REGIONAL DISTRICT OF NANAIMO

Regional District of Nanaimo

Invitation to Bidder No. 21-027

Huxley Community Park Skatepark Construction

Issue Date: March 24, 2021

DIVISON 00- PROCUREMENT AND CONTRACTING REQUIREMENTS

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SPECIFICATIONS

DIVISON 01- GENERAL REQUIREMENTS

TECHNICAL SPECIFICATIONS

APPENDICIES

SCHEDULE OF DRAWINGS

TITLE	Sheets or Pages.	DATE	REVISION NO.	REVISION DATE
COVER SHEET	L-01	January 28, 2021	6	March 23, 2021
TREE RETENTION AND REMOVAL PLAN	L-02	January 28, 2021	6	March 23, 2021
SITE AND TREE PLAN	L-03	January 28, 2021	6	March 23, 2021
LANDSCAPE DETAILS	LD-01	January 28, 2021	6	March 23, 2021
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DETAILS SHEET 3	SK-D-003	January 4, 2021	E	January 4, 2021
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END OF SECTION

Invitation to Bidder No. 21-027
Huxley Community Park Skatepark Construction

Information for Bidders

The Regional District of Nanaimo, hereinafter referred to as the "Regional District", invites Bidders for the construction of the Huxley Community Park Skatepark located on Gabriola Island at 585 North Road, Gabriola Island, BC V0R 1X3.

The work generally consists of the supply and installation of all associated items including chain-link fence, retaining walls, gravel pathways, tree protection fence, bioswale, gravel build up in parking lot, concrete pad viewing area, a 718.5 m2 skate park, skateboard benches and concrete wheel stops and all required items to complete the work.

Bid documents may be downloaded directly from the Regional District of Nanaimo website at www.rdn.bc.ca or the BC Bid website at www.bcbid.gov.bc.ca

Bids must be submitted **via email only** and received on or before **3:00:00 p.m. local time on April 21, 2021** (the “Bid Closing”) with the subject line “21-027 Huxley Skatepark” at the only acceptable email address of emcculloch@rdn.bc.ca.

Bidders must supply with their Bids a **verifiable digital Bid Bond (e-bond)** in an amount not less than 10% of the total contract value and a **verifiable digital Consent of Surety** as defined by the Surety Association of Canada. Scanned copies are not acceptable.
https://suretycanada.com/SAC/Surety-Bonds/E-Bonding.aspx

The successful contractor will have to provide a Performance Bond and a Labour & Material Payment Bond each in the amount of 50% of the total contract price.

There is no formal site visit scheduled. Bidders are responsible for viewing the site on their own.

All enquiries related to this Bid are to be directed to, **Elaine McCulloch, Senior Parks Planner, Recreation and Parks** via email at emcculloch@rdn.bc.ca or telephone at (250) 248-4744.

Bids will not be opened in public. Unverified bid results will be made available to Bidders by 10:00 a.m. the business day following the Bid Closing.

This procurement is subject to Chapter 5 of the Canadian Free Trade Agreement. The Regional District's language in its procurement documents shall be English.

1.1 BIDCALL

1. Bids will be received on or before **3:00 p.m. local time** on **April 21, 2021** (the "bid closing time") **via email only** with the subject line "21-027 Huxley Skatepark" at the only acceptable email address of emcculloch@rdn.bc.ca.

   Bidders must supply with their Bids a verifiable digital Bid Bond (e-bond) in an amount not less than 10% of the total contract value and a verifiable digital Consent of Surety as defined by the Surety Association of Canada. Scanned copies are not acceptable. https://suretycanada.com/SAC/Surety-Bonds/E-Bonding.aspx

2. The time of Bid Closing shall be established by the time shown on the clock used by the Regional District for that purpose.

3. Bids received after the specified bid closing time will not be considered.

4. The Owner reserves the right to extend the bid closing time or cancel the bid call at any time up until award for any reason whatsoever with no compensation.

5. Bids will not be opened in public. Unverified bid results will be made available to Bidders by 10:00 a.m. the business day following the Bid Closing. Such disclosure will not imply that the bids received are compliant or that a contract will be awarded to the lowest or any Bidder.

6. The submission of a Bid constitutes the agreement of the Bidder to be solely responsible for all costs and expenses incurred by it in preparing and submitting its Bid, including any costs incurred by the Bidder after the Bid Closing.

7. Please note: Maximum email file size limit is 20MB, or less. The RDN will not be liable for any technological delays of Bid submissions. Bidders are solely responsible for allowing themselves enough time to submit their Bid prior to the Bid closing time.

1.2 BID DOCUMENT AVAILABILITY

1. Bid Documents are made available in electronic form only for the purpose of obtaining bids for this project. It does not confer a license to use the Bid Documents for any other purpose.

1.3 EXAMINATION OF BID DOCUMENTS

1. Bidders shall examine the Bid Documents and promptly notify the person designated to receive inquiries of any perceived errors, omissions, conflicts, or discrepancies in the Bid Documents.

1.4 SITE EXAMINATION

1. It is the responsibility of the Bidder to examine the Work Site before submitting a Bid. It is the Bidder's responsibility to be familiar with and allow for all site conditions which might affect the Work and the Bidder. The Regional District will not grant, and the Bidder will not be entitled to any additional payments or extensions of time due to site conditions which were or would have been reasonably foreseeable upon a proper inspection of the Work Site by the Bidder.

2. The submission of a Bid by the Bidder shall be deemed to be an acknowledgement that the Bidder has relied and is relying on its own examination of the Work Site, and all other matters related to the completion of Work.

3. Bidders visiting the Place of the Work shall provide their own personal protective equipment.

4. Refer to 00 31 00 - Available Project Information which identifies available information pertaining to the Project.

5. By inference of the "Concealed or Unknown Conditions" GC in the General Conditions of the Contract, Bidders shall include in their bid price for non-concealed and known conditions that are either visible or can be reasonably inferred from a site examination at the Place of the Work before bid submission.

1.5 CONSTRUCTION LAYOUT

1. The Contractor will be responsible for all construction layout of the work required to execute the contract and construct the works in accordance with the design, standard specifications, and the listed specifications forming part of the contract.

1.6 BID FORM SUPPLEMENTS

1. Submit the following Bid Form Supplements together with the Bid Form:
    a. Contract Security as specified below in section 1.7.
    b. Section 00 43 36- Bid Form Supplement- List of Subcontractors.
    c. Section 00 43 40 Bid Form Supplement - Bidders Qualification Statement

1.7 CONTRACT SECURITY

1. **Bidders must supply with their Bids a verifiable digital Bid Bond (e-bond) in an amount not less than 10% of the total contract value and a verifiable digital Consent of Surety as defined by the Surety Association of Canada. Scanned copies are not acceptable. https://suretycanada.com/SAC/Surety-Bonds/E-Bonding.aspx**

2. The successful contractor will have to provide a Performance Bond and a Labour & Material Payment Bond each in the amount of 50% of the total contract price.

3. All required bonds and documentation must be issued by a surety company licensed to transact business in the Province of British Columbia.

1.8 TAXES

1. Include in bid price all taxes and customs duties in effect at the time of the bid closing, except for Value Added Taxes as defined in the CCDC standard form of contract.

1.9 CONTRACT TIME

1. The Bidder, in submitting a bid, agrees to attain Substantial Performance of the Work by the date specified in the Bid Form, which will become the Contract Time under the Contract.

1.10 SUBSTITUTIONS

1. Where the Bid Documents specify Products by proprietary name, the Owner will consider Bidder requests for approval of substitutions during the bid period, provided such requests are received, in writing, at least 7 days before the bid closing time and are in accordance with the requirements specified in Section 01 25 00 - Substitution Procedures. If the Owner approves a substitution, the substitute Product will be named in an addendum. Otherwise, Bidders shall consider the request for approval of the substitution to be rejected.

1.11 LIST OF SUBCONTRACTORS

1. Complete and submit Section 00 43 36 - Bid Form Supplement- List of Subcontractors, indicating those Subcontractors or Suppliers whose bids have been received by the Bidder, which names the Bidder would be prepared to accept for the performance of the work indicated.

2. The purpose of this requirement is to protect the interests of subcontract bidders and the integrity of the bidding process. Provided the List of Subcontractors has been properly completed and submitted, the information will not be used in evaluating the Bids to determine the lowest compliant bidder.

1.12 BID FORM SIGNING

1. Complete the Bid Form as follows:

    1. Incorporated Company: Provide company name and name and signature of the duly authorized signing representative(s). Insert under each signature the representative's capacity to act on behalf of the company.

    2. Joint Venture: Each entity within the joint venture shall execute the Bid Form as specified.

    3. Partnership: Provide name of partnership and name and signature of duly authorized representatives of the partnership.

    4. Sole Proprietorship: Provide name of sole proprietorship and name and signature of sole proprietor in the presence of a witness who shall also sign.

1.13 BID SUBMISSION

1. Complete the Bid Form, in its entirety, on the form provided and submit together with the required Contract Security and Bid Form Supplements, completed in their entirety via email with the subject line “21-027 Huxley Skatepark” at the only acceptable email address of emcculloch@rdn.bc.ca .

2. Bids submitted in any other manner will not be accepted nor acknowledged.

1.14 BID MODIFICATION AND WITHDRAWAL

1. A bid, including the Bid Form and Bid Form supplements, submitted in accordance with these bidding requirements may be modified or withdrawn, provided the modification or withdrawal request:

    1. it is in writing received at the email address specified in "Bid Call" article before the bid closing time, and

    2. states the project title, name of the Bidder, the nature of the modification or withdrawal request,

    3. and is signed by a duly authorized person.

3. If a bid is withdrawn, a new bid may be submitted in accordance with the specified requirements, provided it is received before the bid closing time.

4. When submitting a modification directing a change in a bid price, do not reveal the original amount nor the revised amount:

    1. On stipulated price bids, state only the amount to be added to or deducted from the original bid price.

    2. On unit price bids, state only the amount to be added to or deducted from each original unit price or lump sum in the Schedule of Prices. The Owner will adjust extended amounts and the total bid price as required by the modification.

6. When submitting a second or more modifications related to a particular bid price, ensure that there is no ambiguity as to the intended bid price. The written modification shall clearly indicate whether:

    1. the bid price first submitted is being modified and any previous modifications are to be disregarded, or

    2. a revised bid price derived from a previous modification is being modified.

7. State all addendum numbers received, if different from what was indicated on originally submitted Bid Form.

8. The Owner will assume no responsibility or liability for modifications or withdrawals that are, for any reason, delayed, illegible, unclear as to intent, ambiguous, contrary to these instructions, or otherwise improperly received. The Owner may disregard improperly received modifications or withdrawals.

1.15 BIDDING IRREGULARITIES

1. Bids with Bid Forms or required Bid Form Supplements that are improperly prepared, signed or submitted contrary to these Instructions to Bidders, or that contain added conditions or other irregularities of any kind, may, at the Owner's discretion, be rejected as non-compliant.

2. The Owner may accept or waive a minor and inconsequential irregularity. The determination of what is, or is not, a minor and inconsequential irregularity, the determination of whether to accept or waive such an irregularity, and the final determination of whether the bid is compliant, will be at the Owner's sole discretion.

3. The following irregularities relate to what are considered mandatory bidding requirements. These will not be considered minor and inconsequential and will cause the bid to be rejected as non-compliant:

    1. Bid, Contract Security or Bid Form Supplements are received after the specified bid closing time.

    2. Required Bid Form, Contract Security or Bid Form Supplements are missing.

    3. Bid Form, Contract Security or Bid Form Supplements are not in the form provided or format required.

    4. A bid price is illegible, ambiguous, or unclear.

    5. One or more conditions are added to or submitted with the bid, the effect of which is a material modification of the Bid Documents.

    6. Failure to comply with any other bidding requirement expressly characterized as mandatory in elsewhere in the Bid Documents.

1.16 BID ACCEPTANCE PERIOD

1. Bids shall remain open to acceptance by the Owner and shall be irrevocable until a Bidder enters a fully executed contract with the Owner for performance of the Work or until expiry of the bid acceptance period stated in the Bid Form, whichever occurs first.

2. If at any time after the irrevocable period, if the Bidder has not revoked its Bid in writing, the Regional District may accept the Bid.

1.17 BID ACCEPTANCE

1. The lowest or any bid will not necessarily be accepted, and the Owner may reject any or all bids.

2. The Contract will be established when the parties fully execute the agreement.

3. The entire process is subject to approval from the Board of Directors of the Regional District of Nanaimo.

1.18 INTERPRETATION AND MODIFICATION OF BID DOCUMENTS

1. If an inquiry requires an interpretation or modification of the Bid Documents, the response to that inquiry will be issued in the form of a written Addendum only, to ensure that all Bidders base their bids on the same information.

2. Replies to inquiries or interpretations or modifications of the Bid Documents made by e-mail, verbally, or in any manner other than a written Addendum, will not form part of the Bid Documents and will not be binding.

1.19 ADDENDA

1. Addenda may be issued to modify the Bid Documents in response to Bidder inquiries or as may be considered necessary.

2. All addenda issued during the bid period will become part of the Bid Documents.

3. No addenda will be issued later than 2 working days before the bid closing time.

4. If the Regional District, in the Regional District's sole discretion, determines that a clarification, addition, deletion or revision of the Tender Documents is required then the Regional District will issue a written addendum. Notice of the issuance of a written addendum, and the issued written addendum, will be posted on the Regional District of Nanaimo website www.rdn.bc.ca and the BC Bid website www.bcbid.gov.bc.ca. It is the sole responsibility of all prospective Bidders to check for any addenda prior to submitting their Bid.

1.20 INQUIRIES

1. Direct all inquiries in writing, via e-mail to:

   Elaine McCulloch
   Regional District of Nanaimo
   Email: emcculloch@rdn.bc.ca

2. Submit inquiries as early as possible in the bid period and not less than 4 Working Days before the bid closing time. Inquiries received after this time may not receive a response.

1.21 SOLICTATION

The Bidder may not make any representations or solicitations to any director, officer, or employee of the Regional District with respect to the Bid either before or after submission of the Bid other than the designated contact person. If any director, officer, employee, agent sub-contractor, supplier or other representative of the Bidder communicates with any director, officer or employee of the Regional District or any consultant engaged by the Regional District in connection with this Invitation to Tender about this Invitation to Tender, other than the

designated contact person, the Regional District shall have the unfettered right, regardless of the nature of the communication, to reject the Tender submitted by the Tenderer.

1.22 COLLUSION

The Bidder's attention is directed to the Competition Act which provides that bid-rigging as defined in the Act is an indictable offence punishable upon conviction by a fine or imprisonment or both.

1.23 CONFLICT OF INTEREST

Bidders shall disclose any actual or potential Conflict of Interest and existing business relationships it may have with the RDN, its elected officials, appointed officials or employees.

1.24 LITIGATION CLAUSE

The RDN may, in its absolute discretion, reject a Bid, if the Bidder, or any officer or director of the Bidder is or has been engaged either directly or indirectly through another corporation in legal action against the RDN, its elected or appointed officers and employees in relation to:

(a) any other contract for works or services; or
(b) any matter arising from the RDN's exercise of its powers, duties, or functions under the Local Government Act, Community Charter, or another enactment within five years of the date of this Bid Call.

In determining whether to reject a Bid under this clause, the RDN will consider whether the litigation is likely to affect the Bidder's ability to work with the RDN, its consultants and representatives and whether the RDN's experience with the Bidder indicates that the RDN is likely to incur increased staff and legal costs in the administration of this Contract if it is awarded to the Bidder.

1.25 EXCLUSION OF LIABILITY

The RDN will not be liable to any Bidder for any claims, whether for costs, expense, losses or damages, or loss of anticipated profits, or for any other matter whatsoever, incurred by the Bidder in preparing and submitting a Bid. Except as expressly and specifically permitted in these Instructions, no Bidder shall have any claim for compensation of any kind whatsoever, because of participating in this Bid Call, and by submitting a Bid each Bidder shall be deemed to have agreed that it has no claim.

1.26 FREEDOM OF INFORMATION

All Bids will be held in confidence by the RDN. The RDN is bound by the Freedom of Information and Protection of Privacy Act (British Columbia) and all documents submitted to the RDN will be subject to provisions of this legislation. The successful vendor and value of the award is routinely released.

END OF SECTION

1.1 STATUS OF AVAILABLE PROJECT INFORMATION

1. Available Project information means information of any type and in any form that is expressly identified as available project information in this Section.
2. No available Project information forms part of the Contract Documents unless copied or transcribed into Drawings or Specifications or is expressly listed in the agreement as a Contract Document.

1.2 USE AND RELIANCE UPON AVAILABLE PROJECT INFORMATION

1. Available Project information is made available to Bidders to fulfil the Owner's duty to disclose all relevant Project information to Bidders.

2. Bidders shall interpret and draw their own conclusions about available Project information, including consideration of the time when it was created. Available project information may be time sensitive. The Owner and Consultant assume no responsibility for such interpretations and conclusions.

3. Available Project information, or any part thereof, shall not be construed as contract requirements unless also reflected in Drawings or Specifications, and in case of conflict the Drawings or Specifications shall govern.

4. Bidders, acting reasonably, may rely on available Project information in preparing their bids, subject to any qualifications stated in such available Project information and unless expressly stated otherwise in this Section.

1.3 AVAILABLE PROJECT INFORMATION

1. Geotechnical Investigation report entitled November 6, 2018 prepared by Lone Pine Geotechnical Inc., Project #1098. This report is included in the Bid Documents. (Appendix A).

2. Arborist Report entitles Gabriola Skatepark January 7, 2021 prepared by VDZ + Associates, Project # SK2019-01 (Appendix B).

3. Topographical survey entitled May 7th, 2019 prepared by Turner & Associates Land Surveying, File: 13-065. This report is included in the Bid Documents. (Appendix C).

4. Huxley CP Playground as-built drawings 2019. (Appendix D).

END OF SECTION

Project/Contract: Huxley Community Park

From (Bidder):

_____
Legal Name of Bidder (please print)

_____
Address of Bidder

_____
Telephone Number of Bidder

_____
Email address of Bidder GST Registration Number

_____
Signature Date

_____
Print Name and Title

To (Owner): McCulloch, Elaine
Regional District of Nanaimo
Email: emcculloch@rdn.bc.ca

We, the undersigned, having examined the Bid Documents for the above-named project/contract, including Addendum Number(s)_____ , hereby offer to perform the Work in accordance with the Bid Documents.

We, the undersigned, declare that:

1. we are qualified to perform the Work in accordance with the Bid Documents and our bid price covers all of our obligations and things necessary for the performance of the Work.
2. we hereby submit a lump sum price as required by the specifications and agree that this price will be used for payment of work through approved Progress Payments. Any Extra Work will require a change order procedure. The Bidder agrees that the prices quoted shall remain in force until the date of completion of the Contract.
3. we confirm that the Bid Price includes all necessary costs including but not limited to supply, fabrication and finishing, conveyance and delivery to Site, packing, crating, freight, cartage, shipping charges, off-loading, installation, construction, drafting charges, labour, overhead, profit, etc. and all tariffs, duties and taxes unless otherwise indicated, including British Columbia Provincial Sales Tax. The applicable Federal Goods and Services Tax shall be shown as a separate item to the Tender Price.
4. we shall, within 7 Days of receipt of notice from the Regional District, submit to the Regional District a full and complete breakdown of the Bid Price showing the value assigned to each part of the Work including unit rate breakouts, and an allowance for profit and overhead. In submitting the breakdown, we shall certify that the value assigned to each part of the Work represents the estimate of the actual cost, including profit and overhead, of performing that part of the Work. We agree that the progress of the Work will be measured by the Regional District or its authorized representative, whose decision will be final.
5. we agree to attain Substantial Performance of the Work by _____ if awarded Notice of Intent to Award by May 26th, 2021 with an anticipated construction start date of June 21th.
6. we have arrived at this bid without collusion with any competitor,

7. all bid form supplements called for by the Bid Documents form an integral part of this bid, and

8. this bid is open to acceptance by the Owner for a period of 60 calendar days from the bid closing time.

9. we agree to be designated to be the Prime Contractor within the meaning of Part3, Division 3, Section 118(1) of the Workers Compensation Act and is are qualified and willing to assume this responsibility.

10. **we have included a verifiable digital bond (eBond) and verifiable digital Consent of Surety as defined by the Surety Association of Canada.**

Schedule A – Stipulated Price

STIPULATED LUMP SUM PRICING

Description	Total Price ($) including PST
STIPULATED LUMP SUM PRICE	
GOODS AND SERVICES TAX @ 5%	
TOTAL PRICE	

The BID PRICE stated above will be used to compare submitted Bids and to establish low bidder. The Regional District reserves the right to check the above extensions and additions and to make corrections as necessary. In the event a correction is made by the Regional District the corrected figure shall prevail and be used as the Bid Price in the Bidder's Offer.

SEPARATE PRICES

Item	Description	Total Price ($) including PST
1	Coloured concrete for the skate park per SK-008 Concrete drawing, including supply and installation of concrete, provision of samples, base material, and all related works (complete).	
2	Tree removal as per L-02 (Removal of stumps and root balls as required to remain part of base bid) and all related works (complete).	
3	Shelter structure and footing as per LD-02 Detail 4, including supply and installation as per manufacturer's recommendations and all related works (complete).	
4	Chain Link Fence including supply and installation of all footings, tension bars, tension bands, rails, posts, mesh, gates and all related works (complete).	
5	Valley Stone Block Amphitheatre including supply and install of Valley Stone Blocks, graded wall rock and base material and all related works (complete).	

Separate Prices will be accepted or not accepted at the sole discretion of the Owner.

END OF SECTION

Project/Contract: HUXLEY COMMUNITY PARK

From (Bidder):_____
(Bidder name)

We, the above named Bidder, have received bids from the Subcontractors or Suppliers named below for the items of work requested, and are prepared to accept these names for the performance of these items of work.

Item	Item of Work	Name of Subcontractor or Supplier
1.		
2.		
3.		
4.		
5.		

END OF SECTION

Project/Contract: HUXLEY COMMUNITY PARK

From (Bidder):_____
(Bidder name)

1. Cast-in-place concrete skatepark construction is a specialized trade and requires both experience with and appreciation for the smallest details that affect the quality of environment and the safety of park users. Design specifications provide a very limited range for deviation from the technical drawings and contractors are required to present specific team qualifications and proficiency with this highly technical, concrete construction project. For the safety of the end user and the protection of the owner, selection of the successful construction team will consider all previous experience, references, and qualifications.

2. This document is intended to provide information in the capacity, competence, and relevant experience of the Contractor. Applicant may supplement information with additional sheets if required.

3. Bidder must demonstrate a minimum of five (5) years of experience in providing cast-in-place concrete work for skateparks similar in scope to that specified herein and that include skatepark terrain features (transitions, blends, skatepark bowls/pools, etc.) similar in height and character as those designed for this project.

4. Bidder must have completed a minimum of **three (3)** contracts with a minimum area of 250m^2 of cast-in-place concrete that include comparable terrain features as those designed for this contract. Parks must be open and in good operating condition for at least one year. Minimum one (1) projects must be recent (completed within the last two (2) years). Only those projects where the complete construction of the facility has been the sole responsibility of your firm will be considered acceptable projects.

5. Legal Structure of Bidder:

   _____

   Joint Venture ☐, Corporation ☐, Partnership ☐, Registered ☐, Sole Proprietor ☐, Other ☐

   If the answer is "other" to the previous question, please describe your company structure:

   _____

   Year Established: _____

   Is the Contractor a member of any Construction or Skatepark Associations? [ ] Yes [ ] No

   If the answer is "yes", please list any applicable associations that the contractor is a member in good standing of:

   _____

   _____

6. Contractor's Relevant Experience (as per Section 4 above):

Project #1 Title and Location: _____

Completion Date: _____

Project Value & approx. size (m2): _____

Project Supervisor: _____

Owner Name and Contact: _____

Project #2 Title and Location: _____

Completion Date: _____

Project Value & approx. size (m2): _____

Project Supervisor: _____

Owner Name and Contact: _____

Project #3 Title and Location: _____

Completion Date: _____

Project Value & approx. size (m2): _____

Project Supervisor: _____

Owner Name and Contact: _____

7. Please list the name of the Contractor's proposed Foreman:

_____

Please provide 1 (minimum) project reference (cast-in-place concrete skateparks preferred) that the Foreman was directly involved with in a significant role:

Project Title and Location: _____

Completion Date: _____

Project Value & approx. size (m2): _____

Owner Name and Contact: _____

8. The Contractor's proposed Shotcrete Nozzle Operator(s) must have a minimum of three (3) years of experience in shotcrete. Contractors must provide one (1) project references that the Shotcrete Nozzle Operator(s) was directly involved with applying shotcrete. Preference will be given to Shotcrete Nozzle Operator(s) that are qualified under the ACI Shotcrete Nozzleman Certification Program. Only qualified and approved Shotcrete Nozzle Operator(s) are permitted to perform shotcrete work on this project. Qualified and approved Shotcrete Nozzle Operator(s) must be onsite during all major shotcrete work. The Contract Administrator reserves the right to reject any contractors with Shotcrete Nozzle Operator(s) that do not meet the required skills and experience criteria.

   Please list the name of the Contractor's proposed Shotcrete Nozzle Operator(s):

   Name: _____

   Is the proposed Nozzle Operator(s) qualified under the ACI Shotcrete Nozzleman Certification Program? [ ] Yes [ ] No (If "Yes" please attach proof of certification)

   Does the proposed Nozzle Operator(s) have at least 3 years of experience in shotcrete application?
   [ ] Yes [ ] No

   Please provide one (1) reference for a project completed by the Nozzle Operator:

   Project #1 Title and Location: _____

   Completion Date: _____

   Project Value & approx. size (m2): _____

   Project Supervisor: _____

   Owner Name and Contact: _____

   Only nozzle operator(s) listed above are permitted to perform shotcrete work on this project. The Contract Administrator reserves the right to reject any contractors with nozzle operators that do not meet the required skills and experience criteria. Should the Contractor wish to substitute the above nozzle operator with another nozzle operator the Contractor shall make an application to the Owner for approval at least 3 business days in advance. The Owner reserves the right to reject the substitute operator.

9. The Contractor's proposed Head Concrete Finisher must have at least three (3) years of experience in concrete finishing as applied to concrete skateparks. Contractors must provide one (1) project reference that the Head Concrete Finisher was directly involved with Finishing Concrete in a lead role. Only qualified and approved Concrete Finishers are permitted to perform finishing work on this project. The Head Concrete Finisher must be onsite during all major finishing work. The Contract Administrator reserves the right to reject any contractors with a Head Concrete Finisher that does not meet the required skills and experience criteria.

   Please list the name of the Contractor's proposed Head Concrete Finisher:

   Name: _____

   Does the proposed Finisher have at least 3 years of experience in concrete finishing?

   [ ] Yes [ ] No

   Please provide 1 project reference that the Finisher was directly involved with Finishing Concrete in a lead role:

   Project #1 Title and Location: _____

   Completion Date: _____

   Project Value & approx. size (m2): _____

   Project Supervisor: _____

   Owner Name and Contact: _____

   The Concrete Finisher as noted above must be onsite during all major finishing work on this project. Should the Contractor wish to substitute the above Finisher with another Head Finisher the Contractor shall make an application to the Owner for approval at least 3 business days in advance. The Owner reserves the right to reject the substitute Finisher.

END OF SECTION

1.1 FORM OF CONTRACT

1. The form of Contract, including the Agreement, Definitions, and General Conditions is CCDC 2 – 2008 Stipulated Price Contract, subject to the modifications specified in Section 00 73 00- Supplementary Conditions.

1.2 CONTRACT COPYRIGHT AND AVAILABILITY

1. The CCDC form of Contract is a copyrighted document published by the Canadian Construction Documents Committee (CCDC). It is incorporated into these Bid Documents by reference. It is available for purchase from any CCDC document outlet. Refer to ccdc.org.

1.3 CONTRACT PREPARATION FOR SIGNING

1. The Consultant will prepare 2 (two) copies of the form of Contract for signing by the Contractor and the Owner after notice of award. Each copy will be comprised of the CCDC form of Contract with a CCDC copyright seal affixed, with a completed Agreement form, and with other Contract Documents referenced or appended.

END OF SECTION

1.1 INTENT

1. These Supplementary Conditions amend the General Conditions of CCDC 2 (2008) – Stipulated Price Contract as indicated below. Provisions not amended remain in full force and effect.

1.2 AMENDMENTS TO GENERAL CONDITIONS

PART 2 ADMINISTRATION OF THE CONTRACT

GC 2.3 REVIEW AND INSPECTION OF THE WORK

2.3.2 Add, in the first sentence "review," before the word "tests".

2.3.4 In the first sentence replace "special" with "review," and add "review," before the third instance of "inspections".

Add:

2.3.8 Should the *Consultant* be required to make more than one review of rejected work or should the *Consultant* perform additional reviews due to failure of the Work to comply with the application for status of completion made by the *Contractor*, the *Contractor* is required to compensate the *Owner* for such additional *Consultant* services including expenses incurred. Adjustment for such compensation should be made as outlined under PART 6 CHANGES IN THE WORK.

Add:

2.3.9 The Contractor is responsible for providing and coordinating all required testing.

PART 3 EXECUTION OF THE WORK

GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

Delete:

3.2.2.2 Delete this clause in its entirety.

Add:

3.2.3.4 as it applies to the applicable health and construction safety legislation at the *Place of the Work* the *Contractor* shall assume overall responsibility and be designated as the "Prime Contractor."

GC 3.4 DOCUMENT REVIEW

Add:

3.4.2 A Geotechnical Report on existing soil conditions has been included; however it is the bidder's responsibility to determine how the soil conditions might affect the bid price. The site can be made available to the contractor to carry out any sub-surface investigations they deem necessary.

GC 3.6 SUPERVISION

3.6.1 Add after the last sentence:

"The appointed *Contractor* representative shall not be changed except for valid reason. The appointed *Contractor* representative shall not be changed without consultation with

and written acceptance of the *Owner.* This acceptance shall not be unreasonably withheld."

GC 3.7 SUBCONTRACTORS AND SUPPLIERS

3.7.4 Add at the end of the sentence ", as outlined in GC 6.3 – CHANGE DIRECTIVE."

PART 4 ALLOWANCES

GC 4.1 CASH ALLOWANCES

4.1.2 Add, after the first sentence "Unless noted otherwise, none of the work included in the drawings and specifications is intended to be paid for by the cash allowances. The cash allowances are for the *Owner's* use, at the *Owner's* sole discretion. "

PART 5 PAYMENT

GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

5.2.4 Add, after the first sentence:

"A second schedule, stating the anticipated monthly progress payments, is to be submitted upon request.**"**

Add:

5.2.8 An application for payment shall be deemed received only if submitted complete with required supporting documentation as determined by the *Consultant.*

Add:

5.2.9 The *Contractor* shall with each and every application for payment subsequent to the first, submit a current CCDC 9A Statutory Declaration of Progress Payment Distribution by Contractor, which shall be completed and sworn before a Notary Public or a Commissioner for Oaths for the Province of British Columbia.

Add:
5.2.10 No progress payment to exceed 95% in any one category until substantial completion has been achieved.

GC 5.3 PROGRESS PAYMENT

5.3.1.2 Add,
"If, after a certificate of payment has been issued to the *Owner* (and prior to payment by the *Owner*), the *Consultant* determines on the basis of new information that the amount certified for payment is inappropriately high or low relative to the value of the work performed, then the *Consultant* shall issue a revised certificate of payment,"

5.3.1.3 Delete in its entirety and replace with,

"The *Owner* shall make payment to the *Contractor*, on account, in the amount certified by the

Consultant as provided in Article A-5 of the Agreement – PAYMENT, on or before the later of:

- twenty calendar days after receipt by the Consultant of the application for

payment, or
- twenty-eight calendar days after the last day of the payment period for which the *Contractor's* application for payment is made."

GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK

Add:

5.4.4 Subject to the requirements of the Builders Lien Act relative to the date of issuance by the *Consultant* of the certificate of completion pursuant to paragraph 5.4.2:

.1 The *Consultant* shall issue to the Owner and copy to the *Contractor* a certificate of payment for an amount equal to the *Contract Price* less:

.1 twice the value of any deficiencies shown on the comprehensive list of items to be completed or corrected as in GC 5.4.1, as determined by the *Consultant;*

.2 the value of incomplete work as determined by the *Consultant;* and

.3 the amounts of all previous certificates of payment.

.2 The *Owner* shall make payment to the *Contractor* in accordance with the provisions of GC 5.3.1.3.

Add:

5.4.5 The *Owner* reserves the right to take possession of and use completed or partially completed portion of the *Work*, in addition to occupancy conditions included in the Contract, providing:

.1 the portion of the *Work* is ready to be used for the purpose intended, to the satisfaction of the *Consultant* and authorities having jurisdiction; and

.2 the *Owner's* possession and use do not interfere with the *Contractor's Work*; and

.3 the *Consultant* conducts a review prior to possession by the *Owner*; and

.4 any extra costs are borne by the *Owner*, subject to the provisions of GC 6.5 Delays.

Add:

5.4.6 An application for *Substantial Performance of the Work* shall be deemed complete only if submitted with required supporting documentation, including those requirements in GC 5.2.8, as determined by the *Consultant.*

GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

Add:

5.5.1.3 When applying for release of holdback, the *Contractor* shall submit a current CCDC 9B Statutory Declaration of Progress Payment Distribution by *Subcontractor* from each of the *Subcontractors* and a Worker's Compensation Board Letter of Good Standing.

GC 5.6 PROGRESSIVE RELEASE OF HOLDBACK

Add:

5.6.4 An application for progressive release of holdback will not be considered complete until all related documentation required for the

Consultant's review is received, including those requirements in GC 5.2.8.

GC 5.7 FINAL PAYMENT

5.7.4 Delete'
"no later than 5 calendar days after the issuance of a final certificate for payment,"

Add:
5.7.5 Partial payment may not be made for the completion or correction of any deficiencies shown on the comprehensive list of items to be completed or corrected prior to the date of the issuance of the final certificate of payment.

PART 6 CHANGES IN THE WORK

GC 6.2 CHANGE ORDER

Add:
6.2.3 The following shall determine *Contractor* markup on *Change Orders* by percentage:

.1 To the cost of the *Work* performed by the *Contractor* directly, the *Contractor* may add a maximum of 20% markup for overhead and profit combined.

PART 7 DEFAULT NOTICE

GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, STOP THE WORK, OR TERMINATE THE CONTRACT

7.1.5 In the first sentence, after "paragraph 7.1.1," replace "and" with "or".

PART 10 GOVERNING REGULATIONS

GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

Add:
10.2.8 The *Contractor* shall provide to the *Consultant* copies of all inspection reports from the various authorities having jurisdiction within two *Working Days* of their receipt.

GC 10.4 WORKERS' COMPENSATION

Add:
10.4.3 The *Contractor* is formally designated as the "Prime Contractor."

Add:
10.4.4 Notice of Project must be submitted to WorkSafeBC at least 24hrs prior to the start of the project.

PART 11 INSURANCE AND CONTRACT SECURITY

GC 11.2 CONTRACT SECURITY

Add:

11.2.3 The *Contractor* shall give the *Owner Notice in Writing* of any material change in the surety within 15 days of occurrence.

PART 12 INDEMNIFICATION, WAIVER OF CLAIMS AND WARRANTY

GC 12.3 WARRANTY

12.3.4 Add, "In effecting a correction of defects or deficiencies, the *Contractor* shall also bear all costs involved in removing, replacing, repairing, or restoring aspects of the *Work* that may be affected in the process of making the correction."

Add:

12.3.7 Where a material, product or installation covered by warranty fails, the stipulated warranty and warranty period shall be renewed for the specific work being replaced or repaired, with the exception of warranties referred to in GC 12.3.6.

DIVISON 01- GENERAL REQUIREMENTS

01 11 00 Summary of Work

01 25 00 Substitutions

01 31 13 Project Co-ordination

01 32 16 Construction Schedules

01 33 00 Submittals Procedures

01 33 23 Shop Drawings

01 35 29 Work Site Safety

01 35 43 Environmental Procedures

01 41 00 Regulatory Requirements

01 43 00 Quality Assurance

01 45 00 Quality Control

01 50 00 Temporary Facilities and Controls

01 77 00 Close out Procedures

01 78 39 Project Record Documents

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

.1 The Work shall include all labor, materials and equipment necessary for the construction of retaining walls, gravel pathways, tree protection fence, bioswale, gravel build up in parking lot, concrete pad viewing area, a 718.5 m^2 skate park, skateboard benches, concrete wheel stops and all items outlined in the enclosed design drawings at Huxley Community Park on Gabriola Island at 585 North Road Gabriola Island BC V0R 1X3.

.2 The Work will include the above but is not limited to the preceding list and is more fully described in the tender documents (Drawings, Specification, Schedule of Prices).

.3 The Contractor shall ensure that they are qualified and experienced and have the necessary resources for the successful completion of the Work including any amendments as they may occur during the execution of the Work.

1.2 GUARANTEE

.1 All workmanship and material is to be guaranteed for a period of 1 year from the date of substantial completion.

.2 All work must be performed to the satisfaction of the Owner within the guarantee periods.

1.3 COORDINATION OF THE WORK

.1 The Contractor shall be responsible for the coordination of the various portions of the Work in order that the combined Work will produce the desired result without delay.

1.4 SETTING OUT THE WORK

.1 The Contractor shall be responsible for all setting out and leveling required for the project.

.2 In setting out, include the preparation of grade sheets, installation of stakes, offsets, site rails and similar operations.

.3 Is responsible for the correctness of the position, levels, dimensions and alignment of the work, and for the provision of necessary instruments and labor in connection therewith. Checking of the setting out of line or level by the Owner does not relieve the Contractor of his responsibility for the correctness thereof.

.4 Carefully protect and preserve stakes, lot pins, marks and reference points, and replace if destroyed or removed.

.5 Wherever necessary suspend Work temporarily to permit the Consultant and/or Owner to inspect and check the line and grade of any portion of the work.

1.5 PROTECTION

.1 The Contractor will be responsible for protecting the work in each area, until work in that area has been completed, fully cured, and set; also for protecting other surfaces during

execution of work in accordance with the General Specifications.

.2 Should the Work be closed down for any cause whatsoever, the Contractor shall assume all responsibility for its proper protection during such a period. He shall make suitable arrangements for protection of any of the Work liable to damage.

1.6 MAINTAIN TRAFFIC AND ACCESS

.1 The Contractor or his subcontractors shall not close or obstruct access to public and shall not place or store materials or park vehicles or equipment on public roads without appropriate permits and/or a traffic management plan.

.2 The Contractor shall be responsible for maintaining access to the park (tennis court, playground, and sports court) and shall provide a site access and site safety plan for approval by the RDN.

1.7 USE OF PREMISES

.1 The Contractor shall confine apparatus, the storage of materials and the operations of workers to limits indicated by laws, ordinances, permits or by direction of the Owner, and shall not unreasonably encumber the site with his materials. The Contractor shall not load or permit to be loaded any part of the work with a weight that will endanger its safety. *The Contractor shall enforce instructions regarding signs, advertisements and prevention of fires, spills for hazardous materials* etc.

.2 Confine activities relevant to the work to immediate areas. No fires, explosions or similar dangerous activities shall be permitted on Owner's property without Owner's permission.

.3 The Contractor to be aware that there is no water source available at the site. Should water be required for construction purposes it is the contractor’s responsible to acquire this though their own sources.

1.8 STOLEN, LOST DAMAGED OR DESTROYED WORK

.1 Unless otherwise agreed no security will be provided or compensation paid by the Owner for reasonable value material or work stolen, lost, damaged or destroyed until substantial completion.

1.9 EXISTING CONDITIONS AND SERVICES

.1 It is the responsibility of the contractors to satisfy themselves by examination of the site of the work and existing conditions and materials which may be encountered on the site. It is the responsibility of the successful contractor to notify all agencies regarding the installation of any services in this contract and to obtain stakeouts and permits for the services.

1.10 DELIVERY AND STORAGE

.1 Materials shall be handled and stored on the job in such a manner that no damage shall be done to the material. An area of the site shall be allocated by the Contractor for the storage of materials brought to the job by all Sub-contractors except materials to be stored under cover. The storage area shall be kept tidy at all times and no other part of the property shall be used.

.2 Materials shall be protected from damage during handling, storage and installation.

1.11 OTHER CONTRACTS

.1 Contracts arranged for the Owner, for other types of work may be in progress by more than one Contractor.

.2 The Contractor must make early arrangements and be prepared with persons and materials to fully cooperate with the Contractor(s) of adjoining work.

1.12 PERMITS

.1 The Contractor shall be responsible for obtaining and paying for any permits required for the performance of the work.

.2 The Contractor shall obtain and pay for all permits and licenses, but not permanent easements, and shall give all notices, pay all fees, and comply with all laws, ordinances, rules and regulations bearing on the work. If the Contractor observes that drawings and specifications are at variance therewith, he shall promptly notify the Consultant and Owner in writing. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules or regulations, and without such notice to the Owner and Consultant, he shall bear all costs arising from same.

1.13 HOUSEKEEPING

.1 The Contractor shall be responsible for maintaining the work in a neat, clean and workmanlike manner at all times and for regular clean-up of the work to the satisfaction of the Owner.

.2 Keep public streets, internal roads and other construction areas clean and free from mud. If it is necessary to haul wet material, use suitable watertight trucks. Clean up any internal or public roads as required and or when directed by the Owner.

.3 Control dust by the use of water.

1.14 STARTUP MEETING

.1 After the tender has been awarded, a meeting will be arranged between the Contractor and the Consultant to review construction methods and schedules. This meeting may be waived at the discretion of the consultant or Owner.

1.15 CLEANUP

.1 The Contractor shall dispose of all rubbish and surplus materials and leave the site in a neat and presentable condition, prior to Substantial Performance.

1.16 REINSTATEMENT

.1 The Contractor shall be responsible for the reinstatement and repair of all items damaged as a result of the work. These include, but are not limited to, curbs, municipal sidewalks, and boulevards. Such repairs must be completed prior to Substantial Performance.

1.17 FINAL INSPECTION

.1 Notify the Consultant when in the Contractor's opinion, the work has been substantially performed.

.2 The Consultant will arrange a final inspection of the site between the Contractor and the City.

END OF SECTION

1.1 DEFINITION

.1 In this Section “Substitution” means a *Product*, a manufacturer, or both, not originally specified in *Contract Documents* by proprietary name but proposed for use by *Contractor* in place of a *Product*, a manufacturer, or both, specified by proprietary name.

1.2 SUBSTITUTION PROCEDURES

.1 *Contractor* may propose a Substitution wherever a *Product* or manufacturer is specified by proprietary name(s), unless there is accompanying language indicating that Substitutions will not be considered.

.2 *Contractor* may propose a Substitution wherever a *Product* or manufacturer is specified by proprietary name(s) and accompanied by language such as "or equal", "or approved equal", or other similar words. Do not construe such language as an invitation to unilaterally provide a Substitution without *Owner*’s prior acceptance in writing. Do not order or install any Substitution without a *Supplemental Instruction* or *Change Order*.

.3 Provided a proposed Substitution submission includes all of the information specified in this Section under Submission Requirements For Proposed Substitutions, *Owner* will promptly review and accept or reject the proposed Substitution.

.4 *Owner* may accept a Substitution if satisfied that:

.1 the proposed substitute *Product* is the same type as, is capable of performing the same functions as, interfaces with adjacent work the same as, and meets or exceeds the standard of quality, performance and, if applicable, appearance and maintenance considerations, of the specified Product,

.2 the proposed substitute manufacturer has capabilities comparable to the specified manufacturer, and

.3 the Substitution provides a benefit to *Owner*.

.5 If *Contractor* fails to order a specified *Product* or order a *Product* by a specified manufacturer in adequate time to meet *Contractor*’s construction schedule, *Consultant* will not consider that a valid reason to accept a Substitution.

.6 If *Consultant* accepts a Substitution and subject to *Owner*’s agreement, the change in the *Work* will be documented in the form of either a *Supplemental Instruction* or *Change Order* as specified in Section 01 26 00 – Contract Modification Procedures.

.7 If a Substitution is accepted in the form of a *Supplemental Instruction* or *Change Order*, *Contractor* shall not revert to an originally specified *Product* or manufacturer without *Consultant*’s prior written acceptance.

1.3 SUBMISSION REQUIREMENTS FOR PROPOSED SUBSTITUTIONS

.1 Include with each proposed Substitution the following information:

.1 Identification of the Substitution, including product name and manufacturer’s name, address, telephone numbers, and web site.

.2 Reason(s) for proposing the Substitution.

.3 A statement verifying that the Substitution will not affect the *Contract Price* and *Contract Time* or, if applicable, the amount and extent of a proposed increase or decrease in *Contract Price* and *Contract Time* on account of the Substitution.

.4 A statement verifying that the Substitution will not affect the performance [or warranty] of other parts of the *Work*.

.5 Manufacturer's *Product* literature for the Substitution, including material descriptions, compliance with applicable codes and reference standards, performance and test data, compatibility with contiguous materials and systems, and environmental considerations.

.6 Product samples as applicable.

.7 A summarized comparison of the physical properties and performance characteristics of the specified *Product* and the Substitution, with any significant variations clearly highlighted.

.8 Availability of maintenance services and sources of replacement materials and parts for the Substitution, as applicable, including associated costs and time frames.

.9 If applicable, estimated life cycle cost savings resulting from the Substitution.

.10 Details of other projects and applications where the Substitution has been used.

.11 Identification of any consequential changes in the *Work* to accommodate the Substitution and any consequential effects on the performance of the *Work* as a whole. A later claim for an increase to the *Contract Price* or *Contract Time* for other changes in the *Work* attributable to the Substitution will not be considered.

END OF SECTION

1. GENERAL COORDINATION

.1 Coordinate all construction activities as required to ensure efficient and orderly installation of each part of the Work.

.2 Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule and coordinate construction activities in the sequence required to obtain the best results.

.3 Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.

.4 Make adequate provisions to accommodate items scheduled for later installation under separate contract or by the RDN's own forces.

2. ADMINISTRATIVE PROCEDURES

.1 Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities shall include, but not be limited to, the following:

.1 Preparation of schedules.
.2 Installation and removal of temporary facilities.
.3 Delivery and processing of submittals.
.4 Progress meetings.
.5 Contract acceptance procedures.

3. LEED COORDINATION

.1 Not Applicable

4. GENERAL INSTALLATION PROVISIONS

.1 Require the installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

.2 Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.

.3 Inspect Materials immediately upon delivery and again prior to installation. Reject damaged and defective items.

.4 Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.

.5 Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the RDN for final decision.

.6 Install each component during weather conditions and project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.

.7 Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

.8 Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the RDN for final decision.

.9 Supervise construction activities to ensure that no part of the Work, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

5. CUTTING AND REMEDIAL WORK

.1 Do the cutting and remedial work required to make the several parts of the Work come together properly.

.2 Coordinate the Work to ensure that this requirement is kept to a minimum.

.3 Cutting and remedial work shall be performed by specialists familiar with Materials affected and shall be performed in a manner to neither damage nor endanger the Work.

END OF SECTION

1. RELATED SECTIONS

.1 Work sequence: Section 01 11 00.
.2 Shop Drawings, Product Data and Samples: Section 01 33 23.

2. CONSTRUCTION PROGRESS SCHEDULE

.1 Form of Schedule:
- .1 Horizontal bar chart of sufficient size to clearly indicate all required information.
- .2 Divide time into months, weeks and days. Identify first work day of each week.
- .3 Allow space for revisions.

.2 Content of Schedule:

- .1 List and provide a separate bar for each activity.
- .2 Indicate start and completion dates for each activity.
- .3 Indicate projected percentage of completion for each activity as of first day of each month.

.3 Progress Revisions:
- .1 Keep schedule on site and up-to-date for duration of Contract.
- .2 Indicate actual progress of work.
- .3 Indicate major changes in scope.
- .4 Revise projections of progress and completion as required.

.4 Submissions:
- .1 Within 15 Days after date of commencement of Contract, submit a copy of an initial construction schedule for the RDN's review and acceptance at the pre-construction meeting.
- .2 Revise and resubmit schedule as required by the RDN.
- .3 Submit copy of updated schedule when requested by the RDN.

3. SUBSCHEDULES

.1 Not Applicable

4. SUBMITTALS SCHEDULE

.1 Prepare a schedule of shop drawings, product data and samples which are proposed to be submitted during the course of the Contract.

.2 Submit Submittals Schedule for the RDN's review within 30 days after date of commencement of Contract.

.3 Not Applicable

.4 After review, the RDN may require submission of additional information or request that some proposed submittals not be submitted. Submittals not requested may not be processed or reviewed by the RDN.

.5 Submittals Schedule may be part of Construction Progress Schedule.

END OF SECTION

1. RELATED SECTIONS

.1	Construction Schedules	Section 01 32 16
.2	Shop Drawings, Product Data and Samples	Section 01 33 23
.3	Closeout Procedure	Section 01 77 00

2. WORKERS' COMPENSATION BOARD CERTIFICATE

.1 Before commencement of activities at the Place of the Work, obtain and submit to the RDN a certificate of an account with the Workers' Compensation Board.

3. CASH FLOW FORECAST

.1 Before submission of first application for payment, submit to the RDN for approval, a forecast of approximate monthly progress payments for the duration of the Contract.

.2 Submit revised cash flow forecasts as required as the work progresses or when requested by the RDN.

4. PHOTOGRAPHS

.1 Provide progress photographs taken every two weeks.

.3 Take progress photos from two separate viewpoints determined by the RDN.

.4 In addition, illustrate any special operation, phase of construction or special detail of unusual interest for record purposes.

.5 Take photos of primary entrance at substantial completion.

.6 Forward one clear [200 mm x 250 mm colour print] [digital photographs in .jpg format, 150 dpi resolution minimum, 3 MB maximum] of each photograph along with monthly progress estimates. Provide the following information on each photograph:

Date:
Name of Contractor:
Name of Project:
Set Number:

.7 On completion of building, provide a photograph of the completed project, taken from the best possible viewpoint to show the completed project to its best advantage. Provide two 200 mm x 250 mm colour prints of the photograph.

.8 All photographs will become the RDN's property, to be used for whatever purposes the RDN may desire.

5. CONCRETE MIX DESIGNS

.1 The Contractor is to supply mix designs from their selected concrete plan to the Consultant for review of compliance with 03 30 00 Cast in Place Concrete. Mix designs must be submitted 2 weeks prior to the first pour.

6. SHOP DRAWINGS

.1 Shop Drawings means technical data specially prepared for work of this Contract including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form.

.2 Submit shop drawings presented in a clear and thorough manner to appropriately illustrate the work.

7. PRODUCT DATA

.1 Product Data means standard printed information describing materials, products, equipment and systems; not specially prepared for work of this Contract, other than the designation of selections.

.2 Product data consisting of manufacturers' standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and descriptive data will be accepted in lieu of shop drawings provided that:

.1 information not applicable to the work of this Contract is deleted, and

.2 standard information is supplemented with information specifically applicable to the work of this Contract.

8. SAMPLES

.1 Samples means cuts or containers of materials or partial sections of manufactured or fabricated components which are physically identical to products proposed for use.

9. SUBMISSION OF SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

.1 Review, date and sign, shop drawings, product data and samples, prior to submission.

.2 Contractor is to submit Shop Drawings of all steel coping and rails per 05 50 00 Metal Fabrications.

.3 Notify the RDN, in writing, on the submission and at the time of submission, of deviations from requirements of Contract Documents.

.5 Make corrections or changes to rejected submittals and resubmit, as specified for initial submittal.

.6 The RDN's review of submittals does not relieve Contractor from responsibility for errors and omissions, nor deviations from requirements of the Contract Documents.

10. TEST REPORTS

.1 The contractor is to supply copies of all test reports, per 01 43 00 Quality Assurance, to the Consultant for materials as required by the specifications to be used in the construction of the Work, indicating that the materials comply with the Specifications. Have an approved testing laboratory make such tests at no expense to the Owner.

.2 Submit test reports to the Consultant within ten (10) days of test completion.

11. AS-BUILT RECORD DRAWINGS

.1 The Contractor must provide a set of white prints for RECORD drawing purposes.

.2 Maintain record drawings and record accurately significant changes from Contract documents caused by site conditions, changes ordered by the Owner, and any other causes.

.3 Mark all record drawing changes, on the white prints, in red ink.

.4 Record the following information:

.1 Horizontal and vertical location of underground utilities or drainage structures and referenced to permanent surface improvement.

.2 Field changes of dimension and detail.

.3 Changes made by Change Order or Field Order.

.4 Any other changes

.5 At completion of project and prior to final inspection submit completed As Built "record" drawings in digital format and three sets of white prints of said drawings to the Consultant.

.6 Additional Information required:

.1 Names address and phone number of all sub-contractors and suppliers as requested.

12. SPECIAL TOOLS AND KEYS

.1 On completion of the project and prior to Total Performance, submit to the Owner all special tools and keys required to operate, adjust, and maintain the equipment, locks, etc.

13. WARRANTIES

.1 All manufacturer's warranties for supplementary equipment and site furnishings shall be submitted to the Owner upon substantial completion of the work.

END OF SECTION

1. INTENT

.1 Submit to the RDN, for review, shop drawings, product data and samples called for by the Contract Documents and for such other items as the RDN may reasonably request.

.2 Until submittal is reviewed, do not proceed with work involving the relevant product.

2. RELATED SECTIONS

.1 Submittals Schedule: Section 01 32 16

3. SHOP DRAWINGS

.1 Shop drawings means technical data specially prepared for work of this Contract; including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form.

.2 Present shop drawings in a clear and thorough manner to appropriately illustrate the work.

.3 Identify field dimensions on drawings.

.4 Identify shop drawings by appropriate references to sheet, detail, schedule or room numbers.

.5 Maximum drawing size: 860 x 1120 mm.

.6 Leave a clear space of 100 mm x 75 mm on each sheet of shop drawings for placement of the RDN's review stamp.

.7 Submit one set of mylars for each required shop drawing.

.8 At the time of providing Shop Drawings, the Contractor shall expressly advise the Consultant in writing of any deviations in a Shop Drawing from the requirements of the Contract Documents. The Consultant shall indicate the acceptance or rejection of such deviation expressly in writing.

4. PRODUCT DATA

.1 Product data means standard printed information describing materials, products, equipment and systems; not specially prepared for work of this Contract, other than the designation of selections.

.2 Clearly mark product data to identify products.

.3 Manufacturer's standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and descriptive data will be accepted in lieu of shop drawings provided that:

.1 information not applicable to work of this Contract is deleted, and

.2 standard information is supplemented with information specifically applicable to the work of this Contract.

.4 Submit clear reproducible information as follows:

.1 One copy when product data is submitted as:

.1 Data sheets larger than 216 mm x 355 mm. Submit mylars.

.2 Unbound data sheets 216 mm x 355 mm or smaller. Submit printed or photocopied sheets.

.2 Two copies when product data is submitted as follows:

.1 Information which can not be duplicated using a photocopier with an automatic document feeder, such as bound or multi-fold information.

.2 Information containing photographs or other information that does not reproduce well on a commercial photocopier.

5. SAMPLES

.1 Samples means cuts or containers of materials or partial sections of manufactured or fabricated components which are physically identical to products proposed for use and which establish minimum standards by which the work will be judged.

.2 Label samples as to origin and intended use in the Work.

6. SUBMITTAL PREPARATION

.1 Review, date and sign, shop drawings, product data and samples, prior to submission.

.2 Determine and verify:

.1 Field measurements.
.2 Field construction criteria.
.3 Catalogue numbers and similar data.
.4 Conformance with Contract Documents.

.3 Coordinate each submittal with requirements of work and Contract documents. Individual drawings will not be reviewed until all related shop drawing and product data are available.

.4 Notify the RDN, in writing, on the submittal and at the time of submission, of deviations from requirements of Contract Documents.

7. SUBMISSION REQUIREMENTS

.1 Make submittals sufficiently in advance of date that reviewed submittals will be required and in such sequence as to cause no delay in the Work.

.2 Accompany submittals with transmittal letter, containing:

.1 Date.
.2 Project title and number.
.3 Contractor's name and address.
.4 Number of each shop drawing, product data and sample submitted.
.5 Other pertinent data.

.3 Submittals shall include:

.1 Date and revision dates.
.2 Project title and number.
.3 Name of:
.1 Contractor.
.2 Subcontractor.
.3 Supplier.
.4 Manufacturer.
.5 Name of detailer when details not prepared by Contractor, sub-contractor, or supplier.
.4 Contractor's stamp, initialed or signed, certifying review of submittal, verification of field measurements, and compliance with Contract Documents.

.4 Make corrections or changes to rejected submittals and resubmit, as specified for initial submission.

8. RESPONSIBILITY FOR ERRORS, OMISSIONS AND DEVIATIONS

.1 The RDN's review of submittals does not relieve Contractor from responsibility for errors and omissions, nor deviations from requirements of the Contract Documents.

9. REPRODUCTION OF SUBMITTALS

.1 After final review, the RDN will reproduce at his expense, the number of copies he requires, and return reviewed reproducible documents. Contractor shall reproduce at his expense the number of copies required for performance of the Work.

END OF SECTION

1. WORK SITE SAFETY - THIS CONTRACTOR IS "PRIME CONTRACTOR"

.1 The Contractor shall, for the purposes of the *Occupational Health and Safety Act* (British Columbia), and for the duration of the Work of this Contract:

.1 be the "prime contractor" for the "work site", and

.2 do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with the Act and its regulations, as required to ensure the health and safety of all persons at the "work site".

.2 The Contractor shall direct all Subcontractors, Sub-subcontractors, Other Contractors, employers, workers and any other persons at the "work site" on safety related matters, to the extent required to fulfill its "prime contractor" responsibilities pursuant to the Act, regardless of:

.1 whether or not any contractual relationship exists between the Contractor and any of these entities, and

.2 whether or not such entities have been specifically identified in this Contract.

2. SAFETY PLAN / CERTIFICATE OF RECOGNITION (COR)

.1 The Contractor shall maintain a valid safety plan OR a standard COR, COREL, or TLC for the duration of the Work of this Contract.

3. SUBMITTALS

.1 Contractor to submit 2 copies of their Safety Plan to the RDN within 15 days of Contract Acceptance.

4. SAFETY REQUIREMENTS

.1 All safety-related incidents must be reported to the RDN within 24 hours of occurrence.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

.1 Management and Disposal of Waste – provincial standard.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.

1.3 FIRES

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

1.4 DISPOSAL OF WASTES

.1 All waste must be disposed of in accordance with applicable municipal, provincial and federal standards.

.2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

1.5 DRAINAGE

.1 Provide a temporary Erosion and Sediment Control Plan identifying type and location of erosion and sediment controls provided. Ensure plan includes monitoring and reporting requirements to ensure that control measures are in compliance with the Erosion and Sediment Control Plan, Federal, Provincial, and Municipal laws and regulations.

.2 Provide temporary drainage and pumping required to keep excavations and site free from water.

.3 Ensure pumped water into waterways, sewer or drainage systems is free of suspended materials.

.4 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.6 SITE CLEARING AND PLANT PROTECTION

.1 Protect trees on site and adjacent properties where indicated on tree protection plan or as per municipal bylaw.

.2 Wrap trees adjacent to construction work and storage areas in burlap and encase with protective framework as indicated on tree preservation plan or as per municipal bylaw.

.3 Protect roots of designated trees to remain to dripline during excavation and site grading

to prevent disturbance or damage. Avoid unnecessary traffic, dumping, and storage of materials over root zones.

1.7 POLLUTION CONTROL

.1 Take precautions as required by the Owner, the Ministry of the Environment, or other jurisdictional agency, with respect to filling or grading, planting and other silt causing, and around the existing storm sewer systems. Erect and maintain approved sediment control systems to the approval of above agencies and as per the erosion and sediment control plan, where indicated to protect sediment from being deposited into storm sewer systems.

.2 Maintain temporary erosion and pollution control features installed under this Contract.

.3 Control emissions from equipment to local authorities' emission requirements.

.4 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area.

.5 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for dust-generating activities including, but not limited to:

.1 Saw-cutting.

.2 Sandblasting.

.3 Topsoil placement.

.6 Maintain sediment control systems during construction and remove accumulated deposits until completion of the Contract. Flush and clean any contamination to storm sewer systems to the approval of the Consultant prior to completion of the contract.

.7 Remove sediment control systems by the completion of the contract.

1.8 NOTIFICATION

.1 Owner or Consultant will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.

.2 Contractor: after receipt of such notice, inform Consultant of proposed corrective action and take such action for approval by Consultant.

.3 Do not take action until after receipt of written approval by Consultant.

.4 Consultant will issue stop order of work until satisfactory corrective action has been taken.

.5 No time extensions granted or equitable adjustments allowed to Contractor for such

suspensions.

Part 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

Part 3 EXECUTION

3.1 CLEANING

.1 Waste Management: separate waste materials for reuse and recycling as available.

.2 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.

END OF SECTION

1. DEFINITIONS

.1 Regulatory requirements means laws, by-laws, ordinances, rules, regulations, codes, orders of authorities having jurisdiction, and other legally enforceable requirements applicable to the Work and which are or become in force during the performance of the Work.

2. GENERAL

.1 Comply with regulatory requirements.

.2 Except as otherwise specified, apply for, obtain, and pay all fees associated with, permits, licenses, certificates, and approvals required by regulatory requirements and the Contract Documents, based on:

.1 regulatory requirements and fees in force on date of tender submission, and

.2 any change in regulatory requirements or fees scheduled to become effective after date of tender submission and of which public notice has been given prior to date of tender submission.

.3 The RDN will obtain permanent easements and rights of servitude which may be required for performance of the work.

.4 Contractor shall give all notices required by regulatory requirements.

3. CONTRACT DOCUMENTS

.1 Contractor shall not be responsible for verifying that Contract Documents comply with regulatory requirements. If Contract Documents are at variance therewith, or changes which require modification to Contract Documents are made to regulatory requirements, by authorities having jurisdiction, subsequent to date of tender closing, Contractor shall notify The RDN in writing, requesting direction, immediately such variance or change becomes known to him. The RDN may make changes required to Contract Documents, and any resulting change in Contract Price or Contract Time will be made in accordance with the General Conditions of Contract.

.2 If Contractor fails to notify the RDN in writing and obtain the RDN's direction as required in paragraph 3.1 and performs work knowing it to be contrary to regulatory requirements, Contractor shall be responsible for and shall correct violations thereof and shall bear costs, expenses and damages attributable to his failure to comply with provisions of such regulatory requirements.

4. BUIILDING CODE

.1 Conform to and perform work in accordance with the respective Building Code, except as otherwise indicated in Contract Documents.

5. PERMITS

.1 Development Permit: The RDN will apply for, obtain, and pay for development permit if required.

.2 Building Permit:

.1 Contractor shall apply for, obtain and pay for building permit and other permits required for the Work and its various parts.

.2 Contractor shall display the building permit and such other permits in a conspicuous location at the Place of the Work.

.3 Occupancy Permits:

.1 Where required by authority having jurisdiction, Contractor shall apply for, obtain, and pay for occupancy permits, including partial occupancy permits.

.2 Where Contract Document deficiencies are required to be corrected in order to obtain occupancy permits, including partial occupancy permits, the RDN will issue appropriate instructions to correct the Work.

.3 Turn occupancy permits over to the RDN.

6. LOCAL CONDITIONS

.1 Local conditions (such as fire bans) may have a bearing on the contractors work, completion dates may be extended with approval of the contract manager.

END OF SECTION

Part 1 General

1.1 GENERAL

.1 Testing and inspections will be required of all materials and works as called for in the specification sections.

.2 The Contractor shall pay for all tests and inspections called for in the specifications, including but not limited to, concrete testing, compaction of backfill and soil testing.

.3 The Owner may request and undertake additional testing of materials and construction for quality control. The Contractor shall ensure that the Owner's representative and testing agency shall have free right of access for purposes of inspection or sampling to any site, including plants or mills, where work is in progress producing materials for use in this project to permit the taking of samples and conducting tests.

.4 The Owner shall pay for any tests additional to what is called for in the specifications.

.5 Minimum testing requirements on this project include the following in addition to all tests identified above and in the individual specification sections.

.1 Concrete tests including:

a. At minimum one set of concrete tests taken from pours used in the completion of flatwork / walls / stairs / ledge work. Provide one additional set of concrete tests for every 50m^3 of flatwork, wall, stair and ledge quantities. Concrete testing for flatworks, walls, stairs and ledges to consist of three concrete cylinders tested for compressive strength at 7, 14 and 28 days as well as tests for slump and air content.

b. Shotcrete will be tested by coring three core samples from a separate test panel created outside of the finished work. Test panel to be minimum 350mm x 350mm x 140mm thick. At minimum one test panel is to be built and three core samples are to be taken. One additional test panel and three additional core samples are to be completed for every 50m^3 of shotcrete. Shotcrete testing to consist of three concrete cores tested for compressive strength at 7, 14 and 28 days.

.2 Concrete cylinder samples and shotcrete test panels to remain on site and be protected, in a manner and for duration as directed by the approved testing agency, during the course of the work to ensure identical environmental conditions of temperature and humidity while curing.

.3 Concrete cylinder samples to be labeled along with a reference plan in order to accurately trace the date of the pour and the project location for which they represent.

.4 Compaction tests including:

a. Subgrade shall be inspected and approved by a geotechnical engineer prior to placing any sub base or granular base material.

b. Sub base compaction test location points completed for every 100m^2.

c. Granular base compaction test location points completed for every 80m^2.

d. compaction tests to be accompanied by a reference design layout plan.

.5 Provide original test results to the consultant within 10 days of test completion per 01 33 00 Submittal Procedures.

.6 Inspection panels for concrete work will be required prior to authorization for general concrete work within the skatepark. The Contractor and the contract administrator/Owner/Consultant shall agree to prepare one bank panel or one transition panel for review of shape and finish, or the Consultant may waive this requirement.

.1 The Contractor may choose to construct the inspection panel within the contract area but may be required to remove the work if it does not meet specification for shape and finish.

.2 The consulting team may utilize a ‘true’ dimensional straight edge to check for consistent shape over the entire panel. A radius template may be used to check the shape of the transition panel. No discrepancy greater than 6mm over 2.4m will be acceptable.

.3 Written approval from the consultant is required prior to additional concrete pours. Additional concrete poured without written approval of the inspection panels are done so at the risk of rejection.

.4 The approved inspection panels will become the quality assurance standard for the remainder of the work.

END OF SECTION 01 43 00

1. GENERAL

.1 Testing and inspections will be required of all materials and works as called for in the specification sections.

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.4 The Owner shall pay for any tests additional to what is called for in the specifications.

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a. At minimum one set of concrete tests taken from pours used in the completion of flatwork / walls / stairs / ledge work. Provide one additional set of concrete tests for every 50m3 of flatwork, wall, stair and ledge quantities. Concrete testing for flatworks, walls, stairs and ledges to consist of three concrete cylinders tested for compressive strength at 7, 14 and 28 days as well as tests for slump and air content.

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.2 The consulting team may utilize a 'true' dimensional straight edge to check for consistent shape over the entire panel. A radius template may be used to check the shape of the transition panel. No discrepancy greater than 6mm over 2.4m will be acceptable.

.3 Written approval from the consultant is required prior to additional concrete pours. Additional concrete poured without written approval of the inspection panels are done so at the risk of rejection.

.4 The approved inspection panels will become the quality assurance standard for the remainder of the work.

2. REFERENCE STANDARDS

.1 Within the text of these specifications, reference may be made to the following standards:

.1 ANSI - American National Standards Institute
.2 ASTM - American Society for Testing and Materials
.3 CGSB - Canadian General Standards Board
.4 CSA - Canadian Standards Association
.5 CAN - National Standard of Canada (published by CGSB)
.6 FM - Factory Mutual Engineering Corporation
.7 ULC - Underwriters Laboratories of Canada

.2 The referenced standard and any amendments in force on the day of receipt of bids shall be applicable to the work during the duration of the Contract.

END OF SECTION

Part 1 General

1.1 PROTECTION

.1 The Contractor shall provide, erect and maintain adequate temporary rigid site fencing, barricades, warning signs and other measures as required within all applicable Federal and Provincial occupational health and safety acts, latest edition, and reasonably by the Owner, for the protection of the public and workers at all excavations, closures, detours, and points of danger. Provide any extra protection as required by all applicable Federal and Provincial occupational health and safety acts, latest edition, and the Owner. Maintenance of all site fencing shall be the responsibility of the Contractor and any damaged or removed fence panels must be corrected immediately.

1.2 CONSTRUCTION FACILITIES

Provide maintain and pay for the following services, and any other services required for the completion of the work, for the use of all trades:

.1 Power Service: Power is available at the tennis shed, adjacent to the skatepark. The Contractor is free to use this power, any additional power required for the contract by all trades shall be furnished and paid for by the Contractor.

.2 Temporary Water Supply: Water supply required for the performance of the contract by all trades shall be furnished and paid for by the Contractor.

.3 Toilet Accommodations: A portable toilet is available on-site, as maintained for public park users. The contractor shall provide an additional portable toilet for the use of all trades.

.4 Dust Palliation: Throughout the entire contract period the Contractor shall, as required, effectively water-sprinkle and dampen the working roads used in the operation and involved portions of the site with such frequency as will satisfactorily allay any dust during all hours that work is being performed.

.5 Removal of Temporary Construction: Temporary power service, office facilities, toilets, barricades, storage sheds, utilities, temporary access roads and other construction, facilities and services of temporary nature shall be removed from the site as soon as the progress of the work will permit.

.6 Construction Debris: Contractor shall provide adequate portable facilities, on a continuous basis, for garbage and construction debris collections and removals for the use of all trades.

1.3 TEMPORARY SIGNS

.1 Maintain the site and structures free from advertisement of any kind except as specifically authorized by the Owner.

END OF SECTION 01 50 00

Part 1 General

1.1 DISPOSAL OF WASTE MATERIAL

.1 Upon completion, remove all rubbish and waste from site an approved off site waste disposal facility. Coordinate the removal with all subtrades and/or suppliers. Leave site in clean condition.

1.2 REMOVAL OF TEMPORARY FACILITIES

.1 Upon completion remove all temporary facilities and services, per Section 01 50 00 TEMPORARY FACILITIES AND CONTROLS.

1.3. SUBMITTALS

.1 Certificates: Upon completion, obtain and submit to Owner all "Certificates of Approval" as issued by plumbing, electrical, or by any other inspection authority having jurisdiction over the site.

.2 As Built Record Drawings: Upon completion, submit to Consultant and Owner completed as built record drawings, each bearing the Contractor's stamp of "approved correct", in accordance with 01 33 00 Submittal Procedures.

.3 Adjusting Tools and Spare Parts: Provide necessary adjusting tools, wrenches, spares and the like as specified or required at no additional cost to Owner, in accordance with Section 01 33 00.

END OF SECTION 01 77 00

1. DESIGNATION OF PROJECT RECORD DOCUMENTS

.1 Request from the RDN at commencement of the Work the following documents to be designated and retained as project record documents:

.1 One copy of specifications manual(s):
.2 Two complete sets of Drawings.
.3 One set of all Addenda issued.

2. MAINTENANCE OF PROJECT RECORD DOCUMENTS

.1 Store record documents in site office apart from documents used for construction.

.2 Label each document "PROJECT RECORD" in neat, large printed letters.

.3 Maintain record documents in a clean, dry and legible condition. Do not use record documents for construction purposes.

.4 Keep record documents available for inspection by the RDN.

3. RECORDING INFORMATION ON PROJECT RECORD DRAWINGS

.1 Record information on cad drawings.

.2 Use coloured erasable pencils to record information.

.3 Use different colours to record information pertaining to each major system.

.4 Record changes and variations from Contract Drawings concurrently with construction process. Do not conceal any work until required information is recorded.

.5 Legibly mark project record drawings to record actual construction, including:

.1 Measured depths of foundation elements in relation to finished first floor datum.

.2 Measured horizontal and vertical locations of underground utilities and appurtenances. Reference locations to permanent surface improvements.

.3 Measured locations of internal utilities and appurtenances concealed in construction. Reference to visible and accessible features of construction.

.4 Field changes of dimension and detail.

.5 Changes to equipment layout and services.

4. SUBMISSION OF PROJECT RECORD DOCUMENTS

.1 Prior to placing concrete slab, submit one set of project record drawings showing locations of:

.1 Site services.
.2 Underslab services, equipment and materials.

.2 Submit balance of completed project record documents before or with application for Interim Acceptance of the Work.

.3 Submit with each submission a covering letter including:

.1 Date of Submission.
.2 Project Title, Plan No. and Centre Code.
.3 Contractor's name, address and telephone number.

END OF SECTION

TECHNICAL SPECIFICATIONS

03 10 00 Concrete Reinforcing

03 30 00 Cast in Place Concrete (outside skatepark extent)

31 11 00 Clearing and Grubbing

32 01 56 Tree Protection

32 15 40 Landscape Aggregates

32 31 13 Chain Link Fences and Gates

32 91 13 Growing Medium

03 30 00 Cast in Place Concrete (Skatepark)

05 50 00 Metal Fabrications

07 92 00 Joint Sealants

31 00 00 Earthworks

31 23 00 Excavation and Fill

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 Cast in Place Concrete Section 03 30 00

1.4 REFERENCE STANDARDS

.1 Except as stated otherwise, all work shall conform to the following:

.1 B.C. Building Code (newest edition).
.2 CAN/CSA-A23.2 Methods of Tests for Concrete
.3 CAN/CSA-A23.3 Code for the Design of Concrete Structures for Buildings.
.4 CAN/CSA- A23.1 Concrete Materials and Methods of Concrete Construction
.5 CAN/CSA G30.5–M Welded Steel Wire Fabric for Concrete Reinforcement.
.6 CAN/CSA G30.12-M Billet-Steel Bars for Concrete Reinforcement.
.7 CAN/CSA W186–M Welding of Reinforcement Bars in Reinforced Concrete Construction.
.8 ACI manual of Standard Practice for Detailing

.2 Where the standard is referred to in this specification 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 has begun.

1.6 TESTING AND APPROVALS

.1 As per MMCD 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 Substitution of different size bars/wires permitted only upon written approval of Owner's Representative.

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 re-bent.

.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 Contract 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 **DESCRIPTION**

.1 Section Includes:

.1 Concrete Flatwork
.2 Stairs
.3 Planter Walls/Retaining Walls
.4 Amphitheatre/Seat Walls
.5 Concrete on Slab

.2 Furnish labour, materials, equipment and services necessary for supplying, placing, curing, finishing and patching all site cast concrete shown on drawings and/or specified herein.

.3 The work of this section shall also include but shall not necessarily be limited to the following:

.1 Supply and installation of expansion joints and control joints where shown and as detailed.
.2 Supply of all testing services.
.3 Supply and installation of all concrete.

1.2 **RELATED WORK**

.1	Concrete Reinforcing	Section 03 20 00
.2	Landscape Aggregates	Section 32 15 40

1.3 **SAMPLES**

.1 At least two (2) weeks before beginning work, construct 2m x 2m samples of specialty finishing for concrete. Confirm with Owner's Representative for the location and size prior to constructing samples. Construct additional samples as necessary until a sample is approved by the Owner's Representative.

.2 Samples shall be reviewed and approved by the Owner's Representative prior to commencing concrete work. Any concrete placed prior to sample approvals may be rejected.

.3 The sample area SHALL NOT be part of the finished paving installation unless written approval has been obtained from the Owner's Representative after review.

.4 Protect approved samples until acceptance of all concrete paving. Approved samples shall be the basis for evaluation of finish and installation quality.

1.4 **PROTECTION**

.1 Protect this work from inclement weather, sun or other injury which would impair the finish durability or strength specified.

1.5 **REFERENCE STANDARDS**

.1 Concrete shall be ready-mixed and conforming to CSA A23.3 and most recent NBC for

mixing, transporting and placing.

.2 No admixtures are permitted without the Owner's Representative's approval.

.3 All reinforcing shall be fabricated, placed and supported in accordance with CSA A23.3 and NBC.

.4 Do not place concrete until reinforcing has been inspected by the Owner's Representative. Inform the Inspector a minimum of 24 hours prior to placing.

.5 Minimum compressive strengths at 28 days.

.1	For footings, grade beams stairs, and walls	18 MPa; Maximum slump = 90mm.
.2	For slabs	32 MPa; Maximum slump = 70mm.

.6 Concrete reinforcing shall conform to CSA G30.12M, grade 300 or better.

.7 Footing and wall reinforcing shall be continuous in straight runs and at corners and intersections. Bar lap - 150mm.

1.6 PRODUCT DELIVERY

.1 Concrete shall be delivered from a plant approved by the Owner's Representative.

1.7 APPROVED EQUALS

.1 All items as specified or pre-approved equals. Contractor to submit equivalents at least 14 days prior to the mobilization of work under this section.

1.8 ACCEPTANCE OF FINISHES

.1 All finishes shall be compared to the approved samples on site for compliance.

.2 Rejected horizontal concrete surfaces (i.e. all slab paving) shall be removed to the nearest control and/or expansion joint in all directions and the rejected panel shall be replaced. Patching of horizontal concrete surfaces will not be accepted.

.3 All work required to replace rejected finishes shall be at the Contractors expense and no claim for delay or extra costs will be accepted.

1.9 INSPECTION AND TESTING

.1 A qualified testing agency paid by the Contractor and approved by Owner's Representative shall be appointed to prepare mix designs, perform field quality tests and test and report on concrete strength.

.2 Field tests for concrete quality shall be in accordance with CAN3 A23.1 and CAN3 A23.2.

.3 All testing to be completed prior to substantial completion.

PART 2: **PRODUCTS**

2.1 **MATERIALS**

.1 Portland Cement: to CAN/CSA-A5

.2 Concrete Forms:

.1 Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces

.3 Reinforcing Steel: Refer to Section 03 20 00 Concrete Reinforcing for standards and requirements and Contract Drawings for size.

.4 Aggregate base: Refer to MMCD and Section 32 15 40 Landscape Aggregate for standards and requirements. Place and compact aggregate base as per Contract Drawings.

.5 Form Ties: Noncorrosive snap type. Fiberglass Loop Tie or approved other for Board Form Concrete Walls

.6 Water: potable to CAN/CSA-A23.

.7 Expansion Joints: Bituminous impregnated fiber board to ASTM D1751-83 (1991) (AASHTOM213-74). No joint material protruding at surface of slabs. Recess joint material min. 25mm from top of slab and fill joint with flexible joint compound – Sika 1A or equivalent. No Bituminous fiber board material shall be visible at top of slab.

2.2 **MIX DESIGN**

.1 Contractor to submit mix design to Consultant for approval 2 weeks prior to first pour.

.2 Flat work and Vertical Elements (Reinforced)

.1 Class of Exposure C-1 (table II CSA A23.1-00)
.2 Minimum compressive strength at 28 days of 32MPA.
.3 Slump 80 +/- 20 max.
.4 Maximum water cement ratio 0.40 (Table CSA A23.1-00)
.5 Air content 5% to 8%
.6 Maximum size of coarse aggregate 19mm.
.7 Use water reducing agents throughout.

2.3 **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 MasterEmaco ADH 326, Master Builders

2.4 **NON-SHRINK GROUT FOR PATCHING:** Acceptable materials include but are not limited to:

.1 MasterFlow Mortar, Master Builder's,

.2 Fast- Set Patching Concrete, Target

2.5 **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.

2.6 **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-Graffiti 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 **SUBBASE PREPARATION AND BUILD-UP ON GRADE**

.1 Excavate subgrade to remove all organics.

.2 Compact soil subgrade uniformly to standard set out in Contract Drawings.

.3 Proof-roll prepared subgrade surface below concrete paving locations to identify soft pockets and areas of excess yield.

.4 Place aggregate base and compact by tamping with plate vibrator, and screed to depth indicated in Contract Drawings.

.5 Remove loose material from compacted subbase surface immediately before placing concrete.

3.2 **SUBBASE PREPARATION AND BUILD-UP ON SLAB**

.1 Contractor is responsible for build-up above waterproofing and protection board.

.2 For horizontal applications subbase as Contract Drawings.

.1 Minimum depth of subbase is 150mm or as per Contract Drawings to achieve grades as specified on plan.
.2 Void form or other build-up may be considered to establish subgrade prior to placement of subbase.
.3 Where structural slab is angled subbase to be aggregate base or carefully constructed

void form cut with heated cable to match design grades as per Contract Drawings.

.3 For vertical applications install all elements as per Contract Drawings.

.4 Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 FORMWORK

.1 Form lumber shall be free from defects.

.2 The strength and rigidity of forms shall be such that they will not deflect or leak. Bulges or deflection in vertical surfaces may be cause for rejection.

.3 Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

.4 Form ties shall be min. 6” below top of concrete wall. Removal of form ties shall be done carefully to avoid marking concrete. Leave tie holes open/ Patch and grind tie holes after removal.

.5 All exposed corners and edges shall be as detailed.

3.4 REINFORCING STEEL

.1 Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement

.2 Concrete cover on reinforcing steel: Min. 2” or as per Contract Drawings.

3.5 JOINTS

.1 General: Form construction, expansion, and control joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.

.2 Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at expansion joints. Form concrete flatwork in a “leap-frog” panel pattern if the area is larger than 300m².

.3 Expansion Joints: Form expansion joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed vertical objects, and where indicated. Joint compound to be flush or below elevation of adjacent slab. Fill remaining open void with flexible epoxy or joint sealant of Sikaflex 1A or similar. Set expansion joint at a spacing of no more than 9M or confirm with Owner’s Representative.

.4 Control Joints: Form weakened-plane control joints, sectioning concrete into areas as

indicated. Set control joint at a spacing of no more than 3M or confirm with Owner's Representative. Construct control joints for a depth equal to at least one-fourth of the concrete thickness.

.1 Saw Cuts: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch (3-mm) wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks. All sawcuts to CAN3-A23.1-M77.

.2 Tooled Joints: Form control joints after initial floating by grooving and finishing each edge to a radius of 1/8-inch (3-mm). Repeat grooving of control joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

.5 Vertical Joints: Form 3/4"x3/4" reveal with 1/8" bevel 2 sides on exposed surfaces of any wall or bench at a spacing of no more than 2M or confirm with Owner's Representative. Vertical joint shall be equally spaced between two ends. Coordinate vertical joints with any recessed light or construction joints.

.6 Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch (6-mm) or 1/8-inch (3-mm) radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 **PLACING**

.1 Obtain Owner's Representative approval at least forty-eight (48) hours prior to placing concrete. At the time of placing, all formwork shall have been thoroughly washed and shall be clean and free from all dirt and debris. Formwork shall be wetted down to eliminate suction as far as practical and wash water shall be drained away.

.2 Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

.3 Concrete shall be deposited as near as practical to its final position to avoid segregation and flowing. It shall be well tamped into position, into corners and around embedded items without displacing the reinforced steel.

.4 Handling, transporting and placing of concrete must be done in a manner to maintain uniformity of concrete and avoid segregation.

.5 Concrete shall not be allowed to drop freely more than 1.5m.

.6 Concrete shall be compacted with appropriately sized vibrators and finishing machines to allow movement between all reinforcing steel.

.7 Vibrators shall not be allowed to come in contact with formwork for exposed concrete.

.8 The method, sequence and interruption where necessary of pours shall be determined to achieve the best interest of the design.

.9 The surface of concrete at all joints shall be thoroughly cleaned and latency shall be removed.

.10 When applicable, the cold weather requirements of CAN3 A23.1 shall be followed.

.11 Slabs shall be screeded in two passes with a high frequency mechanically vibrating screed which is chamfered to eliminate concaving of the finished slab.

3.7 SURFACES

.1 Screeds shall be installed securely, true to grade shown.

.2 After concrete has been placed to screeds, strike off concrete level and flush with screeds with true, wooden, strike off bar.

.3 Immediately after striking off concrete, level it and consolidate it with wooden bull float, or in limited access areas, with wooden darby. Complete levelling and consolidation before free moisture rises to surface (bleeding).

.4 Tolerances: Finished surfaces shall be true to intended grades and levels set out in Contract Drawings and shall be free from trowel marks and “washboard” chatters.

.5 Exposed corners and edges shall be as detailed. Surfaces at tooled edges shall be troweled and sand blasted to remove tool edge marks.

3.8 FINISHING OF CONCRETE SURFACES

.1 After final floating, apply surface finishes as per Contract Drawings

.2 Notify the Owner’s representative at least 48 hours in advance to establish a standard finish for subsequent work

.3 Sandblasting

.1 Vibrate and float the concrete sufficiently so mortar is brought to the surface to fill all voids. Over trowel to remove mortar and float lines. Finish surface will be smooth without imperfections which will ghost through finish sandblasting.

.2 Light sandblast to a uniform finish without excessive exposure of aggregate.

.4 Form Finish:

.1 Rough Form Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities

.2 Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

.5 Smooth Steel Trowel Finish

.1 Trowel tops of walls to smooth, true, dense, surface, flat and level or sloped as shown. Uniformity shall be equal to or better than existing tops of walls on site.

.6 Board Form Finish

.1 Contractor to provide board formed plank samples for Owner's Representative's approval.

.2 Board formed planks to be 2x lumber, random size and placement (3½", 5½" and 7¼") with 1/8" joints between planks. Some planks may need to be ripped to allow for proper coursing at significant joint locations. Ripped planks shall be between 3½" and 7¼" wide.

.3 Form ties to be fiberglass, located within the horizontal joints and uniformly spaced.

.4 Contractor to provide mock-up for Owner's Representative's approval.

.7 Broom Finish

.1 Finish surface of concrete to smooth surface with magnesium or wood float trowel and brush or broom to provide uniform "light broom finish" non-skid surface to match approved sample.

.2 Broom or brush at right angles to edges or as otherwise required to match adjacent finish or as directed by Owner's Representative. Pattern shall be consistent over entire slab. Consult with Landscape architect for complex slab areas that may require coordination of broom pattern direction.

.3 Install expansion joints and make saw cut control joints as shown on the Contract Drawings or as directed by Owner's Representative.

.4 Care must be taken to not push a broom finish on a slab panel greater than 3m. Install construction joint to isolate 3m sections so that broom finish can be consistent, and straight for all work

.5 Owner's Representative will not accept any concrete which has been overworked by trowelling, dusted with dry cement or finished with a mortar coat.

3.9 PAVING TOLERANCES

.1 Comply with tolerances in ACI 117 (ACI 117M) and as follows:

.1 Elevation: 1/4 inch (6 mm).
.2 Thickness: Plus 3/8 inch (10 mm), minus 1/4 inch (6 mm).
.3 Surface: Gap below 10-feet- (3-m-) long; unleveled straightedge not to exceed 1/2 inch (13 mm).
.4 Joint Spacing: 3 inches (75 mm).
.5 Control Joint Depth: Plus 1/4 inch (6 mm), no minus.
.6 Joint Width: Plus 1/8 inch (3 mm), no minus.

3.10 PATCHING AND REPAIRS

.1 All repairable defective areas shall be patched immediately after form removal.

.2 No patching of defective horizontal surfaces shall be permitted. See item 1.8.

.3 All honeycombed and other defective concrete shall be removed down to sound concrete. The area to be patched and an area of at least 150mm wide surrounding it shall be dampened to prevent absorption of water from the patching mortar. A bonding grout shall be prepared using a mix of approximately 1 part cement to 1 part fine sand passing a no. 30 mesh metric size sieve, and shall be mixed to the consistency of thick cream and shall then be well brushed into the surface.

.4 Fins and other projections in exposed areas shall be removed by grinding.

.5 All cracked or chipped concrete to be replaced to nearest cold joint or saw cut. Contractor to ensure finish matches adjacent concrete work.

.6 Contractor to removal all debris from concrete surface to ensure uniform finish.

3.11 INSERTS AND OPENINGS

.1 Install all embedded steel connections, anchorages, inserts, anchor bolts, angles, sleeves, expansion joint covers, reglets and other embedded items shown or called for on the drawings, specified, or required for other sections.

3.12 CURING

.1 Concrete shall be cured in accordance with requirements of CAN3 A23.1.

.2 Cure troweled surfaces with burlap kept constantly wet. Do not use burlap which has been used for sugar bags. Use old burlap from which sizing has been completely removed. Begin curing immediately after troweling. Other fabric materials may be acceptable – consult with Owners Representative.

.3 Paving shall be cured for a period of not less than ten (10) days by an approved method. During this curing period no part of the concrete shall be permitted to become dry even for a short while. The curing medium shall be applied so as to prevent cracking of the surface of the concrete immediately after placing, and it shall be maintained so as to prevent loss of water from the concrete for the duration of the entire curing period.

.4 Fresh concrete shall be protected from heavy rains, flowing water, mechanical injury and injurious action of the sun.

.5 Other finishes may be cured by any of the methods specified in CAN3 A23.1 - M77, if required.

3.13 ADJUST AND CLEAN

.1 Surplus material shall be cleared away and removed from the work site.

3.14 APPLICATION OF ANTI-GRAFFITI COATING (for Park Project)

.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 manufactures technical data and application instruction sheet.

END OF SECTION 03 30 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 clear and grub site in preparation for landscape or site work indicated on the contract drawings.

.2 The work shall include but is not limited to the following areas:

.1 Clearing and grubbing operation.

.2 Disposal of material cleared and grubbed from the site.

1.3 Related Work

.1 Tree Protection — Section 32 01 56

1.4 Protection

.1 Protect existing fencing, natural features, benchmarks, existing buildings, existing pavement, sub surface and surface utility lines, and water courses and miscellaneous items noted on contract drawings as to remain.

.2 Protect all existing trees, landscape plant beds, miscellaneous plant material and their associated root areas within the area to be cleared and grubbed that have been identified to remain on the contract drawings.

.3 Protect all existing trees, landscape plant beds, miscellaneous plant material and their associated root areas that are outside of area to be cleared and grubbed.

.4 The Contractor, at no cost to the Owner shall make good all damages incurred during the clearing and grubbing process.

1.5 Nesting Season

.1 All clearing, grubbing and tree removals is to be carried out outside of the bird nesting window (March to August). If this is not possible contractor is to engage a Registered Professional Biologist to provide a nesting survey at the contractor's expense prior to taking down any trees.

PART 2: PRODUCTS (Not Applicable)

PART 3: EXECUTION

3.1 Clearing and Grubbing

.1 All excavation shall be undertaken in accordance with the Standard Operating Procedure- Soil and Excavation Water Contamination Management.

.2 Clear and grubbing operations shall be limited to areas indicated on the Contract drawings. Contractor shall identify the areas to be cleared and grubbed in the field by flagging or staking for Owner's Representative review prior to the start of work.

.3 Clear all trees, existing plant growth, undergrowth, dead wood, surface rocks or boulders and all deleterious material.

.4 Grub out all stumps, roots rubbish over 50mm (2") in size to minimum depth of 300mm (12") below indicated finish grade.

.5 Grub out all parts of noxious or invasive plants including but not limited to varieties of Horsetail, Blackberry, Ivy, and Japanese Knotweed

.6 Remove and dispose of off site, embedded rocks and boulder less than 0.15 cubic metres (5 cubic feet) encountered during clearing and grubbing operation.

.7 Dispose of cleared and grubbed material in an approved off site dump location. No on site burning or burying of grubbed material will be allowed.

.8 Do not clear or grub existing trees, landscape plant beds, miscellaneous plant material and their associated root areas that have been identified on the contract drawings or marked in the field by the Owner's Representative or Contractor to remain.

3.2 Finished Surface

.1 Finished grade of the areas that have been cleared and grubbed shall be left generally smooth and level and suitable for immediate rough grading operations.

END OF SECTION 31 11 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 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 Project Arborist including hand excavation and root pruning.
.4 Watering, fertilizing, and all other measures directed by Project Arborist as required to maximize the health and prospects for survival of the trees.

1.3 RELATED WORK

.1 Clearing and Grubbing	Section 31 11 01
.2 Growing Medium	Section 32 91 13

1.4 REFERENCE STANDARD

.1 International Society of Arboriculture standards.

.2 ANSI A300 Tree Pruning Guidelines

1.5 DEFINITIONS

.1 A No Build Zone shall be established on site under the direction of the Project Arborist. It must be demarcated on site and fenced off from all impacts of construction. Refer to Arborist Report for No Disturbance Zone information. Minor adjustments may be required to meet site species/specific conditions. Confirm on site with Project Arborist.

.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 No Disturbance Zone.

.3 No Project Arborist approvals for root pruning beyond the limits of No Disturbance Zone are required. All severed or fractured roots over 2cm in diameter outside the zone 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 Arborist using clean sharp pruning tools.

1.7 **QUALITY ASSURANCE**

.1 Inspection: The Contractor shall give at least forty-eight (48) hours notice to Project Arborist 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. No activity can occur within No Build Zone without supervision of Project Arborist.

.2 Where requested, all root pruning and branch pruning shall be done to recognized arboriculture industry standards by Project Arborist or Tree Surgeon under direct supervision of Project Arborist.

PART 2: **PRODUCTS**

2.1 **PROTECTIVE BARRIER**

.1 Protective Barrier shall be a 1.2m high fence to be securely installed, plumb, and securely fixed in the approved positions. 2”x4” wood post, top and bottom rails and cross-bracing. Corners shall be firmly fastened and staked into ground with no floating.

.2 Orange plastic web snow fencing, 1.2m high “Tenax" or pre-approved equal.

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.

.2 The following is to be stated on the sign:

TREE AND VEGETATION PROTECTION AREA, DO NOT REMOVE OR RELOCATE FENCE DURING CONSTRUCTION:
No cutting, No Grade Changes, No Dumping, No Burning, No Toxic Substances (paint, solvents, fuel, oils), and No storage of material or equipment is permitted within this area.

2.3 **WATER, FERTILIZERS, MISCILLANEOUS**

.1 Water, fertilizers and miscellaneous materials shall be as specified in other sections of the specification and as directed by Project Arborist.

2.4 **STAKES AND FASTENERS**

.1 Wood Stakes: 2”x4” wood stakes.

.2 Zip Straps: 140mm (5.5”) long, black, nylon lock straps.

.3 Drain Tile: 150mm (6”) diameter Schedule 40 PVC (polyvinyl chloride) perforated pipe conforming to ASTM D 1784.

.4 Burlap: 10 ounce, untreated, woven, natural jute based burlap.

2.5 FILL MATERIALS

.1 Approved premixed growing medium per Section 32 91 13 Growing Medium or specified as per Arborist Report or directed by Project Arborist.

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 No Build Zone (locations as shown on Tree Management Plan). Maintain this barrier until Substantial Performance and remove from the site at that time. Support snow fencing on posts driven vertically into the ground, at the required spacing as approved by the Project Arborist.

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 No Build Zone. 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 No Build Zone except as authorized by Project Arborist.

.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 Project Arborist.

3.4 BRANCH PRUNING

.1 Do not prune any retained tree to compensate for reduction of roots unless specifically instructed by Project Arborist.

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 Project Arborist. Suggested Summer Watering Schedule: The No Build Zone 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 Project Arborist.

.2 Fertilize Retained Trees to stimulate regeneration of lost roots and foliage. Fertilization program only as recommended by Project Arborist.

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 Project Arborist.

.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 maneuverable 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 fill material specified in 2.5.
- .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 Project Arborist, 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 Project Arborist.

.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 Project Arborist 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 No Build Zone unless authorized by Project Arborist.

.2 Drain Tile Installation:

- .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 Project Arborist to review drain tile installation prior to backfill operation.

.3 Drain Tile Backfill:

- .1 Place a minimum of 150mm (6”) cover of 19mm clear crush around perimeter of drain tile.
- .2 Fill growing medium to proposed grades.
- .3 Fill vertical drain tiles with 19mm clear crush. Ensure clear crush is flush with top of drain tile.
- .4 Wrap filter fabric between clear crush and growing medium.

3.8 LOWERING GRADE AROUND EXISTING TREES

.1 DO NOT LOWER GRADES within or adjacent to the No Build Zone unless authorized by Project Arborist.

.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 Project Arborist
- .3 Construct a growing medium dike at dripline to retain water. Dike to be constructed at each individual tree location unless instructed otherwise by Project Arborist.

.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 plant material as indicated on the Contract Drawings.

1.3 DESCRIPTION

.1 Section includes:

.1 Drain Rock and Granular Base
.2 Crushed Granular Paving
.3 Landscape Boulders
.4 Edge Restraint

1.4 RELATED WORK

.1 Cast in Place Concrete	Section 03 30 00
.2 Growing Medium	Section 32 91 13

1.5 SAMPLES

.1 Provide one (1) litre sample of each type of aggregate to Owner's Representative at least seven (7) days before beginning work for approval.

1.6 INFORMATION SUBMITTALS

.1 Product Data: For each type of product to be used.

1.7 QUALITY ASSURANCE

.1 Prior to the start of construction provide a stake layout or line painting of all edges of granular path, amphitheatre, landscape boulder retaining wall for review by Owner's Representative. Stake spacing to be such that the shapes and forms of the landscape aggregate areas can be clearly seen.

.2 Protect all work from damage and protect all property from damage arising from this contract. Take every precaution necessary to avoid damage to drainage and irrigation systems, adjacent growing medium and planting.

1.8 **SITE CONDITIONS**

.1 The Contractor shall be responsible for repair of any utilities damaged in the course of work of this section.

.2 The Contractor shall coordinate all work that crosses crushed granular paving areas to ensure that appropriate sleeves are installed prior to the start of work of this section.

1.9 **APPROVED EQUALS**

.1 All items as specified or pre-approved equals. Contractor to submit equivalents at least fourteen (14) days prior to the mobilization of work under this section.

PART 2: **PRODUCTS**

2.1 **MATERIALS**

.1 Drain Rock and Granular Base

.1 Size: 19mm Minus
.2 Clear crushed granite. Refer to MMCD Section 31 05 17 Aggregates and Granular Materials, Section 32 11 23 Granular Base for materials and execution.

.2 Crushed Granular Paving

.1 Size: 9mm Minus
.2 Shall consist of sound, durable stone particles free from clay, organic material or other deleterious matter as per ASTM C 136.

.3 Landscape Boulders

.1 Boulders and rocks removed from site:
.1 Refer to MMCD Section 31 23 17 Rock Removal for material definitions.
.2 Size: 0.5m -1m Diameter.
.3 Store materials in an open area away from construction. Deliver notice at least fourteen (14) days prior to final boulder placement to Owner's Representative for inspection. Only those that meet the criteria can be reused onsite. Dispose unqualified materials offsite.
.2 New boulders and rocks imported to site:
.1 Natural stone blocks of an approved size and shape. Refer to Contract Drawings for criteria or confirm with Owner's Representative.
.2 Bedding material shall be as specified in the Contract Drawings and shall meet the requirements of any standard specification sections which applies in MMCD.

2.2 **EDGE RESTRAINT**

.1 Pour in place Concrete

.1 As per contract drawings

PART 3: **EXECUTION**

3.1 **INSPECTION**

.1 Areas of work to receive crushed granular paving shall be examined and unsatisfactory conditions reported to Owner's Representative. Commencement of work shall imply acceptance of conditions.

.2 The subgrade shall be well drained.

.3 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.

3.2 **SUBBASE PREPARATION ON GRADE**

.1 Excavate soft and unstable areas of subgrade that cannot be compacted to standard noted, fill and compact with approved granular material.

.2 Compact subbase to 95% MPD.

.3 Ensure subbase is true to line and grade and allows for sufficient depth to ensure finish grade can be established as noted on plans.

.4 Place drainage geotextile over compacted subbase, overlapping ends and edges at least 300mm (12").

3.3 **SUBBASE PREPARATION AND BUILD-UP ON SLAB**

.1 Waterproofing as per Contract Drawings. Exercise care in setting material over waterproofing. Ensure protection materials are not displaced and waterproofing is not punctured or otherwise damaged. Carefully replace protection materials that become displaced. Notify Owner's Representative and arrange for repair of damaged waterproofing before covering with aggregates

.2 Subbase as per Landscape Architect's/Civil Designer's Drawings.

.3 Place drainage geotextile over compacted subbase, overlapping ends and edges at least 300mm (12").

3.4 **AGGREGATES**

.1 Owner's Representative shall review site preparation prior to the placement of aggregates.

.2 Blending Stabilizer: Prior to the placement of material, create a homogenous mix of stabilizer and aggregate material using the mix ratio recommended by the stabilizer manufacturer.

.3 Place the aggregate material to lines and grades indicated on the Contract Drawings.

.4 Water heavily to full depth at a rate of 95-150 litres per 900 kg (25 – 40 gallons per ton). Randomly test for water saturation during application.

.5 Let saturated material stand for at least six (6) hours. Compact to 95% MPD using a 900 – 1,800 kg (2-4 ton) double drum roller or 450kg (1,000lbs) single drum roller. Do not compact with any type of vibratory equipment.

.6 Ensure surface material remains moist by applying a light mist of water as required.

3.5 EDGE RESTRAINT

.1 Install edge restraint to the lines and grades indicated on the contract documents. Ensure straight lines are consistent and true and curved lines are continuous (faceted shapes are not acceptable).

3.6 CLEANING

.1 All paved areas or adjacent surfaces shall be brushed clean and excess materials shall be removed from the work site and disposed of in an approved dump location.

.2 If cracks appear in stabilized surfaces, sweep fines into crack, and tamp in place.

END OF SECTION 32 15 40

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 chain link fence as indicated in the contract documents.

.2 Description of the work:

.1 The work involves the supply and installation of chain link fencing, including but not limited to concrete, posts, rails, fabric, person gates, vehicle gates, and backstops, as per the drawings and specifications provided herein. All mesh to be galvanized and vinyl coated and to be black in colour. All other items must be powder coated black. Any item that cannot be powder coated or any exposed metal resulting from welding or other installation procedures must be painted black with a purpose suited high gloss Galvicon rust-proof coating with a minimum of two coats.

.3 Accurate surveying and layout of the specified work program as per the specifications and drawings herein. Verify field dimensions on site prior to shipping materials.

.4 The provision of all Samples and Submittals as described in Section 1.5 herein

.5 All work to conform to the drawings and specifications of this contract

.6 The supply to the Owner, for post-installation maintenance use, the following items:

.1 Four (4) 500 ml cans of black high gloss organic zinc-rich paint and four (4) packages of 50 tie wires.

.7 Complete site clean-up is required upon completion of the Work.

1.3 RELATED WORK

.1	Concrete Reinforcing	Section 03 20 01
.2	Cast in Place Concrete	Section 03 30 53

1.4 QUALIFICATIONS

.1. The prime contractor shall have a minimum of five (5) years proven record of satisfactory performance of similar size projects in the welding trade and shall show proof before commencement of work that he will maintain a crew of competent and trades qualified welders. Minimum “C” level welding ticket. When requested contractor shall provide a list of three comparable jobs, including name and location, specifying authority/Project Manager, start and completion dates and cost amount of the welding work.

.2 Contractor (applications) bidding work shall be approved by fencing materials manufacturer or his designate.

.3 Only competent and trade qualified welders who have a provincial or interprovincial welding certificate of qualification and who are thoroughly experienced with the material and methods specified may perform welding work. Registered apprentices may be employed provided they work under the direct supervision of a skilled trades qualified welder in accordance with trade regulations.

.4 General labour type activities may be performed by labourers and trades helpers who are thoroughly experienced with preparation procedures provided they work under the direction of a skilled trades qualified welder.

.5 Individual trade certification and apprentice registration number must be presented to the Welding Inspector or his designated inspector upon request. A skilled trades qualified welder shall be present at all times during the execution of the work.

.6 The contractor shall employ and keep on the job a qualified Charge Hand or Foreman who is fully experienced in all aspects of chain link fence installation to industry standards. He shall also have a provincial or interprovincial welding certificate of qualification. He shall be responsible for all work and receive instructions from the Board’s representative during the absence of the contractor. This Foreman or Charge Hand shall not be changed whilst work is in progress without the written permission of the Board or unless said Foreman leaves the employ of the contractor.

1.5 SAMPLES AND SUBMITTALS

.1. Fourteen (14) days prior to the start of the work, submit a 300mm long powder-coated pipe sample that will be representative of the quality of the powder-coating for all powder-coated fencing materials installed as part of the Work.

1.6 Testing

.1. The surface of the posts and rails will be scratch tested to ensure the finish does not flake. Finishes that flake when scratched will be rejected.

1.7 REFERENCES

.1. CAN/CGSB-138.1-M80, Fence, Chain Link, Fabric.
.2 CAN/CGSB-138.2-M80, Fence, Chain Link, Framework, Zinc-Coated, Steel.
.3 CAN/CGSB-138.3-M80, Fence, Chain Link-Installation.
.4 CAN/CGSB-138.4-M82, Fence, Chain Link, Gates.
.5 CSA G164-M1981, Hot Dip Galvanizing of Irregularly Shaped Articles.
.6 ASTM A90-81, Test Method for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles.
.7 ASTM A53-88a, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
.8 CGSB 1-GP-181M-77, Coating, Zinc-Rich, Organic, Ready Mixed

PART 2: MATERIALS

2.1 DELIVERY, STORAGE, AND HANDLING

.1 Deliver and store the products in the original manufacturer's packaging with labels intact and store the products where they will be protected from damage. Determine a suitable, Owner approved, on-site location for products.

2.2 FRAMEWORK

.1 All framework shall be galvanized schedule 40 structural steel pipe that meets the requirements of ASTM-A53 galvanized coating not less than 1.80 oz/s.f. (550 g/m²).

2.3 WELDING RODS FOR SHIELDED METAL ARC WELDING (SMAW)

.1 The electrodes used in fence construction shall be low alloy, all position type that meets CAN.CSAW/483 – M 1982 specifications.

2.4 CHAIN LINK FABRIC

.1 Standard duty chain link fence fabric shall be minimum 9 ga. (.148") (3.76 mm) galvanized wire woven to a 2" (50 mm) diamond pattern.
.4 Minimum galvanized coating on standard, heavy and non climbable fences shall be not less than 490 g/m² (1.60 oz/ft²)
.5 All chain link fabric to have a knuckle selvage at both ends. Knuckle to be closed or nearly closed to a measurement of less than the diameter of wire. Barb finish NOT accepted even

if chain link is hung with barb finish down.

.6 All chain link fabric to be free of production oils, free of dents and bends.

.7 Diamond count for standard, heavy and non-climbable fence

4' 0" (1220 mm) standard fence	13½ diamonds
6' 0" (1830 mm) standard fence	20½ diamonds
8' 0" (2435 mm) standard fence	27½ diamonds
4' 0" (1220 mm) heavy fence	13½ diamonds
6' 0" (1830 mm) heavy fence	20½ diamonds
8' 0" (2435 mm) heavy fence	27½ diamonds
4' 0" (1220 mm) non climbable fence	27 diamonds
6' 0" (1830 mm) non climbable fence	39 diamonds
8' 0" (2435 mm) non climbable fence	53 diamonds

2.5 TIE WIRE

.1 All chain link fabric ties shall be new 9 ga. (.148") (3.76 mm) hard aluminium wire.

2.6 TENSION BANDS

.1 All tension bands shall be industry standard hot dipped galvanized steel of a inside dimension to the post on to which they are clamped. Minimum 13 gauge in thickness and minimum ¾ in. (20 mm) width.

2.7 TENSION BARS

.1 Tension bar shall be continuous (unwelded) through the fabric height, hot dipped galvanized minimum 1.2 0z/ft² (366 g/m²) of zinc coated surface area 3/16" (5 mm) x ¾" (20 mm) x chain link fabric height. ¼" (6 mm) galvanized round bar for non-climbable fences.

2.8 POST/RAIL CAPS

.1 All post/rail caps shall be galvanized pressed steel, of identical style and with an inside diameter appropriate to the pipe O.D. which they are capping. Die cast, sand cast aluminium NOT acceptable.

2.9 RAILS

.1 All standard, heavy and non-climbable chain link fences shall have a top and bottom rail. All rails shall be hot dipped galvanized schedule 40, 1 7/8 (42 mm) O.D. with a minimum zinc coating of not less than 1.8 oz/ft² (550 g/m²). All rails to be welded continuous over top of line posts.

2.10 LINE POSTS

.1 All standard, heavy and non climbable chain link fences shall have hot dipped galvanized schedule 40 pipe 2 3/8" (60 mm) O.D. with a minimum zinc coating not less than 1.8 oz/ft² (550 g/m²) posts set at maximum 7' 11" (2.42M) centres. All line post tops to be coped to accept top rail.

2.11 TERMINAL POSTS

.1 All standard heavy and non climbable chain link fence terminal (end, corner and gate) posts shall be hot dipped galvanized schedule 40 pipe, 2 3/8" (60 mm) O.D. with a minimum zinc coating of not less than 1.8 oz/ft² (550 g/m²)

.1 Gates up to and including 5' 0" (1525 mm) wide panels to have 2 7/8" O.D. (73 mm) gate posts.

.2 Gates up to and including 10'0" (3050 mm) wide panels to have 3½" O.D. (89 mm) gate posts.

.3 Gates up to and including 15'0" (4572 mm) wide panels to have 4½" O.D. (114 mm) gate posts.

2.12 CARRIAGE BOLTS AND HEX NUTS

.1 Carriage bolts for tension bands to be galvanized steel 5/16" (8 mm) x 1¼" (32 mm).

2.13 TENSION WIRE

.1 Tension wire shall NOT be used.

2.14 FINISHES

.1 All fencing to be hot dipped galvanized. For fencing repair and welds contractor to provide sample finish for approval by landscape architect.

2.15 CHAIN LINK VEHICLE GATES

.1 The vehicle gates are not to use a centre post. The closure devise is to operate by securing the gates together when in the closed position. The closure device is to operate independent of the locking pins. Closure device must accept a standard padlock

.2 The vehicle gate is to have locking pins with locking pin aluminum sleeves recessed 25mm into the concrete walkway to secure the gates in the open and closed positions. The top of the sleeve is to be flush with the surrounding concrete surface. The locking pin rod is to be spring-loaded so that the pin is always in the raised position unless pushed and turn locked into place, as per the drawings herein.

.3 The vehicle gate is to be to the full height of the fence and is not to be bridged with a top rail over it as to eliminate any restrictions on the height of objects passing through the gate.

.4 The vehicle gate is to operate on wheels which fully support the weight of the gate. The

wheels must be suitable for use on concrete surfaces and must not mark the concrete surface.

.5 Vehicle gates are not to have signage inserts.

PART 3: EXECUTION

3.1 CONCRETE FOOTINGS

.1 All excavation shall be undertaken in accordance with the Regional District of Nanaimo's Policy and Standard Operating Procedure- Soil and Excavation Water Contamination Management.

.2 All terminal and line posts for standard, heavy and non-climbable fences shall be set in a soil formed concrete footing. Each footing to be a minimum of 12" (305 mm) diameter by 36" (915 mm) deep. All concrete to be transit mixed with a minimum 25 MPA (3500 psi). Minimum pipe burial 36" (915 mm) into concrete footings.

3.2 JOINTS AND WELDING

.1 No fittings, other than tension bands, tension bars and dome tops shall be permitted. All joints shall be coped to a radius appropriate to the post or other member to which they are to be welded. Crimping of pipe shall NOT be permitted. All steel dome tops to be tack welded in place.

.2 All welded joints shall be full round with the joint attaining proper penetration and professional appearance. All splashes shall be filled, chipped or rounded off. All slag shall be removed. All welded joints shall be thoroughly cleaned with Zinga solvent or equivalent and coated with two (2) coats of an approved zinc rich primer (e.g. Zinga Cold Galvanization coating to a dry film thickness of 2 mils per coat).

.3 All welds to be approved by the owner's inspector prior to the installation of the chainlink fabric.

3.3 DRAPING

.1 All chain link fabric to be continuous vertically wherever possible. For the backstop, two lifts of 12' are acceptable.

.2 Fabric shall be taut, level and plumb.

.3 Face side of fabric to be determined by owner prior to installation to suit individual site requirements and conditions.

3.4 STRETCHING

.1 Every straight run of fabric shall be held in tension, by tension bar at each runs start and end. At no time shall it be permitted to stretch the fabric over a post at a change of angle in fence direction.

.2 Stretching of the fabric during installation shall be done using a tension bar properly threaded

through the chain link such that the chain link is not damaged. The fence fabric shall be taut after stretching to industry standards.

.3 Tension bars to be fastened to terminal posts with tension bands spaced evenly at maximum 12” (305 mm) centres.

3.5 TYING

.1 Standard, heavy and non-climbable chain link fabric shall be tied as per details.

.2 All ties shall be double looped at both ends where anchored to the fabric and ends shall not constitute a safety hazard. All ties shall be made with one piece of wire. Any tie that fatigue breaks shall be removed and replaced.

.3 Fabric shall be secured to each line post as per details.

3.5 TOUCH UPS

.1 Clean damaged surfaces with wire brush removing loose and cracked coatings. Apply two coats of black high gloss organic zinc-rich paint to damaged areas, allowing the manufacturer’s recommended drying time between coats. Pre-treat damaged surfaces per manufacturers' instructions for zinc-rich paint.

.2 Wire brush, clean, and paint all welds with two coats of high gloss zinc rich paint, allowing the manufacturer’s recommended drying time between coats. Use paint colour that matches surrounding powder-coated surfaces.

3.7 CLEANING

.1 Upon completion of work, the site shall be left clean and free of the cut-offs, staples, excess wire, pipe or other construction debris. Any ruts caused by equipment shall be filled and levelled to specified surface tolerances to the owner’s satisfaction.

END OF SECTION 32 31 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 growing medium and mulch as indicated in the contract documents. Growing medium for: Soil Cells and Structural soils refer to additional specifications.

1.3 RELATED WORK

.1 Tree Protection Section 32 01 56

1.4 REFERENCE STANDARDS

.1 Conform to the requirements of the latest editions of the following standards and legislation:

.1 Canadian Landscape Standard, Current Edition
.2 Environmental Management Act and Public Health Act of British Columbia
.3 Canadian Systems of Soil Classification, Methods of Soil Analysis
.4 Society for Testing and Materials (ASTM)

1.5 DEFINITIONS

.1 GROWING MEDIUM: A mixture of mineral particulates, microorganisms and organic matter which provides a suitable medium capable of supporting the intended plant growth.

.2 SOIL: A biologically active, porous, growing medium composed of profiles and built of a combination of materials; Sand, Silt, Clay, Organic Matter and chemical inputs, either through natural formation or engineered processes. Soil taxonomy is graded mainly by particle size.

.3 OWNER'S REPRESENTATIVE: The person or entity, employed by the Owner to represent their interest in the review of the work.

1.6 TESTING

.1 Provide a 3.79L sample of materials delivered to site to laboratory approved by Owner's Representative. At the discretion of Owner's Representative, submit two additional samples at directed intervals.

.2 The analysis shall outline the testing laboratory's recommendations for amendments, fertilizer and other modifications to make the proposed growing medium meet the requirements of this specification.

.3 Samples of existing site soil that are under existing pavement to be removed should be submitted as soon as possible after the paving is removed.

.4 Native Soil samples to be taken from depth of established root mass.

.5 All samples to represent characteristics of the final delivered soil.

.6 Soils containing biosolids shall be submitted to demonstrate the finished product meets the BC Organic Matter Recycling Regulation's (OMRR) "Biosolids Growing Medium" standards.

.7 Failure to submit soils analysis is cause for immediate rejection and possible removal of any placed growing medium at their expense.

.8 Soil that has sat three months or longer on site is subject to further testing.

1.7 SUBMITTALS AND EVALUATION

.1 Action Submittals: Submit analysis to Owner's Representative for review and acceptance not less than forty-five (45) days prior to start of installation of materials and products specified in this Section, to allow time for adjustments to mix design and supplier.

.2 Analysis must Include:

.1 PH
.2 Soluble salt by electrical conductivity of a 1:2 soil water sample.
.3 Percent Organic Content
.4 Cation Exchange Capacity in Meg / g
.5 Nutrient levels by parts per million including: Phosphorus, Potassium, Magnesium, Manganese, Iron, Zinc and Calcium.
.6 Texture Analysis and distribution of gravel, coarse sand, medium sand, and fine sand in addition to silt and clay.

.3 Soil shall be free from crabgrass, couch grass, Equisetum, convolvulus or other weeds or seeds or parts thereof. Substantially free from roots, sticks, building materials, wood chips, chemical pollutants, and other extraneous materials.

.4 All similar materials supplied to the site shall be of similar nature and from a single source.

.5 Costs of imported materials shall include cost of modifications from source to ensure that these materials meet specifications.

.6 Acceptance of material at source does not preclude future rejection if material fails to conform to requirements specified following onsite analysis, or if its field performance is found to be unsatisfactory.

1.8 DELIVERY, STORAGE, AND HANDLING

.1 Weather: Do not mix or deliver soil when frozen or saturated with water following period of rainfall or heavy irrigation.

.2 Protect soil and soil stockpiles, from wind, rain and washing that can erode soil or separate fines and coarse material, and contamination by chemicals, dust and debris that may be detrimental to plants or soil drainage. Confine delivered materials to neat piles in areas coordinated with the site supervisor. Cover stockpiles with plastic sheeting when not in use.

.3 Soils with high electrical Conductivity (2.5+) can be uncovered to correct salt concentrations through rainfall exposure or irrigation based on Owner's Representative approval and directions.

.4 All soil to be stripped and stockpiled on site in an approved location. Stripping and stockpiling work shall be such that the soil is not damaged or contaminated.

.5 All manufactured packaged products and material shall be delivered to the site in unopened containers and stored in a dry enclosed space suitable for the material and meeting all environmental regulations.

.6 Biological and Chemical additives shall be protected from extreme humidity, cold or heat. All products shall be freshly manufactured and dated for the year in which the products are to be used. Chemical amendments shall have original labels intact and legible.

1.9 **CONTAMINATED ONSITE SOIL**

.1 Soil containing invasive species to undergo further assessment by a Qualified Professional such as a registered Biologist or Agrologist - prior to further distribution throughout site or removal of materials from site.

.2 If soils are suspected as being contaminated, then further testing is required from an international standard ISO/IEC 17025 approved laboratory. A third-party accredited Biologist or Environmental Engineer must review findings to confirm presence and to give recommendations for amendment.

1.10 **SCHEDULING**

.1 All delivery notification of approved material to include and be given with no less than seven (7) days notice.

PART 2: **SOIL TYPES**

2.1 **AT GRADE SOIL FOR BEDS**

.1 On site or imported soil shall be friable “A Horizon” topsoil to the requirements of the Canadian Landscape Standard Level 1-3P in addition to this:

.2 Soil shall be suitable for modification by screening and additives to meet the requirements within this specification, except where specified and approved for use “as is”.

.3 Soil shall be of a sandy loam or loamy sand texture as specified by Owner’s Representative.

.4 Containing between 3% and 15% organic matter (dry weight basis), organic matter not to contain large quantities of Mushroom Manure or Yard Waste.

.5 Salinity: Maximum saturation extract conductivity of 2.5 mmho/cm.

.6 PH: 6.0-7.5 – unless planting is noted as specified for a PH 7.5-8.5.

2.2 **LAWN AREA SOILS**

.1 On site or imported soil shall be friable “A Horizon” topsoil to the requirements of the Canadian Landscape Standard Level 1-3H/L in addition to this:

.2 Soil shall be suitable for modification by screening and additives to meet the requirements within this specification, except where specified and approved for use “as is”.

.3 Containing between 3% and 15% organic matter (dry weight basis), organic matter not to contain large quantities of Mushroom Manure or Yard Waste.

.4 Containing min 75% Coarse Sand.

.5 Salinity: Maximum saturation extract conductivity of 2.5 mmho/cm.

.6 PH: 6.0-7.5 – unless planting is noted as specified for a PH 7.5-8.5.

2.3 **AMENDMENTS**

.1 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 and using:

.2 Manure: Not to be used in the amendment of soils.

.3 Organic Matter: Owner’s Representative does not allow use of any paper fibre amended

compost products. Shall be derived from organic source free of sewage biowaste, heavy metals, contaminants, animal or plant chemical additives or supplements.

.4 Sand: Coarse, well washed and free of contaminants, chemical and organic matter. Gradation of particle sizes shall fall within the Canadian Landscape Standard recommendations. Must have saturated hydraulic conductivity between 100-300mm.

.5 Peat moss: Not to be used.

.6 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 with the exception of Cedar bark that has had Thujone extracted.

.7 Dolomite Lime: Approved commercial brands for horticultural purposes, coarsely ground; containing not less than 20% calcium by weight.

.8 Thoroughly mix using mechanical mixing/screening equipment the constituent growing medium components and recommended additives. Resulting mixture must have a particle size class and properties that match the requirements of this specification.

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. Granular slow release fertilizers only.

.2 Fertilizers must be those specified in the soil analysis or by Owner's Representative. Contractor shall not make any substitutions without prior written approval.

2.5 **DRAINAGE MEDIUM**

.1 Drain Rock: Shall consist of clean round stone or crushed rock. Acceptable material includes 19 mm (3/4") drain rock or torpedo gravel.

.2 Drain Mat: Light duty, UV stable, impermeable cuspated core bonded to a layer of non-woven filter fabric with the following minimum properties

.1 Compressive Strength -718 kN/m2 as per ASTM D-1621
.2 Flow Rate – 188 l/min/Metre as per ASTM D-4716
.3 Approximate profile thickness of 10mm (3/8"). Acceptable products include J-DRain 200 manufactured by JDR Enterprises (1.800.843.7569); Nudrain WD/15 manufactured by Nilex Geotechnical Products Inc., Burnaby, BC or pre-approved equal.

2.6 **FILTER FABRIC**

.1 Needled, non-woven polypropylene mat. Nilex 4545 by Nilex Geotechnical Products Inc., Burnaby, BC or pre-approved equal.

PART 3: **EXECUTION**

3.1 **PLACING GROWING MEDIUM**

.1 Do not place growing medium until Owner's Representative has reviewed all planters or sub grades.

.2 Ensure that root barrier and irrigation lines to be installed have been reviewed by 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 Except where Contract Drawings show otherwise, place to the following min. / max. depths and levels (measured after initial settling of growing medium):

.1 Tree Planting Areas on grade or on slab min 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.
.3 Each tree shall have access to minimum 10m^3 growing medium volume per street trees and minimum 10m^3 growing medium volume per on-site 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. Volume must have a direct relationship to the mature drip line with outward adjustment for columnar species.
.2 Shrub and Groundcover Areas on grade or on slab 450mm (18") minimum depth.
.3 Low or High Traffic Lawn Areas on grade or on slab 150mm (6") minimum depth.

.5 Crown or slope for positive surface drainage as shown on the drawings.

3.2 APPLICATION OF AMENDMENTS

.1 Ensure minimum seven (7) days separation time between the application of any lime treatment or fertilizers and plant material installation. All granular applications to be irrigated with sufficient water to dissolve amendments into soil.

.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 (2”) 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.
.3 Ensure lime 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.

3.3 FINE GRADING

.1 Manually fine grade growing medium installation to contours and elevations shown on Contract Drawings or as directed by Owner’s Representative. Tolerance for finish grading to be 13mm (1/2”).

.2 Eliminate rough spots and low areas to ensure positive drainage.

.3 Leave surface smooth, uniform, firm against deep foot printing, with a fine loose texture.

.4 In the event of heavy foot traffic compacting the soil grade, Contractor will need to cultivate the soil prior to finish grading to allow for absorption of water and oxygen into soil media.

.5 Limit foot traffic through soil grade to prevent plating and compaction. Use plywood to create temporary paths where soil grade is exposed to frequent traffic.

3.4 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 Owner's Representative with a written methodology outlining of weed removal for approval seven (7) days prior to starting weed removal operations.

3.5 CLEANING

.1 All excess materials and other debris resulting from growing medium preparation and placement operations shall be disposed off site.

.2 Ensure all discoloration 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 Owner's Representative.

END OF SECTION 32 91 13

Part 1 General

1.1 DESCRIPTION

.1 This section specifies the supply and installation of skatepark concrete and workmanship and is intended to be read in conjunction with the appropriate sections listed in the index in addition to those listed below.

.2 The Site Foreman must be onsite for all significant site procedures and key site reviews by the design consultant.

1.2 REFERENCES

.1 Comply with ASTM F2480-06 Standard Guide For In-Ground Concrete Skateparks.

1.3 TESTING

.1 Arrange for testing of the concrete by an independent testing agency approved by the Owner/Consultant. The contractor pays for all testing called for in 01 43 00 Quality Assurance specifications. Submit all test reports to the Owner / Consultant.

.2 To facilitate testing services:

.1 Furnish such labour as is necessary to assist the approved testing agency to obtain and handle samples at the project and at the sources of materials.
.2 Provide and maintain, for the use of the testing agency, facilities acceptable for storing and curing of test cylinders.
.3 Advise the testing agency sufficiently in advance of the operation to allow for the desired quality tests and for the assignment of personnel.

.3 Conduct specified testing and review testing results for compliance with the technical requirements of the specifications. Testing shall be undertaken as specified.

.4 The use of testing services does not relieve the Contractor of their responsibility to furnish materials and construction in compliance with the Construction Drawings and Specifications.

Part 2 Products

2.1 USE MATERIALS COMPLYING WITH CSA A23

.1 **Cement**
.1 Type 10 - Normal Portland cement or as specified in the geotechnical report and confirmed by the consultant.

.2 **Aggregates**
.1 Fine aggregate - natural sand.
.2 Coarse aggregate - gravel or crushed stone.

.3 **Additives**
.1 Air-entraining agents - as specified.

.2 Micro-Fibre reinforcement that is designed to mitigate plastic shrinkage cracking, to be approved by the Consultant, in all concrete (dosage as recommended by the manufacturer)
.3 Water reducing agents - use throughout.
.4 Ensure admixtures are compatible with each other and with construction materials used in contact with concrete.
.5 Do not use calcium chloride.

.4 **Reinforcement**

.1 All concrete must be reinforced. Reinforcement to be laid in accordance with design drawings and notes. Refer to details for specific areas. Reinforcing steel shall be of type and grade stated on drawings or specified. Unless otherwise noted or specified, all bars shall be deformed and in accordance with ASTM F2480-06 Standard Guide For In-Ground Concrete Skateparks, all welded bars shall be in accordance with ASTM F2480-06 Standard Guide For In-Ground Concrete Skateparks. All reinforcing steel shall bear identifying marks of specification to which it has been rolled and all bars which are not so marked shall not be used in structure. All reinforcing steel shall be a bendable grade.
.2 Welding of reinforcing is not permitted without written approval of the consultant.
.3 Clear cover for reinforcement:
- Cast against soil minimum 40mm
- Refer to drawing set typical details for all other situations

.4 Dowels and anchor bolts should be placed BEFORE the concrete is set.
.5 Any dowels and anchor bolts placed AFTER the concrete is set shall be anchored using proper epoxy materials and processes.
.6 Unless otherwise noted, reinforce concrete with 10M reinforcing bar as noted above in 2.1.4.1@ 450mm on centre each way.

.5 **Anchor Bolts and Anchor Assemblies**

.1 see section 05 50 00 Metal Fabrications

.6 **Angle Plates and Steel Support Brackets**:

.1 Painted with zinc-rich primer or as specified in project details.

Part 3 Execution

3.1 FORMWORK

.1 Forms shall be so constructed that the finished concrete will conform with the shapes, lines, grades and dimensions indicated on the plan.

.2 Use “paper-faced” form plywood for exposed vertical formed concrete surfaces, excluding stair risers

.3 Form walls using plastic cone ties for concrete walls. Arrange all ties in symmetrical, aligned vertical and horizontal rows. They shall be so arranged that when the forms are removed, no ties shall be within 25mm of any exposed surface. Wire ties may be permitted only on light work; they shall not be used through surfaces where discoloration will be objectionable. All wall reinforcing shall be continuous at corners and intersections. Use corner bars or hooks.

.4 Plug, tape and seal all cracks and holes in forms to withstand pressure and remain watertight.

.5 Design forms to permit removal without damage to finish.

.6 Clean and condition formwork before each use. Repair or replace any damaged form that may affect the concrete finish.

.7 After removal of plastic cone ties, plug tie holes with cement plugs or patching compound, taking care not to damage surrounding edge of concrete.

.8 Lumber used in forms shall be free from warp. For any exposed surfaces, it shall be dressed to a uniform width and thickness and be free from loose knots, decay or other defects. For unexposed surfaces and rough work, undressed lumber may be used if means be taken to prevent leakage of mortar.

.9 Unless otherwise specified, suitable molding or bevels shall be placed at angles or forms to round or bevel the horizontal concrete edges and re-entrant angles on concrete as shown on details.

.10 The inside of forms may be coated with non-staining mineral oil or other approved liquid or thoroughly wetted, (except in freezing weather). Where oil is used, it shall be applied before the reinforcement is placed.

.11 Care shall be taken to ensure that forms do not become dried and warped before concrete is deposited.

.12 Before concrete is placed, forms and reinforcement shall be checked and approved by the Owner / Consultant. 48 hours notice shall be provided to the Owner / Consultant. Where timely inspection is not reasonable or possible a photographic record may be substituted. Any concrete poured without approval from Owner / Consultant is done so at the contractor's risk of rejection and removal.

.13 Forms shall not be disturbed until the concrete has adequately hardened and removed in a regular sequence of elapsed time between pour and removal.

.14 All horizontal concrete edges without steel edging shall be chamfered as applicable and where shown on drawings, minimum 19mm @1.1, or use a 10mm rounded edging tool.

.15 Do formwork to all safety requirements and regulations within all applicable Federal and Provincial occupational health and safety acts, latest edition and as follows:

- .1 Form materials for concrete surfaces which will be exposed to view, or which require smooth and uniform surfaces, shall use paperfaced plywood as in above 3.1.2, consisting of square edged smooth panels of plywood. Panels shall be made in a true plane, clean, free of holes, surface markings and defects.
- .2 Form release agents and curing agents shall be compatible with applied finishes where applicable. Do not use release agents containing wax or oil in connection with concrete to receive applied coatings.
- .3 Ties in exposed work shall generally be placed symmetrically about any section with plywood sheets and from each wall section.
- .4 Grout all holes.
- .5 Set to proper grade and alignment. Assure positive drainage.
- .6 Construct straight and warp free with no bulging when concrete placed. Fit tightly at joints and corners.

3.2 MIX DESIGNS

.1 Contractor to submit mix design to Consultant for approval per 01 33 00 Submittal Procedures, 2 weeks prior to first pour. The construction of concrete skateboard parks requires a high quality and 'workable' concrete mix. The mix design supplied in this specification is a starting point whereby the contractor may solicit a final mix design from the local ready-mix plant. Local granular variations require that a unique mix design be submitted by the Contractor to the consulting team for review and approval prior to any delivery on site.

.2 Flat Work and Vertical Elements (Reinforced)
- .1 Class of Exposure C-2
- .2 Minimum compressive strength at 28 days of 32MPA.
- .3 Slump 80 +/- 20 max.
- .4 Maximum water cement ratio 0.45.
- .5 Air content 4% to 7%.
- .6 Maximum size of coarse aggregate 19mm.
- .7 Use water reducing agents throughout.
- .8 Fibre reinforcement throughout as noted in 2.1.3 (dosage as recommended by the fiber manufacturer)

.3 Wet Mix Shotcrete Design (Reinforced)
- .1 Class of Exposure C-2
- .2 Minimum compressive strength at 28 days of 35MPA.
- .3 Slump as required.
- .4 Maximum water cement ratio 0.40.
- .5 Air content 5% to 8% (as delivered).
- .6 Maximum size of coarse aggregate 14mm.
- .7 Use water reducing agents throughout.
- .8 Fibre reinforcement throughout as noted in 2.1.3 (dosage as recommended by the fiber manufacturer)

3.3 CHEMICAL ADMIXTURES

.1 No Calcium Chloride

.2 Water reducers: accelerators and retarders where deemed necessary by the Contractor.

.3 Admixtures for flowing concrete where deemed necessary by the Contractor.

3.4 STANDARD OF WORKMANSHIP

.1 Comply with ASTM F2480-06 Standard Guide For In-Ground Concrete Skateparks.

.2 Skatepark shall be constructed in accordance with the layout plan and details provided.

.3 Finishing shall produce a first class, smooth surface, free from irregularities, or imperfections. Localized surface defects greater than 3mm from specified surface finishes may require correction as directed by the Consultant.

.4 Inspect formed surfaces for defects immediately after removal of formwork.

.5 Remove or cut back to a depth of 19mm from the surface of the concrete all bolts, ties,

nails or other metal that is not required and repair immediately.

.6 Grout all steel inserts in strict conformance with grout manufacturer's instructions.

.7 Remove imperfections such as bulges, fins, lips and stains to permanently exposed surfaces as directed by Consultant, by chipping or grinding and patch to match adjacent surfaces. Do not proceed with grinding until the concrete has sufficiently hardened to prevent dislodgement of coarse aggregate particles.

.8 Curved and flat shapes to be screeded using accurately cut screed boards and templates in accordance with drawing sections. Reinforce screeds and templates and keep of manageable size to avoid distortion.

3.5 COORDINATION

.1 Determine the requirements of other trades, inform concerned trades and assume responsibility for location, installation and quality of all items which affect the work of this section.

.2 Have all inserts and form ties placed in the formwork before reinforcing steel is placed. Divert reinforcement around inserts as approved by the Consultant. Do not allow other trades to cut reinforcing steel to clear inserts.

3.6 TOLERANCES FOR CONCRETE

.1 Variation from Level or Plumb for wall and slab surfaces:
plus or minus 6mm (1/4") over 2.4m distance. Level and true concrete panels are extremely important to the safety and 'usability' of the park. All panels may be checked for imperfections in concrete finish, shape and level true to the intent of the design.

.2 Variation in size and location of sleeves and openings:
plus or minus 6mm (1/4").

.3 Variation in the thickness of slabs and walls:
plus or minus 6mm (1/4").

3.7 TOLERANCE FOR REINFORCEMENT

.1 Placing Tolerance:
- .1 Place within 6mm (1/4") with respect to concrete thickness.
- .2 Place within 25mm (1") with respect to center to center spacing.
- .3 Minimum 40mm (1 ½") clear cover from any adjacent surface

3.8 JOINTS

.1 Make joints conform to detail sheets unless otherwise indicated.

.2 Leave the surface of horizontal construction joints rough with 6mm (1/4") deep ridges and valleys.

.3 Blast clean joints of loose material, laitance and form oil before the next pour is made.

.4 Locate and install control joints where shown on drawings.

.5 Except where shown otherwise, provide saw cut control joints in slab on grade in accordance with ASTM F2480-06 Standard Guide For In-Ground Concrete Skateparks and in locations as shown on the drawings.

.6 Saw cuts shall be completed when concrete has hardened sufficiently (typically within 12 hours) that cutting can be performed without damaging slabs. Contractor to take weather and curing times into consideration to avoid premature thermal cracking of the slab prior to cuts.

.7 Install expansion joints around catch basins and along lengths adjacent to concrete curbs, or ledges/seatwalls.

.8 Avoid re-entrant corners into flat slab areas. Curve such corners, provide extra reinforcement and place control joint or saw joint to such corners.

.9 Mark or sawcut concrete paving at intervals indicated on the drawings (control joints), strike the joint to a penetration of 30% of the paving thickness or as per drawings, mark curb only at the expansion joints, and form marked joints as indicated on the drawings with special tools.

.10 Finish exposed surfaces with a smooth finish, broom swept as per drawings, or medium sandblasted finish as per drawings, and correct surface irregularities before final set.

.11 Install 12mm or 10mm expansion joint adjacent to all vertical structures, concrete edges, curbs, walls and/or where shown and as shown on the drawings. Set pre-cut joints below finished grade and finish to surface with sealant, backing rod and pre-formed joint filler rodofoam or equal, as per drawings.

.12 Stop reinforcement on either side of expansion joint.

3.9 PANEL POURING

.1 Typically the skatepark concrete is placed in individual panels and segments to suit designed compound surfaces.

.2 The construction joint between panels shall have continuous rebar extended through forms for connection to abutting slabs. All slabs will be reinforced with 10M rebar @ 450mm on centre maximum. Tie every bar extending into abutting slab (400mm minimum extensions) rebar grid. Alternatively the use of slip dowels is acceptable, ensuring a minimum 200mm extension into both slabs.

.3 Drainage slopes must be planned with care from slab section edges to drain path shown on drawings or direct to drain.

.4 When placing, ensure good consolidation throughout and especially along joints and edges.

3.10 REMOVAL OF FORMS

.1 Ensure concrete is sufficiently cured prior to removal of the forms.

3.11 CURING AND PROTECTION

.1 Properly cure slabs using a cure and seal product or keep slabs moist for at least 7 consecutive days after placing unless otherwise approved by consultant.

.2 Contractor to submit a curing plan which must include:

- type of curing material
- duration of curing
- procedures and methods for keeping concrete moist 24 hours / day for the required time period
- procedures and methods for protection of surfaces being cured from construction traffic and activities
- provisions to address adverse weather conditions such as high winds and hot / cold weather

.3 Cure all concrete in skatepark for 7 days prior to allowing any vehicular traffic with heavy loads on the slab.

3.12 WINTER CONCRETE

.1 Only pour unprotected concrete when temperatures are forecast to remain at least 4 degrees Celsius (40F) for a minimum period of four days. Unforeseen changes in weather after a winter concrete pour will require the use of insulating blankets or heated enclosures for a minimum period of 4 days. Should suspension of work be required for periods of cold weather the contractor shall consult with the Consultant to determine a safe manner in which to leave the site until work can resume.

.2 For winter conditions accelerating admixtures or Type III Hi-Early cement may be used in concrete mix design.

.3 Snow, ice and frost must be removed from all concrete forms and the subbase before pouring concrete.

.4 Ensure that the temperature of the subbase and any other surfaces that come in contact with the concrete are not below freezing.

.5 Never begin final finishing operations while bleed water is present.

.6 Avoid overworking of cooled slabs exhibiting delayed setting characteristics.

.7 Take care to protect edges and corners with insulating blankets during periods of low temperature (between 2-4 degrees Celsius) to limit heat loss in two or more directions.

.8 Decision making regarding pouring concrete under winter concrete conditions, along with the protective measures taken, the dates, the work completed and the ambient temperature readings shall be incorporated as part of the permanent records of the job by the Contractor. Make records available to consultant.

.9 The use of salts, chemicals or other foreign materials to lower the freezing point of concrete are not permitted.

3.13 FINISHING SURFACES

.1 Ensure all patching appears monolithic and uniform with the adjoining concrete.

.2 Finish surfaces to produce smooth, uniform surfaces free of open texturing and exposed aggregate. Do not work more mortar into surface than is required. Do not use neat cement as drier to facilitate finishing.

.3 Round outside edges with 10mm radius edging tool, or apply 19mm chamfer unless shown differently in details for various locations.

.4 Schedule of finishes:

Smooth Finish:

.1 Smooth finish all concrete surfaces in the skatepark including all walls and stair risers except where specified. Use appropriate concrete finishing tools and means to produce a smooth, dense surface with no irregularities on all flat and ramped slabs. Tolerances to flat plane shall be no greater than 6mm in 2.4m. Smooth finish to be non-textured with no exposed aggregate except where specified.

.5 Remove defective concrete, blemishes and embedded debris; repair as required and directed by consultant.

.6 Concrete surfaces to be complete and tight against all coping and steel edges. Proper coping protection as-needed or possible to prevent concrete build-up on steel surfaces; any fresh concrete left on steel surfaces shall be wiped clean immediately.

.7 Prior to final completion of concrete elements, dress imperfections with dressing stone and grinder as directed by consultant. This will include slab surfaces, edges, control and construction joints, coping/slab joints and walls.

3.14 COLOURED CONCRETE

.1 Related Work: Sample colours should approximate the colour of broom finished concrete flatwork made with medium-gray cement. It is noted that concrete colour is altered by many factors, including cement colour, slump, finishing practices and curing method.

.2 As Requested: Submit product data and manufacturer's instructions for:

1. Colour admixture.
2. Expansion joint fill material.

.3 Samples:

1. Samples for Colour Selection: As requested submit colour additive manufacturer's colour chart and sample chip set; indicate colour additive number and required dosage rate. Samples indicate general colour and may vary from concrete finished in field according to Specifications.

2. Expansion Joint Fill Material: Submit one 300mm length.

.4 Delivery Documentation: record batch tags for each load of concrete, for informational purposes.

.5 Do not change brand of cement, pigment brand or source of aggregate during course of Work.

.6 Colour Additives: Mix in accordance with manufacturer's instructions. Mix until colour additives are uniformly dispersed throughout mixture and disintegrating bags, if used, have disintegrated.

.7 Concrete Colour:

1. Cement: Colour shall be gray.

2. Sand: Colour shall be locally available natural sand and complying with the specifications herein.

3. Aggregate: Concrete producer's standard aggregate complying with the specifications herein.

4. Colour Additives: Dosage rate shall be based on weight of Portland Cement, fly ash, silica fume, lime and other cementitious materials but not aggregate or sand, per manufacturer’s recommendation.

.8 Dosage rate of colour additive shall not exceed 10 percent of weight of cementitious materials in mix.

.9 Protect adjacent work from potential concrete stains including but not limited to dissimilar paving types, walls, columns, railing posts, light fixtures, plant materials, to satisfaction of the owner / consultant.

.10 Immediately remove unintended coloured concrete stain on adjacent work.

3.15 CLEAN-UP

.1 Promptly as the work proceeds and upon completion, clean-up and remove from the site, rubbish and surplus material resulting from the work of this section to an approved off site waste disposal facility.

END OF SECTION 03 30 00

Part 1 General

1.1 REFERENCE

.1 American Society of Testing and Materials (ASTM)

A27 Specification for Steel Castings, Carbon, for General Application

A36 Specification for Structural Steel

A53 Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless

A123 Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

A153 Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

A307 Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength

A366 Specification for Steel, Sheet, Carbon, Cold-Rolled, Commercial Quality

A500 Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes

A780 Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings

.2 American Welding Society (AWS)

D1.1 Structural Welding Code - Steel

.3 Steel Structures Painting Council (SSPC)

SSPC-PA 1 Paint Application Specification No. 1

SSPC Paint 12 Paint Specification No. 12 Cold Applied Asphalt Mastic (Extra Thick Film)

SSPC Paint 20 Paint Specification No. 20 Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic")

SSPC-SP1 Surface Preparation Specification No. 1 "Solvent Cleaning"

SSPC-SP2 Surface Preparation Specification No. 2 "Hand-Tool Cleaning"

SSPC-SP3 Surface Preparation Specification No. 3 "Power Tool Cleaning"

1.2 SUBMITTALS

.1 Product Data: Submit product data for products used in metal fabrications, including paint products, grout and fasteners at the request of the Consultant prior to fabrication.

.2 Shop Drawings: As requested submit detailed shop and erection drawings of each metal fabrication indicated. Shop drawings must be submitted where contractor proposes a deviation from the design drawings. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

.3 Qualification data for firm specified in 1.3.1 to demonstrate their capabilities and experience.

1.3 QUALITY ASSURANCE

.1 Fabricator Qualifications: Firm experienced in successfully producing metal fabrications similar to that shown on the drawings, with sufficient production capacity to produce required units without causing delay in the work.

.2 Use of damaged items is prohibited except by specific authorization of Consultant in writing.

1.4 DELIVERY, STORAGE AND HANDLING

.1 Deliver materials to the job site in good condition and properly protected against damage to finished surfaces.

.2 Storage on Site: Store materials in a location and in a manner to avoid damage. Stacking shall be done in a way which will prevent bending.
Store metal components and materials in a clean, dry location. Cover with waterproof paper, tarpaulin or polyethylene sheeting in a manner that will permit circulation of air inside the cover.

.3 Keep handling on-site to a minimum. Exercise care to avoid damage to finishes of material.

1.5 PROJECT CONDITIONS

.1 Field Measurements: Check actual locations of walls and other construction to which metal fabrications must fit, by accurate field measurements before fabrication; show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.

.2 Where field measurements cannot be made without delaying the work, guarantee dimensions and proceed with fabrication of products without field measurements. Coordinate construction to ensure that actual opening dimensions correspond to guaranteed dimensions. Allow for trimming and fitting.

Part 2 Products

2.1 FERROUS METALS

.1 Metal Surfaces, General: Form metal fabrications exposed to view upon completion of the work, provide materials selected for their surface flatness, smoothness and freedom from surface blemishes. Do not use materials whose exposed surfaces exhibit pitting, seam marks, roller marks, rolled trade names, roughness.

.2 Steel Plates, Shapes, and Bars: ASTM A36.

.3 Steel Pipe: ASTM A53, Type S, Grade B, standard weight (schedule 40 or 80 per Construction Drawings), black finish, unless otherwise indicated.

.4 Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.

2.2 FASTENERS

.1 General: Provide **zinc-coated** fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade, and class required. Suspect/counterfeit bolts will not be accepted and will be replaced at Contractor's expense.

.2 Bolts and Nuts: Regular hexagon head type, ASTM A307, Grade A.

2.3 PAINT

.1 Shop Primer for Ferrous Metal: Red oxide, lead- and cadmium-free, corrosion-inhibiting primer complying with performance requirements and,

.2 Galvanizing Paint: High zinc dust content paint with dry film containing not less than 94% zinc dust by weight and complying with SSPC-Paint-20 and,

.3 Finish Paint: Exterior grade Tremclad rust paint or high performance metal surface paint as approved by Consultant. – Color Tremclad “Medium Blue”, available in regular paint and spray

2.4 FABRICATION

.1 Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of material indicated or specified for various components of each metal fabrication.

.2 Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.

.3 Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in the design, fabrication, and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners.

.4 Shear and punch metals cleanly and accurately. Remove burrs.

.5 Grind exposed edges to a radius of approximately 1/32 inch (0.794 mm), unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

.6 Remove sharp or rough areas on exposed traffic surfaces.

.7 Weld corners and seams continuously to comply with AWS (American Welding Society) recommendations and the following:

.1 Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

.2 Obtain fusions without undercut or overlap.

.3 Remove welding flux immediately.

.4 At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surface matched those adjacent.

.8 Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated. Locate joints where least conspicuous.

.9 Provide for anchorage of type indicated: coordinate with supporting elements. Fabricate and space anchoring devices to provide adequate support for intended use.

.10 Shop Assemblies: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

.11 Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware, screws, and similar items.

.12 Fabricate joints that will be exposed in a manner to exclude water, or provide weep holes where water may accumulate.

2.5 ROUGH HARDWARE

.1 Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes as required. Fabricate items to sizes, shapes, and dimensions required.

2.6 LEDGER ANGLES

.1 Fabricate shelf and ledger angles from steel angles of sizes indicated and for attachment to concrete. Provide slotted holes to receive 1/2 inch (12.7mm) bolts.

2.7 STEEL PIPE GUARDRAILS AND HANDRAILS

.1 General: Fabricate pipe guardrails and handrails to comply with requirements indicated for dimensions, details, finish, and member sizes, including wall thickness of pipe, post spacing, and anchorage.

.2 Interconnect guardrails and handrail members by butt-welding or welding with internal connectors, at fabricator's option, unless otherwise indicated.
At tee and cross intersections, cope ends of intersecting members to fit contour of pipe to which end is joined, weld all around and grind smooth.

.3 Form changes in directions of railing members as follows:

.1 By use of welded prefabricated steel elbow fittings.

.2 By bending, of radius indicated.

.3 By mitering at elbow bends.

.4 Form simple and compound curves by bending pipe in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross-section of pipe throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of pipe.

.5 Close exposed ends of pipe by welding 3/16 inch (4.8 mm) thick steel plate in place or by use of prefabricated fittings, except where clearance of end of pipe and adjoining wall surface is 1/4 inch (6.4 mm) or less.

.6 Brackets, Flanges, Fittings and Anchors: Provide wall brackets, end closures, flanges, miscellaneous fittings, and anchors for interconnections of pipe and attachment of guardrails and handrails to other work. Furnish inserts and other anchorage devices for connecting guardrails and handrails to concrete or masonry work.

.7 Where indicated on plan, match to existing fencing. Use same measurements, shapes, gauge, size and finish.

2.8 STEEL AND IRON FINISHES

.1 General: Shop-paint uncoated edges and surfaces, except those to be embedded, welded or galvanized, unless otherwise indicated. Comply with requirements of SSPC-PA 1 for shop painting.

.2 Galvanizing: Unless otherwise indicated all items indicated under this section shall be Hot Dip galvanized with zinc coating in compliance with the following requirements:

.1 ASTM A123 for galvanizing both fabricated and non fabricated iron and steel products made of uncoated rolled, pressed, and forced shapes, plates, bars, and strip 0.0299 inch (0.7595 mm) thick and heavier.

.2 ASTM A153 for galvanizing iron and steel hardware.

.3 Surface Preparation for Shop Priming: Prepare uncoated ferrous metal surfaces to comply with minimum requirements indicated below.

1. Remove oil, grease and similar contaminants in accordance with SP-1, "Solvent Cleaning".

2. Remove loose rust, scale, spatter, slag and other deleterious materials in accordance with SSPC, utilizing the following methods as required:

SP-2 "Hand-Tool Cleaning"
SP-3 "Power-Tool Cleaning"
SP-7 "Brush-Off Blast Cleaning"

.3 Finished Painting: Immediately after finished surface preparation, apply structural steel primer paint in accordance with manufacturer's instructions and at a rate to provide dry film thickness of not less than 3.0 mils (0.076 mm)

.1 Use painting methods that result in full coverage of joints, corners, edges, and exposed surfaces.

.2 Apply 2 coats of paint to surfaces that are inaccessible after assembly or erection.

Part 3 Execution

3.1 EXAMINATION

.1 Contractor shall examine the areas and conditions under which metal fabrication items are to be installed. Notify the consultant in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the contractor and consultant.

3.2 PREPARATION

.1 Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions and directions for installation of anchorages, including concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

3.3 INSTALLATION, GENERAL

.1 Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required.

.2 Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment and elevation with edges and surfaces level and plumb when measured from established lines and levels.

.3 Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.

.4 Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop-welded because of shipping size limitations. Avoid welding, cutting, or abrading the surfaces of exterior units which have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections. When necessary to weld, cut or abrade surfaces of previously galvanized metals, clean up area and paint with zinc rich primer prior to finished painting.

.5 Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, methods used in correcting welding work and the following:

.1 Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

.2 Obtain fusion without undercut or overlap.

.3 Remove welding flux immediately.

.4 At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surfaces matches those adjacent.

3.4 INSTALLATION OF STEEL PIPE GUARDRAILS AND HANDRAILS

.1 Adjust railings prior to anchoring to ensure matching alignment at abutting joints. Space posts at spacing indicated. Plumb posts in each direction. Secure posts and railing ends to building construction as follows:

.1 Cast anchor plates flush with finished concrete and weld attachment points to anchor plates.

.2 Cast or core handrail posts into concrete embedded 450mm minimum. Where annular space exists, fill annular space with non-shrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's directions.

3.5 ADJUSTING AND CLEANING

.1 Touch-Up Painting of Steel Items: Immediately after erection, clean field welds, bolted connections, abraded areas of shop paint and paint exposed areas with same material as used for shop painting and finishing to comply with SSPC-PA 1 requirements for touch-up of field painted surfaces.

.2 For galvanized surfaces clean welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A780.

END OF SECTION 05 50 00

Part 1 General

1.1 DESCRIPTION

.1 This section specifies joint sealants for masonry and concrete.

1.2 SUBMITTALS

.1 As requested, provide samples of Manufacturer's product brochures and product names, range of colours in each type of sealant for selection by Consultants. Also see 01 33 00 Submittal Procedures.

1.3 ENVIRONMENTAL CONDITIONS

1. Do not apply any sealant at ambient temperatures below 4^{o}C without consulting Manufacturer and obtaining Consultant's approval. Apply only to completely dry surfaces.

Part 2 Products

2.1 MATERIALS

.1 All sealants utilized in the sealant system shall be compatible.

.2 Provide sealant formulation recommended by the Manufacturer for the type of joint, substrate and service conditions.

.3 Colours: charcoal/grey so as to blend with surround concrete features or as specified in drawings.

.4 Sealant Type: Single-component, polyurethane base, moisture curing, non-sag, elastomeric sealant, Sikaflex 1a or approved equal meeting all standards and performance requirements.

.5 Sealant Backing: Extruded, foamed, closed cell, round, polyethylene urethane, neoprene or vinyl rod, 30% greater diameter than joint width, with Shore ‘A’ hardness of 20 and 830 - 900 KPa tensile strength, and manufactured especially for the purpose.

.6 Expansion Joint Filler: Preformed PVC closed cell, Rodofoam by Sternson Canada limited or approved equal.

.7 Joint Primer: As recommended by sealant Manufacturer for type of surface being primed.

Part 3 Execution

3.1 PREPARATION

.1 Clean joints walls and spaces, which are to be sealed and ensure that they are dry and free of dust, loose mortar, oil, grease and other foreign material. Clean ferrous metals of all rust, mill scale and foreign materials by wire brushing, grinding or sanding.

.2 Clean all metal surfaces to be sealed, except pre-coated metals, with clean rags and wipe dry with clean cloth. Clean pre-coated metals with solutions or compounds which will not injure finish and which are compatible with joint primer and sealant. Check that ferrous

metal surfaces are painted before applying sealant.

3.2 APPLICATION

.1 Apply sealant using hand-operated guns fitted with suitable nozzles and equipment approved by sealant Manufacturer. Apply in strict accordance with Manufacturer's directions and recommendations.

.2 Apply sealant under pressure to assure good adhesion to sides of joints and to completely fill all voids in joint.

.3 Form surface of sealant smooth, concave, free from ridges, wrinkles, sags, air pockets and embedded foreign matter.

.4 Upon completion, remove masking, sealant smears and droppings from adjacent and other surfaces.

.5 Allow proper curing before park is utilized or allowing any traffic including foot traffic.

END OF SECTION 07 92 00

Part 1 General

1. This section specifies filling, rough grading, excavation and backfilling. This section covers work required throughout the site.

SCOPE OF WORK

1. Complete all site clearing and stripping per specifications and drawings.
2. The Contractor shall provide grade stakes and any other necessary installation control services required during construction.
3. Complete all excavation, filling and rough grading to bring site to required sub-grade per specifications and drawings, and Geotechnical Report and Recommendations.
4. Complete all compaction of native materials per specifications and drawings, and Geotechnical Report and Recommendations.
5. Complete haulage of excess fill material as required. Excess clean fill may be placed on site in locations if approved by the Consultant/Owner within the limits of the contract.
6. Import and compact all structural sub-base and base as specified in the Geotechnical Report and Recommendations.

REFERENCES

1. Construction Specifications for Compacting – per MMCD or approved provincial equivalent
2. Material Specifications for Aggregates – per MMCD or approved provincial equivalent

Part 2 Products

1. Structural Sub Base: Granular ‘B’ material as specified in 31 23 00 EXCAVATION AND FILL or compactable native material approved for use by the geotechnical engineer.
2. Structural Base: Granular ‘A’ fill material as specified in 31 23 00 EXCAVATION AND FILL or alternative granular fill approved for use by the geotechnical engineer.
3. General Non-Structural Fil : Clean fill material, free from debris and deleterious material approved for use by the geotechnical engineer.

Part 3 Execution

GENERAL EXCAVATION

1. Stake out the locations of all items requiring excavation and obtain the approval of the Consultant before commencing work.
2. Dispose of excavated material in designated site fill areas unless it is not approved for use as fill material or backfilling material by the Consultant, or unless designated site fill areas cannot contain all of the excavated volumes in which case surplus materials must be disposed of at an approved off site waste disposal facility.
3. Excavate to the elevations and dimensions indicated or required for construction work. All depths detailed and drawn are after compaction.
4. Obtain the approval of the Consultant of all excavations before proceeding with construction activities.
5. Where bearing capacity of sub-grade appears or is deemed insufficient by the Geotechnical Engineer, the Contractor shall notify the Consultant/Owner before doing any

further work. On approval from Consultant/Owner, mediation of incompetent subgrade shall be per the Geotechnical Report and Recommendations. Such areas must then be tested and approved for compaction. Costs for this additional testing, if required, will be paid by the Owner.

5. Where required due to unauthorized over-excavation, fill with Granular 'B' or approved native material and compact per Geotechnical Report and Recommendations.
6. Correct unauthorized excavation at no extra cost to the Client i.e. at the Contractor's expense.

SHORING AND BRACING

1. Any shoring and bracing required shall comply with all safety requirements and regulations within all applicable Federal and Provincial occupational health and safety acts, latest edition.

INSTALLATION OF STRUCTURAL SUB BASE

1. Where necessary strip topsoil and deleterious materials and stockpile as directed in the drawings, geotechnical report and specifications.
2. Fill with approved fill material in uniform layers as per the Geotechnical Report and Recommendations.
3. Shape and compact each layer to the line and cross section and density specified before placing succeeding layer. Remove stones greater than the fully compacted depth.
4. Provide finished rough grade parallel to finished grade, allowing for the placing of the specified surface material and base to a tolerance of plus or minus 50mm (2") and compact to density per the Geotechnical Report and Recommendations.
5. Compact each layer at a moisture content suitable for obtaining the required density per the Geotechnical Report and Recommendations.

INSTALLATION OF STRUCTURAL BASE

1. Place specified base material in a uniform layer.
2. Shape line and cross section as per drawings.
3. Provide finished base parallel to finished grade to a tolerance of plus or minus 13mm (1/2"), allowing for the placing of the concrete. Compact structural base to density per the Geotechnical Report and Recommendations.
4. Compact at a moisture content suitable for obtaining the required density per the Geotechnical Report and Recommendations.

BACKFILLING (See Site Specific Notes on Construction Drawings)

1. Do not commence backfilling of structures, utilities, etc., until work has been approved by the Owner or Consultant. Photo documentation may be substituted at the discretion of the Owner or Consultant.
2. Ensure that all areas to be backfilled are free of debris, snow, ice, water, frozen ground, organic matter or other deleterious substances.

3. Place specified backfill materials in continuous layers and compact as specified in Geotechnical Report and Recommendations.

4. Backfilling around installations:

   .1 Place and compact specified backfill materials in continuous layers as specified in Geotechnical Report and Recommendations.

   .2 Do not backfill around or over cast-in-place concrete within 24 hours after placing.

   .3 Place backfill simultaneously on both sides of walls, structures, walks, etc. to equalize soil pressures.

   .4 Where temporary unbalanced earth pressures are liable to develop on walls or other structures:

      .1 Permit concrete to cure for minimum 14 days or until it has sufficient strength to withstand earth and compaction pressures and obtain approval from Consultant.

   .5 Place material by hand under, around and over installations until 600mm of cover is provided. Dumping material directly on installations will not be permitted.

   .6 Install drainage and filter system in backfill as indicated on drawings.

   .7 Make good any settlement or subsequent damage to adjacent structures or to other work under this contract caused by improper or inadequate compaction.

TESTING

1. Reference Specifications sections 01 43 00 Quality Assurance and 31 23 00 Excavation and Fill.

MAINTENANCE

1. Maintain all grades until total performance of completed park works. Maintenance will include all filling and re-grading to retain and preserve the required shapes, tolerances and elevations.

2. Cleaning of roads and walkways as a result of mud tracking both off and on the site is the responsibility of the Contractor per 01 11 00 Summary of Work.

3. Dust Control is the responsibility of the Contractor per 01 11 00 Summary of Work and 01 35 43 Environmental Procedures.

END OF SECTION 31 00 00

PART 1 - GENERAL

1.0 Scope of Work

.1 Excavating as required for each item of this Contract.

.2 Backfilling as required for each item of this Contract.

.3 Export and dispose of surplus materials off site. Pay disposal fees and any required analytical lab testing charges.

.4 Supply and pay for imported materials to achieve the grades and levels indicated on the drawings.

1.1 Testing

.1 Make work available for testing at any time and suspend construction if so directed by the Consultant until test results are available.

1.2 Protection

.1 Protect all excavations from freezing and water. Supply and operate as many pumps or other dewatering devices as necessary to keep excavations free of water at all times.

.2 Erect warning signs and protective barriers in accordance with all safety requirements and regulations within all applicable Federal and Provincial occupational health and safety acts, latest edition and to the satisfaction of the Owner.

.3 Do not disturb soil within the branch spread of existing trees or shrubs that are designated for preservation or on adjacent property. Obtain Owner/Consultant's approval prior to excavating through roots. If it is necessary to excavate through tree roots, it shall be done by hand methods and all roots shall be cut with a sharp hand saw. Trim neatly all cuts and seal with approved tree wound dressing.

.4 Locate and protect all buried services. The Contractor shall be held responsible for all damages to utilities and structures resulting from their work.

.5 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.

.6 Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered (as indicated). Obtain direction of Consultant before moving or otherwise disturbing utilities or structures.

.7 Protect existing buildings and surface features which may be affected by work from damage while work is in progress and repair damage resulting from work.

PART 2 - PRODUCTS

2.1 Materials

.1 19mm Clear Crushed Stone: Clean, hard, durable crushed gravel or stone, free from shale, clay, friable materials, organic matter and other deleterious substances and graded within the following limits when tested meet the following gradation requirements:

M.T.C. Sieve Designation	% Passing
26.5 mm	100
22.4 mm	95-100
19.0 mm	90-100
16.0 mm	65-80
13.2 mm	45-80
9.5 mm	20-55
4.75 mm	0-10

.2 Granular 'A' (pit sourced): Clean, hard, durable sand & gravel, free from shale, clay, friable materials, organic matter and other deleterious substances when tested meet the following gradation requirements.

M.T.C. Sieve Designation	% Passing
37.5 mm	100
16.0 mm	62-100
9.5 mm	48-73
4.75 mm	33-55
1.18 mm	15-45
300 um	5-22
75 um	0-8

.3 Granular 'B' (pit sourced): Clean, hard, durable sand & gravel, free from shale, clay, friable materials, organic matter and other deleterious substances when tested meet the following gradation requirements.

M.T.C. Sieve Designation	% Passing
160 mm	100
37.5 mm	*
22.4 mm	57-100
4.75 mm	25-100
1.18 mm	10-85
300 um	5-40
75 um	0-8

* When Granular 'B' is used for Granular backfill for pipe subdrains, 100% of the material shall pass the 37.5 mm sieve.

.4 Backfilling Local Site Fill Material: Selected material from excavations or other sources, free of debris, roots, organic matter, rocks over 75mm diameter, and other deleterious and toxic materials.

.5 General Use of Materials:

.1 Use appropriate materials as specified under Section of Work. If not specified under Section, refer to Construction Drawings.

.2 Granular 'A' is typically used as compacted structural base material, unless otherwise specified or approved.

.3 Granular 'B' (or approved native material) is typically used as compacted structural sub-base material.

.4 19mm clear crushed stone is typically used as backfill around perforated sub-drainage pipe.

.6 Stockpile fill materials in areas approved by Consultant. Stockpile granular materials in a manner to prevent segregation.

PART 3 - EXECUTION

3.1 Excavation (see Site Specific Notes on Drawings)

.1 Prior to excavation, the Contractor shall have all services staked out.

.2 The Contractor shall carefully excavate to the elevations and dimensions indicated or required for the construction of the work.

.3 Remove concrete, masonry demolished foundations and rubble and other non functional obstructions encountered during excavation. Dispose of at an approved off site waste disposal facility

.4 For trench excavation, unless otherwise authorized by Consultant in writing, do not excavate more than 30m of trench in advance of installation operations and do not leave trench open overnight.

.5 Keep excavations free of water while work is in progress, and protect open excavations against flooding and damage due to surface run-off.

.6 Excavation must not interfere with normal 45 degree splay of bearing from bottom of any footing.

.7 Where bearing capacity of sub-grade appears or is deemed insufficient by the Geotechnical Engineer, the Contractor shall notify the Consultant/Owner before doing any further work. On approval from Consultant/Owner, mediation of incompetent subgrade shall be per the Geotechnical Report and Recommendations. Such areas must then be tested and approved for compaction. Costs for this additional testing, if required, will be paid by the Owner.

.8 All excavations shall be sufficiently shored and braced per all safety requirements and regulations within all applicable Federal and Provincial occupational health and safety acts, latest edition, to prevent caving-in and to adequately support existing structures, roads, services and any other aspect of the work.

.9 Excavated materials shall be used for filling only if approved by the Consultant.

.10 All excavations for mud slabs / footings shall be carried to sufficient depth for reaching design grades and approved competent subgrade (allow for depth of specified sub-base and base layers per Construction Drawings and Specifications).

.11 Obtain Geotechnical Engineer's approval of completed excavation.

.12 Remove unsuitable material from trench or excavation bottom to extent and depth directed by Geotechnical Engineer.

.13 Where required due to unauthorized over-excavation, fill with Granular 'B' or approved native material and compact per Geotechnical Report and Recommendations at no additional cost to the Owner i.e. at the Contractor's expense.

.14 Dispose of surplus and unsuitable excavated material in an approved off site waste disposal facility or as otherwise approved by the Owner.

3.2 Backfilling (see Site Specific Notes on Drawings)

.1 Do not commence backfilling of structures, utilities, etc., until work has been approved by the Owner or Consultant. Photo documentation may be substituted at the discretion of the Owner or Consultant.

.2 Ensure that all areas to be backfilled are free of debris, snow, ice, water, frozen ground, organic matter or other deleterious substances.

.3 Place specified backfill materials in continuous layers and compact as specified in Geotechnical Report and Recommendations.

.4 Backfilling around installations:

.1 Place and compact specified backfill materials in continuous layers as specified in Geotechnical Report and Recommendations.

.2 Do not backfill around or over cast-in-place concrete within 24 hours after placing.

.3 Place backfill simultaneously on both sides of walls, structures, walks, etc. to equalize soil pressures.

.4 Where temporary unbalanced earth pressures are liable to develop on walls or other structures:

.1 Permit concrete to cure for minimum 14 days or until it has sufficient strength to withstand earth and compaction pressures and obtain approval from Consultant.

.5 Place material by hand under, around and over installations until 600mm of cover is provided. Dumping material directly on installations will not be permitted.

.6 Install drainage and filter system in backfill as indicated on drawings.

.7 Make good any settlement or subsequent damage to adjacent structures or to other work under this contract caused by improper or inadequate compaction.

3.3 Testing (also see section 01 43 00 Quality Assurance)

.1 Be responsible for inspection and testing of soil compaction under walks and paved areas.

.2 Make good any corrective work to paving and walks when settlement has occurred due to insufficient compaction of subgrades.

.3 Inspection and testing of soil compaction will be carried out by designated approved testing company or laboratory.

.4 Submit two (2) copies of inspection and soil testing report to Owner and one (1) copy of Consultant. See also 01 33 00 Submittal Procedures.

.5 Make good any settlement or damage to other work under this Contract caused by improper or inadequate compaction.

.6 The cost of testing shall be paid by the contractor.

3.4 Grading

.1 Grade site using sub-base (Granular B per 2.1.3) and base material (Granular A per 2.1.2) or approved native material as specified or approved by the Geotechnical Engineer to complete the works of this Contract.

.2 Under areas to be paved, all structures and at any other locations shown on the drawings or details, the subgrade shall be compacted and tested per Geotechnical Report and Recommendations and 01 43 00 Quality Assurance.

.3 Uniform slopes shall be constructed between points for which finished grades or contours are shown. Existing grades shall be met and blended in, in a smooth manner, ensuring a 2% minimum slope away from buildings or structures.

.4 Establish and maintain subgrade parallel to the proposed finished grade and shape to allow adequate surface run-off and prevent ponding, scouring and erosion. If directed by the Consultant, the Contractor shall provide temporary relief, or diversionary swales and ditches at no additional cost to the Owner.

.5 Finish rough grading shall not be done when soil is frozen or wet.

.6 In all areas where non-structural landscape fill is to be placed on the existing grade, the surface shall be scarified to a minimum depth of 75mm in order to provide a good bond and prevent slipping of fill or topsoil.

3.5 Clean-Up

.1 Do final cleaning upon completion of work of this Section.

END OF SECTION 31 23 00

APPENDICIES

Appendix A- Geotechnical Report and Information

Appendix B - Arborist Report

Appendix C - Topographic Survey

Appendix D - As Built Drawings

1.0 GEOTECHNICAL REPORT AND INFORMATION

1. Refer to the following pages for the Geotechnical Report and Information.

Geotechnical Investigation

Proposed Skatepark
585 North Road, Gabriola Island, British Columbia

Submitted To:
Regional District of Nanaimo
Parksville, British Columbia

Submitted By:
Lone Pine Geotechnical Ltd.
Calgary, Alberta

Date: November 6, 2018
Project No: 1098

LONE PINE
GEOTECHNICAL LTD

Table of Contents

Appendix A

Appendix B

1. Introduction

This report summarizes the findings of the geotechnical investigation undertaken by Lone Pine Geotechnical Ltd. for the proposed skatepark in Huxley Community Park, on Gabriola Island, British Columbia. The purpose of the investigation was to assess the soil and groundwater conditions at the site and provide geotechnical recommendations for design and construction.

The scope of work was outlined in our proposal dated September 14, 2018 (Proposal No. 1161-18). Authorization to proceed with the investigation was given by Ms. Elaine McCulloch of the Regional District of Nanaimo on September 20, 2018.

2. Site and Project Details

The address of Huxley Community Park is 585 North Road, Gabriola Island, British Columbia. The location of the park is shown on Figure 1 in Appendix A. The skatepark has been proposed in the partially treed green space northeast of the tennis courts in the park.

At the time of the investigation, the skatepark footprint was relatively flat with a slight overall drop in grade from north to south. Surface grades throughout the footprint were generally less than 15 percent. The footprint was surrounded by tennis courts, a graveled parking area, and walking trails. Photographs taken on September 27, 2018, are presented on Figure 3 in Appendix A.

Planning for the skatepark is presently in its conceptual design stages. Various features such as ledges, quarter pipes, pump bumps, vertical walls, stair sets, hand rails, and spectator seating are being considered by the design team. Based on our project understanding, cuts of up to about 600 mm and fills of up to about 2500 mm are being considered throughout the skatepark footprint. Skatepark slab loads are expected to be light.

3. Investigation Methodology

Four test pits were excavated at the site on September 28, 2018, using a rubber tracked mini excavator operated by Emcon Services Inc. The test pits were excavated to depths of 500 to 1400 mm below grade at the locations shown on Figure 2 in Appendix A.

The soils encountered in the test pits were visually examined and logged by Lone Pine Geotechnical Ltd. in accordance with the Modified Unified Soil Classification System (MUSCS). Soil samples were collected at selected depths in the test pits for laboratory testing, which included moisture content, grain size, organic matter, and sulphate concentration.

The ground surface elevations at the test pit locations were surveyed by Lone Pine Geotechnical Ltd. The elevations were referenced to a temporary benchmark, the northeast corner of the tennis courts. The temporary benchmark was assigned an arbitrary elevation of 100.00 m.

4. Subsurface Conditions

The detailed subsurface conditions encountered in Test Pits 1 to 4 are summarized on the logs in Appendix B, along with explanations of the classification system, symbols, and terminology used on the logs. The general profile encountered in the test pits was topsoil, overlying sand, overlying bedrock. The following is a summary of the conditions encountered:

- 130 to 200 mm thick layers of topsoil were encountered in Test Pits 1 to 4. The topsoil was organic, black, and damp. The organic matter of a sample was 11.4 percent. It is possible that thicker layers of topsoil are present in other areas of the skatepark footprint.

- Sand was encountered below the topsoil and extended to depths of 400, 400, 800, and 850 mm below grade in Test Pits 1 to 4, respectively. The sand contained some silt and was compact, fine grained, poorly graded, damp, and reddish brown to brown. Occasional bedrock fragments were present within the sand. The organic matters of two samples were 6.0 and 6.2 percent, which is considered low. The moisture contents of six samples ranged from 10 to 13 percent.

- Sandstone bedrock was encountered below the sand in Test Pits 1 to 4. The bedrock was weathered, fractured, and had the characteristics of a very dense soil. Bedrock deeper within the formation is expected to have greater strength properties more consistent with intact rock. Excavation refusal was encountered in the bedrock at depths ranging from 500 to 1400 mm below grade in Test Pits 1 to 4.

- Test Pits 1 to 4 were dry upon completion, indicating that the groundwater level at the four locations was below the excavated depths. The near surface soils and upper bedrock at the site are susceptible to perched groundwater during the rainier months of the year.

The following table summarizes the subsurface conditions encountered in the test pits:

Table 1 – Subsurface Conditions

Test Pit	Topsoil Thickness (mm)	Bedrock Depth (mm)	Refusal Depth (mm)	Groundwater Level (mm)
1	150	400	1400	> 1400
2	130	400	500	> 500
3	150	800	1000	> 1000
4	200	850	1000	> 1000

5. Geotechnical Recommendations

The subsurface conditions at the site are considered suitable for the proposed skatepark. Geotechnical recommendations for design and construction are presented below.

5.1 Subgrade Preparation

All topsoil, vegetation, and deleterious soils should be stripped from the skatepark footprint. The exposed subgrade should then be proof-rolled under the supervision of geotechnical personnel. Any soft or otherwise unsuitable areas identified during the proof-roll should be subcut and replaced with suitable fill compacted to at least 98 percent of Standard Proctor Maximum Dry Density (SPMDD). The fill type, fill thickness, and extent of the subcut should be at the discretion of a geotechnical engineer. Surface water should not be allowed to pond on the exposed subgrade.

The use of geosynthetics may also be required if soft or otherwise unsuitable areas are identified. Geosynthetics should be chosen carefully based on their proposed application. Filter fabrics are used for separation, geogrids are used for subgrade improvement, and combigrids are used for both separation and improvement.

5.2 Grading

Cuts of up to about 600 mm and fills of up to about 2500 mm are being considered throughout the skatepark footprint. General engineered fill used for site grading should consist of well graded sand or well graded gravel. The fill should be free of organics, deleterious soils, and debris.

The existing sand encountered at the site is considered suitable for reuse as general engineered fill provided that it can be placed to the required level of compaction. Excavated bedrock is generally not considered suitable, unless it can be broken down to a proper gradation and mixed with sand prior to use. Any soils imported to the site for use as fill should be approved by Lone Pine Geotechnical Ltd. prior to placement.

General engineered fill should be placed in uniform lifts compacted to at least 98 percent of SPMDD. The maximum compacted lift thickness should not exceed 200 mm. The fill should be placed at moisture contents within 2 percent of the Optimum Moisture Content (OMC). Wetting or drying may be required to achieve the required level of compaction. The ability of the construction equipment used to achieve compaction is also an important consideration. Sand fills are best compacted using vibrating smooth drum rollers.

The skatepark surface and the surrounding area should be sloped to remove surface water as quickly as possible. Allowing water to pond on the surface for too long can cause the saturation of the subgrade below the skatepark, which can lead to subsidence issues. A grade of at least 5.0 percent over a distance of at least 2.0 m is recommended away from the skatepark surface.

5.3 Excavations

Standard excavators will be suitable for excavations into the soils at the site. Excavations into the weathered and fractured bedrock are expected to be possible with large excavators. However, ripper teeth or rock breaker attachments will likely be required to break apart slabs of intact rock. Excavations more than 0.9 m into the bedrock are expected to be difficult and are not recommended.

Temporary excavation side slopes should be cut back to 1H:1V. Flatter side slopes may be required for excavations through groundwater or deleterious soils. Notwithstanding the above recommendations, all excavations must be undertaken in accordance to the Occupational Health and Safety Regulation (OHSR) of British Columbia.

The stability of side slopes decreases with time, so the length of time that excavations are left open should be minimized. All excavations should be protected from the inflow of surface water and groundwater seepage. Pumping from collector sumps is recommended if inflow or seepage occurs. All temporary surcharge loads, such as stockpiles, should be kept back from the edge of excavations a distance of at least the excavation depth.

5.4 Skatepark Slabs

Lightly loaded concrete skatepark slabs are expected to perform adequately at the site provided certain precautions are followed. If soft or otherwise unsuitable areas are encountered on the exposed subgrade below slabs prior to gravel placement, they should be subcut and replaced with suitable fill compacted to at least 98 percent of SPMDD. The fill type, fill thickness, and extent of the subcut should be at the discretion of a geotechnical engineer.

Skatepark slabs should be underlain with at least 150 mm of crushed gravel compacted to at least 98 percent of SPMDD. Two acceptable gradation specifications for the crushed gravel are presented below:

Table 2 – Gradation Specifications

Sieve Size (mm)	Percent Passing by Weight	
	25 mm Crushed Gravel	37.5 mm Crushed Gravel
37.5		100
25	100	
19	80 – 100	
16		62 – 100
9.5	50 – 85	48 – 73
4.75	35 – 70	33 – 55
2.36	25 – 50	
1.18	15 – 35	15 – 45
0.300	5 – 20	5 – 22
0.075	0 – 5	0 – 8

Alternative gravels and gradations could be considered upon review by Lone Pine Geotechnical Ltd.

Skatepark slabs should be designed to control cracking through proper reinforcement, control joints, and/or saw cuts in the slabs. Good finishing practices should be followed during the placement of concrete. If slabs subjected to static loads of greater than 25 kPa are proposed, the recommendations above should be reviewed by Lone Pine Geotechnical Ltd.

5.5 Lateral Earth Pressures

If any retaining structures are proposed at the site, they should be designed to resist lateral earth pressures. Recommended parameters for the determination of these pressures are provided below:

Table 3 – Lateral Earth Pressure Design Parameters

Design Parameter	Backfill Type	
	Existing Sand	Imported Crushed Gravel
Coefficient of At-Rest Earth Pressure (k_o)	0.47	0.43
Coefficient of Active Earth Pressure (k_a)	0.31	0.27
Coefficient of Passive Earth Pressure (k_p)	3.25	3.69
Bulk Unit Weight (γ in kN/m^3)	20.0	21.5

The design parameters above assume that the backfill against retaining structures is compacted to 96 percent of SPMDD. The lateral earth pressure distribution used behind or in front of retaining structures should be determined considering the worst-case scenario porewater pressure, surcharge loading, point loading, and seismic loading conditions.

5.6 Subdrainage System

A permanent subdrainage system is recommended to remove surface water in low spots, such as bowls, on the skatepark surface. These systems typically consist of solid plastic pipes connected to concrete drain boxes below low spots. The subdrainage system may be designed to dewater to overland drainage, subject to approval by the Regional District of Nanaimo.

Based on our project understanding, the skatepark surface will not extend deeper than about 600 mm below existing grade in the skatepark footprint. If deeper below grade areas are proposed during later stages of the project, underslab weeping tile and/or permanent waterproofing may be required, subject to review by Lone Pine Geotechnical Ltd.

5.7 Soil Permeability

The hydraulic conductivity (k_{SAT}) of the near surface soils at the site may be required to aid in the design of certain stormwater management features. Based on the observations during the test pit excavations and the results of the soils laboratory testing, a k_{SAT} of 6.0×10^{-5} m/s was estimated for the native sand at the site. This is considered a moderately to highly permeable soil.

5.8 Concrete

The concentrations of sulphates in the soil samples tested were less than 0.10 percent, which indicates a negligible potential for sulphate attack on buried concrete. Therefore, General Use (Type GU) cement will be suitable for use in concrete in contact with the soils that these samples represent. Any soils imported to the site for use as fill should be tested for sulphates.

Concrete used at the site should be chosen in accordance with CSA Standard CAN-A23.1-14. All concrete exposed to freezing temperatures should be air entrained and protected from freezing temperatures during curing.

5.9 Inspection and Materials Testing

Lone Pine Geotechnical Ltd. should review all geotechnical specifications pertaining to the skatepark prior to construction. Inspection and materials testing will be required during construction to verify that the actual conditions at the site are consistent with those assumed in this report. The following inspection and materials testing is recommended:

- Proof-roll of the exposed subgrade after stripping.
- Compaction testing during site grading.
- Concrete testing during construction.

Inspection and materials testing should be undertaken by qualified geotechnical engineering firm. Lone Pine Geotechnical Ltd. is willing to provide these services upon request.

6. Limitations

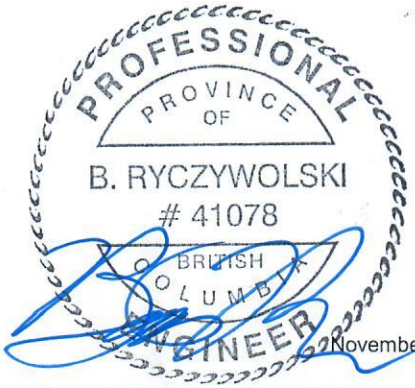
This report has been prepared for the exclusive use of the Regional District of Nanaimo for the proposed skatepark in Huxley Community Park on Gabriola Island, British Columbia. It may not be used by any third party without the express written consent of the Regional District of Nanaimo and Lone Pine Geotechnical Ltd. Any use of this report by a third party is the responsibility of such third party.

This report is based on the findings at four test pit locations, soils laboratory testing, and a review of available information. If different subsurface conditions or information are encountered during later stages of the project, Lone Pine Geotechnical Ltd. must be notified, and the recommendations submitted should be reviewed and revised, as required. This report has been prepared in accordance with generally accepted geotechnical engineering practices. No other warranty, either expressed or implied, is made. Recommendations pertaining to environmental contaminants in soil or groundwater are outside the scope of this report.

7. Closure

Lone Pine Geotechnical Ltd. trusts that this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully Submitted,
Lone Pine Geotechnical Ltd.

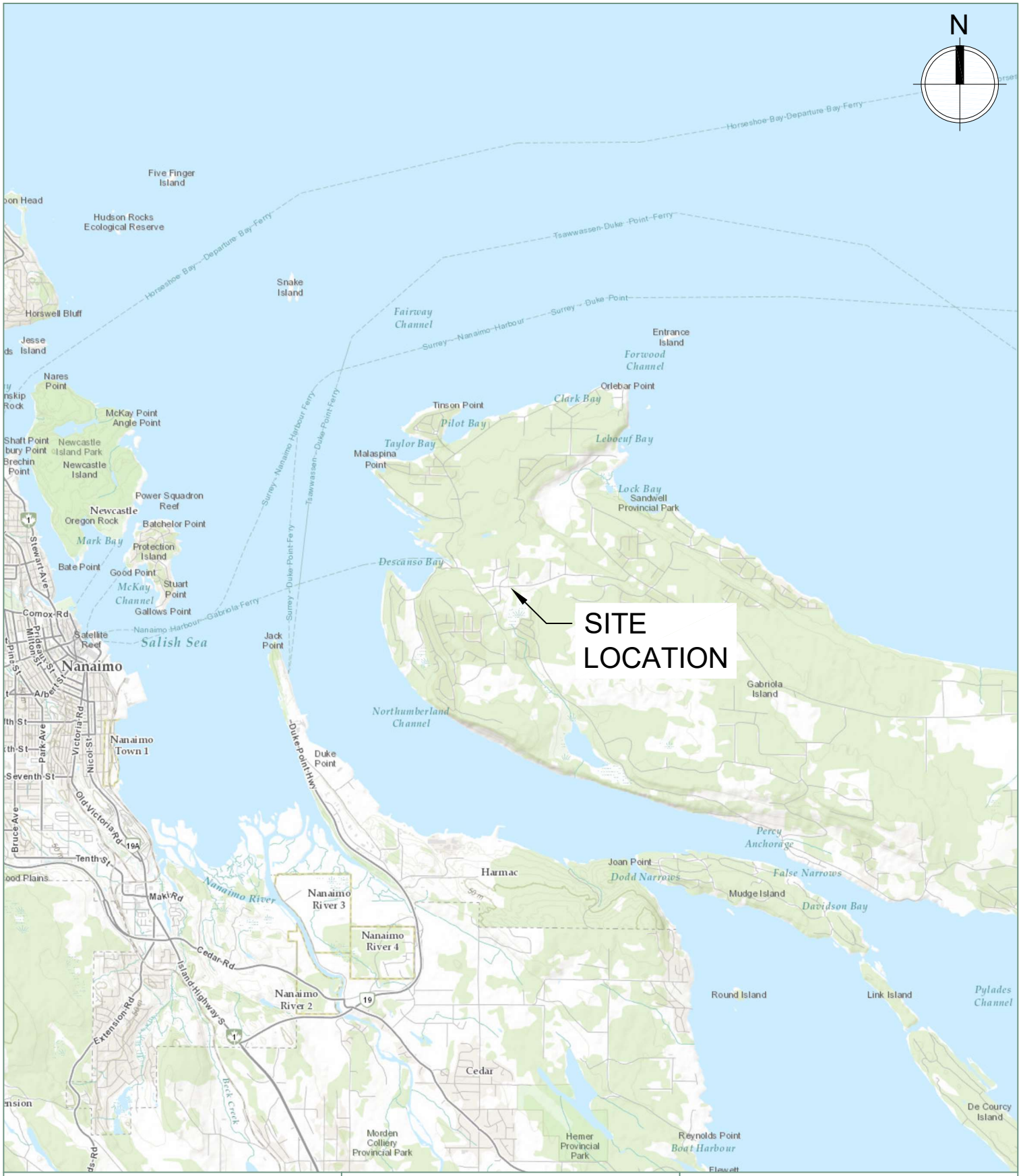


November 6, 2018

Bartek Ryczywolski, P.Eng.
Principal Geotechnical Engineer

Appendix A

Figure 1 – Site Location Plan
Figure 2 – Test Pit Location Plan
Figure 3 – Photographs



CONSULTANT	CLIENT	TITLE		
LONE PINE GEOTECHNICAL LTD	REGIONAL DISTRICT OF NANAIMO	SITE LOCATION PLAN		
PROJECT	DRAWN BY	REVISION NO.	SCALE	
GEOTECHNICAL INVESTIGATION PROPOSED SKATEPARK 585 NORTH ROAD, GABRIOLA ISLAND, BC	BR	0		
	DATE	PROJECT NO.	FIGURE NO.	
	NOV 2018	1098	1	

NOTES:
1. TEST PIT LOCATIONS ARE APPROXIMATE.
2. TEST PIT ELEVATIONS ARE REFERENCED TO A TEMPORARY BENCHMARK WITH AN ASSIGNED ELEVATION OF 100.00 m.

CONSULTANT	CLIENT	TITLE		
LONE PINE GEOTECHNICAL LTD	REGIONAL DISTRICT OF NANAIMO	TEST PIT LOCATION PLAN		
	PROJECT	DRAWN BY	REVISION NO.	SCALE
	GEOTECHNICAL INVESTIGATION PROPOSED SKATEPARK 585 NORTH ROAD, GABRIOLA ISLAND, BC	BR	0	1:500
		DATE	PROJECT NO.	FIGURE NO.
		NOV 2018	1098	2

PHOTOGRAPH 1:
PROPOSED SKATEPARK FOOTPRINT ON
THE NORTH SIDE OF THE TENNIS COURTS

PHOTOGRAPH 2:
GRASSED CLEARING IN THE
SKATEPARK FOOTPRINT

PHOTOGRAPH 3:
SKATEPARK FOOTPRINT ALONG
THE EAST SIDE OF THE TENNIS COURTS

CONSULTANT	CLIENT	TITLE		
LONE PINE GEOTECHNICAL LTD	REGIONAL DISTRICT OF NANAIMO	PHOTOGRAPHS		
	PROJECT	DRAWN BY	REVISION NO.	SCALE
	GEOTECHNICAL INVESTIGATION PROPOSED SKATEPARK 585 NORTH ROAD, GABRIOLA ISLAND, BC	BR	0	
		DATE	PROJECT NO.	FIGURE NO.
		NOV 2018	1098	3

Appendix B

Test Pit Logs
Laboratory Test Results
Explanation of Terminology and Symbols

CLIENT: REGIONAL DISTRICT OF NANAIMO
PROJECT: PROPOSED SKATEPARK
PROJECT NO: 1098
LOCATION: 585 NORTH ROAD, GABRIOLA ISLAND, BC
NOTES:

TEST PIT 1

Depth (m)	Elevation (m)	Soil Symbol	Soil Description	Sample Type	Sample No.	MC (%)	Moisture Content (%) LL MC PL (0 10 20 30 40 50)	PSVT (kg/cm2)	Pocket Shear Vane Test (kg/cm2) (0 .5 1 1.5 2 2.5)	Other Data	Piezometer Installation
0	101		TOPSOIL (150 mm), organic, black, damp.								
			SAND, some silt, trace gravel, compact, fine to medium grained, poorly graded, reddish brown, occasional bedrock fragments, damp.		G1	12				Grain Size: C. Gravel = 27 % F. Gravel = 13 % C. Sand = 11 % M. Sand = 15 % F. Sand = 19 % Silt = 15 %	
1	100		SANDSTONE, weathered, fractured, very dense, light brown to light reddish brown, damp.		G2	6					
2			Excavation refusal at 1400 mm. Dry upon completion. Backfilled with soil and bedrock.								

LONE PINE GEOTECHNICAL LTD

CONTRACTOR: EMCON SERVICES INC.
EQUIPMENT: TRACKED MINI EXCAVATOR
NOTES:

LOGGED BY: TB
DATE: SEPTEMBER 28, 2018
GROUND ELEVATION: 101.16 m

11-09-2018 C:\Lone Pine Geotechnical Ltd\Projects\1098 - Huxley Skatepark\Test Pit Logs\1098 - TP1.bor

CLIENT: REGIONAL DISTRICT OF NANAIMO
PROJECT: PROPOSED SKATEPARK
PROJECT NO: 1098
LOCATION: 585 NORTH ROAD, GABRIOLA ISLAND, BC
NOTES:

TEST PIT 2

Depth (m)	Elevation (m)	Soil Symbol	Soil Description	Sample Type	Sample No.	MC (%)	Moisture Content (%) LL MC PL (0 10 20 30 40 50)	PSVT (kg/cm2)	Pocket Shear Vane Test (kg/cm2) (0 .5 1 1.5 2 2.5)	Other Data	Piezometer Installation
0			TOPSOIL (130 mm), organic, black, damp.		G1	16					
			SAND, some silt, trace gravel, compact, fine grained, poorly graded, reddish brown, occasional bedrock fragments, damp.		G2	11				Organic Matter = 6.2 %	
	100		SANDSTONE, weathered, very dense, light brown, damp.								
			Excavation refusal at 500 mm. Dry upon completion. Backfilled with soil and bedrock.								
1											
	99										
2											

LONE PINE GEOTECHNICAL LTD

CONTRACTOR: EMCON SERVICES INC.
EQUIPMENT: TRACKED MINI EXCAVATOR
NOTES:

LOGGED BY: TB
DATE: SEPTEMBER 28, 2018
GROUND ELEVATION: 100.45 m

11-09-2018 C:\Lone Pine Geotechnical Ltd\Projects\1098 - Huxley Skatepark\Test Pit Logs\1098 - TP2.bo

CLIENT: REGIONAL DISTRICT OF NANAIMO
PROJECT: PROPOSED SKATEPARK
PROJECT NO: 1098
LOCATION: 585 NORTH ROAD, GABRIOLA ISLAND, BC
NOTES:

TEST PIT 3

Depth (m)	Elevation (m)	Soil Symbol	Soil Description	Sample Type	Sample No.	MC (%)	Moisture Content (%) (LL, MC, PL; 0 10 20 30 40 50)	PSVT (kg/cm2)	Pocket Shear Vane Test (kg/cm2) (0 .5 1 1.5 2 2.5)	Other Data	Piezometer Installation
0			TOPSOIL (150 mm), organic, black, occasional rootlets, damp.								
			SAND, some silt, trace gravel, compact, fine to medium grained, poorly graded, reddish brown, occasional bedrock fragments, occasional rootlets, damp.								
			~ silty, light brown, no rootlets at 500 mm.		G1	11				Organic Matter = 6.0 %	
					G2	13					
	99		SANDSTONE, weathered, fractured, very dense, light reddish brown, damp.		G3	4				Sulphate Conc. < 0.01 %	
1			Excavation refusal at 1000 mm. Dry upon completion. Backfilled with soil and bedrock.								
	98										
2											

LONE PINE GEOTECHNICAL LTD

CONTRACTOR: EMCON SERVICES INC.
EQUIPMENT: TRACKED MINI EXCAVATOR
NOTES:

LOGGED BY: TB
DATE: SEPTEMBER 28, 2018
GROUND ELEVATION: 99.79 m

11-09-2018 C:\Lone Pine Geotechnical Ltd\Projects\1098 - Huxley Skatepark\Test Pit Logs\1098 - TP3.bo

CLIENT: REGIONAL DISTRICT OF NANAIMO
PROJECT: PROPOSED SKATEPARK
PROJECT NO: 1098
LOCATION: 585 NORTH ROAD, GABRIOLA ISLAND, BC
NOTES:

TEST PIT 4

Depth (m)	Elevation (m)	Soil Symbol	Soil Description	Sample Type	Sample No.	MC (%)	Moisture Content (%) (LL, MC, PL; 0 10 20 30 40 50)	PSVT (kg/cm2)	Pocket Shear Vane Test (kg/cm2) (0 .5 1 1.5 2 2.5)	Other Data	Piezometer Installation
0			TOPSOIL (200 mm), organic, black, damp.		G1	18				Organic Matter = 11.4 %	
	99		SAND, some silt, trace gravel, compact, fine to medium grained, poorly graded, reddish brown, occasional bedrock fragments, occasional rootlets, damp.		G2	10				Sulphate Conc. < 0.01 %	
			~ light brown at 450 mm.		G3	10				Grain Size: C. Gravel = 2 % F. Gravel = 20 % C. Sand = 10 % M. Sand = 24 % F. Sand = 29 % Silt = 15 %	
1			SANDSTONE, weathered, fractured, very dense, light reddish brown, damp.		G4	6					
	98		Excavation refusal at 1000 mm. Dry upon completion. Backfilled with soil and bedrock.								
2											

LONE PINE GEOTECHNICAL LTD

CONTRACTOR: EMCON SERVICES INC.
EQUIPMENT: TRACKED MINI EXCAVATOR
NOTES:

LOGGED BY: TB
DATE: SEPTEMBER 28, 2018
GROUND ELEVATION: 99.24 m

11-09-2018 C:\Lone Pine Geotechnical Ltd\Projects\1098 - Huxley Skatepark\Test Pit Logs\1098 - TP4.bo

333 50th Ave. S.E.
Calgary, AB, T2G 2B3
Phone (403) 297-0868
Fax: (403) 297-0869

KaizenLAB

ANALYTICAL REPORT

Client: Lone Pine Geotechnical Ltd.
Unit 103, 2845 23 Street NE
Calgary, AB, T2E 7A4

Attention: Bartek Ryczywolski

KaizenLAB JOB #:	**195726 - Rev**
DATE RECEIVED:	02-Oct-2018
DATE REPORTED:	02-Nov-2018
PROJECT ID:	1098
LOCATION:	Proposed Skatepark

KaizenLAB Sample #: 195726_001 **Sample ID:** 4G1 @ 0.0 m
Date Sampled: Unknown **Matrix:** Soil

Parameter Description	Units	Result	Detection Limit
Organic matter	%	11.4	0.1

KaizenLAB Sample #: 195726_002 **Sample ID:** 2G2 @ 0.3 m
Date Sampled: Unknown **Matrix:** Soil

Parameter Description	Units	Result	Detection Limit
Organic matter	%	6.2	0.1

KaizenLAB Sample #: 195726_003 **Sample ID:** 3G1 @ 0.4 m
Date Sampled: Unknown **Matrix:** Soil

Parameter Description	Units	Result	Detection Limit
Organic matter	%	6.0	0.1

KaizenLAB Sample #: 195726_004 **Sample ID:** 4G2 @ 0.3 m
Date Sampled: Unknown **Matrix:** Soil

Parameter Description	Units	Result	Detection Limit
Sulphate (%)	%	0.0051	0.0050

KaizenLAB Sample #: 195726_005 **Sample ID:** 3G3 @ 0.9 m
Date Sampled: Unknown **Matrix:** Soil

Parameter Description	Units	Result	Detection Limit
Sulphate (%)	%	0.0074	0.0050

333 50th Ave. S.E.
Calgary, AB, T2G 2B3
Phone (403) 297-0868
Fax: (403) 297-0869

Comments:

Original Report issued 09-10-2018. Revised report with sample ID and Location update issued 02-11-2018.

Test Methodologies

Organic Matter in Soil: Modified from Soil Sampling & Methods of Analysis, M.R. Carter, 2008

Water-Soluble Sulfate in Soil: Modified from ASTM C1580

Final Review by:

Zakia Biswas
Client Service Representative / Project Coordinator

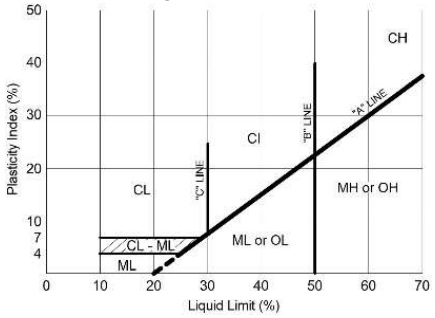
EXPLANATION OF TERMINOLOGY AND SYMBOLS

LONE PINE GEOTECHNICAL LTD

MODIFIED UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISION			GROUP SYMBOL	PLOT SYMBOL	TYPICAL DESCRIPTION	LABORATORY CLASSIFICATION CRITERIA	
COARSE GRAINED SOILS More than 50 % retained on 75 µm sieve	**GRAVELS** More than 50 % of coarse fraction retained on 4.75 mm sieve	**CLEAN GRAVELS**	**GW**		Well graded gravels, gravel-sand mixtures, little or no fines	Less than 5 % passes 75 µm sieve	$C_u = D_{60} / D_{10} > 4$ $C_c = (D_{30})^2 / D_{10}D_{60} = 1$ to 3
			GP		Poorly graded gravels, gravel-sand mixtures, little or no fines		Not meeting both criteria for GW
		GRAVELS WITH FINES	**GM**		Silty gravels, gravel-sand-silt mixtures	More than 12 % passes 75 µm sieve	Atterberg limits below A-line or plasticity index less than 4
			GC		Clayey gravels, gravel-sand-clay mixtures		Atterberg limits above A-line or plasticity index more than 7
	SANDS More than 50 % of coarse fraction passes 4.75 mm sieve	**CLEAN SANDS**	**SW**		Well graded sands, gravelly sands, little or no fines	Less than 5 % passes 75 µm sieve	$C_u = D_{60} / D_{10} > 6$ $C_c = (D_{30})^2 / D_{10}D_{60} = 1$ to 3
			SP		Poorly graded sands, gravelly sands, little or no fines		Not meeting both criteria for SW
		SANDS WITH FINES	**SM**		Silty sands, sand-silt mixtures	More than 12 % passes 75 µm sieve	Atterberg limits below A-line or plasticity index less than 4
			SC		Clayey sands, sand-clay mixtures		Atterberg limits above A-line or plasticity index more than 7
FINE GRAINED SOILS More than 50 % passes the 75 µm sieve	**SILTS** Below A-line Neg. organics	**LIQUID LIMIT** < 50	**ML**		Inorganic silts, very fine sands, silty or clayey fine sands or clayey silts of slight plasticity	Soil classification is based on the plasticity chart	
		LIQUID LIMIT > 50	**MH**		Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts		
	CLAYS Above A-line Neg. organics	**LIQUID LIMIT** < 30	**CL**		Inorganic clays of low plasticity, gravelly clays, sandy clays, silty clays, lean clays		
		LIQUID LIMIT 30 - 50	**CI**		Inorganic clays of medium plasticity, silty clays		
		LIQUID LIMIT > 50	**CH**		Inorganic clays of high plasticity, fat clays		
	ORGANIC SILTS AND CLAYS Below A-line	**LIQUID LIMIT** < 50	**OL**		Organic silts and organic silty clays of low plasticity		
		LIQUID LIMIT > 50	**OH**		Organic clays of medium to high plasticity		
HIGHLY ORGANIC SOILS			**PT**		Peat and other highly organic soils	Strong colour or odour and often fibrous texture	

PLASTICITY CHART



1. Boundary classification for soil with characteristics of two groups are given combined group symbols (ie. GW-GC is a well graded gravel sand mixture with clay binder between 5 % and 12 %).
2. Soil classification is in accordance with the Unified Soil Classification System (ASTM D2487) with the exception that inorganic clays of medium plasticity (CI) are recognized.

EXPLANATION OF TERMINOLOGY AND SYMBOLS

Grain Sizes of Soils – The following table presents the grain size ranges for soils.

Soil	Grain Size (mm)
Boulders	> 300
Cobbles	75 – 300
Coarse Gravel	19 – 75
Fine Gravel	4.75 – 19
Coarse Sand	2.00 – 4.75
Medium Sand	0.425 – 2.00
Fine Sand	0.075 – 0.425
Silt & Clay	< 0.075

Minor Soil Fractions – The following descriptors are used for describing minor soil fractions on borehole logs.

Descriptor*	Example	Percentage by Weight (%)
“and”	“and gravel”	> 35
“y” adjective	“silty”	20 – 35
“some”	“some sand”	10 – 20
“trace”	“trace clay”	1 – 10

* Descriptors not necessarily applicable for soil classification based on the plasticity chart.

Compactness of Cohesionless Soils – The following terms are used for describing the relative density of cohesionless soils on borehole logs.

Descriptive Term	Relative Density (%)	SPT N Value*
Very Loose	< 20	0 – 4
Loose	20 – 40	4 – 10
Compact	40 – 60	10 – 30
Dense	60 – 80	30 – 50
Very Dense	> 80	> 50

* SPT N Value from SPT Test performed in accordance with ASTM D1586. Uncorrected for overburden pressure effects.

Consistency of Cohesive Soils – The following terms are used for describing the undrained shear strength of cohesive soils on borehole logs.

Descriptive Term	Undrained Shear Strength (kPa)	SPT N Value*
Very Soft	< 12	0 – 2
Soft	12 – 25	2 – 4
Firm	25 – 50	4 – 8
Stiff	50 – 100	8 – 15
Very Stiff	100 – 200	15 – 30
Hard	> 200	> 30

* SPT N Value from SPT Test performed in accordance with ASTM D1586. Uncorrected for overburden pressure effects. Correlation is very approximate for cohesive soils and should be used with caution.

1.0 ARBORIST REPORT

1. Refer to the following pages for the Arborist Report.

VDZ+A
VAN DER ZALM + ASSOCIATES

ARBORIST REPORT

7 January 2021

PROJECT:	**Gabriola Skate Park**
VDZ PROJECT#	SK2019-01
SITE ADDRESS:	585 North Rd. Gabriola, B.C. V0R 1X3
PREPARED FOR:	Regional district of Nanaimo
SITE REVIEW DATE(s):	December 20th, 2019
PROJECT ARBORIST:	**Kyle MacGregor** ISA Certified Arborist PN9111-A

ORIGINAL REPORT	January 3rd, 2020 - DRAFT
Revision 1	January 7th, 2021

604 882 0024

FORT LANGLEY
100 – 9181 Church St.
Fort Langley, BC, V1M 2R8

MOUNT PLEASANT
102 – 355 Kingsway
Vancouver, BC, V5T 3J7

www.vdz.ca

TABLE OF CONTENTS

BACKGROUND

VDZ + A Consulting Inc. (VDZ) was contracted by the Regional District of Nanaimo to prepare an ISA Certified Arborist Tree Report for the properties at 585 North Rd., Gabriola Island.

ASSIGNMENT

VDZ have been retained by the client to prepare a report to assess the tree(s) located at Huxley Park. VDZ performed a site review entailing identification and visual assessment of the tree(s) on site.

VDZ will provide recommendations for the retention or removal of tree(s) on this site based on the existing site conditions and the proposed use of the site. Mitigation of development impact on the tree(s) has been considered as part of the tree assessment process.

LIMITS OF THE ASSIGNMENT

VDZ's observations were limited to one site visit on December 20th, 2019 No tissue or soil samples were sent to a lab for identification or analysis. VDZ located the trees using existing landmarks and onsite navigation. A tree survey was completed by the client or representative(s).

TESTING AND ANALYSIS

VDZ used visual tree assessment and mallet sounding to test the trees' health, condition, and risk level.

PURPOSE AND USE OF REPORT

The purpose of this report is to assist the design team in coordinating future site elements with existing trees and the overall mitigation of developmental effect on retained trees and understory vegetation.

If you have any further questions or concerns regarding this report, please contact the undersigned at 604-723-5122

Sincerely,

Kyle MacGregor

Project Arborist

ISA Certified Arborist PN 9111A

SITE REVIEW

FIG. 1 **– AERIAL VIEW OF PROPERTY (GOOGLE EARTH)**

PROPOSED SITE DEVELOPMENT

The development of a new skatepark within an existing civic recreation area. Various parking and pedestrian path improvements will be implemented to service a new skatepark at the existing "Huxley Park".

ENVIRONMENTAL DESCRIPTION

VDZ + A Consulting Inc. met with Elaine McCulloch to review site prior to conducting an evaluation of the trees located at the referenced property on December 20th, 2019.

The existing site is composed of various park amenities such as; a tennis court, newly constructed playground, and ball hockey court. An aging skateboard area is to be replaced with a modern amenity which anchors this project. Proposed paths will meander between existing stands of Douglas Fir, Western Red Cedar and Arbutus. This fits the description of typical Coastal Douglas Fir Zone – lower elevations siting in the rain shadow of Vancouver Island and typically dryer then other coastal ecosystems.

There is no evidence of raptors nests, osprey nests or heron colonies on the site. Removal of trees however between March 15 – August 15 (date subject to change depending on seasonal nesting

behavior and therefore must be confirmed with the City) will require a bird nesting survey. This is as prescribed by the federal Migratory Birds Convention Act (MBCA), 1994 and Section 34 of the BC Wildlife Act. It is the responsibility of the owner/developer to ensure they are in compliance with the city's regulations governing nesting birds on sites where development is occurring.

Off-site Trees – Some offsite trees are slated for removal and owned by the Ministry of Transportation.

Municipal Trees – Onsite trees are municipal owned.

Trees Straddling the Property Line – There are trees straddling the property line on this project.

TREE PRESERVATION SUMMARY

All the Trees identified on the Tree Management Plan and within the Tree Assessment Data Table have been given their Retention/Removal recommendation on a preliminary basis. Final recommendations will be based upon design/construction and grading details.

Long-term tree preservation success is dependent on minimizing the impact caused during pre-construction clearing operations, construction, and post construction activities. Best efforts must be made to ensure the Tree Protection Zone remains undisturbed.

Ongoing monitoring of retained trees through the development process and implementation of mitigating works (watering, mulching, etc.) is essential for success.

SUMMARY OF FINDINGS

- Crown raise trees throughout the site to allow clearance for cars in the parking lot and maintain visual openness from the road for safety of the site users.
- All proposed trails to be constructed of permeable surfaces. Final location of trails will be determined onsite, trails will be field fit to best accommodate existing tree root systems. Project Arborist to confirm final locations and to monitor work within critical root zones and perform or direct all root pruning and grade feathering to accommodate future paths and parking areas.
- It may be determined that further removals are required should trees in conflict with parking and associated boulder retaining be identified during construction phase. Some trees may have symbiotic relationships due to intertwined root systems and maybe unfeasible to

remove only one tree in a unit. Where possible trees should be cut to a low stump to preserve symbiotic roots.

- Landscaping and civil to be reviewed for changes in grade and potential changes to site hydrology which may affect long term sustainability of retained trees.
- When removing trees do not remove the roots where there are adjacent trees being retained as this can cause fracturing of roots. Either leave stump or grind stump to grade.

TREE HEALTH CARE PLAN DURING CONSTRUCTION

To ensure continued health of the protected trees during construction, the following is recommended:

1. Remove dead, dying, and diseased branches prior to the start of construction. Follow ANSI A300 + ISA standards.
2. Install tree protection barriers per specifications.
3. Regular weekly watering of trees between June 1 – October 1.
4. Application of wood chips within the tree protection zone (1-3 inches).
5. Monthly monitoring of protected trees by assigned Arborist.
6. Utilize topsoil's in the project which are built of organic materials, preferably from forest by-products, imported soil to be approved by Landscape Architect and Project Arborist.

Retained protected trees will require supplemental watering on a weekly basis (weather dependent), as well as the application of wood chips or mulch to the tree protection zone within the tree protection barriers. Wood chips are preferred to ensure porous movement through soil and protection from

TREEE OBSERVATIONS

TPB spec. = Tree Protection Barrier specification.

TPBs must be built to whichever distance is greater, C-RAD or TPB spec. The greater distances are in **red**.

TREE / GROUP #	COMMON NAME *BOTANICAL NAME*	DBH (M.)	C-RAD (M.)	COMMENTS	RETAIN / REMOVE
01	3 x Douglas-fir *Pseudotsuga menziesii*	0.20 - 0.35	Avg. 5.6	**Trees belong to the ministry of transportation.** GOOD TRUNK – One tree bows but self-corrects FIG. 2, 3	3 x REMOVE – In Conflict with Parking
02	2 x Douglas-fir *Pseudotsuga menziesii*	0.45-0.20	Avg. 5.5	GOOD	2 x REMOVE – In Conflict With Parking
03	2 x Douglas-fir *Pseudotsuga menziesii*	0.40 - 0.60	Avg. 5.7	GOOD FIG. 4	2x RETAIN
03a 03b	2 x Douglas-fir *Pseudotsuga menziesii*	0.15 0.25	Avg. 4.0	POOR-FAIR CROWN – Moderate dieback, suppressed. FIGURE 4 Not suitable to retain next to current parking lot as they are in decline.	2 x REMOVE DUE TO CONDIITON **We recommend these trees to be removed regardless of any proposed development.**

TREE / GROUP #	COMMON NAME *BOTANICAL NAME*	DBH (M.)	C-RAD (M.)	COMMENTS	RETAIN / REMOVE
04	2 x Douglas-fir *Pseudotsuga menziesii* 1 x western redcedar *Thuja plicata*	0.20-0.40	Avg. 4.9	GOOD FIG. 4	3 x RETAIN
04a	1 x Douglas-fir *Pseudotsuga menziesii*	0.15	Avg. 4.9	FAIR TRUNK – Broken top FIG. 4	1 X RETAIN
05	2 x Douglas-fir *Pseudotsuga menziesii*	0.20-0.60	Avg. 5.0	GOOD	2 x RETAIN
05a	1 x Douglas-fir *Pseudotsuga menziesii*	0.35	4.0	FAIR TRUNK – Dead top	1 x RETAIN
06	3 x Douglas-fir *Pseudotsuga menziesii*	0.35-0.62	Avg. 4.9	GOOD 0.62 DBH tree o be retained	2 x RETAIN 1 x REMOVE ONE DUE TO DESIGN (PARKING LOT)

TREE / GROUP #	COMMON NAME *BOTANICAL NAME*	DBH (M.)	C-RAD (M.)	COMMENTS	RETAIN / REMOVE
07	7 x Douglas-fir *Pseudotsuga menziesii*	0.20-0.61	Avg. 5.8	GOOD **0.61 DBH tree to be retained** FIG. 5, 6	7 x RETAIN
07a	7 x Douglas-fir *Pseudotsuga menziesii*	0.65	5.8	FAIR TRUNK – Broken top	1 x RETAIN
08	9 x Douglas-fir *Pseudotsuga menziesii*	0.20-0.45	Avg. 4.4	GOOD FIG. 6	9 x REMOVE DUE TO DESIGN (GRADING FOR SKATEPARK)
09	8 x Douglas-fir *Pseudotsuga menziesii*	0.20-0.50	Avg. 4.3	GOOD FIG. 7, 10	8 x RETAIN

TREE / GROUP #	COMMON NAME *BOTANICAL NAME*	DBH (M.)	C-RAD (M.)	COMMENTS	RETAIN / REMOVE
09a	1 x Douglas-fir *Pseudotsuga menziesii*	0.15	4.3	FAIR TRUNK – Bulges at 2.0 m. Leans toward proposed skatepark. FIG. 7 Not suitable to retain next to current parking lot as it is in decline.	1 x REMOVE DUE TO CONDIITON **We recommend these trees to be removed regardless of any proposed development.**
10	11 x Mix of mostly Douglas-fir *Pseudotsuga menziesii* & some western redcedar *Thuja plicata*	0.20-0.50	Avg. 3.3 (firs) 6.4 (wrc)	GOOD-FAIR CROWN – All suppressed FIG. 9	11 x RETAIN 7 x REMOVE

TREE / GROUP #	COMMON NAME *BOTANICAL NAME*	DBH (M.)	C-RAD (M.)	COMMENTS	RETAIN / REMOVE
11	38 x Mix of mostly Douglas-fir *Pseudotsuga menziesii* & some western redcedar *Thuja plicata*	0.20-0.50	Avg. 4.9	**75% of the trees belong to the ministry of transportation property, 25% are located onsite** GOOD CROWN – Closed canopy FIG. 8 & 9	38 x RETAIN
11a	1 x Douglas-fir *Pseudotsuga menziesii*	0.50	4.9	POOR TRUNK – Linear crack from 2.0 – 4.0 m. Likely has decay. Not suitable to retain next to the current parking lot or proposed skatepark. The trunk above the linear crack could fail.	1 x REMOVE DUE TO CONDIITON **Tree needs to be removed regardless of any proposed development**

TREE / GROUP #	COMMON NAME *BOTANICAL NAME*	DBH (M.)	C-RAD (M.)	COMMENTS	RETAIN / REMOVE
12	13 x Mix of mostly Douglas-fir *Pseudotsuga menziesii* & some western redcedar *Thuja plicata*	0.20-0.60	Avg. 5.6	FAIR-GOOD **0.60 DBH tree to be remove** FIG.10	13 x REMOVE DUE TO DESIGN (GRADING FOR SKATEPARK)
13	57 x Mix of mostly Douglas-fir *Pseudotsuga menziesii* & some western redcedar *Thuja plicata* & one Arbutus		Avg. 5.6	FAIR- GOOD CROWN – Closed canopy **0.65 DBH tree to be removed** FIG. 10	56 x REMOVE 1 x RETAIN (straddling property line)

Table 2: Tree Retention and Removal Summary – Phase II

TREES TO BE REMOVED DUE TO CONDITION	4
TREES TO BE REMOVED DUE TO DESIGN	100
TREES TO BE RETAINED	64
TOTAL TREES ASSOCIATED WITH THIS PROJECT	168

Final Tree removal quantities may differ from this table due to conflicts identified during construction of proposed trails.

RECOMMEND REPLACEMENT SPECIES

Arbutus menziesii

Cornus nutallii

Pseudotsuga menziesii

PHOTOS

Fig. 2

Fig. 3

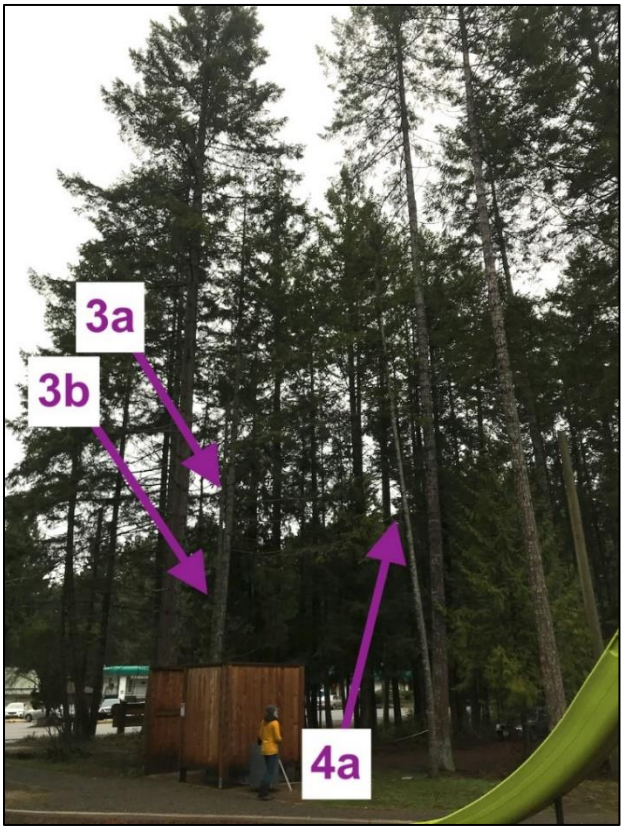


Fig. 4

Fig. 5

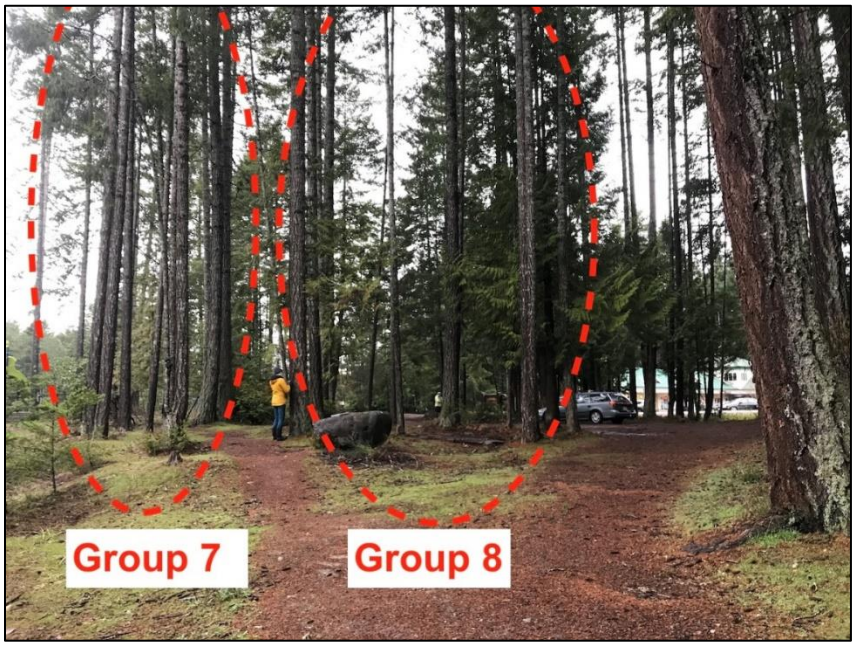


Fig. 6

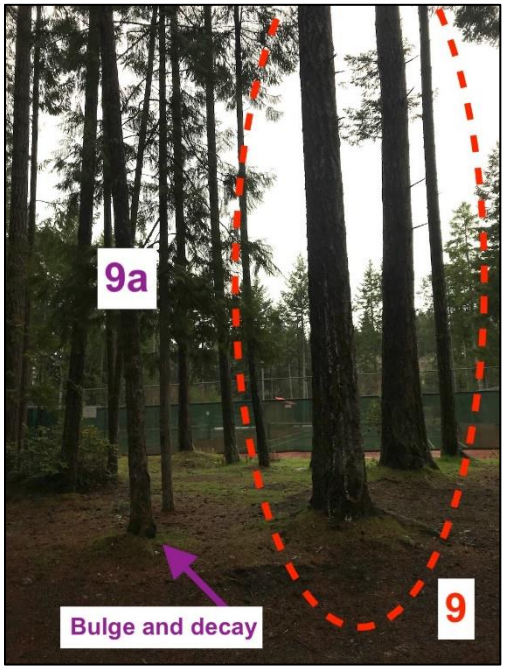


Fig. 7

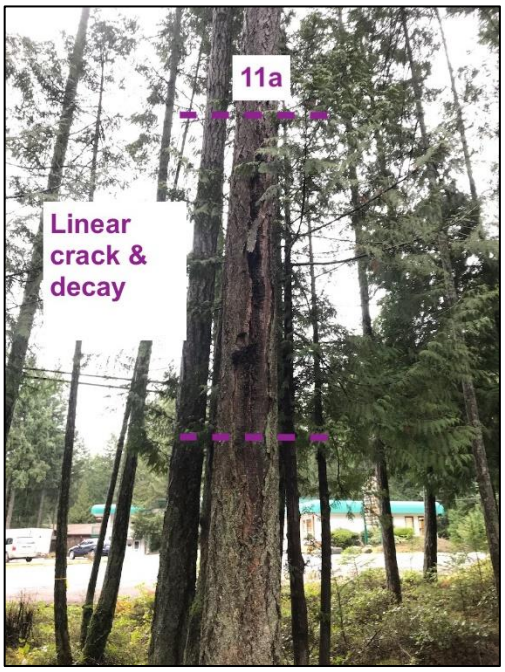


Fig. 8

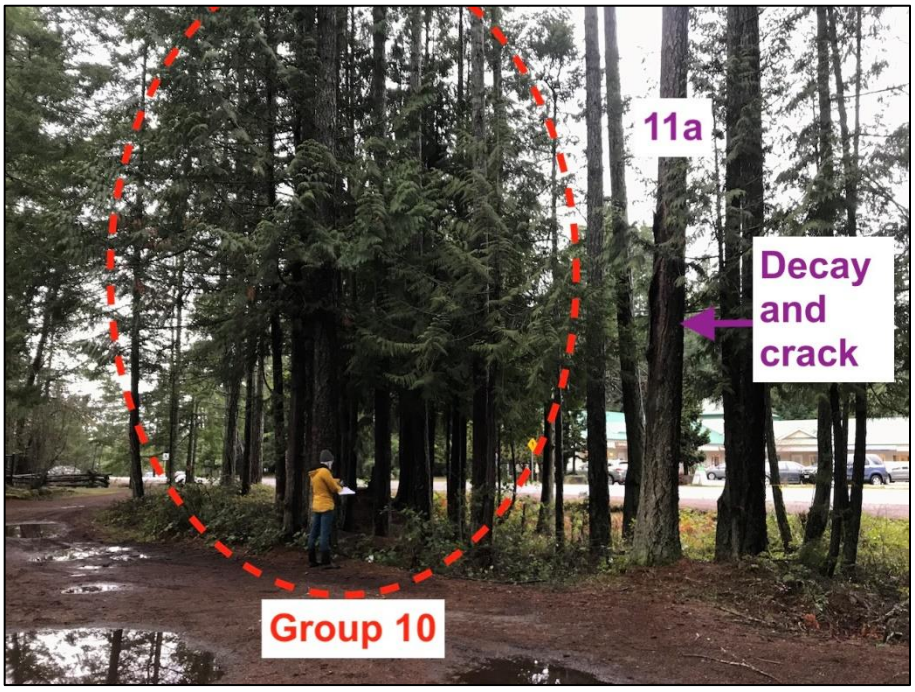


Fig. 9

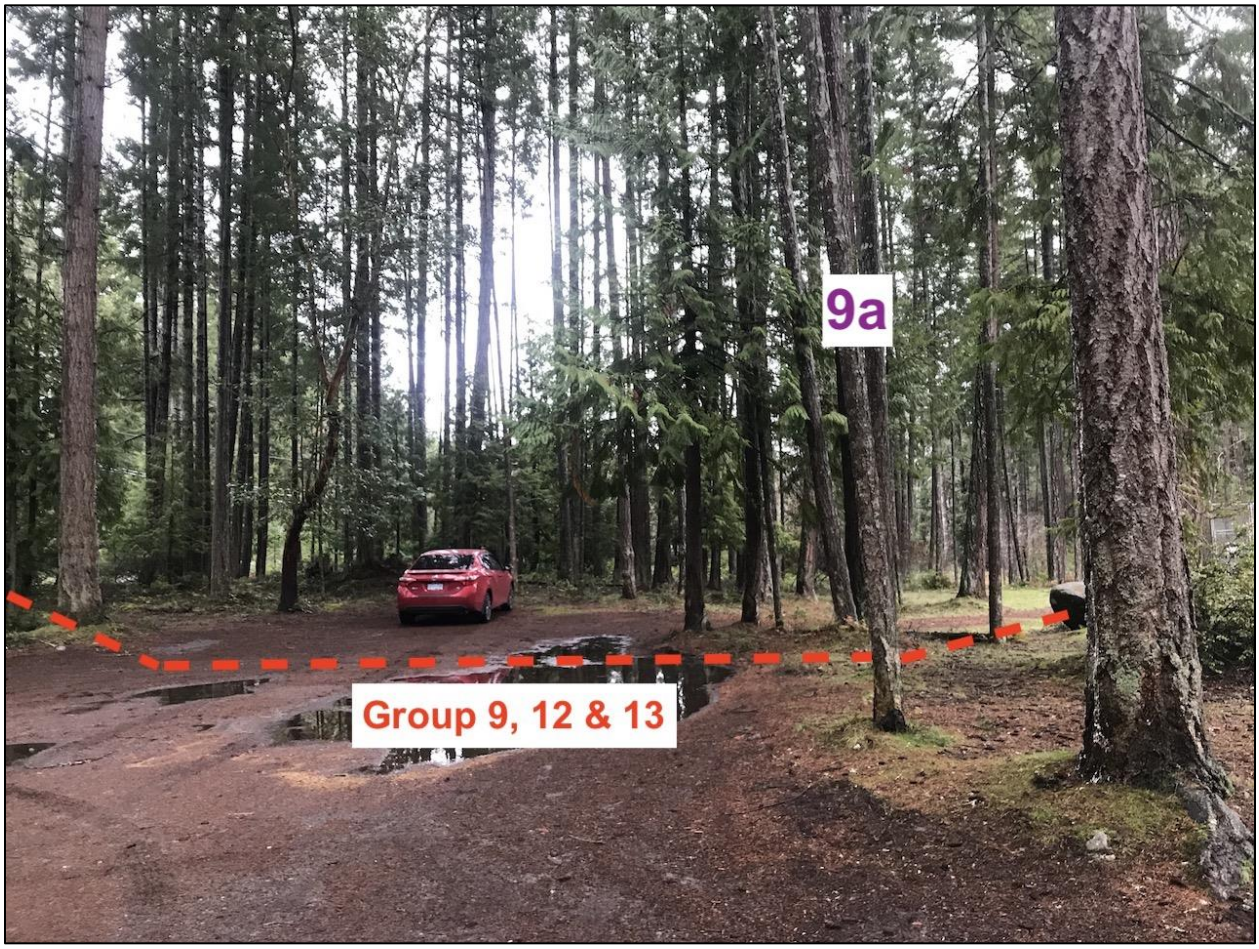
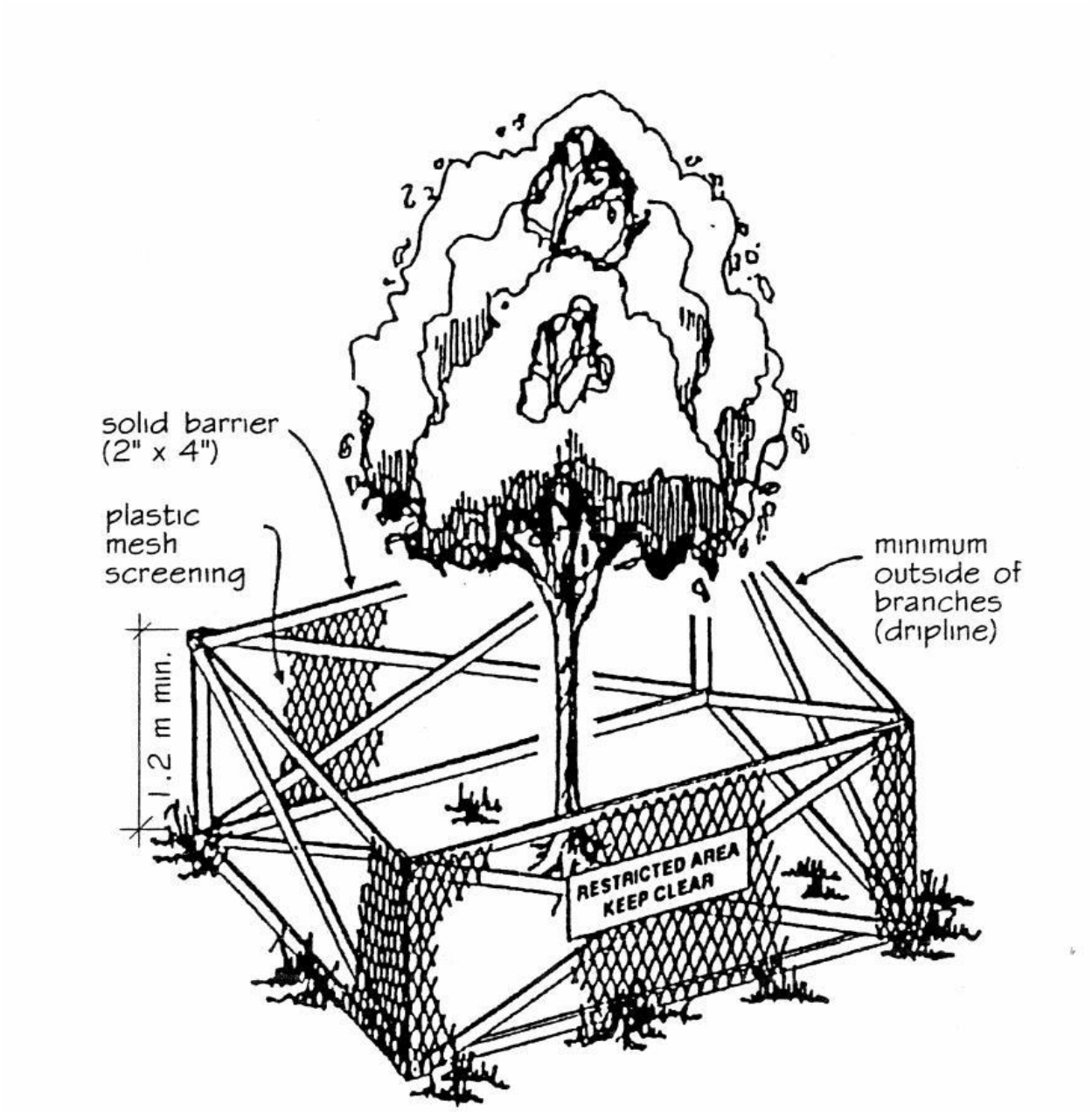


Fig. 10

TREE PROTECTION BARRIER (TPB) SPECIFICATIONS



GENERAL REQUIREMENTS AND LIMITATIONS FOR OPERATIONS WITHIN THE TREE PROTECTION ZONE

- The Contractor shall not engage in any construction activity within the Tree Protection Zone (TPZ) without the approval of the Project Arborist including: operating, moving or storing equipment; storing supplies or materials; locating temporary facilities including trailers or portable toilets and shall not permit employees to traverse the area to access adjacent areas of the project or use the area for lunch or any other work breaks. Permitted activity, if any, within the Tree Protection Zone maybe indicated on the drawings along with any required remedial activity as listed below.
- In the event that construction activity is unavoidable within the Tree Protection Zone, notify the Project Arborist and submit a detailed written plan of action for approval. The plan shall include: a statement detailing the reason for the activity including why other areas are not suited; a description of the proposed activity; the time period for the activity, and a list of remedial actions that will reduce the impact on the Tree Protection Zone from the activity. Remedial actions shall include but shall not be limited to the following:
- In general, demolition and excavation within the drip line of trees and shrubs shall proceed with extreme care either by the use of hand tools, directional boring and/or Air Spade. If any excavation work is required within the Tree Protection Zone (TPZ), the Project Arborist must be present during excavation, and a trench should be 'hand dug' to a depth of 60 cm outside the Drip Line, to uncover any potential roots. The Project Arborist should cleanly prune roots and recommend the appropriate treatment for any structural roots encountered.
- Knife excavation where indicated or with other low impact equipment that will not cause damage to the tree, roots soil.
- When encountered, exposed roots, 1 inches and larger in diameter shall be worked around in a manner that does not break the outer layer of the root surface (bark). These roots shall be covered in Wood Chips and shall be maintained above permanent wilt point at all times. Roots one inch and larger in diameter shall not be cut without the approval of the Project Arborist. Excavation shall be tunnelled under these roots without cutting them. In the areas where roots are encountered, work shall be performed and scheduled to close excavations as quickly as possible over exposed roots.
- Tree branches that interfere with the construction may be tied back or pruned to clear only to the point necessary to complete the work. Other branches shall only be RETAINED when specifically indicated by the Project Arborist. Tying back or trimming of all branches and the cutting of roots shall be in accordance with accepted arboriculture practices (ANSI A300, part 8) and be performed under supervision of the Project Arborist.
- Do not permit foot traffic, scaffolding or the storage of materials within the Tree Protection Zone.
- Protect the Tree Protection Zone at all times from compaction of the soil; damage of any kind to trunks, bark, branches, leaves and roots of all plants; and contamination of the soil, bark or leaves with construction materials, debris, silt, fuels, oils, and any chemicals substance. Notify the Project Arborist of any spills, compaction or damage and take corrective action immediately using methods approved by the Project Arborist

GLOSSARY OF KEY TERMS

Abutment: A structure built to support the lateral pressure of an arch or span, e.g., at the ends of a bridge.

Adapted Trunk Diameter Method: This method uses the trees age and tolerance to construction damage to determine the factor that will be multiplied by the diameter to provide a sufficient tree protection zone given these factors.

Age: The relative age (young, intermediate, mature) within the particular stand of trees or forest.

Algae: Is a simple, nonflowering plant (includes seaweeds and many single-celled forms). They do contain chlorophyll (but lack true stems, roots, and vascular tissue)

ALR: The Agricultural Land Reserve in which agriculture is recognized as the priority.

Bole: The stem or trunk of a tree.

Chlorotic: Yellowing of plant tissues caused by nutrient deficiency &/or pathogen.

Co-dominant Leaders: Forked dominant stems nearly the same size in diameter, arising from a common junction.

Co-dominant Within Stand: Individual tree whose height is generally equal to trees (regardless of species) within the same stand.

Compaction: Compression of the soil that breaks down soil aggregates and reduces soil volume and total pore space, especially macropore space.

Conk: A fungal fruiting structure typically found on trunks and indicating internal decay.

Dead Standing: A tree that has died but is still standing erect.

DBH: The Diameter of the tree at 1.40 meters above the ground.

Dominant Within Stand: Individual tree whose height is significantly greater than adjacent trees (regardless of species) within the same stand.

C-rad: Crown radius, is the dripline measured from the edge of the trunk to the outermost branches of the crown.

CRT: Critical Root Zone

CRZ: Critical Root Zone - The area between the trunk and to the end of the Drip Line.

Fair: Healthy but has some defects such as co-dominant trunk, dead branches.

Feeder Roots: The smaller roots responsible for water and nutrient absorption and gas exchange. These roots can extend far beyond the Drip Line (or outer canopy) of the tree.

Fungus (singular) / Fungi (plural): Unicellular, multicellular or syncytial spore-producing organisms that feed on organic matter (including molds, yeast, mushrooms and toadstools)

Girdling Root: Root that encircles all or part of the trunk of a tree or other roots and constricts the vascular tissue and inhibits secondary growth and the movement of water.

Good: Good form and structure, healthy with no defects.

Hazardous: Significant hazard exists with a high risk of immediate failure; which could result in serious damage to property or person(s).

Height: Height of tree is approximate.

LCR: Live Crown Ratio – The ratio of crown length to total tree length.

Level 1 Limited Visual Assessment: Limited visual assessment looking for obvious defects such as, but not limited to dead trees, large cavity openings, large dead or broken branches, fungal fruiting structures, large cracks, and severe leans.

Level 2 Basic Visual Assessment: Detailed visual inspection (aboveground roots, trunk, canopy) of tree(s) may include the use of simple tools to perform assessment (i.e. sounding mallet, trowel, measuring tape, binoculars). The assessment does not include advanced resistance drilling of trunk.

Level 3 Advanced Assessment: To provide detailed information about specific tree parts, defects, targets, or side conditions. May included aerial inspection, resistance drilling of tree parts, laboratory diagnosis of fungal or plant tissue.

Mildew: Is a minute powdery or web-like fungi (of different colours) that is found on diseased or decaying substances.

Moss: A small, green, seedless plant that grows on stones, trees or ground.

No Disturbance Zone: (Trunk Diameter x 6) + Trunk Radius + (60 cm excavation zone). For example, a 50-cm diameter tree would have a No Disturbance Zone = 3.85 meters measured from the edge of the trunk.

Poor: multiple defects, disease, poor structure and or form, root and or canopy damage.

Phloem: Plant vascular tissue that transports sugar and growth regulators. Situated on the inside of the bark, just outside the cambium. Is bidirectional (transports up and down). Contrast with xylem.

Phototropic: Growth toward light source or stimulant.

Retain & Monitor: Monitor health and condition of tree every 12 months for signs of deterioration.

Root Crown: Also, called the root collar, it includes the flare at the base of the trunk and the initial roots that develop below the trunk. These roots generally taper and subdivide rapidly to form the root system of the tree.

SPEA: Streamside Protection and Enhancement Area

Spiral Decline: The health and condition of the tree is deteriorating.

Sub-dominant Within Stand: Individual tree whose height is significantly less than adjacent trees (regardless of species) within the same stand.

Suppressed: Individual tree whose growth, health and condition is negatively impacted by adjacent tree(s).

TPZ: Tree Protection Zone - The area between the trunk and the Tree Protection Barrier.

Wildlife Tree: A tree or a group of trees that are identified to be retained to provide future wildlife habitat. Wildlife habitat can exist in tree risks (cavities, dead snags, broken tops). Often times the tree risk to potential targets (people & property) is reduced by removing that part of the tree posing the risk of failure, but the tree (or portion of) is retained to provide future habitat.

Witches Broom: A dense mass of shoots growing from a single point, with the resulting structure resembling a broom or a bird's nest.

Xylem: Thin overlapping cells that helps provide support and that conducts water and nutrients upward from the roots all the way to the leaves.

LIMITATIONS

This report is valid for the day the trees were reviewed. This report is not to be re-printed, copied, published or distributed without prior approval by VDZ + A Consulting Inc.

Sketches, diagrams and photographs contained in this report being intended as visual aids, should not be construed as engineering reports or legal surveys.

Only the subject tree(s) was inspected and no others. This report does not imply or in any other way infer that other trees on this site or near this site are sound and healthy.

The tendency of trees or parts of trees to fall due to environmental conditions and internal problems are unpredictable. Defects are often hidden within the tree or underground. The project arborist has endeavored to use his skill, education and judgment to assess the potential for failure, with reasonable methods and detail. It is the owner's responsibility to maintain the trees and inspect the trees to reasonable standards and to carry out recommendations for mitigation suggested in this report.

REFERENCES

Bond, Jerry & Buchanan, Beth (2006) Best Management Practices: Tree Inventories, International Society of Arboriculture, Champaign, IL.

Dunster, Dr. Julian (2003) *Preliminary Species Profiles for Tree Failure Assessment*. ISA Pacific Northwest Chapter, Silverton, OR, USA

Dunster, Dr. Julian & Edmonds, Dr. R. (2014) Common Fungi Affecting Pacific Northwest Trees, ISA Pacific Northwest Chapter, Silverton, OR, USA

Fite, Kelby & Smiley, E. Thomas (2016) Best Management Practices: Managing Trees During Construction, International Society of Arboriculture, Champaign, IL.

Sibley, David Allen (2009) *The Sibley Guide to Trees*. Alfred A. Knopf, New York, NY

Smiley, E.T., Matheny, N., Lilly, S. (2011) Best Management Practises: Tree Risk Assessment. International Society of Arboriculture, Champaign, IL.

TREE MANAGEMENT PLAN

See attached Tree Management Plan

Original size: 24x36

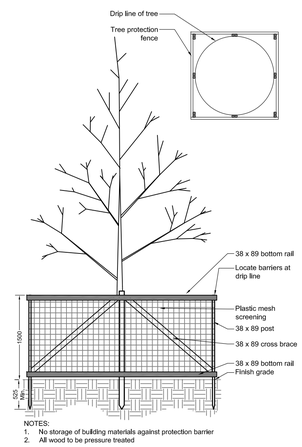
Print as 11x17 for foldout

1 TREE RETENTION AND REMOVAL PLAN
Scale 1:200

1:200 0 2m 4 6 8 10 12 14 16 18 20 22 24 26 28 30

Note:
1. Contact VDZ+A Project Arborist for inspection 72 hrs prior to any grading or excavation within the tree protection zone. (typ) If during excavation it is found that it cannot be completed without severing roots that are critical to the trees health or stability it may be necessary to remove additional trees.
2. Read this plan together with the arborist report prepared by VDZ+A.
3. An additional 1m setback is shown for all hand-plotted trees to be retained
4.If Stump Grinding is to occur in close proximity to trees which are to be retained then it is requested stumps to be removed under Arborist supervision.
5. It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:
*Locating TPZ Fencing
*Locating Work Zone and Machine access corridors where required
*Reviewing the Report with the project foreman or site supervisor.

Existing Tree to be Retained	Existing Tree to be Removed during Skate park Install	Tree Protection Fence

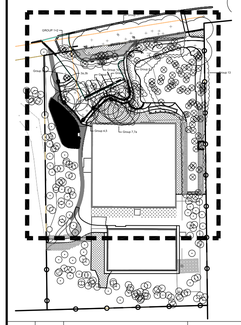


NOTES:
1. No storage of building materials against protection barrier
2. All wood to be pressure treated

van der Zalm + associates inc.
Parks & Recreation + Civil Engineering
Urban Design + Landscape Architecture
Suite 1, 20177 97th Avenue
Langley, British Columbia
V1M 4B9
P 604.882.0024
F 604.882.0042
info@www.vdz.ca

DRAFT
100% REVIEW SET

Key Map (NTS)



No.	By:	Description	Date
6	DY	ISSUED FOR	Jan. 07, 2021
5	AK	ISSUED FOR REVIEW	Feb. 21, 2020
4	JJ	ISSUED FOR 100% REVIEW	April 18, 2019
3	JJ	ISSUED FOR ICIP - CCR GRANT APPLICATION	Jan. 21, 2019
2	AK	ISSUED FOR 50% REVIEW	Jan. 03, 2019
1	AK	ISSUED FOR 25% REVIEW	Dec.18, 2018

REVISIONS TABLE FOR DRAWINGS

No.	By:	Description	Date

REVISIONS TABLE FOR SHEET

Project:

HUXLEY COMMUNITY PARK
PHASE 2/3 DEVELOPMENT

Location:

585 NORTH ROAD,
GABRIOLA ISLAND, BC

Drawn: KM

Checked: DJ

Approved: DJ

Scale: 1:200

Stamp:

Original Sheet Size: 24"x36"

Drawing Title: TREE RETENTION AND REMOVAL PLAN

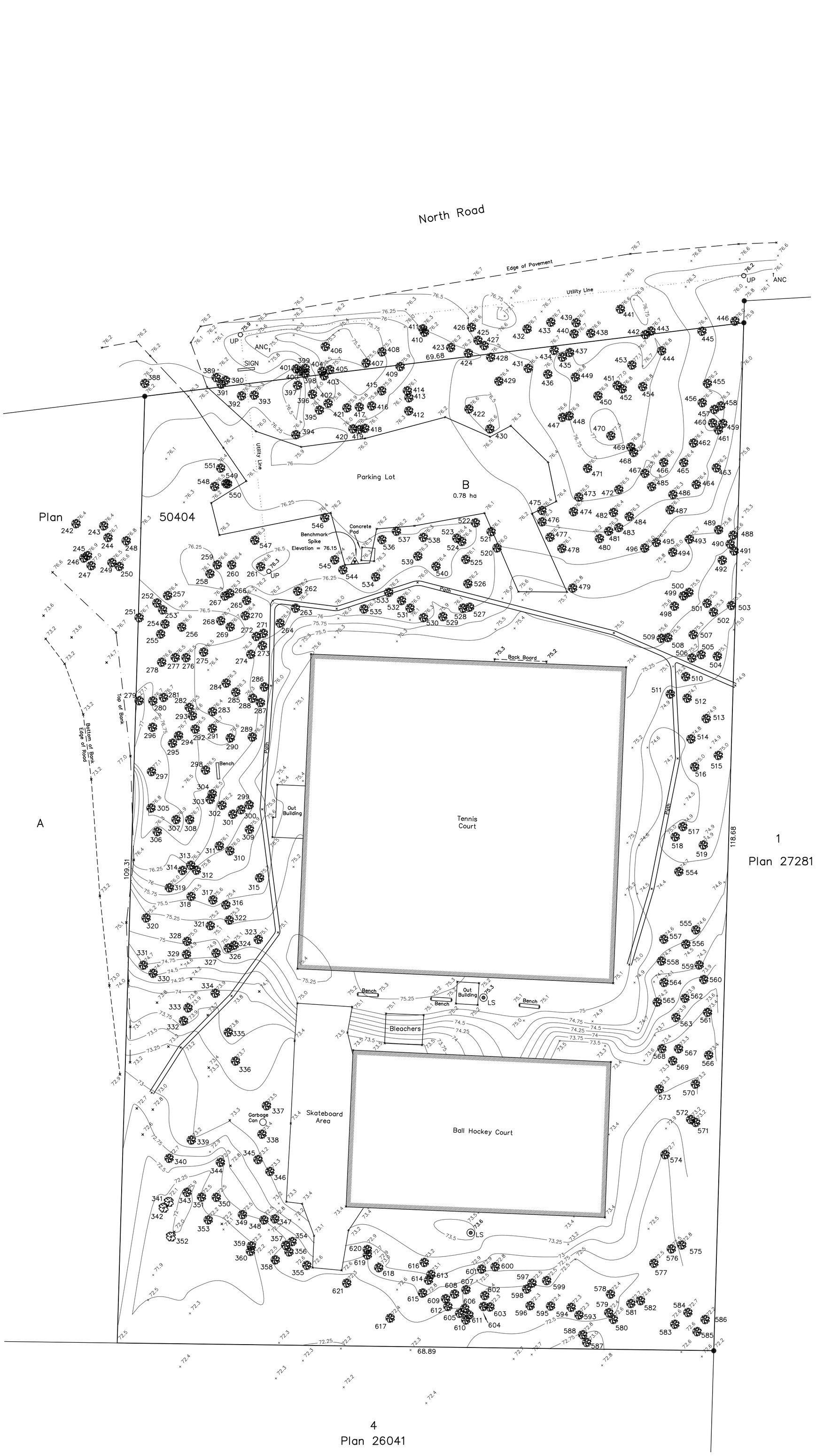
NORTH

VDZ Project #: SK2019-01

Drawing #: L-02

1.0 TOPOGRAPHIC SURVEY

1. Refer to the following pages for the topographic survey.



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Legend

×75.0		Denotes Spot Elevation
●		Denotes Standard Iron Post Found
O	UP	Denotes Utility Pole
↑	ANC	Denotes Pole Anchor
◉	LS	Denotes Lamp Standard
	TRC	Denotes Coniferous Tree
	TRD	Denotes Deciduous Tree
	ø	Denotes Tree Trunk Diameter
		Denotes Benchmark Set

Topographic Site Plan showing:
Lot B, Section 20, Gabriola Island, Nanaimo District, Plan 50404.

Client: Regional District of Nanaimo		Civic Address: North Road, Huxley Park	
File: 13-065	Scale: 1:250	Date: February 20th, 2017	Drawn by: DRW

0 10 20
Scale 1:250

Distances and elevations are in metres.
Geodetic elevations are derived from GNSS observations.
Vertical Datum CVD28BC
Horizontal Datum NAD83(CSRS) 3.0.0.BC.NVI

Note:
This property is affected by the following registered document: M76301.

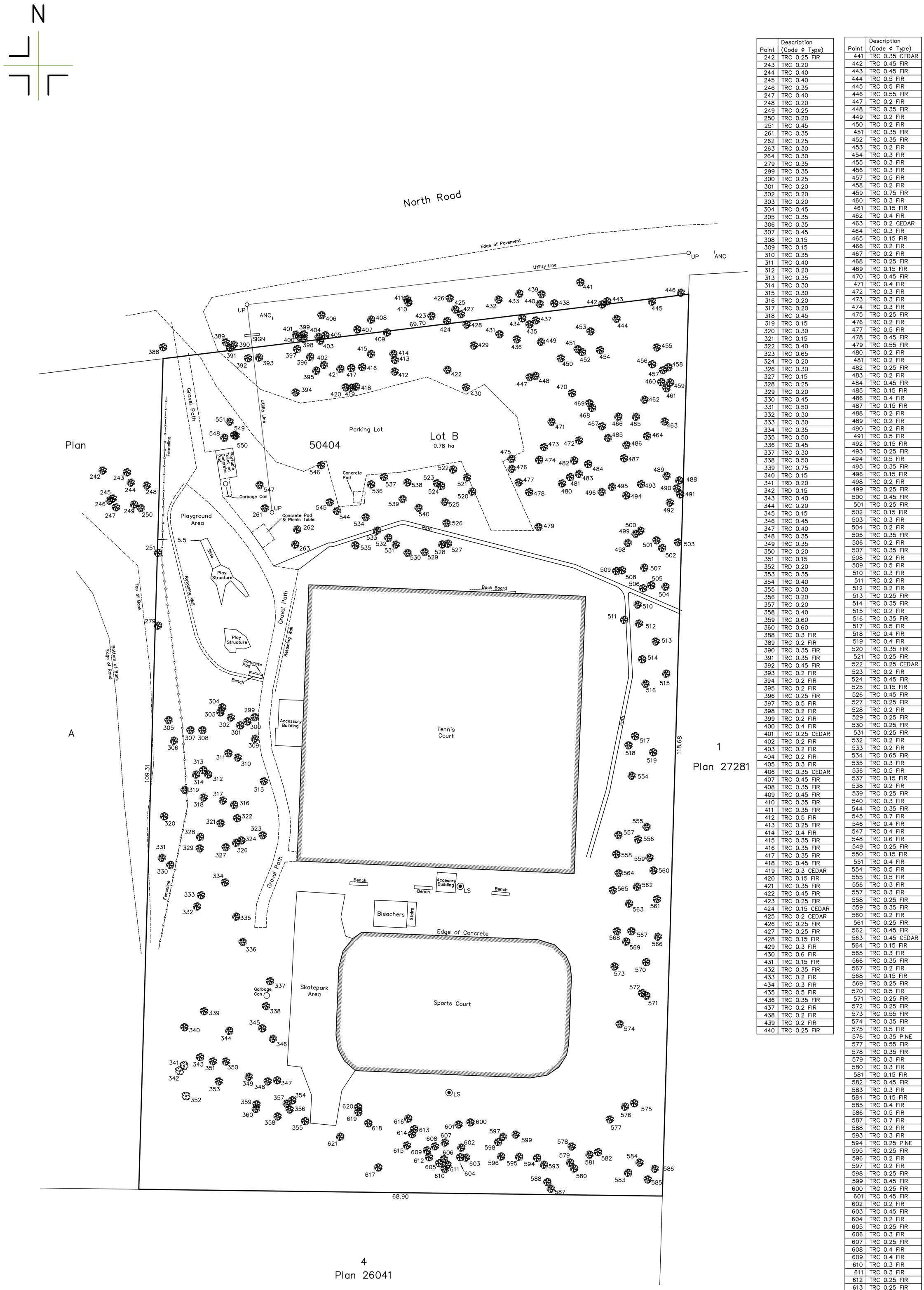
Certified correct this 20th day of February, 2017.

_____ B.C.L.S.
(This document is not valid unless originally signed and sealed.)

Turner land surveying
250.753.9778
605 Comox Road
Nanaimo, BC V9R 3J4

1.0 AS-BUILT DRAWINGS

1. Refer to the following pages for the as-built drawings



Point	Description (Code ø Type)
242	TRC 0.25 FIR
243	TRC 0.20
244	TRC 0.40
245	TRC 0.40
246	TRC 0.35
247	TRC 0.40
248	TRC 0.20
249	TRC 0.25
250	TRC 0.20
251	TRC 0.45
261	TRC 0.35
262	TRC 0.25
263	TRC 0.30
264	TRC 0.30
279	TRC 0.35
299	TRC 0.35
300	TRC 0.25
301	TRC 0.20
302	TRC 0.20
303	TRC 0.20
304	TRC 0.45
305	TRC 0.35
306	TRC 0.35
307	TRC 0.45
308	TRC 0.15
309	TRC 0.15
310	TRC 0.35
311	TRC 0.40
312	TRC 0.20
313	TRC 0.35
314	TRC 0.30
315	TRC 0.30
316	TRC 0.20
317	TRC 0.20
318	TRC 0.45
319	TRC 0.15
320	TRC 0.30
321	TRC 0.15
322	TRC 0.40
323	TRC 0.65
324	TRC 0.20
326	TRC 0.30
327	TRC 0.15
328	TRC 0.25
329	TRC 0.20
330	TRC 0.45
331	TRC 0.50
332	TRC 0.30
333	TRC 0.30
334	TRC 0.35
335	TRC 0.50
336	TRC 0.45
337	TRC 0.30
338	TRC 0.50
339	TRC 0.75
340	TRC 0.15
341	TRD 0.20
342	TRD 0.15
343	TRC 0.40
344	TRC 0.20
345	TRC 0.15
346	TRC 0.45
347	TRC 0.40
348	TRC 0.35
349	TRC 0.35
350	TRC 0.20
351	TRC 0.15
352	TRD 0.20
353	TRC 0.35
354	TRC 0.40
355	TRC 0.30
356	TRC 0.20
357	TRC 0.20
358	TRC 0.40
359	TRC 0.60
360	TRC 0.60
388	TRC 0.3 FIR
389	TRC 0.2 FIR
390	TRC 0.35 FIR
391	TRC 0.35 FIR
392	TRC 0.45 FIR
393	TRC 0.2 FIR
394	TRC 0.2 FIR
395	TRC 0.2 FIR
396	TRC 0.25 FIR
397	TRC 0.5 FIR
398	TRC 0.2 FIR
399	TRC 0.2 FIR
400	TRC 0.4 FIR
401	TRC 0.25 CEDAR
402	TRC 0.2 FIR
403	TRC 0.2 FIR
404	TRC 0.2 FIR
405	TRC 0.3 FIR
406	TRC 0.35 CEDAR
407	TRC 0.45 FIR
408	TRC 0.35 FIR
409	TRC 0.45 FIR
410	TRC 0.35 FIR
411	TRC 0.35 FIR
412	TRC 0.5 FIR
413	TRC 0.25 FIR
414	TRC 0.4 FIR
415	TRC 0.35 FIR
416	TRC 0.35 FIR
417	TRC 0.35 FIR
418	TRC 0.45 FIR
419	TRC 0.3 CEDAR
420	TRC 0.15 FIR
421	TRC 0.35 FIR
422	TRC 0.45 FIR
423	TRC 0.25 FIR
424	TRC 0.15 CEDAR
425	TRC 0.2 CEDAR
426	TRC 0.25 FIR
427	TRC 0.25 FIR
428	TRC 0.15 FIR
429	TRC 0.3 FIR
430	TRC 0.6 FIR
431	TRC 0.15 FIR
432	TRC 0.35 FIR
433	TRC 0.2 FIR
434	TRC 0.3 FIR
435	TRC 0.5 FIR
436	TRC 0.35 FIR
437	TRC 0.2 FIR
438	TRC 0.2 FIR
439	TRC 0.2 FIR
440	TRC 0.25 FIR

Point	Description (Code ø Type)
441	TRC 0.35 CEDAR
442	TRC 0.45 FIR
443	TRC 0.45 FIR
444	TRC 0.5 FIR
445	TRC 0.5 FIR
446	TRC 0.55 FIR
447	TRC 0.2 FIR
448	TRC 0.35 FIR
449	TRC 0.2 FIR
450	TRC 0.2 FIR
451	TRC 0.35 FIR
452	TRC 0.35 FIR
453	TRC 0.2 FIR
454	TRC 0.3 FIR
455	TRC 0.3 FIR
456	TRC 0.3 FIR
457	TRC 0.5 FIR
458	TRC 0.2 FIR
459	TRC 0.75 FIR
460	TRC 0.3 FIR
461	TRC 0.15 FIR
462	TRC 0.4 FIR
463	TRC 0.2 CEDAR
464	TRC 0.3 FIR
465	TRC 0.15 FIR
466	TRC 0.2 FIR
467	TRC 0.2 FIR
468	TRC 0.25 FIR
469	TRC 0.15 FIR
470	TRC 0.45 FIR
471	TRC 0.4 FIR
472	TRC 0.3 FIR
473	TRC 0.3 FIR
474	TRC 0.3 FIR
475	TRC 0.3 FIR
476	TRC 0.3 FIR
477	TRC 0.5 FIR
478	TRC 0.2 FIR
479	TRC 0.2 FIR
480	TRC 0.2 FIR
481	TRC 0.2 FIR
482	TRC 0.25 FIR
483	TRC 0.2 FIR
484	TRC 0.2 FIR
485	TRC 0.5 FIR
486	TRC 0.15 FIR
487	TRC 0.25 FIR
488	TRC 0.5 FIR
489	TRC 0.35 FIR
490	TRC 0.15 FIR
491	TRC 0.2 FIR
492	TRC 0.25 FIR
493	TRC 0.5 FIR
494	TRC 0.45 FIR
495	TRC 0.25 FIR
496	TRC 0.15 FIR
498	TRC 0.2 FIR
499	TRC 0.25 FIR
500	TRC 0.45 FIR
501	TRC 0.25 FIR
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503	TRC 0.3 FIR
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509	TRC 0.2 FIR
510	TRC 0.2 FIR
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514	TRC 0.2 FIR
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518	TRC 0.4 FIR
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520	TRC 0.35 FIR
521	TRC 0.25 FIR
522	TRC 0.25 CEDAR
523	TRC 0.2 FIR
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560	TRC 0.2 FIR
561	TRC 0.25 FIR
562	TRC 0.45 FIR
563	TRC 0.45 CEDAR
564	TRC 0.15 FIR
565	TRC 0.3 FIR
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571	TRC 0.25 FIR
572	TRC 0.25 FIR
573	TRC 0.55 FIR
574	TRC 0.35 FIR
575	TRC 0.5 FIR
576	TRC 0.35 PINE
577	TRC 0.55 FIR
578	TRC 0.35 FIR
579	TRC 0.3 FIR
580	TRC 0.3 FIR
581	TRC 0.15 FIR
582	TRC 0.45 FIR
583	TRC 0.3 FIR
584	TRC 0.15 FIR
585	TRC 0.4 FIR
586	TRC 0.5 FIR
587	TRC 0.7 FIR
588	TRC 0.2 FIR
593	TRC 0.3 FIR
594	TRC 0.25 PINE
595	TRC 0.25 FIR
596	TRC 0.2 FIR
597	TRC 0.2 FIR
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600	TRC 0.25 FIR
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603	TRC 0.45 FIR
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607	TRC 0.25 FIR
608	TRC 0.4 FIR
609	TRC 0.4 FIR
610	TRC 0.3 FIR
611	TRC 0.3 FIR
612	TRC 0.25 FIR
613	TRC 0.25 FIR
614	TRC 0.35 FIR
615	TRC 0.35 FIR
616	TRC 0.15 FIR
617	TRC 0.3 FIR
618	TRC 0.5 FIR
619	TRC 0.4 FIR
620	TRC 0.25 FIR
621	TRC 0.3 FIR

Legend

O	UP	Denotes Utility Pole
↑	ANC	Denotes Pole Anchor
◉	LS	Denotes Lamp Standard
❋	TRC	Denotes Coniferous Tree
❀	TRD	Denotes Deciduous Tree
	ø	Denotes Tree Trunk Diameter

Sports Court = 540 m²
Bleachers = 15 m²
Skatepark Area = 181 m²
Tennis Court = 1329 m²
Playground Area = 224 m²
Concrete Pad (Portabale Toilet) = 9 m²
Accessory Buildings (2) = 26 m²

TOTAL = 2324 m²

LOT AREA = 7854 m²
PARCEL COVERAGE 30%

SITE PLAN SHOWING:
LOT B, SECTION 20, GABRIOLA ISLAND, NANAIMO DISTRICT, PLAN 50404.

Client: REGIONAL DISTRICT OF NANAIMO		Civic Address: NORTH ROAD, HUXLEY PARK	
File: 13-065	Scale: 1:250	Drawn by: DRW	Property Zoning: P3

0 10 20
SCALE 1:250
DISTANCES AND ELEVATIONS ARE IN METRES.
GEODETIC ELEVATIONS ARE DERIVED FROM GNSS OBSERVATIONS (CVD28BC DATUM).

NOTE:
THIS PROPERTY IS AFFECTED BY THE FOLLOWING REGISTERED DOCUMENT:
M76301.

Certified correct this 7th day of May, 2019.

_____ B.C.L.S.
(This document is not valid unless originally signed and sealed.)

Turner & Associates land surveying Inc.
250.753.9778
605 Comox Road
Nanaimo, BC V9R 3J4
www.turnersurveys.ca

CONTRACT DRAWINGS

SCHEDULE OF DRAWINGS

TITLE	Sheets or Pages.	DATE	REVISION NO.	REVISION DATE
COVER SHEET	L-01	January 28, 2021	6	March 23, 2021
TREE RETENTION AND REMOVAL PLAN	L-02	January 28, 2021	6	March 23, 2021
SITE AND TREE PLAN	L-03	January 28, 2021	6	March 23, 2021
LANDSCAPE DETAILS	LD-01	January 28, 2021	6	March 23, 2021
LANDSCAPE DETAILS	LD-02	January 28, 2021	6	March 23, 2021
LANDSCAPE DETAILS	LD-03	January 28, 2021	6	March 23, 2021
LANDSCAPE DETAILS	LD-04	January 28, 2021	6	March 23, 2021
CIVIL NOTES	CV-01	January 28, 2021	6	March 23, 2021
EXISTING CONDITIONS	CV-02	January 28, 2021	6	March 23, 2021
GRADING PLAN	CV-03	January 28, 2021	6	March 23, 2021
GRADING PLAN - SOUTH	CV-04	January 28, 2021	6	March 23, 2021
SECTIONS	CV-05	January 28, 2021	6	March 23, 2021
DRAINAGE PLAN	CV-06	January 28, 2021	6	March 23, 2021
DETAILS	CV-07	January 28, 2021	6	March 23, 2021
COVER	SK-001	January 4, 2021	E	January 4, 2021
SECTIONS	SK-002	January 4, 2021	E	January 4, 2021
FOUNDATIONS	SK-003	January 4, 2021	E	January 4, 2021
WALLS	SK-004	January 4, 2021	E	January 4, 2021
DIMENSIONS	SK-005	January 4, 2021	E	January 4, 2021
GRADING	SK-006	January 4, 2021	E	January 4, 2021
STEEL	SK-007	January 4, 2021	E	January 4, 2021
CONCRETE	SK-008	January 4, 2021	E	January 4, 2021
DETAIL REFERENCE	SK-D-000	January 4, 2021	E	January 4, 2021
DETAILS SHEET 1	SK-D-001	January 4, 2021	E	January 4, 2021
DETAILS SHEET 2	SK-D-002	January 4, 2021	E	January 4, 2021
DETAILS SHEET 3	SK-D-003	January 4, 2021	E	January 4, 2021
TYPICAL DETAILS	SK-TD-001	January 4, 2021	E	January 4, 2021

Huxley Community Park Phase 2 Development

Issued for Tender

Contact Information	Other Key Contacts:	
van der Zalm + Associates Inc. Project Landscape Architect and Civil Engineer Suite 1 - 20177 97th Avenue Langley, British Columbia, V1M 4B9 t. 604 882 0024 f. 604 882 0042 Primary project contact: Dave Jerke davidj@vdz.ca o. 604-882-0024 Alternate contacts (in case away): Mark van der Zalm Principal Landscape Architect mark@vdz.ca o. 604 882 0024 x22	Regional District of Nanaimo Parksville, British Columbia Project Owner 6300 Hammond Bay Road Nanaimo, BC V9T 6N2 t. 250 248 4744	New Line Skateparks Inc Skatepark Designer 6249 205 St. Langley BC V2Y 1N7 t. 604 530 1114

Legal Address and Description:
LOT B, SECTION 20, GABRIOLA ISLAND, NANAIMO DISTRICT, PLAN 50404

Sheet List Table : Landscape

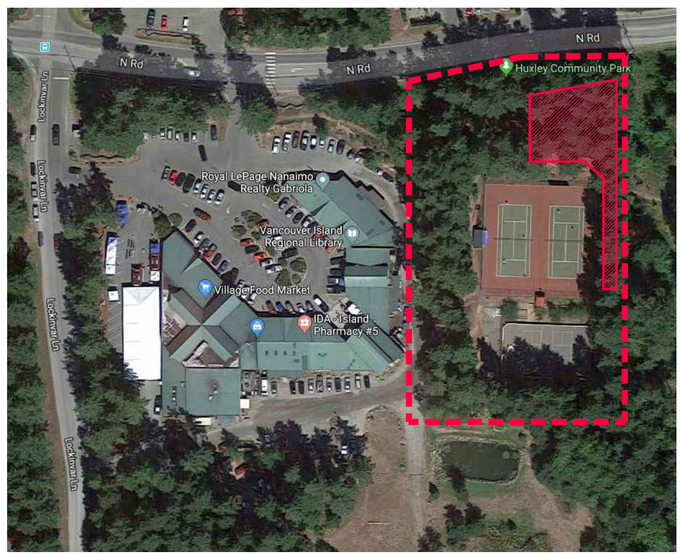
Sheet Number	Sheet Title
L-01	COVER SHEET
L-02	TREE RETENTION AND REMOVAL PLAN
L-03	SITE & TREE PLAN
LD-01	LANDSCAPE DETAILS
LD-02	LANDSCAPE DETAILS
LD-03	LANDSCAPE DETAILS
LD-04	LANDSCAPE DETAILS

Sheet List Table: Civil

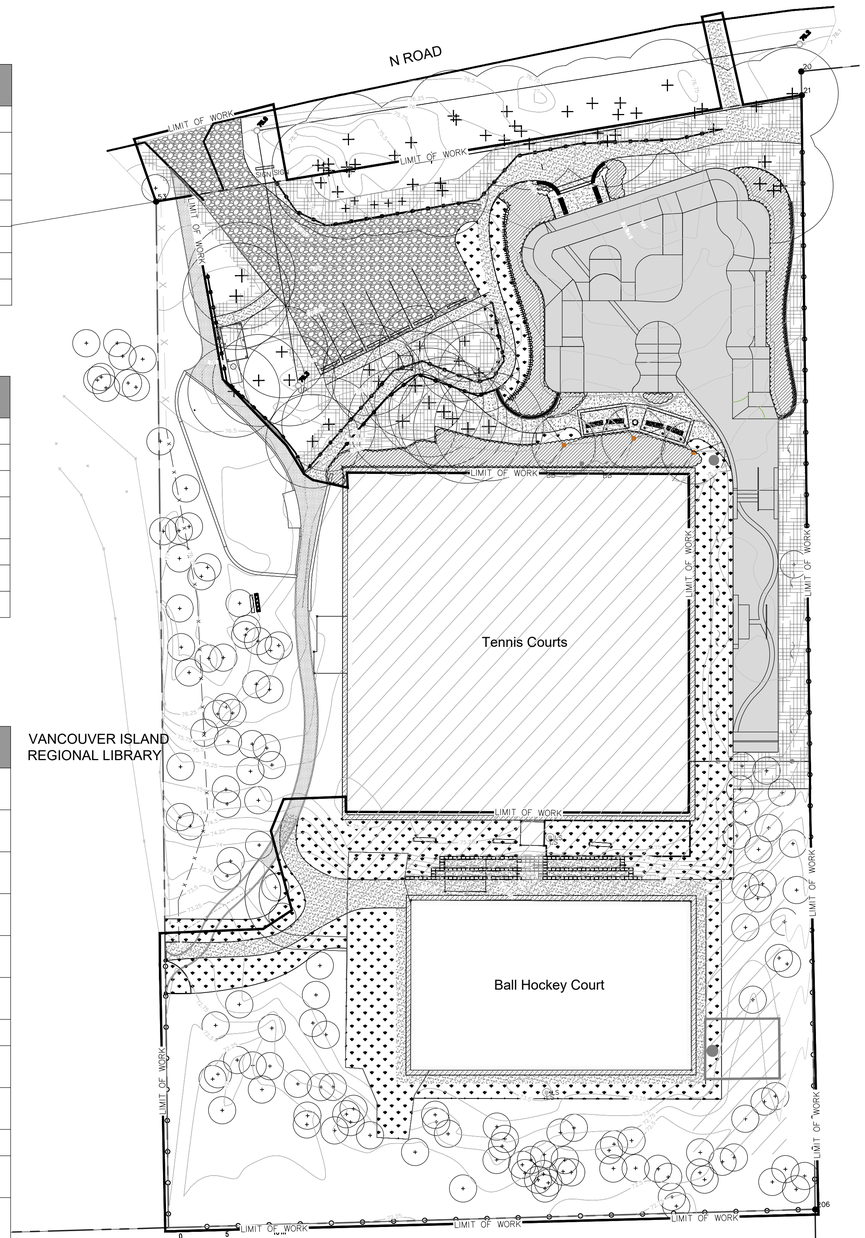
Sheet Number	Sheet Title
CV-01	CIVIL NOTES
CV-02	EXISTING CONDITIONS
CV-03	GRADING PLAN
CV-04	GRADING PLAN - SOUTH
CV-05	SECTIONS
CV-06	DRAINAGE PLAN
CD-01	DETAILS

Sheet List Table : Skatepark

Sheet Number	Sheet Title
SK-001	COVER
SK-002	SECTIONS
SK-003	FOUNDATIONS
SK-004	WALLS
SK-005	DIMENSIONS
SK-006	GRADING
SK-007	STEEL
SK-008	CONCRETE
SK-D-000	DETAIL PREFERENCE
SK-D-001	DETAILS SHEET
SK-D-002	DETAILS SHEET 2
SK-D-003	DETAILS SHEET 3
SK-TD-001	TYPICAL DETAILS



1 SITE LOCATION
NTS



2 SITE PLAN OVERVIEW
Scale 1:300

van der Zalm + associates inc.
Parks & Recreation + Civil Engineering
Urban Design + Landscape Architecture
Suite 1, 20177 97th Avenue
Langley, British Columbia
V1M 4B9
P 604.882.0024
F 604.882.0042
info@www.vdz.ca

No.	By:	Description	Date
6	DY	ISSUED FOR TENDER	Mar 23, 2021
5	AK	ISSUED FOR REVIEW	Feb. 21, 2020
4	JJ	ISSUED FOR 100% REVIEW	April 18, 2019
3	JJ	ISSUED FOR ICIP - CCR GRANT APPLICATION	Jan. 21, 2019
2	AK	ISSUED FOR 50% REVIEW	Jan. 03, 2019
1	AK	ISSUED FOR 25% REVIEW	Dec.18, 2018

REVISIONS TABLE FOR DRAWINGS

No.	By:	Description	Date

REVISIONS TABLE FOR SHEET

Project:

HUXLEY COMMUNITY PARK
PHASE 2 DEVELOPMENT

Location:

585 NORTH ROAD,
GABRIOLA ISLAND, BC

Drawn: MM

Checked: DJ

Approved: DJ

Stamp:

Original Sheet Size: 24"x36"

Scale: AS SHOWN

Drawing Title: COVER SHEET

NORTH

VDZ Project #: SK2019-01

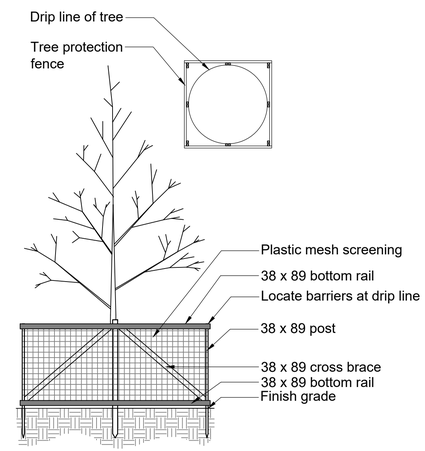
Drawing #: L-01

1 TREE RETENTION AND REMOVAL PLAN
Scale 1:200

1:200 0 2m 4 6 8 10 12 14 16 18 20 22 24 26 28 30

Note:
1. Contact VDZ+A Project Arborist for inspection 72 hrs prior to any grading or excavation within the tree protection zone. (typ) If during excavation it is found that it cannot be completed without severing roots that are critical to the trees health or stability it may be necessary to remove additional trees.
2. Read this plan together with the arborist report prepared by VDZ+A.
3. An additional 1m setback is shown for all hand-plotted trees to be retained
4.If Stump Grinding is to occur in close proximity to trees which are to be retained then it is requested stumps to be removed under Arborist supervision.
5. It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:
*Locating TPZ Fencing
*Locating Work Zone and Machine access corridors where required
*Reviewing the Report with the project foreman or site supervisor.
6. Contractor to provide an optional price for tree removal. Stump and root ball removal is to be included in the base bid.
7. See CV-03 for existing conditions.

Existing Tree to be Retained	Existing Tree to be Removed prior to construction	Tree Protection Fence



NOTES:
1. No storage of building materials against protection barrier
2. All wood to be pressure treated

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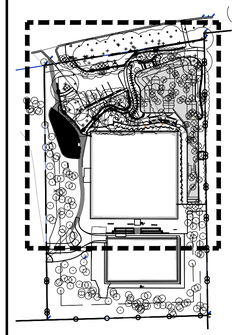
Key Map (NTS)



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No.	By:	Description	Date

REVISIONS TABLE FOR DRAWINGS

No.	By:	Description	Date

REVISIONS TABLE FOR SHEET

Project:

HUXLEY COMMUNITY PARK
PHASE 2 DEVELOPMENT

Location:

585 NORTH ROAD,
GABRIOLA ISLAND, BC

Drawn: KM

Checked: DJ

Approved: DJ

Stamp:

Original Sheet Size: 24"x36"

Scale: 1:200

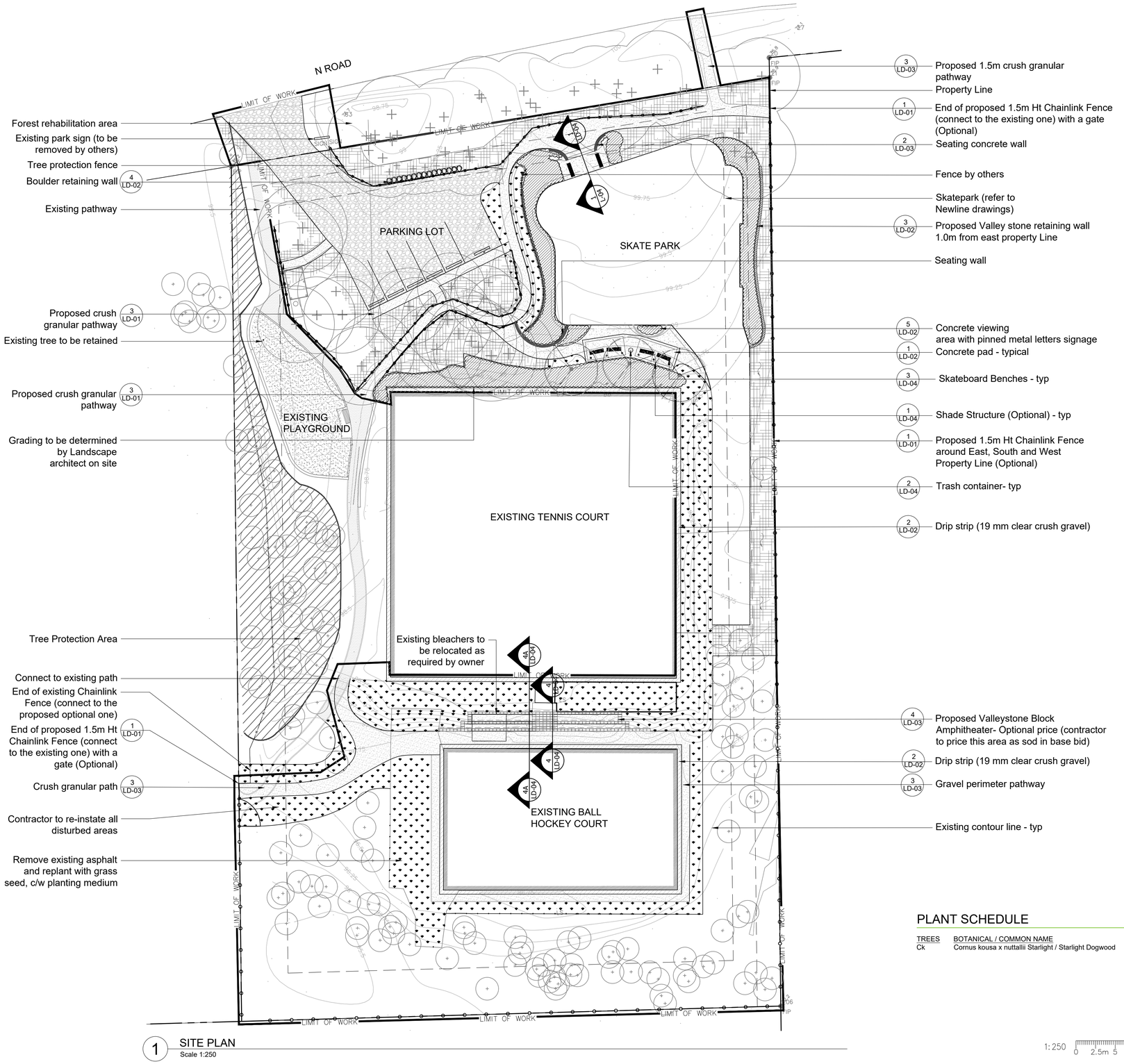
CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE WORK AND REPORT ANY/DISCREPANCY TO THE CONSULTANT BEFORE PROCEEDING. ALL DRAWINGS AND SPECIFICATIONS ARE THE EXCLUSIVE PROPERTY OF THE OWNER AND MUST BE RETURNED AT THE COMPLETION OF THE WORK. ALL REZONING/DP/PPA/FHA/BP DRAWINGS MUST NOT BE PRICED FOR CONSTRUCTION UNLESS LABELED ISSUED FOR TENDER/CONSTRUCTION.

Drawing Title: TREE RETENTION AND REMOVAL PLAN

NORTH

VDZ Project #: SK2019-01

Drawing #: L-02



1 SITE PLAN
Scale 1:250

LANDSCAPE MATERIALS

KEY	REF.	DESCRIPTION
	1 LD-02	CONCRETE PIAZA (NON-SKATEPARK)
	3 LD-02	VALLEYSTONE RETAINING WALL
	2 LD-03	CONCRETE RETAINING WALL
		CONCRETE SKATEPARK Refer to New Line Drawings
		GRAVEL (PARKING AND DRIVEWAY)
	2 LD-02	DRIP STRIP (TENNIS COURT) ¾ CLEAR CRUSH GRAVEL
	3 LD-03	CRUSH GRANULAR PATH
		FUTURE SHRUB PLANTING (NOT IN CONTRACT)
		FUTURE TURF (NOT IN CONTRACT)
		FUTURE RESTORATION PLANTING (NOT IN CONTRACT)
		EXISTING CHAIN LINK FENCE
	1 LD-01	1.5M HT CHAIN LINK FENCE (OPTIONAL)
		TREE PROTECTION FENCE
		FENCE BY OTHERS
	2 LD-04	TRASH CONTAINER Model: MLWR200S-32 Description: Evergreen, Dome Lid Manufacturer: Maglin Site Furnishing
	3 LD-04	SKATEBOARD BENCH

Note: Contractor is expected to restrict construction parking and staging to the construction zone unless otherwise approved by the Regional district of Nanaimo.

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME	CONT	QTY
Ck	Cornus kousa x nuttallii Starlight / Starlight Dogwood	B&B; 6cm Cal. 1.5m std.	3

1:250 0 2.5m 5 7.5 10 12.5 15 17.5 20 22.5 25 27.5 30 32.5 35 37.5

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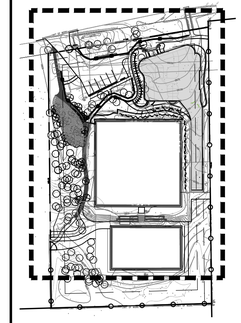

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Approved: DJ

Original Sheet Size: 24"x36"

Scale: 1:250

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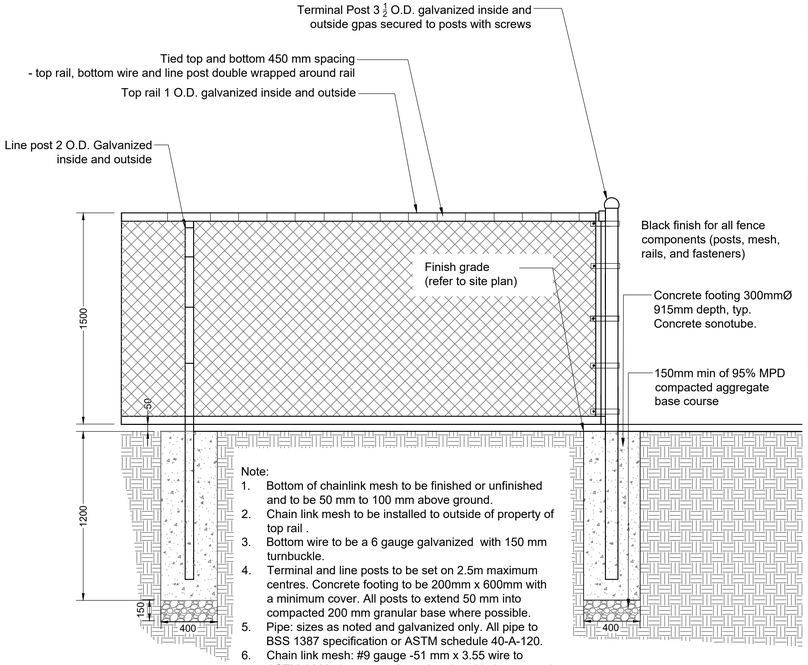
Drawing Title: SITE & TREE PLAN

NORTH

VDZ Project #: SK2019-01

Drawing #: L-03

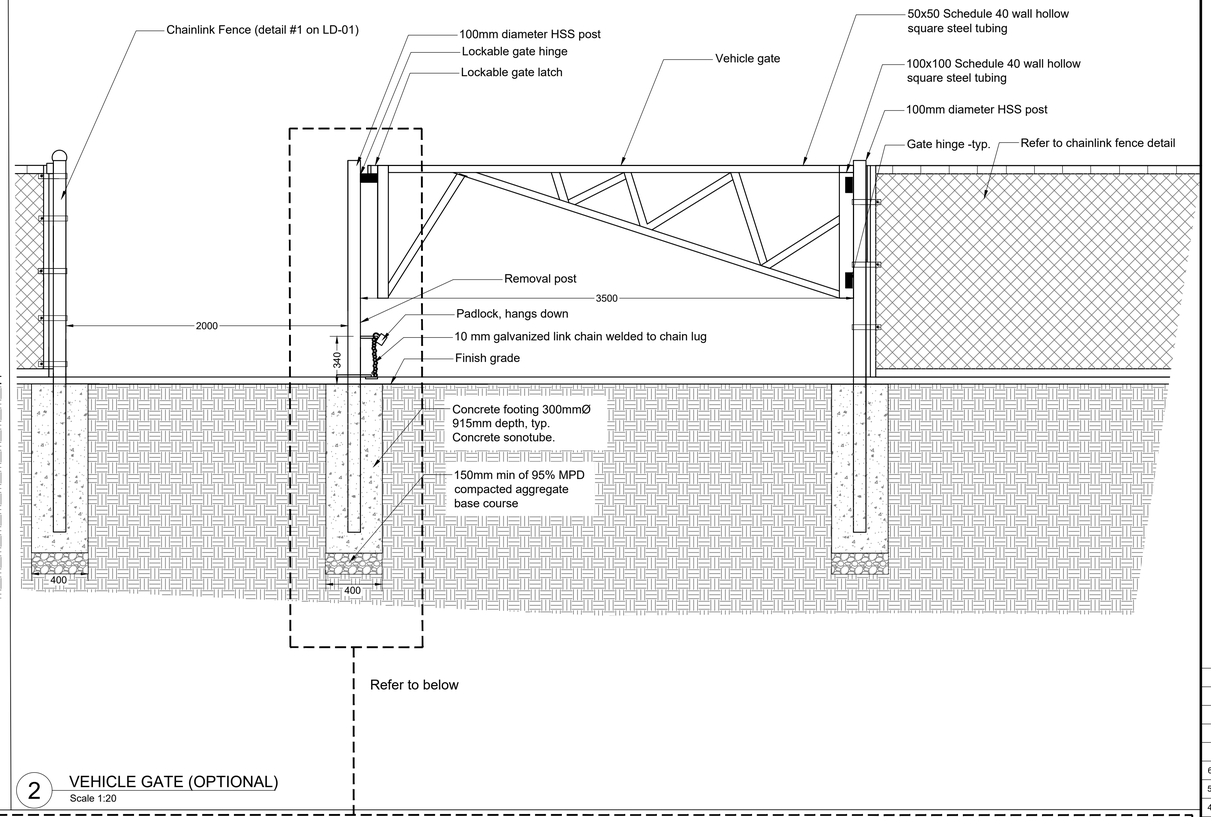
Z:\PROJECTS\SKATEPARKS\ACTIVE\SK2019-01 GABRIOLA SKATE PARK\DWGS\SHEETS\LANDSCAPE\L-03 SITE & TREE PLAN.DWG



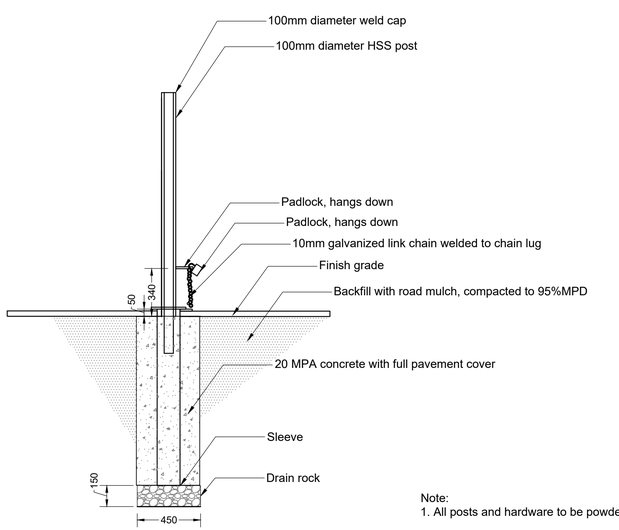
Note:

1. Bottom of chainlink mesh to be finished or unfinished and to be 50 mm to 100 mm above ground.
2. Chain link mesh to be installed to outside of property of top rail .
3. Bottom wire to be a 6 gauge galvanized with 150 mm turnbuckle.
4. Terminal and line posts to be set on 2.5m maximum centres. Concrete footing to be 200mm x 600mm with a minimum cover. All posts to extend 50 mm into compacted 200 mm granular base where possible.
5. Pipe: sizes as noted and galvanized only. All pipe to BSS 1387 specification or ASTM schedule 40-A-120.
6. Chain link mesh: #9 gauge -51 mm x 3.55 wire to ASTM A392 class one w/t coating, knuckled to top and bottom.
7. Fitting, dome tips, eye tops, rail ends, rail sleeves, and similar fittings to be galvanized and in all respects as supplied by the fencing manufacturer.
8. If posts being installed in rick, drill holes to suit post and grout -in.
9. All fencing material sizes shown are nominal assembly details which are not specified in these standards are to be in accordance with the fencing manufacturer's recommendations.

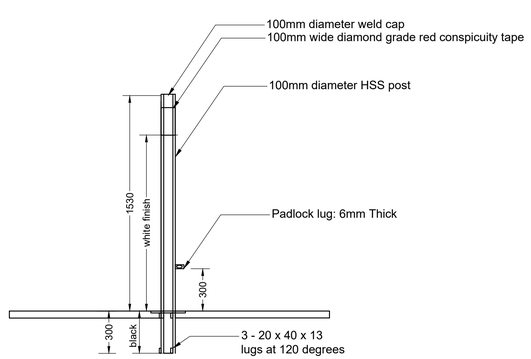
1 CHAIN LINK FENCE (OPTIONAL)
Scale 1:20



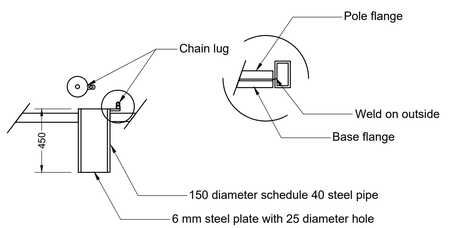
2 VEHICLE GATE (OPTIONAL)
Scale 1:20



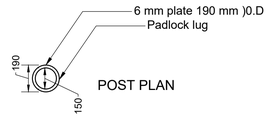
REMOVAL POST ASSEMBLY



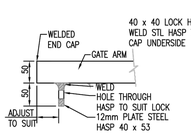
REMOVAL POST ELEVATION



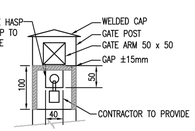
SLEEVE ELEVATION



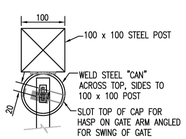
POST PLAN



ELEVATION LOCKING TAB DETAIL



SECTION HINGE DETAIL



PLAN HINGE DETAIL

Note:
1. All posts and hardware to be powder coated black

2 VEHICLE GATE (ADDITIONAL DETAILS) (OPTIONAL)
Scale 1:20

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Urban Design + Landscape Architecture
Suite 1, 20177 97th Avenue
Langley, British Columbia
V1M 4B9
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F 604.882.0042
info@www.vdz.ca

No.	By:	Description	Date
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4	JJ	ISSUED FOR 100% REVIEW	April 18, 2019
3	JJ	ISSUED FOR ICIP - CCR GRANT APPLICATION	Jan. 21, 2019
2	AK	ISSUED FOR 50% REVIEW	Jan. 03, 2019
1	AK	ISSUED FOR 25% REVIEW	Dec.18, 2018

REVISIONS TABLE FOR DRAWINGS

No.	By:	Description	Date

REVISIONS TABLE FOR SHEET

Project:

HUXLEY COMMUNITY PARK
PHASE 2 DEVELOPMENT

Location:

585 NORTH ROAD,
GABRIOLA ISLAND, BC

Drawn: MM AL

Checked: DJ

Approved: DJ

Scale: AS SHOWN

Stamp:

Original Sheet Size: 24"x36"

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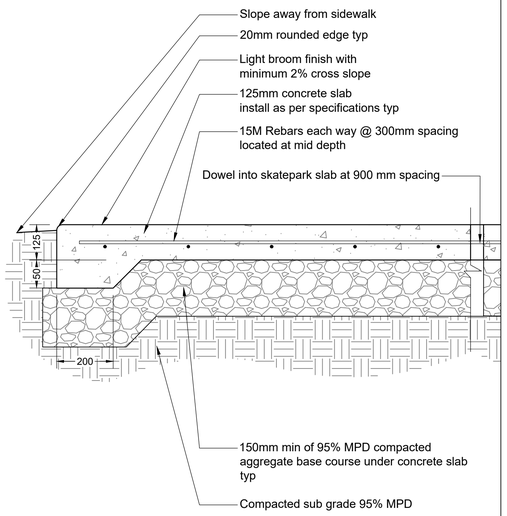
Drawing Title: LANDSCAPE DETAILS

VDZ Project #: SK2019-01

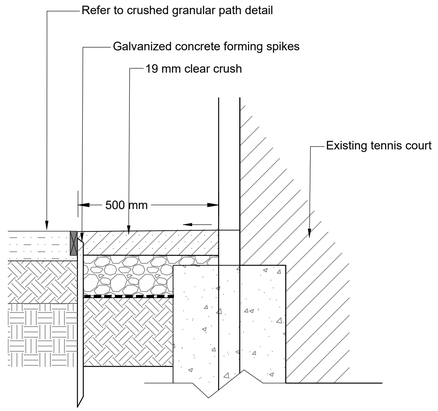
Drawing #: LD-01

Z:\PROJECTS\SKATEPARKS\ACTIVE\SK2019-01 GABRIOLA SKATE PARK\DWGS\SHEETS\LANDSCAPE\LD-01 LANDSCAPE DETAILS.DWG

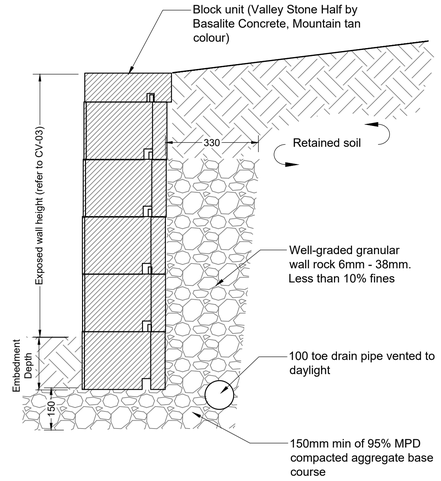


Notes:
1. Contractor to provide expansion joints where concrete meets all vertical structures
2. Saw cuts every 1500mm. All saw cuts to be 1/3 of the slab depth, straight following chalklines/straight edge.
3. All formwork to be reviewed and approved by Landscape Architect prior to pour.
4. Saw cut locations and layout to be reviewed and approved by Landscape architect prior to cutting.

1 CONCRETE PLAZA (NON-SKATEPARK)
Scale 1:10

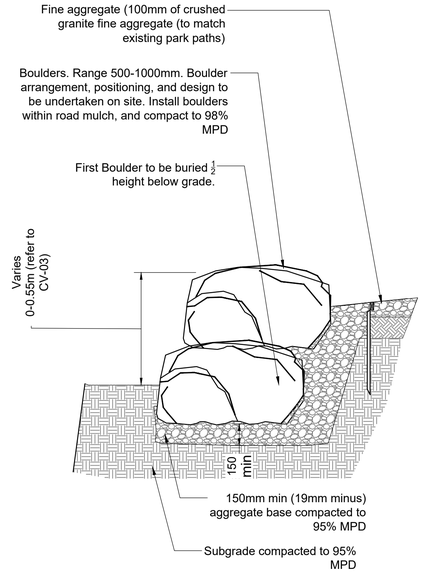


2 DRIP STRIP DETAIL (TENNIS COURT)
Scale 1:10

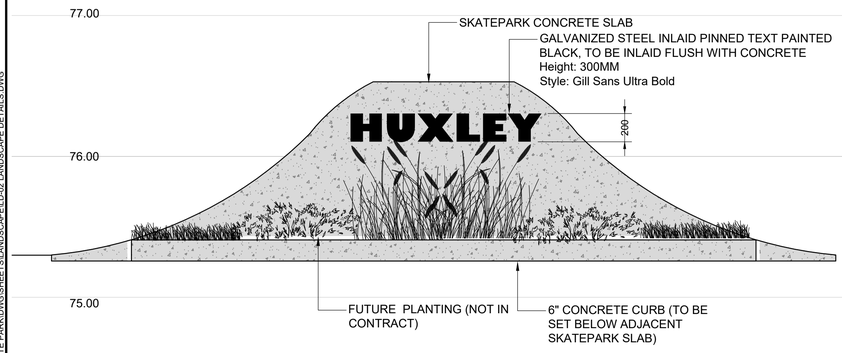


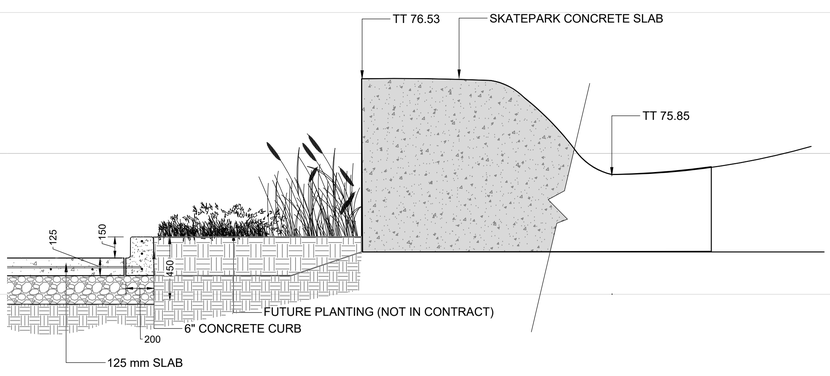
1. Contractor to provide engineered drawings for all walls with a total height over 1.2 m

3 VALLEY STONE BLOCK WALL
1:10



4 BOULDER WALL
Scale 1:20





5 SKATEPARK SIGNAGE
1:20

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REVISIONS TABLE FOR DRAWINGS

No.	By:	Description	Date

REVISIONS TABLE FOR SHEET

Project:

HUXLEY COMMUNITY PARK
PHASE 2 DEVELOPMENT

Location:

585 NORTH ROAD,
GABRIOLA ISLAND, BC

Drawn: MM

Checked: DJ

Approved: DJ

Stamp:

Original Sheet Size: 24"x36"

Scale: AS SHOWN

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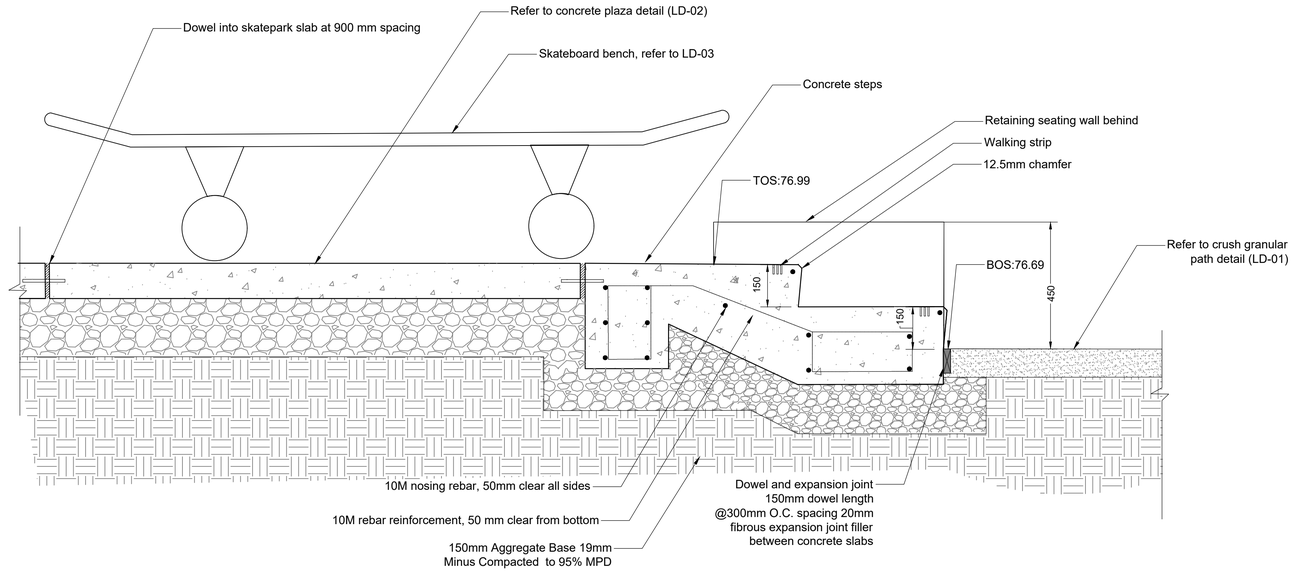
Drawing Title: LANDSCAPE DETAILS

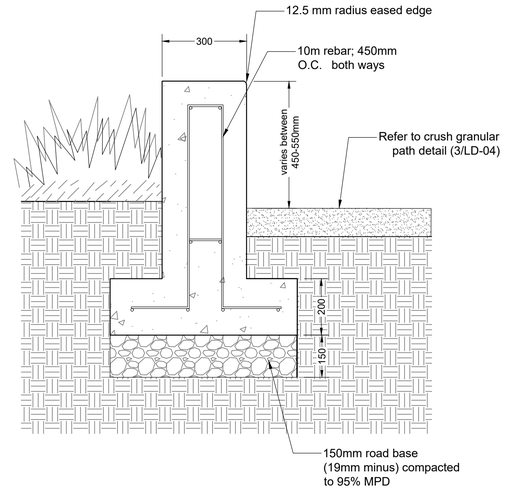
VDZ Project #: SK2019-01

Drawing #: LD-02

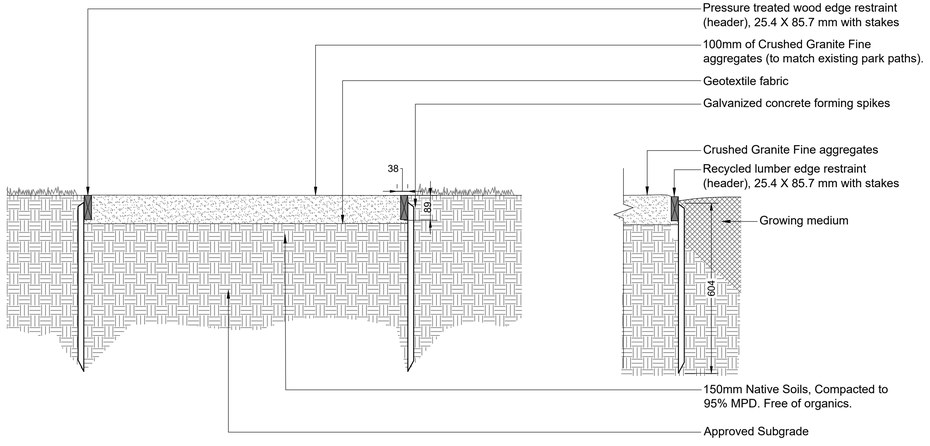
Z:\PROJECTS\SKATEPARKS\ACTIVE\SK2019-01 GABRIOLA SKATE PARK\DWGS\SHEETS\LANDSCAPE\LD-02 LANDSCAPE DETAILS.DWG



1 SKATEPARK ENTRANCE/ STEPS
Scale 1:10

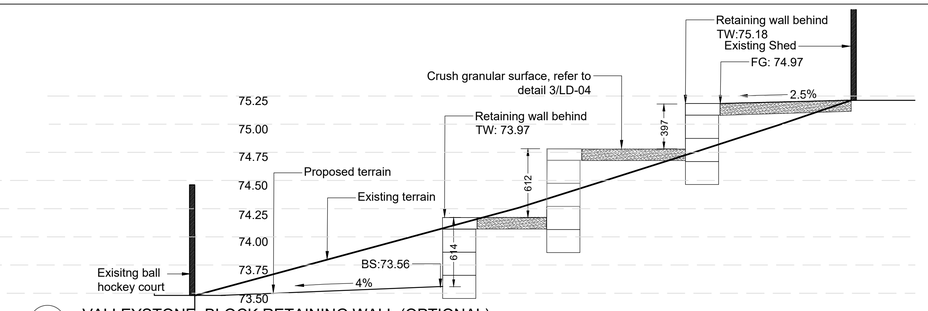


2 CONCRETE BENCH/SEAT WALL
Scale 1:10

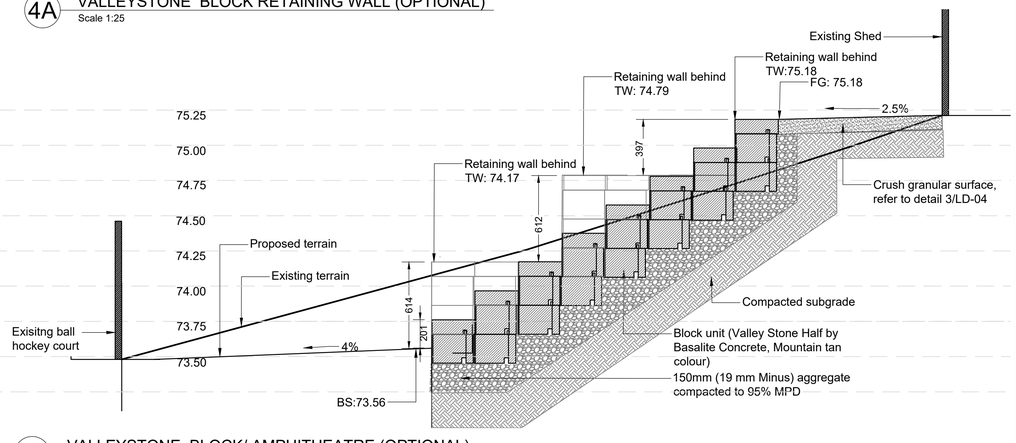


NOTES:
1. Contractor to provide 1L sample of crushed granite material for approval by landscape architect prior to installation.
2. Ensure top of edge board meets flush with crushed granite pathways.
3. Minimum 2% cross slope.
4. Growing medium to be 25mm below top of edger board.
5. 25.4 X 85.7 mm edge restraint not required where walkway abuts wall, concrete pad.

3 CRUSH GRANULAR PATH
Scale 1:10



4A VALLEYSTONE BLOCK RETAINING WALL (OPTIONAL)
Scale 1:25



4 VALLEYSTONE BLOCK/ AMPHITHEATRE (OPTIONAL)
Scale 1:20

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REVISIONS TABLE FOR SHEET

Project:

HUXLEY COMMUNITY PARK
PHASE 2 DEVELOPMENT

Location:

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GABRIOLA ISLAND, BC

Drawn: MM AL
Checked: DJ
Approved: DJ
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Drawing Title: LANDSCAPE DETAILS
VDZ Project #: SK2019-01
Drawing #: LD-03

Z:\PROJECTS\SKATEPARKS\ACTIVE\SK2019-01 GABRIOLA SKATE PARK\DWG\SHEETS\LANDSCAPE\LD-03 LANDSCAPE DETAILS.DWG

Manufacturer: Icon Structures
Tel.: 1-800-427-9737
Model: BC10x16G-P5-55-90-40
Description: 10ft wide x 16ft long Barrel Vault Cantilever with Mega-rib panel roof
Qty: 2
Colour: Black

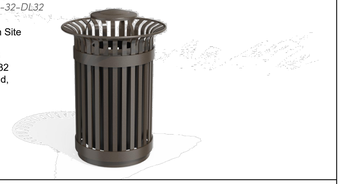
1. Contractor to provide shop drawings for footings

1 SHADE STRUCTURE (OPTIONAL)
NTS

200 SERIES

MTR-0200-00011
Legacy # MLWR200-32-DL32

Manufacturer: Maglin Site Furnishing
Tel: 1-800-716-5506
Model: MLWR200S-32
Description: Dome Lid,
Black colour
Surface mount



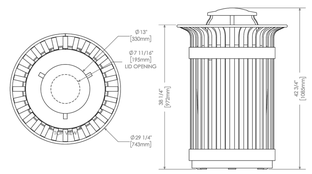
MATERIALS: The trash container frame is constructed using heavy duty steel flat bar.
A 32 gallon commercial grade plastic liner and standard metal lid are provided.

FINISH: All steel components are protected with E-Coat rust proofing.
The Maglin Powdercoat System provides a durable finish on all metal surfaces.

INSTALLATION: The trash container is delivered pre-assembled. Holes (0.5") are provided in each mounting foot for securing to base.

TO SPECIFY: Select MTR-0200-00011
Choose:
- Powdercoat Color

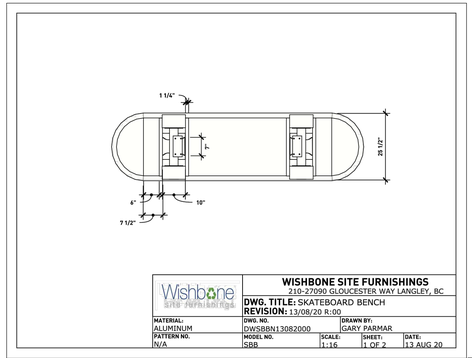
HEIGHT: 42.75" (108.5cm) OUTER RADIUS: 29.25" (74.3cm) WEIGHT: 200.75lbs (91.1kg) LINER CAPACITY: 32gal (121 L)



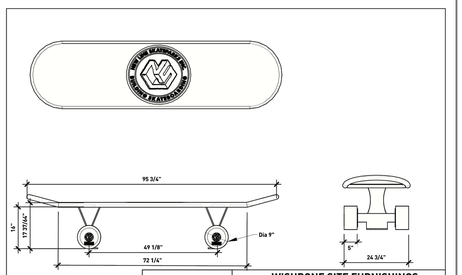
MAGLIN Site Furniture

T 800 716 5506
F 877 360 9383
www.maglin.com
sales@maglin.com

2 GARBAGE CONTAINER
NTS



Wishbone Site Furnishings	**WISHBONE SITE FURNISHINGS** 210-27090 GLOUCESTER WAY LANGLEY, BC
	DWG. TITLE: SKATEBOARD BENCH
	REVISION: 13/08/20 R:00
MATERIAL: ALUMINUM	DWG. NO. DWSBBN13082000 / DRAWN BY: GARY PARMAR
PATTERN NO. N/A	MODEL NO. SBB / SCALE: 1:16 / SHEET: 1 OF 2 / DATE: 13 AUG 20



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PATTERN NO. N/A	MODEL NO. SBB / SCALE: 1:16 / SHEET: 1 OF 2 / DATE: 13 AUG 20

Wishbone Site Furnishings	**WISHBONE SITE FURNISHINGS** 210-27090 GLOUCESTER WAY LANGLEY, BC
	DWG. TITLE: SKATEBOARD BENCH
	REVISION: 13/08/20 R:00
MATERIAL: ALUMINUM	DWG. NO. DWSBBN13082000 / DRAWN BY: GARY PARMAR
PATTERN NO. N/A	MODEL NO. SBB / SCALE: AS SHOWN / SHEET: 2 OF 2 / DATE: 13 AUG 20

3 SKATEBOARD BENCH
NTS

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HUXLEY COMMUNITY PARK
PHASE 2 DEVELOPMENT

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Checked: DJ

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Scale: AS SHOWN

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Drawing Title: LANDSCAPE DETAILS

VDZ Project #: SK2019-01

Drawing #: LD-04

Z:\PROJECTS\SKATEPARKS\ACTIVE\SK2019-01 GABRIOLA SKATE PARK\DWGS\SHEETS\LANDSCAPE\LD-04 LANDSCAPE DETAILS.DWG

CIVIL CONSTRUCTION NOTES:

1.0 ALL WORK MUST BE IN ACCORDANCE WITH THE MASTER MUNICIPAL CONSTRUCTION DOCUMENT (PLATINUM EDITION), THE NATIONAL BUILDING CODE, B.C. BUILDING CODE (2018), AND TO THE GABRIOLA ISLAND TRUST SPECIFICATIONS AND STANDARD DETAIL DRAWINGS AND THE CIVIL PROJECT SPECIFICATIONS LABELED:

2.0 THE GENERAL CONTRACTOR SHALL NOTIFY THE PRIMARY PROJECT CONTACT PRIOR TO COMMENCING WORK TO ENSURE THE PROJECT TEAM HAS THE LATEST PLANS AND SPECIFICATIONS ISSUED FOR CONSTRUCTION. THE GENERAL CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ISSUING PLANS AND SPECIFICATIONS TO ASSIGNED SUBCONTRACTORS. CIVIL PLANS PREPARED BY VAN DER ZALM AND ASSOCIATES WILL CONTAIN "ISSUED FOR CONSTRUCTION" WITHIN THE REVISIONS TABLE TO IDENTIFY CONSTRUCTION DRAWINGS.

3.0 THE CONTRACTOR IS CAUTIONED THAT THE UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR AND/OR SUBCONTRACTORS SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK BY CONTACTING BC ONE CALL AND OTHER APPLICABLE METHODS. THE CONTRACTOR AND/OR SUBCONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS OR HER FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES (UNDERGROUND AND OVERHEAD). SUBSURFACE UTILITY INFORMATION HAS NOT BEEN PROVIDED TO CSA STANDARD S250 DETAIL.

4.0 IF THE CONTRACTOR ENCOUNTERS ANY UTILITY LINES WITHIN THE SITE INCLUDING DRAINTILE OR IRRIGATION LINES, HE OR SHE SHALL NOTIFY THE ENGINEER WITH THE LOCATION, SIZE, INVERT AND DIRECTION OF THOSE UTILITY LINES. NO UTILITY LINE SHALL BE BACKFILLED OR ALTERED WITHOUT REVIEW, DISCUSSION AND WRITTEN APPROVAL FROM THE PRIMARY PROJECT CONTACT. THE CONTRACTOR SHALL BEAR RESPONSIBILITY OF THE RELOCATING ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS AT NO ADDITIONAL PAYMENT BY THE OWNER.

5.0 THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.

6.0 ACTIVITIES PROHIBITED OUTSIDE OF THE CONSTRUCTION BOUNDARIES WOULD INCLUDE, BUT NOT BE LIMITED TO: SOIL AND OTHER MATERIAL STOCKPILING, EQUIPMENT OR MACHINERY STORAGE, DRIVING OF ANY VEHICLE, LEAKAGE OR SPILLAGE OF ANY "WASHOUT" OR OTHER TOXIC MATERIAL.

7.0 ALL RESTRICTED AREAS SHALL BE CLEARLY DELINEATED FROM THE ACTIVE AREA OF WORK. FINAL PLACEMENT OF ALL PROTECTIVE FENCING SHALL BE COMPLETE BEFORE ANY WORK COMMENCES ON-SITE.

8.0 ALL WATER AND SEWER UTILITY WORK WILL CONFORM TO THE BC BUILDING CODE, THE GABRIOLA ISLAND TRUST CONSTRUCTION STANDARDS AND THE MMCD. IF THERE IS A CONFLICT BETWEEN APPLICABLE STANDARDS, THE MORE STRINGENT STANDARD WILL GOVERN.

9.0 REPORT ANY DISCREPANCIES TO THE CONSULTING ENGINEER, PRIOR TO CONSTRUCTION.

10.0 PRIOR TO PLACEMENT OF STRUCTURAL SOIL, SUBGRADE OR SOIL DRAINAGE MEDIUM, REFER TO GEOTECHNICAL SOIL RECOMMENDATIONS AND VERIFY PLACEMENT IS ACCEPTABLE TO THE PROJECT GEOTECHNICAL ENGINEER.

11.0 SUBSTITUTIONS OR DEVIATIONS FROM THE CIVIL PROJECT PLANS OR SPECIFICATIONS ARE NOT ALLOWED WITHOUT WRITTEN APPROVAL FROM THE PROJECT ENGINEER.

12.0 OPEN TRENCH OPERATIONS IN EXISTING PAVEMENT SHALL BE VERTICAL AND REPLACED WITH HOT MIX ASPHALT AFTER BACKFILL AND COMPACTION. ALL PAVEMENTS, BOULEVARD, ETC. ARE TO BE RESTORED TO ORIGINAL CONDITION WHERE NO IMPROVEMENTS ARE PROPOSED UNDER THIS CONTRACT.

13.0 THE CONTRACTOR SHALL USE EXTREME CARE WHEN WORKING NEAR EXISTING SERVICES AND ANY SERVICES DISTURBED ARE TO BE REPLACED TO THE SATISFACTION OF THE GABRIOLA ISLAND TRUST OR OTHER APPROVING AGENCIES.

14.0 ANY MATERIAL SUBSTITUTIONS MUST BE APPROVED BY THE ENGINEER.

15.0 ANY SURVEY MONUMENTS MUST BE PROTECTED AND ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

16.0 ALL EXISTING IMPROVEMENTS SHALL BE RESTORED TO THE SATISFACTION OF THE GABRIOLA ISLAND TRUST. IN SPECIAL CASES THE CITY INSPECTOR MAY REQUIRE WRITTEN ACCEPTANCE BY THE AFFECTED PROPERTY OWNERS FOR RESTORATION WORKS PERFORMED BY THE CONTRACTOR.

17.0 SEE LANDSCAPE ARCHITECT'S DRAWINGS FOR FEATURE LAYOUTS AND DIMENSIONS.

18.0 CONTRACTOR TO PROVIDE 48 HOURS PRIOR TO CONSTRUCTION WITHIN ROAD ALLOWANCES.

19.0 ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE GEOTECHNICAL REPORT FOR THIS PROJECT.

20.0 CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS UPON COMPLETION OF THE PROJECT.

ROADWORKS NOTES:

1.0 ALL ELEVATIONS AND DIMENSIONS ARE METRIC.

2.0 ALL MANHOLE LIDS, VALVE COVERS, CATCH BASINS AND LIDS OF ANY OTHER STRUCTURE TO BE ADJUSTED TO SUIT FINAL OR PROPOSED ROAD, DRIVEWAY, SIDEWALK, PATHWAY, AND BOULEVARD/LANDSCAPE AREAS.

3.0 GEOTECHNICAL ENGINEER TO APPROVE ALL SUBGRADES PRIOR TO PLACING BASE MATERIALS.

4.0 COMPACTION TESTING, ASPHALT TESTING AND CONCRETE TESTING BY CONTRACTOR.

5.0 FOR FENCE LOCATIONS, SEE LANDSCAPE ARCHITECT PLANS.

6.0 ALL PAVEMENT MARKINGS TO BE INCLUDED IN CONTRACT.

7.0 LOCATIONS OF DRIVEWAYS, WHEELCHAIRS RAMPS, ETC., SHALL BE CONFIRMED IN THE FIELD PRIOR TO CONSTRUCTION OF THE PROPOSED CONCRETE CURB/GUTTER AND SIDEWALK.

8.0 ALL LOOSE, ORGANIC, OTHERWISE DELETERIOUS MATERIALS OR SOFT SPOT(S) ARE TO BE EXCAVATED AND REMOVED FROM THE ROADWAY AND UTILITY TRENCHES IN THE ROADWAY AS PER THE GEOTECHNICAL CONSULTANT'S REPORT OR AS DIRECTED BY THE CITY.

9.0 ALL NEW SURFACES SHALL BE SMOOTHLY TIED INTO EXISTING SURFACES.

10.0 BOULEVARDS ARE TO BE CONSTRUCTED TO THE CURRENT EDITION OF THE MMCD AND GABRIOLA ISLAND TRUST.

WATERWORKS NOTES:

1.0 ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE CURRENT EDITION OF THE MMCD AND GABRIOLA ISLAND TRUST SUPPLEMENTARY SPECIFICATIONS AND DETAIL DRAWINGS.

2.0 CONTRACTOR NOT TO INSTALL SERVICES OR WORK ON PRIVATE PROPERTY WITHOUT WRITTEN APPROVAL FROM PROPERTY OWNER, APPROVAL TO BE OBTAINED BY THE DEVELOPER.

3.0 CONTRACTOR IS RESPONSIBLE FOR CONFIRMING ALL DRIVEWAY LOCATIONS PRIOR TO CONSTRUCTION AND IS RESPONSIBLE FOR ANY NECESSARY WATER SERVICE CONNECTION RELOCATIONS.

4.0 ALL WATER MAIN 100mm TO 300mm SHALL BE AWWA PVC C900. ALL WATER MAIN 350mm OR GREATER SHALL BE AWWA PVC C905. MINIMUM PIPE COVER SHALL BE 1.0 METER. REFER TO THE IRRIGATION PLAN, CIVIL PLANS AND DETAILS, AND THE PROJECT SPECIFICATIONS FOR MAIN SMALLER THAN 100mm IN DIAMETER. CONTACT THE PRIMARY PROJECT CONTACT REGARDING USE OF SUITABLE MAIN FITTINGS UNLESS SPECIFIED IN PLANS AND DETAILS.

5.0 RESTORATION OF EXISTING DRIVEWAYS, PARKING AREAS, AND WALKWAYS TO CONFORM TO CITY SPECIFICATIONS.

6.0 THE CONTRACTOR SHALL SUPPLY ALL MATERIALS AND FITTINGS REQUIRED FOR THE TIE-IN OF THE NEW WATER MAINS BY THE CITY.

7.0 ALL NEW WATER MAINS, AT TIE-IN POINTS, ARE TO BE CAPPED 1.5m FROM THE EXISTING WATER MAIN. THE PROPOSED WATER MAIN IS TO BE SET AT THE LIN EAND GRADE TO MEET THE EXISTING WATER MAIN.

8.0 TIE-INS TO EXISTING PUBLIC WATER MAINS IS TO BE PERFORMED BY THE GABRIOLA ISLAND TRUST.

9.0 ALL DOMESTIC SERVICE CONNECTIONS ARE TO BE A MINIMUM OF 19mm IN DIAMETER UNLESS OTHERWISE SPECIFIED.

10.0 NO CAST IRON VALVES ON FITTINGS.

11.0 ASSUME TEST PRESSURE OF 1380kPa (200 psi).

12.0 ALL WATER VALVES ARE TO BE KEPT FLUSH WITH THE FIRST LIFT OF ASPHALT BOXES TO BE ADJUSTED TO FINAL GRADE PRIOR TO PLACING FINAL LIFT.

13.0 MINIMUM GRADE OF WATER MAINS IS TO BE 0.1%.

14.0 ALL FITTINGS, BENDS, AND PIPE JOINTS TO HAVE JOINT RESTRAINTS THROUGHOUT.

15.0 ALL FITTINGS AND BENDS TO HAVE CONCRETE THRUST BLOCKS.

16.0 VALVES AND BOXES TO BE INSTALLED AS PER MMCD W3.

17.0 VALVE BODIES, COMPONENTS AND HYDRANTS TO BE DUCTILE IRON.

18.0 CONTRACTOR TO PROVIDE THIRD PARTY TEST RESULTS FOR CHLORINATION TEST, PRESSURE TEST, AND BACTERIOLOGICAL TEST FOR ALL WATERWORKS.

STORM AND SANITARY NOTES:

1.0 ALL STORM AND SANITARY PIPES LESS THAN OR EQUAL TO 150mm DIAMETER SHALL BE PVC SDR 28 UNLESS OTHERWISE NOTED. ALL STORM AND SANITARY PIPES GREATER THAN 150mm DIAMETER SHALL BE PVC SDR 35 UNLESS OTHERWISE NOTED. REFER TO PLANS, DETAILS, AND SPECIFICATIONS REGARDING SEWER FITTINGS AND APPURTENANCES. CONTACT THE PRIMARY PROJECT CONTRACT REGARDING USE OF SUITABLE MAIN FITTINGS IF NOT SPECIFIED IN PLAN, DETAILS, OR SPECIFICATIONS. MINIMUM COVER SHALL BE 1.0m FOR ANY SANITARY MAIN OR SERVICE. ADDITIONAL PIPE PROTECTION WILL BE REQUIRED IF MINIMUM COVER IS NOT FEASIBLE.

2.0 ALL MANHOLE BARRELS SHALL BE 1050mm DIAMETER UNLESS OTHERWISE NOTED.

3.0 ALL WYES TO BE MANUFACTURED.

4.0 EXISTING INVERTS MUST BE VERIFIED IN THE FIELD BY CONTRACTOR PRIOR TO ORDERING MATERIALS.

5.0 ALL CBs IN ASPHALT AND PARKING AREAS TO BE 600mm DIAMETER AND SHALL BE CONSTRUCTED WITH DONUT FRAME AND GRATE TO SUPPORT H-20 LIVE ROAD REQUIREMENTS AS APPROVED BY THE ENGINEER.

6.0 STORM AND SANITARY CONNECTIONS ARE TO TERMINATE 1m FROM BUILDINGS AND HAVE 1m OF COVER. SEE MECHANICAL ENGINEER'S DRAWINGS FOR CONFIRMATION OF LOCATION. DESIGN AND REQUIREMENT OF INSPECTION CHAMBERS OR STORM SUMPS ARE THE RESPONSIBILITY OF THE MECHANICAL ENGINEER.

6.0 ALL MANHOLE AND CATCH BASIN LIDS SHOWN ON CONTRACT DRAWINGS ARE TO FINISHED GRADE ELEVATIONS.

7.0 ELEVATION OF MANHOLE LID AND CATCH BASIN ON PAVEMENT TO BE SET TO TOP OF BASE COURSE ELEVATION, WHEN THE FINAL LIFT IS LAID (AT A LATER DATE) THE MANHOLE LID AND CATCH BASE GRATE ARE TO BE RAISED TO FINISH GRADE AT THE DEVELOPER'S COST.

8.0 ALL GRANULAR PIPE BEDDING SHALL BE EITHER TYPE 1 OR TYPE 2 ONLY AS PER MMCD UNLESS SUPERCEDED BY MUNICIPAL REQUIREMENTS.

9.0 ALL MANHOLE AND CATCH BASIN LIDS SHOWN ON CONTRACT DRAWINGS ARE TO FINISHED GRADE ELEVATIONS.

10.0 ALL CATCH BASIN/LAWN BASIN LEADS TO BE 150mm IN DIAMETER AT 1.0% SLOPE MIN UNLESS OTHERWISE NOTED. DOUBLE CATCH BASIN LEADS TO BE 200mm IN DIAMETER.

11.0 OFFSET OF ALL INSPECTION CHAMBERS (I.C.) TO BE IN ACCORDANCE WITH THE CURRENT GABRIOLA ISLAND TRUST SUPPLEMENTARY SPECIFICATIONS, MMCD, AND CITY DETAIL DRAWINGS.

12.0 CONNECT ALL EXISTING PIPES UP TO 150mm DIAMETER WITH TYPE1 I.C. IN BOULEVARDS AND TYPE 2 I.C. IN DRIVEWAYS. TOP ELEVATIONS OF ALL TYPE 1 AND TYPE 2 I.C.'S ARE TO BE PLACED IN CONFORMANCE WITH THE GABRIOLA ISLAND TRUST SUPPLEMENTARY SPECIFICATIONS AND DETAIL DRAWINGS.

13.0 ALL EXISTING I.C.'S ARE TO BE FLUSHED TO ENSURE PROPER WORKING ORDER AND REPLACED IF NECESSARY.

14.0 MARK ALL CAPPED STUB ENDS WITH STAKE IN ACCORDANCE WITH MMCD.

15.0 ALL GAS AND WATER CONNECTIONS CROSSINGS UNDER DITCHES ARE TO BE RAISED OVER STORM SEWER BEFORE BACKFILLING OF TRENCH AT DEVELOPER'S COST.

16.0 FLOW ARROWS SHOWN ON PLAN PROVIDE DIRECTION OF FLOW DOWNHILL.

TESTING:

1.0 ALL TESTING TO BE PERFORMED BY A CSA OR CCIL (CANADIAN CERTIFIED TESTING LABORATORY).

2.0 FREQUENCY OF DENSITY TESTS FOR EXCAVATING, TRENCHING, AND BACKFILLING SHALL BE ONE TEST PER 50 LINEAL METERS OR TRENCH PER METER DEPTH. MATERIAL TO BE COMPACTED IN 300mm LIFTS.

3.0 FREQUENCY OF DENSITY TEST FOR ROADWAY/GENERAL EXCAVATION, EMBANKMENT, (SUBGRADE FILL) AND COMPACTION SHALL BE ONE TEST PER 250m^2 PER 300mm LIFT.

4.0 FREQUENCY OF DENSITY TEST FOR GRANULAR BASE AND SUB-BASE SHALL BE ONE TEST FOR 30 LINEAL METERS OF LANE WIDTH STAGGERED EACH SIDE OF CENTRELINE PER 150mm LIFT OR SPECIFIED THICKNESS.

5.0 FREQUENCY OF DENSITY TESTS FOR SIDEWALK BASE SHALL BE ONE TEST PER 30 LINEAL METERS WTIHIN SIDEWALK AND DRIVEWAY AREA.

6.0 FREQUENCY OF DENSITY TESTS FOR CURB BASE SHALL BE ONE TEST PER 100 LINEAL METERS.

7.0 FREQUENCY OF MARSHALL TEST FOR HOT-MIX ASPHALT CONCRETE PAVING SHALL BE ONE TEST PER 500 TONNES OF MIX PLACED OR ONE TEST FOR EACH TYPE OF ASPHALT MIX, MIN ONE PER DAY.

8.0 FOR STREET PAVING, CORE LOCATIONS WILL BE SELECTED FOR EACH PASS OF THE PAVING MACHINE AS FOLLOWS:
- 8.1 ACROSS THE WIDTH, CORE LOCATIONS WILL BE SELECTED RANDOMLY FROM ONE-SIXTH INCREMENTS.
- 8.2 ALONG THE LENGTH, CORE LOCATIONS WILL HAVE A RANDOMLY SELECTED START WITH CORES AT A SPACING OF APPROXIMATELY, BUT NOT TO EXCEED 30 METERS.
- 8.3 FOR OTHER PAVING OPERATIONS A MINIMUM OF ONE CORE FOR EVERY 250 SQUARE METERS OF ASPHALT MIX PLACED.

9.0 FREQUENCY OF PLASTIC CONCRETE TEST FOR SIDEWALK SHALL BE ONE TEST PER 150 LINEAL METERS OR A MINIMUM OF ONE PER DAY.

10.0 FREQUENCY OF PLASTIC CONCRETE TEST FOR CURB AND GUTTER SHALL BE ONE TEST PER 150 LINEAL METERS OR A MINIMUM OF ONE PER DAY.

11.0 THE CONTRACTOR IS RESPONSIBLE FOR ALL TESTING.

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No.	By:	Description	Date
6	DY	ISSUED FOR TENDER	Mar 23, 2021
5	AK	ISSUED FOR REVIEW	Feb. 21, 2020
4	JJ	ISSUED FOR 100% REVIEW	April 18, 2019
3	JJ	ISSUED FOR ICIP - CCR GRANT APPLICATION	Jan. 21, 2019
2	AK	ISSUED FOR 50% REVIEW	Jan. 03, 2019
1	AK	ISSUED FOR 25% REVIEW	Dec.18, 2018
No.	By:	Description	Date

REVISIONS TABLE FOR DRAWINGS

No.	By:	Description	Date

REVISIONS TABLE FOR SHEET

Project:

HUXLEY COMMUNITY PARK
PHASE 2 DEVELOPMENT

Location:

585 NORTH ROAD,
GABRIOLA ISLAND, BC

Drawn: AK

Checked: GB

Approved: GB

Stamp:

Original Sheet Size: 24"x36"

Scale: NTS

CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE WORK AND REPORT ANYDISCREPANCY TO THE CONSULTANT BEFORE PROCEEDING. ALL DRAWINGS AND SPECIFICATIONS ARE THE EXCLUSIVE PROPERTY OF THE OWNER AND MUST BE RETURNED AT THE COMPLETION OF THE WORK. ALL REZONING/DP/PPA/FHA/BP DRAWINGS MUST NOT BE PRICED FOR CONSTRUCTION UNLESS LABELED ISSUED FOR TENDER/CONSTRUCTION.

Drawing Title: CIVIL NOTES

VDZ Project #: SK2019-01

Drawing #: CV-01

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Project:

HUXLEY COMMUNITY PARK
PHASE 2 DEVELOPMENT

Location:

585 NORTH ROAD,
GABRIOLA ISLAND, BC

Drawn: AK

Checked: GB

Approved: —

Scale: 1:300

Stamp:

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Drawing Title: EXISTING CONDITIONS

NORTH

VDZ Project #: SK2019-01

Drawing #: CV-02

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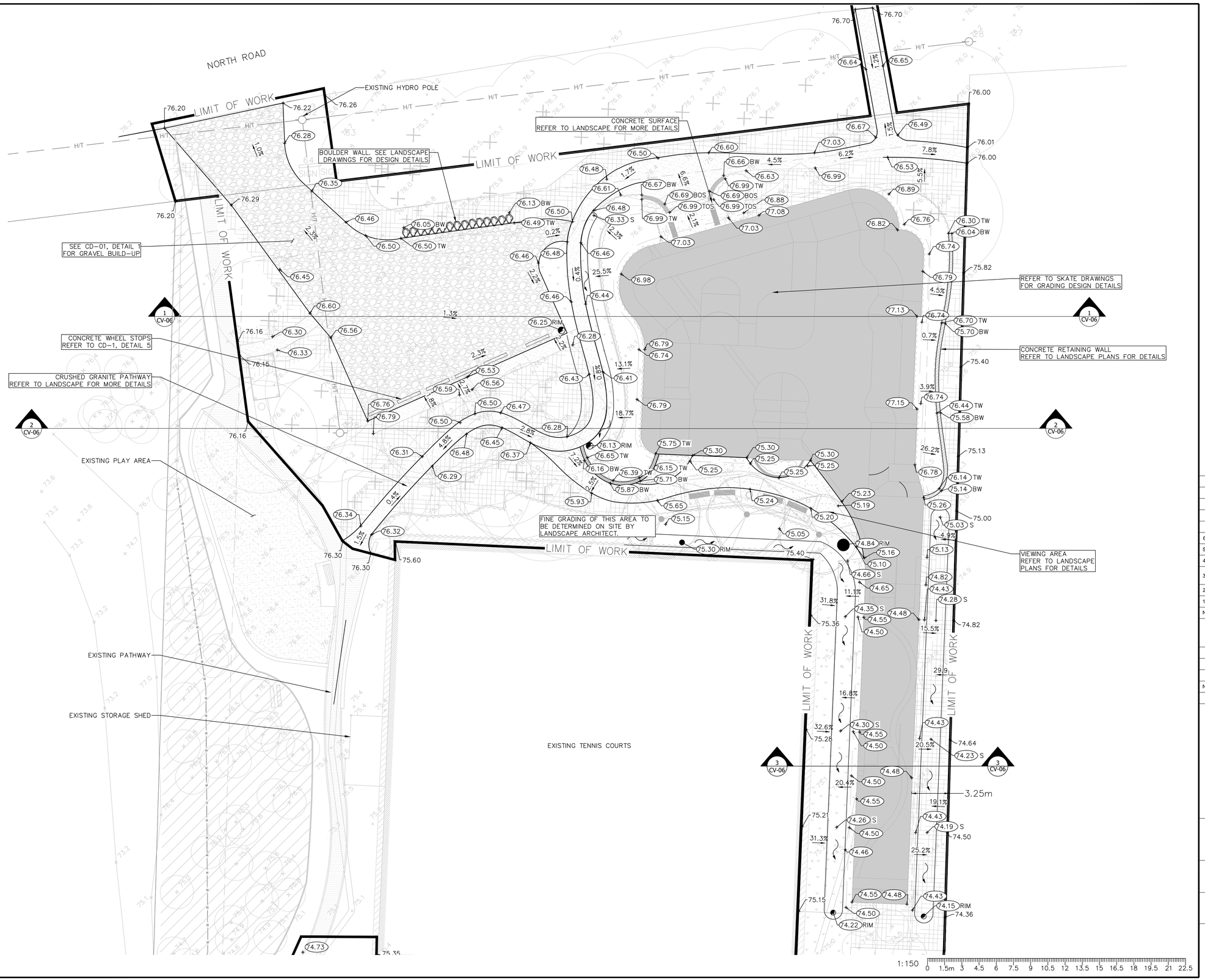

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LEGEND:

- 2.0% — SLOPE
- 75.60 — FINISHED GRADE
- 75.60 — EXISTING GRADE
- 75.60 RIM — RIM ELEVATION
- 75.60 TW — TOP OF WALL ELEV
- 75.60 BW — BOTTOM OF WALL ELEV
- 75.60 S — SWALE ELEVATION
- 75.60 TOS — TOP OF STAIR
- 75.60 BOS — BOTTOM OF STAIR
- STORM
- LAWNBASIN
- MANHOLE
- SWALE

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Project:

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PHASE 2 DEVELOPMENT

Location:

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Drawn: AK

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Approved: GB

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Original Sheet Size: 24"x36"

Scale: 1:150

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Drawing Title: GRADING PLAN

NORTH

VDZ Project #: SK2019-01

Drawing #: CV-03

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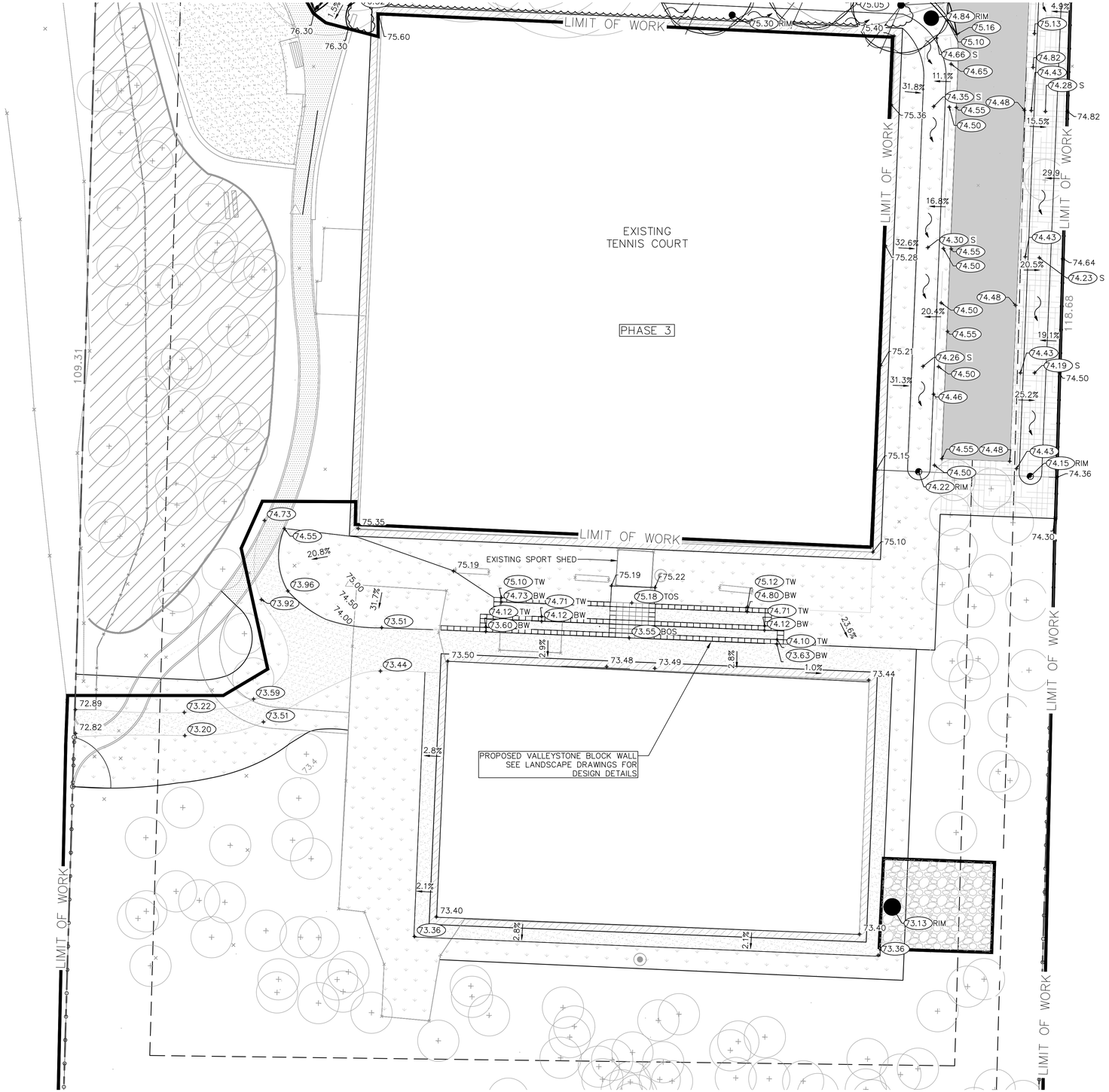

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LEGEND:

2.0%	SLOPE
75.60	FINISHED GRADE
75.60	EXISTING GRADE
75.60 RIM	RIM ELEVATION
75.60 TW	TOP OF WALL ELEV
75.60 BW	BOTTOM OF WALL ELEV
75.60 S	SWALE ELEVATION
75.60 TOS	TOP OF STAIR
75.60 BOS	BOTTOM OF STAIR
	STORM
	LAWNBASIN
	MANHOLE
	SWALE

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Project:

HUXLEY COMMUNITY PARK
PHASE 2 DEVELOPMENT

Location:

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Drawing Title: GRADING PLAN - SOUTH

NORTH

VDZ Project #: SK2019-01

Drawing #: CV-04

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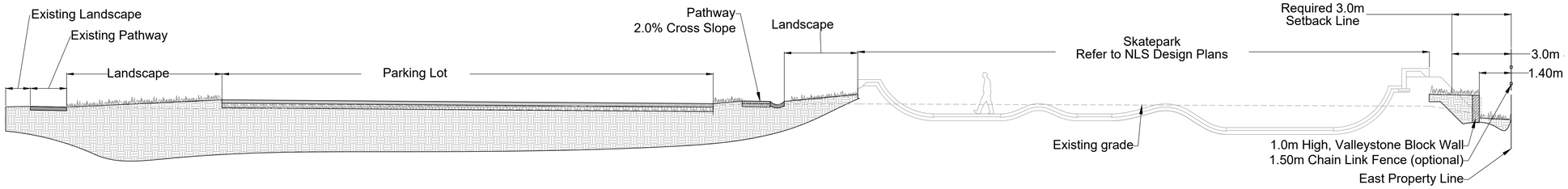

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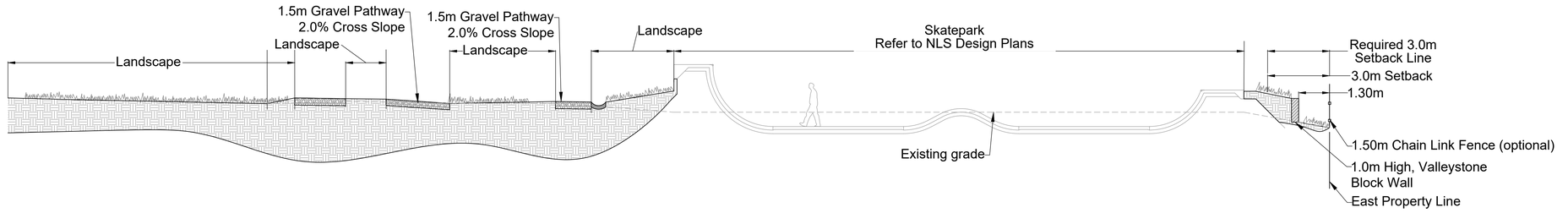

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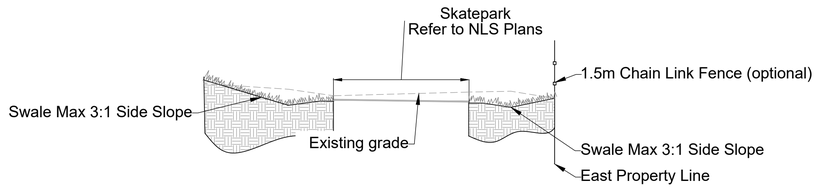

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REVISIONS TABLE FOR DRAWINGS

No.	By:	Description	Date
1	JJ	SECTION REV 1	Jan. 03, 2019

REVISIONS TABLE FOR SHEET

Project:

HUXLEY COMMUNITY PARK
PHASE 2 DEVELOPMENT

Location:

585 NORTH ROAD,
GABRIOLA ISLAND, BC

Drawn: AK

Checked: GB

Approved: GB

Scale: 1:100

Stamp:

Original Sheet Size: 24"x36"

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Drawing Title: SECTIONS

NORTH

VDZ Project #: SK2019-01

Drawing #: CV-05

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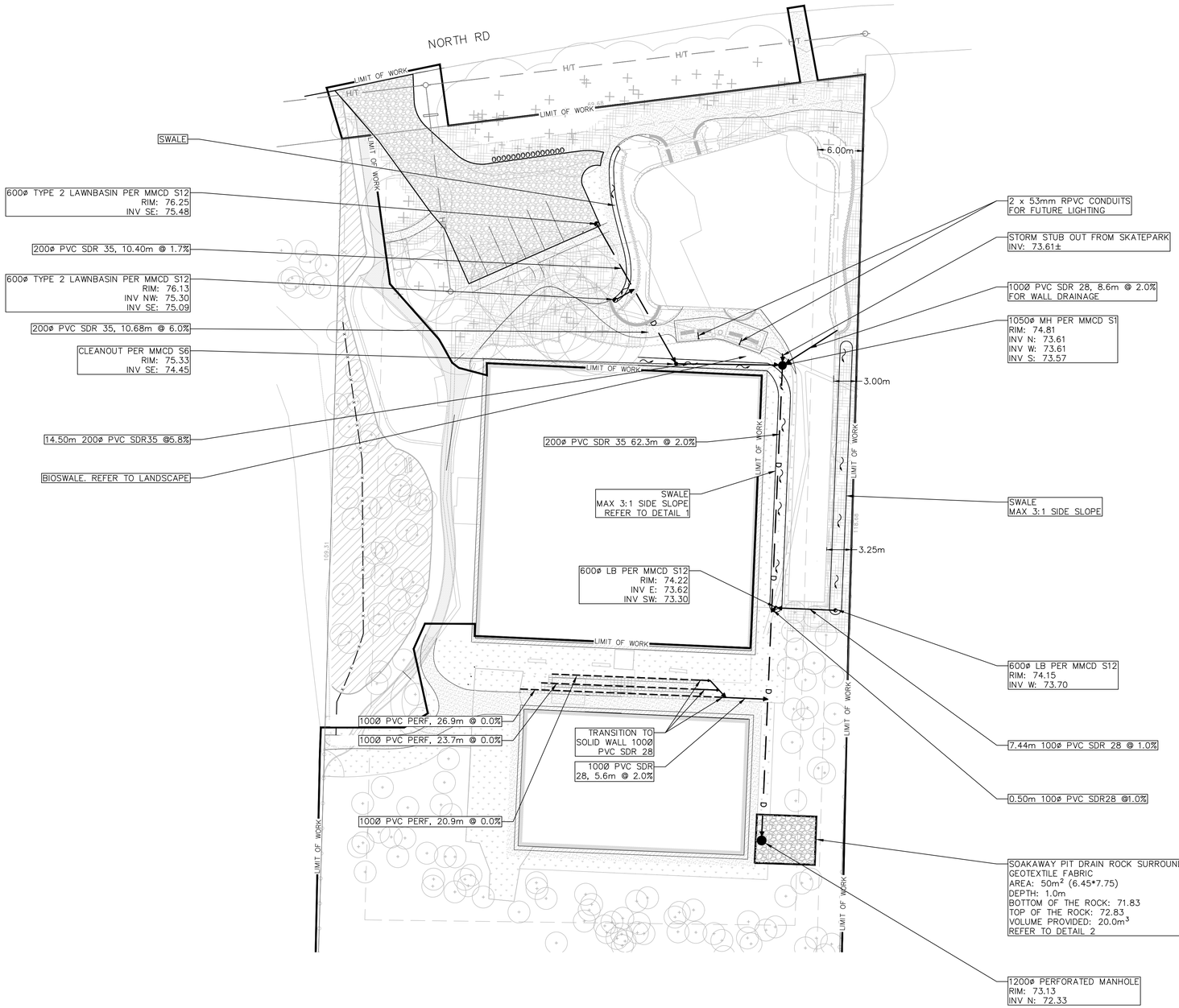

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LEGEND:

2.0%	SLOPE
75.60	FINISHED GRADE
75.60	EXISTING GRADE
75.60 RIM	RIM ELEVATION
75.60 TW	TOP OF WALL ELEV
75.60 BW	BOTTOM OF WALL ELEV
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REVISIONS TABLE FOR SHEET

Project:

HUXLEY COMMUNITY PARK
PHASE 2 DEVELOPMENT

Location:

585 NORTH ROAD,
GABRIOLA ISLAND, BC

Drawn: JJ

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Stamp:

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Drawing Title: DRAINAGE PLAN

NORTH

VDZ Project #: SK2019-01

Drawing #: CV-06

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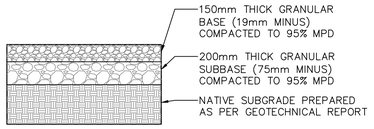

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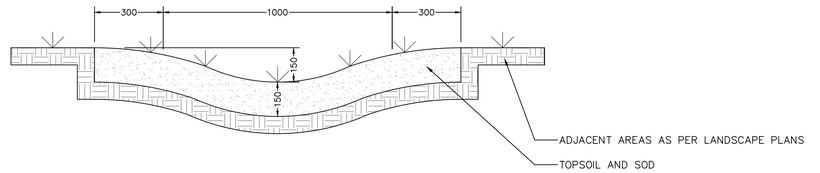
SCALE: 1:25

2 ACCESSIBLE PARKING SIGN
SCALE: NTS



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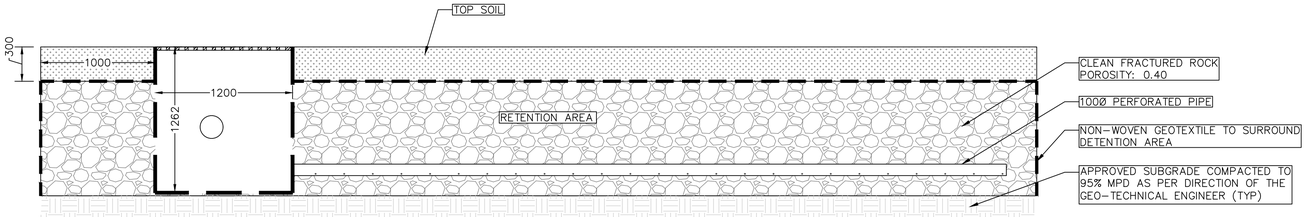

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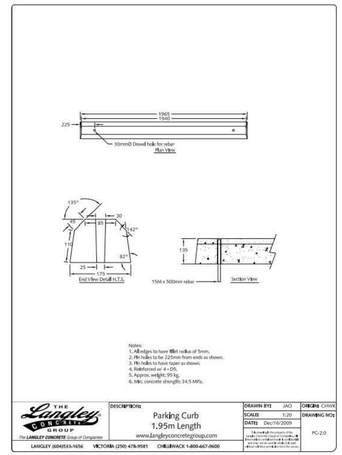

5 CONCRETE WHEELSTOP
SCALE: NTS

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1	AK	ISSUED FOR 25% REVIEW	Dec.18, 2018

REVISIONS TABLE FOR DRAWINGS

No.	By:	Description	Date
1	JJ	SECTION REV 1	Jan. 03, 2019

REVISIONS TABLE FOR SHEET

Project:

HUXLEY COMMUNITY PARK
PHASE 2 DEVELOPMENT

Location:

585 NORTH ROAD,
GABRIOLA ISLAND, BC

Drawn: AK

Checked: GB

Approved: GB

Scale: As Shown

Stamp:

Original Sheet Size: 24"x36"

CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE WORK AND REPORT ANYDISCREPANCY TO THE CONSULTANT BEFORE PROCEEDING. ALL DRAWINGS AND SPECIFICATIONS ARE THE EXCLUSIVE PROPERTY OF THE OWNER AND MUST BE RETURNED AT THE COMPLETION OF THE WORK. ALL REZONING/DP/PPA/HA/BP DRAWINGS MUST NOT BE PRICED FOR CONSTRUCTION UNLESS LABELLED ISSUED FOR TENDER/CONSTRUCTION.

van der Zalm + associates inc.
Parks & Recreation + Civil Engineering
Urban Design + Landscape Architecture
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Langley, British Columbia
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info@www.vdz.ca

Drawing Title: DETAILS

NORTH

VDZ Project #: SK2019-01

Drawing #: CV-07

Z:\PROJECTS\SKATEPARKS\ACTIVE\SK2019-01 GABRIOLA SKATE PARK\DWGS\SHEETS\CIVIL\CD-01 - DETAILS.DWG

HUXLEY SKATEPARK

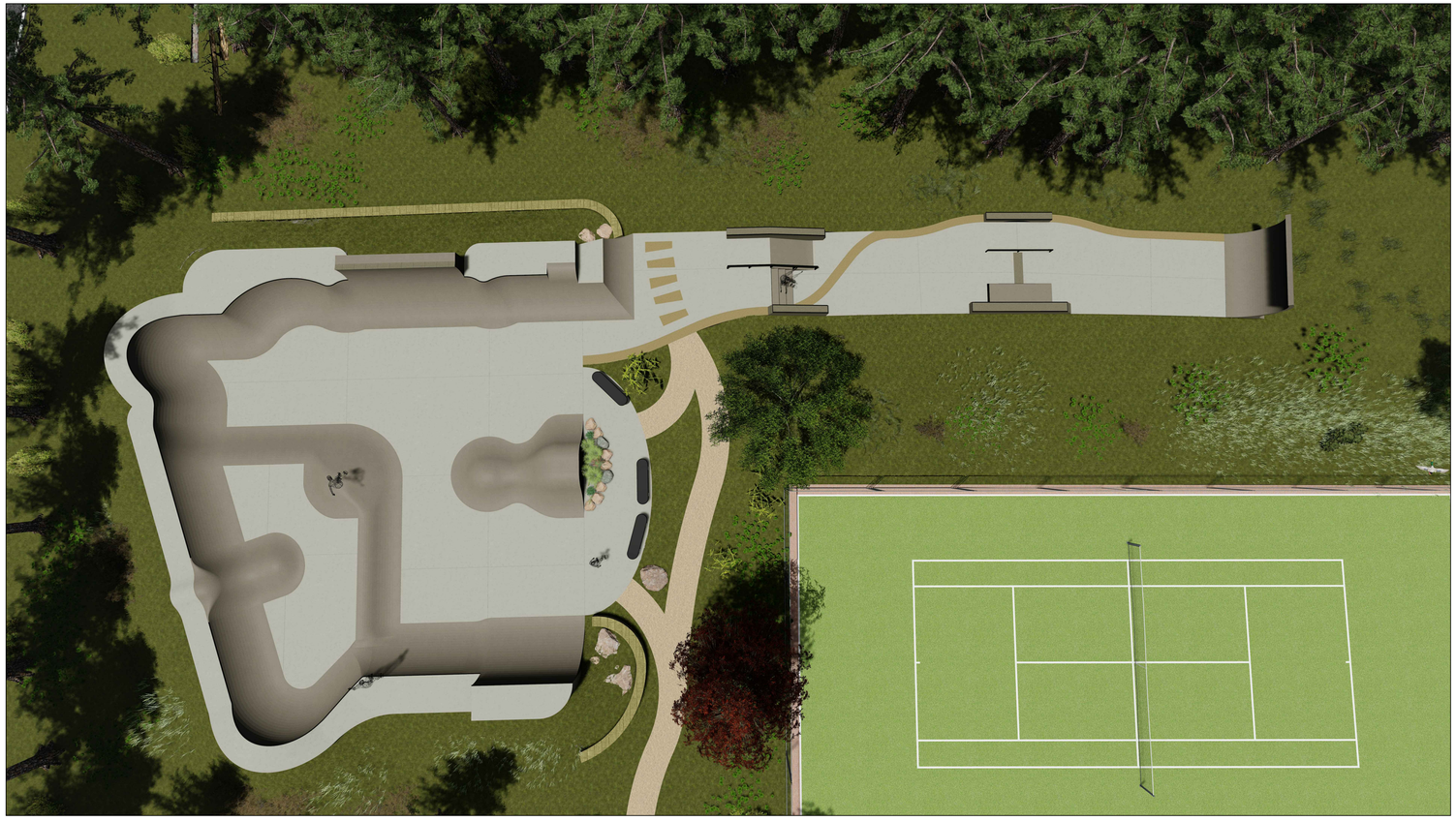
ISSUE FOR: TENDER

DRAWING INDEX

Sheet List Table	
Sheet Number	Sheet Title
SK-001	COVER
SK-002	SECTIONS
SK-003	FOUNDATIONS
SK-004	WALLS
SK-005	DIMENSIONS
SK-006	GRADING
SK-007	STEEL
SK-008	CONCRETE
SK-D-000	DETAIL REFERENCE
SK-D-001	DETAILS SHEET 1
SK-D-002	DETAILS SHEET 2
SK-D-003	DETAILS SHEET 3
SK-TD-001	TYPICAL DETAILS

PERSPECTIVE VIEW

Note: perspective drawing not for construction reference.
Alterations have been made to model during detailed design phase.
Image shown to display broader design concept only.



KEY CONTACTS

SKATEPARK DESIGN CONSULTANT

New Line Skateparks inc.
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V2Y 1N7
ph: 604.530.1114
fax: 604.530.1119
Contact: Jim@newlineskateparks.com

NEW LINE SKATEPARKS inc.
BUILDING SKATEBOARDING
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No	DATE	BY	DESCRIPTION
E	03.16.21	CB	ISSUE FOR TENDER
D	03.26.19	CB	100% ISSUE
C	01.18.19	CB	100% PROGRESS REVIEW
B	01.07.19	CB	DVP APPLICATION
A	12.24.18	CB	50% PROGRESS REVIEW

PROJECT:
HUXLEY SKATEPARK

LOCATION:
Gabriola Island, BC

DRAWN:	CB	START DATE:	01.03.2017
CHECKED:	JB		
APPROVED:	JB		

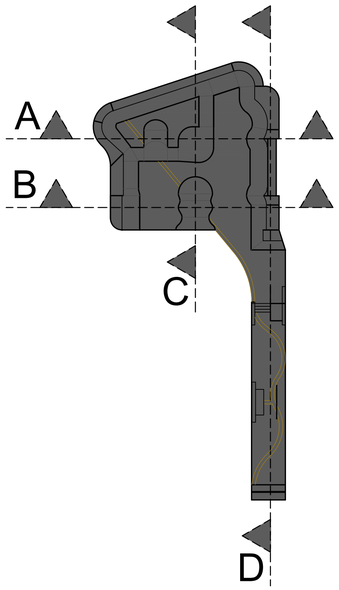
DRAWING TITLE:
COVER PAGE

SCALE:	NTS	PAGE SIZE:	24"x36"

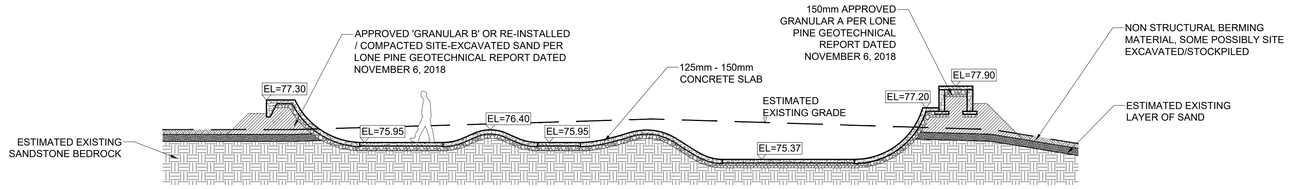
PROJECT NUMBER: SK2016-39

DRAWING NUMBER: SK-001

REV E



REFERENCE PLAN
NTS



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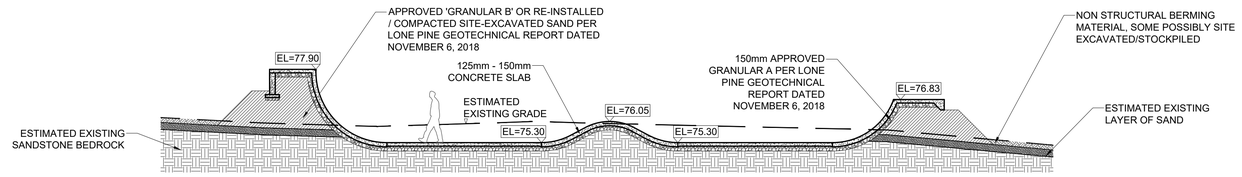

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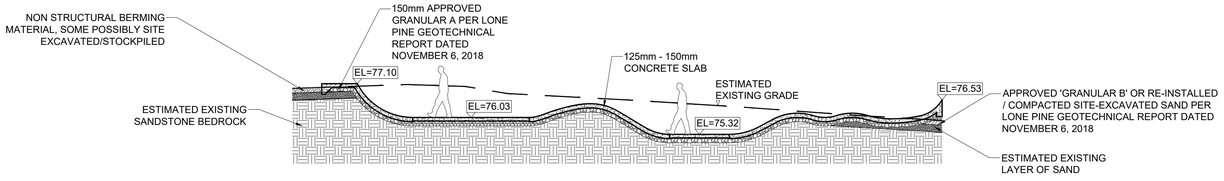

SECTION C
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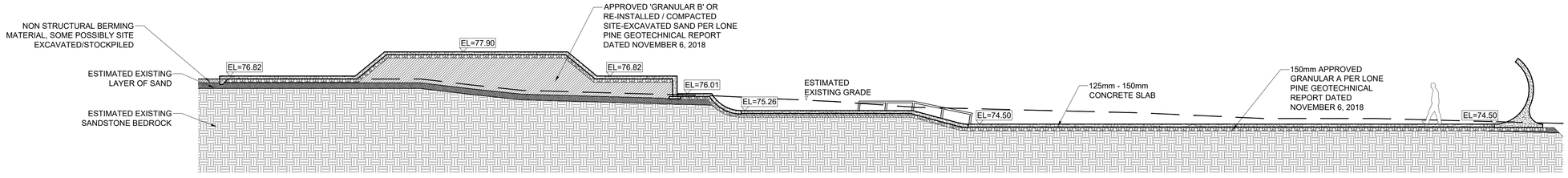

SECTION D
SCALE: 1:100

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LEGEND

	SKATEPARK CONCRETE
	150mm A BASE LAYER
	ESTIMATED B BASE LAYER PER GEOTECHNICAL REPORT, ONLY WHERE REQUIRED TO ACHIEVE DESIGN GRADES
	ESTIMATED EXISTING BEDROCK
	ESTIMATED BERMING MATERIAL
	ESTIMATED EXISTING SAND
	ESTIMATED EXISTING GRADE
	ESTIMATED LIMIT OF EXISTING SAND

No	DATE	BY	DESCRIPTION
E	03.16.21	CB	ISSUE FOR TENDER
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PROJECT:
HUXLEY SKATEPARK

LOCATION:
Gabriola Island, BC

DRAWN:	CB	START DATE:	01.03.2017
CHECKED:	JB		
APPROVED:	JB		

DRAWING TITLE:
SECTIONS
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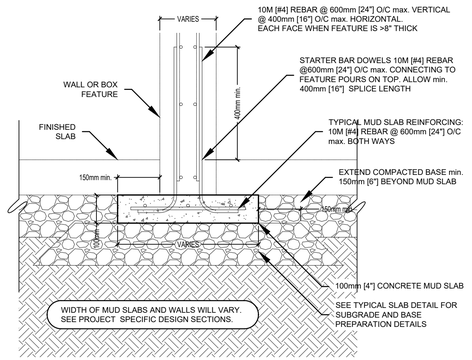
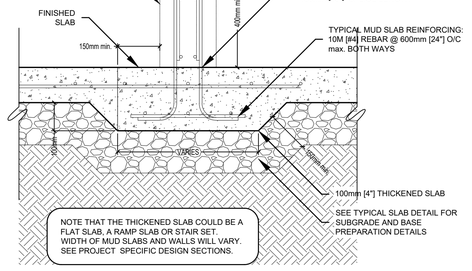
SCALE:	AS SHOWN	PAGE SIZE:	24"x36"
PROJECT NUMBER:	SK2016-39		
DRAWING NUMBER:	SK-002	REV	E



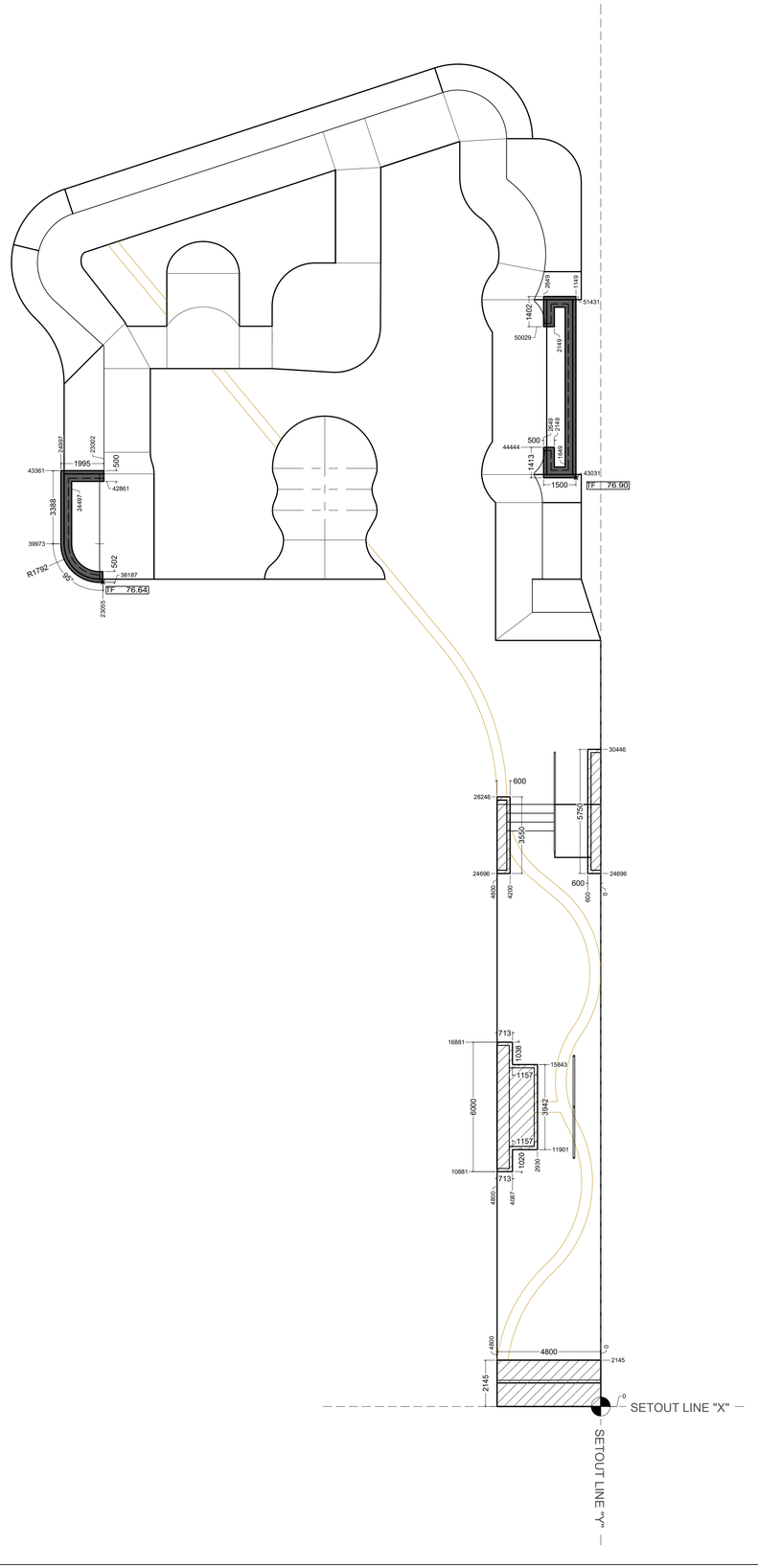
TMS TYPICAL MUD SLAB DETAIL

SCALE 1 : 10



THS TYPICAL THICKENED SLAB DETAIL

SCALE 1 : 10



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LEGEND

- FOUNDATION SLAB (DETAIL TMS)
- 303 / 2628 — ORDINATE LOCATION FOR FOOTING POINT OFFSET FROM ORIGIN / SETOUT POINT 1
- TF 686.35 — TOP OF FOUNDATION ELEVATION RELATIVE TO PROJECT 0.00
- WALL / LEDGE ON TOP OF SLAB (REFER SK-008 WALLS AND LEDGES)
- THICKENED SLAB (DETAIL THS)

NOTES:

1. ALL ELEVATIONS SHOWN ON THIS DRAWING ARE IN METERS

No	DATE	BY	DESCRIPTION
E	03.16.21	CB	ISSUE FOR TENDER
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PROJECT:
HUXLEY SKATEPARK

LOCATION:
Gabriola Island, BC

DRAWN:	CB	START DATE:	01.03.2017
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APPROVED:	JB		

DRAWING TITLE:
FOUNDATIONS
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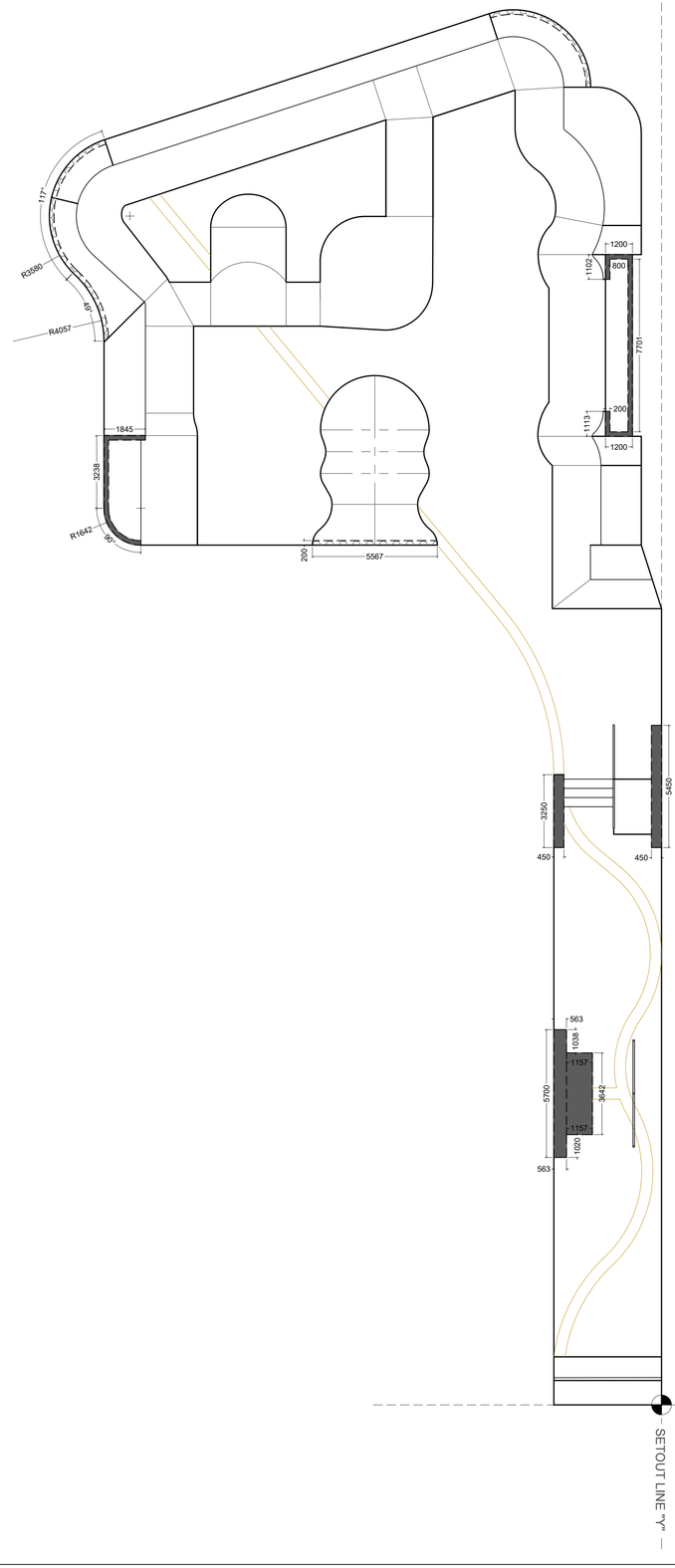
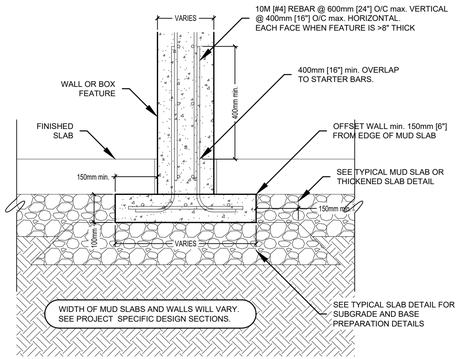
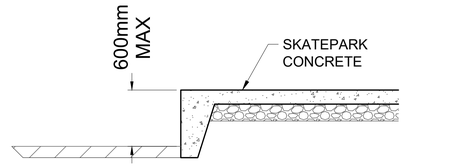
SCALE: 1:125	PAGE SIZE: 24"x36"
PROJECT NUMBER: SK2016-39	
DRAWING NUMBER: SK-003	REV E





TW TYPICAL WALL DETAIL

SCALE 1 : 10



TD TURNDOWN SLAB DETAIL

SCALE 1 : 25

0 1 2 3 4 5 m

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LEGEND

CONCRETE LEDGE / WALL (DETAIL TW)

TURN DOWN WALL

No	DATE	BY	DESCRIPTION
E	03.16.21	CB	ISSUE FOR TENDER
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PROJECT:
HUXLEY SKATEPARK

LOCATION:
Gabriola Island, BC

DRAWN:	CB	START DATE:	01.03.2017
CHECKED:	JB		
APPROVED:	JB		

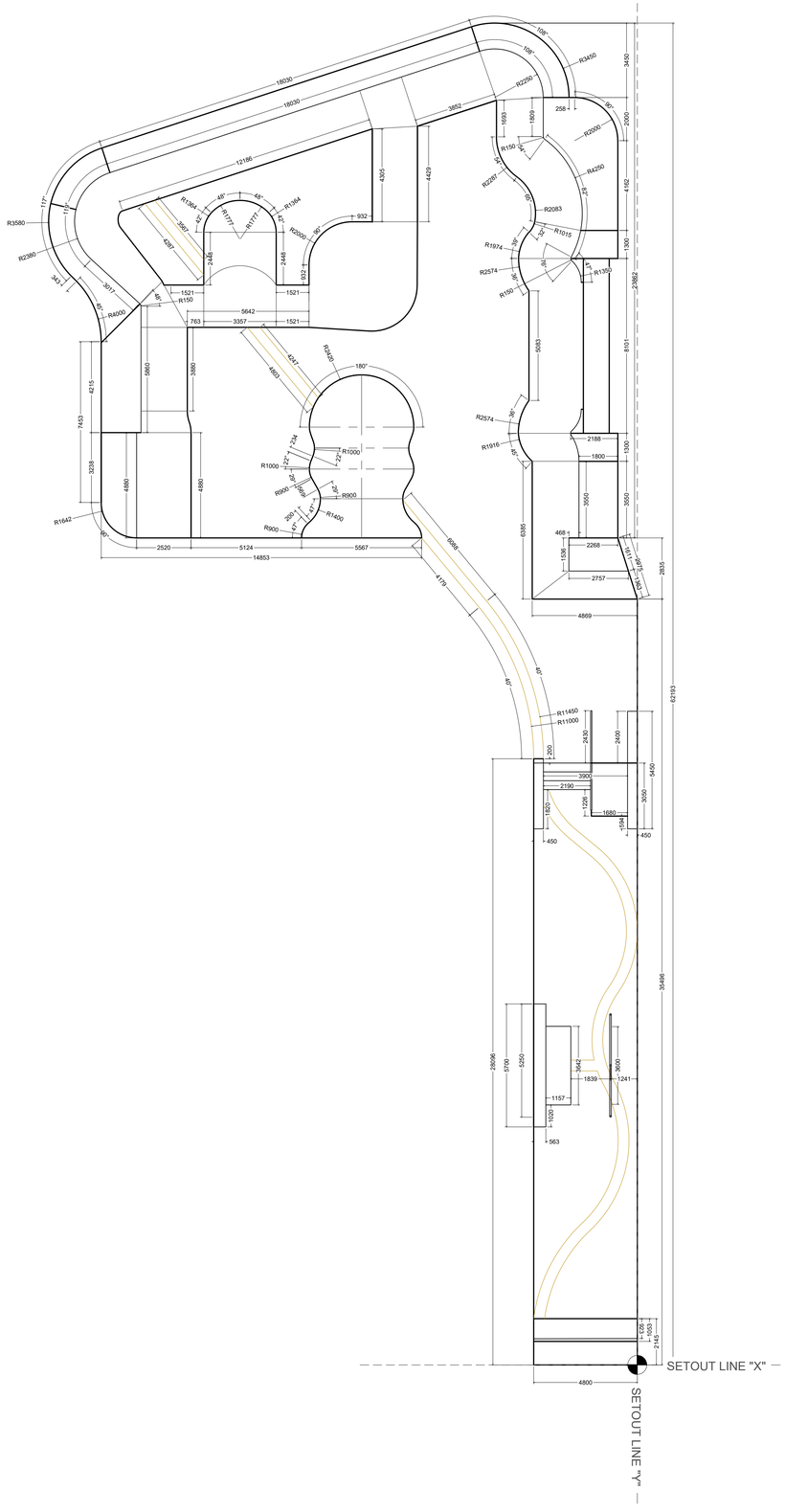
DRAWING TITLE:
WALLS
.

SCALE:	1:125	PAGE SIZE:	24"x36"

PROJECT NUMBER: SK2016-39

DRAWING NUMBER: SK-004

REV E



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ALL DIMENSIONS IN MILLIMETRES

No	DATE	BY	DESCRIPTION
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PROJECT:
HUXLEY SKATEPARK

LOCATION:
Gabriola Island, BC

DRAWN:	CB	START DATE:	01.03.2017
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APPROVED:	JB		

DRAWING TITLE:
DIMENSIONS
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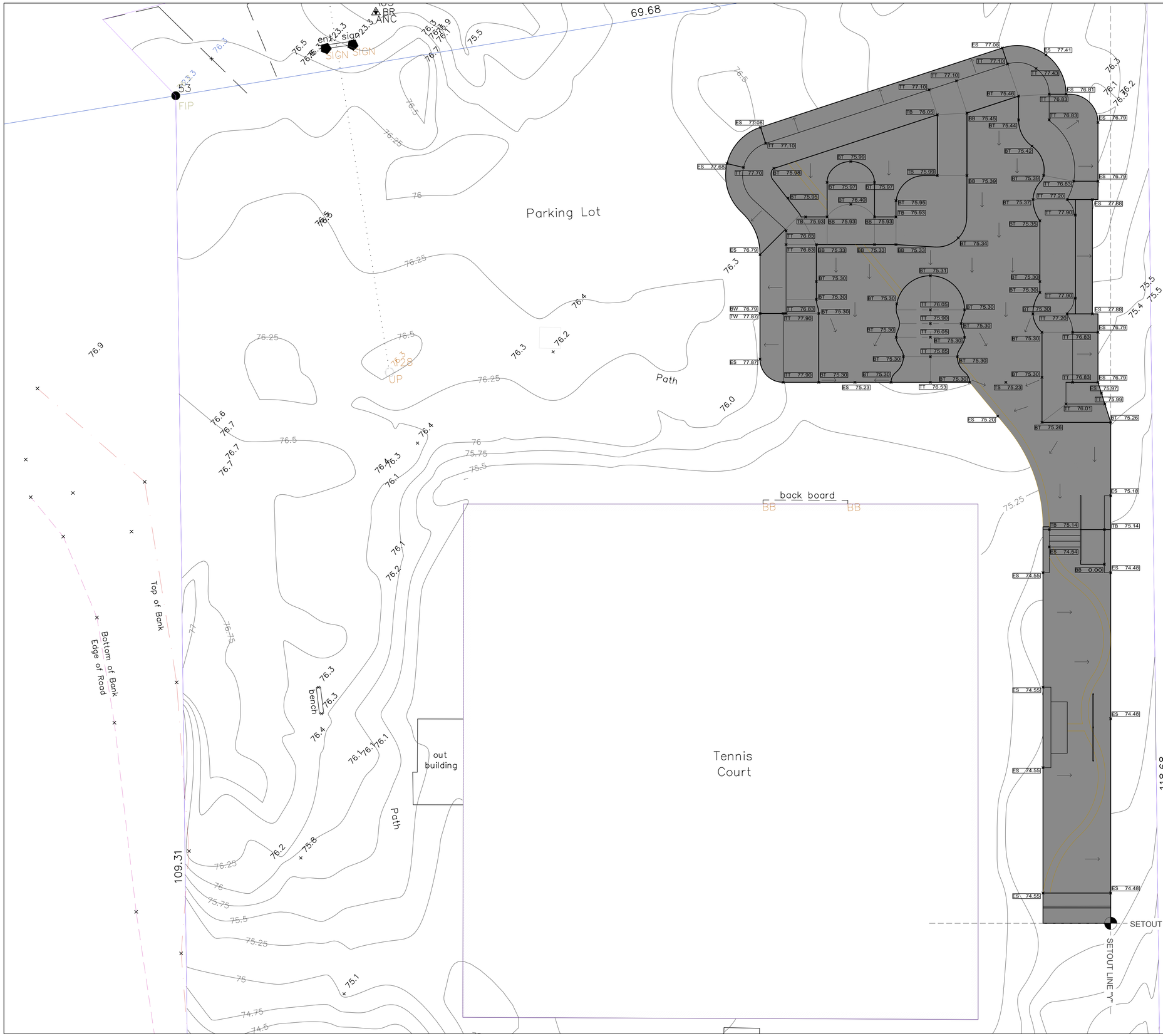
SCALE:	1:125	PAGE SIZE:	24"x36"

PROJECT NUMBER: SK2016-39

DRAWING NUMBER: SK-005

REV E



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LEGEND

TS -0.993	ELEVATION TAG RELATIVE TO TOTAL STATION ZERO LEVEL (MEASURED FROM RIM OF EXISTING CB)
TC	TOP OF COPING
TS	TOP OF FINISHED SLAB
TB	TOP OF BANK
BB	BOTTOM OF BANK
TT	TOP OF TRANSITION
BT	BOTTOM OF TRANSITION
TX	TOP OF BOX
TL	TOP OF LEDGE
TW	TOP OF WALL
ES	EDGE OF SLAB
BX	BOTTOM OF BOX
→	WATER FLOW
— — —	HIGH POINT ON SLAB

NOTES:

1. REFER TO TRENCHING AND DRAINAGE FOR FURTHER PIPING INFORMATION.

2. MAX SLOPE ON FLAT SLAB = 3%.

3. ALL ELEVATIONS SHOWN ON THIS DRAWING ARE IN METERS RELATIVE TO REFERENCE ELEVATION.

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PROJECT:
HUXLEY SKATEPARK

LOCATION:
Gabriola Island, BC

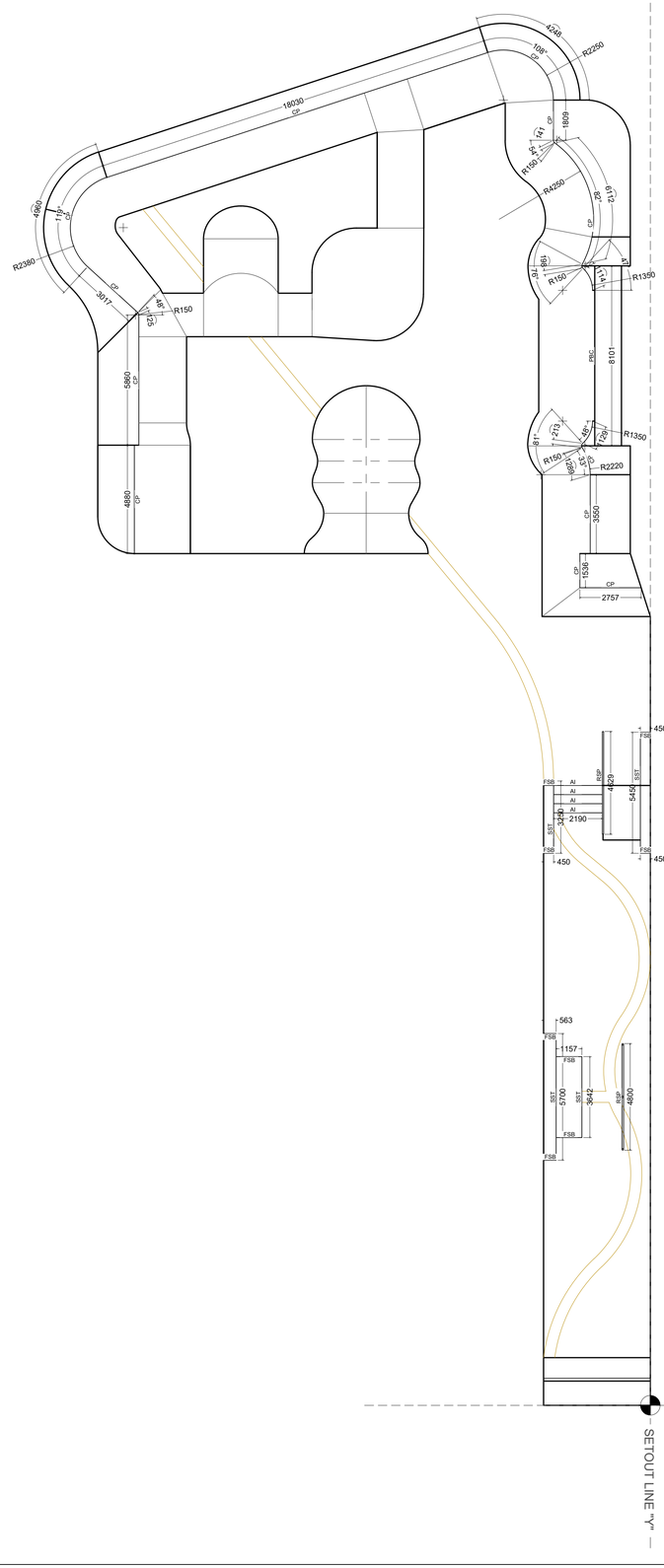
DRAWN:	CB	START DATE:	01.03.2017
CHECKED:	JB		
APPROVED:	JB		

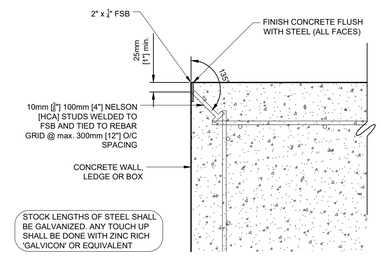
DRAWING TITLE:
GRADING
.

SCALE: 1:100
PAGE SIZE: 24"x36"

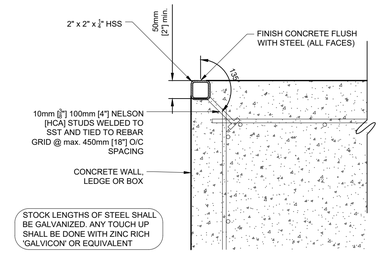
PROJECT NUMBER: SK2016-39

DRAWING NUMBER: SK-006
REV E

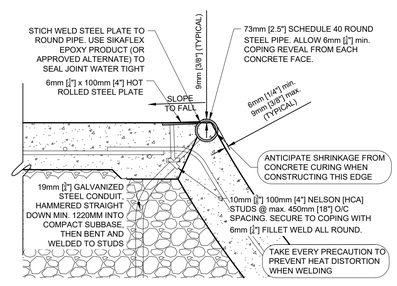




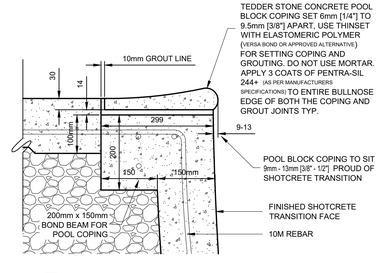
FSB TYPICAL FLAT STEEL BAR
SCALE 1 : 7.5



SST TYPICAL SQUARE TUBE COPING
SCALE 1 : 7.5



CP TYPICAL ROUND TUBE COPING
SCALE 1 : 7.5



PBC TYPICAL POOL BLOCK COPING
SCALE 1 : 7.5

METAL NOTES

*REFER TO DETAILS TO CONFIRM HAND RAIL DIMENSIONS

UNLESS OTHERWISE INDICATED, ALL STEEL GRINDING EDGES AND STEEL COPING SHALL BE GALVANIZED WITH ZINC COATING (HOT DIPPED) AS PER SPECIFICATIONS. ANY TOUCH UP SHALL BE DONE WITH ZINC RICH 'GALVICON' OR EQUIVALENT. ALL STEEL WORK TO BE FINISH PAINTED WITH BLACK 'TREMCLAD' RUST PROOF PAINT (OR APPROVED EQUAL) UNLESS OTHERWISE SPECIFIED.

SST:	SQUARE HSS 2" X 2" X¼" (50mm X 50mm X 6mm) ASTM - A500
RSP:	2" (50mm) Ø: SCHEDULE 80 ASTM - A53 PIPE
CP:	2" (50mm) Ø: SCHEDULE 80 ASTM - A53 PIPE WITH 4" STEEL BACKING PLATE ASTM - A36 (SEE COPING DETAIL BELOW)
FSB:	FLAT STEEL BAR 2" X ¼" (50mm X 6mm) ASTM - A36
PBC:	PRECAST CONCRETE POOL COPING. TEDDERSTONE STANDARD BULLNOSE OR APPROVED ALTERNATIVE.

ALL METAL WORK SHALL STRICTLY ADHERE TO THE SPECIFIED WALL THICKNESS. ALL METAL WORK SHALL BE GROUND IN SHOP AND PRIMED BEFORE DELIVERY TO SITE. NO MILL SCALE ON METAL SHALL BE TOLERATED. ALL SITE WELDING SHALL BE RETOUCHED AND PAINTED PRIOR TO SUBSTANTIAL COMPLETION. REFER TO SPECIFICATIONS

CONCRETE NOTES

CONCRETE APPLICATION
ALL TRANSITION AND BANK ELEMENTS TO BE POURED VIA SHOTCRETE APPLICATION (SEE SK-013 JOINT PLAN WHERE THESE FEATURES ARE IDENTIFIED)

CONCRETE FINISHING
ALL HORIZONTAL ELEMENTS TO HAVE A POWER TROWELED SHOP FLOOR FINISH
ALL TRANSITIONAL ELEMENTS AND FEATURES TO HAVE A HAND TROWEL SHOP FLOOR FINISH AND VERTICAL WALL FACES TO BE PRODUCED USING PAPER-FACED FORMS

CONCRETE PROPERTIES AND REINFORCEMENT
FOR CONCRETE PROPERTIES; STRENGTH, THICKNESS, REINFORCEMENT GAUGE AND SPACING, REFER TO SPECIFICATIONS AND DETAILS

0 1 2 3 4 5 m

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ALL DIMENSIONS IN MILLIMETRES

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PROJECT:
HUXLEY SKATEPARK

LOCATION:
Gabriola Island, BC

DRAWN:	CB	START DATE:	01.03.2017
CHECKED:	JB		
APPROVED:	JB		

DRAWING TITLE:
STEEL
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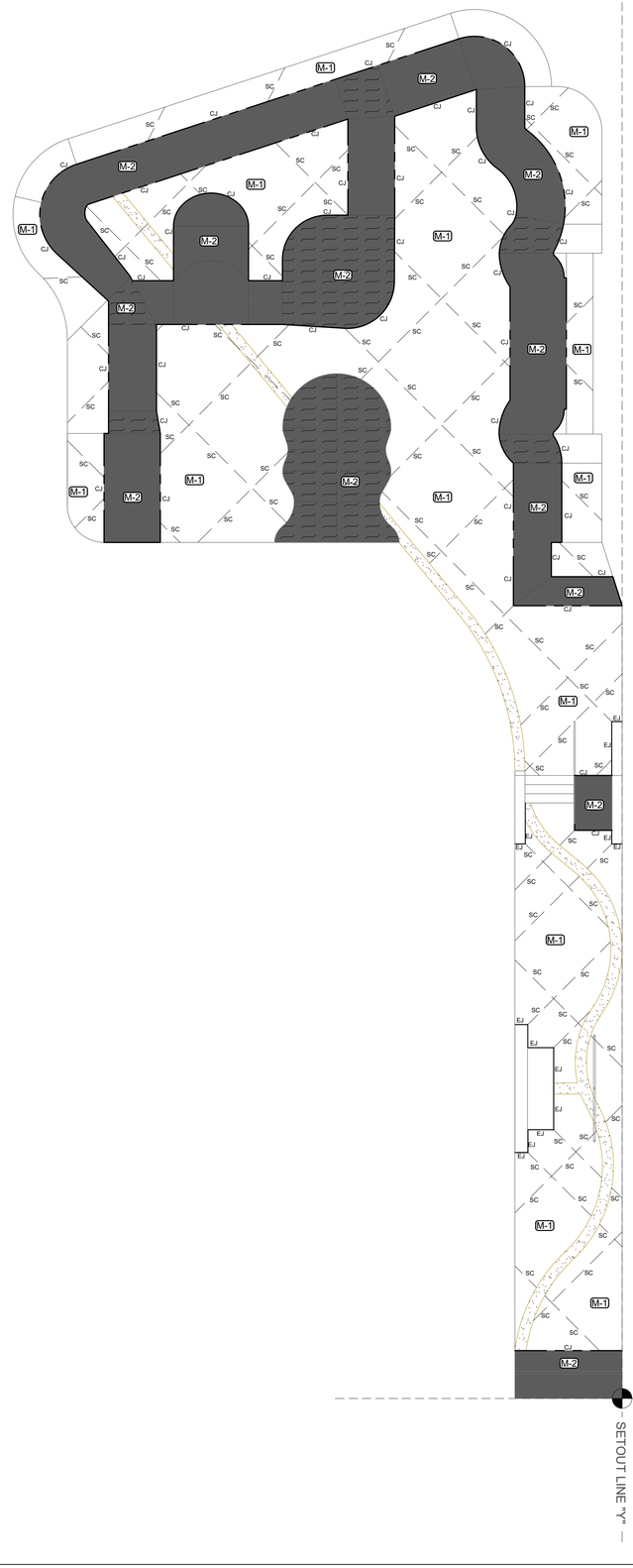
SCALE: 1:125
PAGE SIZE: 24"x36"

PROJECT NUMBER:
SK2016-39

DRAWING NUMBER:
SK-007

REV
E



NOTES:

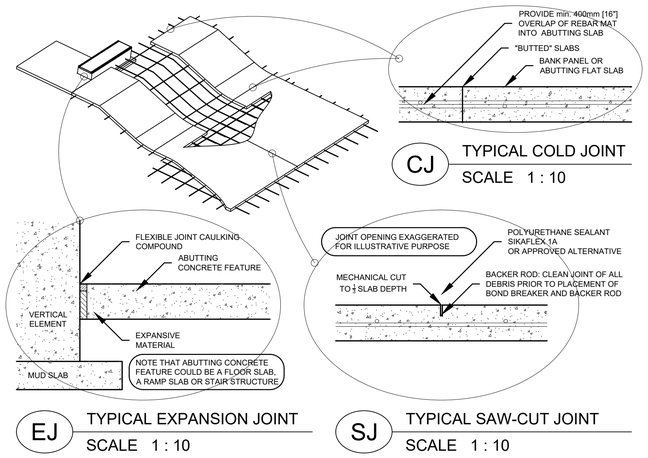
1. CONSTRUCTION OF ALL CONCRETE ELEMENTS WITHIN THE SKATEPARK ARE BEST COMPLETED IN THE FOLLOWING ORDER: A. FOOTINGS AND WALLS WITH FOOTINGS B. BANK PANELS, STEPS AND TRANSITIONS C. FLOOR SLAB D. WALL, LEDGES AND BOXES BUILT ON SLAB.

2. CAST IN PLACE CONCRETE PANELS SHALL BE CONSTRUCTED IN AN ALTERNATING ARRANGEMENT SO THAT EVERY OTHER PANEL IS COMPLETED PRIOR TO THE POURING OF THE INFILL PANEL. THIS SYSTEM PROVIDES EDGE FORMING FOR EVERY ALTERNATE PANEL AND HELPS ENSURE QUALITY CONTROL. NO PANELS SHALL EXCEED 4.0m (LINEAR) IN SIZE WITHOUT CONTROL JOINTING. - SEE CONCRETE SPECS.

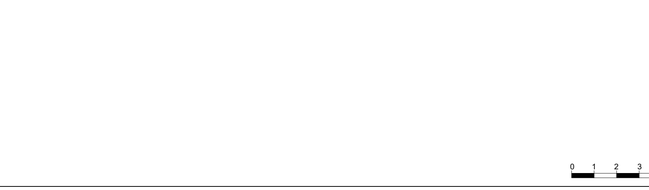
3. COLD JOINTS ARE PROVIDED BETWEEN EACH PANEL. PLACE TIE BARS AND DOWELS OR CONTINUOUS 10M REBAR (ROUND DEFORMED REINFORCING STEEL) THROUGH ALL PANELS AND FLOOR SLAB.

4. EXPANSION JOINTS: SHALL BE PLACED AT THE BASE OF ALL VERTICAL CONCRETE ELEMENTS SUCH AS LEDGES, STAIRS AND WALLS. UTILIZE JOINT COMPOUND NO GREATER THAN 6.25mm IN WIDTH TO HELP ELIMINATE TRIPPING OR IRREGULARITIES IN SKATING SURFACE.

5. SAW CUT PATTERN IS SHOWN TO PROVIDE DIRECTION ONLY. CONTRACTOR SHALL CUT SLAB AS NEEDED TO PREVENT CRACKING. SAW CUTS MUST BE MADE BEFORE ANY SIGNS OF THERMAL CRACKING. THERMAL CRACKING AS A RESULT OF INSUFFICIENT CRACK CONTROL MAY RESULT IN UNSKATEABLE SURFACES AND MAY NEED TO BE REPLACED.



CJ TYPICAL COLD JOINT
SCALE 1 : 10



EJ TYPICAL EXPANSION JOINT
SCALE 1 : 10

SJ TYPICAL SAW-CUT JOINT
SCALE 1 : 10

BLEND AREAS

IN MANY INSTANCES THROUGHOUT THE SKATEPARK - ELEVATION, AND DEGREE OF SLOPE BETWEEN BANKS, TRANSITION SLOPES, AND VERTICAL ELEMENTS CAN VARY. WHERE INDICATED ON PLAN, PROVIDE CUSTOM CONCRETE BLENDING FOR SMOOTH TRANSITIONS. THESE AREAS TYPICALLY REQUIRE GREATER HAND WORK AND QUALITY CONTROL TO ENSURE THAT BLENDS DO NOT RESULT IN IRREGULAR CONCRETE SURFACE CONDITIONS.

0 1 2 3 4 5 m

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LEGEND

- SC — SAW CUT
- EJ — EXPANSION JOINT
- CJ — COLD JOINT
- M-1 — SMOOTH FINISH CONCRETE COLOR SPECIFICATIONS: NATURAL GREY
- M-2 — SHOTCRETE APPLICATION COLOR SPECIFICATIONS: NATURAL GREY
- M-3 — SHAKE-ON / TROWEL IN COLOR SPECIFICATIONS: WR MEADOWS SPECTRUM 940
- SHOTCRETE APPLICATION COLOR SPECIFICATIONS: INTERSTAR "BUFF" JN-4416R (2 BAGS)

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E	03.16.21	CB	ISSUE FOR TENDER
D	03.26.19	CB	100% ISSUE
C	01.18.19	CB	100% PROGRESS REVIEW
B	01.07.19	CB	DVP APPLICATION
A	12.24.18	CB	50% PROGRESS REVIEW

CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE WORK AND REPORT ANY DISCREPANCY TO THE CONSULTANT BEFORE PROCEEDING. ALL DRAWINGS AND SPECIFICATIONS ARE THE EXCLUSIVE PROPERTY OF THE OWNER AND MUST BE RETURNED AT THE COMPLETION OF THE WORK.

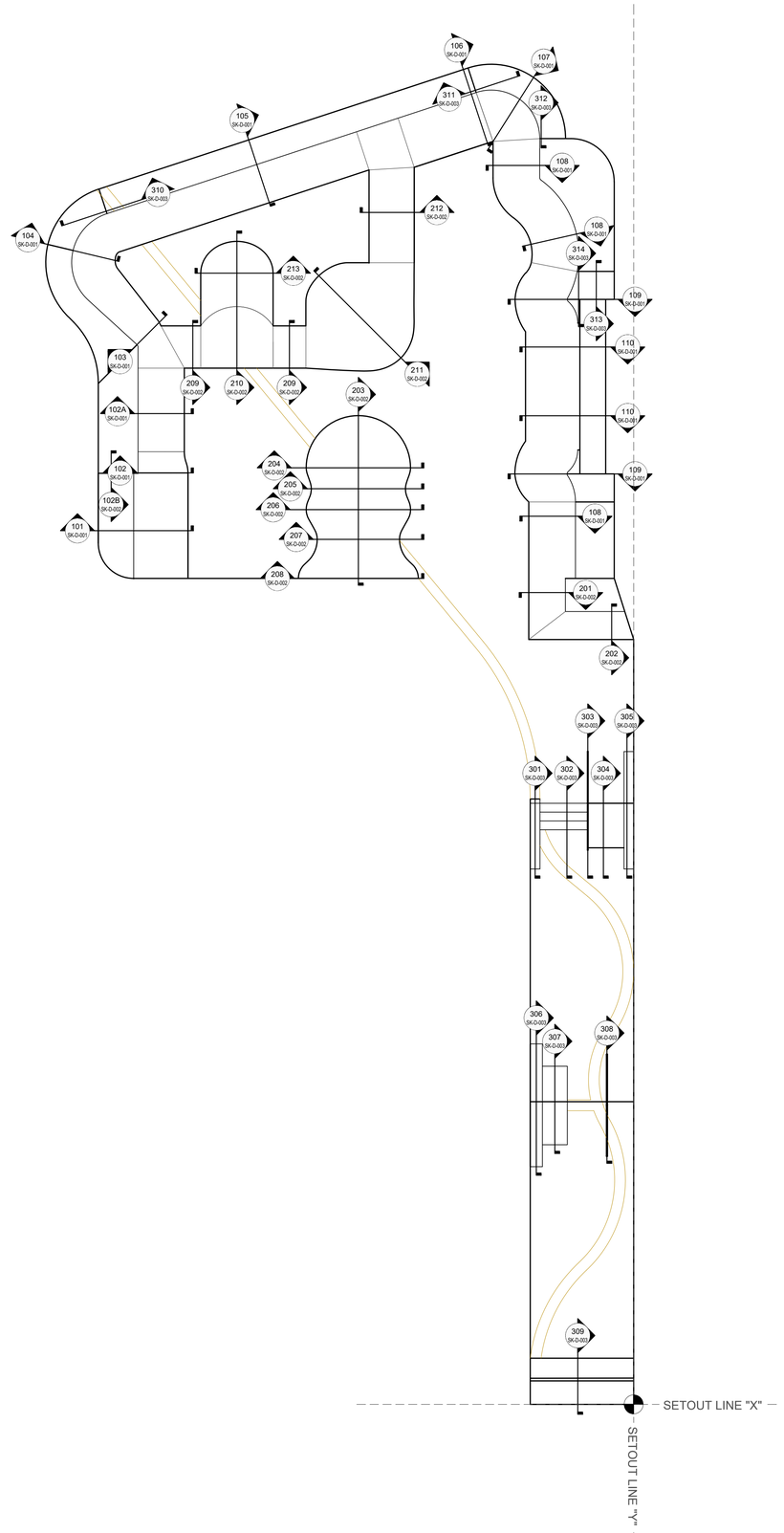
PROJECT:
HUXLEY SKATEPARK

LOCATION:
Gabriola Island, BC

DRAWN:	CB	START DATE:	01.03.2017
CHECKED:	JB		
APPROVED:	JB		

DRAWING TITLE:
CONCRETE
.

SCALE: 1:125	PAGE SIZE: 24"x36"
PROJECT NUMBER:	SK2016-39
DRAWING NUMBER: SK-008	REV E



NEW LINE SKATEPARKS inc.
BUILDING SKATEBOARDING
Unit #101 - 6249 205th Street P 604.530.1114
Langley, British Columbia F 604.530.1119
V2Y 1N7 info@newlineskateparks.com

No	DATE	BY	DESCRIPTION
E	03.16.21	CB	ISSUE FOR TENDER
D	03.26.19	CB	100% ISSUE
C	01.18.19	CB	100% PROGRESS REVIEW
B	01.07.19	CB	DVP APPLICATION
A	12.24.18	CB	50% PROGRESS REVIEW

CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE WORK AND REPORT ANY DISCREPANCY TO THE CONSULTANT BEFORE PROCEEDING. ALL DRAWINGS AND SPECIFICATIONS ARE THE EXCLUSIVE PROPERTY OF THE OWNER AND MUST BE RETURNED AT THE COMPLETION OF THE WORK.

PROJECT:
HUXLEY SKATEPARK

LOCATION:
Gabriola Island, BC

DRAWN:	CB	START DATE:	01.03.2017
CHECKED:	JB		
APPROVED:	JB		

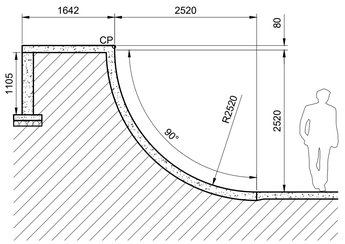
DRAWING TITLE:
DETAIL REFERENCE
.

SCALE: 1:100
PAGE SIZE: 24"x36"

PROJECT NUMBER: SK2016-39

DRAWING NUMBER: SK-D-000
REV E

NEW LINE SKATEPARKS inc.
BUILDING SKATEBOARDING
Unit #101 - 6249 205th Street P 604.530.1114
Langley, British Columbia F 604.530.1119
V2Y 1N7 info@newlineskateparks.com



101 8'6" QUARTER PIPE
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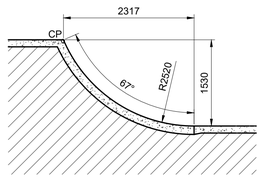

102 5' QUARTER PIPE
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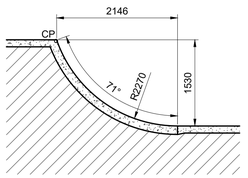

102A 5' QUARTER PIPE
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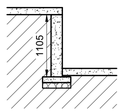

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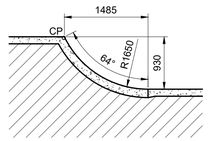

103 3' QUARTER PIPE
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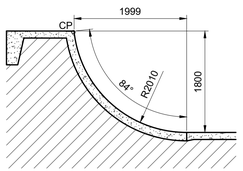

104 6' QUARTER PIPE
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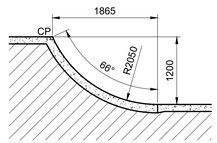

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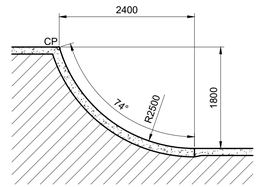

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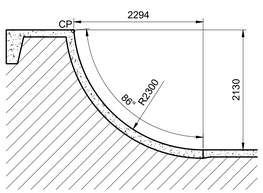
SCALE: 1:50



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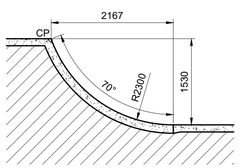

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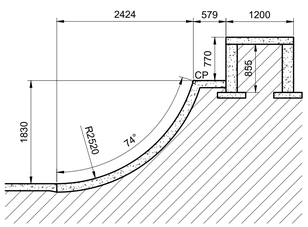

109 6' QUARTER PIPE
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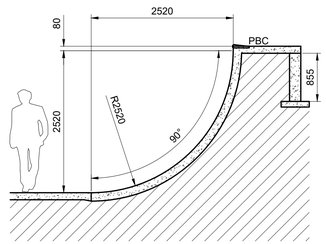


110 8'6" QUARTER PIPE
SCALE: 1:50

No	DATE	BY	DESCRIPTION
E	03.16.21	CB	ISSUE FOR TENDER
D	03.26.19	CB	100% ISSUE
C	01.18.19	CB	100% PROGRESS REVIEW
B	01.07.19	CB	DVP APPLICATION
A	12.24.18	CB	50% PROGRESS REVIEW

PROJECT:
HUXLEY SKATEPARK

LOCATION:
Gabriola Island, BC

DRAWN:	CB	START DATE:	01.03.2017
CHECKED:	JB		
APPROVED:	JB		

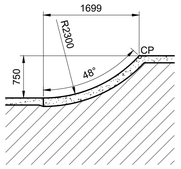
DRAWING TITLE:
DETAILS SHEET 1
.

SCALE: 1:50
PAGE SIZE: 24"x36"

PROJECT NUMBER: SK2016-39

DRAWING NUMBER: SK-D-001
REV E

NEW LINE SKATEPARKS inc.
BUILDING SKATEBOARDING
Unit #101 - 6249 205th Street P 604.530.1114
Langley, British Columbia F 604.530.1119
V2Y 1N7 info@newlineskateparks.com



201 2'6" QUARTER PIPE
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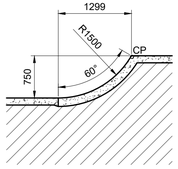

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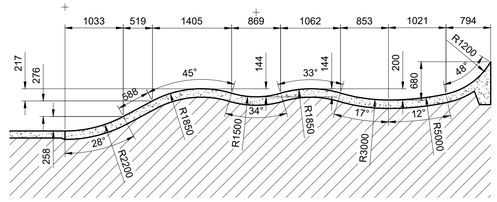
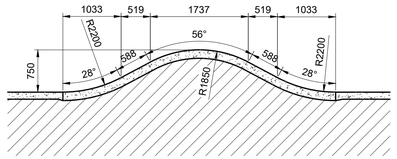
SCALE: 1:50



203 PUMP BUMP SECTION
SCALE: 1:50



204 2'6" PUMP BUMP
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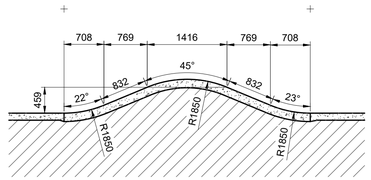

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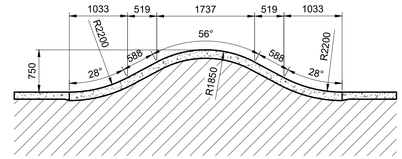

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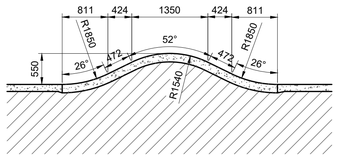
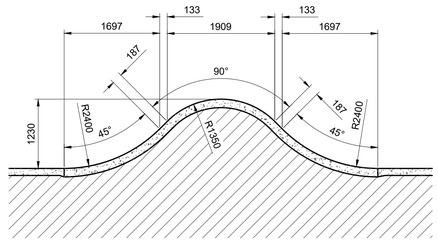
SCALE: 1:50



207 2' PUMP BUMP
SCALE: 1:50



208 4' PUMP BUMP
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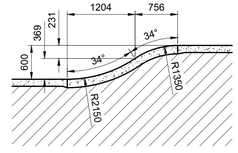
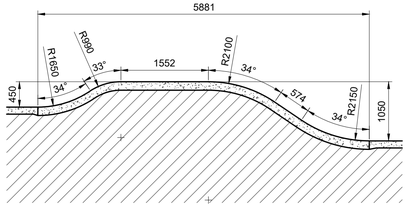


209 2' ROLLER
SCALE: 1:50



210 ROLLER SECTION
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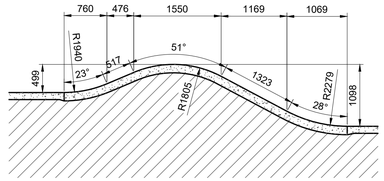

211 PUMP BUMP SECTION
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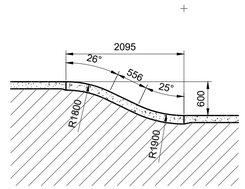
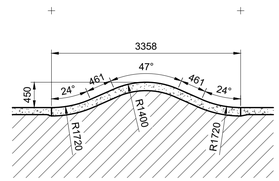


212 2' ROLL IN
SCALE: 1:50



213 1'6" PUMP BUMP
SCALE: 1:50

No	DATE	BY	DESCRIPTION
E	03.16.21	CB	ISSUE FOR TENDER
D	03.26.19	CB	100% ISSUE
C	01.18.19	CB	100% PROGRESS REVIEW
B	01.07.19	CB	DVP APPLICATION
A	12.24.18	CB	50% PROGRESS REVIEW

PROJECT:
HUXLEY SKATEPARK

LOCATION:
Gabriola Island, BC

DRAWN:	CB	START DATE:	01.03.2017
CHECKED:	JB		
APPROVED:	JB		

DRAWING TITLE:
DETAILS SHEET 2
.

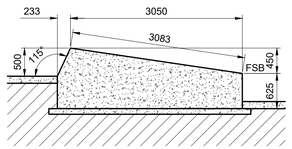
SCALE:	1:50	PAGE SIZE:	24"x36"

PROJECT NUMBER: SK2016-39

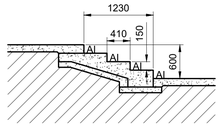
DRAWING NUMBER: SK-D-002

REV E

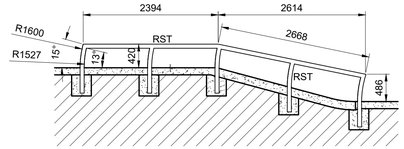
NEW LINE SKATEPARKS inc.
BUILDING SKATEBOARDING
Unit #101 - 6249 205th Street
Langley, British Columbia
V2Y 1N7
P 604.530.1114
F 604.530.1119
info@newlineskateparks.com



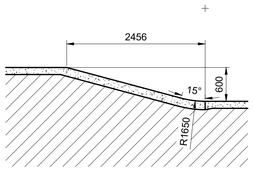
301 HUBBA LEDGE
SCALE: 1:50



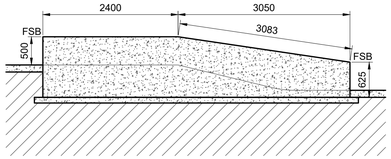
302 4 STAIR
SCALE: 1:50



303 FLAT/DOWN RAIL
SCALE: 1:50



304 2' 15° BANK
SCALE: 1:50



305 FLAT/DOWN LEDGE
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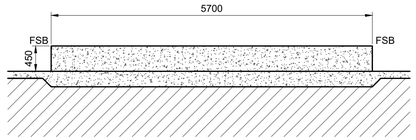

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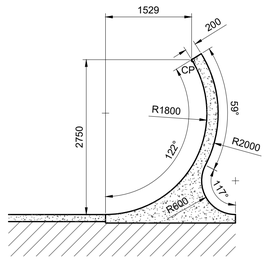
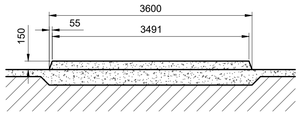
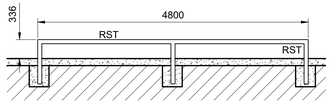


309 OVERVERT QP
SCALE: 1:50



307 MANUAL PAD
SCALE: 1:50



308 FLATBAR
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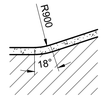
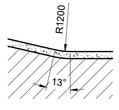


310 ESCALATOR RADIUS
SCALE: 1:50



311 ESCALATOR RADIUS
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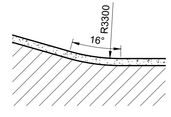

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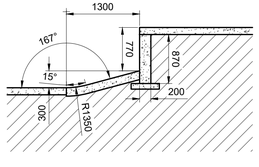
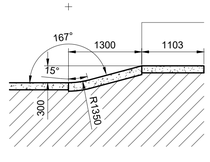


313 WALL INTERFACE
SCALE: 1:50



314 DECK INTERFACE
SCALE: 1:50

No	DATE	BY	DESCRIPTION
E	03.16.21	CB	ISSUE FOR TENDER
D	03.26.19	CB	100% ISSUE
C	01.18.19	CB	100% PROGRESS REVIEW
B	01.07.19	CB	DVP APPLICATION
A	12.24.18	CB	50% PROGRESS REVIEW

PROJECT:
HUXLEY SKATEPARK

LOCATION:
Gabriola Island, BC

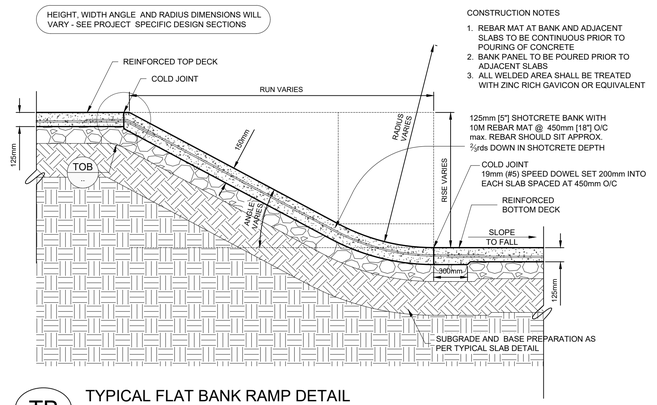
DRAWN:	CB	START DATE:	01.03.2017
CHECKED:	JB		
APPROVED:	JB		

DRAWING TITLE:
DETAILS SHEET 3
.

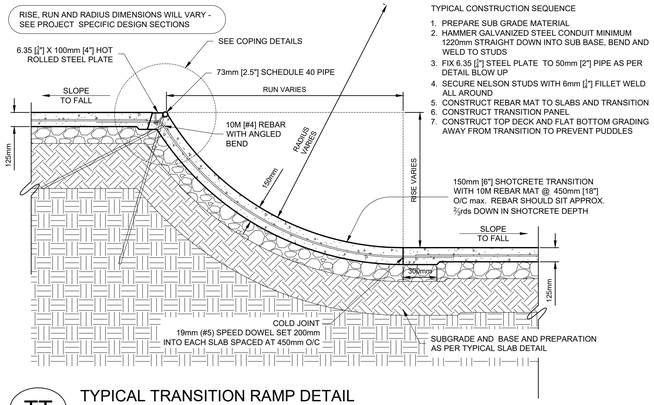
SCALE: AS SHOWN
PAGE SIZE: 24"x36"

PROJECT NUMBER: SK2016-39

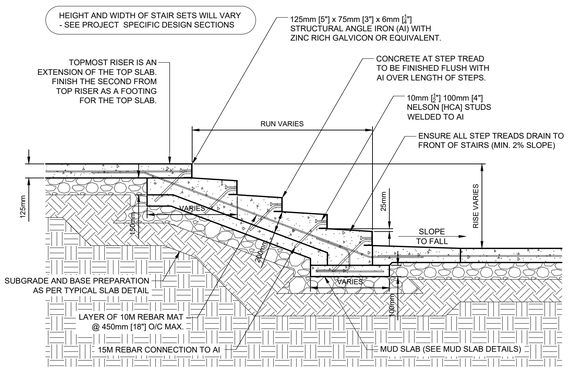
DRAWING NUMBER: SK-D-003
REV E



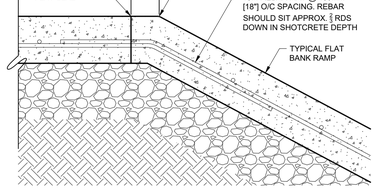
TB TYPICAL FLAT BANK RAMP DETAIL
SCALE 1 : 25



TT TYPICAL TRANSITION RAMP DETAIL
SCALE 1 : 25



TST TYPICAL STAIR DETAIL
SCALE 1 : 25



TOB TOP OF BANK EDGE TREATMENT
SCALE 1 : 7.5

NEW LINE SKATEPARKS Inc.
BUILDING SKATEBOARDING
Unit #101 - 6249 205th Street P 604.530.1114
Langley, British Columbia F 604.530.1119
V2Y 1N7 info@newlineskateparks.com

No	DATE	BY	DESCRIPTION
E	03.16.21	CB	ISSUE FOR TENDER
D	03.26.19	CB	100% ISSUE
C	01.18.19	CB	100% PROGRESS REVIEW
B	01.07.19	CB	DVP APPLICATION
A	12.24.18	CB	50% PROGRESS REVIEW

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PROJECT:
HUXLEY SKATEPARK

LOCATION:
Gabriola Island, BC

DRAWN:	CB	START DATE:	01.03.2017
CHECKED:	JB		
APPROVED:	JB		

DRAWING TITLE:
TYPICAL DETAILS
.

SCALE:	1:25	PAGE SIZE:	24"x36"

PROJECT NUMBER: SK2016-39

DRAWING NUMBER:	REV
SK-TD-001	E

END OF DOCUMENT