and build-up, and re-location of existing bake oven and shelter to neighbouring Italian Cultural Centre (complete) per Drawings and Specifications.	\$

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE "A" (PART C - FORM OF TENDER)

Item	Description	Total Price (including PST)
3.0	Earthwork and Drainage	
3.1	Site Drainage Including tie into existing storm service, installation of all associated drainage structures, including catch basins, drainage swales, perf and solid pipes, cleanouts, cleaning, inspections and all related works as (complete) per Drawings and Specifications.	\$
3.2	Excavation, Backfilling and Subgrade Preparation Including bulk excavation works and filling, offsite disposal of unsuitable and excess native materials, subgrade reshaping, supply and placement of imported subgrade fill and related works (complete) per Drawings and Specifications.	\$
4.0	Surfacing	
4.1	Concrete Including supply and installation of on-site concrete improvements including pathways/paving, pads, concrete curbs and related works (complete) per Drawings and Specifications.	\$
4.2	Asphalt Paving Including asphalt paving (complete) per Drawings and Specifications.	\$
4.3	Play Sand Including play sand (complete) per Drawings and Specifications.	\$
4.4	Engineered Wood Fibre (EWF) Including supply and installation of EWF and related works (complete) per Drawings and Specifications.	\$

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CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE "A" (PART C - FORM OF TENDER)

Item	Description	Total Price (including PST)
4.5	Poured in Place Rubberized Safety Surfacing Including supply and installation of rubber surfacing and related works including cement soil walls at berms (complete) per Drawings and Specifications.	\$
5.0	Site Furnishings and Planting	
5.1	Boulder Retaining Including supply and installation of all boulders and related works (complete) per Drawings and Specifications.	\$
5.2	Allowance for Supply and Install of Play Equipment (or approved equal) Including supply and installation by Swing Time (or approved equal) of: L210 swings with 2 Slash-Proof Belt Packages w/ Regular Hangers, 1 Accessible Seat Package w/ Regular Hangers, 1 Slash-Proof Tot Package w/ Regular Hangers, 2 Crazy Cups, 2 Corkscrew spinners, and 1 Space Capsule. And including supply and installation by Rectec Industries (or approved equal) of: 1 Kompan Corocord EXPLORER DOME (discounted price for VPB), 1 Kompan Corocord EMBANKMENT SLIDE, 2 EUROTRAMP Loop XL Outdoor Inground Trampoline (Install of Eurotramp includes: supply and install drain rock, supply and install concrete curb, install 2.0 x 2.0m square Euro Tramp NOTE: Excavation and drain line installation by others)"	CASH ALLOWANCE: \$168,500.00
5.3	Upright Log Edging Including preparation and installation of owner supplied logs (Jericho Beach park Source) and related works (complete) per Drawings and Specifications.	\$
5.4	Bike Racks Including supply and installation of bike racks per Drawings and Specifications.	\$
5.5	Log Play Hut, Table and Stools Including fabrication, supply and installation of custom log play elements by Paul Dirks (or approved equivalent) and related works (complete) per Drawings and Specifications.	\$

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SCHEDULE "A" (PART C - FORM OF TENDER)

Item	Description	Total Price (including PST)
5.6	Installation of Owner Supplied Furnishings Including installation of three picnic tables, and three standard inverted U bike racks and related works (complete) per Drawings and Specifications.	\$
5.7	Supply and Installation of three custom benches Including supply and installation of three custom (coordination by owner) benches by Frances Andrew (or approved equal) and related works (complete) per Drawings and Specifications.	CASH ALLOWANCE: \$12,000.00
5.7	Tree Planting (10) Including the supply and installation of 10, 7cm cal. trees including growing medium, per the Drawings and Specifications (complete).	\$
5.8	Hydro-seeded Lawn Including the supply and install of hydro-seeded lawn including growing medium, per Drawings and Specifications and as needed to repair any areas disturbed by construction (complete).	\$
6.0	Construction - Project Close Out	
6.1	Other (contingency allowances and any other work or costs not reflected in the items above but required to complete the Work covered by the Tender Documents) List Work if applicable.	\$
6.2	As Built Drawings Including all mark-ups provided to the Consultant as a condition of Substantial Completion, per Specifications (complete).	\$
6.3	Establishment Landscape Maintenance Including the maintenance of all landscape areas, including lawn and planted areas, and litter removal, from installation and until one (1) full year from the date of Acceptance for the entire landscape area in accordance with the Specifications.	\$

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SCHEDULE "A" (PART C - FORM OF TENDER)

Item	Description	Total Price (including PST)
6.4	Demobilization	\$
	Sub-Total (including all applicable PST)	\$
	GST (5%)	\$
	Grand Total Contract Price	\$

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE "A" (PART C - FORM OF TENDER)

List of Unit Prices for Any Additional Work

These unit prices will be used for changing quantities from those indicated in the Tender Documents or Contract Documents upon written instruction from the City. The unit prices will be applied in accordance with the Contract. The prices should include (i) all labour, material and other costs, (ii) overhead and profit, (iii) PST, and (iv) all other taxes, duties, assessments, charges and fees, *except for GST*.

Item	Description	Unit	Unit Price (including PST)	
			Add	Delete
1.	Lawn Basin Lead (per detail 150 mm dia.- including preparation, granulars, supply, installed, complete)	lin.m.	\$	\$
2.	Storm Clean Out (per detail 150 mm dia. including preparation, granulars, supply, installed, complete)	each	\$	\$
3.	Excavation with Offsite Disposal	m3	\$	\$
4.	152mm CIP concrete band/curb (per details 152mm thick, reinforced , complete with base, subbase per detail, supply, installed, complete)	m2	\$	\$
5.	Concrete Surface (per detail 125 mm thick, reinforced, complete with base, subbase per detail, supply, installed, complete)	m2	\$	\$
6.	Perforated Pipe - 100mm (per detail including preparation, granulars, connections, supply, installed, complete)	lin.m.	\$	\$
7.	Growing medium for lawn areas - 250 mm min. depth, per Specifications, including supply, placement, (complete)	m2	\$	\$
8.	Sodded Lawn - (per Specifications, including 100mm growing medium, preparation, supplied, installed, complete)	m2	\$	\$
9.	PIP rubber surfacing (per detail including preparation granulars supply, installed, complete)	m2	\$	\$

INVITATION TO TENDER NO. PS20200764
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SCHEDULE "A" (PART C - FORM OF TENDER)

10.	Engineered Wood Fibre (per detail including preparation granulars and filter cloth supply, installed, complete)	m3	\$	\$
11.	Play Sand (per detail including preparation granulars and filter cloth, supply, installed complete)	m3	\$	\$

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE "B" (PART C - FORM OF TENDER)

SCHEDULE "B"

PRELIMINARY CONSTRUCTION SCHEDULE

The Work is expected to begin by **September 8, 2020** and substantial performance is targeted for **November 25, 2020**. Please clearly define time requirements for project milestones identified in the table below. If necessary, please add an attachment to this Schedule.

TABLE 1 - PROJECT MILESTONES	
Milestone	Date of Completion
Project Start Up Meeting	September 8, 2020
Tree Planting	October 30, 2020
Substantial Completion	November 25, 2020
Total Completion	December 9, 2020

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20200764, FORM OF TENDER - SCHEDULE B", and is to be signed by the Tenderer.

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE "C" (PART C - FORM OF TENDER)

SCHEDULE "C"

SUBCONTRACTORS AND SUPPLIERS

1.0 SUBCONTRACTORS

The Tenderer intends to use the following subcontractors for the portions of the Work identified below. (All subcontractors who are proposed to perform any portion of the Work should be listed.)

Subcontractor	Address	Type of Work

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20200764, FORM OF TENDER - SCHEDULE C", and is to be signed by the Tenderer.

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE "C" (PART C - FORM OF TENDER)

2.0 SUPPLIERS

The Tenderer intends to use the following suppliers and manufacturers for the Work.

Supplier	Manufacturer	Supplier Address	Item

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20200764, FORM OF TENDER - SCHEDULE C", and is to be signed by the Tenderer.

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE "E" (PART C - FORM OF TENDER)

SCHEDULE "D"

TENDERER'S EXPERIENCE WITH RELATED WORK

Tenderers should confirm that they and their proposed subcontractors have the required experience to perform the Work. Each Tenderer should submit information concerning a minimum of **three** completed projects similar in scope and size to the Work, for each of itself and its proposed subcontractors, including the following information:

Description of Project:

Location of Project:

Contract Value:

\$

(Cdn. Dollars)

Start and Completion Dates:

Completed on Schedule?

Yes

No

(Circle Correct Response)

Name of Contract City:

Name of Project Reference:

Current Telephone Number and E-mail of Project Reference:

Names of Key Personnel and Subcontractors:

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20200764, FORM OF TENDER - SCHEDULE D", and is to be signed by the Tenderer.

SCHEDULE "E"

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE "E" (PART C - FORM OF TENDER)

FORCE ACCOUNT LABOUR & EQUIPMENT RATES

Tenderers should complete the following tables setting out the all-inclusive hourly rates for all applicable types of equipment as well as the all-inclusive hourly rates for all applicable categories of labour, which rates will then apply pursuant to any Contract.

TABLE 1 - SCHEDULE OF LABOUR RATES

Job Classification	Regular Rate	Overtime Rate
	\$	\$
	\$	\$
	\$	\$
	\$	\$
	\$	\$
	\$	\$

TABLE 2 - SCHEDULE OF EQUIPMENT RATES

No.	Equipment Description	Hourly Rate	No. of Hours	Overhead And Profit	Total Price
		\$		\$	\$
		\$		\$	\$
		\$		\$	\$
		\$		\$	\$
		\$		\$	\$

Labour and equipment rates must be inclusive of all taxes except for GST, and all assessments, benefits, small tools, overhead and profits.

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20200764, FORM OF TENDER - SCHEDULE E", and is to be signed by the Tenderer.

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE "F" (PART C - FORM OF TENDER)

SCHEDULE "F"

FORM OF CONSENT OF SURETY

PROJECT: _____

Should it be required, we the undersigned Surety Company do hereby undertake to become bound as a surety in an approved Contract Performance Bond and Labour and Material Payment Bond, each in the amount of fifty percent (50%) of the awarded Contract Price for the fulfillment of the Contract, which may be awarded to _____ at the Tender Price set forth in the attached Tender, which Performance Bond and Labour and Material Payment Bond we understand are to conform to the applicable CCDC forms and be filed with the City within 10 Working Days of receipt of Notice of Award of the Contract, unless otherwise directed by the City.

We hereby further declare that the undersigned Surety Company is legally entitled to do business in the Province of British Columbia and that it has a net worth over and above its present liabilities and the amounts herein set forth.

The Common Seal of _____
was hereto affixed in the presence of:

SCHEDULE "G"

SUSTAINABILITY

1. Please list any products or services contemplated in the Tender that are toxic or hazardous to the environment or humans and complete the following table in relation thereto.

Item	Description of Toxin/Hazard	Substantiation for Use	Mitigation strategy to reduce the effect of the Toxin/Hazard

2. Please identify the Tenderer's standard practices for disposal of obsolete or expired products or equipment.

Item	Type of Product/Equipment	Disposal Method

3. Please identify the Tenderer's current or proposed solutions to address and reduce carbon emissions.

Item	Carbon Emission Risk	Solution to Reduce Carbon Emissions

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE "G" (PART C - FORM OF TENDER)

SCHEDULE "H"

CERTIFICATE OF INSURANCE

(TO BE COMPLETED IF AWARDED THE CONTRACT)

LIABILITY INSURANCE CERTIFICATE

Section 7 b) – City staff to select the required # of days Written Notice before sending out for completion
 Section 2 through 7 – to be completed and executed by the Insurer or its Authorized Representative

1. **THIS CERTIFICATE IS ISSUED TO:** City of Vancouver, 453 W 12th Avenue, Vancouver, BC, V5Y 1V4
and certifies that the insurance policy (policies) as listed herein has/have been issued to the Named Insured and is/are in full force and effect as of the effective date of the agreement described below.
2. **NAMED INSURED** *[must be the same name as the Permittee/Licensee or Party(ies) to Contract and is/are either an individual(s) or a legally incorporated company(ies)]*

BUSINESS TRADE NAME OR DOING BUSINESS AS

BUSINESS ADDRESS

DESCRIPTION OF OPERATION, CONTRACT, AGREEMENT, LEASE, PERMIT OR LICENSE

3. COMMERCIAL GENERAL LIABILITY INSURANCE (Occurrence Form)

Including the following coverages:

- ✓ Personal Injury
- ✓ Employees as Additional Insureds
- ✓ Cross Liability or Severability of Interest
- ✓ Contingent Employer's Liability
- ✓ Blanket Contractual Liability
- ✓ Broad Form Products & Completed Operations
- ✓ Broad Form Property Damage Incl. Loss of Use
- ✓ Non-Owned Auto Liability

Check Additional Extensions where applicable and included:

- | | |
|--|---|
| <input type="checkbox"/> Sudden & Accidental Pollution Liability | <input type="checkbox"/> Work below ground level over 3 metres |
| <input type="checkbox"/> Host Liquor Liability | <input type="checkbox"/> Excavation, shoring, underpinning, pile driving or caisson |
| <input type="checkbox"/> Abuse/Molestation Coverage | <input type="checkbox"/> Demolition, removal or weakening of support of property |
| <input type="checkbox"/> Advertising Liability | <input type="checkbox"/> Blasting |
| <input type="checkbox"/> Volunteers as Additional Insured | <input type="checkbox"/> Operation of hoist or attached machinery |
| <input type="checkbox"/> Members as Additional Insured | <input type="checkbox"/> 12 months Completed Operations |
| <input type="checkbox"/> Injury to Participants | <input type="checkbox"/> 24 months Completed Operations |

INSURER: _____ POLICY NUMBER: _____

POLICY PERIOD: FROM: _____ To: _____

LIMITS OF LIABILITY (Bodily Injury and Property Damage Inclusive):

Per Occurrence \$ _____ Aggregate \$ _____

Deductible Per Occurrence \$ _____ All Risk Tenants' Legal Liability \$ _____

4. AUTOMOBILE LIABILITY INSURANCE for operation of owned and/or leased vehicles

INSURER: _____

POLICY NUMBER: _____

POLICY PERIOD: From _____ to _____

LIMITS OF LIABILITY:

Combined Single Limit: \$ _____

If vehicles are insured by ICBC, complete and provide Form APV-47.

5. ☐ UMBRELLA OR ☐ EXCESS LIABILITY INSURANCE

INSURER: _____

Limits of Liability (Bodily Injury and Property Damage Inclusive) -

Per Occurrence \$ _____

POLICY NUMBER: _____

Aggregate \$ _____

POLICY PERIOD: From _____ to _____

Self-Insured Retention \$ _____

6. OTHER INSURANCE (e.g. Contractors Equipment, Crime, etc.) – Please specify Name of Insurer(s), Policy Number, Policy Period, and Limit

7. POLICY PROVISIONS

Where required by the governing contract, agreement, lease, permit or license, it is understood and agreed that:

- a) *The City of Vancouver, its officials, officers, employees, servants and agents have been added as Additional Insureds with respect to liability arising out of the operation of the Named Insured pursuant to the governing contract, agreement, lease, permit or license.*
- b) *SIXTY (60) days written notice of cancellation or material change resulting in reduction of coverage with respect to any of the policies listed herein, either in part or in whole, will be given by the Insurer to the Holder of this Certificate; the exception is cancellation for non-payment of premiums in which case the applicable statutory conditions will apply.*
- c) *The insurance policy (policies) listed herein shall be primary with respect to liability arising out of the operation of the Named Insured. Any insurance or self-insurance maintained by the City of Vancouver shall be in excess of this insurance and shall not contribute to it.*

SIGNED BY THE INSURER OR ITS AUTHORIZED REPRESENTATIVE

PRINT NAME OF THE INSURER OR ITS AUTHORIZED REPRESENTATIVE, ADDRESS AND PHONE NUMBER

SCHEDULE "I"

CERTIFICATE OF EXISTING INSURANCE

(TO BE COMPLETED AND SUBMITTED WITH TENDER)



**CERTIFICATE OF EXISTING INSURANCE
TO BE COMPLETED AND APPENDED TO THE PROPOSAL/TENDER**

Section 2 through 8 – to be completed and executed by the Insurer or its Authorized Representative

1. **THIS CERTIFICATE IS ISSUED TO:** City of Vancouver, 453 W 12th Avenue, Vancouver, BC, V5Y 1V4
and certifies that the insurance policy (policies) as listed herein has/have been issued to the Named Insured and is/are in full force and effect.
2. **NAMED INSURED** (must be the same name as the proponent/bidder and is either an individual or a legally incorporated company)

BUSINESS TRADE NAME or DOING BUSINESS AS

BUSINESS ADDRESS

DESCRIPTION OF OPERATION

3. **PROPERTY INSURANCE (All Risks Coverage including Earthquake and Flood)**

INSURER _____	Insured Values (Replacement Cost) -
TYPE OF COVERAGE _____	Building and Tenants' Improvements \$ _____
POLICY NUMBER _____	Contents and Equipment \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____

4. **COMMERCIAL GENERAL LIABILITY INSURANCE (Occurrence Form)**

Including the following extensions:	INSURER _____
✓ Personal Injury	POLICY NUMBER _____
✓ Property Damage including Loss of Use	POLICY PERIOD From _____ to _____
✓ Products and Completed Operations	Limits of Liability (Bodily Injury and Property Damage Inclusive) -
✓ Cross Liability or Severability of Interest	Per Occurrence \$ _____
✓ Employees as Additional Insureds	Aggregate \$ _____
✓ Blanket Contractual Liability	All Risk Tenants' Legal Liability \$ _____
✓ Non-Owned Auto Liability	Deductible Per Occurrence \$ _____

5. **AUTOMOBILE LIABILITY INSURANCE** for operation of owned and/or leased vehicles

INSURER _____	Limits of Liability -
POLICY NUMBER _____	Combined Single Limit \$ _____
POLICY PERIOD From _____ to _____	<i>If vehicles are insured by ICBC, complete and provide Form APV-47.</i>

6. ☐ **UMBRELLA OR** ☐ **EXCESS LIABILITY INSURANCE** **Limits of Liability (Bodily Injury and Property Damage Inclusive) -**

INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Self-Insured Retention \$ _____

7. **PROFESSIONAL LIABILITY INSURANCE**

INSURER _____	Limits of Liability
POLICY NUMBER _____	Per Occurrence/Claim \$ _____
POLICY PERIOD From _____ to _____	Aggregate \$ _____
	Deductible Per Occurrence/Claim \$ _____

If the policy is in a "CLAIMS MADE" form, please specify the applicable Retroactive Date: _____

8. **OTHER INSURANCE**

TYPE OF INSURANCE _____	Limits of Liability
INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____
TYPE OF INSURANCE _____	Limits of Liability
INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____

SIGNED BY THE INSURER OR ITS AUTHORIZED REPRESENTATIVE

PRINT NAME OF INSURER OR ITS AUTHORIZED REPRESENTATIVE, ADDRESS AND PHONE NUMBER

Dated _____

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE "J" (PART C - FORM OF TENDER)

SCHEDULE "J"

UNDERTAKING OF INSURANCE

To: City of Vancouver as represented by its Vancouver Board of Parks and Recreation

Re: PS20200764 - CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT

Dear Sirs:

We, the undersigned have completed, signed and attached the "Certificate of Existing Insurance" enclosed with this undertaking and now also do hereby undertake and agree that if _____ (the "Tenderer") is awarded a Contract, we will insure the Contractor in accordance with the requirements of the Contract, the form of which is included in the Tender Documents and will form part of the Contract Documents.

Dated at _____, British Columbia, this _____ day of _____ 20____.

By: _____

Title: _____

Full Corporate Name of Insurer:

The "Certificate of Existing Insurance" provided with the ITT should be completed and signed and enclosed with this schedule, both of which are to be signed by the Insurance Company or an authorized broker on behalf of the Insurance Company. A SEPARATE FORM (AND CERTIFICATE OF EXISTING INSURANCE) SHOULD BE SIGNED FOR EACH POLICY IF THE TENDERER HAS MORE THAN ONE INSURER OR BROKER FOR ITS POLICIES.

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE "K" (PART C - FORM OF TENDER)

Schedule "K"
DECLARATION OF SUPPLIER CODE OF CONDUCT COMPLIANCE

Purpose: All proposed suppliers are to complete and submit this form to certify compliance with the supplier performance standards set out in the Supplier Code of Conduct.

The City of Vancouver, as represented by its Vancouver Board of Parks and Recreation expects each supplier of goods and services to the City to comply with the supplier performance standards set out in the City's Supplier Code of Conduct (SCC) <http://vancouver.ca/policy_pdf/AF01401P1.pdf>. The SCC defines minimum labour and environmental standards for City suppliers and their subcontractors.

Suppliers are expected to comply with the aforementioned standards upon submitting a tender, proposal, application, expression of interest or quotation to the City, or have a plan in place to comply within a specific period of time. The City reserves the right to determine an appropriate timeframe in which suppliers must come into compliance with these standards. To give effect to these requirements, an authorised signatory of each proposed vendor must complete the following declaration and include this declaration with its submission:

As an authorised signatory of _____(vendor name), I declare that I have reviewed the SCC and to the best of my knowledge, _____(vendor name) and its proposed subcontractors have not been and are not currently in violation of the SCC or convicted of an offence under national and other applicable laws referred to in the SCC, other than as noted in the table below (*include all violations/convictions that have occurred in the past three years as well as plans for corrective action*).

Section of SCC / title of law	Date of violation /conviction	Description of violation / conviction	Regulatory / adjudication body and document file number	Corrective action plan

I understand that a false declaration and/or lack of a corrective action plan may result in no further consideration being given to the submission of _____(vendor name).

Signature: _____

Name and Title: _____

SCHEDULE "L"

CONFLICT OF INTEREST DECLARATION

NO CONFLICT OF INTEREST / NO COLLUSION / NO LOBBYING

Declaration as to no Conflict of Interest in ITT

- (a) The Tenderer confirms and warrants that there is no officer, director, shareholder, partner, employee or contractor of the Tenderer or of any of its proposed subcontractors, or any other person related to the Tenderer's or any proposed subcontractor's organization (a "person having an interest") or any spouse, business associate, friend or relative of a person having an interest who is:
- a. an official or employee of the City; or
 - b. related to or has any business or family relationship with an elected official or employee of the City,
- in each case, such that there could be any conflict of interest or any appearance of conflict of interest in the evaluation or consideration of the Tender by the City, and, in each case, except as set out, in all material detail in the section titled "Disclosure" in this Schedule "L".
- (b) The Tenderer confirms and warrants that there is no person having an interest (as defined above) who is a former official, former employee or former contractor of the City and who has non-public information relevant to the ITT obtained during his or her employment or engagement by the City, except as set out, in all material detail, in the section titled "Disclosure" in this Schedule "L".

Declaration as to No Conflict of Interest Respecting Proposed Supply

The Tenderer confirms and warrants that neither the Tenderer nor any of its proposed subcontractors is currently engaged in supplying (or is proposing to supply) goods or services to a third party such that entering into an agreement with the City in relation to the subject matter of the ITT would create a conflict of interest or the appearance of a conflict of interest between the Tenderer's duties to the City and the Tenderer's or its subcontractors' duties to such third party, except as set out, in all material detail, in the section titled "Disclosure" in this Schedule "L".

Declaration as to No Collusion

The Tenderer confirms and warrants that:

- (a) the Tenderer is not competing within the ITT with any entity with which it is legally or financially associated or affiliated; and
- (b) the Tenderer is not cooperating in any manner in relation to the ITT with any other tenderer responding to the ITT,

in each case, except as set out, in all material detail, in the section titled "Disclosure" in this Schedule "L".

Declaration as to Lobbying

The Tenderer confirms and warrants that:

- (a) neither it nor any officer, director, shareholder, partner, employee or agent of the Tenderer or any of its proposed subcontractors is registered as a lobbyist under any lobbyist legislation in any jurisdiction in Canada or in the United States of America; and

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SCHEDULE "L" (PART C - FORM OF TENDER)

- (b) neither it nor any officer, director, shareholder, partner, employee or agent of the Tenderer or any of its proposed subcontractors has engaged in any form of political or other lobbying whatsoever with respect to the Tender or sought, other than through the submission of the Tender, to influence the outcome of the ITT,

in each case, except as set out, in all material detail, in the section titled "Disclosure" in this Schedule "L".

Disclosure [Add disclosure here.]

(NOTE: The City will evaluate each matter disclosed to determine whether and to what extent the Tenderer can be given consideration in the ITT in light of the particular matter.)

THE TENDERER HAS EXECUTED AND DELIVERED THIS DECLARATION AS AN INTEGRAL PART OF ITS TENDER IN THE MANNER AND SPACE SET OUT BELOW:

Signature of Authorized Signatory for the Tenderer

Date

Name and Title

Signature of Authorized Signatory for the Tenderer

Date

Name and Title

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CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
PART D - FORM OF AGREEMENT



INVITATION TO TENDER ("ITT") NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT

FORM OF AGREEMENT

between

and

CITY OF VANCOUVER, AS REPRESENTED BY ITS VANCOUVER BOARD OF PARKS AND RECREATION

_____, 20____

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CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
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This AGREEMENT (this "Agreement") is made as of the _____ day of _____.

BETWEEN:

CITY OF VANCOUVER, AS REPRESENTED BY ITS VANCOUVER BOARD OF PARKS
AND RECREATION having an office at
453 West 12th Avenue
Vancouver, British Columbia, V5Y 1V4

(hereinafter referred to as the "Owner")

OF THE FIRST PART

AND:

[NTD: INSERT CONTRACTOR NAME/ADDRESS]

(hereinafter referred to as the "Contractor")

OF THE SECOND PART

WHEREAS:

- A. The *Owner* has appointed **DURANTE KREUK LTD.** (hereinafter referred to as the "**Contract Administrator**" for the purposes of this *Contract*) to act as its sole and exclusive agent for purposes of managing and administering the performance of the *Work* by the *Contractor* in accordance with the *Specifications*, *Drawings* and other *Contract Documents*; and
- B. The *Contractor* has agreed with the *Owner* to perform the *Work* and to furnish all plant, tools, equipment, labour, products, material and supervision necessary therefor as hereinafter set forth.

NOW THEREFORE THIS AGREEMENT WITNESSES as follows:

ARTICLE 1 ROLE OF THE CONTRACT ADMINISTRATOR

The *Owner* hereby designates and appoints the *Contract Administrator* as its sole and exclusive agent for the purpose of, on behalf of the *Owner*, managing and administering the performance of the *Work*, as set out in the *Contract Documents*. Unless otherwise notified in writing by the *Owner* to the *Contractor*, the agency of the *Contract Administrator* shall continue for the entire duration of this *Contract* including the period of any guarantees or warranties given by or through the *Contractor*. In the event of the revocation in writing of the agency of the *Contract Administrator* by the *Owner*, the *Contract Administrator* shall have no further authority under this *Contract*, except as may be specifically designated in writing by the *Owner* and agreed to in writing by the *Contract Administrator*, and all references to the *Contract Administrator* in this *Contract* shall thereafter be deemed to be references to the *Owner* or to such other person designated in writing to the *Contractor*. The *Contract Administrator* may from time to time delegate to a representative the performance of, or the authority to perform, the duties, responsibilities, rights and obligations of the *Owner* in respect of which the *Contract Administrator* has been designated and appointed as its sole and exclusive agent.

ARTICLE 2 WORK

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The *Contractor* will carry out the *Work*, and will furnish all materials, equipment, products, labour, services and supervision necessary to carry out the *Work* as specified in and in accordance with the *Contract Documents*.

All of the *Work* shall be done, performed or furnished by the *Contractor* in a proper and workmanlike manner and in accordance with the requirements of the *Contract Documents* (as hereinafter defined).

ARTICLE 3 CONTRACT DOCUMENTS

3.1 The following are the *Contract Documents*, whether or not attached to this Agreement:

- (a) this Agreement and the following schedules:
 - (i) Schedule 1 - Supplemental General Conditions;
 - (ii) Schedule 2 - Specifications and Drawings (the *Specifications* and Drawings listed in Schedule 2 that are not included in Schedule 2 are incorporated by reference);
 - (iii) Schedule 3 - Schedule of Quantities and Prices;
 - (iv) Schedule 4 - Subcontractors and Suppliers;
 - (v) Schedule 5 - Construction Schedule;
 - (vi) Schedule 6 - Performance and Labour and Material Payments Bonds;
 - (vii) Schedule 7 - Insurance Certificates;
 - (viii) Schedule 8 - Force Account Labour and Equipment Rates;
 - (ix) Schedule 9 - Insurance;
 - (x) Schedule 10 - City Pre-Contract Hazard Assessment Form
 - (xi) Schedule 11 - Contractor Pre-Contract Hazard Assessment Form
- (b) the "Master Municipal General Conditions" contained within Volume II of the Master Municipal Construction Document (printing 2009), as supplemented by the Supplemental General Conditions attached hereto as Schedule 1 (collectively, the "General Conditions");
- (c) the Tender;
- (d) the *Specifications* and *Drawings* (i.e., those not included in Schedule 2 but incorporated herein by reference);
- (e) the *Traffic Management Plan* provided by the *Contractor* to the *Owner* (incorporated by reference); and

3.2 The *Contract Documents* are complementary and what is called for by any one shall be as binding as if called for by all. The intent and spirit of the *Contract Documents* is that the *Contractor* is required to complete the *Work* in every detail within the times and for the

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purposes designated, and that the *Contractor* shall furnish and do any and everything necessary for such purposes notwithstanding any omission from the *Contract Documents*.

ARTICLE 4 SCHEDULE OF WORK

- 4.1 The *Contractor* will commence the *Work* as directed in writing by the *Owner*.
- 4.2 The *Contractor* will perform the *Work* diligently and in accordance with the *Construction Schedule*. The *Contractor* will:
- (a) achieve *Substantial Performance* of the *Work* on or before **November 25, 2020**; and
 - (b) achieve *Total Performance* of the *Work* on or before **December 9, 2020**;
- (collectively, the "**Contract Time**"), subject to the provisions of the *Contract Documents* for adjustments to the *Contract Time*.
- 4.3 Time shall be of the essence in this *Contract*.

ARTICLE 5 PAYMENT

5.1 Contract Price

- (a) The *Contract Price* (inclusive of all PST, GST and other taxes, duties assessments, charges and fees, all permit and inspection costs, and all WorkSafeBC assessments relating to the *Work*) to do, perform and supply all the *Work* in accordance with, and perform all the obligations specified by, the *Contract Documents* is **[To Be Determined]**.
- (b) The GST payable by the *Owner* to the *Contractor* is **[To Be Determined]**. This amount is included in the *Contract Price*.
- (c) The (i) aforesaid GST and (ii) the PST and all other taxes, duties, assessments, charges and fees included in the *Contract Price* will be remitted by the *Contractor* to the applicable authorities as and when the *Owner* pays the *Contract Price* to the *Contractor* or as earlier required by applicable law.
- (d) All amounts are in Canadian dollars.
- (e) The *Contract Price* shall be subject to adjustments as provided for in the *Contract Documents*.
- (f) The payment for any *Work* under this *Contract* which shall be made to the *Contractor* by the *Owner* shall not be construed as an acceptance of any *Work* as being in accordance with the *Contract Documents*. The issuance of the *Certificate of Total Performance* shall constitute a waiver by the *Contractor* of all claims except those previously made in writing and still unsettled, if any, and specified by the *Contractor* in its application for final payment pursuant to Section 5.2(c) above.

ARTICLE 6 NOTICES

- 6.1 Unless otherwise specifically provided in the *Contract Documents*, all notices, instructions, orders or other communications in writing shall be conclusively deemed to

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have been given to the *Contractor* if delivered to the *Contractor* personally (or in the case of a company, to any of its officers or directors personally), or to the *Contractor's* superintendent or foreman, or delivered by mail to the *Contractor* at the business address of the *Contractor* set forth below:

Contractor:

[NTD: Insert Contractor information]

- 6.2 Unless otherwise specifically provided in the *Contract Documents* all notices, requests, claims or other communications by the *Contractor* shall be in writing and shall be given by personal delivery or by registered mail addressed to the *Owner* at the following address:

Owner:

City of Vancouver, as represented by its Vancouver Board of Parks and Recreation
453 West 12th Avenue
Vancouver, British Columbia
V5Y 1V4

Attention: Lehran Hache, Landscape Architect

provided that, each notice, request, claim or other communication that this Agreement requires to be directed to the *Contract Administrator* shall be in writing and shall be given by the *Contractor* by personal delivery or by registered mail, addressed to the *Contract Administrator* at the address set forth below, with a copy to the *Owner* at the address set forth above.

Contract Administrator:

Stephen Vincent, Landscape Architect

DURANTE KREUK LTD. 102-1637 W 5th Ave., Vancouver BC V6J 1N5

- 6.3 Any of the said addresses may be changed from time to time by written notice to the other party.
- 6.4 Any such notices, instructions, orders, requests or other communications sent by mail as aforesaid shall be deemed to have been given on the second business day following the mailing thereof.

ARTICLE 7 GENERAL

- 7.1 All capitalized terms used by not defined in this Agreement shall have the meaning given to them in the *General Conditions*.
- 7.2 This Agreement shall inure to the benefit of and be binding upon the respective successors and permitted assigns of the parties hereto.
- 7.3 Except as expressly set forth in the foregoing Section 7.1 or in Schedule 1, nothing in this Agreement shall be construed to give any rights or benefits to anyone other than the *Owner* and the *Contractor*.
- 7.4 This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and cancels and supersedes any prior understandings and

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- agreements between the parties hereto with respect thereto. There are no representations, warranties, terms, conditions, undertakings or collateral agreements, express, implied or statutory, between the parties in relation to the subject matter hereof other than as expressly set forth in this Agreement.
- 7.5 No modification of or amendment to this Agreement is valid or binding unless set forth in writing and fully executed by the parties hereto and no waiver of any breach of any term or provision of this Agreement is effective or binding unless made in writing and signed by the party purporting to give such waiver and, unless otherwise provided, is limited to the specific breach waiver.
- 7.6 This Agreement is governed by and must be construed in accordance with the laws of the Province of British Columbia.
- 7.7 This Agreement is subject to the exclusive jurisdiction of the courts in the Province of British Columbia except to the extent necessary to enforce, in another jurisdiction, any judgment of any court in the Province of British Columbia.
- 7.8 The *Contractor* agrees to do all things and execute all deeds, instruments, transfers or other documents as may be necessary or desirable to give full effect to the provisions of this Agreement and the transactions contemplated by it.
- 7.9 If any term or condition of this Agreement is for any reason held to be illegal, invalid, ineffective, inoperable or otherwise unenforceable, it shall be severed and deemed to be deleted from this Agreement and the validity and enforceability of the remainder of this Agreement shall not be affected or impaired thereby. If any term or condition of this Agreement is found to be illegal, invalid, ineffective, inoperable or otherwise unenforceable, but would not be so if some part of it were deleted, the term or condition shall apply with such modifications as may be necessary to make it enforceable.
- 7.10 This Agreement may be executed in any number of counterparts. All counterparts, taken together, constitute one instrument. A party may execute this Agreement by signing any counterpart.
- 7.11 Delivery of an executed signature page to this Agreement by either party by electronic transmission shall be as effective as delivery of a manually executed copy of this Agreement by such party.

IN WITNESS WHEREOF the parties hereto have executed this Agreement on the date first herein above written.

CITY OF VANCOUVER, AS REPRESENTED BY ITS VANCOUVER BOARD OF PARKS AND RECREATION
by its authorized signatories:

Signature: _____

Name: _____

Title: _____

Signature: _____

Name: _____

INVITATION TO TENDER NO. PS20200764
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Title: _____

Signature: _____

Name: _____

Title: _____

[INSERT NAME OF CONTRACTOR]

by its authorized signatories:

Signature: _____

Name: _____

Title: _____

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE 1 - SUPPLEMENTAL GENERAL CONDITIONS

1.0	DEFINITIONS	In the Contract Documents the following capitalized and italicized words and definitions will apply. Where a definition refers to a paragraph in the Contract Documents the definition is contained in that paragraph and the defined term is indicated as capitalized, in quotations and in brackets.	
1.1	Abnormal Weather	Delete 1.1 and replace as follows:	<i>"Abnormal Weather"</i> means a weather condition that affects the <i>Place of the Work</i> , that is more severe or of a longer duration than the weather conditions that a person experienced with the <i>Place of the Work</i> would reasonably anticipate and that has a materially adverse effect on the <i>Contractor's</i> performance of the <i>Work</i> . Benchmarks shall be determined by monthly historical data for the <i>Place of the Work</i> , with consideration of annual variation in monthly trends over a 5-year period preceding the construction period.
1.5	Alternate Tender	Delete 1.5	
1.6	Approved Equal	Delete 1.6.1 and replace with	<i>"Approved Equal"</i> has the meaning given to it in GC 4.20.
1.7	Approved Equipment Rental Rate Guide	Deleted 1.7	
1.9	Bid Security	Delete 1.9.1 and replace with	<i>"Bid Security"</i> means the bid security required of the Contractor pursuant to the terms of the Invitation to Tender.
1.21	Contract Administrator	Delete 1.21.1 and replace with	<i>"Contract Administrator"</i> means the person, firm or corporation appointed by the <i>Owner</i> and identified by the <i>Owner</i> in writing to the <i>Contractor</i> . The <i>Contract Administrator</i> may be the <i>Owner's</i> Engineer, an employee of the <i>Owner</i> or a third party engaged by the <i>Owner</i> .
1.22	Contract Document	Delete 1.22.1 and replace with	<i>"Contract Documents"</i> means the documents set out in Article 3 of the Contract.
1.23	Contract Drawing	Delete 1.23.1 and replace with	<i>"Contract Drawing"</i> means a drawing included in Schedule 2 to the <i>Contract</i> , entitled "Specifications and Drawings".
1.24	Contract Price	Delete 1.24.1 and replace with	<i>"Contract Price"</i> means the amount stipulated in Article 5 of the <i>Contract</i> .
1.33	Drawings	Delete 1.33.1 and replace with	<i>"Drawings"</i> means, collectively, the <i>Contract Drawings</i> , the <i>City of Vancouver</i> , as represented by its <i>Vancouver Board of Parks and Recreation Standard Detail Drawings</i> and the <i>MMCD Standard Detail Drawings</i> .
1.40	Hazardous Materials	Delete 1.40.1 and replace with	<i>"Hazardous Materials"</i> means any substance or material that is prohibited, controlled or regulated by any Competent Authority pursuant to any

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SCHEDULE 1 - SUPPLEMENTAL GENERAL CONDITIONS

			Environmental Law including pollutants, contaminants, dangerous goods or substances, toxic or hazardous substances or materials, wastes (including solid non-hazardous wastes and subject wastes), petroleum and its derivatives and by-products and other hydrocarbons, all as defined in or pursuant to any Environmental Law;
1.46	Notice of Award	Delete 1.46.1 and replace with	<i>"Notice of Award"</i> has the meaning set out in the Invitation to Tender.
1.47	Notice to Proceed	Delete 1.47.1 and replace with	<i>"Notice to Proceed"</i> has the meaning set out in the Invitation to Tender.
1.49	Other Contractor	Append to 1.49.1	<i>"Other Contractor"</i> may include the <i>Owner's</i> own work crews.
1.51	Owner	Delete 1.51 and replace with	<i>"Owner"</i> means the City of Vancouver, as represented by its Vancouver Board of Parks and Recreation a municipal corporation continued pursuant to the Vancouver Charter, acting in its capacity as the owner of the <i>Street</i> , but expressly excludes the City of Vancouver, as represented by its Vancouver Board of Parks and Recreation acting in its regulatory capacity.
1.55	Preliminary Construction Schedule	Delete 1.55.1 and replace with	<i>"Preliminary Construction Schedule"</i> means the schedule submitted by the Contractor as part of its Tender and attached as Schedule 5 of the Contract Documents.
1.60	Schedule of Quantities and Prices	Delete 1.60.1 and replace with	<i>"Schedule of Quantities and Prices"</i> means Schedule 3 of the Contract Documents.
1.64	Site Inspector	Delete and replace with 1.64.1	<i>"Site Inspector"</i> means the person appointed by the <i>Owner or Contract Administrator</i> as set out in GC 3.4.6.
1.67	Substantial Performance	Delete 1.67.1 and replace with	<i>"Substantial Performance"</i> means that the Work is "substantially performed" in accordance with the criteria set out in Section 1(2) of the <i>Builders Lien Act</i> (British Columbia).
1.70	Tender Closing Date and Tender Closing Time	Deleted 1.70 and replace with	<i>"Tender Closing Date"</i> and <i>"Tender Closing Time"</i> have the meanings set out in the Invitation to Tender.
1.71	Tender Price	Delete 1.71.1 and replace with	<i>"Tender Price"</i> has the meaning set out in the Invitation to Tender.
1.80	City	Add 1.80.1	<i>"Approved Abatement Contractor"</i> means a <i>Hazardous Materials contractor approved by the Owner as set out in the Invitation to Tender.</i>
1.81	City Engineer	Add 1.81.1	<i>"City"</i> means the City of Vancouver, as represented by its Vancouver Board of Parks and Recreation and shall have the same definition as <i>Owner</i> .
1.82	City of Vancouver Construction	Add 1.82.1	<i>"City Engineer"</i> means the General Manager of Engineering Services with the City of Vancouver, as represented by its Vancouver Board of Parks and

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SCHEDULE 1 - SUPPLEMENTAL GENERAL CONDITIONS

	Specification		Recreation or his / her delegate.
1.83	City of Vancouver Standard Detail Drawing	Add 1.83.1	<i>"City of Vancouver, as represented by its Vancouver Board of Parks and Recreation Construction Specifications"</i> means the manual of supplementary <i>Specifications</i> to the MMCD produced by the City of Vancouver, as represented by its Vancouver Board of Parks and Recreation.
1.84	Competent Authority	Add 1.84.1	<i>"City of Vancouver, as represented by its Vancouver Board of Parks and Recreation Standard Detail Drawings"</i> means the manual of supplementary standard detail drawings to the MMCD produced by the City of Vancouver.
1.85	Engineer	Add 1.85.1	<p><i>"Competent Authority"</i> means:</p> <ul style="list-style-type: none"> (a) any multinational, federal, provincial, state, regional, municipal, local or other government or governmental body and any ministry, department, division, bureau, agent, agency, commission, board or authority of any government or governmental body, domestic or foreign; (b) any domestic, foreign or international judicial, quasi-judicial or administrative court, tribunal, commission, board, panel, arbitrator or arbitral body acting under the authority of any of the foregoing; or (c) any quasi-governmental or private body exercising any statutory, regulatory, expropriation or taxing authority under the authority of any of the foregoing.
1.86	Environmental Law	Add 1.86.1	<p><i>"Engineer"</i> means the <i>City Engineer</i>.</p> <p><i>"Environmental Law"</i> means any Law which imposes any obligations relating to:</p> <ul style="list-style-type: none"> (a) the protection, management, conservation or restoration of the natural environment; (b) reporting, licensing, permitting, investigating, remediating and cleaning up in connection with any presence or Release, or the threat of the same, of Hazardous Materials; and (c) the manufacture, processing, distribution, use, treatment, storage, disposal, transport, handling and the like of Hazardous

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SCHEDULE 1 - SUPPLEMENTAL GENERAL CONDITIONS

			Materials, including those pertaining to occupational health and safety.
1.87	Intellectual Property Rights	Add 1.87.1	<i>"Intellectual Property Rights"</i> means any and all current and future proprietary rights provided under patent law, copyright law, design patent or industrial design law, or any other applicable statutory provision or common law principle, including trade secret law, that may provide a right in ideas, formulae, algorithms, concepts, inventions, know-how, computer software, database or design, or the expression or use thereof, whether registered or unregistered, together with any right to apply for or register any of the foregoing.
1.88	Invitation to Tender	Add 1.88.1	<i>"Initiation to Tender"</i> means the Owner's Invitation to Tender No. PS20200764.
1.89	Key Personnel	Add 1.89.1	<i>"Key Personnel"</i> means the Contractor's or Subcontractor's personnel identified as key personnel in the Invitation to Tender.
1.90	Laws	Add 1.90.1	<i>"Laws"</i> means all laws, statutes, codes, ordinances, decrees, rules, regulations, by-laws, judicial or arbitral or administrative or ministerial or departmental or regulatory judgments, orders, decisions, rulings, determinations or awards of any Competent Authority whether or not having the force of law and any legal requirements or bases of liability under the common law or civil law, including all such Laws relating to Taxes, the environment, human health or safety, pollution and other environmental degradation, and hazardous materials, which affect or are otherwise applicable to the Work, the Contractor, the Site or any other lands affected by the Work.
1.91	Living Wage	Add 1.91.1	<i>"Living Wage"</i> means the hourly wage established by the <i>Living Wage Certifier</i> from time to time, which includes: (i) direct wages; and (ii) the value of any non-mandatory benefits such as paid sick leave, employer-paid Medical Services Plan premiums and extended health benefits.
1.92	Living Wage Certifier	Add 1.92.1	<i>"Living Wage Certifier"</i> means the Living Wage for Families Campaign, any successor entity, or, in the event the Living Wage for Families Campaign ceases to carry on operations, such other <i>Living Wage</i> certification entity designated by the <i>Owner</i> to the <i>Contractor</i> in writing.
1.93	Living Wage Employee	Add 1.93.1	<i>"Living Wage Employee"</i> means any and all employees of the <i>Contractor</i> and all <i>Subcontractors</i> of the <i>Contractor</i> that perform any part of the <i>Work</i> on a property owned by or leased to the <i>Owner</i> , including all <i>Streets</i> , sidewalks and other public rights-of-way, for at least one consecutive hour, but excluding <i>Students</i> , volunteers and employees of

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SCHEDULE 1 - SUPPLEMENTAL GENERAL CONDITIONS

			<i>Social Enterprises.</i>
1.94	Maintenance Security Holdback	Add 1.94.1	<i>"Maintenance Security Holdback" has the meaning given to it in GC 18.4.6.</i>
1.95	MMCD Specifications	Add 1.95.1	<i>"MMCD Specifications" means the Specifications contained within Volume II of the Master Municipal Construction Document, as further described in GC 2.5.</i>
1.96	MMCD Standard Detail Drawings	Add 1.96.1	<i>"MMCD Standard Detail Drawings" means the Standard Detail Drawings published by the Master Municipal Construction Documents Association, 2009 version.</i>
1.97	Project Specific Specifications	Add 1.97.1	<i>"Project Specific Specifications" means the Specifications listed in Schedule 2 to the Agreement.</i>
1.98	Quality Audit	Add 1.98.1	<i>"Quality Audit" means those planned activities to determine the degree of compliance of day-to-day practices to the defined systems and procedures.</i>
1.99	Quality Management	Add 1.99.1	<i>"Quality Management" means the determination and execution of quality policy across a project. Quality Management includes Quality Assurance (QA), Quality Control (QC), and Quality Audits.</i>
1.100	Reasonable Time	Add 1.100.1	<i>"Reasonable Time" means, unless otherwise agreed to in writing, 5 Days.</i>
1.101	Record Drawings	Add 1.101.1	<i>"Record Drawings" are the design drawings which have been amended as required to reflect the actual constructed Work.</i>
1.102	Release	Add 1.102.1	<i>"Release" means any release or discharge of any Hazardous Materials including any discharge, spray, injection, inoculation, abandonment, deposit, spillage, leakage, seepage, pouring, emission, emptying, throwing, dumping, placing, exhausting, escape, leach, migration, dispersal, dispensing or disposal.</i>
1.103	Social Enterprise	Add 1.103.1	<i>"Social Enterprise" means a business that: (i) is owned by a non-profit organization or community services co-operative; (ii) is directly involved in the production and/or selling of goods and services for the combined purpose of generating income and achieving social, cultural, and/or environmental aims; and (iii) has a defined social and/or environmental mandate.</i>
1.104	Specifications	Add 1.104.1	<i>"Specifications" mean the portion of the Contract Documents, wherever located and whenever issued, consisting of the written requirements and standards for products, systems, workmanship, quality, and the services necessary for the performance of the Work.</i>
1.105	Street	Add 1.105.1	<i>"Street" means public rights-of-way belonging to</i>

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			the City of Vancouver and includes lanes.
1.106	Student	Add 1.106.1	<i>"Student"</i> means an individual who is enrolled in a school, college, university or other educational institution and is employed by the <i>Contractor</i> or a <i>Subcontractor</i> , as the case may be, to obtain practical workplace experience as a requirement of or credit for their education.
1.107	Tender	Add 1.107.1	<i>"Tender"</i> means the Contractor's tender, tendered in response to the Invitation to Tender.
1.108	Third-Party Property	Add 1.108.1	<i>"Third-Party Property"</i> means a property owned by a third party on which some or all of the Work is to be performed.
1.109	Third-Party Utility	Add 1.109.1	<i>"Third-Party Utility"</i> means a utility within a City of Vancouver, as represented by its Vancouver Board of Parks and Recreation right-of-way other than those owned by the City of Vancouver, as represented by its Vancouver Board of Parks and Recreation.
1.110	Warranty Period	Add 1.110.1	<i>"Warranty Period"</i> shall have the same meaning as <i>Maintenance Period</i> .
2.0	DOCUMENTS		
2.1	Execution	Add 2.1.0	The <i>Contractor</i> shall deliver all required submittals as described in the <i>Notice of Award</i> , and in a format acceptable to the <i>Owner</i> within the time specified in the <i>Notice of Award</i>
		Delete 2.1.1	Delete 2.1.1
		Delete 2.1.2 and replace with	The <i>Contractor</i> shall sign the <i>Contract Documents</i> and return them to the <i>Contract Administrator</i> within 15 <i>Days</i> after receiving them and the <i>Contract Administrator</i> shall forward them to the <i>Owner</i> for signing.
2.2	Interpretation	Delete 2.2.4 and replace with	Should any difference exist between the <i>Drawings</i> and <i>Specifications</i> , or should any errors or inconsistency occur in any or between any of the <i>Drawings</i> and <i>Specifications</i> , the <i>Contractor</i> , before proceeding, shall bring them to the attention of the <i>Contract Administrator</i> . The <i>Contract Administrator</i> shall resolve the error or inconsistency and the <i>Contractor</i> shall proceed with the <i>Work</i> in the manner directed by the <i>Contract Administrator</i> . The <i>Contract Administrator</i> will furnish from time to time such detail drawings and specifications as the <i>Contract Administrator</i> may consider necessary for the <i>Contractor's</i> guidance. These detail drawings and specification shall be considered <i>Drawings</i> and <i>Specifications</i> , respectively, and shall take precedence over any previously furnished <i>Drawings</i> or <i>Specifications</i> , and shall be considered as explanatory of them and not as indicating <i>Changes</i> in the <i>Work</i> or as giving rise to any

entitlement to a change in the *Contract Price*.

The *Contract Documents* shall govern and take precedence in the following order or priority with the *Contract* taking precedence over all other *Contract Documents*:

- (a) *Agreement*
- (b) *Addenda*
- (c) *Supplementary General Conditions*
- (d) *General Conditions*
- (e) *Project Specific Specifications*
- (f) *City of Vancouver, as represented by its Vancouver Board of Parks and Recreation Construction Specifications*
- (g) *MMCD Specifications*
- (h) *City of Vancouver, as represented by its Vancouver Board of Parks and Recreation Standard Detail Drawings*
- (i) *MMCD Standard Detail Drawings*
- (j) *Tender*
- (k) *Invitation to Tenders*
- (l) *All other Contract Documents*

Drawings of a larger scale shall govern over *Drawings* at a smaller scale.

Documents of later date shall govern a similar type of document of an earlier date. Figured dimensions on a *Drawing* shall govern over scaled measurements on the same *Drawing*. Scaling of dimensions, if done, is done at the *Contractor's* own risk. All dimensions on the *Drawings*, except as noted thereon, are shown in metric units.

The *Drawings* forming part of the *Contract* are intended to show the position and extent of the *Work*, the general features of the design and construction, and the dimensions and proportions of all principal parts, but neither they nor the *Specifications* are guaranteed to show or describe every part or detail of the *Work*; anything omitted from the *Drawings* and *Specifications*, which may fairly be considered to be necessary for the proper execution and completion of the *Work*, shall be deemed to be required of the *Contractor* under the *Contract*.

Add 2.2.5

Notwithstanding GC 2.2.4, in the event of any inconsistency between the *Drawings* and *Specifications* or between any other *Contract Documents* or within any *Contract Documents* which could be construed as creating an ambiguity regarding the amount of *Work* involved, the cost or amount of product to be supplied, the *Contract Price* being lower or higher, or any other similar discrepancy or inconsistency, the discrepancy or

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			<p>conflict will be resolved as follows:</p> <p>(1) the more stringent will take precedence over the less stringent;</p> <p>(2) the more expensive item will take precedence over the less expensive; and</p> <p>if none of the foregoing rules (1) and (2) can be applied by the <i>Contract Administrator</i>, the more specific provision will take precedence over the less specific.</p>
		Add 2.2.6	In this <i>Contract</i> , the masculine includes the feminine and bodies corporate, and each includes the others. Also, any reference to the singular includes the plural where appropriate.
2.3	Instructions to Tenderers, General Conditions, Specifications, Standard Detail Drawings	Delete 2.3.1	Delete 2.3.1
2.4	Copies of Contract Documents	Append to 2.4.1	All <i>Drawings, Specifications</i> , model and copies thereof furnished by the <i>Contract Administrator</i> are and shall remain the <i>Owner's</i> property. Such documents and models are to be used only with respect to the <i>Work</i> , are not to be copied or revised in any manner without the written authorization of the <i>Contract Administrator</i> and are to be returned to the <i>Contract Administrator</i> on request at the completion of the <i>Work</i> .
2.5	Master Municipal Specifications and Standard Detail Drawings	Add 2.5	The <i>Contract Documents</i> incorporate by reference the "Master Municipal Specifications and Standard Detail Drawings" contained within Volume II of the Master Municipal Construction Document (printing 2009), as supplemented by the City of Vancouver, as represented by its Vancouver Board of Parks and Recreation Standard Detail Drawings (rev. [Date]) and the City of Vancouver, as represented by its Vancouver Board of Parks and Recreation Construction Specifications(rev. [Date]).
3.0	CONTRACT ADMINISTRATOR		
3.1	Appointment	Delete 3.1.2 and replace with	If for any reason the <i>Contract Administrator's</i> appointment is discontinued, then the <i>Owner</i> shall immediately notify the <i>Contractor</i> and appoint a replacement.
3.2	Authority	Add 3.2.3	Resolution of any discrepancy in technical nature between this manual, and any other referenced sources such as <i>MMCD</i> that is not covered by other <i>City</i> regulations, shall be at the sole discretion of the <i>Contract Administrator</i> , in consultation with the <i>City Engineer</i> .

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3.3	Contract Administrator	Append to 3.3.7	The <i>Contract Administrator</i> is not required to acknowledge any communications from the <i>Contractor's</i> personnel, except for the <i>Superintendent</i> set out in the <i>Contract</i> . Any communications which occurs with personnel other than the <i>Superintendent</i> , regardless of format, which are not acknowledged by the <i>Contract Administrator</i> in writing, may, at the <i>Contract Administrator's</i> sole discretion shall have no bearing on any portion of the <i>Contract</i> .
		Delete 3.3.8 and replace with	The <i>Contract Administrator</i> , in consultation with the <i>City Engineer</i> , shall conduct inspections to determine the dates of <i>Substantial Performance</i> and <i>Total Performance</i> .
		Add 3.3.10	The <i>Contract Administrator</i> , in consultation with the <i>City Engineer</i> , has the authority to stop the progress of the <i>Work</i> whenever in the <i>Contract Administrator's</i> opinion such stoppage may be necessary to ensure the safety of life, or the <i>Work</i> or neighbouring property. This includes authority to make <i>Changes</i> in the <i>Work</i> , and to order, assess and award the cost of work extra to the <i>Contract</i> or otherwise, as may in the <i>Contract Administrator's</i> opinion be necessary in such circumstances. The <i>Contract Administrator</i> shall within 2 <i>Days</i> confirm in writing any instructions given verbally.
3.4	Inspection and Site Inspector	Append to 3.4.6	Such inspections may extend to any or all parts of the <i>Work</i> and to the preparation or manufacture of the products to be used whether on <i>Site</i> or elsewhere. <i>Site Inspectors</i> and surveyors shall not be authorized to revoke, alter, enlarge or accept any portion of the <i>Work</i> or to issue instructions contrary to the <i>Drawings</i> and <i>Specifications</i> .
		Add 3.4.9	In the absence of <i>Contract Administrator</i> , any of the <i>Contract Administrator's</i> personnel, whom the <i>Contract Administrator</i> may designate in writing to the Contractor to supervise the <i>Work</i> , shall have (subject to the instructions of the <i>Contract Administrator</i>) full power to decide as to the manner of conducting and executing the <i>Work</i> in every particular aspect, subject to the limitations to the <i>Contract Administrator's</i> authority as contained within the <i>Contract Documents</i> , and the <i>Contractor</i> shall follow the instructions or orders of the person so designated.
3.5	Progress Payments	Add 3.5.2	The <i>Contractor</i> shall provide the <i>Contract Administrator</i> with daily breakdowns of units installed as it relates to payment, complete with corresponding weigh tickets or other relevant documentation. These summaries will be provided on intervals determined by the <i>Contract Administrator</i> , but will be no greater than 5 <i>Days</i> .

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		Add 3.5.3	The <i>Contractor</i> shall not work on the <i>Site</i> , or cause the delivery of materials for which delivery slips submitted to the <i>Owner</i> are the basis of payment unless the <i>Site Inspector</i> is present, unless otherwise approved in writing by the <i>Contract Administrator</i> .
3.6	Contract Interpretation and Decisions	Delete 3.6.1 and replace with	The <i>Contract Administrator</i> will be the interpreter of the <i>Contract Documents</i> and the judge of the performance of both parties to the <i>Contract</i> . Interpretations and decisions of the <i>Contract Administrator</i> shall be consistent with the <i>Contract Documents</i> .
		Add 3.6.4	Notwithstanding GC 3.6.3, on all questions relating to the acceptability of material, machinery or plant equipment, classifications of material or <i>Work</i> , the proper execution, progress or sequence of the <i>Work</i> , quantities and the interpretation of these <i>Specifications</i> or <i>Drawings</i> , the decision of the <i>Contract Administrator</i> , in consultation with the <i>City Engineer</i> , shall be final and binding, and shall be a condition precedent to any payment under the <i>Contract</i> .
4.0	CONTRACTOR		
4.1	Control of the Work	Add 4.1.0	<p>The <i>Contractor</i> shall not commence the <i>Work</i> or procure any material therefore until it has received the <i>Notice to Proceed</i> from the <i>Owner</i>. Forthwith after the receipt of the <i>Notice to Proceed</i>, the <i>Contractor</i> shall at once begin and continuously carry on to completion (subject as herein provided) the <i>Work</i> and shall complete and give full possession thereof to the <i>Owner</i> before the date for <i>Total Performance</i> specified herein, unless a longer period shall be allowed in writing by the <i>Contract Administrator</i>, in which case it shall be carried on to completion and possession given to the <i>Owner</i> within the additional time so allowed. No progress or interim estimate or certificate shall release the <i>Contractor</i> or its surety from any responsibility or shall be taken as evidence of any such release, or as an acceptance of any <i>Work</i> or material, or as a waiver of any condition herein.</p> <p>The whole <i>Work</i> and every portion and detail thereof shall, at the time of completion, be put and left by the <i>Contractor</i> in good and satisfactory condition, finished in all respects and at the time must be fully up to the requirements of the <i>Drawings</i> and <i>Specifications</i> in every particular aspect; and all surplus and refuse material and rubbish must be removed by the <i>Contractor</i> from the vicinity of the <i>Work</i>; the <i>Site</i> must be left by the <i>Contractor</i> in a neat and tidy condition; all damages to adjacent property, including pavements, foot walks, boulevards, sod, trees,</p>

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			shrubs and plants, or other things injured or interfered with by the <i>Contractor</i> , or in any way due to its <i>Work</i> , must be made good by the <i>Contractor</i> ; all wages must be paid, and every other requirement of the <i>Contract</i> must be complied with by the <i>Contractor</i> .
		Add 4.1.3	The <i>Contractor</i> shall maintain all areas disturbed with competent temporary repair to the satisfaction of the <i>Contract Administrator</i> , in consultation with the <i>City Engineer</i> , until such areas are permanently repaired. In the event the <i>Contractor</i> fails or neglects to carry out such tasks for whatever reasons, the <i>City</i> may do the necessary repairs at the expense of the <i>Contractor</i> .
4.3	Protection of Work, Property, and the Public	Delete 4.3.1 and replace with	In performing the <i>Work</i> , the <i>Contractor</i> shall protect the <i>Work</i> and the <i>Owner's</i> property and other person's property from damage. The <i>Contractor</i> shall at the <i>Contractor's</i> own expense make good any such damage which arises as the result of the <i>Contractor's</i> operations.
		Append to 4.3.4(1)	It shall be the responsibility of the <i>Contractor</i> to locate all existing mains and services, including but not limited to: water, gas, electricity, telephone, sewers, drains, catchbasin leads, and culverts to preserve and protect them from damage during the <i>Work</i> , and to arrange for their relocation if required. No payment will be made to the <i>Contractor</i> for the cost of finding these mains and services or the delay incurred by checking and adjusting lines and/or grades to avoid conflict with these mains and services. The <i>Contractor</i> shall avoid interruptions to services and the use of "cut and replace" methodology except with the express written consent of the <i>Contract Administrator</i> , in consultation with the <i>City Engineer</i> .
			The <i>Contractor</i> shall notify the <i>Contract Administrator</i> of any conflict between existing mains and services and the <i>Work</i> described in the <i>Contract Documents</i> for the <i>Contract Administrator</i> to revise the <i>Work</i> accordingly. The <i>Contractor</i> will be responsible for the cost of adjusting or relaying any previously completed existing work as a result of conflicting utilities. If relocation of existing mains and services is required by any direct conflict between these mains and services and the <i>Work</i> in the <i>Contract Documents</i> which, in the opinion of the <i>Contract Administrator</i> , cannot be avoided by adjustments in the location of the <i>Work</i> , the cost of the relocation shall be borne by the <i>Owner</i> .
		Append to 4.3.4(2)	In performing <i>Work</i> on or near <i>Third-Party Utilities</i> or where it is necessary to cut, move or alter these <i>Third-Party Utilities</i> , the <i>Contractor</i> shall communicate and coordinate with the <i>Third-Party</i>

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- Utility* as it relates to schedule, timing, site safety and compliance in the utility alterations or relocations as part of performing the overall *Work*.
- Add 4.3.4(4) The Contractor shall submit a confirmation letter to the *Contract Administrator*, at least 1 week prior to any excavation *Work*, confirming that the *Contractor* has identified all the existing utilities within the proposed alignments and trenches, and no conflicts exist between the existing utilities and the proposed *Work*.
- Add 4.3.7 Before commencing any construction *Work* as described in the *Drawings* and *Specifications*, the *Contractor* shall provide to the *Contract Administrator* photographs of pre-existing conditions of the area that will be disturbed during construction operations. Photographs must be obtained as follows:
- (1) Every 10m interval in easements;
 - (2) Every 20m interval in paved areas;
 - (3) Wherever any tree or structure may be damaged due to construction activity; and,
 - (4) Any other location as directed by the *Contract Administrator*.
- The photographs shall be taken with a digital camera 5 megapixels or better and catalogued in albums saved on flash drives.
- Add 4.3.8 The extents of rights-of-way to be provided by the *Owner* is shown on the *Contract Drawings*.
- Where any part of the *Work* is to be performed on *Third-Party Property*, the *Owner* shall arrange for and acquire required rights-of-way. The *Contractor* shall perform all such *Work* in accordance with all agreements between the *Owner* and each *Third-Party Property* owner.
- On completion of any *Work on a Third-Party Property*, the *Contractor* shall deliver to the *Contract Administrator*, a formal release in writing, in a form provided by the *Owner*, signed by the owner *Third-Party Property* on which the *Work* was performed, verifying that the *Contractor* has restored the *Third-Party Property* to that owner's satisfaction, and that the *Third-Party Property* owner is waiving all claims upon the *Contractor* or the *Owner* as a result of the *Work*.
- Where the *Contractor* makes private arrangements for the use of *Third-Party Property*, the *Contractor* shall obtain a signed document from the owner of the *Third-Party Property* granting such permission to the *Contractor* and provide a copy to the *Contract Administrator*.
- Add 4.3.9 If the *Contractor* does not make good any damage

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			caused to a <i>Third-Party Property</i> in a timely and satisfactory manner, then at the discretion of the <i>Contract Administrator</i> , <i>Other Contractors</i> may be engaged by the <i>Owner</i> to make good the damage caused by the <i>Contractor</i> , with the costs of such repair work to be deducted from progress payments owing to the <i>Contractor</i> or otherwise recovered from the <i>Contractor</i> .
4.4	Temporary Structures and Facilities	Append to 4.4.1	The <i>Contractor</i> will submit designs and plans for temporary structures and facilities to the <i>Contract Administrator</i> for review and comment, but such review shall not relieve the <i>Contractor</i> of any responsibility. The <i>Contractor</i> shall make good at the <i>Contractor's</i> expense immediately all defects arising from the <i>Contractor's</i> faulty design, equipment or application thereof.
		Add 4.4.3	Temporary structures erected by the <i>Contractor</i> shall remain the <i>Contractor's</i> property and be removed from the <i>Site</i> on completion of the <i>Work</i> .
4.5	Errors, Inconsistencies or Omissions in the Contract Documents	Add 4.5.4	Any work or material not herein specified or shown on the <i>Drawings</i> , but which by fair implication, in the judgement of the <i>Contract Administrator</i> , should be included therein, shall be done or furnished by the <i>Contractor</i> as part of their <i>Contract</i> as though shown or included in the <i>Drawings</i> and <i>Specifications</i> .
4.6	Construction Schedule	Delete 4.6.1 and replace with	<p>The <i>Contractor</i> shall prepare and submit to the <i>Contract Administrator</i>, within 10 <i>Days</i> after issuance of the <i>Notice of Award</i>, a construction schedule (the "<i>Baseline Construction Schedule</i>") consistent with the <i>Substantial Performance</i> and <i>Total Performance</i> dates set out herein. This schedule is in addition to the <i>Preliminary Construction Schedule</i> provided in the <i>Contractor's</i> Tender, showing additional details and all dates on which each material component of the <i>Contractor's</i> proposed program of operations will be performed so as to attain <i>Substantial Performance</i> and <i>Total Performance</i> on the required dates. The <i>Contract Administrator</i> will review schedules and return reviewed copy within 10 <i>Days</i> after receipt. <i>Contractor</i> shall resubmit finalized schedules within 5 <i>Days</i> after return of reviewed copy. Instruct recipients to report any problems anticipated with the schedule to <i>Contractor</i> within 10 <i>Days</i>.</p> <p>The <i>Construction Schedule(s)</i> must be in conformance with the Construction Schedule requirements set out in the <i>Specifications</i>.</p> <p>The <i>Contractor</i> shall immediately advise the <i>Contract Administrator</i> of any deviations from, or proposed changes to, the <i>Construction Schedule</i>. If, in the opinion of the <i>Contract Administrator</i>, the <i>Construction Schedule</i> as submitted is inadequate to</p>

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			<p>ensure the completion of the <i>Work</i> within the time limited therefore, or is otherwise not in accordance with the <i>Tender</i>, or if the <i>Work</i> is not being adequately or properly prosecuted in any respect, the <i>Contract Administrator</i>, without derogating from the <i>Owner's</i> rights under the <i>Contract</i>, shall have the right to require the <i>Contractor</i> to submit a new <i>Construction Schedule</i> providing for proper and timely completion of the <i>Work</i>, and the <i>Contractor</i> shall be entitled to no claim for extension of time on account of such requirement, and such new <i>Construction Schedule</i>, when accepted by the <i>Contract Administrator</i>, shall be a <i>Contract Document</i>.</p>
		Append to 4.6.2	<p><i>Contractor</i> shall submit an <i>Adjusted Baseline Schedule</i> with each application for payment or as directed otherwise by the <i>Contract Administrator</i>.</p>
		Delete 4.6.6 and replace with	<p>The time for the performance of the <i>Work</i> shall commence on the date specified in the <i>Notice to Proceed</i>, or if not so specified, on the date the <i>Notice to Proceed</i> is issued.</p> <p>Subject to a contrary provision in the <i>Contract Documents</i>, the <i>Owner</i> shall issue the <i>Notice to Proceed</i> within 14 Days of receipt of a complete set of accurate and compliant documentation from the <i>Contractor</i> as stipulated in the <i>Notice of Award</i>. Failure by the <i>Owner</i> to issue the <i>Notice to Proceed</i> within the 14 Days, shall entitle the <i>Contractor</i> to a claim for delay under GC 13.1.1.</p>
		Add 4.6.8	<p>If the alteration of a <i>Third-Party Utility</i> is required to complete the <i>Work</i>, the <i>Contractor</i> shall notify, coordinate and allow sufficient time for the companies or authorities to relocate their <i>Third-Party Utilities</i>. It is the <i>Contractor's</i> responsibility to ensure all <i>Work</i>, including <i>Third-Party Utility</i> relocations, is coordinated and completed in a <i>Reasonable Time</i> as part of the overall <i>Work</i>.</p> <p>In the event the <i>Contractor</i> has been diligent and made significant effort and attempts in coordinating with the <i>Third-Party Utility</i> companies or authorities and having their relocations accelerated, any and all costs incurred as a result of the <i>Third-Party Utility</i> companies' ability, or inability, to relocate the <i>Third-Party Utilities</i> are considered incidental and any such delays are considered <i>Delays</i> in accordance with GC 13.3.</p>
4.8	Workers	Add 4.8.0	<p>The <i>Contractor</i> agrees to employ appropriate trade people for the <i>Work</i>. Where the trades people are covered by collective agreements, the <i>Contractor</i> shall abide by the conditions of the collective agreements covering such trades people.</p> <p>The <i>Contractor</i> shall endeavour to avoid labour</p>

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- problems and minimize *Work* stoppages, jurisdictional or other labour disputes on the *Site*.
- Add 4.8.2 The *Contractor* shall ensure that all workers, including *Subcontractor* employees, are always fit for work within the public right-of-way. There will be no tolerance for the use of inappropriate language, harassing behaviours, influence of drugs and/or alcohol and all clothing shall be suitable for the *Site* and not contain inappropriate messaging. The *Contract Administrator* and/or their representative may request the removal of a worker by the *Superintendent*, if in their opinion the behaviour is not suitable of a *Contractor* representing the *Owner*.
- Add 4.8.3 The *Contractor* shall provide disability awareness training for employees, including *Subcontractor* employees, if the *Site* is adjacent to health or community facilities catering to members of the public with mobility, visual or hearing challenges.
- The *Contractor* shall provide cultural awareness training for employees, including *Subcontractor* employees, if the *Site* is reasonably suspected to have a high potential to be of cultural importance to First Nations.
- Add 4.8.4
- (1) Notwithstanding any other provision of any *Contract Document* but subject to GC.4.8.4(2), the *Contractor* shall pay all *Living Wage Employees* not less than the *Living Wage*.
 - (2) Notwithstanding GC.4.8.4(1), the *Contractor* has up to 6 months from the date on which any increase in the *Living Wage* is published by the *Living Wage Certifier* to increase wages for all *Living Wage Employees* such that all *Living Wage Employees* continue to be paid not less than the *Living Wage*.
 - (3) A breach by the *Contractor* of its obligations pursuant to this GC shall be deemed to constitute a failure by the *Contractor* to comply with the requirements of the *Contract* to a substantial degree and shall entitle the *Owner* to terminate the *Contract* in accordance with GC 15.
 - (4) The *Contractor* shall maintain up-to-date records and accounts which clearly document its satisfaction of the requirements of this GC 4.8.4 and shall make the same available to the *Owner* upon request. The *Owner* may request copies of all such records and accounts which shall be provided to the *Owner* by the *Contractor* (subject to reimbursement of the *Contractor's* reasonable copying costs and any other direct costs and expenses, if any) at any time prior to the expiry of 1 year after *Total Performance* or

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			<p>earlier termination of this <i>Contract</i>. Any records and accounts provided by the <i>Contractor</i> in accordance with this GC 4.8.4 shall be treated by the <i>Owner</i> as confidential information.</p> <p>The <i>Contractor</i> shall, at the direction of the <i>Owner</i>, post signs at sites that are owned by or leased to the <i>Owner</i>, including all <i>Streets</i>, sidewalks and other public rights of way, informing <i>Living Wage Employees</i> of the obligations of the <i>Contractor</i> and <i>Subcontractor</i> pursuant to this GC 4.8.4 and providing contact information to report any breaches thereof. The <i>Owner</i> shall supply the <i>Contractor</i> with all such signs and the <i>Contractor</i> shall return all such signs upon completion of the <i>Work</i> or otherwise at the request of the <i>Owner</i>.</p>
4.10	Contractor to Provide Labour, Materials and Equipment	Delete 4.10.1 and replace with	<p>The <i>Contractor</i> at its own expense shall provide all necessary temporary buildings and storage grounds and shall furnish all necessary labour, materials and plant, including supervision, products, tools, construction machinery, water, heat, light, and power, together with all proper and required facilities for moving and transporting the same, so that the <i>Contract</i> and all <i>Work</i> required to be done under it can and will be carried on in a workmanlike manner, properly, satisfactorily, continuously and expeditiously, to completion, to the <i>Contract Administrator's</i>, in consultation with the <i>City Engineer</i>, satisfaction in all respects.</p> <p>Should any plant, equipment, appliance, materials or workmanship which the <i>Contract Administrator</i> or <i>City Engineer</i> may deem to be inferior or unfit for use in or on the <i>Work</i> be brought on the <i>Site</i> or used, the same shall be wholly removed therefrom within 24 hours after notification to that effect from the <i>Contract Administrator</i>, and in the case of failure or neglect on the part of the <i>Contractor</i> to remove the same the <i>Contract Administrator</i> may cause the same to be taken away at the <i>Contractor's</i> expense, and deposited, wasted or otherwise disposed of in any locality, place or way the <i>Contract Administrator</i> considers convenient or proper, and the <i>Contractor</i> shall forthwith pay to the <i>Owner</i> on demand, all expenses incurred including storage, if any, or the same may be deducted or collected by the <i>Owner</i>. The <i>Contractor</i> shall, at their own expense, arrange for and provide adequate supplies of water, electricity or other source of power and light, etc., wherever required for the construction and maintenance of the <i>Work</i>.</p> <p>Add 4.10.2</p> <p>Where there are <i>Key Personnel</i> the <i>Contractor</i> shall:</p> <p>(1) use best endeavours to retain <i>Key Personnel</i> for the duration of the provision of the <i>Work</i>;</p>

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			<p>(2) take reasonable steps to ensure that <i>Key Personnel</i> dedicate their time fully to the Work (unless otherwise agreed or approved by the Contract Administrator in writing);</p> <p>(3) promptly inform the Contract Administrator should any of the <i>Key Personnel</i> leave, or give notice of an intention to leave the <i>Contractor</i>, and obtain a substitute or substitutes; and</p> <p>not reassign or allow the reassignment of the <i>Key Personnel</i> to other projects during the performance of the Work without the Contract Administrator's prior written consent (such consent not to be unreasonably withheld or delayed).</p>
		Add 4.10.3	<p>If:</p> <p>(1) the <i>Contractor</i> wishes to reassign or to replace an individual designated as <i>Key Personnel</i>; or</p> <p>(2) an individual designated as <i>Key Personnel</i> gives notice of his or her intention to leave or is otherwise no longer able to perform the duties, including for reasons of illness, injury or personal hardship,</p> <p>the <i>Contractor</i> shall provide a substitute with experience and qualifications equivalent or greater than the <i>Key Personnel</i> to be replaced, and shall provide documentation to the <i>Contract Administrator</i> to establish such experience and qualifications.</p>
4.11	Subcontractors	Add 4.11.0	<p>The <i>Contractor</i> shall supply complete information to <i>Subcontractors</i> and equipment and material suppliers. Where <i>Specifications</i> and <i>Drawings</i> are required to provide complete information on any aspect of the <i>Work</i>, the <i>Contractor</i> shall supply them to the <i>Subcontractor</i> or supplier concerned.</p> <p>In every subcontract, to the extent the <i>Builders Lien Act</i> is applicable, the <i>Contractor</i> shall specify that the <i>Contractor</i> or agent of the <i>Contractor</i> shall be the person responsible for payment certification under that subcontract for the purposes of the <i>Builders Lien Act</i> (and not the <i>Owner</i> or <i>Contract Administrator</i>).</p>
		Delete 4.11.2 and replace with	<p>The <i>Contractor</i> shall employ only the <i>Subcontractors</i> listed in Schedule 4 to the Contract, or others as approved in writing by the <i>Contract Administrator</i>, and shall not change or employ additional <i>Subcontractors</i> without the approval of the <i>Contract Administrator</i>, which approval shall not be unreasonably withheld.</p>
		Add 4.11.7	<p>The <i>Contractor</i> shall ensure that the requirements of GC 4.8.4 apply to all <i>Subcontractors</i>.</p>
4.12	Tests and	Add 4.12.1	<p>The <i>Contractor</i> shall be notified of all deficiencies discovered by the <i>Contract Administrator</i> or <i>City</i></p>

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Inspections

Engineer upon completion of each inspection. The *Contractor* shall provide a schedule for correction or correct such deficiencies within 7 Days of the notice.

Add 4.12.2 If any material, design or installation *Work* does not conform to any of the *Contract Documents*, the *Contract Administrator* and the *City Engineer* have the authority to stop *Work* and order the removal of unsatisfactory materials or require the *Contractor* to re-perform the *Work* in compliance with the *Contract Documents*. The *Contractor* will be held liable for all costs associated with the removal of and / or the reconstruction of *Work* which is not in accordance with the *Contract Documents*, as determined by the *Contract Administrator* or *City Engineer*, as applicable.

Add 4.12.3 Where tests or inspections by designated testing laboratory reveal *Work* not in accordance with the *Contract Documents*, the *Contractor* shall pay costs for additional tests or inspections as the *Contract Administrator* or *City Engineer* may require verifying acceptability of corrected *Work*.

Add 4.12.4.1 The *Contract Administrator*, *City Engineer*, and *Site Inspectors* shall have free and uninterrupted access to any and all parts of the *Work* area and the plants that are producing the materials for the purpose of making inspections and taking samples of materials being used.

The *Contractor* shall furnish labour and facilities to:

(1) Provide access to *Work* to be inspected and tested.

(2) Facilitate inspections and tests.

Make good *Work* disturbed by inspection and test.

Add 4.12.4.2 Testing of materials, assembled components and systems to be carried out at the *Contractor's* cost by an independent third-party testing laboratory approved by the *Contract Administrator*.

Add 4.12.10 The *Contractor* shall not schedule *Work* that will require inspection beyond an eight-hour *Day*, or forty hour week without the *Contract Administrator's* prior approval. Any extra cost incurred by the *Owner* in connection with inspections of *Work* scheduled outside the foregoing parameters, whether approved or not, may be deducted from the *Contractor's* subsequent progress payment.

Add 4.12.11 Prior to the *Work* being inspected by the *City Engineer*, the *Contractor* shall make whatever preliminary tests are necessary to assure that the materials and equipment is in accordance with the *Drawings* and *Specifications*.

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4.13	Rejected Work	Add 4.13.4	If the <i>Contractor</i> does not make good any rejected work in a timely and satisfactory manner, then at the discretion of the <i>Contract Administrator</i> , <i>Other Contractors</i> may be engaged by the <i>Owner</i> to make good the rejected work, with the costs of such repair work to be deducted from progress payments owing to the <i>Contractor</i> or otherwise recovered from the <i>Contractor</i> .
4.16	Notice of Disruption	Add 4.16.2	Notifications pursuant to GC.4.18.1 must be in compliance with the requirements of the <i>City of Vancouver Construction Specifications</i> .
4.17	No Promotion of Relationship with the Owner	Add 4.17.1	The <i>Contractor</i> shall not disclose or promote its relationship with the <i>Owner</i> , including by means of any verbal declarations, announcements, sales, marketing or other literature, letters, client lists, press releases, brochures or other written materials without the express prior written consent of the <i>Owner</i> (except as may be necessary for the <i>Contractor</i> to perform the <i>Contractor's</i> obligations under the terms of the <i>Contract</i>). The <i>Contractor</i> shall not use the <i>Owner's</i> logo or any of the <i>Owner's</i> official marks without the express prior written consent of the <i>Owner</i> .
4.18	Hours of Work	Add 4.18.1	<p>The <i>Contractor</i> must comply at all times with all applicable requirements of the <i>City of Vancouver</i>, as represented by its <i>Vancouver Board of Parks and Recreation's Noise By-law</i>.</p> <p>The <i>Contractor</i> shall keep the <i>Contract Administrator</i> advised on the proposed hours of <i>Work</i> so that inspection can be co-ordinated. <i>Work</i> without inspection shall not be permitted.</p> <p>The <i>Owner's</i> employees work between the hours of 7:30 a.m. and 3:30 p.m. on all <i>weekdays except statutory holidays</i>. The <i>Contractor</i> shall not schedule any work to be performed by the <i>Owner's</i> crews outside these hours except by special arrangement agreed to by the <i>Contract Administrator</i> or in case of emergency.</p>
4.19	Assignment	Add 4.19.1	Neither party to the <i>Contract</i> shall assign the <i>Contract</i> or a portion thereof without the written consent of the other, which consent shall not be unreasonably withheld.
4.20	Approved Equals	Add 4.20.1	Contractor may request the <i>Owner</i> to approve alternate materials, products or equipment (" Approved Equals ") for items indicated in the <i>Contractor</i> documents, provided such <i>Approved Equals</i> comply in all respects with the applicable <i>Specifications</i> . Applications for <i>Approved Equals</i> must be in writing and supported by appropriate supporting information, data, specifications and documentation. The <i>Owner</i> is not obligated to review or accept any applications for an <i>Approved</i>

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			Equal and may decide to accept an application for an Approved Equal in its sole discretion.
5.0	SHOP DRAWINGS		
5.1	Preparation of Shop Drawings	Delete 5.1.3 and replace with	The <i>Contract Administrator</i> or <i>City Engineer</i> may require that a <i>Shop Drawing</i> be stamped by a registered Professional Engineer with appropriate skill and knowledge indicating that the <i>Shop Drawing</i> has been prepared in compliance with applicable codes and design standards and good engineering practice.
		Delete 5.1.4 and replace with	If the <i>City Engineer</i> or <i>Contract Administrator</i> requires the review and stamping by a Professional Engineer of <i>Shop Drawings</i> that are of a type which, according to usual construction practice, are not so reviewed and stamped, then the cost of such review and stamping shall be paid by the <i>Owner</i> .
		Add 5.1.5	Manufacturer's standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and other standard descriptive data may be accepted in lieu of <i>Shop Drawings</i> , as determined by the <i>Contract Administrator</i> , in consultation with the <i>City Engineer</i> , and provided the following conditions are met: (1) Information is deleted which is not applicable to the project. (2) The standard information is supplemented with additional information applicable and specific to the <i>Work</i> .
5.2	Submission of Shop Drawings	Delete 5.2.1 and replace with	The <i>Contractor</i> shall submit <i>Shop Drawings</i> , product data and samples to the <i>Contract Administrator</i> in a timely way and in an orderly sequence so as to permit the <i>Contract Administrator</i> and <i>City Engineer</i> a reasonable opportunity to review the provided information without causing a delay to the <i>Work</i> or to the work of <i>Other Contractors</i> . The <i>Contractor</i> shall submit a <i>Shop Drawing</i> schedule in accordance with the <i>Specifications</i> related to the <i>Construction Schedule</i> . The <i>Contractor</i> shall schedule submissions at least 10 Days before the date that reviewed submission will be needed. The <i>Contractor</i> shall submit the number of copies of <i>Shop Drawings</i> and product data which the <i>Contractor</i> requires for distribution plus two (2) copies which will be retained by the <i>Contract Administrator</i> . <i>Shop Drawings</i> shall be prepared and submitted in compliance with the requirements of the <i>City of Vancouver</i> , as represented by its <i>Vancouver Board of Parks and Recreation Construction Specifications</i> .
		Delete 5.2.4 and	Unless otherwise noted, the <i>Shop Drawings</i> may be in CAD format, or other format at selection of the

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		replace with	<i>Contractor.</i>
5.3	Review by Contract Administrator	Delete 5.3.1 and replace with	The <i>Contract Administrator</i> , in consultation with the <i>City Engineer</i> , will review <i>Shop Drawings</i> submitted by the <i>Contractor</i> and return them in accordance with an agreed-to schedule, if any, or otherwise with reasonable promptness so as not to cause delay to the <i>Work</i> . <i>Contractor</i> shall coordinate the timing of all submissions required pursuant to the <i>Contract Documents</i> with the performance of the <i>Work</i> to which the submission relates. Individual <i>Shop Drawings</i> will not be reviewed until all related drawings are available.
		Delete 5.3.2 and replace with	The <i>Contractor</i> shall make any changes in <i>Shop Drawings</i> which the <i>Contract Administrator</i> or <i>City Engineer</i> may require consistent with the <i>Contract Documents</i> and resubmit unless otherwise directed by the <i>Contract Administrator</i> or <i>City Engineer</i> . When resubmitting, the <i>Contractor</i> shall notify the <i>Contract Administrator</i> in writing of any revisions other than those requested by the <i>Contract Administrator</i> or <i>City Engineer</i> .
		Delete 5.3.3 and replace with	When a submitted <i>Shop Drawing</i> is acceptable to the <i>Contract Administrator</i> , in consultation with the <i>City Engineer</i> , as provided by this GC then the <i>Contract Administrator</i> shall date and mark the <i>Shop Drawing</i> as "Reviewed" and return it to the <i>Contractor</i> . The <i>Contract Administrator</i> shall date and mark the number of copies submitted.
6.0	OTHER CONTRACTORS		
6.2	Coordination and Connection	Delete 6.2.1 and replace with	<p>The <i>Contractor</i> shall afford all facilities for the execution of any <i>Other Work</i> which may be undertaken by the <i>Owner</i> or by such parties as may be employed by them, so that such work may be properly and conveniently completed, and the <i>Contract Administrator</i> shall have full authority to make and enforce such regulations as the <i>Contract Administrator</i> may deem necessary for the conduct of the work; and the <i>Contractor</i> shall proceed in such manner and complete in such order such portions of the <i>Work</i> as the <i>Contract Administrator</i> may require, and the <i>Contract Administrator</i> shall be the sole judge as to what facilities are due and proper, and can be afforded without any undue interference with the execution of the <i>Contract</i>.</p> <p>The <i>Contractor</i> shall at all times give free access and every reasonable facility to the employees of the <i>Owner</i> and to <i>Other Contractors</i>, to such portion of the work and adjoining land as may be necessary to enable them to execute and maintain work of any description; such accommodation and access being regulated and directed by the <i>Contract</i></p>

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			<i>Administrator</i> and no inconvenience or alleged inconvenience arising therefrom shall form any ground for claims, losses or damages, compensation or otherwise, by the <i>Contractor</i> against the <i>Owner</i> .
7.0	CHANGES		
7.1	Changes	Delete 7.1.3 and replace with	Additional work that the <i>Owner</i> may wish performed that does not satisfy the requirements of subparagraphs (1) and (3) of GC 7.1.1 is extra Work (" <i>Extra Work</i> ") and not a <i>Change</i> . Pursuant to GC 8, <i>Extra Work</i> may be declined by the <i>Contractor</i> or may, upon agreement between the parties, be undertaken as <i>Extra Work</i> .
		Delete 7.1.4 and replace with	A variation between the actual quantity and the estimated <i>Tender Quantity</i> for that item set out in the <i>Schedule of Quantities and Prices</i> of not more than plus or minus the percentage set out in GC 9.4.1 shall not be a <i>Change</i> unless the variation is greater than such percentage, in which case the provisions of GC 9.4 shall apply.
7.2	Contemplated Change Order	Add 7.2.3	If the <i>Contemplated Change Order</i> is for work, which if executed and incorporated would impact a critical path element of the <i>Work</i> , then any delay in the <i>Contractor's</i> provision of a response to the <i>Contemplated Change Order</i> greater than 10 days, will be deemed a Delay by the <i>Contractor</i> as defined in GC 13.2.
7.4	Optional Work	Delete 7.4.1 and replace with	<i>Optional Work</i> will only be included in the <i>Work</i> if the <i>Contract Administrator</i> so directs by <i>Change Order</i> , and in such event the <i>Contractor</i> shall perform the <i>Optional Work</i> as part of the <i>Work</i> , for the price tendered at the time of bid and with schedule extension as provided for in the <i>Contract Documents</i> (if any).
9.0	VALUATIONS OF CHANGES AND EXTRA WORK		
9.2	Valuation Method	Delete 9.2.1 and replace with	Adjustments to the <i>Contract Price</i> on account of <i>Changes</i> shall be valued by <i>Force Account</i> .
9.4	Quantity Variations	Delete 9.4.1 and replace with	If for any reason, including an addition or deletion under GC 7.1.1.a or GC 7.1.1.b respectively, the actual quantity of an item listed in the <i>Schedule of Quantities and Prices</i> constructed or provided by the <i>Contractor</i> varies more than plus or minus the <i>Variance Threshold Percentage</i> from the estimated quantity for that item as listed in the <i>Schedule of Quantities and Prices</i> (the " <i>Tender Quantity</i> "), then either the <i>Owner</i> or the <i>Contractor</i> may by written notice request a revised <i>Contract Price</i> in consideration of such change in quantities.
		Delete 9.4.3 and replace with	If notice is delivered to either party pursuant to GC 9.4.1, the <i>Contract Price</i> shall be revised as

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follows:

- (1) in the case where the actual quantity an of item constructed or provided is less than the quantity of an item listed in the *Schedule of Quantities and Prices* by more than the *Variance Threshold Percentage*, the *Contract Price* shall be decreased by an amount equal to the unit price of the applicable item as listed in the *Schedule of Quantities and Prices* multiplied by the quantity of unit that constitute the amount of the item constructed or provided less than the *Variance Threshold Percentage*; and
- (2) in the case where the actual quantity an of item constructed or provided is more than the quantity of an item listed in the *Schedule of Quantities and Prices* by more than the *Variance Threshold Percentage*, the *Contract Price* shall be increased by an amount equal to the unit price of the applicable item as listed in the *Schedule of Quantities and Prices* multiplied by the quantity of unit that constitute the amount of the item constructed or provided in excess of the *Variance Threshold Percentage*.

Delete 9.4.4

If either party requests a revision to the *Contract Price* pursuant to GC 9.4.1, the *Contractor* shall make available to the *Contract Administrator* all documentation reasonably required to verify that the actual amount of the applicable item constructed or provided by the *Contractor* is greater or less than, as the case may be, the quantity set out in the *Schedule of Quantities and Prices* by no less than the *Variance Threshold Percentage*.

Delete 9.4.5

Delete 9.4.5

10.0 FORCE ACCOUNT

10.1 Force Account Cost

Delete 10.1.1 and replace with

Payment for *Work* based on *Force Account* shall be calculated as follows:

- (5) the costs of labour will be determined by the labour rates specified in Schedule 8 of the *Contract Documents* (Force Account Labour and Equipment Rates); and
- (6) the costs of equipment will be determined by the construction equipment rates specified in Schedule 8 of the *Contract Documents* (Force Account Labour and Equipment Rates);

in each case, such costs shall be deemed to include all amounts on account of overhead, profit, administrative, and any other indirect expenses or allowances, provided in all cases that the foregoing represents in the aggregate no greater than 10% of the costs set out in Schedule 8.

Add 10.1.2

No compensation will be made for standby of the

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			<p><i>Contractor's</i> labour or owned equipment, unless otherwise previously agreed to in writing. In the case of an occurrence of standby, the standby hours will be separated from the actual hours worked on the records.</p>
		Add 10.1.3	<p>In the completion of <i>Work</i> based on <i>Force Account</i>, the <i>Contractor</i> shall take all reasonable efforts to minimize the effects and costs of the <i>Work</i> based on <i>Force Account</i>, and this obligation shall be taken into account in the determination of the <i>Contractor's</i> entitlement to a <i>Contract</i> extension and reimbursement of costs. If in the opinion of the <i>Contract Administrator</i>, the <i>Contractor</i> is using an unsuitable methodology, the <i>Contractor</i> will be immediately advised that <i>Work</i> based on <i>Force Account</i> is to cease and will not recommence until the <i>Contractor</i> has presented an acceptable methodology.</p>
10.3	Submit Accurate Records	Append to 10.3.1	<p>Neither the <i>Contract Administrator</i> nor their site representative's signature upon the submitted daily sheet forms any agreement for payment, only an agreement on the hours worked under <i>Force Account</i>.</p>
12.0	HAZARDOUS MATERIALS		
12.1	Risk of Hazardous Materials	Add 12.1.4	<p>The <i>Contractor</i> shall conduct no <i>Work</i> on materials that are potentially <i>Hazardous Materials</i> without prior testing. Responsibility for testing will be agreed upon prior to commencing <i>Work</i>.</p>
12.3	Directions for Hazardous materials	Delete 12.3.2 and replace with	<p>The <i>Work</i> shall be performed in full compliance with all <i>Laws</i> applicable to any <i>Hazardous Materials</i> encountered at the <i>Place of the Work</i> by an <i>Approved Abatement Contractor</i>.</p>
13.0	DELAYS		
13.1	Delay by Owner or Contract Administrator	Add 13.1.2	<p>No additional <i>Contract Time</i> and no additional reimbursement will be owed to the <i>Contractor</i> by the <i>Owner</i>, for instances where the delay by <i>Owner</i> or <i>Contract Administrator</i> is as a direct result of a preceding Delay by the <i>Contractor</i>.</p>
13.3	Unavoidable Delay	Add 13.3.2	<p>A delay for <i>Abnormal Weather</i> will only be considered if the <i>Contractor</i> can show that one or more of the following apply:</p> <ol style="list-style-type: none"> (1) A weather condition, as determined by the <i>Contract Administrator</i>, that prevents the <i>Contractor</i> from proceeding with at least 60% of the normal labour and equipment force, for at least 5 hours on a component of the <i>Work</i>, which if delayed is on the critical path of the most up to date <i>Construction Schedule</i>, and as such will delay the completion of the <i>Work</i>; (2) The <i>Contractor</i> cannot reasonably complete

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			other <i>Work</i> on the <i>Site</i> to advance the schedule; AND
			(3) The Contractor complies with the requirements of GC.13.6.3
			And, that the <i>Contractor</i> has pursued alternate construction methodologies to mitigate potential delays for contractual <i>Work</i> in advance of the expected seasonal weather.
13.9	Liquidated Damages for Late Completion	Delete 13.9.1 and replace with	<p>If the <i>Contractor</i> fails to meet the <i>Milestone Date</i> for <i>Substantial Performance</i> as set out herein (and as may be adjusted pursuant to the provisions of the <i>Contract Documents</i>), then the <i>Owner</i> may deduct from any monies owing to the <i>Contractor</i> for the <i>Work</i>:</p> <p>(1) as a genuine pre-estimate of the <i>Owner's</i> increased costs for the <i>Contract Administrator</i> and the <i>Owner's</i> own staff caused by such delay an amount of \$1500.00 per day or pro rata portion for each <i>Day</i> that actual <i>Substantial Performance</i> is achieved after the <i>Substantial Performance Milestone Date</i>; plus</p> <p>(2) all direct out-of-pocket costs, such as costs for safety, security, or equipment rental, reasonably incurred by the <i>Owner</i> as a direct result of such delay.</p> <p>If the monies owing to the <i>Contractor</i> are less than the total amount owing by the <i>Contractor</i> to the <i>Owner</i> under (1) and (2) then any shortfall shall immediately, upon written notice from the <i>Owner</i>, and upon <i>Substantial Performance</i>, be due and owing by the <i>Contractor</i> to the <i>Owner</i>.</p>
		Add 13.9.2	<p>If the <i>Contractor</i> fails to meet the date agreed to for <i>Total Performance</i> or any other <i>Milestone Date</i>, the <i>Owner</i> may deduct monies as set out in GC 13.9.1.</p>
15.0	OWNERS RIGHTS ON CONTRACTORSS DEFAULT		
15.0	Contractor Default	Add 15.0.0	<p>The <i>Owner</i>, without prejudice to any other right, may elect to terminate the <i>Contract</i> forthwith upon notice to the <i>Contractor</i> if:</p> <p>(1) the <i>Contractor</i> fails to comply with the <i>Notice to Proceed</i>;</p> <p>(2) the <i>Contractor</i> commits an act of bankruptcy or becomes a bankrupt or makes a general assignment for the benefit of the <i>Contractor's</i> creditors;</p> <p>(3) a receiver is appointed for the <i>Contractor's</i> business;</p>

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- (4) the *Contractor* fails, on reasonable notice from the *Contract Administrator*, in consultation with the *City Engineer*, to supply enough proper labour, equipment, or products;
- (5) the *Contractor* does not pay promptly the *Contractor's* employees, *Subcontractors* or suppliers;
- (6) the *Contractor* does not comply with the requirements of the WorkSafeBC Regulations, or otherwise fails to meet the safety requirements of the *Contract*; or
- (7) the *Contractor* persistently or substantially breaches any provision of this *Contract*.

On such termination, the *Contract Administrator*, in consultation with the *City Engineer*, may arrange for the performance of the *Work* by whatever method the *City Engineer* deems expedient but without undue delay or expense.

15.3 Termination

Append to
15.3.1(1)

which possession the *Contractor* hereby pledges to the *Contract Administrator* as agent for and on behalf of the *Owner*, as security for the performance of the *Contract* and the *Work*, provided that upon completion of the *Work*, the *Contract Administrator* shall return to the *Contractor* or its legal representative any such chattels so taken in possession in their original condition (ordinary wear and tear excepted) if not incorporated in the *Work*, without any compensation for use thereof.

Add 15.3.3

In case the *Work* or any part thereof is assumed from the *Contractor*, as herein provided, it shall in no way affect the relative obligations of the *Owner* and the *Contractor* or its sureties in respect of the *Contractor's* or their obligation, or in respect of the remainder of the *Work* (if any), as the *Contract Administrator*, in consultation with the *City Engineer*, may consider reasonable. The *Contractor* and its sureties in every case shall be liable for such damages, expenditures and extra expenditures, and for all additional cost of the *Work* which may be incurred by reason of termination of the *Contract* pursuant to this GC 15, together with the compensation for liquidated damages, if any, from the date fixed for the *Total Performance* of the *Work*, and the same may be deducted or collected by the *Owner* as provided by GC 18.11.

All the powers of the *Owner* with respect to the determination of any doubts, *Disputes* and differences, and the determination of the sum or sums, or balance of money to be paid to or received from the *Contractor*, and otherwise in respect of the *Contract* shall nevertheless continue in force.

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		Add 15.3.4	<p>The fulfilment by the <i>Contractor</i> of any stipulation in the <i>Contract</i> may be enforced by legal proceedings and judgement, or order of Court, without prejudice to any other remedy herein contained. Neither the <i>Owner</i> nor any of its officials, officers, employees or other agents shall be liable or accountable to the <i>Contractor</i> in any way for the manner in which, or the price at which the <i>Work</i>, or any portion thereof, may have been or may be done or completed by the <i>Owner</i>.</p> <p>No proceeding taken pursuant to this GC 15 or pursuant to any other provision of the <i>Contract</i> shall at any time be deemed to be an assignment of the <i>Contract</i> or of any portion thereof, unless otherwise agreed to in writing.</p>
15.4	Termination of Contract Without Default of Contractor	Add 15.4.1	<p>The <i>Contract Administrator</i> may, as agent for and on behalf of the <i>Owner</i>, at the <i>Contract Administrator's</i> discretion terminate the <i>Contract</i> at any time upon written notice to the <i>Contractor</i> notwithstanding the fact that the <i>Contractor</i> may not then be in default, in which event the <i>Owner</i> shall be liable to the <i>Contractor</i> only for <i>Work</i> done and materials delivered at or to the <i>Site</i> up to the date of the termination plus reasonable demobilization costs up to a maximum of \$[REDACTED].</p> <p>Upon payment of the aggregate of the aforesaid sums, the <i>Owner</i>, the <i>Contract Administrator</i> and the <i>Contractor</i> shall be released from their liabilities or obligations under the <i>Contract</i> save and except that the liabilities and obligations of the <i>Contractor</i> shall continue with respect to: (i) deficiencies and warranties in the portion of the <i>Work</i> completed prior to termination; and (ii) the indemnification requirement set out in GC.22.</p>
16.0	CONTRACTORS RIGHTS ON OWNERS DEFAULT		
16.3	Notice of Default	Delete 16.3.1 and replace with	<p>If:</p> <p>(8) the <i>Contract Administrator</i> fails to issue a certificate in accordance with the provisions of GC 18.1.1; or</p> <p>(9) the <i>Owner</i> fails to pay the <i>Contractor</i> when due the amounts certified by the <i>Contract Administrator</i> or awarded by arbitration or court; or</p> <p>(10) the <i>Owner</i> fails to provide the <i>Contract Documents</i> as required by GC 2.1.1;</p> <p>then the <i>Contractor</i> may give written notice to the <i>Contract Administrator</i>, with a copy to the <i>Owner</i>, that the <i>Owner</i> is in default and demand that the</p>

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			<i>Owner</i> correct the default within 20 <i>Days</i> , and if the <i>Owner</i> fails to make the correction then, without prejudice to any other right or remedy the <i>Contractor</i> may have, the <i>Contractor</i> may stop the <i>Work</i> or terminate the <i>Contract</i> .
17.0	DISPUTES		
17.9	Attornment to Jurisdiction of Courts of British Columbia	Add 17.9	Notwithstanding any other provision of the <i>Contract</i> , the <i>Owner</i> and the <i>Contractor</i> irrevocably and unconditionally attorn to the jurisdiction of the courts of British Columbia, and courts to which appeals therefrom may be taken, in respect of any dispute or claim arising under or relating to the <i>Contract</i> .
18.0	PAYMENT		
18.1	Preparation of the Payment Certificat	Add 18.1	5 <i>Days</i> prior to the end of the calendar month, the <i>Superintendent</i> shall compile and submit a summary of the daily quantities for <i>Work</i> completed within the past month. This shall be included with other deliverables such as the <i>Adjusted Baseline Schedule</i> , <i>Quality Management</i> reports, and supporting documentation in GC 18.2.1.
18.4	Holdbacks	Delete 18.4.1 and replace with	Builders Lien Holdback: The <i>Owner</i> shall: <ul style="list-style-type: none"> (1) hold back 10%, or other percentage as required by the <i>Builders Lien Act</i>, of any amounts due to the <i>Contractor</i> as a builders lien holdback; and (2) if the <i>Place of the Work</i> is a highway, City Street, or right-of-way then, notwithstanding that a lien cannot be registered against the <i>Place of the Work</i>, hold back the percentage that would have been required if the <i>Builders Lien Act</i> did apply of any amounts due to the <i>Contractor</i> as a builders lien holdback, on the same conditions as though such hold back was a requirement of the <i>Builders Lien Act</i>, including making payment from such hold back directly to <i>Subcontractors</i>.
		Add 18.4.6	<p><i>Maintenance Security Hold Back</i>: The <i>Owner</i> shall hold back 5%, of any amounts due to the <i>Contractor</i> as a maintenance security holdback, to cover the costs of corrections to defective <i>Work</i> that may be required.</p> <p>The <i>Contractor</i> may substitute a letter of credit, in the amount of the <i>Maintenance Security Holdback</i>, in a form and from a financial institution acceptable to the <i>Owner</i>, for the <i>Maintenance Security Holdback</i>.</p>
18.5	Payment	Delete 18.5.1 and replace with	<p>During progress of the <i>Work</i>, the <i>Contractor</i> may make application to the <i>Contract Administrator</i> for payment, in the form of an invoice accompanied by:</p> <ul style="list-style-type: none"> (1) a <i>Payment Certificate</i> approved by the <i>Contract Administrator</i> as per GC 18.1,

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- (2) a sworn declaration that all amounts relating to the *Work*, due and owing as of the end of the month to third parties including all *Subcontractors* and suppliers, have been paid, and
- (3) such other documentation reasonably required by the *Contract Administrator* as may be necessary to establish to the *Contract Administrator's* satisfaction the compliance by the *Contractor* with the conditions of the *Contract*.

All in a form acceptable to the *Contract Administrator*, on or before the last day of every month for any portion of the *Work* done to the date of the application.

The net amount shown for payment, less any holdback required by the *Builders Lien Act* and less the aggregate of any previous payments, all in accordance with the *Contract* and with the *Builders Lien Act* (if and to the extent applicable), shall be due and payable to the *Contractor* 30 days following submission of an invoice to the *Owner*, in an acceptable format, accompanied by and consistent with the *Payment Certificate* approved by the *Contract Administrator*.

The *Owner* will, in addition to other holdbacks as provided by the *Contract Documents*, be entitled to deduct and retain from payments otherwise due to the *Contractor*, a *Maintenance Security Holdback* as per GC 18.4. The balance of the *Maintenance Security Holdback* not required to correct defective *Work*, and remaining at the end of the *Warranty Period*, shall be paid without interest to the *Contractor*.

On *Substantial Performance* being certified in accordance with the procedures set out in GC 18.6 and the value of the certified deficiencies being agreed upon, the *Contractor* may make application to the *Contract Administrator* for the balance of all monies then owing under this *Contract* to the *Contractor*, submitting also such documentation as is required by GC 18.6.

Delete 18.5.3 and
replace with

If for any reason the *Owner* disputes the net amount shown for payment on a *Payment Certificate* the *Owner* shall, within the time specified in this GC, pay to the *Contractor* any amount not disputed and also deliver to the *Contractor* and the *Contract Administrator* written reasons for any deductions.

The dispute by the *Owner* of the correct amount owing shall be a *Dispute* and the written reasons for any deduction shall constitute a *Dispute Notice*.

Add 18.5.4

After 55 calendar days have elapsed from the date

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			<p>of the <i>Certificate of Substantial Performance</i> issued in accordance with GC 18.6 and upon the <i>Contract Administrator's</i> satisfaction that no encumbrance, lawful claim or lien exists, the <i>Owner</i> will, within a further 10 calendar days, make payment to the <i>Contractor</i> of all monies due under this <i>Contract</i> at the date of <i>Substantial Performance</i>, including the release of all remaining <i>Builders Lien Act</i> holdback amounts, if any, but retaining at least twice the estimated value of the certified deficiencies, and retaining the <i>Maintenance Security Holdback</i>.</p> <p>Upon the issuance of the <i>Certificate of Total Performance</i>, the <i>Owner</i> will make a final payment of all monies owing to the <i>Contractor</i> under the <i>Contract</i>, except for the <i>Maintenance Security Holdback</i>, which shall be released as per GC 18.5.1.</p>
		Add 18.5.5	<p>Upon the issuance of the <i>Certificate of Total Performance</i>, the <i>Owner</i> will make a final payment of all monies owing to the <i>Contractor</i> under the <i>Contract</i>, except for the <i>Maintenance Security Holdback</i>, which shall be released as per GC 18.5.1.</p>
		Add 18.5.6	<p>Where payment is not made in accordance with the payment provisions contained in GC 18.5, the overdue amount shall bear interest at the lending rate of the Bank of Montreal for its prime commercial customers and such interest shall be calculated from and after the date upon which such payment was due and shall accrue until the date that payment of the overdue amount together with interest is made. This interest obligation on the <i>Owner</i> shall constitute the sole remedy of the <i>Contractor</i> for late payment.</p>
18.6	Substantial Performance	Add 18.6.3 (3)	<p>A completed set of legible, marked up as-constructed prints and survey point file containing all inverts, casting elevations and all other information required for the production of <i>Record Drawings</i>. If additional information is required, the <i>Contract Administrator</i> will cause that information to be obtained, and in doing so, will deduct the costs to the <i>Owner</i> from the final progress payment.</p>
		Delete 18.6.4 and replace with	<p>The <i>Owner</i>, the <i>Contract Administrator</i> and the <i>Contractor</i> shall inspect the <i>Work</i> and any remaining deficiencies shall be detailed and included on the <i>Certificate of Substantial Performance</i>. The date of <i>Substantial Performance</i> shall be as stated in this Certificate. Upon issuance of the <i>Certificate of Substantial Performance</i> to the <i>Contractor</i>, the <i>Contract Administrator</i> shall set a reasonable date for the <i>Total Performance</i> of the <i>Work</i>.</p>
		Add 18.6.7	<p>For the purposes of the <i>Builders Lien Act</i> (to the extent applicable), the <i>Certificate of Substantial Performance</i> as described herein shall serve as the</p>

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18.10 Statutory
Declarations

Add 18.10.1

Contract's certificate of completion, and the date of *Substantial Performance* stated in the Certificate shall be deemed to be the date of the Certificate's issuance.

The *Contractor* shall submit with each of the *Contractor's* applications for payment such statutory declarations as may be required herein, which shall be sworn in duplicate by the *Contractor*, or by such person on behalf of the *Contractor* as the *Contract Administrator* may approve.

- (1) Prior to payment and as condition to any payment, the *Contract Administrator* may at any time require the *Contractor* to file with the *Contract Administrator* a statutory declaration showing that all wages for the various classes of labour, the hire of trucks, equipment, etc., employed in or about the *Site*, all products or other things supplied for use in or upon the *Work* and amounts due to *Subcontractors* and suppliers have been paid and satisfied and that there is no encumbrance, lawful claim or lien accruing for labour or services in connection with the *Work*.

Should any amounts be due and unpaid for wages, equipment, hire, products and *Subcontractors* or suppliers as above listed or any encumbrance, lawful claim or lien accrue, the amounts shall be listed on a duly attested statement, in duplicate, and attached to the statutory declaration referred to above.

The *Contract Administrator* may at any time, if the *Contract Administrator* deems it advisable, require from the *Contractor* a statement showing the rates of wages paid by the *Contractor* for the various classes of labour, the rates of hire of trucks and equipment employed and the prices and quantities of any products supplied for use in or upon the *Work* and may also require the statement to show in detail the names of unpaid employees, the rates of wages and amounts due to each, and the names of creditors, quantities, prices and amounts due to each. Such statement shall be duly attested in duplicate as above and be a condition precedent to the right of the *Contractor* to receive payment.

- (2) Prior to final payment and as a condition to issuance by the *Contract Administrator* of a *Certificate of Total Performance*, the *Contractor* shall file with the *Contract Administrator* a statutory declaration showing that all *Work* in respect of the *Contract* has been completed; all accounts, detailed in the

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first sentence of Section (1) of this General Condition have been paid and satisfied and there is no encumbrance, lawful claim or lien accruing for labour, products or services in connection with the *Work*; and payments already received and due under the final payment application are accepted by the *Contractor* as full compensation for everything furnished and done by the *Contractor* under the *Contract*.

The *Contractor's* payrolls, time-books, books of account, invoices, receipt and statements relating to its *Work* under the *Contract* shall be at all times open for inspection and extract by the *Contract Administrator* and the *Owner* and any authorized representative of them.

18.11 Money Due to Owner Add 18.11.1

All money payable to the *Owner* by the *Contractor* may be retained out of any money then due, or which may become due from them to the *Contractor* under this or any other contract with the *Owner*, or otherwise howsoever, or may be recovered from the *Contractor* and its sureties, or any of either of them, in any Court of competent jurisdiction, as a debt due to them; and the *Contract Administrator* shall have full power to withhold any estimate or certificate, if circumstances arise which may indicate to him or her the advisability of so doing, until the *Contract Administrator* is satisfied that the *Work* and material so far done or furnished are in accordance with the *Contract* and that the *Contractor* is otherwise entitled thereto, though the sum to be retained may be unascertained.

19.0 TAXES, DUTIES AND GST

19.4 Non-Resident Withholding Tax Add 19.4.1

If the *Contractor* is, at any time, a non-resident of Canada, within the meaning of the *Income Tax Act* (Canada) as amended, then, and the *Contractor* hereby so agrees, the *Owner* may deduct from all money payable under the *Contract* and remit to the Receiver-General of Canada, the Government of Canada or the Canada Revenue Agency sums required to be withheld and remitted by the *Income Tax Act* (Canada), as amended.

The *Owner* will receive a further credit under the *Contract* for money withheld as of and from the date of the withholding (regardless of when or whether remitted) and no interest will be payable by the *Owner* on sums withheld, not remitted as aforesaid and later paid directly to the *Contractor*.

20. LAWS, NOTICES, PERMITS AND

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FEES			
20.2	Permits	Delete 20.2.1 and replace with	Except for <i>Owner Permits</i> , the <i>Contractor</i> shall obtain all permits, licenses, approvals and certificates which, as of the <i>Tender Closing Date</i> , are required for the performance of the <i>Work</i> (collectively the " <i>Contractor Permits</i> "). <i>Contractor Permits</i> shall include all municipal construction permits and approvals. The <i>Contractor</i> shall pay all <i>Contractor Permit</i> fees.
		Delete 20.2.2 and replace with	Unless otherwise noted in the <i>Contract Documents</i> , the <i>Owner</i> shall obtain those permits, clearances and approvals that are required for operation of the completed project, including any permanent easements or other permanent property rights, land use approvals (such as zoning) or environmental approvals (such as Federal Department of Fisheries and Oceans) (collectively the " <i>Owner Permits</i> "). The <i>Owner</i> shall obtain all <i>Owner Permits</i> in a timely manner so as not to delay the progress of the <i>Work</i> .
		Add 20.2.3	All <i>Work</i> within <i>City</i> properties shall be carried out and completed within the stated terms and conditions of any applicable permit, specification and bylaw.
		Add 20.2.4	It is the <i>Contractor's</i> responsibility to seek clarification and instruction from the <i>Contract Administrator</i> regarding construction activities that are not covered by the applicable permits, bylaws and <i>City</i> and <i>MMCD</i> Specifications. In the event of any variation between this manual and <i>City</i> bylaws, the bylaws shall prevail.
21.0	WORKERS COMPENSATION REGULATIONS		
21.0	Payment of WorkSafeBC Assessments	Add 21.0.0	The <i>Contractor</i> agrees that it shall at its own expense procure and carry or cause to be procured and carried and paid for, full WorkSafe BC coverage for itself and all workers, employees, servants and others engaged in or upon any <i>Work</i> or service which is the subject of this <i>Contract</i> . The <i>Contractor</i> agrees that the <i>Owner</i> has the unfettered right to set off the amount of the unpaid premiums and assessments for such WorkSafe BC coverage against any monies owing by the <i>Owner</i> to the <i>Contractor</i> . The <i>Owner</i> shall have the right to withhold payment under this <i>Contract</i> until the WorkSafe BC premiums, assessments or penalties in respect of <i>Work</i> done or service performed in fulfilling this <i>Contract</i> have been paid in full.
21.2	Contractor is "Prime	Delete 21.2.1 and replace with	Unless otherwise specified in the <i>Contract Documents</i> or notified to the contrary by the

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Contractor"

Contract Administrator, the *Contractor* is the "Prime Contractor" for the purpose of all *Laws* relative to occupational health and safety, including the discharge of all duties of the "Prime Contractor" under the *Workers Compensation Act* (British Columbia), notwithstanding that the *Owner*, the *Contract Administrator* or *Other Contractors* may provide from time to time some of the services normally provided by such "Prime Contractor". In this GC.4.2 "Prime Contractor" has the definition ascribed to the term "prime contractor" under the *Workers Compensation Act* (British Columbia).

Add 21.2.2

If the *Contractor* is the "Prime Contractor", the *Contractor* shall:

- (1) comply with all *Laws*, and all reasonable rules established by the *Owner* of which the *Contractor* is given timely notice through the *Contract Administrator*, relative to occupational health and safety;
- (2) initiate, maintain and supervise all safety programs and measures in connection with the performance of the *Work*, which programs and measures shall respond fully to the requirements of all *Laws* relative to occupational health and safety, all to the satisfaction of the *Contract Administrator*;
- (3) conduct regular safety meetings at the *Site*, no less frequently than weekly, record minutes of such meetings and give copies of such minutes to the *Contract Administrator* on a weekly basis;
- (4) supply and maintain at the *Site* all safety equipment necessary to protect workers and others from accident or injury;
- (5) supply and maintain at the *Site* all personnel, equipment and supplies necessary for the provision of appropriate first-aid to any worker or person suffering an accident or injury at or about the *Site*, and establish an emergency procedure for prompt removal of any such person from the *Site* to a hospital, clinic or medical office for further treatment; and
- (6) prior to commencement of construction, the *Contractor* will:
 - a. complete and file a "Notice of Project" with the WorkSafeBC in compliance with Section 20.2 of the WorkSafeBC Rules, and
 - b. post the Notice of Project at the *Site*, and
 - c. provide a copy of the Notice of Project to the *Owner* and confirm in writing that the Notice of Project has been posted at the

Site.

If, or for so long as the *Contractor* is not the "Prime Contractor", the *Contractor* shall:

- (1) comply with all Laws, and all reasonable rules established by the Owner of which the Contractor is given timely notice through the *Contract Administrator*, relative to occupational health and safety;
- (2) comply with all reasonable directions issued by the "Prime Contractor" regarding compliance with Laws, and rules established by the *Owner*, relative to occupational health and safety; and
- (3) attend all *Site* safety meetings convened by the "Prime Contractor".

Whether or not the *Contractor* is the "Prime Contractor", it shall:

- (1) report immediately to the "Prime Contractor" (if not the Contractor) and the *City Engineer* all accidents and injuries of any kind or severity occurring on or about the Site and involving employees of the Contractor or any Subcontractor, or any other person of which the Contractor is aware, and arising out of or in connection with the Work;
- (2) confirm in writing each report made under subparagraph (1) above; and
- (3) respect and adhere to the *Owner's* safety and training policies relative to the *Site* and the *Work*.

If the *Contract Administrator* determines that the *Contractor* is not in compliance with its obligations as "Prime Contractor", if applicable, the *Owner* may, but is not obliged to, provide some or all of the services required to discharge those obligations. All costs incurred by the *Owner* in providing such services shall be paid by the *Contractor* to the *Owner*, and may be deducted from any amount then or thereafter becoming due to the *Contractor* under the *Contract*.

Add 21.2.3 Upon request of the *Contract Administrator* or the *Owner*, the *Contractor* will provide the *Owner* and the *Contract Administrator* with the *Contractor's* or any *Subcontractors'* WorkSafeBC registration number.

Add 21.2.4 Concurrently with making any application for payment under this *Contract*, the *Contractor* will provide the *Owner* with written confirmation that the *Contractor* and all *Subcontractors* are registered in good standing with WorkSafeBC and that all assessments have been paid.

Add 21.2.5 The *Contractor* may or may not have received, as part of the *Contract Documents*, a "Pre-Contract

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Hazard Assessment” prepared by or for the *Owner* pursuant to the *Owner’s* statutory obligations under the WorkSafeBC/H&S Regulation (Section 119 of the WCA) as an “owner of a workplace”. Despite the *Owner’s* statutory obligations, the *Contractor* now acknowledges and agrees that the *Contractor* may not rely on the “Pre-Contract Hazard Assessment” and now agrees to assume by the terms of this *Contract* full responsibility for carrying out the *Owner’s* obligations under Section 119 of the WCA, including without limitation and by way of example only, conducting all due diligence inquiries of all applicable *Owner* staff and departments in order to ascertain what, if any, information is known or has been recorded by *Owner* staff about the *Site* that is necessary to identify and eliminate or control hazards to the health or safety of persons at the *Site*. The *Owner* now agrees to make all reasonable efforts to assist the *Contractor* in obtaining timely access to *Owner* staff and *Owner* records for this purpose. The *Contractor* will immediately start conducting such due diligence inquiries and must complete and deliver written confirmation of the completion of such inquiries to the *Contract Administrator* prior to the *Owner* being obligated to issue the *Notice to Proceed*.

Add 21.2.6

The *Contractor* will indemnify the *Owner* and hold harmless the *Owner* from all manner of claims, demands, costs, losses, penalties and proceedings arising out of or in any way related to:

- (1) unpaid WorkSafeBC assessments of the *Contractor* or any other employer for whom the *Contractor* is responsible under this *Contract*;
- (2) the acts or omissions of any person engaged directly or indirectly by the *Contractor* in the performance of this *Contract*, or for whom the *Contractor* is liable pursuant to the *Contractor’s* obligations as the Prime Contractor, and which acts or omissions are or are alleged by WorkSafeBC to constitute a breach of the WorkSafeBC/H&S Regulation or other failure to observe safety rules, regulations and practices of WorkSafeBC, including any and all fines and penalties levied by WorkSafeBC; or
- (3) any breach of the *Contractor’s* obligations under this GC4.2.

22.1 Contractor to Indemnify

Delete 22.1 and replace with

The *Contractor* releases the *Owner*, its officers, officials, employees and agents from all costs, losses, damages and expenses, including those caused by personal injury, death, property damage, loss and economic loss arising out of, suffered or experienced by the *Contractor*, its *Subcontractors*,

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			<p>and their respective officers, employees and agents, or suffered or experienced by any other entity or person in connection with the performance of the <i>Work</i>.</p> <p>Despite the provision of insurance coverage by the <i>Owner</i>, the <i>Contractor</i> hereby agrees to indemnify and save harmless the <i>Owner</i>, its elected officials, officers, employees and authorized representatives and each of them from and against losses, claims, damages, actions, and causes of actions that the <i>Owner</i> may sustain, incur, suffer or be put to at any time either before or after the expiration or termination of the <i>Contract</i>, that arise out of the acts of the <i>Contractor</i>, its <i>Subcontractors</i>, or their respective officers, employees or agents under the <i>Contract</i>.</p> <p>This indemnity will not affect or prejudice the <i>Owner</i> from exercising any other rights that may be available to it at law or in equity.</p> <p>The release and indemnity set out in this GC will survive the expiry or sooner termination of the <i>Contract</i>.</p>
22.2	Owner to Indemnify	Deleted 22.2.2 and replace with	<p>If the <i>Owner</i> performs work at the <i>Place of the Work</i> at the same time as the <i>Contractor</i> is performing the <i>Work</i>, then the <i>Owner</i> shall indemnify and hold harmless the <i>Contractor</i>, and the <i>Contractor's</i> agents and employees from and against claims, demands, losses, costs, damages, actions, suits or proceedings by third parties that arise out of, or are attributable to, the negligent acts or omissions of the <i>Owner</i>, the <i>Owner's</i> agents, or employees in the performance of that work.</p>
22.4	Patent Infringement	Add 22.4	<p><i>Contractor</i> hereby agrees to indemnify and save harmless the <i>Owner</i>, its elected officials, officers, employees and authorized representatives and each of them from and against losses, claims, damages, actions, and causes of actions that the <i>Owner</i> may sustain, incur, suffer or be put to at any time either before or after the expiration or termination of the <i>Contract</i>, that arise out of any actual or alleged infringement of any <i>Intellectual Property Rights</i> caused by the performance of the <i>Work</i> or the use of any process, work, material, matter, thing or method used or supplied by the <i>Contractor</i> or any <i>Subcontractor</i> in the performance of the <i>Work</i>.</p>
24.0	INSURANCE		
24.1	Required Insurance	Delete 24.1.1 to 24.1.6 and replace with	<p>(1) The <i>Contractor</i> shall obtain and maintain throughout the term of the <i>Contract</i> and the prosecution of the <i>Work</i>, all of the insurance policies described in Schedule 9 of the <i>Contract Documents</i>.</p> <p>(2) All insurance coverage described in Schedule 9</p>

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of the *Contract Documents* shall be issued by an insurance carrier or agent acceptable to the *Owner* and licensed to conduct business in the Province of British Columbia.

- (3) Upon request of the *City Engineer* or the *Owner*, the *Contractor* shall be required to deliver a Certificate of Insurance, and where required by the *Owner's* Director of Risk Management, certified copies of all policies and endorsements, evidencing the placement and endorsement of insurance in accordance with this GC 24.
- (4) Contractors and their *Subcontractors* shall be required to furnish evidence of the renewal of policies described in this GC by renewal certificate, endorsement or certified copy to be received by the *Owner* at least 15 calendar days prior to the expiry date of the policy.
- (5) If the *Contractor* fails to obtain and maintain insurance as required hereunder, or if the *Owner* does not approve any insurance policy or policies submitted to the *Owner* and the *Contractor* thereafter does not meet the requirements of the *Owner* as to terms and conditions of the insurance policy, the *Owner* shall have the right to place and maintain such insurance in the name of the *Contractor*. The cost thereof shall be payable by the *Contractor* to the *Owner* on demand, and the *Owner* may deduct the cost thereof from any monies which are due or may become due to the *Contractor*. If coverage should lapse, all *Work* by the *Contractor* shall be stopped until satisfactory evidence of renewal is produced.
- (6) Each policy described in Schedule 9 of the *Contract Documents* shall be required to be endorsed to provide the following notice for policy changes and cancellations to the *Owner*:
"It is understood and agreed that this policy will not be cancelled, reduced, materially altered or changed without the insurer giving at least 30 calendar days' prior written notice by registered mail to the City of Vancouver, as represented by its Vancouver Board of Parks and Recreation."
- (7) In addition to the requirements of Schedule 9 of the *Contract Documents*, each *Contractor* and each of its *Subcontractors* shall provide at its own cost any additional insurance which it is required by law to provide or which it considers necessary.

All deductibles shall be for the account of and be paid by the *Contractor* upon demand by the *Owner*. The *Owner* shall have the right to deduct amounts

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE 1 - SUPPLEMENTAL GENERAL CONDITIONS

			for which the <i>Contractor</i> is responsible under this GC 24 from any monies which are due or may become due to the <i>Contractor</i> .
25.0	MAINTENANCE PERIOD		
25.1	Correction of Defects	Delete 25.1.1 and replace with	The <i>Contractor</i> shall, at the <i>Contractor's</i> own expense, promptly correct defects or deficiencies in the <i>Work</i> that appear prior to and during the period of two years from the date of the <i>Certificate of Substantial Performance</i> , or such longer periods as may be specified in the <i>Contract Documents</i> for certain products or <i>Work</i> (the " <i>Maintenance Period</i> "), including damage caused by backfill deficiency.
		Add 25.1.4	<p>Whether the <i>Contractor</i> should replace defective products or <i>Work</i>, or repair the same, shall be determined by the <i>Contract Administrator</i>. Should the <i>Contractor</i> fail to make good defects within 3 Days after being notified by the <i>Owner</i> to do so, the <i>Owner</i> at its option may do so and all costs, charges and expenses so incurred may be deducted or collected by the <i>Owner</i> as provided in GC 18.11, provided that the <i>Owner</i> shall first deduct such amounts from the <i>Maintenance Security Holdback</i>. If the <i>Owner</i> assesses the defects to be dangerous or determines that an emergency situation exists, the <i>Owner</i>, at the <i>Owner's</i> discretion will effect repairs immediately and all costs, charges and expenses so incurred may be deducted or collected by the <i>Owner</i> as provided in 18.11 - Money Due to <i>Owner</i>; provided that the <i>Owner</i> shall first deduct such amounts from the <i>Maintenance Security Holdback</i>.</p> <p>The decision of the <i>Owner</i> shall be final as to the necessity of repairs or of any <i>Work</i> done or required to be done under the provisions of the <i>Contract</i> and for the amounts expended thereunder. If in the opinion of the <i>Contract Administrator</i>, it is in the <i>Owner's</i> best interests (taking into account effects on the <i>Owner's</i> overall schedule, the difference in value between the <i>Work</i> as performed and that called for by the <i>Contract Documents</i>, and other relevant factors) not to correct defective <i>Work</i> or <i>Work</i> not provided in the <i>Contract Documents</i>, the <i>Contract Administrator</i> will assess the amount which should be deducted from the amount otherwise due to the <i>Contractor</i> and will assess the length of time by which the obligations should be extended in order to put the <i>Owner</i> in as close a position financially and in terms of the useful life of the <i>Work</i> as would have been the case had the <i>Contractor</i> performed the <i>Work</i> as called for by the <i>Contract Documents</i>. For further certainty, the <i>Contract Administrator</i> may extend the <i>Warranty</i></p>

Period in appropriate circumstances to a minimum of twice the *Warranty Period* originally provided for under the *Contract Documents*, subject always to the above parameters.

END OF Supplementary General Conditions

SCHEDULE 2
SPECIFICATIONS AND DRAWINGS

SCHEDULE 3
SCHEDULE OF QUANTITIES AND PRICES

SCHEDULE 4
SUBCONTRACTORS AND SUPPLIES

SCHEDULE 5
CONSTRUCTION SCHEDULE

SCHEDULE 6
PERFORMANCE AND LABOUR AND MATERIALS PAYMENT BONDS

SCHEDULE 7
INSURANCE CERTIFICATES

SCHEDULE 8
FORCE ACCOUNT LABOUR AND EQUIPMENT RATES

**SCHEDULE 9
INSURANCE REQUIREMENTS**

1. All Risk Course of Construction Insurance

(a) Coverage

"All Risks" of physical loss or damage.

(b) Property Insured

(i) At Site

All materials, equipment and machinery, labour and supplies of any nature whatsoever, Work in progress, including property of the insured or of others for which the insured may have assumed responsibility, to be used in or incidental to the Site preparations, demolition or existing structures, erection and/or fabrication and/or reconstruction and/or repair of the project insured, commencing when the property becomes at the insured's risk, at the Site, and while there awaiting, during and subsequent to erection and/or fabrication and/or repair and/or testing.

(ii) Transit

Property to enter into and form a part of the project insured, from the commencement of loading at the original point of shipment anywhere in Canada or the continental United States of America, but excluding such property in the course of manufacturing or processing within buildings at the manufacturer's or supplier's site.

(iii) Off-Site

Off-Site coverage shall apply to property that is to be incorporated into and form a part of the project insured, anywhere in Canada or the Continental United States of America, but excluding such property while in transit or in the course of manufacturing or processing within buildings at the manufacturer's or supplier's site.

(c) Insureds

The Owner, the Contractor, and their respective officials, officers, employees and agents.

(d) Term

During the period of the construction operations and also during any period in which the property insured is being prepared for use and while partially used or occupied; provided all coverage shall cease when the Work has been formally accepted as complete by the Owner, whichever shall first occur.

(e) Limit and Deductibles at Site

(i) Limit of Liability: Full replacement value of the Work

INVITATION TO TENDER NO. PS20200764
CONTRACTOR FOR BEACONSFIELD PARK PLAYGROUND REPLACEMENT
SCHEDULE 9 - INSURANCE REQUIREMENTS

- (ii) Deductible not to exceed \$5,000.

2. **"Wrap Up Liability Insurance"**

(a) ***Insureds***

The Owner, the Engineer, the Contractor, and all Subcontractors, and their respective officials, officers, employees and agents.

(b) ***Limits***

Bodily injury liability and property damage liability including aggregate products and completed operations: \$10,000,000 for each occurrence.

(c) ***Extensions of Coverage***

- (i) Broad form products and completed operations liability, including coverage for activities of the Contractor and Subcontractors during the completed operations period;
- (ii) Owner's and contractor's protective liability;
- (iii) Blanket contractual liability;
- (iv) Contingent employer's liability;
- (v) Personal injury liability;
- (vi) non-owned automobile liability;
- (vii) Cross liability or severability of interest clause;
- (viii) Employees as additional insureds;
- (ix) Blasting, collapse, underpinning, shoring, pile driving, dredging or grading activities;
- (x) Loading and unloading of automobiles;
- (xi) Hoist liability;
- (xii) Unlicensed and specially licensed vehicles;
- (xiii) Operation of attached machinery;
- (xiv) Limited pollution liability arising out of hostile fire and sudden and accidental release of contaminants.

(d) ***Deductibles***

Deductible not to exceed \$5,000.

(e) ***Cross Liability***

The insurance shall apply to any action brought against any one of the insureds by any other insured in the same manner as though separate policies were issued to each.

(f) ***Term***

Period of construction or completion of the Work, whichever shall first occur, plus 24 months for completed operations liability thereafter.

(g) ***Waiver of Subrogation***

It is understood and agreed that in the event of a loss and upon payment of claim hereunder, the insurer will waive the any right of subrogation against the Owner, the Engineer and all architects, engineers or consultants engaged in or connected with the construction and Site preparation and related operations of the Work and any of their servants, agents, employees, and parent, subsidiary, affiliated or associated firms.

3. **Automobile Insurance**

A standard owner's form automobile policy for licensed vehicles providing third party liability and accident benefits insurance as provided by the Insurance Corporation of British Columbia (Autoplan) in accordance with applicable British Columbia law, with the minimum limits as follows:

Bodily injury and property damage (third party limit) inclusive limit: \$5,000,000.

4. **Contractor's Equipment Insurance**

"All Risk" insurance with insurers acceptable to the Owner, covering all construction equipment, owned or rented, or for which the Contractor or any of its Subcontractors may be responsible. In the event of loss or damage to the said construction equipment, or any part thereof, the Contractor or the Subcontractor, as the case may be, shall, if so requested by the Owner in writing, forthwith replace such damaged or destroyed construction equipment.

It is understood and agreed that in the event of a loss and upon payment of claim hereunder, the insurer will waive any right of subrogation against the Owner, the Engineer and all architects, engineers or consultants engaged in or connected with the construction and Site preparation and related operations of the Work and any of their servants, agents, employees, and parent, subsidiary, affiliated or associated firms.

5. **Contractor's Pollution Liability Insurance**

The Contractor will obtain or cause its Subcontractors to obtain contractor's pollution liability insurance including "Non Owned Disposal Sites" ("NODS") coverage for a limit not less than \$2,000,000.00 per occurrence with a deductible not greater than \$50,000.00 covering third party bodily injury, property damage and clean-up costs arising out of a pollution event including but not limited to unexpected and unintentional spill, discharge, emission, dispersal, leakage, migration, release or escape of pollutants including Polychlorinated Biphenyl ("PCB"). Coverage will include the transportation, loading and unloading of materials. The coverage is to include the Contractor as a named insured.

6. Professional Liability Insurance

The Contractor's sub-contracting erection engineer will be required to obtain and carry a professional (errors and omissions) liability insurance policy with limits of not less than \$2,000,000 per occurrence (and aggregate coverage of not less than \$5,000,000) and a deductible of not more than \$50,000, protecting the sub-contracting engineer against all claims for loss or damage arising out of any wrongful act or error or omission of the erection engineer or its personnel in the performance of the Work.

SCHEDULE 10
OWNERS LIST OF KNOWN WORKPLACE HAZARDS

See attached.

OWNERS LIST OF KNOWN WORKPLACE HAZARDS

Contract Title Beaconsfield Park Playground Renewal

Project Manager (City employee) Lehran Hache

Contract Name and No. (if known) _____

PURPOSE

This document shall be completed by the City's designated project manager, who shall list all the known worksite hazards and all the existing work process hazards associated with the upcoming contract. The completed document shall then be provided to all potential contractors, so the project can be bid appropriately based on the known worksite hazards.

DEFINITIONS

"Project Manager" means the City employee designated to be the liaison with the contractor for the purpose of managing, overseeing, coordinating or in any other way administering the contract.

INSTRUCTIONS FOR COMPLETION

The document must be completed in full. Choices for each entry are:

Yes (Y) the known worksite hazard or existing work process hazard does exist

No (N) the known worksite hazard or existing work process hazard does not exist*, or, a third party (environmental consultant) will address the issue (usually for a hazardous materials assessment)

* based on reasonable estimation from all input by persons with expertise or relevant knowledge and understanding

Not Applicable (NA) the worksite hazard or existing work process is not applicable for this contract type

INFORMATION FROM HAZARDOUS MATERIALS ASSESSMENTS PROVIDED BY A THIRD PARTY

A hazardous materials assessment may be completed prior to the Project Manager completing the City's List of Known Workplace Hazards. Any such assessment should be referenced by the Project Manager in this document and provided to all bidders. Hazardous materials may include asbestos, lead, crystalline silica, ammonia, PCBs, CFCs, moulds, mercury, ozone depleting substances (ODSs), radioactive substances.

ASSISTANCE IN COMPLETING THIS DOCUMENT

If you have questions while completing this document, or are unsure if the listed hazards apply, please seek assistance from Health and Safety (604.871.6078 or healthandsafety@vancouver.ca).

Hazard or Issue	Project Manager
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	Yes (Y), No (N) or Not Applicable (NA)
1. Asbestos-containing Materials. Disturbance or penetrations of flooring, walls, ceiling tiles, pipe lagging, ac pipe, transite siding, particularly in older facilities; e.g., furniture/fixture installation, carpeting/flooring services and boiler repair/tune-up services	
(a) Asbestos containing materials (ACM) will be encountered	NA
(b) A hazardous materials assessment for asbestos is provided in bidding package	NA
(c) A hazardous materials assessment for asbestos is the responsibility of the contractor	NA
2. Lead-containing Materials. Disturbance of lead-based paint, particularly in older facilities. Also present in certain electrical circuitry and metal alloys; e.g., overhead bridge crane maintenance/repair, high-voltage cable splicing services, boiler repair/tune-up services, fixture installation services, and chiller maintenance/repair services	
(a) Inorganic lead-containing materials may be encountered	NA
(b) A hazardous materials assessment for lead is provided in bidding package	NA
(c) A hazardous materials assessment for lead is the responsibility of the contractor	NA
3. Other hazardous materials. May include ammonia, pcb's, cfc's, moulds, mercury, ozone depleting substances (ods), radioactive substances, sewage, unknown contaminated materials, other (list other here) _____ _____ _____	
(a) A hazardous materials assessment for ammonia is provided in bidding package	NA
(b) a hazardous materials assessment for (list the specific hazardous material) will be provided in bidding package;	NA
(c) a hazardous materials assessment for (list the specific hazardous materials) will be the contractors responsibility	NA
4. Confined Spaces. Working in vaults, chambers, pits, tanks, etc.; e.g., construction, inspection and testing services, water/fuel storage tank clean-out services, and utility corrosion inspection services:	
(a) a hazard assessment (for entry and inspection only) from the City of Vancouver is provided in bidding package;	NA
(b) the City of Vancouver shall provide procedures to isolate adjacent piping, or to lock out equipment (complicated systems only);	NA
(c) the contractor shall be responsible for isolation and lockout procedures.	NA

Hazard or Issue	Project Manager
	Yes (Y), No (N) or Not Applicable (NA)
5. Lock Out. Industrial equipment maintenance, power machinery repair services, pump maintenance/repair services, mechanical refrigeration systems, elevator repair, overhead bridge crane maintenance/repair services, cathodic protection services, hydraulic test systems repair/service, and air compressor rebuilding services:	
(a) lockout will be required to isolate or prevent the unexpected release of energy (electrical, mechanical, hydraulic, chemical, thermal, kinetic, gravitational, pneumatic);	NA
(b) work will be performed on or near energized equipment, lines, or circuits	NA
If yes to (a) or (b) describe: _____ _____ _____	
6. Fall Protection. Tree pruning, window and ledge cleaning, window replacement, overhead bridge crane maintenance/repair services, roll-up door replacement, tent installation, awning/canopy installation, overhead air exchange installation, construction inspection and testing services	
(a) Workers will be exposed to a potential fall in excess of 3 m (10 feet), or to a fall of less than 3 m which would likely result in a serious injury (ex. impalement on rebar)	NA
(b) Scaffolding or ladders will be required to be secured to a building or structure	NA
7. Overhead and Underground Utilities. Tree pruning services, tree removal, utility relocation or replacement, underground utility identification (digging with powered equipment), concrete sawing services, pole painting	
(a) There will be electrical hazards associated with overhead power lines such as limits of approach and contact	N
(b) Necessary assurances (in writing) have (or will be) obtained by the City, through the utility company, for any work where minimum limits of approach cannot be maintained (provide documentation and review at pre job meeting with the successful contractor candidate)	N
(c) Necessary assurances must be obtained (in writing) by the successful contractor, through the utility company, for any work where minimum limits of approach will not be able to be maintained	Y
(d) Underground or hidden utilities are located on the job site and any excavation or drilling work in proximity to an underground utility service must be undertaken in conformity with the requirements of the owner of that utility service	Y

Hazard or Issue	Project Manager
	Yes (Y), No (N) or Not Applicable (NA)
<p>If yes to (c), and the specific physical locations where minimum limits of approach will not be able to be maintained are known, how will this information be provided to the contractor?</p> <p><u>It is the contractors responsibility to both complete a BC One call and local utility scoping within park property within the designated work zone. Un-documented buried utilities are a risk in park sites, and care should be taken during all excavation</u></p>	
8. Construction, Excavation, Shoring and Demolition	
(a) As "prime contractor", the City of Vancouver project manager will submit the Notice of Project	N
(b) Workers will be required to enter an excavation over 1.2m (4 ft) in depth	N
9. Chemicals, Solvents, Fumes, Vapours, And/Or Dusts (existing work processes or known worksite hazard only) - ice rinks, swimming pools, cleaning solvents, adhesives, paints, coatings, binders; e.g., storage tank clean-out services, countertop installation (epoxies), and flooring	
(a) The worksite has chemicals solvents, fumes, vapours or dusts that may affect the contractor	N
(b) Material Safety Data Sheets for chemicals currently in use at the worksite will be available, on request, to the contractor	N
<p>If yes to (a), list the work processes and/or chemicals in use:</p> <p>_____</p> <p>_____</p> <p>_____</p>	
10. Noise (existing work processes only)	
Employees will be exposed to noise levels above 85dbA	NA

OTHER HAZARDS (NOT IDENTIFIED ABOVE)	
(a)	<p><u>Used hypodermic needles are a potential risk on all park sites. Workers should be educated on safe handling and disposal if found, and use caution when reaching into areas with low visibility.</u></p> <p>_____</p> <p>_____</p>
(b)	<p>_____</p> <p>_____</p>
(c)	<p>_____</p> <p>_____</p>

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KNOWN WORKPLACE HAZARDS LIST COMPLETED BY	
Project Manager Name (print): Lehran Hache	
Project Manager Signature: 	Date: July 16, 2020
Title: Landscape Architect II	Phone: 604.257.8472

SCHEDULE 11
CONTRACTOR PRE-CONTRACT HAZARD ASSESSMENT FORM

See attached.

INVITATION TO TENDER NO. PS20200336
CONTRACTOR FOR RAYCAM COMMUNITY CENTRE PLAYGROUND REPLACEMENT
SCHEDULE 11 (PART D - FORM OF AGREEMENT)

SCHEDULE 11
CONTRACTOR PRE-CONTRACT HAZARD ASSESSMENT FORM

[Completed form to be attached to the finalized agreement.]

CONTRACT TITLE _____

PROJECT MANAGER (CITY EMPLOYEE) _____

CONTRACTOR REPRESENTATIVE _____

CONTRACT NAME & # _____

Purpose

This document shall be completed by the contractor awarded the contract, who shall identify all the **known and potential work process hazards** associated with the contract. The contractor, who is responsible for all identified actions, shall provide a completed Contractors Pre-Work Hazard Identification (CHI) document to the Project Manager (City employee) for review and consultation before the contract work begins.

Reference Material

In order to complete this document, the contractor should reference a completed copy of the **List of Known Workplace Hazards**, initially provided with the tender package. The contractor is also responsible to reference any **Hazardous Materials Assessments**, provided by the City with the tender package, and possibly referenced in the List of Known Workplace Hazards document.

Instructions for Completion

The document must be completed in full. Choices for each entry are:

Y - Yes - this work process or worksite hazard will exist for this contract and are the responsibility of the contractor

N - No - Even though the work process or worksite hazard will exist, it will not be the responsibility of the contractor

NA - Not Applicable - the work process or worksite hazard is not applicable for this contract

TBD - a third party (environmental consultant) will address the issue (primarily for a hazardous materials assessment)

Each grouping of safety hazards or issues in this document (bold text, capitalized) may list some examples of work tasks where this hazard may be encountered. These examples are not conclusive; there may be other examples of work tasks that create this hazard or issue.

INVITATION TO TENDER NO. PS20200336
CONTRACTOR FOR RAYCAM COMMUNITY CENTRE PLAYGROUND REPLACEMENT
SCHEDULE 11 (PART D - FORM OF AGREEMENT)

Documentation and Training Requirements

During the contract term, the contractor may be requested by the City of Vancouver, and shall provide documented evidence for items identified with a **(D)** in this document.

The summary table at the end of the document provides all potentially required documentation, and if applicable, the WCB OHS Regulation reference.

For any identified hazard marked with a **(T)**, the contractor is responsible to train their employees.

HAZARDOUS MATERIALS

The contractor is responsible for providing additional information on hazardous materials which may be encountered as part of the work process, yet not identified in the List of Known Workplace Hazards.

HAZARD OR ISSUE	Contractor Confirmation
1. ASBESTOS-CONTAINING MATERIALS - disturbance or penetrations of flooring, walls, ceiling tiles, pipe lagging, ac pipe, transite siding, particularly in older facilities; e.g., furniture/fixture installation, carpeting/flooring services, and boiler repair/tune-up services.	Yes (Y) No (N) Not Applicable (NA) or To Be Determined (TBD)
a) We have reviewed the hazardous materials assessment for asbestos provided by the City of Vancouver (or third party) in the tender package	Y N NA TBD
b) We will provide a written hazardous materials assessment for asbestos	Y N NA TBD
c) We have a written Asbestos Program (D)	Y N NA
d) As Prime Contractor, we will submit a Notice of Project Asbestos(NOP-A) to WorksafeBC at least 24 hours in advance of the project startup	Y N NA

2. LEAD-CONTAINING MATERIALS - disturbance of lead-based paint, particularly in older facilities. Also present in certain electrical circuitry and metal alloys; .e.g., overhead bridge crane maintenance/repair, high-voltage cable splicing services, boiler repair/tune-up services, fixture installation services, and chiller maintenance/repair services.	Yes (Y) No (N) or Not Applicable (NA)
a) We have reviewed the hazardous materials assessment for lead provided by the City of Vancouver (or third party) in the tender package	Y N NA TBD
b) We will provide a written hazardous materials assessment for lead	Y N NA TBD

INVITATION TO TENDER NO. PS20200336
CONTRACTOR FOR RAYCAM COMMUNITY CENTRE PLAYGROUND REPLACEMENT
SCHEDULE 11 (PART D - FORM OF AGREEMENT)

c) We have a written exposure control program for Lead (D)	Y N NA
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3. OTHER HAZARDOUS MATERIALS - may include PCBs, CFCs, molds, mercury, ozone depleting substances (ODS), radioactive substances, sewage and unidentified contaminated hazardous materials, other: (list other here) _____	Yes (Y) No (N) or Not Applicable (NA)
a) We have reviewed the hazardous materials assessment for (insert hazardous material type here) provided by the City of Vancouver, or a third party, in the tender package	Y N NA TBD
b) We have reviewed the hazardous materials assessment for (insert hazardous material type here) provided by the City of Vancouver, or a third party, in the tender package	Y N NA TBD
c) We will provide a hazardous materials assessment for (insert hazardous material type here)	Y N NA TBD
d) We will provide a hazardous materials assessment for (insert hazardous material type here)	Y N NA TBD

4. CONFINED SPACES - working in vaults, chambers, pits, tanks, etc.; e.g., construction, inspection and testing services, water/fuel storage tank clean-out services, and utility corrosion inspection services.	Yes (Y) No (N) or Not Applicable (NA)
a) We have reviewed the confined space hazard assessment provided by the City of Vancouver in the tender package	Y N NA TBD
b) We have a written confined space entry program (D)	Y N NA
c) Our employees have received confined space training (T)	Y N NA
d) We shall complete a confined space hazard assessment specific to the work to be performed (D)	Y N NA
e) We shall develop site specific written safe operating procedures (including evacuation and rescue components) prior to starting work (D)	Y N NA
f) We shall identify and record isolation points (D)	Y N NA
g) We will develop alternate procedures (as per WCB OHS Regulation # 9.22) to be used to isolate adjacent piping containing harmful substances (D)	Y N NA
h) We will provide for the services of rescue persons	Y N NA

If yes to g), provide brief description:

INVITATION TO TENDER NO. PS20200336
CONTRACTOR FOR RAYCAM COMMUNITY CENTRE PLAYGROUND REPLACEMENT
SCHEDULE 11 (PART D - FORM OF AGREEMENT)

5. LOCK OUT - industrial equipment maintenance, power machinery repair services, pump maintenance/repair services, mechanical refrigeration systems, elevator repair, overhead bridge crane maintenance/repair services, cathodic protection services, hydraulic test systems repair/service, and air compressor rebuilding services.	Yes (Y) No (N) or Not Applicable (NA)
a) We will be required to lock out in order to isolate or prevent the unexpected release of energy (electrical, mechanical, hydraulic, chemical, thermal, kinetic, gravitational, pneumatic)	Y N NA
b) We will perform work on, or near, energized equipment, lines or circuits	Y N NA

Note: If yes to a) or b) above, no work may be performed until reviewed by City of Vancouver project manager or project manager designate.

If yes to a) or b) describe:

6A. FALL PROTECTION - tree pruning, window and ledge cleaning, window replacement, overhead bridge crane maintenance/repair services, roll-up door replacement, tent installation, awning/canopy installation, overhead air exchange installation, construction inspection and testing services.	Yes (Y) No (N) or Not Applicable (NA)
a) Our employees will be exposed to a potential fall in excess of 3 m (10 feet), or to a fall of less than 3 m which would likely result in a serious injury (ex. impalement on rebar)	Y N NA
b) We will produce a written Fall Protection Plan for work that will occur more than 25 feet above grade, or, if written procedures (control zone) are to be used as the means of fall protection (D)	Y N NA
c) Our employees who will be required to use fall protection have received training (T)	Y N NA

If yes to a), describe:

INVITATION TO TENDER NO. PS20200336
CONTRACTOR FOR RAYCAM COMMUNITY CENTRE PLAYGROUND REPLACEMENT
SCHEDULE 11 (PART D - FORM OF AGREEMENT)

6B. SCAFFOLDING AND LADDERS - window replacement or cleaning, tree pruning, roll-up door replacement, tent installation, and awning/canopy installation.	Yes (Y) No (N) or Not Applicable (NA)
a) Our employees will use scaffolding or ladders for access to the work	Y N NA
b) The scaffolding or ladders will be exposed to wet and/or slippery conditions	Y N NA
c) We will ensure scaffolding or ladders are secured before accessing the worksite	Y N NA
d) Scaffolding will be erected and dismantled only by qualified workers	Y N NA

7. OVERHEAD POWER LINES AND UNDERGROUND UTILITIES - tree pruning services, tree removal, utility relocation or replacement, underground utility identification services, concrete sawing services, pole painting	Yes (Y) No (N) or Not Applicable (NA)
a) There are electrical hazards associated with overhead power lines such as limits of approach and contact	Y N NA
b) We will obtain necessary assurances, in writing, through the utility company, for any work where minimum limits of approach cannot be maintained	Y N NA
c) Underground or hidden utilities may be on the job site and we shall contact the Project Manager and BC OneCall at least four business days prior to the start of any excavation work	Y N NA
d) In the event of an inadvertent utility strike, we will have a written procedure for immediate notification of both the utility company and WorkSafeBC (D)	Y N NA

8. CONSTRUCTION, EXCAVATION, SHORING AND DEMOLITION	Yes (Y) No (N) or Not Applicable (NA)
a) As Prime Contractor, we will submit a Notice of Project (NOP) to WorksafeBC at least 24 hours in advance of the project startup date	Y N NA
b) Workers may be required to enter an excavation over 1.2m (4 ft) in depth	Y N NA
c) We will develop site specific written safe operating procedures, including evacuation and rescue components, prior to starting any excavation work (D)	Y N NA
d) Shoring will be installed in accordance with Part 20 of the WorkSafeBC OH&S Regulation	Y N NA
e) We will provide safe means of entry and exit for excavations	Y N NA
f) We will provide for the services of rescue persons and equipment (excavation rescue)	Y N NA

INVITATION TO TENDER NO. PS20200336
 CONTRACTOR FOR RAYCAM COMMUNITY CENTRE PLAYGROUND REPLACEMENT
 SCHEDULE 11 (PART D - FORM OF AGREEMENT)

g) We will develop a demolition/salvage plan (D)	Y N NA
h) We will evaluate the demolition materials for reuse or recycling	Y N NA
i) We will protect passers-by from potential hazards	Y N NA

9. CHEMICALS, SOLVENTS, FUMES, VAPORS, AND DUSTS - cleaning solvents, adhesives, paints, coatings, binders; e.g., storage tank clean-out services, countertop installation (epoxies), and flooring	Yes (Y) No (N) or Not Applicable (NA)
a) We will complete a hazard assessment for chemicals we will use in our work, and if chemicals already exist at the workplace, our assessment will identify possible results of any reactions between our chemicals and those of the City's operations	Y N NA

10. NOISE AND VIBRATION - includes installations and heavy equipment operation. Noise examples for 85 - 90 dbA (at noise source) include forklift, smoke alarm, table saw. Whole body vibration examples include truck or equipment operator and jackhammer operation	Yes (Y) No (N) or Not Applicable (NA)
a) Our employees will be exposed to noise levels above 85dbA	Y N NA
b) We have a written hearing conservation program (D)	Y N NA
c) Our employees will be exposed to excessive levels of whole body vibration (WBV)	Y N NA

11. OCCUPATIONAL HEALTH AND SAFETY PROGRAM	Yes (Y) No (N) or Not Applicable (NA)
a) We have a written Safety Program (D)	Y N NA
b) We will make regular inspections of all workplaces	Y N NA
c) We will immediately investigate any reported unsafe conditions and correct as required	Y N NA
d) We will investigate all incidents and provide written incident reports to the Project Manager	Y N NA
e) We will develop a written plan (D) identifying how risk to the public and workers will be minimized (may include the use of barriers and safe entry/exit points from the worksite)	Y N NA

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12. FIRST AID	Yes (Y) No (N) or Not Applicable (NA)
a) First aid equipment, supplies, facilities and services will be readily accessible during working hours	Y N NA
b) We will complete a first aid assessment (D)	Y N NA
c) We will post site drawings and signs indicating the location of, and how to summon, first aid	Y N NA
d) We will develop an effective means of communication between the first aid attendant and the work areas	Y N NA

13. FIRE PROTECTION - solvents, fuels, soldering, torch cutting, or heating devices; e.g., gasoline and diesel fuel delivery services, flooring services, fire suppression service, and water pipe repair services	Yes (Y) No (N) or Not Applicable (NA)
a) We will weld, solder, or cut with a torch	Y N NA
b) We will use or store flammable/combustible liquids	Y N NA
c) We will use temporary heating devices	Y N NA
d) We will provide water and/or fire extinguishers on the job site	Y N NA

14. PERSONAL PROTECTIVE EQUIPMENT (PPE)	Yes (Y) No (N) or Not Applicable (NA)
a) We will ensure our workers have appropriate personal protective clothing and equipment (e.g., safety footwear, hi-vis vests, hardhats, eye protection, face protection, hearing protection, chemical gloves/clothing)	Y N NA
b) We have a written PPE program (D)	Y N NA

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15. RESPIRATORY PROTECTION	Yes (Y) No (N) or Not Applicable (NA)
a) The work will involve materials or processes requiring respiratory protection	Y N NA
b) We have a written respiratory protection program (D)	Y N NA

16. TOOLS MACHINERY AND EQUIPMENT	Yes (Y) No (N) or Not Applicable (NA)
a) We will use powder-actuated tools.	Y N NA
b) Our employees who operate equipment have been trained and are qualified in use of that equipment. (T)	Y N NA

If yes to a), describe:

17. CRANES, FORKLIFTS, AND MANLIFTS - heavy or oversized goods delivery, tree pruning, overhead bridge crane maintenance/repair, and roll-up door replacement.	Yes (Y) No (N) or Not Applicable (NA)
a) We will use a crane, forklift, manlift or other lifting equipment	Y N NA
b) Our lifting and rigging equipment is certified where applicable, and inspected on a regular basis	Y N NA
c) Our operators shall have a valid operators certificate (mobile crane or tower crane) or have received training (boom lift, scissor lift or forklift) (T)	Y N NA
d) Only lifting attachments approved for use by the forklift manufacturer will be used	Y N NA

18. RIGGING	Yes (Y) No (N) or Not Applicable (NA)
a) We will lift or sling loads overhead	Y N NA
b) We will inspect ropes, hooks and slings before use on each shift	Y N NA

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19. MOTOR VEHICLES AND HEAVY EQUIPMENT - goods delivery, personnel transportation services, trailer relocation services, oil/water pumpout and recycling services, asphalt grinding and asphalt sealing services, weed/brush abatement and mowing services, landscape hydroseed services, tree stump grinding, and concrete sawing and removal	Yes (Y) No (N) or Not Applicable (NA)
a) We will use motor vehicles or heavy equipment at the work location	Y N NA
b) All operators have a valid provincial driver's license	Y N NA
c) We will inspect vehicles, including safety features (e.g., ROPS)	Y N NA

20. TRAFFIC CONTROL	Yes (Y) No (N) or Not Applicable (NA)
a) There will be uncontrolled movement of vehicular traffic at the worksite	Y N NA
b) We will develop a written traffic control plan (D)	Y N NA
c) We will put in place any required traffic control devices	Y N NA
d) The traffic control devices conform to the Ministry of Transportation and Infrastructure (MoTI) " <i>Traffic Control Manual for Work on Roadways</i> "	Y N NA
e) We will provide Traffic Control Persons (TCP's) as required by law	Y N NA

21. CRYSTALLINE SILICA DUST	Yes (Y) No (N) or Not Applicable (NA)
a) Our work will involve jackhammering, rotohammering, drilling, grinding or other disturbance of concrete or stone, creating potential exposure to silica dust	Y N NA

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22. Additional Concerns	Yes (Y) No (N) or Not Applicable (NA)
We foresee additional health and safety concerns associated with the work	Y N NA

If yes, describe:

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

Describe the control measures each of the concerns listed above:

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

PRE CONTRACT HAZARD ASSESSMENT COMPLETED BY	
Contractor's Representative Name (print):	
Contractor's Representative Signature:	Date:
Title:	Phone:

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CONTRACTOR'S DESIGNATE RESPONSIBLE FOR ONSITE SAFETY	
Name (print):	
Title:	Phone:

SUMMARY OF DOCUMENTATION (D) TO BE PROVIDED BY THE CONTRACTOR upon request by the City of Vancouver (documentation required as per Workers Compensation Board Occupational Health and Safety (WCB OHS) Regulation, the Workers' Compensation Act (WCA) or the City of Vancouver)	Yes (Y) or Not Applicable (NA)
a) Safety Program (WCB OHS Regulation Parts 3.1-3.3)	
b) Asbestos Exposure Control Plan (WCB OHS Regulation Part 6.3)	
c) Lead (Pb) Exposure Control Plan (WCB OHS Regulation Part 6.60)	
d) Respiratory Protection Program (WCB OHS Regulation Part 8.5)	
e) Confined Space Entry Program (WCB OHS Regulation Parts 9.5 and 9.6)	
f) Plan for minimizing risk to public and to workers (City of Vancouver)	
g) Personal Protective Equipment (PPE) Program (WCB OHS Regulation Part 8.5)	
h) Hearing Conservation Program (WCB OHS Regulation Part 7.5)	
i) Confined Space Hazard Assessment (WCB OHS Regulation Part 9.9)	
j) Work Procedure, including evacuation and rescue, for confined space (WCB OHS Regulation Part 9.10 and 9.11)	
k) Identification of Isolation Points (confined space) (WCB OHS Regulation Part 9.19)	
l) Alternate procedures to isolate adjacent piping (confined space) (WCB OHS Regulation Part 9.22)	
m) Fall Protection Plan (WCB OHS Regulation Part 11.3)	
n) Traffic Control Plan (Ministry of Transportation and Infrastructure (MOTI) manual, as referenced in WCB OHS Regulation Part 18.3)	
o) In the event of a utility strike, a written procedure for notification of Utility Provider (WCB OHS Regulation Part 4.18) and WorksafeBC (Workers' Compensation Act Part 3, Division 10, Sec. 172 (1)(c))	
p) Work Procedure (including evacuation and rescue) for excavations (City of Vancouver)	

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q) Demolition/Salvage Plan (City of Vancouver in reference to WCB OHS Regulation Part 20.112)	
r) First Aid Assessment (WCB OHS Regulation Part 3.16 (2))	

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SUMMARY OF TRAINING REQUIREMENTS (T) OF CONTRACTOR EMPLOYEES (for any persons completing this type of work throughout the duration of the contract)	Yes (Y) or Not Applicable (NA)
a) Confined Space Entry (WCB OHS Regulation Part 9.8)	
b) Fall Protection (WCB OHS Regulation Part 11.2 (6))	
c) Equipment Operation (WCB OHS Regulation Part 4.3 (1) (b)(i) (ii))	
d) Mobile Equipment (ex. boom lift, scissor lift, forklift) (WCB OHS Regulation Part 16.4)	
e) For any work on energized City electrical infrastructure. Contractor will need to complete Appendix R prior to contract signing. Electrical Work on energised circuits. This includes testing and troubleshooting and verification of lockout.	