Invitation To Tender

INVITATION TO TENDER N0. PS20201114 (the "ITT")

CONTRACTOR FOR HARO ST TRANSMISSION MAIN REPLACEMENT – GILFORD MINI-PARK

ITT No. PS20201114

Issue Date: November 20, 2020

Issued by: City of Vancouver (the "City")

Tenders are to be emailed to bids@vancouver.ca and must be received at bids@vancouver.ca prior to 3:00pm, Vancouver Time (as defined in Note 3 below), on January 7, 2021 (the "Closing Time").

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

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

NOTES:

1. Tenders must be delivered to the email addressed specified above prior to the Closing Time.

2. "Vancouver Time" will be conclusively deemed to be the time indicated in the electronic timestamp the Tender receives upon delivery to the email address specified herein, which is in turn synchronized to Network Time Protocol (NTP) provided by the National Research Council of Canada adjusted to local Pacific Time Zone.

3. The City of Vancouver is open on business days from 8:30 a.m. to 4:30 p.m., Vancouver Time, and is closed Saturdays, Sundays, and holidays.

4. DO NOT SUBMIT TENDERS BY FAX.

5. All queries related to this ITT should be submitted in writing to the attention of:

Jason Lo, Contracting Specialist

Email: jason.lo@vancouver.ca

(the "**Contact Person**")

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1.0 OVERVIEW OF PROJECT

1.1 The City of Vancouver (the **"City**") invites Tenders for the Haro Street Transmission Main Replacement for Gilford Mini-Park**.**

1.2 The Work generally includes, but is not limited to:

- preparation and installation of planting,
  - installation of shrub and ground cover areas,
  - installation of turf grass lawn area,
  - installation of rain garden at East end of Mini-Park,
  - replacement of trees adjacent walkway impacted by water main construction;

- construction of concrete sidewalk and re-construction of hardscape,
  - construction of curb sections directly adjacent mini-park frontages, including the asphalt slot required for installation,
  - construction of widened concrete park walkways to replace paver walks,
  - permanent restoration of pavement cut on Rosemary Brown Lane,
  - removal of hardscape and retaining wall,
  - placement of reclaimed granite boulders,
  - offsite disposal of existing fill / landscaping and retaining wall elements;

- installation of public drinking fountain (fountain supplied by the City),

- design and installation of park landscaping irrigation to Park Board specifications,

- street lighting relocation and upgrades,
  - installation of street light pole 5/18 at Haro Street,
  - reinstatement of two direct buried lamp standards in the mini-park,
  - trenching and installing RPVC conduit, junction boxes, and re & re of existing lights and pole bases to facilitate the pole relocations, except wiring.

1.3 The Work Site is located at Haro Street and Gilford Street, British Columbia. The Work Site is further described in the Tender Documents, including the Site Plan attached with the drawings.

1.4 The purpose of this ITT is to select a Tenderer with the capability and experience to efficiently and cost-effectively perform and complete the Work.

1.5 IF A POTENTIAL TENDERER BELIEVES THAT THE CITY MAY BE UNABLE TO SELECT IT DUE TO A CONFLICT OF INTEREST, BUT IS UNCERTAIN ABOUT THIS, THE POTENTIAL TENDERER IS URGED TO CONTACT THE CONTACT PERSON AS SOON AS POSSIBLE WITH THE RELEVANT INFORMATION SO THAT THE CITY MAY ADVISE THE POTENTIAL TENDERER REGARDING THE MATTER. SEE SCHEDULE "L" FOR AN INDICATION OF THE TYPES OF CONFLICTS OF INTEREST THAT OFTEN ARISE.

2.0 SUSTAINABILITY

2.1 The City's Procurement Policy, Ethical Purchasing Policy and related Supplier Code of Conduct found at http://vancouver.ca/doing-business/selling-to-and-buying-from-the-city.aspx align the City's approach to procurement with its corporate social, environmental and economic

sustainability values and goals. They evidence the City's commitment to maximize benefits to the environment through product and service selection, and to ensure safe and healthy workplaces, where human and civil rights are respected. Each Tenderer is expected to adhere to the supplier performance standards set forth in the Supplier Code of Conduct.

2.2 A Contractor is to provide environmentally sensitive products or services wherever possible. Where there is a requirement that a Contractor supply materials, and where such materials may cause adverse environmental effects, each Tenderer should indicate the nature of the hazard(s) in its Tender. Furthermore, each Tenderer should advise the City of any known alternatives or substitutes for such materials that would mitigate such adverse effects.

3.0 TENDER DOCUMENTS

3.1 The Tender Documents consist of the following and include the documents referred in Section 3.3 below):

(a) Part A – Introduction, and its appendices**:**

(i) Appendix 1 – Information Meeting Attendance Form;

(ii) Appendix 2 – Response Notification Form; and

(iii) Appendix 3 – Specifications and Drawings;

(b) Part B – Terms and Conditions of ITT Process;

(c) Part C - Form of Tender (including all schedules),

(d) Part D – Form of Agreement (including all schedules);

(e) the Specifications (available separately and to be incorporated into the Contract when finalized);

(f) the Drawings (available separately and to be incorporated into the Contract when finalized);

(g) all addenda or amendments to the ITT, and all questions and answers in connection with the ITT, issued in writing by the City prior to the Closing Time, as well as any addenda, amendments or questions and answers issued in writing by the City after the Closing Time and accepted in writing by the Tenderers.

3.2 Specifications and Drawings will be made available on the City's website at https://bids.vancouver.ca/bidopp/openbid.htm and by searching for the ITT's reference number PS20201114.

3.3 The Specifications and Drawings include the "Master Municipal Specifications and Standard Detail Drawings" contained within Volume II of the Master Municipal Construction Document, as supplemented by the City of Vancouver Engineering Design Manual and Construction Specifications. For certainty, all of Volume I and the following parts of Volume II of the MMCD are expressly excluded from the Tender Documents: Instructions to Tenderers – Part II. General Conditions (including Schedule 17.5.3 Letter Agreement with Referee, Changes and Extra Work flow chart, and Dispute Resolution Process flow chart).

4.0 INFORMATION MEETING

4.1 Tenderers are invited to attend an optional information meeting (the "**Information Meeting**") on **December 7, 2020** commencing at 11:00 am.

4.2 The location of the Information Meeting will be: Haro Street and Gilford Street, Vancouver, British Columbia.

4.3 Tenderers are asked to pre-register for the Information Meeting by submitting the Information Meeting Attendance Form (Appendix 1) to the Contact Person by email prior **to 3 pm December 2, 2020**.

5.0 ADMINISTRATIVE REQUIREMENTS

5.1 Tenderers are asked to indicate their intentions to submit Tenders by submitting the Response Notification Form (Appendix 2) to the Contact Person by email on or before **December 10, 2020.**

5.2 It is the sole responsibility of each Tenderer to check the City's website at http://vancouver.ca/doing-business/open-bids.aspx regularly for addenda, amendments and questions and answers related to this ITT, which the City may issue at any time during the process, and for any reason, at its discretion.

6.0 CONDUCT OF ITT – INQUIRES AND CLARIFICATIONS

6.1 The City will have conduct of this ITT, and all communications are to be directed only to the Contact Person named on the cover page. Any communication from potential Proponents to City staff other than the contact person regarding the content of this RFP may lead to disqualification of the Proponent from this RFP process, at the City's sole discretion.

6.2 It is the responsibility of each Tenderer to thoroughly examine the Tender Documents and satisfy itself as to the full requirements of this ITT and their acceptability to the Tenderer.

6.3 The City welcomes inquiries, requests for clarification or comments from registered Tenderers. All inquires or comments to the City must be in written form only. All inquiries, requests for clarification and comments must be e-mailed to jason.lo@vancouver.ca prior to **December 29, 2020**, and must in each case be addressed to the attention of the Contact Person. In response to inquiries, requests for clarification or comments, the City, in its sole discretion, may make amendments to this ITT or may issue questions and answers to all Tenderers who have submitted a Response Notification Form and post them on the City's website.

7.0 ELIGIBILITY TO PARTICIPATE – Intentionally Deleted

CITY OF VANCOUVER
Purchasing Services

Invitation to Tender No. PS20201114

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

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

Your details:

Tenderer's Name: _____

"**Tenderer**"

Address: _____

_____

_____

Telephone: _____

Key Contact Person: _____

E-mail: _____

We will attend the Information Meeting for: ITT No. PS20201114, **"Contractor for Haro Street Transmission Replacement – Gilford Mini-Park".**

_____ _____
Signature Name of Authorized Signatory (Please print)

_____ _____
E-mail Address (Please print) Date

CITY OF VANCOUVER
Purchasing Services

Invitation to Tender No. PS20201114

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

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

Your details:

Tenderer's Legal Name: _____

"**Tenderer**"

Address: _____

_____

_____

Telephone: _____

Key Contact Person: _____

E-mail: _____

We **WILL** □ **/ WILL NOT** □ submit a Tender in response to ITT No. PS20201114, **"Contractor for Haro Street Transmission Replacement – Gilford Mini-Park"** on or before the Closing Time**.**

_____ _____
Signature Name of Authorized Signatory (Please print)

_____ _____
E-mail Address (Please print) Date

The following is the list of Specifications dated October 2020 for Haro Street Transmission Main Replacement – Gilford Mini-Park:

Project Specific Specifications for Haro Street Transmission Main Replacement – Gilford Mini-Park

04 43 00	Miscellaneous Stone Work
31 22 02S	GI Site Grading
31 22 16 2S	GI Reshaping Existing Subgrade
31 23 02S	GI Excavating, Trenching and Backfilling
31 32 20S	GI Geosynthetics
32 80 00	Irrigation System
32 91 21	Topsoil and Finish Grading
32 91 23S	GI Growing Medium and Finish Grading

The following is the list of Drawings dated September 2020 for Haro Street Transmission Main Replacement – Gilford Mini-Park:

Drawings for Haro Street Transmission Main Replacement – Gilford Mini-Park

L0	Cover Sheet with Project Location Rev. 3
L1.1	Existing Site Plan Rev. 1
L1.2	Utilities Plan Rev.2
L1.3	Demolition and Protection Plan Rev. 2
L2.0	Layout of Materials Plan Rev. 3
L2.1	Survey Layout Plan – Paving Rev. 3
L3.0	Grading & Drainage Plan Rev. 2
L4.0	Growing Medium Plan Rev. 3
L5.0	Planting Plan Rev. 2
L5.1	Turf Areas Rev. 1
L6.1	Cross Sections Rev. 1
L7.1	Details – Green Infrastructure Rain Garden Rev. 4
L7.2	Details – Drinking Water Fountain & Paving Rev. 4
S-1284	Street Lighting Design

PART 1: GENERAL

1.1 General Requirements

.1 Refer to Division 1, General Requirements.

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

1.2 Description

.1 Supply all products, labour, equipment, and services necessary to install miscellaneous stone work as indicated in the contract documents. Work includes but is not limited to:

.1 Reclaimed Boulders - Install

.2 Reclaimed Boulders shall be supplied and stockpiled on site by City of Vancouver prior to start of work.

1.3 Related Work

.1	Cast-In-Place Concrete	Section 03 33 00
.2	Excavation and Backfill	Section 31 23 10
.3	Precast Concrete Unit Paving	Section 32 14 00
.4	Precast Concrete Unit Paving – Permeable	Section 32 14 43

1.4 Protection

.1 Site and Adjacent Property

.1 Protect all work from damage related to weather, other trades, and/or on site construction activities.

.2 Protect adjacent property and construction activities from damage arising from this contract.

.2 Finished Stone

.1 Properly protect all stone against damage in transit or at project site.

.2 Place wood timbers under stone when stored on open ground to prevent contact with grade.

1.5 Existing Utilities and Structures

.1 Exact location of all existing utilities and structures, whether or not indicated on the drawings will be determined by the Contractor. Conduct work so as to prevent interruption of service or damage.

.2 Ensure that all underground utilities including drainage and irrigation systems are clearly located and protected during construction. Make good all damages.

1.6 Examination

.1 Prior to the commencement of work of this section, inspect all surfaces on which work is to be laid and ascertain that surfaces are adequate in relationship to the preparation of work to be performed under this section. Commencement of work will signify acceptance.

.2 Prior to the commencement of work of this section, inspect all Reclaimed Boulders in stockpile for cracks, sharp edges or other defects.

.2 Report any defects or perceived conflicts to the Owner's Representative.

1.7 Measurement For Payment

.1 Installation of the Reclaimed Boulders will be measured as a unit price. The work includes site preparation, placement and all incidentals necessary for proper installation of all Reclaimed Boulders according to the drawings.

PART 2: PRODUCTS

2.1 Approved Equals

.1 It is the intent of the City to provide the Reclaimed Boulders. Approved Equals will not be considered.

2.2 Materials

.1 Reclaimed Boulders are sizes as noted on the drawings.

PART 3: EXECUTION

3.1 Layout

.1 Prior to the start of construction, stake layout of all stone elements for Owner's Representative review.

.2 Verify all locations and dimensions and report to Owner's Representative any deviation or conflicts between drawings, specifications and site conditions.

3.2 Subgrade Preparation

.1 Compact subgrade to 95% Modified Proctor Density.

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

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

3.3 Placement of Reclaimed Boulders

.1 Owner's Representative shall be on site to oversee placement of boulders.

.2 Examine material prior to installation for visible defects or damage. Do not install cracked, chipped, stained or physically damaged pieces. Report any damages to Owner's Representative immediately.

.3 Place and compact crushed granular base to lines and levels noted on drawings.

.4 Set Reclaimed Boulders to locations and levels noted on drawings.

3.4 Adjust and Clean

.1 Carefully clean all stone removing all dirt and debris from all surfaces.

.2 Remove and dispose of off site all debris as a result of work in this section.

3.5 Final Acceptance

.1 Reclaimed Boulders will be inspected by the Owner's Representative at the completion of the Guarantee Period for any settling or defects.

.2 Where deficiencies are found, issuance of Final Acceptance may be withheld or the guarantee period may be extended or made conditional upon completion of repairs or improvements, at the discretion of the Owner's Representative.

END OF SECTION 04 43 00

PART 1: GENERAL

.1 Section 31 22 02S is a "*Green Infrastructure Landscaping*" Section and refers to those portions of the work that are unique to preparation of subgrade, by rough grading and filling, to provide a base that will allow placing of growing medium (topsoil) to specified depths. This section does not apply to grading prior to placement of paved or concrete surfaces. This section must be referenced to and interpreted simultaneously with all other sections pertinent to the works described herein.

.2 This section is based on the "British Columbia Landscape Standard" published by the BC Society of Landscape Architects and the BC Nursery Trades Association. This standard is intended to set a level of quality which is to be equaled or bettered in the construction documents for each project. Guidance of a registered British Columbia Landscape Architect is recommended.

1.1 Related Work

.1	*GI Growing Medium and Finish Grading*	*Section 32 91 23S*
.2	*Seeding*	*Section 32 92 20*
.3	*Hydraulic Seeding*	*Section 32 92 19*
.4	*Sodding*	*Section 32 92 23*
.5	*Planting of Trees, Shrubs and Ground Covers*	*Section 32 93 01*

1.2 References

.1 Canadian Landscape Standard

.2 Canadian System of Soil Classification

1.3 Site Conditions

.1 Examine site with Contract Administrator and obtain approval of previous work prior to commencing site grading .

1.4 Measurement and Payment

.1 For imported growing medium refer to Section 32 91 23S.

.2 Measurement for topsoil stripping, including stockpiling for re-use, will be made from the before-and-after cross sections of stripped area as determined by Contract Administrator. Approximate values to be provided in the contract.

.3 Payment for site grading of stockpiled native soil includes cut and fill excavation its on-site redistribution and compaction to design elevations and grades .Off-site disposal of surplus materials to be paid for separately. Measurement for site grading will be for the entire area graded including excavating and filling.

.4 Unless otherwise noted in the Contract Documents, payment for all Work under this Section will be incidental to payment for Work described in other Sections.

1.5 Inspection and Testing

.1 Refer to General Conditions, Clause 4.12, Inspections

PART 2: PRODUCTS

2.1 Materials

.1 Fill material: in case of deficit of in-place or specified materials, all additional materials necessary to bring site up to specified grade must comply with material specified in appropriate Section, or as shown on Contract Drawings.

.2 Obtain approval from Contract Administrator for excavated or graded material to be used as fill for grading work. Protect approved material from contamination.

.3 Fill material to be placed under areas to be landscaped, i.e., with grass, sod, groundcover, shrubs and trees, to be non-toxic to plant and animal life in part or in concentration (leachate).

PART 3: EXECUTION

3.1 Stripping of Topsoil

.1 Strip all organic material to specified limits and specified depth. Stockpile for re-use as shown in *Contract Documents*. Do not handle topsoil while in wet or frozen condition or in any manner in which soil structure is adversely affected. Remove all debris and unusable material as specified in the *Contract Documents.*

.2 Surface drainage: provide suitable temporary ditches or other means of handling drainage deemed acceptable by the Contract Administrator, prior to excavation and during construction to protect construction area and all adjacent or affected properties. Provide siltation controls to protect natural watercourses or existing drainage facilities

.3 When excavating the soil trench, care must be taken to avoid disruption to the granular base structure of the curb and sidewalk.

.4 If the soil is to be ameliorated, ensure that the quality of the removed top soil is preserved to the satisfaction of the *City Engineer* per guidance in Section 01 57 01. Preserve material according to Section 32 91 21.

.5 Mix salvaged top soil according to specifications in the *Contract Drawings* to the satisfaction of the *City Engineer*

3.2 Grading

.1 Rough grade to levels, profiles, and contours allowing for surface treatment as shown on *Contract Drawings*.

.2 Compact subgrade *to* a consistent 80% Modified Proctor Density in compliance with ASTM D1557..3 Excavate soft and unstable areas below subgrade that cannot be compacted to this standard and fill with approved backfill material, except in locations where special environmental conditions have been identified. In such cases, appropriate alternative solutions to be approved by the *City Engineer* and carried out.

.4 Remove and dispose to approved off-site disposal area, all debris, roots, branches, stones, building material, contaminated subsoil, visible weeds and all else that may interfere with proper growth and development of the planned finished landscaping.

.5 Place fill materials to elevations and sections shown on *Contract Drawings*.

Place fill in maximum 150 mm lifts compacting each lift to 75-80% Modified Proctor Density.6 Scarify areas showing excessive compaction to minimum depth of 150-300 mm and compact as directed by the *City Engineer*, immediately before placing topsoil.

.7 Ensure gradients are within ranges shown in Table 1, except where *Contract Drawings* show variation from this standard.

.8 Grade transitions of subgrade smooth and even, such that ponding cannot occur on subgrade surface. Ponding should occur only within the designated bioretention ponding area as shown in the *Contract Drawings* to the satisfaction of the *City Engineer*.

Table 1: Maximum and Minimum Gradients in Location

Location	Minimum	Maximum
Lawn and Grass	50:1 (2%)	3:1
Grass Swales (without additional erosion protection)	50:1 (2%)	10:1 (10%)
i) Slope along inverts	6:1 (preferred)	3:1
ii) Side Slope		
Ponding Area (Bioretention Practices)	0% (preferred)	50:1 (2%)*
Side Slopes (Bioretention Practices)	4:1 (preferred)	3:1*
Unmowed Areas	100:1 (1%)	2:1*
Planted Areas	50:1 (2%)	2:1*

* Unless directed otherwise by *Contract Administrator* or *Contract Drawings*

3.3 Tolerance

.1 Accuracy of subgrade elevations to be within tolerances shown in Table 2.

Table 2: Maximum and Minimum Gradients in Location

Location	Minimum	Maximum
Lawn and Grass	50:1 (2%)	3:1
Grass Swales (without additional erosion protection)	50:1 (2%)	10:1 (10%)
i) Slope along inverts	6:1 (preferred)	3:1
ii) Side Slope		
Ponding Area (Bioretention Practices)	0% (preferred)	50:1 (2%)*
Side Slopes (Bioretention Practices)	4:1 (preferred)	3:1*
Unmowed Areas	100:1 (1%)	2:1*
Planted Areas	50:1 (2%)	2:1*

* Unless directed otherwise by *Contract Administrator* or *Contract Drawings*

3.4 Surplus Material

.1 Remove surplus material unsuitable for fill, grading or landscaping from site for disposal at approved disposal site.

3.5 Topsoil and Finish Grading

.1 See Section 32 91 21 - Topsoil and Finish Grading for placement and finish grading of growing medium (topsoil).

END OF SECTION 31 22 02S

PART 1: GENERAL

.1 Section 31 22 16 2S refers to those portions of the work that are unique to reshaping and compacting existing subgrade for green infrastructure. This Section must be referenced and interpreted simultaneously with all sections pertinent to the works described herein.

1.1 Related Work

.1	Traffic Control, Vehicle Access and Parking	Section 01 55 00
.2	Roadway Excavation, Embankment and Compaction	Section 31 24 13
.3	Aggregates and Granular Materials	Section 31 05 17
.4	Dust Control	Section 31 15 60
.5	GI Excavating, Trenching and Backfilling	Section 31 23 02S
.6	GI Growing Medium and Grading	Section 32 91 23S

1.2 References

.1 The abbreviated standard specifications for testing, materials, fabrication and supply, referred to herein, are fully described in Section 01 42 00 - Reference Specifications - Site and Infrastructure.

1.3 Samples

.1 Samples may be required.

1.4 Measurement and Payment

.1 Payment for reshaping existing subgrade includes adjustment of moisture content, compaction and disposal of excess material.

.2 Payment for removal of un suitable subgrade includes disposal off-site. Replacement of unsuitable subgrade removed will be treated as new sub-base material under Section 32 11 16 - Granular Subbase - 1.4.1. Measurement will be made by loose truck box volume of the sub-base brought to site and incorporated into work.

.3 Payment for additional embankment materials will be made under Section 31 24 13 - Roadway Excavation, Embankment and Compaction - 1.8.7.

.4 Payment for backfilling with green infrastructure components will be made separately under Section 31 23 02S – GI Excavating Trenching Backfilling.

1.5 Inspection and Testing

.1 Refer to General Conditions, Clause 4.12, Inspections.

PART 2: PRODUCTS

2.1 Materials

.1 Additional embankment material (subgrade fill) to be in accordance with Section 31 24 13 - Roadway Excavation, Embankment and Compaction; Section 31 05 17 - Aggregates and Granular Materials and Section 31 23 02S – GI Excavating Trenching Backfilling.

PART 3: EXECUTION

3.1 Scarifying and Shaping

.1 Scarify the subgrade to a depth between 150-300 mm in accordance with the area shown on the *Contract Drawings*. Refer to *Contract Drawings* for alternate scarifying depths.

.2 Do not scarify beyond what is specified in *Contract Drawings*. If the scarification of the excavation extends beyond the required depth and area, the over-scarification shall be compacted at the Contractor's expense in accordance with section 3.2 of this document and to the satisfaction of the *City Engineer*.

3.2 Compaction

.1 Compact subgrade in accordance with width and area shown on *Contract Drawings*.

.2 Compaction equipment to be capable of obtaining required material densities. Where existing subgrade constructed of imported material, compact to density not less than 95% Modified Proctor density in compliance with ASTM D1557. *Contract Administrator* shall accept satisfactory proof rolling as evidence of acceptable compaction for native subgrade.

.3 Shape and roll alternately to obtain smooth, even and uniformly compacted subgrade surface.

.4 Apply water as necessary during compaction to obtain specified density. If material is excessively moist, aerate by scarifying until moisture content is adequate for compaction.

.5 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers.

3.3 Repair of Soft Areas

.1 Correct soft areas by removing unsuitable material to depth and extent as directed by *Contract Administrator*. Replace with specified material and compact to the density specified by the *City Engineer*.

3.4 Finished Tolerances

.1 Reshape compacted surface to within plus or minus 15 mm of specified grade and cross-section but not uniformly high or low.

.2 Ensure finished subgrade has no irregularities exceeding 15 mm when checked with a 3m straight edge placed across in any direction.

.3 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

3.5 Maintenance

.1 Maintain reshaped surface in a condition conforming to this Section until succeeding material is applied or reshaped subgrade is accepted by *Contract Administrator*.

END OF SECTION 31 22 16 02S

PART 1: GENERAL

.1 Section 31 23 02S refers to those portions of the work that are unique to green infrastructure excavating, trenching and backfilling of green infrastructure practices and infrastructure adjacent to this work. This section must be referenced to and interpreted simultaneously with all other sections pertinent to the works described herein.

1.1 Related Work

.1	*Environmental Protection*	*Section 01 57 01*
.2	*Rock Removal*	*Section 31 23 17*
.3	*Controlled Density Fit*	*Section 31 23 23*
.4	*Aggregates and Granular Materials*	*Section 31 05 17*
.5	*Waterworks*	*Section 33 11 01*
.6	*Storm Sewers*	*Section 33 40 01*
.7	*Pipe Culverts*	*Section 33 42 13*
.8	*Manholes and Catchbasins*	*Section 33 44 01*
.9	*Sanitary Sewers*	*Section 33 30 01*
.10	*Sewage Forcemains*	*Section 33 34 01*
.11	*GI Growing Medium and Finish Grading*	*Section 32 91 23S*
.12	*GI Reshaping Existing Subgrade*	*Section 32 22 16 2S*
.13	*Environmental Protection*	*Section 01 57 01*
.14	*GI Site Grading*	*Section 31 22 02S*
.15	*GI Geosynthetics*	*Section 31 32 20S*
.16	*Engineered Soil*	*Section 32 91 22S*
.17	*Permeable Unit Paving*	*Section 32 14 02S*
.18	*GI Geosynthetics*	*Section 31 32 20S*
.19	*Excavating, Trenching and Backfilling*	*Section 31 23 01*

1.2 References

.1 The abbreviated standard specifications for testing, materials, fabrication and supply, referred to herein, are fully described in *Section 01 42 00 - Reference Specifications - Site and Infrastructure*.

1.3 Definitions

.1 Rock Excavation: As defined in *Section 31 23 17 - Rock Removal*.

.2 Common Excavation: excavation of materials of whatever nature, which are not included under definitions of rock excavation including dense tills, hardpan, partially cemented materials, clay or frozen materials which can be ripped and excavated with heavy construction equipment.

.3 Over-excavation: excavation below design elevation of bottom of specified bedding, and including backfilling of resultant excavation with specified material, as authorized by *Contract Administrator*.

.4 Removals: removal and disposal at an approved location off-site of surface

concrete structures and walks, curbs, gutters, manholes, catchbasins, pipes, culverts, endwalls, and any other structures on surface or underground specifically designated on *Contract Drawings* for removal. Removals to include backfilling of resultant excavation with specified material.

.5 Native Topsoil: refer to *Section 32 91 23S GI Growing Medium and Finish Grading*.

.6 Waste material: material unsuitable for use in work or surplus to requirements.

.7 Pavement structure: combination of layers of unbound or stabilized granular subbase, base, and asphalt or concrete surfacing.

.8 Subgrade elevation: elevation immediately below pavement structure.

1.6 Blasting

.1 Ensure all blasting operations comply with *Section 31 23 17 Rock Removal*.

1.7 Disposal

.1 Dispose of all surplus spoil from excavations on-site and/or off-site as shown on *Contract Drawings* or as specified in *Contract Documents*. Suitability of excavated material for use as native bedding or trench backfill will be governed by 2.0 of this *Section*. Dumping of spoil on private property will be permitted only upon written approval from property owner and provided all necessary permits and approvals have been obtained.

.2 Excavated material within areas of Japanese Beetle Regulated Area: Excavated material for landfill during spring to fall may cause environmental issues if not properly stored and transported to a certified landfill facility. Special permit required for dealing with excavated material from the work area. Material storage and transportation should follow regulations and landfill should be arranged at a certified location.

1.8 Limitations of Open Trench

.1 Excavate only as far in advance of material and pipe laying operation as safety, traffic, and weather conditions permit and, in no case, to exceed 30 m. Before stopping work on last day of work before each weekend or holiday, adequately protect all open trenches or excavations with approved fencing or barricades and, where required, with flashing lights.

All backfilling procedures shall be carried out as promptly as possible behind material and pipe laying. Under no circumstances shall an inactive open trench be open for more than 5 *Days* unless otherwise approved by the *Contract Administrator*. In addition, no more than one Block may remain un-backfilled at any given time, unless approved in advance by the *Contract Administrator*.

.2 The use of road plates to cover excavations and restore travel lanes is generally not permitted. Where construction necessitates their use, a letter signed by an Engineer must be submitted ensuring the installation is safe and that the plate will support H-20 traffic loading. Plates need to be properly secured (either pinned or recessed into the pavement) and feathered a minimum 300mm with existing road asphalt. Plates need to extend a minimum 300mm beyond the trench, and any pavement damage related to the plate installation will need to be repaired.

1.9 Permits and Approvals

.1 Comply with General Conditions, Clause 20, Laws, Notices, Permits and Fees.

.2 Conduct a *Condition Survey* with the *Contract Administrator* prior to commencing any excavation unless otherwise directed by the *City Engineer*.

1.10 Measurement and Payment

.1 With the exception of pay items specifically identified hereunder, payment for all other work performed under this *Section* will be included under payment for work involved in trenchwork as described in other *Sections*.

.2 Unless otherwise noted in the *Contract Documents*, payment for trench excavation by hand (hand dig) or hydro-vacuum excavation will be incidental to payment for *Work* described in other *Sections*.

.3 Payment for over-excavation including backfilling will only be made for over-excavation authorized by *Contract Administrator*. Payment will be based on before and after excavation cross-section areas at sufficient equal intervals over the length of over-excavation.

.4 Payment for removal and disposal of disused pipes and headwalls encountered during trench excavation to specific disposal site will be in addition to trenchwork with no deduction of payment from such trenchwork. No payment will be made under this item for removal and disposal carried out as part of the operation for removal and disposal of excavated materials from trenchwork.

.5 All costs incurred as a result of unauthorized excavation beyond neat lines or limits of excavation shown on *Contract Drawings* or *Standard Detail Drawings* including remedial backfilling will be to Contractor's cost.

.6 Measurement for excavation of new channels and ditches will be based on before and after excavation cross-section areas at sufficient equal intervals over the entire length of the channels or ditches.

.7 Payment for cleaning and deepening of existing channel or ditch will be made separately for each location or over sections with generally similar cross sections before and after cleaning.

.8 Payment for green infrastructure in boulevard or other locations as shown on *Contract Drawings* includes cast in place or precast concrete elements as per *Contract Drawings* to provide proper drainage.

.9 Payment for rock excavation will be made in accordance with *Section 31 23 17: Rock Removal.*

.10 Unless otherwise noted in the *Contract Documents*, payment for all charges or fees related to inspection from third-party utility companies and / or external authorities / agencies will be incidental to payment for Work described in other *Sections*.

.11 Payment for additional paving, including saw-cutting, removal of existing asphalt and base, and preparation of new base shall be made as per the relevant unit price item as indicated in the Schedule of Quantities and Prices.

Payment for additional paving connected to mainline trench pavement repair shall be paid using the lowest unit rate in the Schedule of Quantities and Prices.

.12 Unless otherwise noted in the *Contract Documents*, payment for all costs incurred to obtain professional geotechnical services will be incidental to payment for Work described in other Sections.

.13 Where extended trench width is required and approved by the *City Engineer* due to an unstable soil condition beyond the Contractor's control, the cost of such upgrading shall be borne by the Owner. However, where extended trench width has occurred due to unapproved over-excavation, the cost of such upgrading shall be borne by the *Contractor*.

.14 Unless otherwise noted in the *Contract Documents*, payment for all costs of vertical trench timbering or sheeting protection will be incidental to payment for *Work* described in other *Sections.*

1.11 Inspection and Testing

.1 Refer to General Conditions, Clause 4.12, Inspections.

.2 Sources and gradation curves for backfill materials must be submitted to the *Contract Administrator* at least two weeks prior to construction. Material samples are required if requested by the *City Engineer*

.3 Compaction tests will be performed as outlined in the *Contract Documents* and approved by the *City Engineer.*

.4 The Contractor shall ensure all compaction test results (for all failed and passed tests) and test certificates are submitted to the *Contract Administrator* within 48 hours. Compaction test results shall be submitted by third parties to the *Contract Administrator.*

.5 The *Contractor* shall notify the *Contract Administrator* 48hrs in advance of backfilling to collect soil samples from the bottom of the excavation and conduct infiltration tests if requested by the *City Engineer.*

PART 2: PRODUCTS

2.1 General

.1 Unless shown otherwise on *Contract Drawings* the materials specified in 2.2 of this *Section* are approved for their respective uses.

.2 Refer to *Section 31 05 17 Aggregates and Granular Materials* and discipline-specific sections, such as *Section 33 11 01 Waterworks, Section 33 40 01 Storm Sewers* and *Section 33 30 01 Sanitary Sewers* for additional requirements.

2.2 Use of Specified Materials

.1 Backfill for over-excavated trench to be one of the following, as indicated in the *Contract Documents* or as directed by the *City Engineer*:

.1 75mm Minus Crushed Tailings (City of Vancouver Aggregate #13).

.2 19mm Minus Combined Crushed Aggregate Fill (Mulch) (City of Vancouver Aggregate #9).

.3 19mm Clear Drain Rock (City of Vancouver Aggregate #7) (for waterworks waterworks and green infrastructure only where approved by the City Engineer).

.4 20mm Clear Crushed Aggregate (City of Vancouver Aggregate #15) (for waterworks and green infrastructure only where approved by the City Engineer).

.5 25mm Minus Combined Crushed Recycled Aggregate (City of Vancouver Aggregate #30) (for sewers only).

.6 Engineered Soil. Refer to Section *32 91 22S*

.7 Growing Medium. *Refer to Section 32 91 23S GI Growing Medium and Finish Grading.*

.8 The final acceptance to use the above materials or other proposed materials shall be at the sole discretion of the *City Engineer.*

.2 Pipe bedding and surround: see applicable Sections:

.1	Waterworks	Section 33 11 01
.2	Storm Sewers	Section 33 40 01
.3	Pipe Culverts	Section 33 42 13
.4	Sanitary Sewers	Section 33 30 01
.5	Sewage Forcemains	Section 33 34 01
.6	Roadway Lighting	Section 26 56 01

.3 Backfill for trenches and excavations to be one of the following, as indicated in the *Contract Documents* or as directed by the *City Engineer*:

.1 Approved granular native material:

.1 Native silts and / or clay materials shall not be used, as clarified in *Section 31 05 17 Aggregates and Granular Materials*.

.2 Native granular materials (primarily sand) are permissible for backfilling up to 1.2m below the finished grade provided that they meet the requirements set forth in *Section 31 05 17 Aggregates and Granular Materials* and have been approved by the *City Engineer*. All approved native granular materials shall be compacted to the minimum densities in 3.5.4 of this Section. In addition to the compaction requirements, the granular native material must be proven to be stable enough to provide a good foundation for the lifts of granular base on top. The acceptance of certain native granular materials will be at the sole discretion of the *City Engineer*. The *City Engineer* may also impose additional acceptance requirements as deemed necessary for the use of approved native granular material. See 2.2 of *Section 31 05 17 Aggregates and Granular Materials* for further details.

.2 Granular or Sand Backfill:

.1 Use imported granular fill materials as per *Section 31 05 17 Aggregates and Granular Materials* unless otherwise specified or approved by the *City Engineer*.

.3 Controlled Density:

.1 Controlled density fill shall meet the requirements in *Section 31 23 23 Controlled Density Fill*

.2 Backfill material shall be free of large stones and / or frozen material

.4 Surface treatment to be:

.1 Restoration to match existing conditions.

.2 Subgrade, subbase and base for works described in other Sections.

.3 Topsoil, grass, sod or requirements for landscaping works described in other Sections.

2.3 Materials

.1 Refer to *Section 31 05 17- Aggregates and Granular Materials* for specifications for approved granular materials and approved native material.

.2 Other granular materials: granular materials approved for roadwork (subbase, base,) also acceptable for trench backfill subject to approval of Contract Administrator.

.3 Concrete: to *Section 03 30 53 - Cast-In-Place Concrete*, to be minimum 20 MPa.

.4 Controlled Density Fill: to *Section 31 23 23 - Controlled Density Fill*, maximum to be 0. 5 MPa.

PART 3: EXECUTION

3.1 Site Preparation

.1 Remove all brush, weeds, grasses and accumulated debris to an approved offsite location.

.2 The Contractor shall continuously cut existing pavement to its full depth along neat straight lines with a cutting tool to confine the width of the pavement to be disturbed. The Contractor shall not disturb the pavement beyond the maximum trench width defined on the *Drawings* or contained herein, or unless approved otherwise by the *City Engineer.*

.3 Where trench passes through lawn, neatly cut and remove sod before trench excavation. Save sod for replacement upon backfilling trench.

.4 Strip topsoil after area has been cleared and stockpile in locations as shown on *Contract Drawings*. Stockpile height not to exceed 2 m. Avoid mixing topsoil with subsoil. Dispose of unused topsoil as specified. Do not handle topsoil while in wet or frozen condition or in any manner In which soil structure is adversely affected .

3.2 Stockpiling

.1 Stockpile fill materials in areas designated by *Contract Administrator*. Stockpile granular materials in manner to prevent segregation and contamination. Do not block curb and gutter drainage with granular materials. Stockpiling must be in accordance with Section *01 57 01 Environmental Protection*.

.2 Stockpiled engineered soil or growing medium must not be left exposed if stored overnight. Protect stored material from contamination, segregation and weather.

.3 Properly store aggregates and materials to prevent fines from migrating into green infrastructure excavations. Stockpiling must be done in accordance of *Section 31 15 60 Dust Control.*

3.3 Excavation

.1 Connection to existing mains:

.1 Prior to or at commencement of construction, check existing main for line and elevation at point of connection. If found different from *Contract Drawings* report such difference to *Contract Administrator* immediately. Comply with

General Conditions, Clause 4.5, Errors, Inconsistencies or Omissions in the Contract Documents.

.2 Connections to existing waterworks systems to be made by Municipal crews unless shown otherwise on *Contract Drawings.* Make all necessary arrangements with *Contract Administrator* to schedule work to prevent construction delays.

.3 Connections to existing sanitary and storm sewer systems to be made by Contractor unless shown otherwise on *Contract Drawings*. Notify *Contract Administrator* minimum 48h in advance of scheduled connection. Make connection in presence of Contract *Administrator.*

.4 To prevent damage to existing utilities, excavate last 300 mm over utility by hand.

.2 Surface drainage:

.1 Provide suitable temporary ditches or other approved means of handling drainage prior to excavation and during construction to protect construction area and adjacent and other affected properties. Provide siltation controls to protect natural watercourses or existing municipal green infrastructure and drainage facilities.

.2 Comply with *Section 01 57 01 - Environmental Protection* .

.3 Excavation to grade: Complete excavations and trenches to allow green infrastructure materials and pipe to be laid to alignment and grades required with allowance for specified pipe bedding.

Excavations shall be to the alignment and grades shown on the *Drawings* and as set in the field by the construction survey. Vertical walls on all trenches shall be maintained. If, in the opinion of the *Contract Administrator*, it is impossible or impractical to maintain vertical walls for certain sewer trenches, a "Y" type of excavation will be permitted to a point 300mm above the top of the pipe; trench walls below this point shall be maintained vertical using appropriate shoring methods.

For utility pipe bedding, the Contractor to refer to *Section 31 23 01 – Excavation, Trenching and Backfilling.*

If the bottom of the excavation extends beyond the required depth, the over-excavation shall be refilled at the Contractor's expense with approved compacted granular material. The use of trench digging machinery will be permitted except where its operations will cause damage to trees, buildings, existing utilities, or existing structures above or below ground. At such locations, hand methods shall be employed to avoid such damage.

.4 Excavation below grade: Scarify or compact bottom as shown on *Contract Drawings*. If compacting is required, achieve 95% Modified Proctor density in compliance with ASTM D1557. Scarify 150mm to 300mm in depth with a tooth bucket or soil ripper.

.5 Hand and hydro-vacuum excavation: excavate by hand if and replace necessary to preserve or minimize damage to existing trees, with shrubs, buildings, and all similar existing features or facilities. Where, in the opinion of the *City Engineer*, mechanical excavation presents a high risk of damage to existing underground utilities, *the City Engineer* can require either hand or hydro-vacuum excavation to be done to expose those underground utilities. The cost of hand or hydro-vacuum excavation shall be borne by the Contractor

.6 Trench bottom conditions: remove extraneous materials including trash from trench bottom or any subsequent lifts before placing green infrastructure materials. Maintain trench free from water and soft materials during placement of clear crush aggregate, growing medium or engineered soil to ensure proper compaction (as directed in *Section 32 91 21: Topsoil and Finish Grading and Section 32 91 22S: Engineered Soil,* or in *Contract Drawings*.

.7 Trench drainage:

.1 During pipe laying, jointing, bedding and backfilling, keep trench free of water by pumping or other appropriate means. Provide pumps and dewatering equipment and take precautions to prevent any damage to adjoining buildings, structures, roads or land from prolonged or excessive pumping by installing shoring, sheeting or other supportive measures.

Discharge water from excavations in such a manner as not to cause nuisance, injury, loss or damage. Contractor to be responsible for any claims or actions arising from such discharge of water.

All water pumped or drained from the Work shall be disposed of in a suitable manner satisfactory to the *City Engineer*.

.2 Diverting trench water through newly laid system not allowed, unless authorized by *Contract Administrator*.

.3 Do not discharge silt or sand laden water into sewers. Water discharged into sewers must meet the requirements of *Section 01 57 01 Environmental Protection* and the *Sewer and Watercourse Bylaw No. 8093*.

.4 Material that becomes unsuitable, in the opinion of the *City Engineer*, through the Contractor's failure to divert surface water or control water in the trench must be excavated and disposed of at the Contractor's expense.

.5 In no case shall urban runoff be allowed to directly enter the excavation via overland flow during construction, unless approved by the *City Engineer*.

.6 Written permission from the *City Engineer* is required before any liquid waste (excluding liquid waste from existing sewer services and / or clean groundwater) may be disposed of through existing City sewers.

.9 Disposal of surplus soil: dispose of surplus excavated soil off-site. Side-casting not allowed in restricted areas where, in opinion of *Contract Administrator*, sidecasting would create interference with flow of traffic. In such case, temporarily store materials or dispose to an approved site. Provisions of Provincial Contaminated Sites Legislation must be met prior to disposal of soil offsite.

.10 Native Backfill: Where native backfill is approved for re-use, and side-casting not allowed, transport approved material to other locations where material is required or temporarily store at approved site. Protect stored material from contamination, segregation and weather.

.11 Rock Excavation: Rock excavation to Section *31 23 17 - Rock Removal.*
Where trench excavation involves the removal of solid bedrock, consolidated glacial till or hardpan, boulders, loose rock, buried concrete pavements, concrete rubble and foundations, or suspected contaminated soils, the Contractor must contact the *Contract Administrator* immediately.

.12 Maintain roads used for transporting materials and equipment in clean condition. Clean, flush and/or sweep on daily basis and more frequently if directed by Contract Administrator.
Any materials dropped or spilled during the hauling operations shall be promptly cleaned up by and at the expense of the *Contractor*, to the satisfaction of the *Contract Administrator.*
Refer to *3.3 of Section 31 15 60 Dust Control* for additional hauling requirements.

.13 Vertical trench timbering or sheeting shall be placed in accordance with the requirements of WorkSafeBC or as may be necessary to protect life and property adjacent to or on the Site. The *Contractor* shall be responsible for the adequacy of such bracing and shoring. Unless otherwise accepted by the *Contract Administrator*, or as WorkSafeBC Rules and Regulations dictate, vertical trench timbering or sheeting shall be placed so as not to extend below the springline of the largest pipe. No timbering or sheeting shall be left in without the written approval of the *City Engineer*, and when removed, the void left by the raised sheeting shall be backfilled and thoroughly compacted.

.14 All bracing, shoring, and cribbing shall be removed from the trench as backfilling proceeds unless ordered to be left in place by the *City Engineer*.
Installation and removal of bracing, shoring and cribbing shall ensure that the integrity of bedding and initial backfill is maintained during removal operations.

.15 If the Work is stopped on the whole or at any part of the trench, and the trench is left open for an unreasonable length of time, as determined by the *Contract Administrator*, in advance of the installation of the pipe, the *Contractor* shall, when directed by the *ContractAdministrator*, refill such trench or part thereof until they are ready to proceed with the installation of the pipe.

3.4 Utility Pipe Installation

.1 Refer to *Section 31 23 01*: *Excavating, Trenching and Backfilling*.

3.5 Backfill and Compaction

.1 General: Place backfill carefully in excavation to prevent damage to installed pipe. Care must be exercised in selecting compaction equipment. In City Streets, there are many utilities with service connections that are susceptible to damage. The use of drop hammer type compactors and large vibrating rollers shall not be allowed, except under special conditions approved by the *City Engineer*. The *Contractor* shall assume all responsibility for costs / damages caused to any existing utility.

.2 Shoring: during backfill and compaction of trench, remove shoring in such a manner as to allow proper compaction and to prevent trench walls from collapsing. Remove all bracing and/or shoring from trench.

.3 Green infrastructure backfill materials:

.1 For other areas, outside green infrastructure refer to MMCD and City of Vancouver Specification *Section 31 23 01*: *Excavating, Trenching and Backfilling*.

.2 Refer to *Contract Drawings* for green infrastructure backfill materials.

.4 Compaction:

.1 For other areas, outside green infrastructure refer to MMCD and City of Vancouver Specification *Section 31 23 01: Excavating, Trenching and Backfilling*.

.2 Backfill materials shall be placed in uniform lifts not exceeding 300mm in loose thickness, 200mm for approved granular native material, and compacted to specified densities unless otherwise specified in *Contract Drawings* or allowed by *City Engineer.*

.3 Refer to *Section 32 91 22S: Engineered Soil* for material lift placement and compaction when using engineered soil as backfill.

.4 Do not compact growing medium in green infrastructure unless otherwise directed in Contract Documents. Place growing medium over prepared subgrade and allow to settle or compact by light rolling such that it is firm against deep footprints. Do not compact growing medium more than necessary to meet this requirement. *Section 32 91 23S GI Growing Medium and Finish Grading*.

3.6 Surface Restoration

.1 Refer to MMCD and City of Vancouver Specification *Section 31 23 01: Excavating, Trenching and Backfilling* for work outside green infrastructure footprint

3.7 Trenching in Peat Areas

.1 Refer to MMCD and City of Vancouver Specification *Section 31 23 01: Excavating, Trenching and Backfilling* for work outside green infrastructure footprint

END OF SECTION 31 23 02S

PART 1: GENERAL

.1 Section 31 32 20S refers to those portions of the work that are unique to the supply and installation of geosynthetic materials. Geosynthetics include Geotextiles, Geogrids, Geocomposites and Geomembranes. This section must be referenced to and interpreted simultaneously with all other sections pertinent to the works described herein.

.2 Geotextiles are typically of either a "slit-film, woven" variety or a "continuous filament· variety. Geo textiles may be used for separation, filtration and reinforcement. Geogrids may be used for reinforcement. Geocomposites may be used for drainage and for separation/reinforcement or drainage/reinforcement. Geomembranes may be used for impermeable barriers.

.3 This section currently provides minimum specifications for geosynthetics. The final use of any geosynthetic requires advanced notice of the use of the proposed material to the *Contract Administrator*, and that the proposed material has been reviewed and approved by the *City Engineer*.

.4 Any damage to existing geomembrane must be repaired or replaced to the satisfaction of the *City Engineer* at the *Contractor*'s expense.

1.1 Related Work

.1	*Environmental Protection*	*Section 01 57 01*
.2	*Roadway Excavation, Embankment and Compaction*	*Section 31 24 13*
.3	*Riprap*	*Section 31 37 10*
.4	*Gabions*	*Section 31 36 13*
.5	*GI Excavating, Trenching & Backfilling*	*Section 31 23 02S*
.6	*Permeable Unit Paving*	*Section 31 32 20S*
.7	*Engineered Soil*	*Section 32 91 22S*
.8	*GI Growing Medium and Finish Grading*	*Section 32 91 23S*
.9	*Planting Trees, Shrubs and Ground Covers*	*Section 32 93 01*

1.2 References

.1 The abbreviated standard specifications for testing, materials, fabrication, supply and installation, referred to herein, are fully described in *Section 01 42 00 - Reference Specifications - Site and Infrastructure* or otherwise mentioned in this section.

1.3 Samples and Submittals

.1 *Contractor* shall submit samples a minimum of 30 days prior to start of the project unless otherwise stated by *Contract Administrator.*

1.4 Material Certification

.1 Submit a "General Product Certification Sheet" clearly showing "Minimum Average Roll Values", as governed by ASTM D4354, with tender documents. All values to meet or exceed specified requirements.

.2 At least 2 weeks prior to commencing work, and prior to material being accepted on site, submit original manufacturer's "Mill Certificates", showing actual minimum test

values and clearly identifying roll and batch numbers. Any material arriving on site which does not meet or exceed accepted "Minimum Average Roll Values" or that are not identified on original manufacturer's mill certification document to be removed at no cost to Owner.

.3 All rolls of geosynthetics arriving on site to be clearly labelled identifying roll and batch number, original manufacturer's product identification number, and width and length of material contained within roll.

1.5 Delivery and Storage

.1 Ensure each individual roll of geosynthetic is wrapped and covered to protect fabric from direct sunlight, ultraviolet rays, excessive heat, mud, dirt, debris and rodents. At no time shall the geotextile be exposed to ultraviolet light for a period exceeding 14 calendar days. Geotextile rolls shall be stored in a manner which protects them from the elements. If stored outdoors, they shall be elevated and protected with a waterproof cover.

.2 Use equipment that does not contact material itself during loading, unloading and handling. Slings or other lifting devices to provide, adequate support without damaging material. Off-load in a minimum of steps directly to storage or installation area.

.3 Store all rolls of geosynthetic on smooth, flat surfaces raised above ground that provide continuous support to rolls. Maintain additional protective cover if rolls are to be stored in excess of 30 days.

1.6 Measurement and Payment

.1 Payment for geosynthetics will be made separately for each type of geosynthetics supplied and installed. Measurement of geosynthetics will be for the net surface of the work covered by the material. No allowance will be made for seams and overlaps.

1.7 Inspection and Testing

.1 Refer to General Conditions Clause 4.12, Inspections.

PART 2: PRODUCTS

2.1 Geotextile

.1 See detailed specifications in manufacturers specifications or as shown on *Contract Drawings.*

.2 Notwithstanding above, all specified properties represent "Minimum Average Roll Values" as governed by ASTM D4354.

.3 The geotextile shall be labelled as per ASTM D4873.

.4 At a minimum report in metric units, with its respective ASTM test, the following properties: grab tensile strength, elongation, CBR puncture, trapezoidal tear, apparent opening size, permittivity, water flow rate, UV resistance, and roll size.

2.2 Geomembrane

.1 See detailed specifications in manufacturers specifications or as shown on *Contract Drawings*.

.2 The geotextile shall be labelled as per ASTM D4873.

.2 At a minimum, report in metric units with its respective ASTM test the following properties: Thickness (min. average), sheet density, carbon black content, tensile strength at break, elongation at break, tear resistance, puncture resistance, oven aging (HP-OIT), and UV resistance (HP-OIT).

2.3 Other Geosynthetics

.1 See detailed specifications in manufacturers specifications or as shown on *Contract Drawings.*

.2 The geosynthetic shall be labelled as per ASTM D4873.

.3 Category includes: geogrids and drain board.

PART 3: EXECUTION

3.1 Installation

.1 Ensure overlaps conform to manufacturers specifications or as shown on *Contract Drawings*, but under no circumstances less than 600 mm.
When geosynthetics is overlapped, the upstream geosynthetic shall overlap over the downstream.

.2 Geotextile:

.1 The geotextile shall be placed loosely (not taut) with no wrinkles or fold. Care will be taken to place the geotextile in intimate contact with the soil so that no void spaces occur between the geotextile and the underlying soil.

2 Care shall be taken during construction to avoid contamination of the geotextile with soil or other material. Contaminated geotextile shall be removed and replaced at the Contractor's expense.

.3 Place pins or staples, where used, at a maximum of 2 m intervals.

.3 Geomembrane:

.1 Seal the seams for the ends of the geomembrane.

.2 Overlap one end over the other by minimum of 75mm.

.3 Use double sided sealant tape to seal the seam. Cover the seam with one sided waterproof tape to protect the seam.

.4 Other Geosynthetics: Refer to *Contract Drawings*.

3.2 Protection

.1 Do not permit passage of any vehicle directly on geosynthetic at any time. Place fill by end dumping or long-reach equipment.

.2 Maximum drop height for fill directly onto geosynthetic to not exceed 1 m.

3.3 Repairs

.1 Repair seams which open, and tears and punctures, by removing fill and resetting fabric. Additional geosynthetic to be placed over area, extending beyond perimeter of failure a distance corresponding to lapping requirements for project. See 3.1.1 of this Section. Where practical, repaired geosynthetic to be pinned, bonded or stapled into place at intervals equal to or less than one-eighth perimeter of damage or 2m, whichever is lesser.
The geosynthetic shall have no tears or defects which adversely alter its physical properties.

END OF SECTION 31 32 20S

PART 1: GENERAL

.1 Section 32 91 23S refers to those portions of the work that are unique to the supply and placement of **Green Infrastructure** growing medium (topsoil) and subsequent finish grading. In this Section, the term "growing medium" is used in place of the generic and commonly used term "topsoil". The term "topsoil" in this Section is used where appropriate to identify imported or on-site natural material conforming to 2.4 of this Section. This Section must be referenced to and interpreted simultaneously with all other sections pertinent to the works described herein.

.2 This section is based on the "British Columbia Landscape Standard" published by the B. C. Society of Landscape Architects and the B. C. Nursery Trades Association. This standard is intended to set a level of quality which is to be equalled or bettered in the construction documents for each project. Guidance of a registered British Columbia Landscape Architect is recommended.

1.1 Related Work

.1	*GI Site Grading*	*Section 32 22 02S*
.2	*Engineered Soil*	*Section 32 91 22S*
.3	*Seeding*	*Section 32 92 20*
.4	*Sodding*	*Section 32 92 23*
.5	*GI Geosynthetics*	*Section 31 32 20S*
.6	*Aggregates and Granular Materials*	*Section 31 05 17*
.7	*Hydraulic Seeding*	*Section 32 92 19*
.8	*Planting of Trees, Shrubs and Ground Covers*	*Section 32 93 01*
.9	*GI Excavation, Trenching and Backfilling*	*Section GI 31 23 02S*

1.2 References

.1 CLS Canadian Landscape Standard
.2 Canadian System of Soil Classification
.3 Canadian National Master Construction Specification,32 91 19.13 Topsoil and Grading

1.3 Source Quality Control

.1 Advise *Contract Administrator* of sources of growing medium a minimum of thirty days (30) prior to starting work and with sufficient lead time for testing.
.2 *Contractor* is responsible for soil analysis and requirements for amendments to supply growing medium as specified.
.3 The *Contractor* shall guarantee that the growing medium submitted for laboratory analysis is a representative sample taken from the growing medium to be delivered to the *Site*.
.4 Failure to test and provide appropriate documentation of test results may be considered grounds for rejection of a proposed growing medium and may result in removal and replacement of the rejected material at the Contractor's expense.
.5 *City Engineer* (Green Infrastructure Branch) may appoint an independent testing facility to ascertain compliance with this specification and to recommend modifications to the growing medium in order to meet the requirements of this specification.

6 Verify size, location, and depth of all existing site services and sub-surface utilities prior to commencement of the work. Repair all damages as a result of failure to perform adequate review at no cost of the City of Vancouver.

.7 Notify *Contract Administrator* when the site is prepared for growing medium placement. Do not place growing medium until subgrades have been reviewed and approved.

.8 Provide at least two days (48 hours) notice in advance of each required review.

1.4 Measurement and Payment

.1 Payment for growing medium and imported topsoil will be made separately for each type of growing medium and imported topsoil specified, and includes supply of materials, on-site handling, placement to thickness specified, application of fertilizers and finish grading. Payment for growing medium will be by actual area provided and payment for imported topsoil will be based on loose truck box volume.

.2 Payment for placement and spreading of native topsoil previously stockpiled on site will be made under *Section 31 22 02S – GI Site Grading* - 1.4.3

.3 Payment to include excavation of native topsoil and re-use (including amelioration treatment) as indicated by *Contract Drawings* and to be included in work for *Section 31 23 02S: GI Excavation, Trenching, and Backfilling.*

1.5 Inspection and Testing

.1 Refer to General Conditions, Clause 4.12, Inspections

.2 Provide to the *Contract Administrator* a copy of growing medium analysis from a testing facility approved by the *Contract Administrator*. The analysis shall be of tests done on the proposed growing medium from samples taken at the supply source *within three weeks* immediately prior to soil placement. Cost of initial analysis and subsequent tests to ensure compliance with this specification shall be borne by the contractor. Results of these tests shall be presented to the *Contract Administrator* for review before any growing medium delivery to site.

3 Soil testing by approved testing facility for soil mix parameters indicated in Table 2 and others required by the *Contract Administrator*.

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

.5 Failure to submit the soil analysis may result in immediate rejection and possible removal of any placed growing medium at Contractor's expenses.

1.6 Submittals and Samples

.1 Submit to *Contract Administrator* one composite sample of each type of proposed growing medium for each different application within the project. Each sample shall be a composite of at least three samples distributed throughout the proposed source and shall be at least one (1) liter in volume.

.2 Samples of each growing medium type shall be submitted to the *Contract Administrator* in zip lock plastic bags clearly marked with date, project name, supplier name and phone number.

.3 The *Contractor Administrator* may request independent sample collection.

PART 2: PRODUCTS

2.1 General

.1 In this Section, a range of measurable physical and chemical properties are set out as being acceptable in a growing medium. Compliance with this Section is to be determined by testing for those properties. When imported or on-site soil is used, it is to be tested and modified as necessary by admixture of other components to bring its properties within ranges set in 2.9 of this Section for growing medium.

2.2 Native Topsoil

.1 On-site native topsoil may be used, provided it meets standard set for imported topsoil and can be modified to meet requirements set out for specified growing medium.

.2 If testing shows on-site soil to be suitable for landscaping, a sufficient quantity of stripped topsoil to be stockpiled where shown on *Contract Drawings* or in areas specified for stockpiling .

.3 Do not handle topsoil while in a wet or frozen condition or in any manner In which structure is adversely affected .

.4 At discretion of *Contract Administrator* and *City Engineer* (Green Infrastructure Branch), native soil may be amended with additives, fertilizers and other modifications to make the proposed growing medium meet the requirements of this specification.

2.3 Peat

.1 Peat moss shall not be used.

2.4 Sand

.1 Sand fill (COV #17) as per *Section 31 05 17 Aggregates and Granular Materials*.

2.5 Manure

.1 Soil amendment growing medium, as specified in 2.10 of this Section, shall be used in place of manure.

2.6 Biosolids

.1 Biosolids or waste water treatment plant residuals shall not be used unless approved by *Contract Administrator*.

2.7 Wood Residuals

.1 Where wood residuals such as fir or hemlock sawdust are present in growing medium, their quantities and properties to be such that total Carbon to total Nitrogen ratio is a maximum of 40:1.

.2 Cedar or redwood sawdust to not be present in growing medium.

2.8 Fertilizers

.1 Chemical Fertilizers:

.1 Fertilizers to be standard commercial brands, meeting requirements of Canada Fertilizer Act.

.2 All fertilizers to, be in granular, pelleted or prill form, and to be dry, freeflowing and free from lumps .

.3 Fertilizers to have a guaranteed N-P-K analysis .
.4 Fertilizer to be packed in standard waterproof containers, clearly marked with name of manufacturer, weight and analysis .
.5 Fertilizer to be stored in weatherproof storage place and in such a manner that it will stay dry and its effectiveness is not impaired.
.6 Fertilizers to include, but not be limited to, those shown in Table 1 .

TABLE 1: Fertilizers

Name	Minimum Proportion by Weight	Main Element
Ammonium Nitrate	33.5%	N
Ammonium Suflate	21.0%	N
Superphosphate (0-20-0)	8.5%	P (20% P_2O_5)
Superphosphate (0-45-0)	19.5%	P (45% P_2O_5)
Potassium Sulfate	41.5%	K (50% K_2O)
Potassium Chloride (muriate)	50.0%	K (60% K_2O)
Potassium Nitrate	13.0%	N
	36.5%	K (44% K_2O)
Iron Sulfate	20.0%	Fe, as metallic
Gypsum	23.0%	Ca
Rock or oyster shell lime, limestone flour	40.0%	Ca
Dolomite lime	20.0%	Ca
	13.0%	M
Bonemeal	20.0%	Phosphoric acid
	3.0%	N

(Bonemeal, gypsum and limes to be finely ground, to 12 mesh or finer).

2.9 Growing Medium

.1 Growing medium is any soil, soil substitute, or mixture whose chemical and physical properties fall within ranges required by this Section for a particular application, Refer to Table 2.
.2 Growing medium shall be free from subsoil, plants or their roots, building materials, wood, non-composted wood, wood waste, woody plant parts, insect pests, plant pathogenic organisms, chemical pollutants or substances at levels toxic to plants, stones (in excess of 10mm in maximum dimensions), foreign objects, and other extraneous materials that detract from the desirable physical and chemical properties required for landscaping purposes. All soil product supplied to the City is to be free of Neonicotinoid.
.3 Growing medium to require not more than 0.5 kg/m**2** of dolomite lime to reach required pH level.
.4 Fertility (nitrogen, phosphorous and potassium) and pH: may be modified after

growing medium is placed, by incorporation of lime and fertilizers, or by incorporating these chemicals when mixing and screening.

.5 Growing Medium mix

TABLE 2: Growing Medium Mix

Properties	Soil	Street Turf Shrub Mix	Street Amendment Mix	Bioretention Soil (Park Turf Mix)
C:N (Carbon : Nitrogen)	25:1-10:1	20:1-10:1	20:1-10:1	20:1-10:1
%OM (of tot. dry wt.) (Organic Matter)	40-65%	3-10%	10-20%	10-20%
%Sand (of tot. dry wt.)	15-35%	30-60%	30-60%	70-85%
%Silt (of tot dry wt.)	5-15%	10-35%	10-35%	5-15%
%Clay (of tot dry wt.)	7-17%	5-15%	5-15%	0-15%
Total Silt and Clay	15-30% max	40% max	40% max	20% max
Acidity (pH)	4.5-8.0	6.0-7.0	4.5-6.5	4.5-8.0
Max Particle Size	100% passing 0.5" sieve	100% passing 0.5" sieve	100% passing 0.5" sieve	100% passing 0.5" sieve
Nitrogen (N)	2	4	2	4
Phosphorus (P) (ppm)	390	324	443	324
Potassium (K) (ppm)	2681	1956	2114	1956
EC (sat extr.) @25˚C (Electrical Conductivity)	n/a	n/a	n/a	n/a
SAR (sat extr.) (Sodium Adsorption Ratio)	8.8%	2.22%	2.34%	2.22%

.6 Drainage of growing medium can be measured only after growing medium in place. Mixing and handling or growing medium to be done in such a manner that minimum saturated hydraulic conductivity shown in Table 2 is achieved.

.7 Tolerances: samples of growing medium taken just before planting to have above properties to within tolerances of ±20%, except for salinity, which is to be less than stated limit.

.8 Growing medium shall be free from nuisance, noxious and invasive weeds and seeds or parts thereof.

.9 Growing medium shall be free of pathogens harmful to humans, including but not limited to Fecal Coliforms, Salmonella and E. coli.

.10 If engineered soil is specified on the *Drawings,* the growing medium shall be as per *Section 32 91 22S Engineered Soil*.

2.11 Drainage Medium

.1 Drain rock to be CoV #15 clear crush material, refer to *Section 31 05 17: Aggregates and Granular Materials*

PART 3: EXECUTION

3.1 Stripping of Topsoil

.1 Strip existing topsoil in accordance with *Section 31 22 01 - Site Grading*.

3.2 Preparation of Subgrade

.1 Prepare subgrade in accordance with *Section 31 22 01 - Site Grading.*
.2 Verify that grades are correct. If discrepancies occur, notify *Contract Administrator* and do not commence work until instructed by *Contract Administrator.*
.3 Grade soil, eliminating uneven areas and low spots, ensuring positive drainage.
.4 Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials. Remove soil contaminated with calcium chloride, toxic materials and petroleum products. Remove debris which protrudes more than 75 mm above surface. Dispose of removed material to approved off-site disposal area.
.5 Scarify compacted subgrade to depth of 150mm – 300mm immediately before placing growing medium. Refer to Reshape Existing Subgrade *Section 31 22 16 2S: GI Reshaping Existing Subgrade*
.6 Review subgrade conditions to ensure that there is proper drainage in all planting areas and tree pits. Perform an infiltration test as instructed by *Contractor Administrator* to confirm proper drainage.

3.3 Placement of Drainage Medium - Drain Rock

.1 Verify that subgrade has been approved by *Contract Administrator* prior to the placement of drainage medium.
.2 Place drainage medium and ensure consistent depth as per *Contract Documents.*
.3 Place geotextiles over the entire finished surface of drainage medium as per *Contract Documents*. Ensure seams are overlapped as per *31 32 20S Geosynthetics.*

3.4 Processing Growth Medium

.1 Mixing/screening of growing medium on site is not allowed. All growing medium is to arrive pre-mixed with the exception of amending growing medium or topsoil with components that are to be applied at rates indicated in the growing medium analysis recommendations.

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

.3 Peat moss shall not be used.
.4 Do not prepare or handle growing medium in a wet or frozen condition.

3.4 Placing Growing Medium

.1 When subgrade and drainage medium installation accepted by *Contract Administrator* commence placing growing medium.

.2 Ensure that irrigation lines to be installed have been reviewed by *Contract Administrator* prior to the placing of growing medium.

.3 Place growing medium over prepared subgrade and allow to settle or compact by light rolling such that it is firm against deep footprints. Do not compact growing medium more than necessary to meet this requirement. The growing medium shall be lightly compacted with a slight crown to account for near-term settlement.

.3 Ensure growing medium is moist (25% to 75% of fieId capacity) but not wet when placed, and do not handle if frozen or so wet that its structure will be altered.

.4 Manually spread growing medium around trees, shrubs and obstacles.

.5 Place all growing medium to the required finished grades in uniform lifts of 150mm compacted to 75%-80% Modified Proctor Density.

.6 Except where drawings or details show otherwise, place to the following minimum and/or maximum depths and levels (measured after initial settling of growing medium):

- .1 Tree Planting Areas on grade maximum 900mm and shall conform to the following additional parameters:
  - .1 Planting hole shall be minimum 300mm wider than rootball on all sides.
  - .2 Planting hole shall be minimum depth of root ball.
- .2 Shrub and Groundcover Areas on grade 450mm minimum depth.
- .3 Low or High Traffic Lawn Areas on grade 300mm minimum depth.

3.5 Applying Fertilizers and Amendment

.1 Add fertilizers to bring growing medium fertility within ranges set out in this Section, and as recommended by testing of the growing medium.

.2 Add lime (if require d) and potassium (if required) to growing medium at time of screening. Add all other fertilizers (such as nitrogen, phosphorus and micronutrients) to growing medium by thorough cultivation after medium is in place (if required).

.3 Spread fertilizers evenly over growing medium with suitable mechanical Spreader.

.4 Ensure fertilizers are fully incorporated to minimum depth of 150 mm, except in lawn areas, where they are to be incorporated to depth of 50 mm.

.5 Minimum one week separation between application of lime and fertilizers other than lime.

.6 Addition of amendment components shall be at the rates indicated in the growing medium analysis recommendations or by the *Contract Administrator.*

.7 Organic matter shall be top-dressed and cultivated into the top 150 -200mm of the growing medium prior to fine grading.

3.6 Finished Grading

.1 Fine grade growing medium after placing to specified areas to ensure positive surface drainage.

.2 Manually fine grade growing medium installation to contours and elevations shown on *Contract Drawings* or as directed by *Contract Administrator*. Tolerance for finish grading to be 10mm.

.3 Finish Grade of growing medium shall be 25 mm from finished elevation of adjacent curb or planter wall unless otherwise noted on drawings.

3.7 Acceptance

.1 *Contract Administrator* will inspect and test growing medium in place and determine acceptance of material, depth of growing medium and finish grading. Approval of growing medium material subject to soil testing and analysis.

3.8 Restoration of Stockpile Sites

.1 Restore stockpile sites as specified in *Contract Documents.*

3.9 Clean-up

.1 Dispose of surplus materials and all construction debris off-site.

END OF SECTION 32 91 23S

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 design, products, labour, equipment, and services necessary to install a complete automatic underground irrigation system as indicated in the contract documents including all preparatory work, electrical wiring, plumbing, and related items necessary to provide a properly operating automatic irrigation system to distribute water in a consistent, uniform, measurable way that adequately maintains the landscape while conserving and protecting water resources.

.2 The work shall include but is not limited to system design, supply, installation, testing and commissioning of the following:

- .1 System piping, valves, conduit, control wiring, controls, control boxes and miscellaneous equipment
- .2 Supply of water (potable) to the irrigation system
- .3 Moisture sensor(s), controls and miscellaneous equipment.
- .4 Complete winterization of Irrigation system
- .5 Complete spring start up of Irrigation system
- .6 Complete computer control system, hardware and software
- .7 Complete system maintenance and operation for one year from Substantial Performance

1.3 Related Work

.1	Plumbing Specification	Section 22 00 00
2	Water Utilities	Section 33 10 00
.3	Electrical Specification	Section 26 00
.4	Growing Medium Preparation and Placement	Section 32 91 13
.5	Plants and Planting	Section 32 93 10

1.4 Codes and Regulations

.1 All work shall be installed in accordance with the requirements of local and applicable provincial and federal regulations. Any work shown on the drawings or described in the specifications that is at variance with current regulations shall be changed to comply with the requisite authority at no cost to the Owner.

.2 Work Safe BC regulations shall be followed.

1.5 Quality Assurance

.1 The Contractor is responsible for the coordination with the mechanical and electrical Owner's Representative and sub-contractors as well as for coordination of all required sleeves under paved areas and through planter walls as specified.

.2 The Contractor is to verify site measurements and irrigation coverage, and unless deficiencies are identified by the contractor and an amendment is made to the Contract Document prior to the quotation date, the Contractor accepts full responsibility to deliver the intended performance of the system at no additional cost to the Owner. If any conditions are subsequently observed on site that will impair proper and intended uniform irrigation coverage, notify the Owner's Representative as soon as possible, and inform what the impairment is and its resolution. Do not proceed with any work that would yield unsatisfactory coverage as it will not be accepted.

1.6 Qualifications

.1 All irrigation work shall be done by an experienced and competent Irrigation Contractor having the capabilities and personnel necessary for all phases of the work specified.

.2 The Irrigation Contractor shall be a member in good standing of the Irrigation Industry Association of British Columbia (IIABC) and have met the qualification standards currently applied to contractors by that organization. The Contractor must provide proof of membership, and shall provide proof of having worked in the industry for a minimum of five (5) years and provide a list of clients for whom similar sized irrigation projects have been satisfactorily completed. The acceptance of experience and work history rests solely with the Owner.

1.7 Submittals

.1 The Contractor shall submit design drawings for approval by the Owners Representative prior to construction. This drawing shall be suitably scaled, accurately drawn, showing all components of the irrigation system with clear measurements (in metric). Drawings shall include invert depths and offset measurements from reference points.

.2 The Contractor shall submit shop drawings, product literature, and specifications for approval by the Owners Representative prior to construction.

.3 Maintenance Data and Operation Instructions/Manual: Prior to and as a condition of Substantial Performance, submit to the Owner's Representative three (3) copies of an operating and maintenance manual containing operational information for all operating components, cleaning and lubrication schedules, overhaul/adjustment schedules and similar maintenance operations. Each manual shall be bound in a three ring binder.

.4 As-Built Drawings: As a condition of Substantial Performance, submit with the operating and maintenance manuals, a suitably scaled reproducible copy of the "as-constructed" installation of the system. This drawing shall be accurately drawn, showing all components of the irrigation system as installed, with clear measurements provided from identifiable reference points (in metric). As-built drawings shall include invert depths and offset measurements; all such measurements must be taken during construction.

.5 A plasticized site plan shall be installed in the controller showing the location of each and every solenoid valve, type of valve, with identified zone number, location of the controller, DCVA, control and flow meter valve, pressure regulating valve, booster pump if installed, isolating valves and water supply – with a north reference point

All solenoid valves are to have a type 316 stainless steel tag attached, 25 mm in diameter, indicating the number of the operating zone, and all zone conductors in the controller shall be correlated with the controller program and numbered in adherence thereto.

.6 Maintenance Devices: Submit to Owner's Representative two (2) sets of all special tools, keys, and equipment that is required to commission the system or as otherwise specified in the Contract Documents.

.7 Commissioning: Instruct Owner's Representative in the complete operating and maintenance procedures for this system. This instruction shall include but not be limited to showing the relative timing differences between zones of different precipitation rates and a schedule of run times suggested for various weather conditions.

1.8 Site Conditions

.1 Existing Conditions/Underground Services: The Contractor is to verify all existing services, locate all on-site utilities and underground services by hand digging or by use of an electronic toning device or M-Scope. Mark the location of all buried cables, conduits, pipes etc, prior to any trenching. Cooperate with the Owner and utility companies to keep their respective utilities in operation. Notify Owner's Representative immediately for directions as to the procedure should any piping utilities be affected during excavation.

.2 Site Preparation: Prior to the work of this Section, the Contractor is to carefully inspect any installed work of other trades or contractors and verify all such work is complete to the extent that this work may properly begin.

.3 Field Measurements: Make all measurements in the field to confirm that the design meets the on site conditions to ensure the precise fit of items in accordance with the original design and performance criteria.

.4 Discrepancies: In the event of major discrepancies, errors or conflicts between the drawings and the actual site conditions, immediately notify Owner's Representative as to procedure before proceeding with work.

.5 Repair to Underground Services: Repair or replace all damage to underground services caused by the work of this Contract. Damage to services that are shown on the drawings or have been brought to the Contractor's attention in the field prior to commencement or during construction of the work shall be repaired in its entirety at the Contractor's expense. (Damage to services that were clearly unforeseen/unknown of existence (provided that all reasonable measures were undertaken by the Contractor to ascertain the existence of these services) shall be repaired in accordance with the Changes clause of the General Conditions). Notify Owner's Representative of damage immediately and co-ordinate replacement or repairs through her/him

1.9 Protection

.1 Protect existing landscape features, plant material, buildings, equipment, sidewalks, landscape reference points, monuments, markers and other completed work. Make good any damage resulting from work of this Contract at no expense to the Owner.

.2 Do not park vehicles on the site in areas where the work will be undertaken without express written consent of the Owner's Representative. Utilize only such equipment/vehicles essential for construction of the system.

.3 Protect the work and material of all other trades from damage. Make good all damages from work of this Contract at no expense to the Owner.

.4 The Contractor shall be responsible for work and equipment until finally reviewed, tested, and accepted by Owner's Representative.

.5 Store materials and equipment received on site that is not immediately installed in a secure location.

.6 Close open ends of work with temporary covers or plugs during construction to prevent entry of obstructive material.

.7 Trenching and other excavations for vaults, valve boxes etc. are not to be left open during non-work hours of operation unless they are protected to current WorkSafeBC Standards. Cover, mark, and/or protect as necessary all open excavations to ensure worker and public safety.

1.10 Guarantee

.1 Provide a written Guarantee for all workmanship and materials for one year from date of Substantial Performance. Make all corrections, adjustments and maintenance operations required as a result of failure of the irrigation system to perform due to the work of this Section.

.2 Manufactured products, including but not limited to irrigation heads, quick couplers, controllers, valve boxes and valves, shall be warranted as per the manufacturers' standard guarantee period or a minimum of one year, whichever is greater.

1.11 Sequence

.1 Coordinate and ensure the installation of all sleeves and irrigation piping as required under all paved surfaces and through planter walls as noted on the drawings.

.2 The Contractor is to verify the location of the municipal water supply connection point for the automatic irrigation system. Coordinate as necessary.

.3 The Contractor is to verify the location of the control cabinet and install a minimum 50mm PVC electrical conduit for the low voltage wires from the control cabinet to a point a minimum of 600mm below grade to the top of the PVC conduit and 1.5 meters horizontal from the control cabinet. There shall not be an in-grade junction box below the control cabinet.

1.12 Review

.1 Prior to commencement of any work related to this irrigation project, the contractor is required to make contact with the designated Owner's Representative authorized to make project decisions.

.2 All work is to remain uncovered for inspection of workmanship and materials. Notify Owner's Representative a minimum of forty-eight (48) hours prior to required inspections. Failure to provide such notice and closing in of un-inspected work is sufficient grounds for withholding any payments due to the Contractor. All buried work that has not been inspected and approved will have to be totally uncovered.

1.13 Measurement For Payment

.1 Supply and installation of the irrigation system will be measured as a lump sum. The work includes everything downstream of the designated irrigation connection at the water service, including but not limited to: design, permits and fees, supply and installation of point of connection vault at backflow prevention assembly, conduits, sleeves, pipes, valves, sprinklers, sensors, control valves, controllers, controller cabinets, vaults and lids, valve boxes, fittings, wire, programming and adjustment of irrigation system controller, excavation, trenching, backfill, restoration and all incidentals necessary for the proper design and installation of complete irrigation system.

.2 Operation maintenance and adjustment of the irrigation system through to issuance of Total Performance will be incidental to the lump sum rate provided.

.3 One winterization and one spring start-up after the issuance of Total Performance will be incidental to the lump sum rate provided.

.4 Submittal of design drawings, record drawings and an operations manual will be incidental to the lump sum rate provided.

PART 2: PRODUCTS

2.1 General

.1 Product Handling

.1 Deliver and store materials in new condition, in unopened containers and protect until installed. Deliver, handle and store pipe and fittings so as to avoid gouging, bending or cracking.

2.2 Pipe and Fittings

.1 Plastic Pipe: Pipe shall be Schedule 40 polyvinyl chloride (PVC) conforming to ASTM D1784-97, D1785-96B and/or CSA B137.3-93 standards.(ASTM F441/441M-97 or CSA B137.6-96 for CPVC). It shall be extruded, virgin, high impact pipe conforming to Cell Class 12454-B, solvent weldable with belled ends, and continually and permanently marked showing manufacturer's name or trademark, type of material, pipe size and pressure rating.

Size and Classes as follows:

Size	Class
19 - 25 mm. diameter	Schedule 40 PVC
31 -100 mm. diameter	Schedule 40 PVC
Mainlines	Schedule 40 PVC
Laterals	Class 200 PVC

.2 Plastic Pipe Fittings:

.1 GSR Schedule 40 PVC conforming to ASTM D-2466-97 (and F438-97 for CPVC) standards and be of the same material as the pipe. Fittings shall be designed for solvent welding to PVC pipe except where valves, risers, etc. require threaded joints.

.2 Fittings for PVC pipe shall be 2/3 to full interference fit to ensure a fully sealed joint. Provide a minimum two (2) times depth of insert of fitting clearance between fittings to allow for repair. No exception.

.3 All threaded connections shall be joined with minimum three (3) wraps Teflon Tape: no substitutions accepted.

.4 Threaded nipples shall be Schedule 80 PVC and be manufactured from the same material specified for the pipe.

.5 Threaded connections of PVC to metal shall have female threads on the PVC and male threads on the metal (Schedule 80 FMI adapter)

.3 Primers and Pipe Solvents: Cement shall be Weld-On (IPS) 725 Wet ‘R Dry and Primer shall be Weld-On (IPS) P-75 Wet ‘R Dry.

.4 Sleeves: In locations noted on the drawings and sized a minimum of two (2) nominal pipe sizes larger than any irrigation lateral line to be carried and a minimum of three (3) minimal pipe sizes larger if carrying a mainline:

.1 Shall be cast iron piping under all designated vehicular access routes.

.2 Shall be Schedule 40 PVC under all other paved surfaces, through walls, and through or underneath footing walls.

2.3 Valves and Valve Boxes

.1 Valves: Valves shall be Rain Bird PEB series (with DC latching solenoid)

.5 Valve Boxes: Shall be green plastic irrigation boxes complete with captive lock bolt cove complete with S.S. bolts, sized to suit valves and other components with adequate room for operating and maintenance access:
NDS - 113 BC (14" x 19") 1-2 valves or Carson 1419 (14" x 19") 1-2 valves
NDS - 117 BC (17" 20") 3 valves or Carson 1320 (13" x 20") 3 valves

2.4 Sprinkler Heads

.1 Spray heads shall be Toro 570Z series with MPR nozzles
.2 Rotors shall be Rain Bird 5000 series (plastic riser)
.

2.5 Controller and Common Ground Wiring

.1 Controller shall be Rain Bird ESP-9V series (battery operated)
.2 Obtain Electrical Permit for the work from Permits and Licenses, City of Vancouver.
.3 Use insulated solid copper wire, minimum #14 AWG, TWU insulation of a type approved by the governing electrical authority and by CSA for direct underground burial, sized to suit loads, and distances. Maximum voltage loss shall be three percent (3%). Insulation colour for control/signal conductors shall be consistently applied throughout the system, and white conductor shall always be the common wire.
.4 Confirm control wire size with the manufacturer of zone control valves to ensure wire is sized to the length of its run and in compliance with the current Canadian Electrical Code, as amended by the Province of British Columbia and the City of Vancouver.
.5 Wire, breakers, conduits and related materials that comprise the electrical supply to the controller shall be CSA approved, and installation shall be pursuant to the Canadian Electrical Code, as amended by the province of British Columbia and the City of Vancouver. Underground installation of electrical wiring must comply with Table 53 of the CEC, Part 1.

2.6 Miscellaneous Materials

.1 Electrical Tape: All weather, black plastic 19 mm wide, a minimum 0.1778 mm thick, or use approved equal.
.2 Electrical Wire Splices shall be made watertight with CSA approved watertight connectors. No splicing of wires shall occur unless located in an accessible box and shown on the As-Built Drawings.
.3 Thread Lubricant: Type manufactured for plastic to metal connections such as Teflon tape or Permatex 2.
.4 Conductors in the Control Cabinet must all be terminated on terminal strips suitable for wire size.

2.7 Cabinet for Controller

.1 The Control Cabinet shall be CSA approved and of the type specified on the drawings, complete with approved weather proof lockable metal door and grounded by means of ground rods or plates. It must be large enough and capable of providing all necessary features for programming equipment for the irrigation system as designed.

2.8 Back Flow Preventer

.1 Wilkins Zurn or Watts Series 007M1QT double check Backflow Prevention Assembly, complete with gate valves, or pre-approved equal.

.2 All back flow preventers larger than 50 mm shall be the approved type or pre-approved equal.

.3 All back flow prevention devices to be CSA and BCWWA approved and conform to all current Municipal cross connection control standards as applicable.

2.9 Service Vault

.1 All back flow prevention devices to be located in precast concrete vaults complete with concrete bottom that shall be sized as shown on the drawings,

.2 The vault shall be supplied by AE Precast Concrete Products or shall be a pre-approved alternative.

.3 Vaults shall be supplied complete with double hinged, galvanize steel checker plate locking covers, with lock and hasp assembly which shall be recessed below top of lid. Lids are to extend the full length of the service vault to allow for unimpeded access into the vault. Each lid is to be a maximum weight of 27 kg each. Install service vault flush with finished grade.

.4 The piping and valve assembly within the vault must be adequately supported and braced (minimum two (2) riser type supports and two (2) side wall supports), with adjustable supports, complete with riser, pipe clamps, galvanized metal and stainless steel bolts. Install as per provided schematic drawing.

.5 All piping inside the vault is to be brass or type, and is to extend a minimum of 300 mm outside the vault on the downstream side and a minimum of 150 mm on the upstream side.

.6 The top of the piping shall be 600 mm from the top of the lid. The service vault shall be filled with 25 mm drain rock to within 300 mm of the bottom of the pipe. Contractor shall install a 100 mm PVC drainpipe, complete with a backwater valve. The vertical section of the drainpipe is to be perforated and terminating with a grate that is flush with the surface of the drain rock. The drainpipe is to run (minimum of .5% slope) into a catch basin or an approved drainage system.

.7 PVC connections to brass outside the vault on the downstream side are to be made with schedule 80 PVC female adapters.

.8 Inside vault piping shall be brass including the triple threaded swing joints for blow down quick coupler, or pre-approved alternative.

.9 All piping to vault from the city service is to be type K copper or pre-approved alternative.

2.10 Pressure Reducing Valve

.1 If required, Watts Series 223 sized to system: Range 173 KPa to 470 KPa or pre-approved alternative.

2.11 Blow Out Tee

.1 Brass, 19 mm in size on triple brass threaded swing joint.

2.12 Flow Meter

.1 Hydrometer: Bermad Model No. 910-P or pre-approved equal.
.2 Shall combine a turbine type water meter and a diaphragm actuated, solenoid controlled valve mounted in a single globe style valve body.
.3 The meter shall power a gear mechanism which activates a reed switch that transmits a pulse at a pre-determined amount of flow.
.4 The unit shall include integral flow guides to eliminate the need for straight pipe allowances before and after the valve.
.5 The hydrometer shall be capable of sending electronic flow data to a compatible irrigation controller to enable it to be integrated within an overall computer controlled system.
.6 Three different coloured wires shall be installed to the controller from the Bermad, two of which must be a white common.
.7 Flow meter must have a manual override to bypass meter.
.8 Three way actuator must be of brass construction and must have a solenoid. Plastic materials are not acceptable.

2.13 Approved Equals

.1 All items as specified or pre-approved equivalents.
.2 Proposed equivalents shall meet or exceed the specifications in performance, flow, pressure loss and all other important characteristics of the original equipment specified.
.3 The alternative equipment shall be of good quality construction, with a proven record of trouble free performance and low maintenance, on projects of similar size and scope.
.4 The proposed equivalent must be available from a local distributor with a well-stocked inventory of all readily available spare parts.
.5 The alternative equipment must have an equivalent warranty to the original equipment specified.
.6 Alternative equipment must be compatible with all other remaining system components and must be agreed upon by both parties to the contract.
.7 Submission guidelines for approval of equal products must be strictly adhered to or no consideration for approval as equals will be considered.

PART 3: EXECUTION

3.1 Design

.1 Provide a design for an irrigation system that shall apply a consistent, uniform, measurable amount of water to the landscape over a period of time to promote deep root zone development. The system design shall consider water cost and conservation, long term durability and maintenance cost, safety, the desired aesthetic, and site-specific requirements.

.2 Confirm conduit layout as shown on contract drawings meets system requirements of irrigation design.

3.2 Protection of Existing Work

.1 Protect existing and proposed landscape features, elements, and sites from damage or contamination. Coordinate with the work of other trades to reduce waste, missing of waste, soil compaction or erosion, overspray, or run-off from cleaning operations.

3.3 Irrigation System Layout

.1 Establish and coordinate exact locations of lines, valves and heads, with planting locations to avoid conflicts and damage to plants during installation. Stake locations for approval by Owner's Representative. The Contractor is to verify grades for all components.

.2 Layout the piping and sprinkler locations with flags or short lengths of pipe, in accordance with the drawings, and obtain the approval of the Owner's Representative before proceeding. The layout shall be in accordance with the drawing. The Owner's Representative must approve alternative layouts.

3.4 Installation of Piping

.1 The Contractor is to verify that all pipe, fittings, primers and cements are compatible for proper installation.

.2 Obtain field assistance from pipe manufacturer/supplier as necessary to ensure correct installation and adhesive techniques are used on joints.

.3 Do not cement pipe and fittings under wet or muddy conditions, and follow the manufacturer's recommendations.

.4 Layout the piping system in accordance with drawings. Route piping to take into account site elevation changes and to minimize low head weeping subsequent to shutdown.

.5 No irrigation line shall be directly over and parallel to another irrigation line or any other service line. Ensure minimum horizontal and vertical clearance requirements as dictated by Canadian Electrical Code for all piping installations near any electrical conduit/service.

.6 Where possible, main supply lines may occupy the same trench as lateral sprinkler lines, provided that a minimum horizontal clearance of 150mm is maintained. Multiple lateral lines may occupy the same trench provided that a minimum of 50mm horizontal clearance is maintained and the pipes are all on the same plane.

.7 Install pipes in long 'S' curves to allow for expansion and contraction.

.8 Comply with all the manufacturer's printed data and recommendations regarding pipe cutting, cleaning, bevelling, deburring, fitting preparation, primer and cement application and correct joining techniques. Ensure that all joints are properly fused and bonded and that all curing times given site climatic conditions are fully observed prior to testing or charging of piping system.

.9 Install yellow warning tape approximately 250mm above all mainline runs with low voltage wiring located below piping. Warning tape on lateral lines is not required.

.10 Trenching:

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

.2 Open excavation shall be carried out in a safe and orderly manner and in accordance with the requirements of the Workers' Compensation Act of B.C. Approved shoring shall be used where required for safe working conditions.

.3 All trenches are to be hand or machine excavated. Pulling pipes is not acceptable. All trenches shall be dug on the alignment and to the depth required as shown on the drawings and as stated herein. In any event, the water main service pipe shall be buried to a depth of at least 750 mm below ground. The irrigation main and zone lines shall be buried to a depth of at least 406 mm below the surface measured to top of pipe. Trenches are to be straight with uniform slopes to the bottom of all trenches.

.4 Where the pipes are to be laid in sub-surface material the trench shall be excavated to a depth at least 100 mm below the bottom of the pipe elevation. The trench shall be backfilled with at least 100 mm of sand passing a 5 mm sieve and be carefully compacted by hand.

.5 Prior to backfilling, all lines, valves and fittings shall be inspected by Owner's Representative , where required.

.6 Trenches shall be at least 300 mm away from paving stones or other hard surfaces to avoid undermining such surface or its edge retention.

.7 Backfilling shall take place in an orderly fashion. Where the line is within an enclosed planting bed or sod lawn area and does not penetrate below the growing medium, the growing medium shall be carefully placed over the pipe and be carefully tamped by hand to achieve compaction equivalent to the surrounding area. Where the lines penetrate the native soil or sub-surface fill, backfilling to a depth of 100mm over the top of the pipe shall be carried out with sand passing a 5 mm sieve and be carefully compacted by hand.

The remainder of the backfill to finish grade shall be with suitable material, free of any rocks over 25mm in diameter and other similar materials that could damage the pipe or create unusual settling conditions.

.8 Compact the growing medium to the same density as the native material in the trench sidewalls to prevent differential settlement.

.9 Fill piping with water at approx. 0.172 MPa during backfill operations.

.10 Contractor is responsible to repair all trenches which have settled below the adjacent grade for a period of one(1) year from date of Substantial Performance.

.11 Material refuse such as pipe pieces, excess wire, rags, fittings or PVC cement canisters shall not be left as a part of backfill in any of the trenches.

3.5 Installation of Equipment

.1 General: Install all equipment as shown in plans and details, using specified and appropriate pipes, connectors, cements, lubricants, solvents for each type of joint.

.2 Valve Boxes: Install valves in valve boxes, allowing adequate space within boxes for proper operation/servicing of each component. Keep the valve box clean and clear of all debris that may fall into it during construction/installation. Ensure a minimum 150 mm of 19 mm drain gravel is placed in the bottom of each valve box. Additionally, ensure the following:

.1 The top of the valve box is to be level and flush with grade, and located in shrub areas where possible.

.2 Valves are to be installed vertical and centred.

.3 Valve boxes are to be blocked (with brick or concrete pavers) so that neither blocking nor valve box rest on lateral or mainlines when supporting the weight of expected forces on the top of the box.

.4 Quick coupler valves to be installed within valve boxes in active, non-solenoid valved line or in specified designated solenoid valved line.

.3 Automatic Controllers: Ensure controller(s) are located to allow for maximum viewing of the system operation. Install in location shown on drawing. If not shown coordinate location with Project Manger prior to starting work. Install at 1500 mm height to the centre of the Cabinet or as otherwise detailed at location shown. Make all connections to optimize the operation and sequencing station valves in a logical manner to expedite proper testing of all system operations.

.4 Control Wiring: Protect control and common wiring by installing beneath irrigation mainline. Obtain approval from Owner's Representative for all wiring to be installed in separate trenching and protect with Yellow Buried Wire Warning Tape that shall be 200 mm above the wires. Leave additional 600 mm of each wire at each valve and neatly coil and wrap excess. Wrap conductors with electrical tape at 900 mm intervals. Make wire splices only in accessible valve boxes. Minimize the number of splices. As much as possible ensure that wire runs are continuous without interruption. Run control wiring from valves and connect to automatic controller. Install control wiring in a conduit that extend 1500 mm horizontally from the vertical connection point of the controller, with the horizontal portion 600 mm below grade to the top of the pipe. Electrical conduit to be a 50 mm diameter PVC with a sweep elbow from below grade to bottom of controller cabinet location. Ensure that conduit is clamped to mounting surfaces with conduit pipe clamps at 250 mm on centre spacing or as detailed.

.5 Quick Coupler Valves: Install in valve box to allow for easy insertion and rotation of quick coupler keys, with the top of the Quick Coupler installed a maximum of 50 mm below the lid of the valve box, on Schedule 80, triple threaded swing joints and nipples to provide sufficient "give" should a hose or line be pulled.

.6 Irrigation Heads: Install all heads on triple swing joint assemblies of the same size as the sprinkler inlet. Adjust all heads to12 mm below finished grade for sodded lawn areas once sodded lawn has been approved by Owner's Representative.

.1 All sprinkler heads to be installed a minimum 50 mm away from any hard surface.

3.6 Testing

.1 Closing in Work:

.1 Obtain approval from the Electrical Inspector before backfilling any section of the underground electrical installation.

.2 Obtain approval of Owner's Representative before backfilling any sections of the irrigation system.

.3 Any work closed in before inspection will be required to be re-exposed for inspection at no extra cost to the Owner. Provide 48 hours minimum notice to Owner's Representative to arrange inspections and review of pressure testing.

.2 Testing: Upon completion of the irrigation system, arrange with the Owner's Representative to be present to observe pressure testing. Test all plastic pipe and sprinklers as follows:

.1 After the pipe is in place in the bottom of the trench with risers in place, cap the risers where the sprinklers will be attached and insure that all pipe, couplings and fittings are exposed.

.2 Apply a pressure of 0.551 MPa (80 psi) to each section, using a test pump and calibrated container. Inspect visually for leaks at couplings and fittings, cut out and replace any that leak. Maintain test pressure for two (2) hours. After replacing any defective sections, pressure test for two (2) hours and note any pressure loss.

.3 After approval by the Owner's Representative , backfill the pipe maintaining pressure in the line, noting any sudden drop in pressure. If there is any indication of a leak, locate the defective section and replace. Leaks shall not be repaired by patching.

.4 Provide written documentation that pressure testing has been completed satisfactorily, including re-testing (for 2 hours) of all defective sections. Written notice shall state the date, parties present, pressures applied and duration of pressure tests.

.3 Flushing: after testing and prior to attaching sprinklers, flush out each section to remove any dirt accumulated.

.4 Adjustment: Adjust the irrigation heads for optimum coverage and rate of flow, including minor adjustment in actual head locations. Set the controller operation times as dictated by Owner's Representative . The Contractor is required to balance and adjust the various components of the system to ensure the efficient operation of the system. This includes the adjustment of any pressure regulators, full and part circle radius heads, valves and adjustments to controllers.

.5 Systems that are Substantially Complete on or after September 15th, shall be left in a winterized state as per Item 3.5. This contractor is responsible to return the following Spring at a time dictated by the Project Manger and start-up the system and perform all maintenance functions necessary to provide a fully operating system.

.6 Coverage Test: When the irrigation system has been completed, a coverage test shall be completed in the presence of the Owner's Representative to determine if coverage of water on planted areas is complete and determine if any adjustments are required.

.7 Controller Test: As part of the above, and prior to Final Acceptance by the Owner's Representative , the automatic controller(s) shall be set in sequence and thoroughly tested through each zone to determine if any adjustments are required.

.8 Submit Certificate of Double Check Valve Assembly Test and Pass at the time of Substantial Completion.

3.7 Winterizing

.1 Winterize the system for the first time with the Owner's Representative observing. Winterizing shall include all operations necessary to protect the system from freezing temperatures, including manual and solenoid valve operations to isolate vulnerable parts of the system and draining components and pipes and/or blowing water out of all pipes with compressed air.

3.8 Spring Start-up

.1 In the following spring after Substantial Completion, the Contractor shall set the system in operation by May 1 or as weather permits

.2 The Contractor shall perform all maintenance and repair procedures as necessary to ensure the system is completely functional and operation as designed.

.3 Replace and compact topsoil in trenches that settle. Reseed or replace sod if necessary.

3.9 Site Clean Up

.1 The job site shall be kept in a neat, clean and orderly condition at all times during the installation process.

.2 Trenching, laying pipe and backfilling shall be continuous so that the amount of open trenching at the end of each workday is minimized. Any open trench or other excavations shall be barricaded and marked with high visibility marking tape to current WorkSafeBC requirements.

.3 Any damage to paving, planting or any other structures/elements due to settlement of improperly compacted trenches shall be immediately repaired at the Contractor's expense to satisfaction of the Owner's Representative.

.4 Remove and dispose from the site any and all surplus material, excess excavated materials, trash, debris and waste material arising from the work of this Section.

3.10 Maintenance

.1 Protect and maintain the entire irrigation system throughout the entire Maintenance & Warranty Period. Include replacement of any defective material, making all repairs due to faulty workmanship.

.2 The Maintenance Period shall be one (1) year following award of Substantial Completion

.3 The Contractor shall be responsible for conduction the winterization and spring start-up of system until the irrigation system is awarded Final Acceptance.

3.11 Final Acceptance

.1 Irrigation system will be inspected by the Owner's Representative at the completion of the Maintenance Period

.2 Where it is found that during the guarantee/maintenance period, the irrigation system has been poorly maintained, or there has been a failure to rectify deficiencies within reasonable time, issuance of Final Acceptance may be withheld or the guarantee/maintenance period may be extended or made conditional upon completion of repairs or improvements, at the discretion of the Onwer's Representative.

END OF SECTION 32 80 00

Section 32 91 21 Topsoil and Finish Grading

1.0 GENERAL

1.3 Source Quality Control

Add 1.3.3 The Contractor shall guarantee that the growing medium submitted for laboratory analysis is a representative sample taken from the growing medium to be delivered to the Site.

Add 1.3.4 Failure to test and provide appropriate documentation of test results may be considered grounds for rejection of a proposed growing medium and may result in removal and replacement of the rejected material at the Contractor's expense.

2.0 PRODUCTS

2.2 Applications

Delete 2.2 Delete 2.2

2.3 Native Topsoil

Delete 2.3 Delete 2.3

2.4 Imported Topsoil

Delete 2.4.1 Delete 2.4.1
Delete 2.4.2 Delete 2.4.2
Delete 2.4.3 Delete 2.4.3

2.5 Peat Moss

Delete 2.5.1 to 2.5.5 and replace with Peat moss shall not be used.

2.6 Sand

Delete 2.6.1 to 2.6.2 and replace with Sand fill (COV #17) as per Section 31 05 17 Aggregates and Granular Materials.

2.7 Manure

Delete 2.7.1 to 2.7.5 and replace with Soil amendment growing medium, as specified in 2.10 of this Section, shall be used in place of manure.

2.10 Growing Medium

Delete 2.10.2 and replace with Growing medium shall be free from subsoil, plants or their roots, building materials, wood, non-composted wood, wood waste, woody plant parts, insect pests, plant pathogenic organisms, chemical pollutants or substances at levels toxic to plants, stones (in excess of 10mm in maximum dimensions), foreign objects, and other extraneous materials that detract from the desirable physical and chemical properties required for landscaping purposes. All soil product supplied to the City is to be free of Neonicotinoid.

Delete 2.10.5 to 2.10.15 and Table 2 and replace with 'Refer to drawings for soil mix types.'

Add 2.10.18 Growing medium shall be free from nuisance, noxious and invasive weeds and seeds or parts thereof.

Add 2.10.19 Growing medium shall be free of pathogens harmful to humans, including but not limited to Fecal Coliforms, Salmonella and E. coli.

Add 2.10.20 If engineered soil is specified on the Drawings, the growing medium shall be as per Section 32 91 22S Engineered Soil.

3.0 EXECUTION

3.3 Processing Growing Medium

Append to 3.3.1 Screening: .1 Standard (Single Screen) – 100% passing through a 12.7mm screening machine (unless otherwise specified in the table in 2.10.5 of this Section). .2 Optional Double screen – 100% passing through a 9.52mm screening machine. .3 Double screening is weather dependent and can only be done in dry weather or after 2 to 3 consecutive dry days. .4 Screening of soil must have occurred within one week of delivery.

Delete 3.3.2 and replace with Peat moss shall not be used.

3.4 Placing Growing Medium

Append to 3.4.2 The growing medium shall be moderately compacted (e.g. 90% density) with a slight crown to account for near-term settlement.

Delete 3.4.5 and replace with Boulevard soil shall be placed at a minimum depth of 300mm in turf areas. A minimum depth of 450mm shall be placed in planted areas of the boulevard.

Add 3.4.6 Underground utilities and conduits shall maintain their required minimum granular cover as specified by the utility. In these areas, at least 150mm of boulevard growing medium shall be placed over the granular cover (300mm preferred); the thickness shall be as per the Contract Documents.

Add 3.4.7 In areas with poor draining subgrade soils, curb drains shall be installed adjacent to the sidewalk or at the back of curb according to the Contract Documents, Section 03 30 20 Concrete Walks, Curbs and Gutters and as per Standard Detail Drawing C6.1.

3.5 Applying Fertilizers

Delete 3.5.1 and replace with Add fertilizers to bring growing medium fertility within ranges set out in this Section, and as recommended by testing of the growing medium.

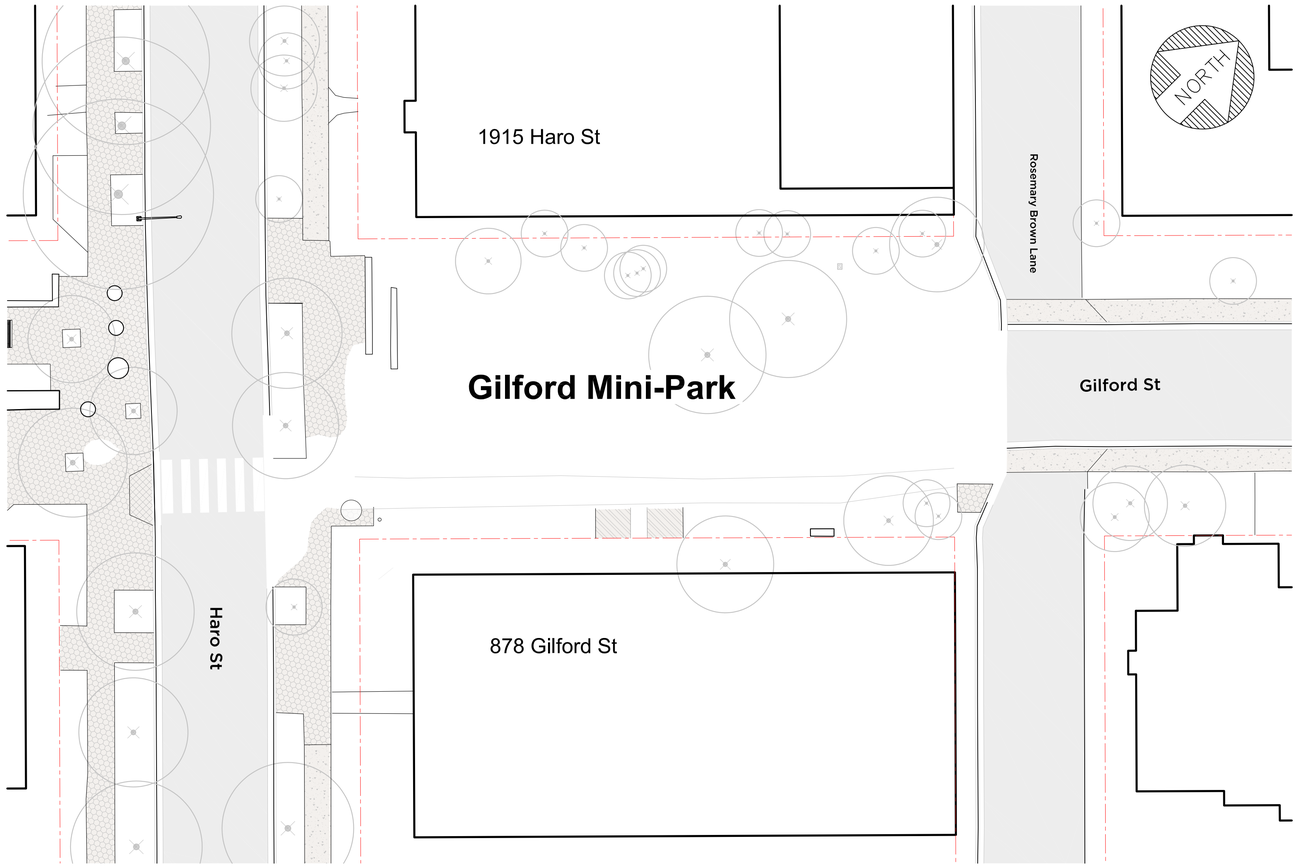
3.6 Finished Grading

Append to 3.6.1 The desired crossfall through a grass or planted boulevard to the curb is 4%; the allowable crossfall of a grass or planted boulevard shall be between 2% and 6% or as otherwise approved by the City Engineer. If there is settlement in the boulevard during the two-year Warranty Period, the areas must be re-graded / top-dressed to prevent trips (settlements over 6mm), particularly at the edge of curb and edge of sidewalk.

END OF SECTION 32 91 21

Haro St Transmission Main Replacement - Gilford St Mini Park

Issue For Tender Drawings



Site Plan Overview

Scale 1:200

Project Locaton

Drawing List:

L0 Cover Sheet with Project Location Rev 3
L1.1 Existing Site Plan Rev 1
L1.2 Utilities Plan Rev 2
L1.3 Demolition and Protection Plan Rev 2
L2.0 Layout of Materials Plan Rev 3
L2.1 Survey Layout Plan - Paving Rev 3
L3.0 Grading & Drainage Plan Rev 2
L4.0 Growing Medium Plan Rev 3
L5.0 Planting Plan Rev 2
L5.1 Turf Areas Rev 1
L6.1 Cross Sections Rev 1
L7.1 Details - Green Infrastructure Rain Garden Rev 4
L7.2 Details - Drinking Water Fountain & Paving Rev 4

CITY OF VANCOUVER

APPROVALS	INITIALS	CONTACT
LANDSCAPE ARCHITECT		
PROJECT ENGINEER		
CONSTRUCTION COORDINATOR		

REVISIONS / DESCRIPTION	INITIALS
Rev 3 Sheet L7.2 amended Sept 2020	APL
ACCOUNT #:	
DIRECTORY: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\	

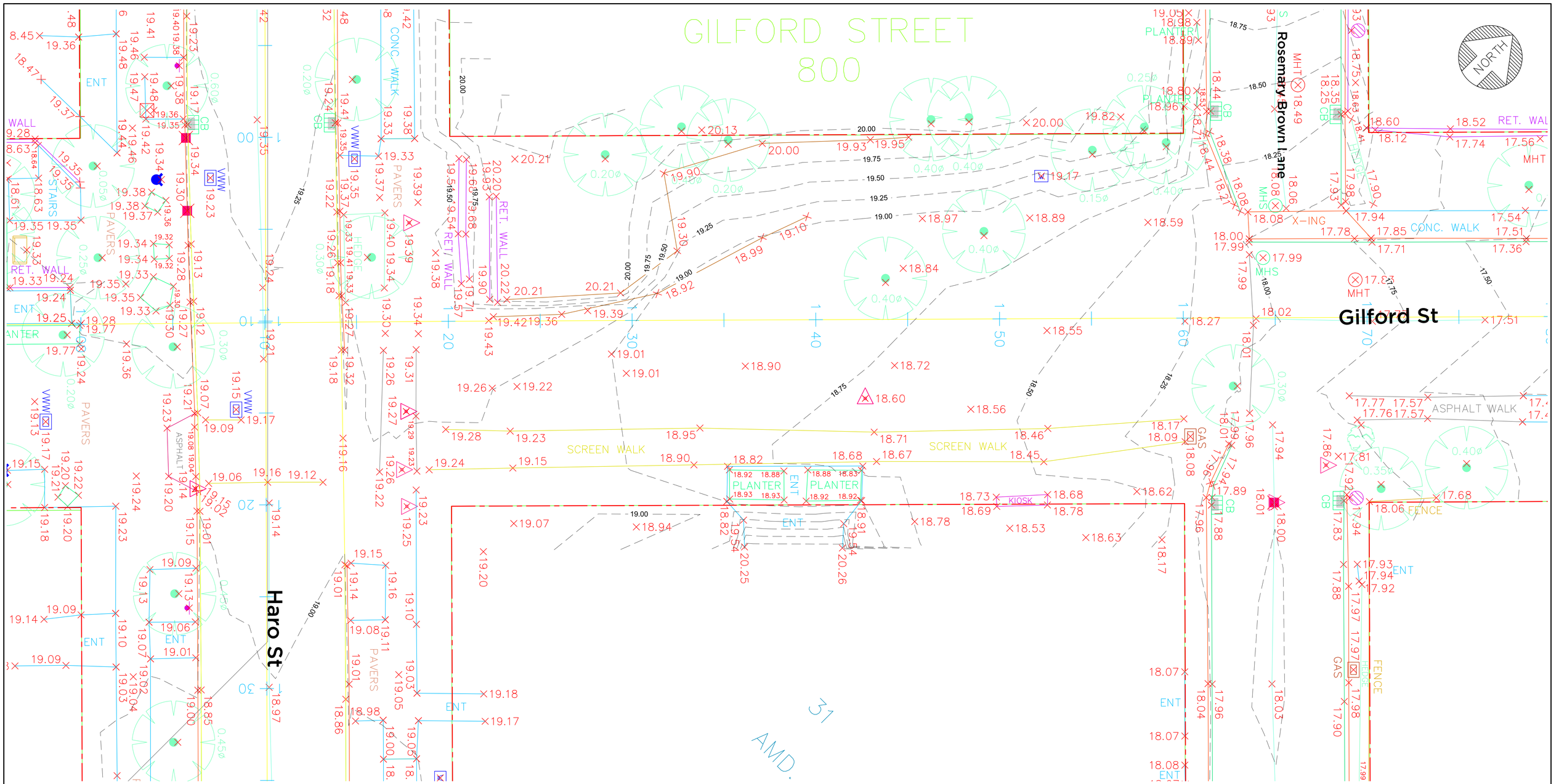
ENGINEERING SERVICES – CITY OF VANCOUVER – TRANSPORTATION DESIGN

DESIGNED BY:	APL
DRAFTED BY:	APL
CHECKED BY:	BM
FILE NAME:	ENG - TDE - Gilford St Mini Park_External Contractor.dwg

Haro St Transmission Main Replacement
Gilford Segment - Gilford St Mini-Park
Cover Sheet

SCALE:	As shown
DATE:	May 2019
DWG. NO.	2018-101-D-Zn2-L0
REV. NO.	3
SHEET:	1 OF 13

FILE: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\ENG - TDE - Gilford St Mini Park_External Contractor.dwg DATE:Sep 28, 2020 - 10:02am USER:enapl



Existing Site Plan

Scale 1:100

APPROVALS	INITIALS	CONTACT
LANDSCAPE ARCHITECT		
PROJECT ENGINEER		
CONSTRUCTION COORDINATOR		

REVISIONS / DESCRIPTION	INITIALS
Rev 1 Topographic survey updated Sept 2020	APL
ACCOUNT #:	
DIRECTORY: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\	

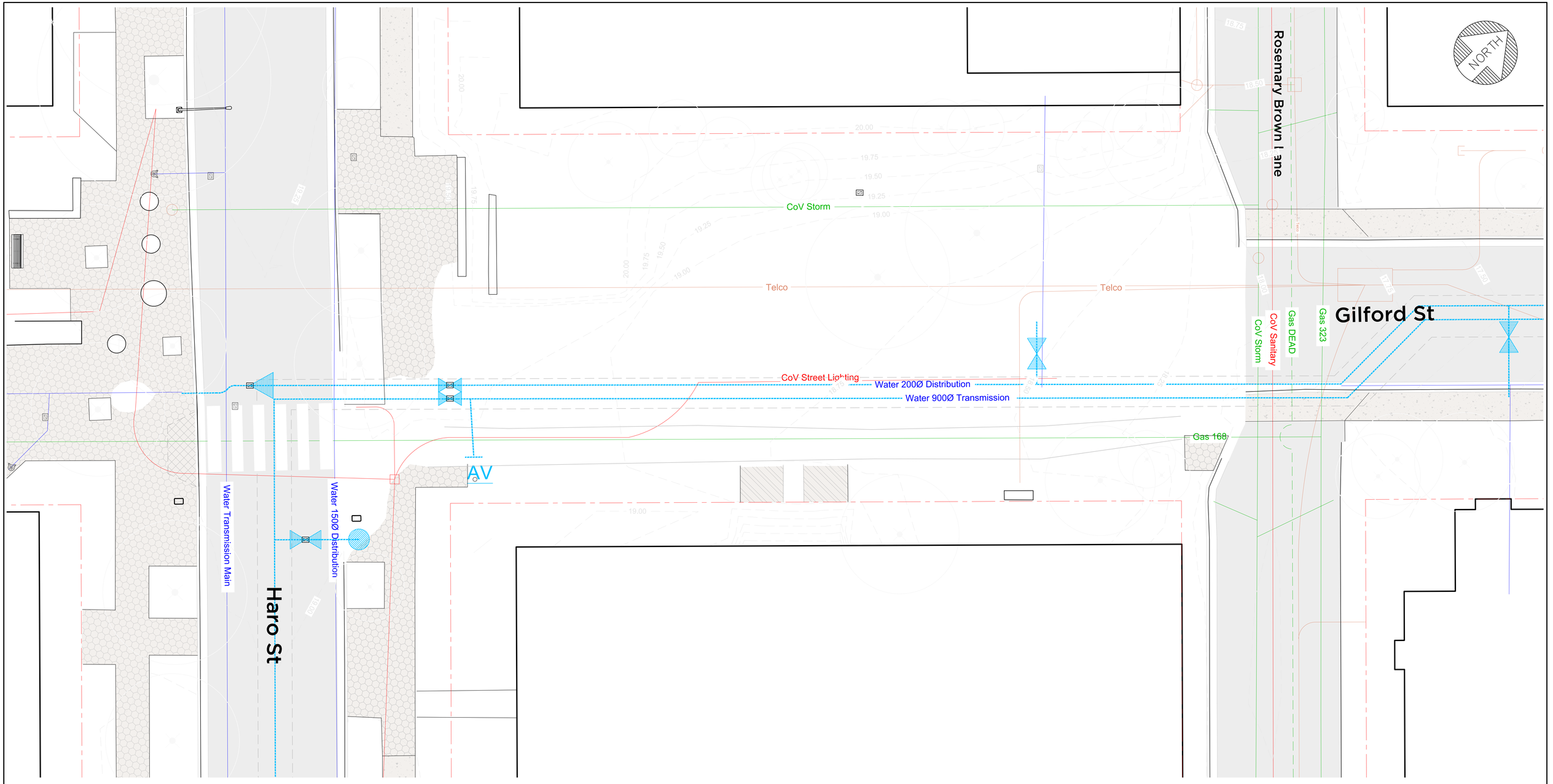
ENGINEERING SERVICES – CITY OF VANCOUVER – TRANSPORTATION DESIGN

DESIGNED BY:	APL
DRAFTED BY:	APL
CHECKED BY:	BM
FILE NAME:	ENG - TDE - Gilford St Mini Park_External Contractor.dwg

Haro St Transmission Main Replacement
Gilford Segment - Gilford St Mini-Park
Existing Site Plan

SCALE:	1:100
DATE:	May 2019
DWG. NO.	2018-101-D-Zn2-L1.1
REV. NO.	1
SHEET:	2 OF 13

FILE: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\ENG - TDE - Gilford St Mini Park_External Contractor.dwg DATE:Sep 28, 2020 - 9:16am USER:enapl



Utilities Plan

Scale 1:100

APPROVALS	INITIALS	CONTACT
LANDSCAPE ARCHITECT		
PROJECT ENGINEER		
CONSTRUCTION COORDINATOR		

REVISIONS / DESCRIPTION	INITIALS
Rev 2 Utility info updated Sept 2020	APL
ACCOUNT #:	
DIRECTORY: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\	

ENGINEERING SERVICES – CITY OF VANCOUVER – TRANSPORTATION DESIGN

DESIGNED BY:	APL
DRAFTED BY:	APL
CHECKED BY:	BM
FILE NAME:	ENG - TDE - Gilford St Mini Park_External Contractor.dwg

Haro St Transmission Main Replacement
Gilford Segment - Gilford St Mini-Park
Utilities Plan

SCALE:	1:100
DATE:	May 2019
DWG. NO.	2018-101-D-Zn2-L1.2
REV. NO.	2
SHEET:	3 OF 13

FILE: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\ENG - TDE - Gilford St Mini Park_External Contractor.dwg DATE:Sep 28, 2020 - 9:23am USER:enapl

Rosemary Brown Lane

Gilford St

Haro St

NORTH

Property line

Strip turf, remove from site

Remove curb

Remove concrete retaining walls

Remove brick paving. Store sufficient units to restore paving to the west of road

Remove curb

Agree the final location of tree protection fencing with the Landscape Architect

Remove brick paving.

Remove asphalt paving.

Remove curb

Remove screen walk

Remove brick paving

Strip turf to 0.15m depth, remove from site

Strip turf to 0.15m depth, remove from site

Remove concrete/gravel paving. Carefully protect central tile pathway.
Landscape Architect to be present during removal

Remove brick paving.

Legend

Symbol	Description
	Existing Tree
	Tree to be Removed
	Tree Protection Fencing

NOTES:

1. Trees to be removed as noted on the drawing. Contact the Park Board in order to schedule this work (Drew Gilchrist on 604.257.8573).
2. Tree Protection Fencing to be installed as shown on the drawing as per CoV standards.
3. Prior to the commencement of work identify the Root Protection Zone (RPZ) in the grassed areas with stakes or spray paint. All work undertaken in the RPZ shall be done to minimize compaction and impacts to tree roots. This is to be accomplished by hand digging, hydro excavation and low impact equipment.
4. Any questions regarding plan please contact the Landscape Architect on 604.829.9217
5. All excavated material surplus to requirements to be disposed of in accordance with CFIA Japanese beetle regulations

CITY OF VANCOUVER

APPROVALS	INITIALS	CONTACT
LANDSCAPE ARCHITECT		
PROJECT ENGINEER		
CONSTRUCTION COORDINATOR		

REVISIONS / DESCRIPTION	INITIALS
Rev 1 Areas of turf identified for removal Sept 2019	APL
Rev 2 Demolition items updated following force main installation Sept 2020	APL
ACCOUNT #:	
DIRECTORY: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\	

ENGINEERING SERVICES – CITY OF VANCOUVER – TRANSPORTATION DESIGN

DESIGNED BY: APL
DRAFTED BY: APL
CHECKED BY: BM
FILE NAME: ENG - TDE - Gilford St Mini Park_External Contractor.dwg

Haro St Transmission Main Replacement
Gilford Segment - Gilford St Mini-Park
Demolition and Protection Plan

SCALE: 1:100
DATE: May 2019
DWG. NO. 2018-101-D-Zn2-L1.3
REV. N0. 2
SHEET: 4 OF 13

FILE: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\ENG - TDE - Gilford St Mini Park_External Contractor.dwg DATE:Sep 28, 2020 - 9:14am USER:enapl

Rosemary Brown Lane

Gilford St

Haro St

NORTH

Reclaimed boulders. Placement of boulder to be approved by Landscape Architect

CoV No.6 meter box for irrigation scheme

Drinking water fountain

Pedestrian light

2 x 3" conduits

3" conduit, Typ.

Concrete Sidewalk - Broom finish

Sawcut control joints

Pedestrian lightt

Reclaimed boulders

New pedestrian curb ramp

Concrete Sidewalk - Broom finish

3" conduit, Typ.

New curb and gutter

New bike ramp

New pedestrian curb ramp

Reinstate brick paving

New pedestrian curb ramp

New pedestrian curb ramp

New curb and gutter

reinstate brick paving

New curb and gutter

Relocated street light 5/18

Concrete Sidewalk - Broom finish

BOULDER SCHEDULE:
Plan Location

KEY	APPROX. SIZE
1	0.8 x 0.8m
2	1.5 x 0.9m
3	1.0 x 0.9m
4	1.5 x 1.0m
5	1.5 x 1.5m
6	0.8 x 0.6m
7	1.1 x 0.9m
8	0.8 x 0.5m
9	0.6 x 0.6m
10	1.5 x 1.2m
11	1.0 x 0.8m
12	0.9 x 0.6m
13	0.9 x 0.8m
14	1.4 x 1.2m
15	1.3 x 1.0m
16	1.2 x 1.1m
17	0.9 x 0.9m
18	0.9 x 0.9m
19	1.3 x 1.0m
20	1.2 x 0.9m
21	1.2 x 0.9m

CITY OF VANCOUVER

APPROVALS	INITIALS	CONTACT
LANDSCAPE ARCHITECT		
PROJECT ENGINEER		
CONSTRUCTION COORDINATOR		

REVISIONS / DESCRIPTION	INITIALS
Rev 2 Locaton of irrigation conduit beneath paving shown. Curb ramps modified. 29 Oct 2019	APL
Rev 3 Boulder size and location added. Sept 2020	APL
ACCOUNT #:	
DIRECTORY: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\	

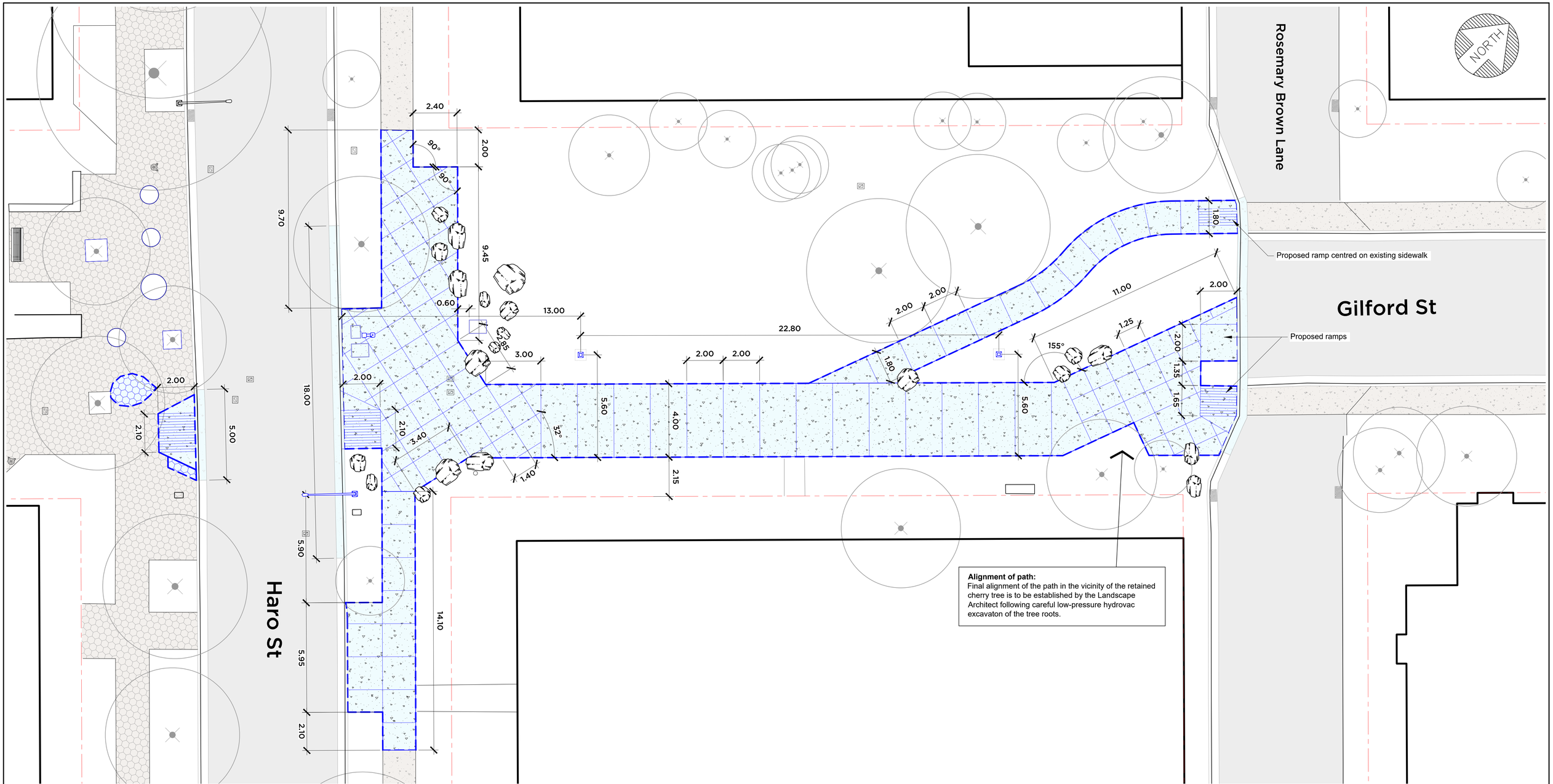
ENGINEERING SERVICES – CITY OF VANCOUVER – TRANSPORTATION DESIGN

DESIGNED BY: APL
DRAFTED BY: APL
CHECKED BY: BM
FILE NAME: ENG - TDE - Gilford St Mini Park_External Contractor.dwg

Haro St Transmission Main Replacement
Gilford Segment - Gilford St Mini-Park
Materials Layout Plan

SCALE: 1:100
DATE: May 2019
DWG. NO. 2018-101-D-Zn2-L2.0
REV. NO. 3
SHEET: 5 OF 13

FILE: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\ENG - TDE - Gilford St Mini Park_External Contractor.dwg DATE:Sep 28, 2020 - 9:32am USER:enapl



Alignment of path:
Final alignment of the path in the vicinity of the retained cherry tree is to be established by the Landscape Architect following careful low-pressure hydrovac excavaton of the tree roots.

CITY OF VANCOUVER

APPROVALS	INITIALS	CONTACT
LANDSCAPE ARCHITECT		
PROJECT ENGINEER		
CONSTRUCTION COORDINATOR		

REVISIONS / DESCRIPTION	INITIALS
Rev 2 Dimensions added to curb ramps 01 Novemebr 2019	APL
Rev 3 Boulder layout updated Sept 2020	APL
ACCOUNT #:	
DIRECTORY: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\	

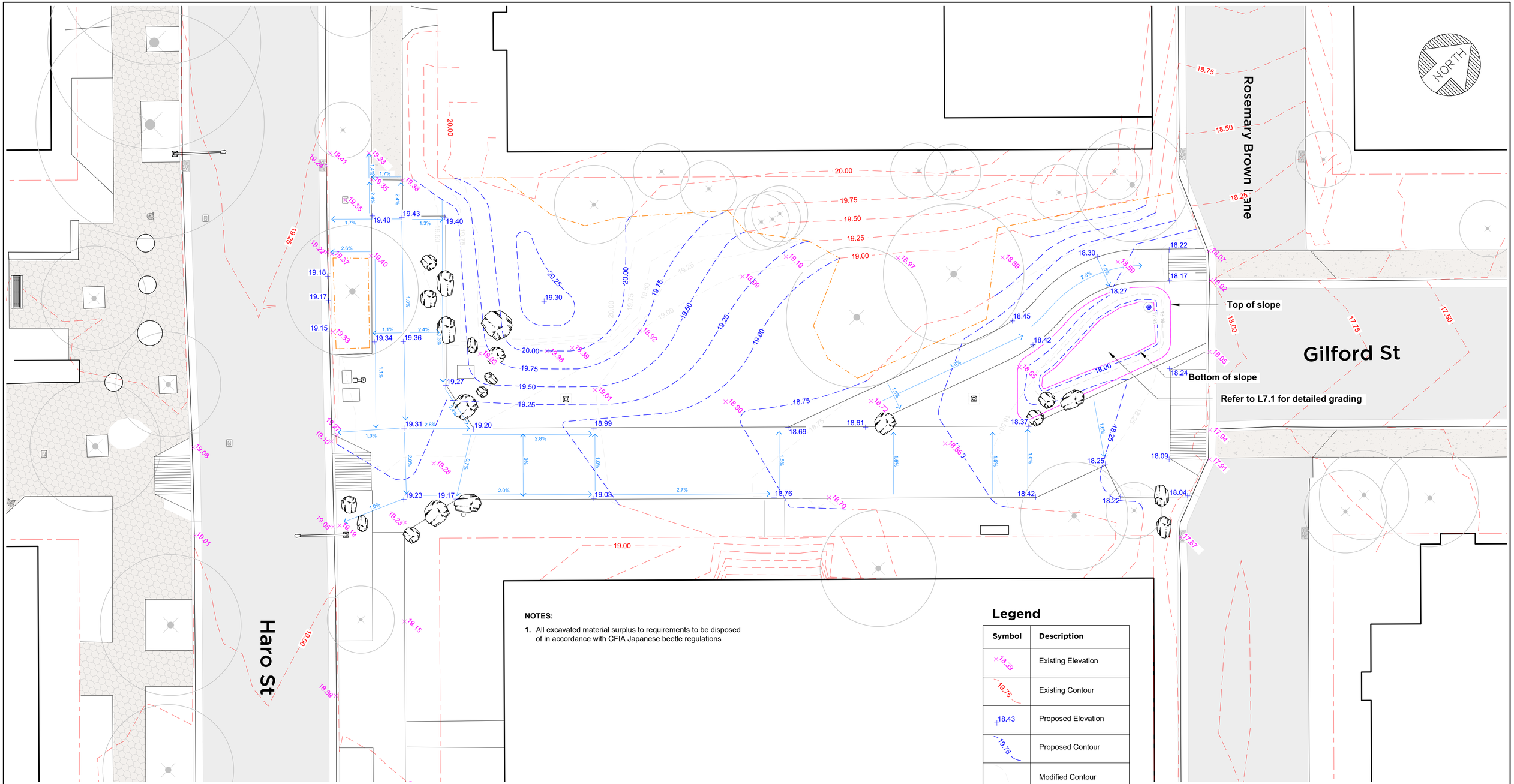
ENGINEERING SERVICES – CITY OF VANCOUVER – TRANSPORTATION DESIGN

DESIGNED BY:	APL
DRAFTED BY:	APL
CHECKED BY:	BM
FILE NAME:	ENG - TDE - Gilford St Mini Park_External Contractor.dwg

Haro St Transmission Main Replacement
Gilford Segment - Gilford St Mini-Park
Survey Layout Plan

SCALE:	1:100
DATE:	May 2019
DWG. NO.	2018-101-D-Zn2-L2.1
REV. NO.	3
SHEET:	6 OF 13

FILE: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\ENG - TDE - Gilford St Mini Park_External Contractor.dwg DATE:Sep 28, 2020 - 9:35am USER:enapl



NOTES:

1. All excavated material surplus to requirements to be disposed of in accordance with CFIA Japanese beetle regulations

Legend

Symbol	Description
18.39	Existing Elevation
19.75	Existing Contour
18.43	Proposed Elevation
19.75	Proposed Contour
	Modified Contour
	Tree Protection Fence
1.5%	Proposed Crossfall

CITY OF VANCOUVER

APPROVALS	INITIALS	CONTACT
LANDSCAPE ARCHITECT		
PROJECT ENGINEER		
CONSTRUCTION COORDINATOR		

REVISIONS / DESCRIPTION	INITIALS
Rev 1 Southern edge of main path amended. Aug 2019	APL
Rev 2 Boulder layout updated Sept 2020	
ACCOUNT #:	
DIRECTORY: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\	

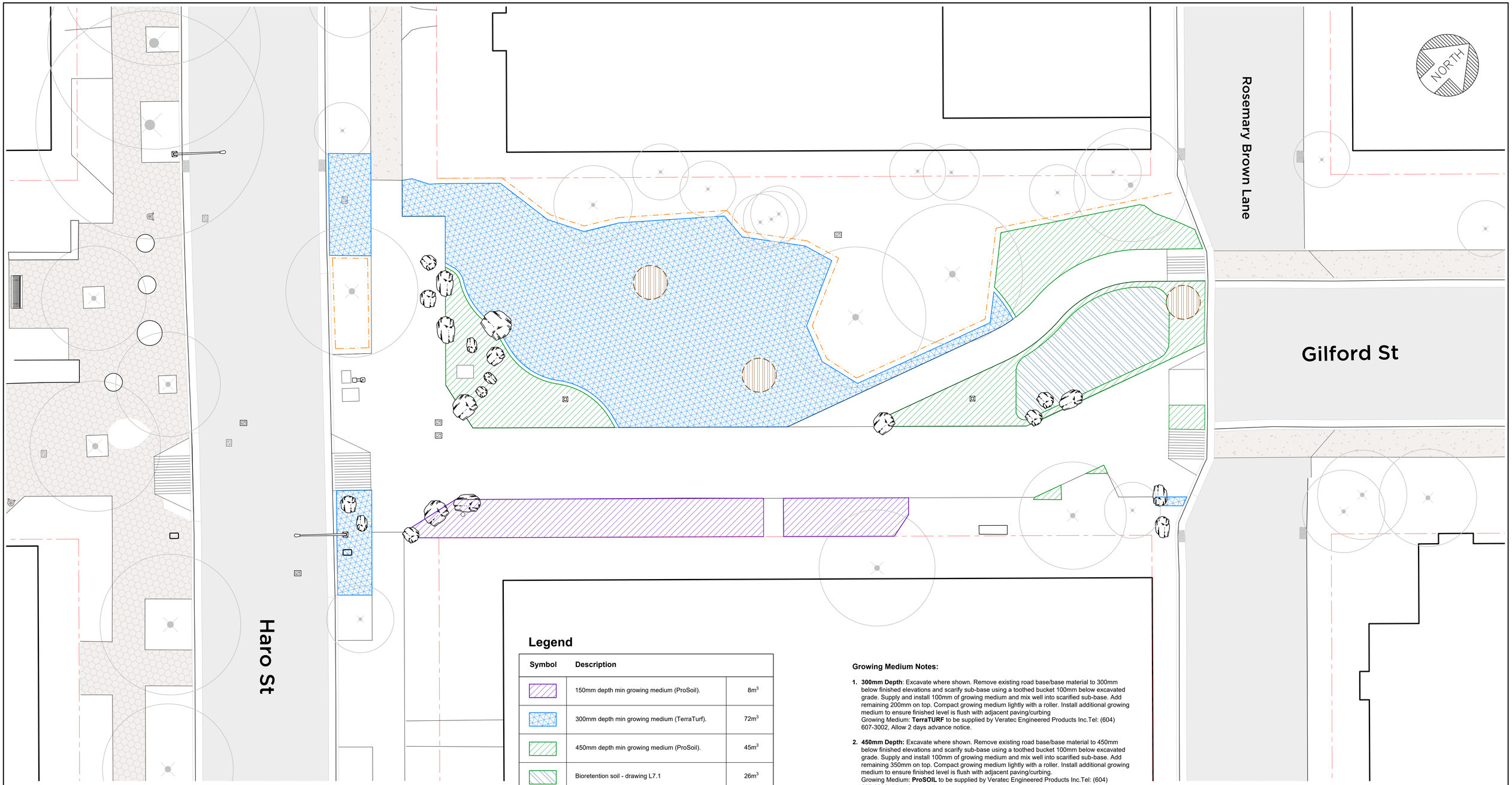
ENGINEERING SERVICES – CITY OF VANCOUVER – TRANSPORTATION DESIGN

DESIGNED BY:	APL
DRAFTED BY:	APL
CHECKED BY:	BM
FILE NAME:	ENG - TDE - Gilford St Mini Park_External Contractor.dwg

Haro St Transmission Main Replacement
Gilford Segment - Gilford St Mini-Park
Grading and Drainage Plan

SCALE:	1:100
DATE:	May 2019
DWG. NO.	2018-101-D-Zn2-L3.0
REV. N0.	2
SHEET:	7 OF 13

FILE: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\ENG - TDE - Gilford St Mini Park_External Contractor.dwg DATE:Sep 28, 2020 - 9:39am USER:enapl



Legend

Symbol	Description	
	150mm depth min growing medium (ProSoil).	$8m^3$
	300mm depth min growing medium (TerraTurf).	$72m^3$
	450mm depth min growing medium (ProSoil).	$45m^3$
	Bioretention soil - drawing L7.1	$26m^3$
	Tree pits - 2m dia x 0.6m deep (ProSoil).	$6m^3$

Growing Medium Notes:

1. **300mm Depth**: Excavate where shown. Remove existing road base/base material to 300mm below finished elevations and scarify sub-base using a toothed bucket 100mm below excavated grade. Supply and install 100mm of growing medium and mix well into scarified sub-base. Add remaining 200mm on top. Compact growing medium lightly with a roller. Install additional growing medium to ensure finished level is flush with adjacent paving/curbing
   Growing Medium: **TerraTURF** to be supplied by Veratec Engineered Products Inc.Tel: (604) 607-3002, Allow 2 days advance notice.

2. **450mm Depth:** Excavate where shown. Remove existing road base/base material to 450mm below finished elevations and scarify sub-base using a toothed bucket 100mm below excavated grade. Supply and install 100mm of growing medium and mix well into scarified sub-base. Add remaining 350mm on top. Compact growing medium lightly with a roller. Install additional growing medium to ensure finished level is flush with adjacent paving/curbing.
   Growing Medium: **ProSOIL** to be supplied by Veratec Engineered Products Inc.Tel: (604) 607-3002, Allow 2 days advance notice.

CITY OF VANCOUVER

APPROVALS	INITIALS	CONTACT
LANDSCAPE ARCHITECT		
PROJECT ENGINEER		
CONSTRUCTION COORDINATOR		

REVISIONS / DESCRIPTION	INITIALS
Rev 2 Planting bed introduced between curb ramps, northern end. 01 Nov 2019	APL
Rev 3 Extent of all growing mediums updated. Sept 2020	APL
ACCOUNT #:	
DIRECTORY: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\	

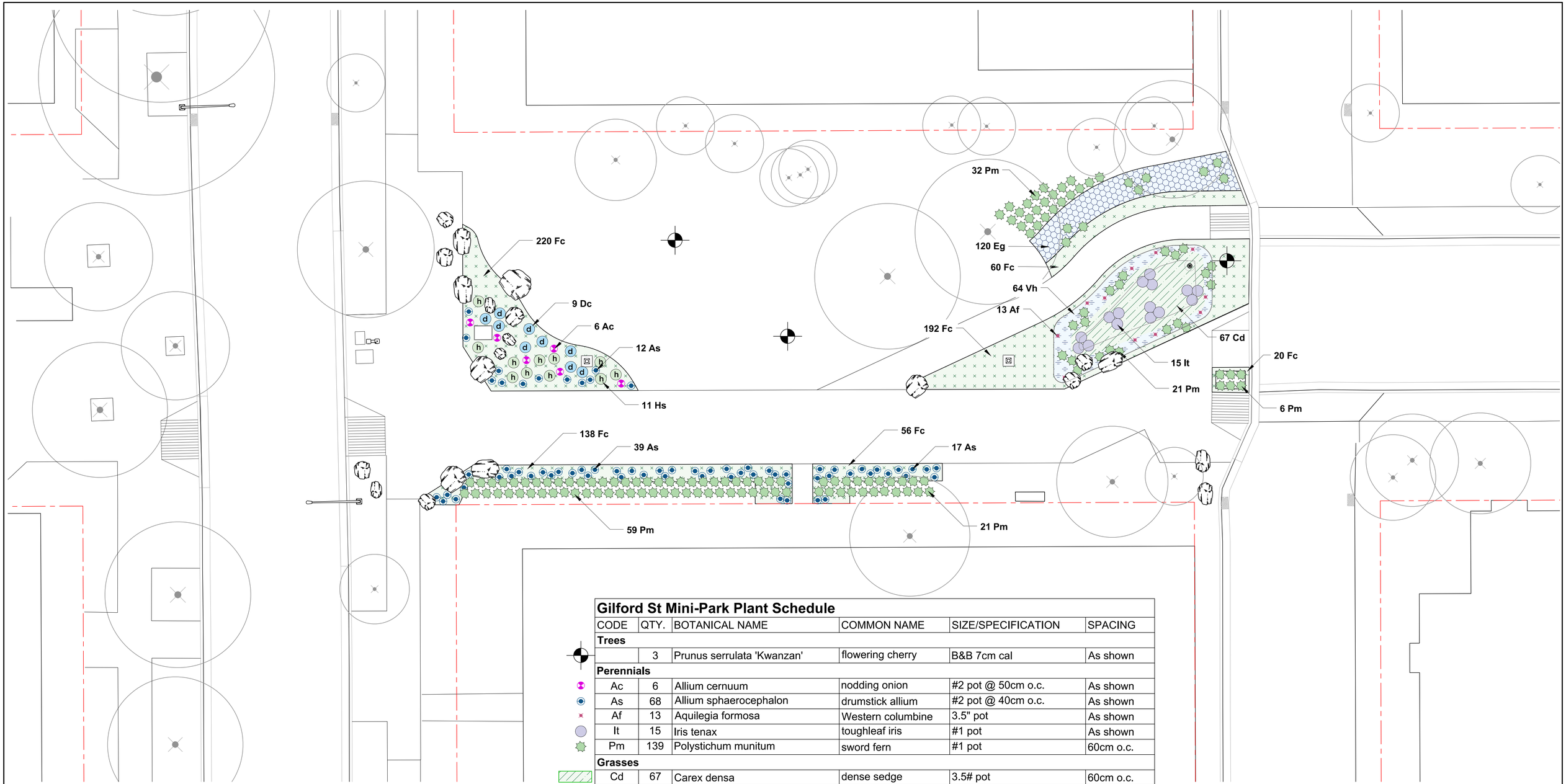
ENGINEERING SERVICES – CITY OF VANCOUVER – TRANSPORTATION DESIGN

DESIGNED BY: APL
DRAFTED BY: APL
CHECKED BY: BM
FILE NAME: ENG - TDE - Gilford St Mini Park_External Contractor.dwg

Haro St Transmission Main Replacement
Gilford Segment - Gilford St Mini-Park
Growing Medium

SCALE:	1:100
DATE:	May 2019
DWG. NO.	2018-101-D-Zn2-L4.0
REV. NO.	3
SHEET:	8 OF 13

FILE: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\ENG - TDE - Gilford St Mini Park_External Contractor.dwg DATE:Sep 28, 2020 - 9:42am USER:enapl



Gilford St Mini-Park Plant Schedule

CODE	QTY.	BOTANICAL NAME	COMMON NAME	SIZE/SPECIFICATION	SPACING
Trees					
	3	Prunus serrulata 'Kwanzan'	flowering cherry	B&B 7cm cal	As shown
Perennials					
Ac	6	Allium cernuum	nodding onion	#2 pot @ 50cm o.c.	As shown
As	68	Allium sphaerocephalon	drumstick allium	#2 pot @ 40cm o.c.	As shown
Af	13	Aquilegia formosa	Western columbine	3.5" pot	As shown
It	15	Iris tenax	toughleaf iris	#1 pot	As shown
Pm	139	Polystichum munitum	sword fern	#1 pot	60cm o.c.
Grasses					
Cd	67	Carex densa	dense sedge	3.5# pot	60cm o.c.
Dc	9	Deschampsia cespitosa	tufted hair grass	#1 pot	As shown
Hs	11	Helictotrichon sempervirens	blue oat grass	#1 pot	As shown
Groundcover					
Eg	120	Epimedium grandiflorum 'Lilafee'	bishop's hat	#1 pot	40cm o.c.
Fc	686	Fragaria chiloensis	coastal strawberry	3.5# pot	40cm o.c.
Vh	64	Vancouveria hexandra	inside-out flower	3.5# pot	50cm o.c.

CITY OF VANCOUVER

APPROVALS	INITIALS	CONTACT
LANDSCAPE ARCHITECT		
PROJECT ENGINEER		
CONSTRUCTION COORDINATOR		

REVISIONS / DESCRIPTION	INITIALS
Rev 1 Planting shown between curb ramps, north end 01 Nov 2019	APL
Rev 2 Planting plan amended to reflect new boulder layout. Sept 2020	APL
ACCOUNT #:	
DIRECTORY: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\	

ENGINEERING SERVICES – CITY OF VANCOUVER – TRANSPORTATION DESIGN

DESIGNED BY: APL
DRAFTED BY: APL
CHECKED BY: BM
FILE NAME: ENG - TDE - Gilford St Mini Park - Planting Plan.dwg

Haro St Transmission Main Replacement
Gilford Segment - Gilford St Mini-Park
Planting Plan

SCALE: 1:100
DATE: September 2019
DWG. NO. 2018-101-D-Zn2-L5.0
REV. NO. 2
SHEET: 9 OF 13

FILE: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\ENG - TDE - Gilford St Mini Park - Planting Plan.dwg DATE:Sep 28, 2020 - 9:57am USER:enapl

Area of sod: 26m^2

Area of sod: 216m^2

Allow for an additional 25m^2 of sod in this area

Area of sod: 12m^2

Total area of sod = 279m^2

CITY OF VANCOUVER

APPROVALS	INITIALS	CONTACT
LANDSCAPE ARCHITECT		
PROJECT ENGINEER		
CONSTRUCTION COORDINATOR		

REVISIONS / DESCRIPTION	INITIALS
Rev 1 Boulder layour updated. Sept 2020	
ACCOUNT #:	
DIRECTORY: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\	

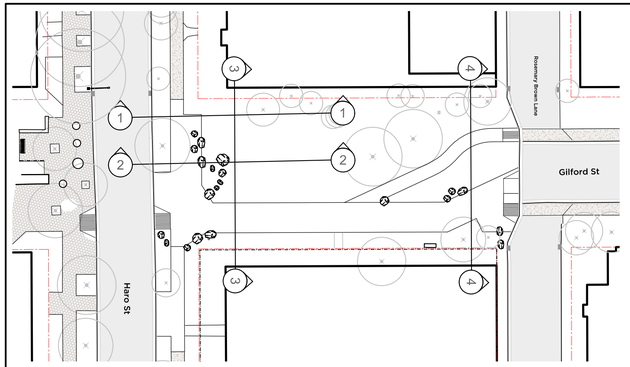
ENGINEERING SERVICES – CITY OF VANCOUVER – TRANSPORTATION DESIGN

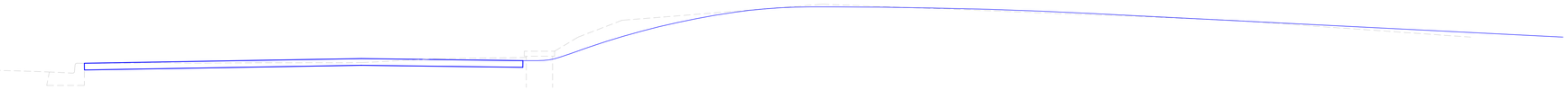
DESIGNED BY: APL
DRAFTED BY: APL
CHECKED BY: BM
FILE NAME: ENG - TDE - Gilford St Mini Park - Planting Plan.dwg

Haro St Transmission Main Replacement
Gilford Segment - Gilford St Mini-Park
Planting Plan - Sod Areas

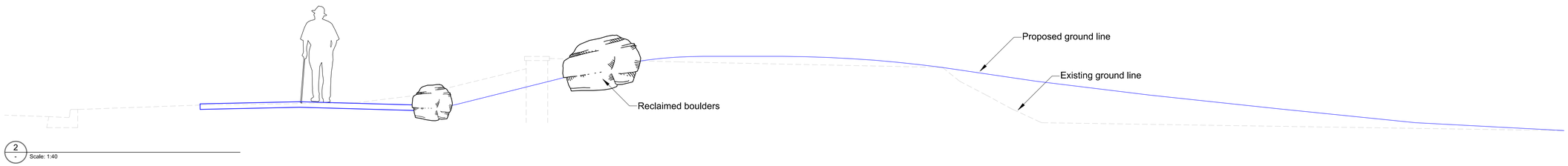
SCALE: 1:100
DATE: September 2019
DWG. NO. 2018-101-D-Zn2-L5.1
REV. NO. 1
SHEET: 10 OF 13

FILE: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\ENG - TDE - Gilford St Mini Park - Planting Plan.dwg DATE:Sep 28, 2020 - 9:59am USER:enapl





1
-
Scale: 1:40



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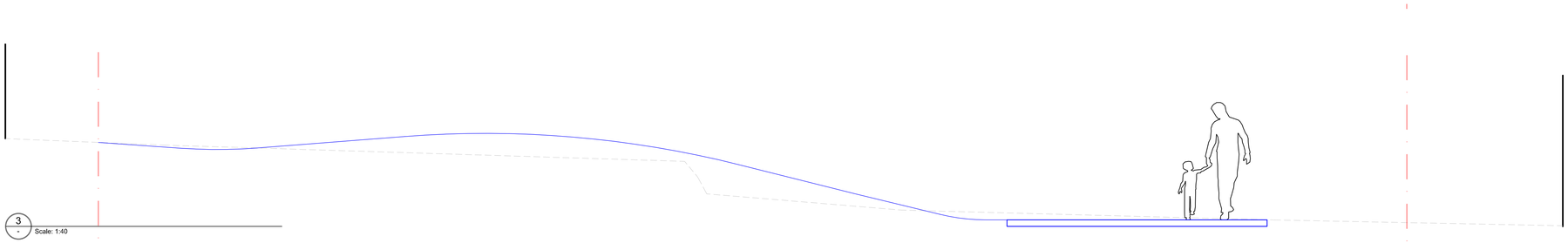
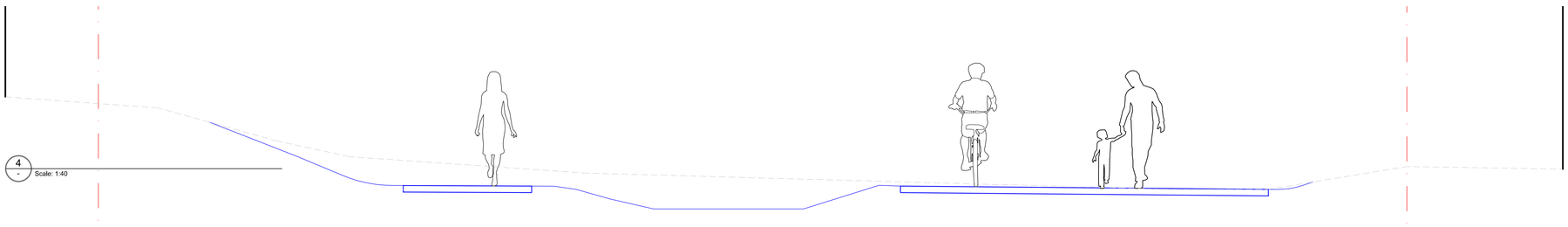
Scale: 1:40



3
-
Scale: 1:40



4
-
Scale: 1:40

NORTH

CITY OF VANCOUVER

APPROVALS	INITIALS	CONTACT
LANDSCAPE ARCHITECT		
PROJECT ENGINEER		
CONSTRUCTION COORDINATOR		

REVISIONS / DESCRIPTION	INITIALS
Rev 1 Cross sections updated. Sept 2020	APL
ACCOUNT #:	
DIRECTORY: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\	

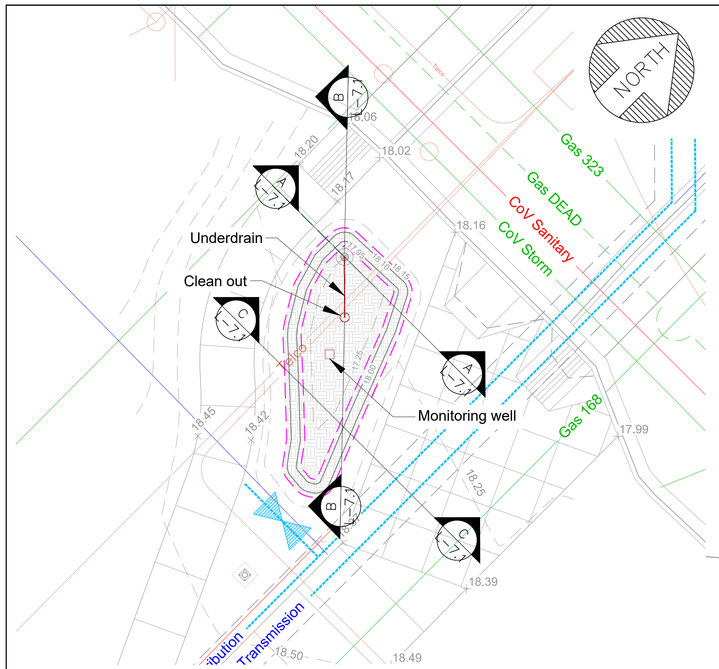
ENGINEERING SERVICES – CITY OF VANCOUVER – TRANSPORTATION DESIGN

DESIGNED BY: APL
DRAFTED BY: APL
CHECKED BY: BM
FILE NAME: ENG - TDE - Gilford St Mini Park_External Contractor.dwg

Haro St Transmission Main Replacement
Gilford Segment - Gilford St Mini-Park
Cross Sections

SCALE:	1:100
DATE:	May 2019
DWG. NO.	2018-101-D-Zn2-L6.1
REV. N0.	1
SHEET:	11 OF 13

FILE: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\ENG - TDE - Gilford St Mini Park_External Contractor.dwg DATE:Sep 28, 2020 - 10:01am USER:enapl



Rain Garden Location Plan
Scale: 1:100

Construction Notes

- Refer to grading plan for contours and elevations outside rain garden
- Rain garden's pond slopes are 3:1
- **Construct rain garden after CIP paths are constructed**. If rain garden is constructed before, follow the "Protection of Green Infrastructure Practices" instruction below for proper care of the practice
- Place impermeable NILEX Enviroflex Smooth LLDPE (30 mil) liner in areas where water utility is less than 3m away. For example Section B-B and C-C
  - Overlap between panels and use double sided tape to join panels. Use cover tape to seal seam
  - Covered perimeter 15m (Excavation and Liner Offsets View)
- Bioretention Soil: **14 m³** of soil bioretention soil (park turf mix). Refer to CoV Specs Section 32 91 21.

Protection of Green Infrastructure Practices

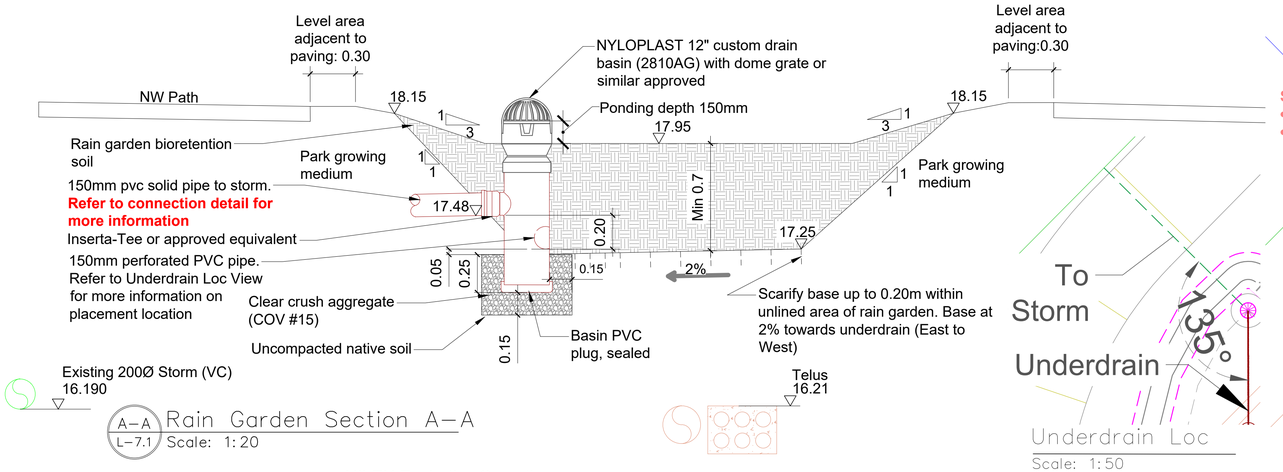
Any construction activity that would impact the condition, infiltration capabilities, or general plant health of Green Infrastructure (GI) practices shall require the below protective measures:

- Debris and dust control - plastic tarps shall be placed and secured over the GI practice to prevent debris and excessive dust resulting from construction from settling into the engineered soil and obstructing infiltration and harming vegetation.
- Storage of construction materials, disposing of construction waste or effluent, or illegal dumping within the GI practice is strictly prohibited.

Common contaminants include, but are not limited to, runoff from wet saw-cutting of sidewalks or roadways, runoff seeping from stockpiled soils or materials, debris from street milling activities, dust and other fine particles, general construction litter and debris. Excessive damage may result in loss of functionality and will require reconstruction of the GI practice.

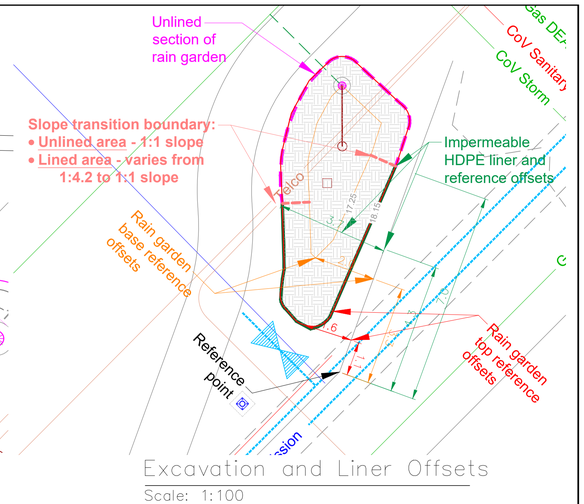
Maintenance and Removal

GI practices shall remain protected, closed, and all protection measures will remain in place and maintained until the construction activity is complete and the GI Branch has accepted the GI for being opened up to rainwater runoff.

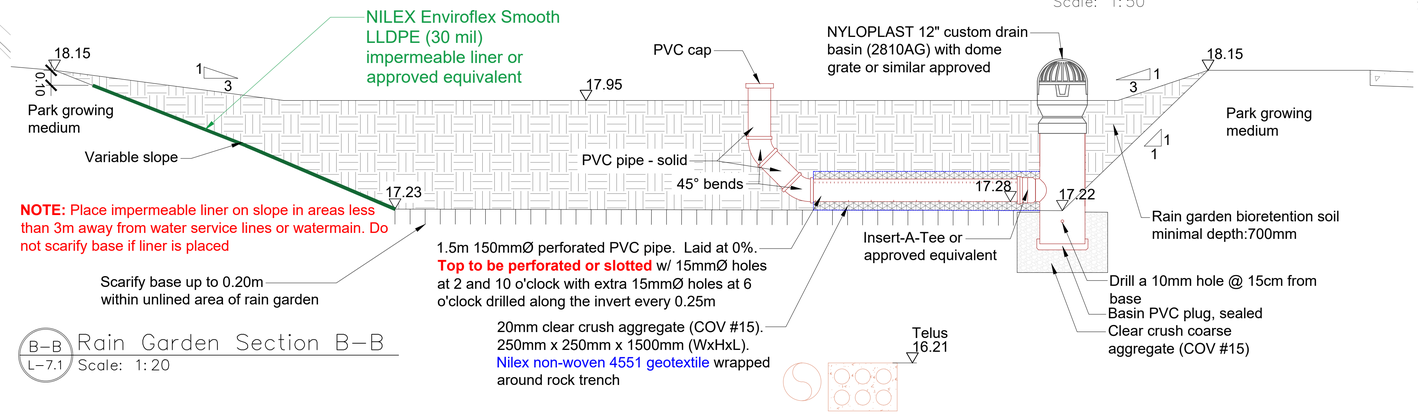


A–A L–7.1 Rain Garden Section A–A
Scale: 1:20

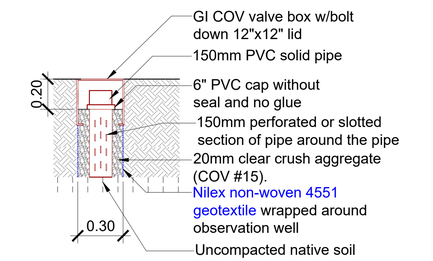
Underdrain Loc
Scale: 1:50



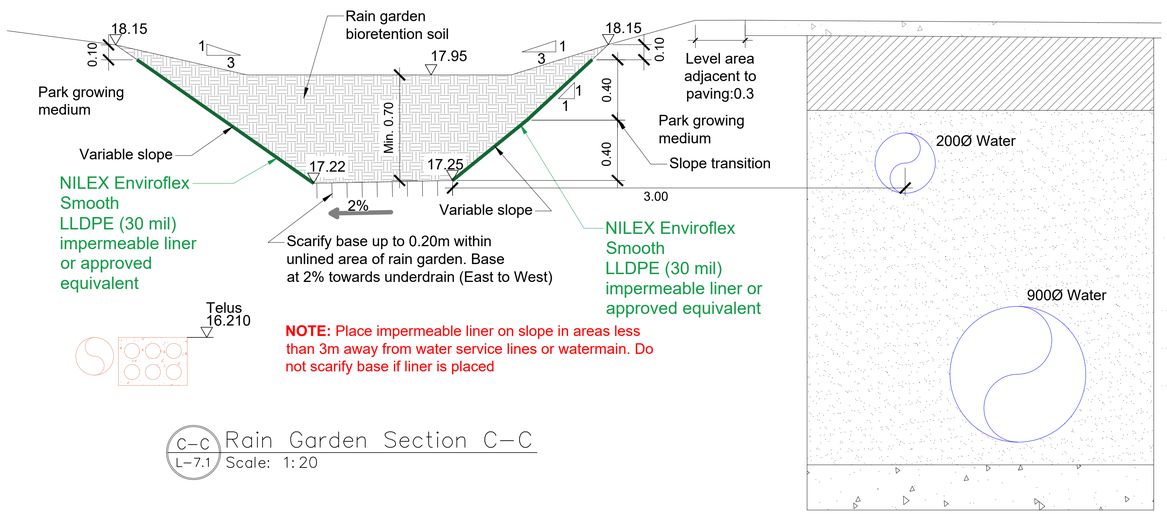
Excavation and Liner Offsets
Scale: 1:100



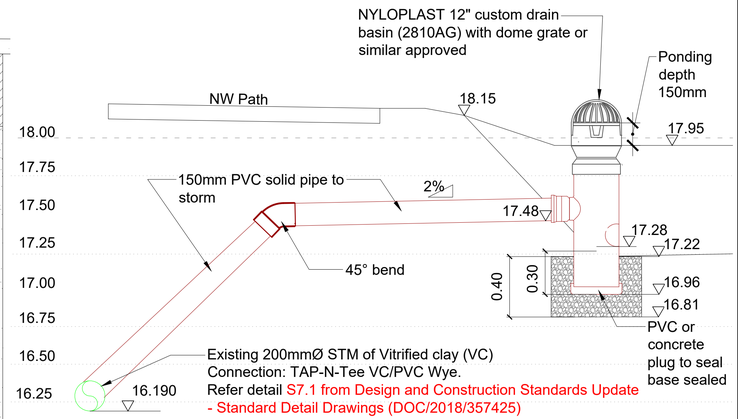
B–B L–7.1 Rain Garden Section B–B
Scale: 1:20



MONITORING WELL
Scale: 1:20



C–C L–7.1 Rain Garden Section C–C
Scale: 1:20



Connection Detail
Scale: 1:20

CITY OF VANCOUVER

APPROVALS	INITIALS	CONTACT
LANDSCAPE ARCHITECT		
PROJECT ENGINEER	Osvaldo Vega	604-829-9526
CONSTRUCTION COORDINATOR		

PROFESSIONAL ENGINEER — PROVINCE OF — O. M. VEGA — # 53366 — REGISTERED — ENGINEER
2020-08-21

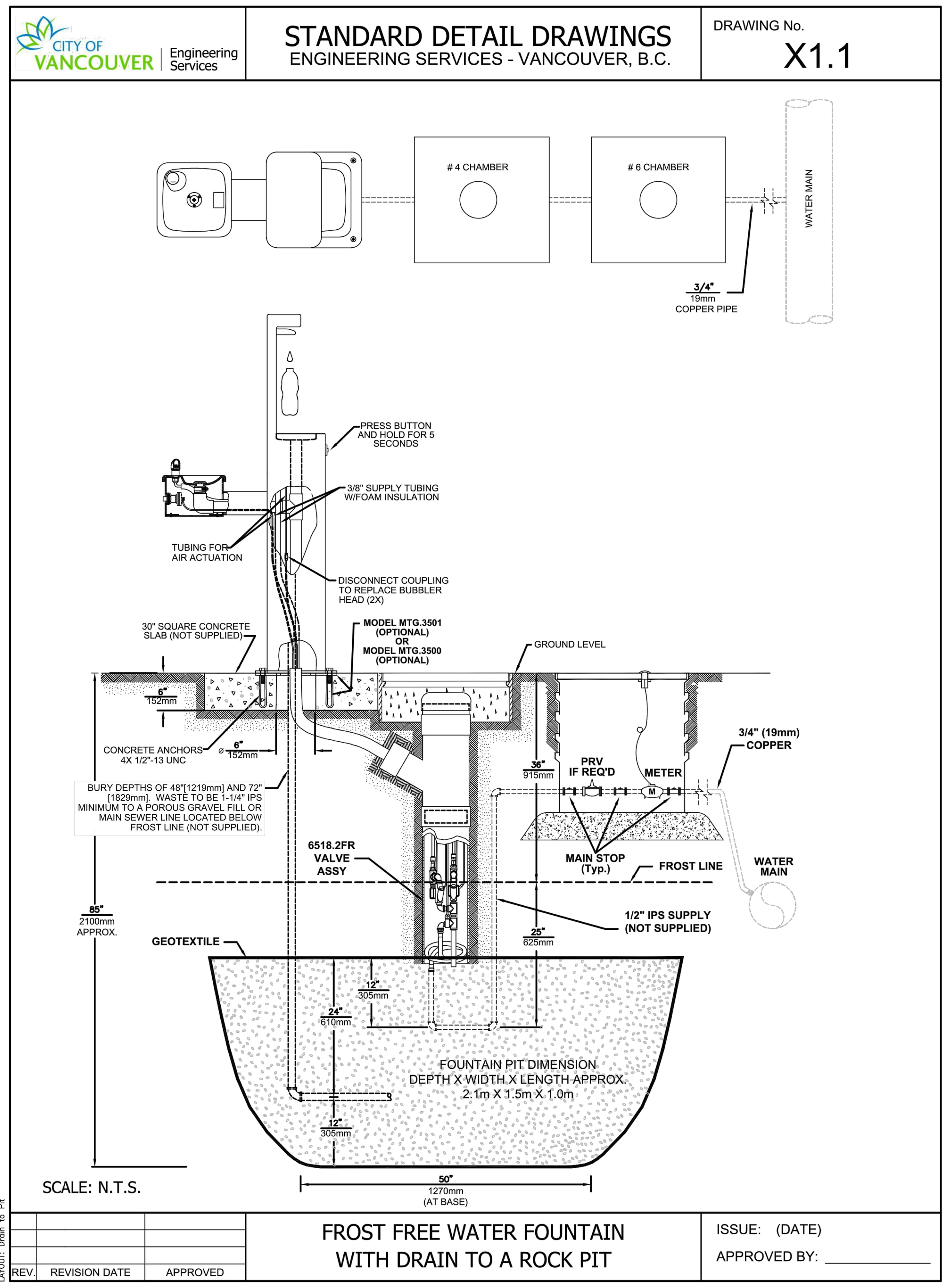
REVISIONS / DESCRIPTION	INITIALS
Rev. 4 Updates to growing medium, aggregates, and volume of growing medium	OV
ACCOUNT #:	
DIRECTORY: H:\GREEN INFRASTRUCTURE\13-8100-40 - Green Infrastructure Case Files\ENG - GI - Haro Street WM Upgrades\11 - Design\01-Gilford St Mini Park\Cad\	FILE NAME: ENG - GI - Gilford St Mini Park rev 4.dwg

ENGINEERING SERVICES – CITY OF VANCOUVER – TRANSPORTATION DESIGN

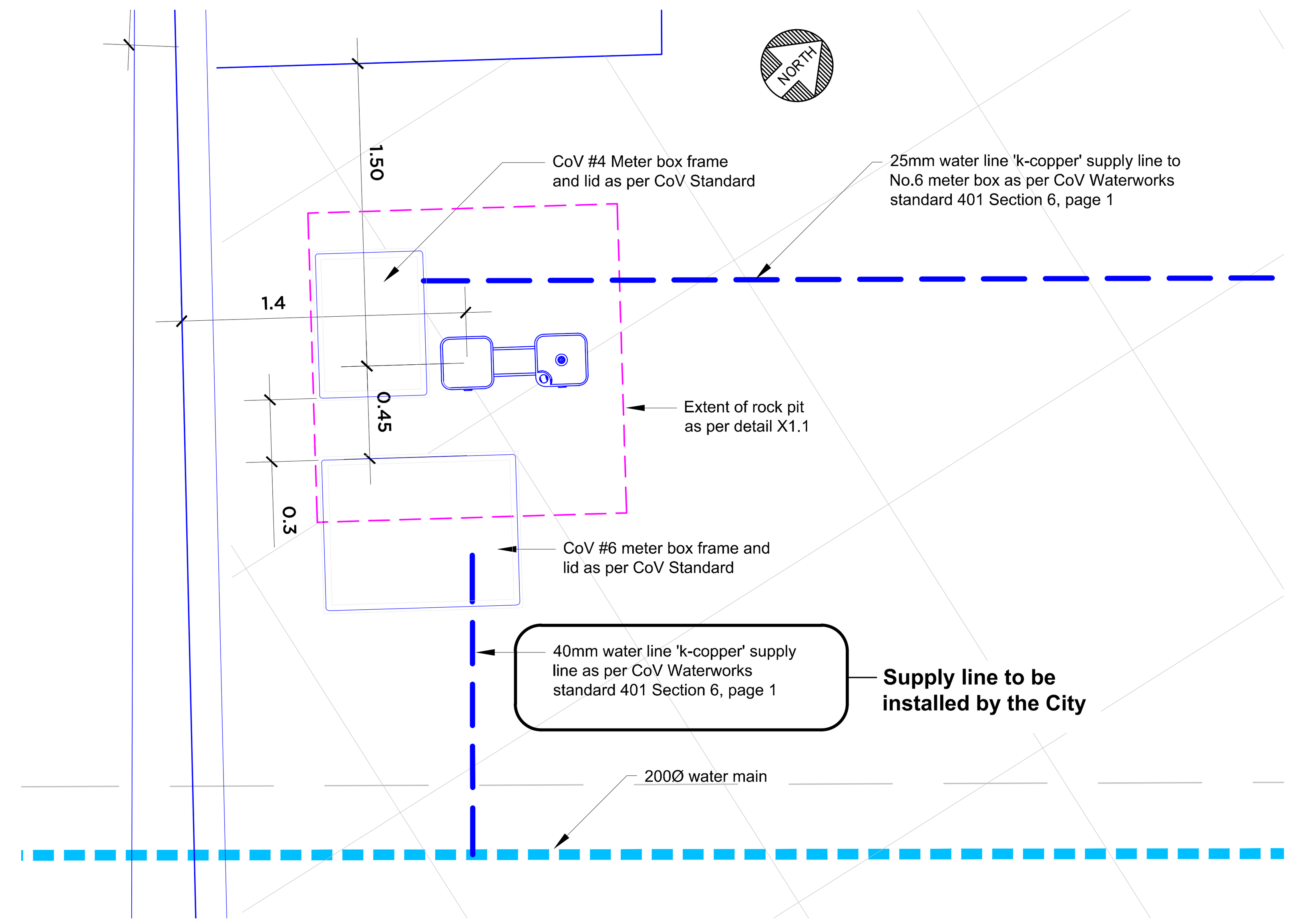
DESIGNED BY: OV/APL
DRAFTED BY: MJ/OV
CHECKED BY: RL

Haro St Transmission Main Replacement
Gilford Segment - Gilford St Mini Park
Green Infrastructure Rain Garden

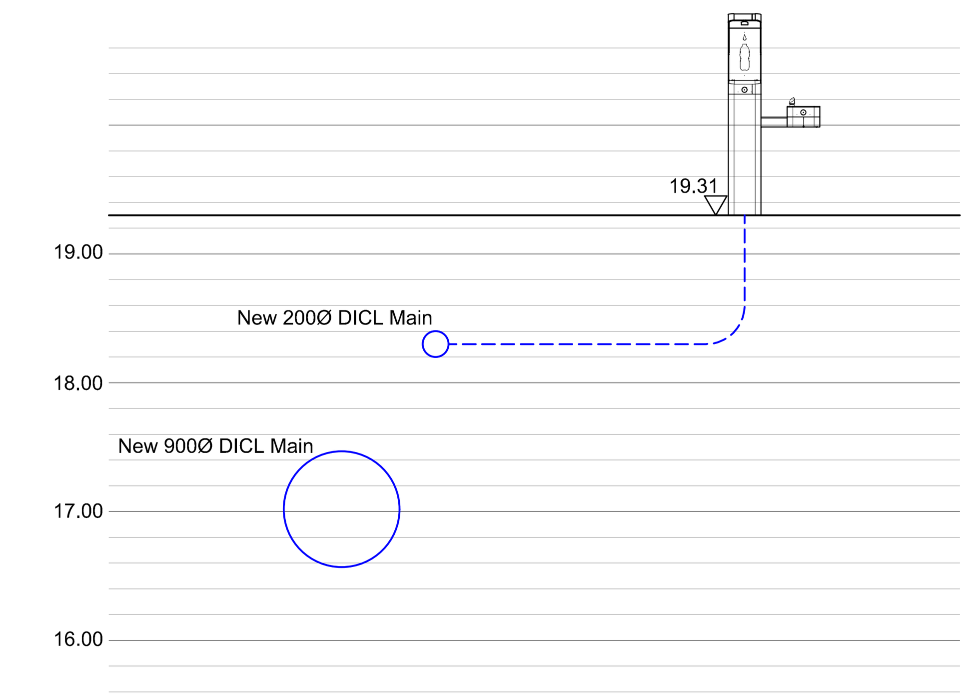
SCALE:	As Shown
DATE:	August 2020
DWG. NO.	2018-101-D-Zn2-L7.1
REV. NO.	4
SHEET:	12 OF 13



1 Drinking Water Fountain - Schematic
NTS



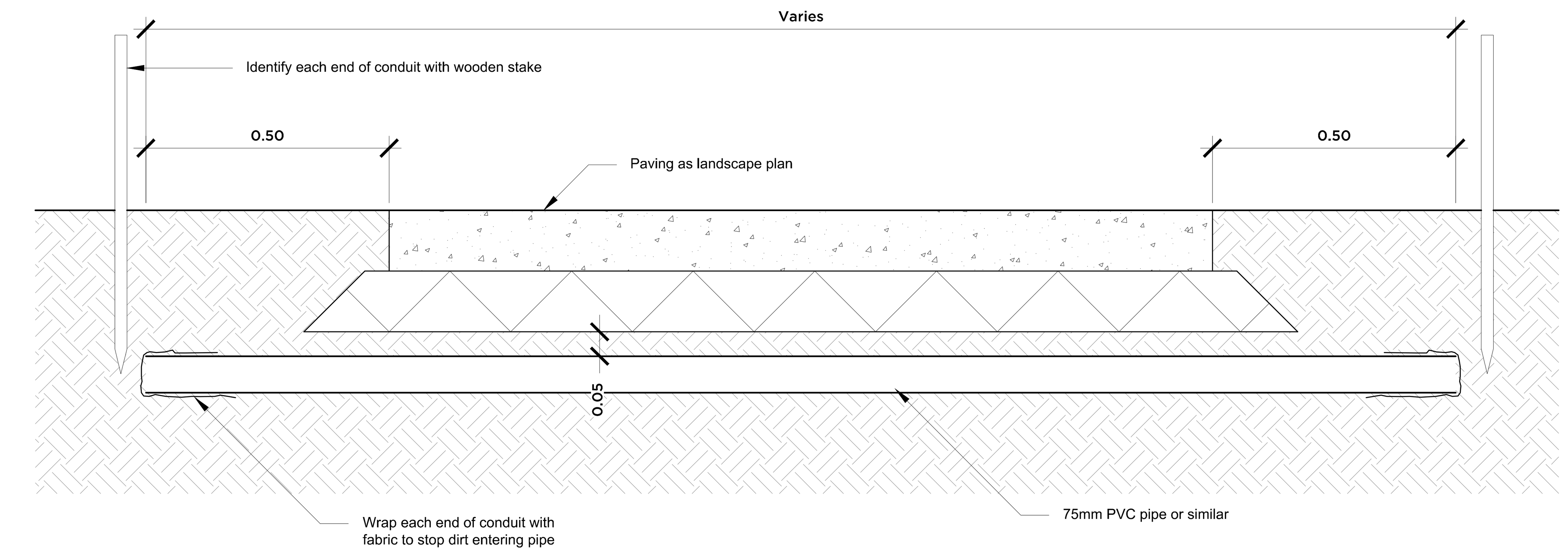
2 Drinking Water Fountain - Layout Plan
Scale 1:25



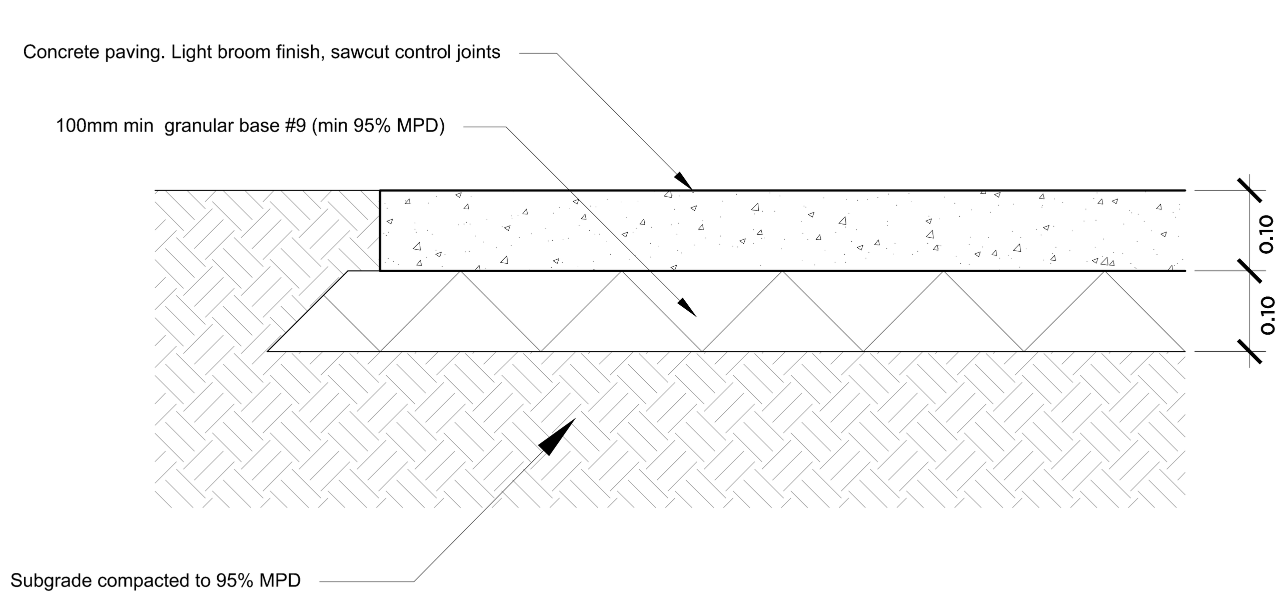
3 Drinking Water Fountain - Connections
Scale 1:50

GENERAL NOTES:

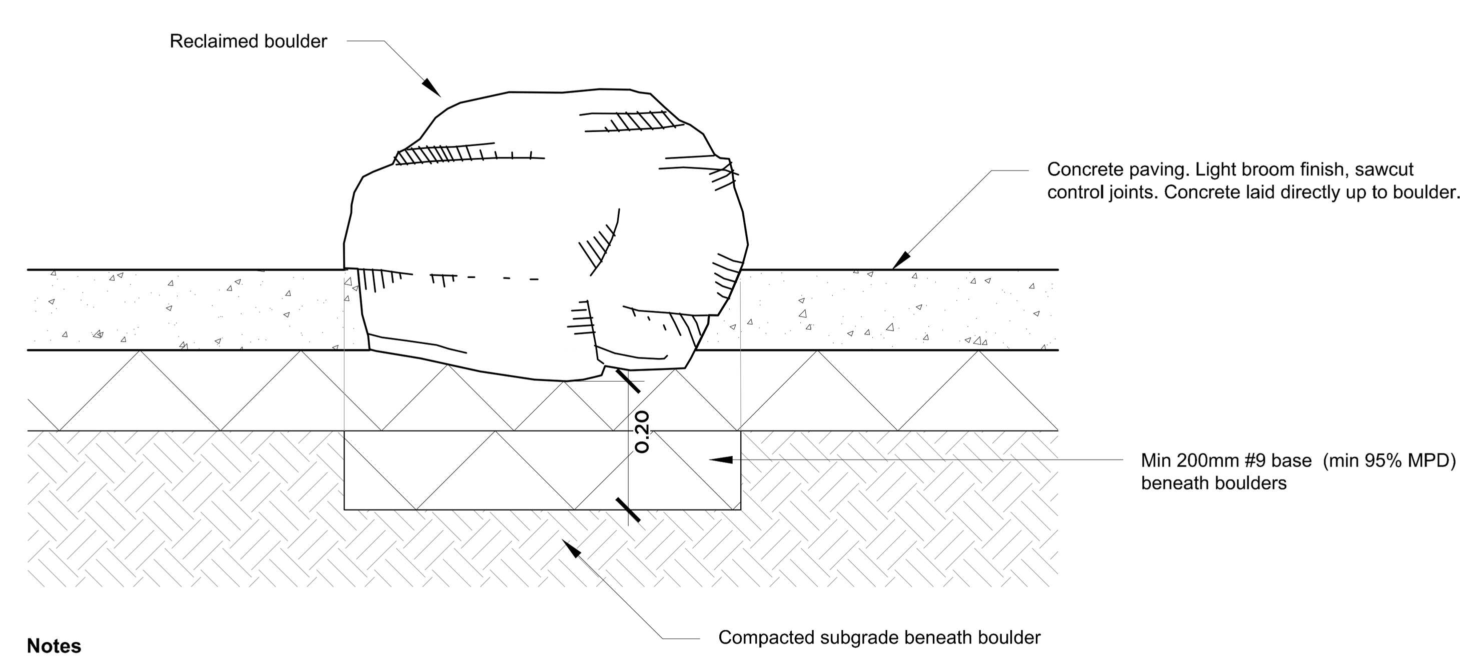
1. Installation of the drinking water fountain to be in accordance with the 'Engineering Requirements for the Installation of Public Drinking Fountains' published by the City of Vancouver last updated May 27, 2020.
2. Step 1. and Step 2. of the Requirements have been completed.



7 Conduit runs beneath paving
Scale 1:10

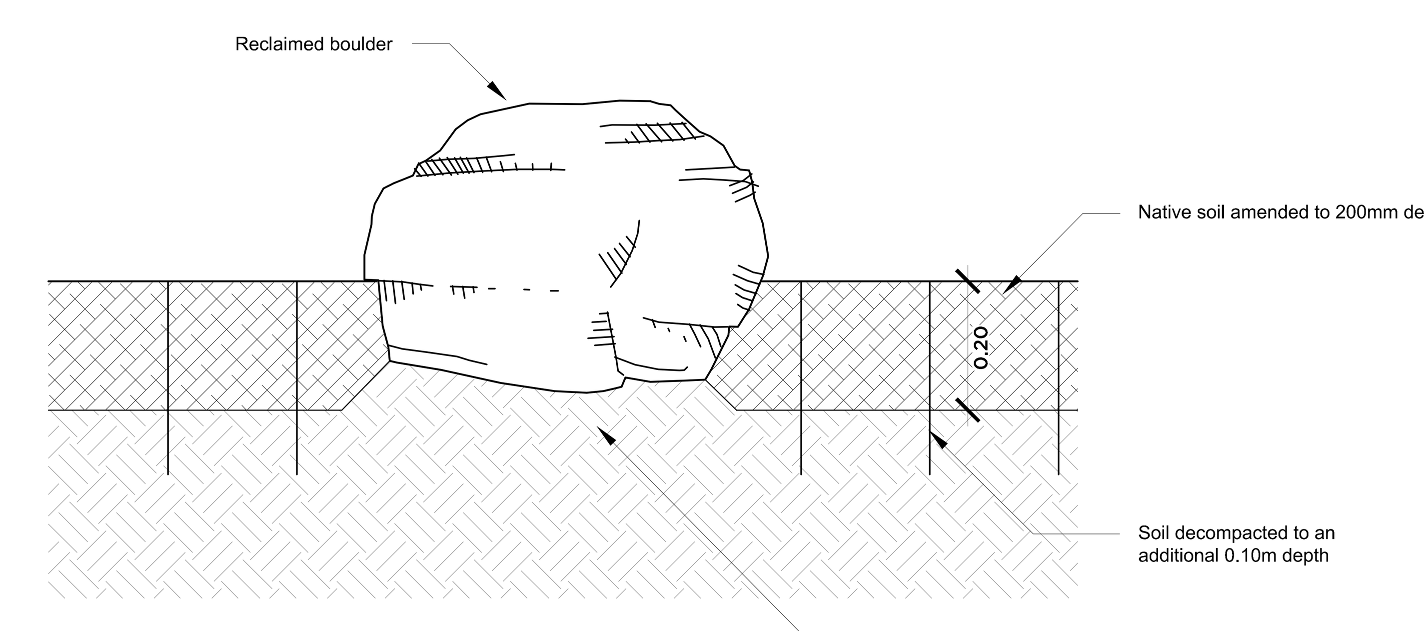


4 Concrete paving
Scale 1:10



Notes
1. Set boulders $\frac{1}{3}$ to $\frac{1}{2}$ dia. below grade
2. No cracked or broken edges shall be exposed above finish grade

5 Reclaimed boulder in paving
Scale 1:10



Notes
1. Set boulders $\frac{1}{3}$ to $\frac{1}{2}$ dia. below grade
2. No cracked or broken edges shall be exposed above finish grade

6 Reclaimed boulder in landscape
Scale 1:10

CITY OF VANCOUVER

APPROVALS	INITIALS	CONTACT
LANDSCAPE ARCHITECT		
PROJECT ENGINEER		
CONSTRUCTION COORDINATOR		

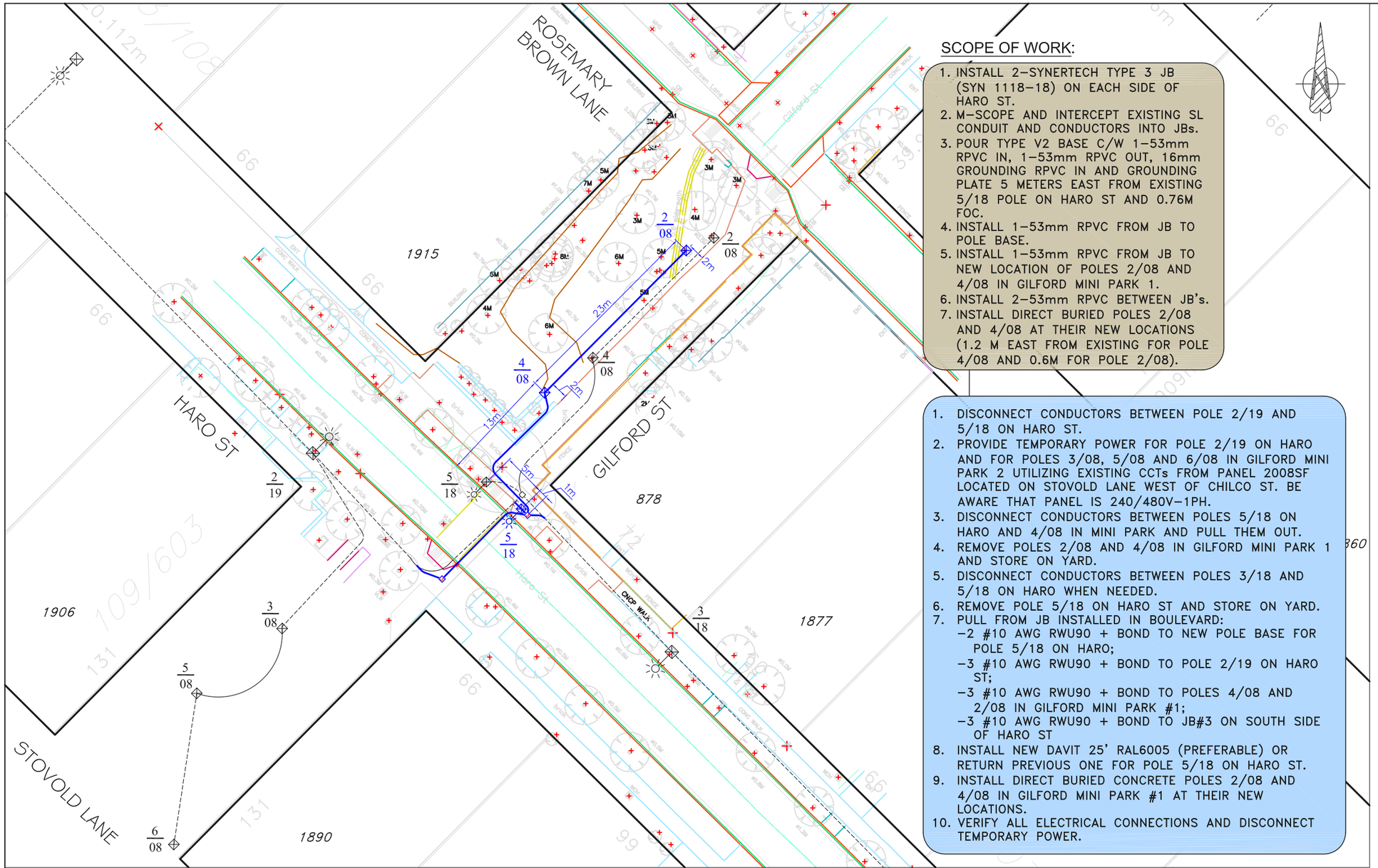
REVISIONS / DESCRIPTION	INITIALS
Rev 3 Pipe sizing to fountain modified 13 Feb 2020	APL
Rev 4 Drinking fountain - City work identified 28 Sept 2020	APL
ACCOUNT #:	
DIRECTORY: Y:\TRANSPORTATION\TRANSPORT_DRAFTING\PROJECTS\2018\2018-101\Landscape Design\2018-101 Gilford St Mini Park\	

ENGINEERING SERVICES – CITY OF VANCOUVER – TRANSPORTATION DESIGN

DESIGNED BY: APL
DRAFTED BY: APL
CHECKED BY: BM
FILE NAME: ENG - TDE - Gilford St Mini Park_External Contractor.dwg

Haro St Transmission Main Replacement
Gilford Segment - Gilford St Mini-Park
Details - Drinking Water Fountain and Paving

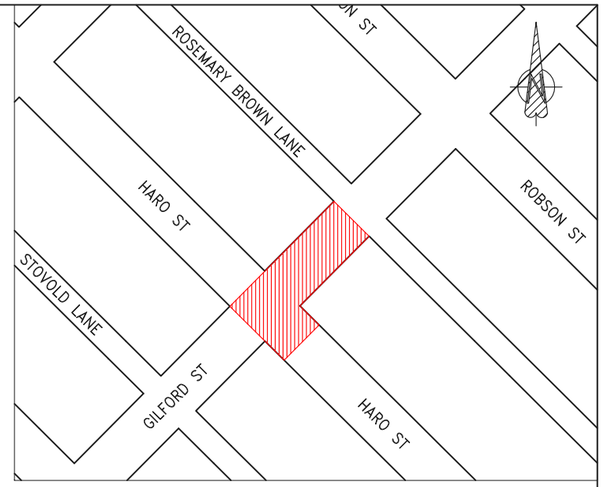
SCALE: 1:100
DATE: May 2019
DWG. NO. 2018-101-D-Zn2-L7.2
REV. N0. 4
SHEET: 13 OF 13



SCOPE OF WORK:

1. INSTALL 2–SYNERTECH TYPE 3 JB (SYN 1118–18) ON EACH SIDE OF HARO ST.
2. M–SCOPE AND INTERCEPT EXISTING SL CONDUIT AND CONDUCTORS INTO JBs.
3. POUR TYPE V2 BASE C/W 1–53mm RPVC IN, 1–53mm RPVC OUT, 16mm GROUNDING RPVC IN AND GROUNDING PLATE 5 METERS EAST FROM EXISTING 5/18 POLE ON HARO ST AND 0.76M FOC.
4. INSTALL 1–53mm RPVC FROM JB TO POLE BASE.
5. INSTALL 1–53mm RPVC FROM JB TO NEW LOCATION OF POLES 2/08 AND 4/08 IN GILFORD MINI PARK 1.
6. INSTALL 2–53mm RPVC BETWEEN JB's.
7. INSTALL DIRECT BURIED POLES 2/08 AND 4/08 AT THEIR NEW LOCATIONS (1.2 M EAST FROM EXISTING FOR POLE 4/08 AND 0.6M FOR POLE 2/08).

1. DISCONNECT CONDUCTORS BETWEEN POLE 2/19 AND 5/18 ON HARO ST.
2. PROVIDE TEMPORARY POWER FOR POLE 2/19 ON HARO AND FOR POLES 3/08, 5/08 AND 6/08 IN GILFORD MINI PARK 2 UTILIZING EXISTING CCTs FROM PANEL 2008SF LOCATED ON STOVOLD LANE WEST OF CHILCO ST. BE AWARE THAT PANEL IS 240/480V–1PH.
3. DISCONNECT CONDUCTORS BETWEEN POLES 5/18 ON HARO AND 4/08 IN MINI PARK AND PULL THEM OUT.
4. REMOVE POLES 2/08 AND 4/08 IN GILFORD MINI PARK 1 AND STORE ON YARD.
5. DISCONNECT CONDUCTORS BETWEEN POLES 3/18 AND 5/18 ON HARO WHEN NEEDED.
6. REMOVE POLE 5/18 ON HARO ST AND STORE ON YARD.
7. PULL FROM JB INSTALLED IN BOULEVARD:
   - –2 #10 AWG RWU90 + BOND TO NEW POLE BASE FOR POLE 5/18 ON HARO;
   - –3 #10 AWG RWU90 + BOND TO POLE 2/19 ON HARO ST;
   - –3 #10 AWG RWU90 + BOND TO POLES 4/08 AND 2/08 IN GILFORD MINI PARK #1;
   - –3 #10 AWG RWU90 + BOND TO JB#3 ON SOUTH SIDE OF HARO ST
8. INSTALL NEW DAVIT 25' RAL6005 (PREFERABLE) OR RETURN PREVIOUS ONE FOR POLE 5/18 ON HARO ST.
9. INSTALL DIRECT BURIED CONCRETE POLES 2/08 AND 4/08 IN GILFORD MINI PARK #1 AT THEIR NEW LOCATIONS.
10. VERIFY ALL ELECTRICAL CONNECTIONS AND DISCONNECT TEMPORARY POWER.



KEY MAP
SCALE: N.T.S.

LEGEND:

- PROPOSED 53mm (2") RPVC
- EXISTING CONDUITS
- PROPOSED STREET LIGHTING
- EXISTING STREET LIGHTING
- PROPOSED PEDESTRIAN LIGHTING
- EXISTING PEDESTRIAN LIGHTING
- 3 PROPOSED SYNERTECH TYPE 3 JB
- EXISTING JUNCTION BOX
- 3/5 POLE & BLOCK NUMBER

REFERENCE DRAWINGS:

- ELECTRICAL FACET: M6
- UTILITY DRAWING

–ELECTRICAL –CIVIL

FINAL DESIGN DRAWING
ISSUED FOR CONSTRUCTION
OCTOBER 8, 2019

PLAN LAYOUT
SCALE: 1:500

DISCLAIMER FOR UTILITY DATA:

THE ELECTRICAL BRANCH OF COV ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE FIELD INFORMATION ON THE DRAWING. ALL WORK CARRIED OUT IS DONE WHOLLY AT THE RISK OF THE PARTY UNDERTAKING THE WORK WHO AGREES, AS A CONDITION OF SUCH UNDERTAKING, TO RELEASE THE CITY OF VANCOUVER FROM ALL LIABILITY. LOCATION UTILITIES SHOULD ALWAYS BE CONFIRMED BY MANUAL DIGGING.

ATTENTION
VANCOUVER PARKS BOARD
257–8600 MUST BE CONTACTED
5 WORKING DAYS BEFORE
START OF CONSTRUCTION

CALL BC ONE BEFORE YOU DIG

OVERHEAD POWER LINE CONFLICTS
CONTRACTOR SHALL CONFIRM ON-SITE PRIOR TO CONSTRUCTION THAT POLES AND EQUIPMENT WILL MEET WORKSPACE BC CLEARANCE REQUIREMENTS FOR OVERHEAD PRIMARY AND SECONDARY LINES. IF ANY CONFLICTS OR DISCREPANCIES ARE IDENTIFIED, OPERATIONS TO CONTACT ELECTRICAL DESIGN PRIOR TO COMMENCING CONSTRUCTION

CITY OF VANCOUVER
HIGH VOLTAGE TRANSMISSION DUCT
BEFORE CROSSING OR CONSTRUCTING WITHIN 6 METERS OF DUCT CONTACT BC HYDRO TRANSMISSION

CITY OF VANCOUVER
* GAS PRESSURE OVER 100 P.S.I.
BEFORE CROSSING OR CONSTRUCTING WITHIN 2.0 METERS OF PIPELINE APPLY TO FORTIS BC GAS

CITY OF VANCOUVER
JAPANESE BEETLE REGULATED AREA
(Burrard Street to Clark Drive, 12th Ave to Waterfront)
MOVEMENT CERTIFICATE MUST BE OBTAINED FOR ALL SOIL MOVEMENT OUTSIDE OF THE REGULATED AREA.

ENGINEER OF RECORD SEAL

CITY OF VANCOUVER

NO.	DATE	REVISION	DWG	DESIGN	NO.	DATE	REVISION	DWG	DESIGN

ATTENTION
UNITS SHOWN ON THIS PLAN ARE IN METRES
BASED ON GEODETIC DATUM.
UTM Zone 10 NAD 83

ENGINEERING

CITY OF VANCOUVER - ENGINEERING SERVICES

ELECTRICAL DESIGN BRANCH	
DRAWN BY: VBP	DESIGN BY: AK
DRAWING CHECKED: AK	DESIGN CHECKED: HH
REFERENCES: 193022; JJF–1305	

HARO ST - 800 BLOCK
GUILDFORD MINI PARK
STREET LIGHTING DESIGN

SCALE:	1:500
DATE:	2019 AUGUST 14
DRAWING NUMBER:	S–1284
SHEET....1.. OF....1..	REVISION:.....

H:\STLIGHT\ACAD\Engineers_Designers\PROJECT FOLDERS REFERENCED IN CAD FILES\2019 – PROJECTS\Haro – Guildford Mini Park\S–1284_IFC 10/8/2019 11:57 AM

See attached.

CANADIAN FOOD INSPECTION AGENCY (CFIA) MOVEMENT CONTROL MEASURES FOR JAPANESE BEETLESMEASURES

Material requiring a CFIA-issued Movement Certificate:

- *All organic material within the Regulated Area in the top 30cm*
- *Organic material under hard surface (i.e. sidewalks, curbs and roadways), then this hard surface will also be considered as contaminated*
    - *If organic material can be completely removed from the hard surface, so it is clean, then this hard surface may be taken to City of Vancouver Kent Yard for recycling*

Operations within the Regulated area are encouraged to keep soil on site to be re-used or moved only within the Regulated Area – this movement does not require a movement certificate

For additional information:
City of Vancouver - www.vancouver.ca/japanesebeetle
Canadian Food Inspection Agency - http://inspection.gc.ca/plants/plant-pestsinvasive-species/insects/japanese-beetle/jbvancouver/eng/1525800137593/1525800137983

To apply for a Movement Certificate, send the information below to: BCPF.Japanese.Beetle@inspection.gc.ca

1. Organization/Company name of applicant
2. Complete address (street address, city, province, postal code) of the organization/company
3. Complete address (street address, city, province, postal code) of the construction site within the Regulated Area
4. Full name, phone number, email address of person to be in care and control of the movement of the regulated material (soil)
5. What type of regulated material are you going to be moving out of the regulated area: top 30cm of soil, soil that is 30cm or deeper OR from under asphalt/concrete, plants with soil, branches and plant debris with no soil.
6. Where are you moving the regulated material to? If the regulated material is the top 30cm of soil, you may currently only move it directly to the Vancouver Landfill.
7. End date of project, if known.

1.0 DEFINITIONS AND INTERPRETATION

1.1 Definitions

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

(a) "**City**" means the City of Vancouver;

(b) **"Closing Time"** has the meaning set out on the cover page of this ITT;

(c) **"Contract"** means a contract substantially in the form of Part D – Form Agreement, to be entered into between the City and a successful Tenderer;

(d) **"Contractor"** means a Tenderer, the Tender of which the City has accepted, and which Tenderer has consequently entered into a Contract;

(e) **"Drawings"** means the portion of the Tender Documents consisting of the graphic and pictorial representations of the Work or Work requirements;

(f) **"Engineer"** means the architect, engineer or other professional consultant who will act as the City's agent for the purpose of managing and administering a Contract, who may be an employee of the City or an independent consultant engaged by the City on its behalf;

(g) **"Form of Tender"** means the form of tender in Part C – Form of Tender to this ITT on which Tenderers are to complete their Tenders;

(h) "**GST**" means the tax payable and imposed pursuant to Part IX of the *Excise Tax Act* (Canada), as amended or replaced from time to time;

(i) **"Information and Privacy Legislation"** includes the *Freedom of Information and Protection of Privacy Act* (British Columbia) and the regulations thereunder;

(j) **"Losses"** means, in respect of any matter, all:

(i) direct and indirect; and

(ii) consequential,

claims, demands, proceedings, losses, damages, liabilities, deficiencies, costs and expenses (including without limitation, all legal and other professional fees and disbursements, interest, penalties and amounts paid in settlement, whether from a third person or otherwise);

(k) **"Notice of Award"** has the meaning set out in Part C – Form of Tender;

(l) **"Notice to Proceed"** has the meaning set out in Part C – Form of Tender;

(m) "**PST**" means the provincial sales tax payable and imposed pursuant to the *Provincial Sales Tax Act* (British Columbia), as amended or replaced from time to time;

(n) **"Specifications"** means the portion of the Tender Documents consisting of the written requirements and standards for products, systems, workmanship, quality, and the services necessary for the performance of the Work;

(o) **"Tender"** means a tender submitted to the City in response to this ITT, or as used in Part C – Form of Tender, a particular such entity;

(p) **"Tender Contract"** means the contract between the City and each Tenderer governing the ITT process;

(q) **"Tender Documents"** means the documents identified as such in Part A - Introduction;

(r) **"Tenderer"** means an entity eligible to participate in this ITT process;

(s) **"Tender Price"** means the amount stipulated by the Tenderer in the space provided therefor in the Form of Tender, including all applicable taxes, which price, for greater certainty, is the Tenderer's proposed Contract Price to complete all of the Work;

(t) **"Work"** means the total construction and related services required by the Tender Documents; and

(u) **"Work Site"** or **"Site"** means the area or areas on or about the City's property where the Work is to be carried out.

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

1.2 **Interpretation**

(a) In the Tender Documents, any reference to the masculine, the feminine or the neuter includes the others unless the context requires otherwise. Also, any reference to the singular includes the plural where appropriate.

(b) If there is a conflict between or among (i) the Specifications and Drawings and (ii) the other Tender Documents, the other Tender Documents shall prevail over the Specifications and Drawings.

(c) In these Tender Documents, the word "should" and the terms "is asked to" and "are asked to" are used to denote actions or Tender inclusions that, while not mandatory, are strongly recommended. In contrast, the terms "will", "shall", "must", "is to", "are to", "is required to" and "are required to" are used to denote mandatory requirements of the ITT. If a Tenderer is uncertain as to whether or not a particular action or Tender inclusion is mandatory, the Tenderer should submit an inquiry to the Contact Person.

2.0 SUBMISSION INSTRUCTIONS

2.1 Each Tenderer must complete its Tender on the Form of Tender and submit its Tender in accordance with the instructions set forth on the cover page of the ITT and elsewhere herein.

2.2 Any Tender received after the Closing Time may be returned unopened to the Tenderer.

2.3 Faxed Tenders and/or other documents will not be accepted.

2.4 Each Tender must be signed by an authorized signatory or authorized signatories of the Tenderer (as necessary for due execution on behalf of the Tenderer). Each Tender by a company or partnership should specify the full legal name of the legal entity submitting the Tender.

2.5 All blank spaces in the Form of Tender should be filled in and all schedules completed. Any failure by a Tenderer to complete the Form of Tender may result in preference being given to competing Tenderers. All prices and notations should be legibly written in a non-erasable medium. Erasures, interlineations or other corrections should be initialled by an authorized signatory of the Tenderer.

2.6 Subject to any alternatives or options in respect of which the City requests pricing or other information in a Schedule to the Form of Tender, Tenders are to be all inclusive and without qualification or condition.

2.7 The City may, at any time and for any reason, extend the Closing Time by means of a written amendment published on the City's website, as set out in Part A - Introduction.

2.8 A Tenderer that has already submitted a Tender may amend its Tender prior to the Closing Time: a) by submitting an amendment identifying a plus or minus variance to the Tenderer's Tender Price; or b) by sending in a completely new Tender, clearly indicating it replaces the previously submitted Tender. Any such revision must clearly identify the ITT number and the Closing Time. A Tender revision submitted as aforesaid shall effectively amend the Tender and the City shall only review and evaluate the Tender as amended.

2.9 The City will not be responsible for any cost incurred by any Tenderer in preparing a Tender.

3.0 BONDS

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

Bid Bond:	CCDC 220 (latest)
Performance Bond:	CCDC 221 (latest)
Labour and Material Payment Bond:	CCDC 222 (latest)

3.2 A bid bond must be submitted in an electronic or digital format and must meet the following criteria:

(a) The version submitted by the Tenderer must be verifiable by the City with respect to the totality and wholeness of the bond form, including: the content; all digital signatures; all digital seals; with the surety company, or an approved verification service provider of the surety company.

(b) The version submitted must be viewable, printable and storable in standard electronic file formats acceptable to the City, and in a single file. Allowable formats include pdf.

(c) The verification may be conducted by the City immediately or at any time during the life of the bond and at the discretion of the City with no requirement for passwords or fees.

(d) The results of the verification must provide a clear, immediate and printable indication of pass or fail regarding Section 3.2(a).

3.3 Bonds failing the verification process will NOT be considered to be valid. Bonds passing the verification process will be treated as original and authentic.

3.4 Each Tender must be accompanied by a "Consent of Surety", substantially in the form provided as a schedule to the Form of Tender, duly completed by a surety company authorized and licensed to carry on business in British Columbia.

3.5 The bid bonds of unsuccessful Tenderers will be returned to them upon request at any time after the Contract is awarded. The bid bond of the Tenderer to whom the award is made will be returned upon request of the Tenderer following: execution of the Contract; delivery of a performance bond for 50% of the Tender Price (or the aggregate tendered price for the subset(s) of the Work in respect of which a Notice of Award has been given) and a labour and material payment bond for 50% of such price; commencement of the Work; and compliance with any other conditions set out in the Form of Tender. The cost of all bond premiums must be included in the Tender Price.

3.6 All bonds must be issued by a surety company authorized and licensed to carry on business in British Columbia.

4.0 TENDER PRICE

4.1 Subject to any adjustment for changes to the Work, which is approved by the City in accordance with the Tender Documents or Contract Documents, the Tender Price shall be the maximum compensation owing to the Contractor for the Work and the Contractor's compensation shall cover and include all profit and all costs of supervision, labour, material, equipment, overhead, financing and all other costs and expenses whatsoever incurred in performing the Work.

4.2 If unit prices or other price breakdowns are requested in a schedule to the Form of Tender, such information **must** be included in the Tender. Furthermore, if such unit prices or other price breakdowns are requested in a schedule to the Form of Tender, such amounts may be used to compute interim progress payments and will be reviewed by the City in its evaluation of Tenders; therefore Tenderers should ensure that such amounts accurately reflect their costs for each item. A Tenderer may be required to justify any submitted unit price or other price breakdown.

4.3 If an itemized breakdown of the Tender Price is requested in a schedule to the Form of Tender, the City may delete any items in order to meet any budget limitation and award a Contract for only the remaining items to a Tenderer who is agreeable thereto.

5.0 ACCEPTANCE OF TENDERS

5.1 Despite anything to the contrary contained in the Tender Documents:

(a) Tenderers are notified that the lowest or any Tender need not necessarily be accepted and the City reserves the right to reject any and all Tenders at any time, or cancel the ITT process, without further explanation or to accept any Tender that is considered advantageous to the City.

(b) Acceptance of any offer made within a Tender is contingent on funds being approved and a contract award being made by, or pursuant to authority delegated by, Vancouver City Council and the compliance of the Tenderer with the conditions required to be satisfied upon receipt of a Notice of Award.

(c) Tenders which fail to conform to the Tender Documents may or may not be disqualified or rejected. The City may or may not waive any non-compliance with the Tender Documents, including any material non-compliance, irregularity or anomaly, and including any non-compliance as to the timing of delivery of anything required by the Tender Documents, and may at its sole discretion elect to retain for consideration Tenders which are non-conforming because they do not contain the content or form required by the Tender Documents or because they have not complied with the process for submission set out in this ITT.

(d) Where the City is of the view, in its sole discretion, that there is an ambiguity or other discrepancy which cannot be discerned or resolved from examining the contents of a Tender, then whether or not such an ambiguity or discrepancy actually exists on the face of the Tender, the City may, prior to any Contract award, solicit clarification from the Tenderer or accept clarification from the Tenderer on any aspect of the Tender. Such clarification may include the acceptance of any further documents or information which will then form part of the Tender. The soliciting or accepting of such clarification (whether or not solicited) by the City will be without any duty or obligation of the City to advise any other Tenderers or to allow them to vary their Tender Prices as a result of the acceptance of clarification from any one or more Tenderers and the City will have no liability to any Tenderer as a result of such acceptance of clarification.

(e) The award of any Contract will be based on an evaluation of the Tenders by the City to determine which, in the City's opinion, offer the best overall value to the City. The City expects to place the greatest emphasis on price; however, the City may take into account other factors affecting value, including those concerning quality, service or sustainability, or Tenderers' past work, reputations or experience. The City may also focus, where relevant, on the overall net impact of a Tender (or an offer therein) on the finances of the City (including both capital and operating costs). Therefore, the City may accept a Tender other than the lowest Tender.

(f) If the City determines that all Tender Prices are too high, all Tenders may be rejected.

(g) The City may, prior to any Contract award, agree, with the Tenderer considered to provide best value or any one or more Tenderers, to certain changes to the scope of the Work or certain changes to Contract conditions, in each case without having any duty or obligation to advise any other Tenderers or to allow them to vary their Tender Prices as a result of such changes, and the City will have no liability to any other Tenderer as a result of such changes. However, each Tender must be a tender in

respect of the Work set forth herein, to complete that Work, under an agreement in the form of the Form of Agreement included as Part D of the ITT, and not propose variations thereto.

(h) Each Tenderer acknowledges and agrees that the City will not be responsible for Losses incurred by the Tenderer as a result of or arising out of submitting a Tender, or due to the City's acceptance or non-acceptance of its Tender, or any part thereof, or any breach by the City of the Tender Contract between the City and the Tenderer, or arising out of any Contract award not being made in accordance with the express or implied terms of the Tender Documents.

(i) The City may award a Contract on the basis of policies and preferences not stated in the Tender Documents or otherwise than as stated in the Tender Documents.

(j) Prior to any Contract award, a Tenderer may be required to demonstrate financial stability. Should the City so request, a Tenderer may be required to provide annual financial reports or a set of financial statements prepared by an accountant.

(k) City guidelines or policies that may be applicable to the ITT will not give rise to legal rights on the part of any Tenderer, Contractor, subcontractor, supplier, or other person as against the City and will in no case create any liability on the part of the City. For certainty, the City's Procurement Policy, as amended or replaced from time to time, is now agreed to be an internal guideline document and creates no legal rights or obligations with respect to this ITT.

(l) The City may reject any Tender by a Tenderer that has engaged in collusion with another Tenderer or otherwise attempted to influence the outcome of the ITT other than through the submission of its Tender.

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

6.0 AWARD OF CONTRACT

6.1 Award of a Contract will be subject to approval by, or pursuant to authority delegated by, Vancouver City Council and the Tenderer's compliance with the conditions required to be met upon receipt of the Notice of Award.

6.2 Any successful Tenderer will become a Contractor and will be required to sign a Contract with the City, subject to any amendments approved by the City in writing.

7.0 EXAMINATION OF TENDER DOCUMENTS

7.1 Each Tenderer should examine the Tender Documents and must also satisfy itself of the extent of the Work. Each Tenderer must make its own estimate of the facilities and difficulties attending the performance and the completion of the Work.

7.2 No allowance will be made on behalf of a Contractor for any error, omission or negligence on the Contractor's part or for non-compliance with the requirements of the foregoing clause 7.1.

8.0 SITE EXAMINATION/PRE-SUBMISSION DUE DILIGENCE BY TENDERER

8.1 Tenderers should make a careful examination of the Work Site and investigate and satisfy themselves at their own risk and expense as to all matters relating to the nature and extent of the Work, the means of access to the Work Site, the extent of required coordination with public use of adjacent areas, and any and all matters which are referred to in the Specifications and Drawings and other Tender Documents, or which are necessary for the full and proper completion of any Work or are required by the conditions under which it must be performed. No allowance will be made subsequently for any error, negligence, interpretation, or misinterpretation on a Contractor's part.

8.2 The City and the Engineer do not make any representations or warranties concerning the completeness or accuracy of Work Site and geotechnical information (if any) provided in or with the Tender Documents, and each Tenderer must evaluate such information as part of its overall assessment of actual Work Site conditions.

8.3 If any Tenderer wishes to evaluate any Work Site conditions, and, for that purpose, requires access or documents from the City beyond the access and documents already provided for in this ITT, the City encourages the Tenderer to submit a written request to the City as far in advance of the Closing Time as is possible. The City will then consider whether or not to facilitate the request. In response to such a request, the City may elect to, itself, undertake a particular study and distribute the results to all Tenderers.

9.0 INTERPRETATION AND CLARIFICATIONS

9.1 If any Tenderer is in doubt as to the correct interpretation of any part of the Specifications, Drawings, or other Tender Documents, the Tenderer should request an interpretation of the same from the City by the time stated in Part A - Introduction, Section 6.3. In the absence of such a request, the Tenderer's Tender will be presumed to be based upon the interpretation that may be subsequently given in accordance with the Contract Documents, after award of a Contract.

9.2 Prior to the Closing Time, requests for clarification of the Specifications, Drawings, or other Tender Documents may be answered in writing by the City and sent to all prospective Tenderers who have submitted a Response Notification Form on or before the indicated deadline. The City is not responsible for any other explanations or interpretations of the Specifications, Drawings or other Tender Documents.

10.0 PRODUCT APPROVAL

10.1 Wherever any material, machinery, equipment or fixture (any "**Product**") is specified or shown in the Tender Documents by reference to a proprietary item, product or model number, catalogue number, manufacturer or trade name or similar reference, each Tenderer obligates

itself to submit its Tender and, if applicable, accept award of a Contract based upon the use of such Product. Use of any such reference in the Tender Documents is intended to establish the measure of quality which the City (or its Engineer) has determined to be requisite and necessary for the Work. Where two or more Products are shown or specified, the Contractor has the option of which to use.

10.2 For approval of Products other than those specified, a Tenderer should submit a request in writing to the City at least five business days prior to the Closing Time. Requests must clearly define and describe the Product for which approval is requested. Requests should be accompanied by manufacturer's literature, specifications, drawings, cuts, performance data or other information necessary to completely describe the items. Approval by the City will only be in the form of an addendum to the Specifications issued by the City.

10.3 Approvals of Products, as noted in clause 10.2 above, shall only be deemed effective insofar as the Products conform to the Specifications.

11.0 INSURANCE

11.1 Each Tenderer should ensure that it can maintain the insurance described in the Form of Agreement (Part D).

11.2 The Tenderer should complete and submit the "Certificate of Existing Insurance" attached as a Schedule to the Form of Tender, together with the "Undertaking of Insurance" attached as a Schedule to the Form of Tender.

11.3 Following Contract award, a successful Tenderer will be required to complete a "Certificate of Insurance" for the Work, a copy of which is attached as a schedule to the Form of Tender.

12.0 WORKSAFEBC

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

13.0 LABOUR RATES AND EQUIPMENT

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

14.0 LISTS OF SUBCONTRACTORS AND SUPPLIERS

14.1 Tenderers should provide, if requested in a schedule to the Form of Tender, lists of proposed subcontractors and suppliers, specifying the name and address of, and the portion of the Work to be completed by, or the equipment or materials to be supplied by, each proposed subcontractor or supplier.

14.2 The City reserves the right to object to any of the proposed subcontractors or suppliers listed in a Tender. If the City objects to a listed subcontractor or supplier, then the City will permit a Tenderer to propose a substitute subcontractor or supplier acceptable to the City. A Tenderer will not be required to make such a substitution and, if the City objects to a listed subcontractor or supplier, the Tenderer may, rather than propose a substitute subcontractor or

supplier, consider its Tender rejected by the City and, by written notice, withdraw its tender. The City shall, in that event, return the Tenderer's bid security.

15.0 TAXES AND FEES

15.1 The successful Tenderer will be required to obtain and pay for any applicable municipal, provincial and federal permits and licences necessary for the proper completion of the Work. The City will not be liable in any manner for the same, and the successful Tenderer agrees to indemnify and save the City harmless from and against all claims and Losses in relation to obtaining and paying for any applicable municipal, provincial and federal permits and licences necessary for the proper completion of the Work.

15.2 Each Tenderer's Tender Price (and each other price offered by the Tenderer in its Tender, if applicable) must, unless otherwise expressly stated, be inclusive of all applicable municipal, provincial, federal and other taxes, and all customs and excise duties and other assessments and charges, including sales taxes assessed upon the sale of goods and services to the City under the Contract, and the successful Tenderer agrees to indemnify and save the City harmless from and against all claims which shall be made with respect thereto.

16.0 NON-RESIDENT WITHHOLDING TAX

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

17.0 NO CLAIM AGAINST THE CITY

17.1 The Tenderer acknowledges and agrees that the City will not be responsible for any Losses incurred by the Tenderer, including, without limiting the generality of the foregoing, any Losses incurred by the Tenderer directly or indirectly caused by any act or omission of the City or breach of any agreement or duty by the City, express or implied, and by submitting a Tender each Tenderer shall be deemed to have agreed that it has no claim whatsoever.

17.2 The Tenderer now indemnifies and will protect and save the City and any of its employees, advisors or representatives (including the Engineer) harmless from and against all Losses, in respect of any claim or threatened claim by any of its subcontractors, or materials or equipment suppliers alleging or pleading:

(a) a breach of the Tender Contract by the City or any of its employees, advisors or representatives (including the Engineer);

(b) an unintentional tort, of the City or any of its employees, advisors or representatives (including the Engineer), occurring in the course of conducting this ITT; or

(c) liability on any other basis related to the ITT or the Tender Contract.

18.0 DISPUTE RESOLUTION

18.1 Any dispute relating in any manner to this ITT, except only disputes arising between the City and any Tenderer to whom the City has made an award of a Contract, which arise under such Contract, will be resolved by arbitration in accordance with the *Commercial Arbitration Act* (British Columbia), amended as follows:

(a) The arbitrator will be selected by the City's Director – Supply Chain Management;

(b) Sections 17.1 and 17.2 above will:

(i) bind the arbitrator, the Tenderer and the City; and

(ii) survive any and all awards made by the arbitrator; and

(c) The Tenderer will bear all costs of the arbitration.

19.0 CONFIDENTIALITY AND PRIVACY

19.1 Each Tender, once submitted to the City, will be held in accordance with the City's role as a public body required under Information and Privacy Legislation to protect or disclose certain types of records according to certain statutory rules. Each Tender, upon submission to the City, will be received and held in confidence by the City, unless and to the extent that it is or must be disclosed pursuant to Information and Privacy Legislation or other applicable legal requirements, and except that the City may publicly disclose information about or from Tenders, including without limitation names and prices, in the course of publicly reporting to the Vancouver City Council about the ITT.

19.2 If unsuccessful, a Tenderer, at the City's request, shall destroy or return all copies and originals (in any format or medium) of the Tender Documents.

20.0 RELEASE OF INFORMATION RESTRICTED

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

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

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

Name of Tenderer Initials of Signing Officer

1.0 TENDER PRICE AND SCHEDULE

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

ITT NO. PS20201114

The Tender Price (including all costs, taxes and fees)(as per Schedule A), is

_____ dollars

and _____ cents ($_____)

The Tender Price *includes* **all PST and GST**.

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

(a) Work will begin by **March 29, 2021**, subject to the City issuing a Notice to Proceed.

(b) Substantial performance of the Work will occur by **July 20, 2021**.

(c) Total performance of the Work will occur by **August 20, 2021**.

2.0 ELECTRONIC PAYMENTS ACKNOWLEDGEMENT

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

3.0 IRREVOCABILITY; NOTICE OF AWARD

The Tenderer agrees that this Tender will be irrevocable and open for acceptance by the City for a period of ninety (90) calendar days commencing on the Closing Time, even if the Tender of another Tenderer is accepted by the City. If within this period the City delivers a written notice by which the City accepts the Tender (a "**Notice of Award**"), the Tenderer will, within fifteen (15) Working Days of the receipt of the Notice of Award, deliver to the City:

(a) a performance bond and a labour and material payment bond, each in the amount of fifty percent (50%) of the Tender Price, issued by a surety licensed to carry on the business of suretyship in the province of British Columbia, and in a form acceptable to the City;

Name of Tenderer _____ Initials of Signing Officer(s)

(b) a detailed construction schedule consistent with the preliminary construction schedule included in this Tender, which indicates the timing of the major activities of the relevant Work and provides sufficient detail of the critical events and their inter-relationship to demonstrate such Work will be performed by the relevant completion date stated in this Tender;

(c) a detailed traffic management plan addressing vehicular and pedestrian movement, safety and access with specific detailing on methods, signage and materials used to maintain Work Site operations and access to staff and public users of the Work Site to specifically note the following;

• all pedestrian facilities should be reopened after work hours

• Haro St is a bicycle route. Bicycles must be retained on Haro, or a detour established.

(d) a detailed Work Site-specific safety and health plan addressing as a high-level overview the health and safety issues including, but not limited to hazards, mitigation measures, site orientations, safety meetings, first aid attendant requirements, and training requirements and record keeping as well as include their company policy/procedures related to their COVID-19 safety planning;

(e) a WorkSafeBC number and a "clearance letter" confirming that the Tenderer is in WorkSafeBC compliance;

(f) a valid City of Vancouver business licence;

(g) banking details to support payments by Electronic Funds Transfer (EFT); and

(h) a completed and signed Certificate of Insurance (in the form attached as a schedule to this Form of Tender), including a record of auto liability insurance policies indicating that all of the insurance coverage required by the Contract is in place.

(i) a completed Contractor's Pre-Contract Hazard Assessment Form; and

(j) a completed and signed Prime Contractor Agreement.

4.0 NOTICE TO PROCEED

The Tenderer agrees that upon the City's receipt and acceptance (in the City's discretion) of the required submissions listed above, the Tenderer will, within five (5) Working Days, execute and return to the City the Contract and the other Contract Documents requiring execution (in each case, as prepared by the City for execution) and, upon the City's receipt and acceptance thereof, the City may deliver to the Tenderer a "Notice to Proceed", and the Tenderer will:

(a) commence the relevant Work within five (5) Working Days of the receipt of the Notice to Proceed or such longer time as may be otherwise specified in the Notice to Proceed; and

(b) issue, post, and copy the City on the "Notice of Project" as and when required under section 20.2 of the *Occupational Health & Safety Regulation* (BC Regulation 296/97).

5.0 CONDITIONS

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

(i) the face value of the bid security; and

(ii) the amount by which the Tender Price is less than the amount for which the City contracts with another party to perform the Work.

(b) The lowest or any submitted tender will not necessarily be accepted. The City reserves the right to reject this Tender at any time without further explanation or to accept any Tender considered advantageous to the City.

(c) The schedules attached to this Form of Tender form an integral part of the same.

6.0 ADDENDA, AMENDMENTS AND QUESTIONS AND ANSWERS

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

Addendum No.
Amendment No.
Questions and Answers No.

Name of Tenderer Initials of Signing Officer(s)

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

7.0 CERTIFICATION

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

8.0 LABOUR

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

9.0 CONTRACT TERMS IN THE ITT

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

SIGNED on behalf of the Tenderer this _____ day of _____20____ by the duly authorized signatory or signatories of the Tenderer:

Per:_____

Name and Title:_____

Per:_____

Name and Title:_____

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

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

_____
Witness signature

_____
Witness name

_____
Witness address

Name of Tenderer Initials of Signing Officer(s)

SCHEDULE "A"

SCHEDULE OF QUANTITIES AND PRICES

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

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

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

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

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

Item	Description	Qty	Unit	Unit Rate	Total
1.0	Mobilization/Demolition				
1.1	Site Fencing	80	l.m.	$	$
1.2	Tree protection fencing	55	l.m.	$	$
1.3	Concrete retaining wall removal	13	l.m.	$	$
1.4	Paving removal	121	sq.m.	$	$
1.5	Curb removal	14	l.m.	$	$
1.6	Soil removal	160	cu.m.	$	$
	TOTAL MOBILIZATION/DEMOLITION (LUMP SUM PRICE)				
2.0	Site Preparation				
2.1	Rough grading	220	sq.m.	$	$

Name of Tenderer Initials of Signing Officer

2.2	Growing medium: 150mm depth	55	sq.m.	$	$
2.3	Growing medium: 300mm depth	240	sq.m.	$	$
2.4	Growing medium: 450mm depth	100	sq.m.	$	$
2.5	Fine grading	435	sq.m.	$	$
2.6	Tree pits	3	ea.	$	$
				TOTAL SITE PREPARATION (LUMP SUM PRICE)	
3.0	Construction				
3.1	Lighting	1	LS	$	$
3.2	GI rain garden	1	LS	$	$
3.3	Install reclaimed boulders	21	ea.	$	$
3.4	Install drinking water fountain	1	ea.	$	$
3.5	Concrete Sidewalk	365	sq.m	$	$
3.6	Reinstate brick paving	5	sq.m	$	$
3.7	Curb and gutter	37	l.m.	$	$
3.8	Irrigation (design plan and installation)	1	LS	$	$
3.9	Tree planting	3	ea.	$	$

Name of Tenderer Initials of Signing Officer

3.10	Shrub planting	190	sq.m	$	$
3.11	Grass sod	279	sq.m	$	$
				TOTAL CONSTRUCTION (LUMP SUM PRICE)	$
4.0	**Overhead/Contract administration (lump sum price)**				$
				Sub-Total (including all applicable PST)	$
				GST (5%)	$
				Tender Price (including all costs, taxes and fees)	**$**

Name of Tenderer Initials of Signing Officer

SCHEDULE "B"

PRELIMINARY CONSTRUCTION SCHEDULE

The Work is expected to begin by **March 29, 2021** and substantial performance is targeted for **July 20, 2021.** Please clearly define time requirements for project milestones identified in the table below. If necessary, please add an attachment to this Schedule.

TABLE 1 – PROJECT MILESTONES

Milestone	Date of Completion
Mobilization	March 29, 2021
Demolition	April 15, 2021
Substantial Performance of the Work	July 20, 2021
Total Performance of the Work	August 20, 2021

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20201114, FORM OF TENDER – SCHEDULE B", and is to be signed by the Tenderer.

Name of Tenderer Initials of Signing Officer

SCHEDULE "C"

SUBCONTRACTORS AND SUPPLIERS

1.0 SUBCONTRACTORS

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

Subcontractor	Address	Type of Work

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20201114, FORM OF TENDER – SCHEDULE C", and is to be signed by the Tenderer.

Name of Tenderer Initials of Signing Officer

2.0 SUPPLIERS

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

Supplier	Manufacturer	Supplier Address	Item

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20201114, FORM OF TENDER – SCHEDULE C", and is to be signed by the Tenderer.

Name of Tenderer Initials of Signing Officer

SCHEDULE "D"

TENDERER'S EXPERIENCE WITH RELATED WORK

Tenderers should confirm that they and their proposed subcontractors have the required experience to perform the Work. Each Tenderer should submit information concerning a minimum of **three (3)** completed projects similar in scope and size to the Work, for each of itself and its proposed subcontractors, including the following information:

Description of Project: _____

_____

_____

_____

Location of Project: _____

Contract Value: $ _____ (Cdn. Dollars)

Start and Completion Dates: _____

Completed on Schedule? **Yes** **No** **(Circle Correct Response)**

Name of Contract City: _____

Name of Project Reference: _____

Current Telephone Number and E-mail of Project Reference:

_____

_____

Names of Key Personnel and Subcontractors:

_____

_____

_____

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20201114, FORM OF TENDER – SCHEDULE D", and is to be signed by the Tenderer.

Name of Tenderer _____ Initials of Signing Officer _____

SCHEDULE "E"

FORCE ACCOUNT LABOUR & EQUIPMENT RATES

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

TABLE 1 - SCHEDULE OF LABOUR RATES

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

TABLE 2 – SCHEDULE OF EQUIPMENT RATES

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

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

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20201114, FORM OF TENDER – SCHEDULE E", and is to be signed by the Tenderer.

Name of Tenderer Initials of Signing Officer

SCHEDULE "F"

FORM OF CONSENT OF SURETY

PROJECT: _____

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

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

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

_____

Name of Tenderer _____ Initials of Signing Officer

SCHEDULE "G"

SUSTAINABILITY

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

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

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

Item	Type of Product/Equipment	Disposal Method

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

Item	Carbon Emission Risk	Solution to Reduce Carbon Emissions

Name of Tenderer Initials of Signing Officer

Name of Tenderer Initials of Signing Officer

SCHEDULE "H"

CERTIFICATE OF INSURANCE

(TO BE COMPLETED IF AWARDED THE CONTRACT)

Name of Tenderer Initials of Signing Officer

Schedule H

LIABILITY INSURANCE CERTIFICATE

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

1. **THIS CERTIFICATE IS ISSUED TO:** City of Vancouver, 453 W 12th Avenue, Vancouver, BC, V5Y 1V4
and certifies that the insurance policy (policies) as listed herein has/have been issued to the Named Insured and is/are in full force and effect as of the effective date of the agreement described below.

2. **NAMED INSURED** ***[must be the same name as the Permittee/Licensee or Party(ies) to Contract and is/are either an individual(s) or a legally incorporated company(ies)]***

BUSINESS TRADE NAME OR DOING BUSINESS AS

BUSINESS ADDRESS

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

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

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

Check Additional Extensions where applicable and included:
- ☐ Sudden & Accidental Pollution Liability
- ☐ Host Liquor Liability
- ☐ Abuse/Molestation Coverage
- ☐ Advertising Liability
- ☐ Volunteers as Additional Insured
- ☐ Members as Additional Insured
- ☐ Injury to Participants
- ☐ Work below ground level over 3 metres
- ☐ Excavation, shoring, underpinning, pile driving or caisson
- ☐ Demolition, removal or weakening of support of property
- ☐ Blasting
- ☐ Operation of hoist or attached machinery
- ☐ 12 months Completed Operations
- ☐ 24 months Completed Operations

INSURER: _____ POLICY NUMBER: _____

POLICY PERIOD: FROM: _____ To: _____

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

Per Occurrence $_____ Aggregate $_____

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

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

INSURER: _____ **LIMITS OF LIABILITY:**

POLICY NUMBER: _____ Combined Single Limit: $ _____

POLICY PERIOD: From _____ to _____ ***If vehicles are insured by ICBC, complete and provide Form APV-47.***

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

INSURER: _____ Per Occurrence $ _____

POLICY NUMBER: _____ Aggregate $ _____

POLICY PERIOD: From _____ to _____ Self-Insured Retention $ _____

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

7. **POLICY PROVISIONS**

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

a) The City of Vancouver, its officials, officers, employees, servants and agents have been added as Additional Insureds with respect to liability arising out of the operation of the Named Insured pursuant to the governing contract, agreement, lease, permit or license.

b) SIXTY (60) days written notice of cancellation or material change resulting in reduction of coverage with respect to any of the policies listed herein, either in part or in whole, will be given by the Insurer to the Holder of this Certificate; the exception is cancellation for non-payment of premiums in which case the applicable statutory conditions will apply.

c) The insurance policy (policies) listed herein shall be primary with respect to liability arising out of the operation of the Named Insured. Any insurance or self-insurance maintained by the City of Vancouver shall be in excess of this insurance and shall not contribute to it.

SIGNED BY THE INSURER OR ITS AUTHORIZED REPRESENTATIVE

_____ Date _____

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

SCHEDULE "I"

CERTIFICATE OF EXISTING INSURANCE

(TO BE COMPLETED AND SUBMITTED WITH TENDER)

Name of Tenderer Initials of Signing Officer

CITY OF VANCOUVER

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

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

1. **THIS CERTIFICATE IS ISSUED TO:** **City of Vancouver, 453 W 12th Avenue, Vancouver, BC, V5Y 1V4**
and certifies that the insurance policy (policies) as listed herein has/have been issued to the Named Insured and is/are in full force and effect.

2. **NAMED INSURED** ***(must be the same name as the proponent/bidder and is either an individual or a legally incorporated company)***

BUSINESS TRADE NAME or DOING BUSINESS AS

BUSINESS ADDRESS

DESCRIPTION OF OPERATION

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

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

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

Including the following extensions:
√ Personal Injury
√ Property Damage including Loss of Use
√ Products and Completed Operations
√ Cross Liability or Severability of Interest
√ Employees as Additional Insureds
√ Blanket Contractual Liability
√ Non-Owned Auto Liability

INSURER _____
POLICY NUMBER _____
POLICY PERIOD From _____ to _____
Limits of Liability (Bodily Injury and Property Damage Inclusive) -
Per Occurrence $ _____
Aggregate $ _____
All Risk Tenants' Legal Liability $ _____
Deductible Per Occurrence $ _____

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

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

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

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

7. **PROFESSIONAL LIABILITY INSURANCE** **Limits of Liability**

INSURER _____ Per Occurrence/Claim $ _____
POLICY NUMBER _____ Aggregate $ _____
POLICY PERIOD From _____ to _____ Deductible Per Occurrence/Claim $ _____

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

8. **OTHER INSURANCE**

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

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

SIGNED BY THE INSURER OR ITS AUTHORIZED REPRESENTATIVE

_____ Dated _____

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

SCHEDULE "J"

UNDERTAKING OF INSURANCE

To: City of Vancouver

Re: CONTRACTOR FOR HARO ST. TRANSMISSION MAIN REPLACEMENT – GILFORD MINI-PARK, PS20201114

Dear Sirs:

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

Dated at _____, British Columbia, this _____day of _____20____.

By: _____

Title: _____

Full Corporate Name of Insurer:

_____

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

Schedule "K"

DECLARATION OF SUPPLIER CODE OF CONDUCT COMPLIANCE

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

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

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

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

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

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

Signature: _____

Name and Title: _____

Name of Tenderer _____ Initials of Signing Officer _____

SCHEDULE "L"

CONFLICT OF INTEREST DECLARATION

NO CONFLICT OF INTEREST / NO COLLUSION / NO LOBBYING

Declaration as to no Conflict of Interest in ITT

(a) The Tenderer confirms and warrants that there is no officer, director, shareholder, partner, employee or contractor of the Tenderer or of any of its proposed subcontractors, or any other person related to the Tenderer's or any proposed subcontractor's organization (a "person having an interest") or any spouse, business associate, friend or relative of a person having an interest who is:

a. an official or employee of the City; or

b. related to or has any business or family relationship with an elected official or employee of the City,

in each case, such that there could be any conflict of interest or any appearance of conflict of interest in the evaluation or consideration of the Tender by the City, and, in each case, except as set out, in all material detail in the section titled "Disclosure" in this Schedule "L".

(b) The Tenderer confirms and warrants that there is no person having an interest (as defined above) who is a former official, former employee or former contractor of the City and who has non-public information relevant to the ITT obtained during his or her employment or engagement by the City, except as set out, in all material detail, in the section titled "Disclosure" in this Schedule "L".

Declaration as to No Conflict of Interest Respecting Proposed Supply

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

Declaration as to No Collusion

The Tenderer confirms and warrants that:

(a) the Tenderer is not competing within the ITT with any entity with which it is legally or financially associated or affiliated; and

(b) the Tenderer is not cooperating in any manner in relation to the ITT with any other tenderer responding to the ITT,

Name of Tenderer Initials of Signing Officer

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

Declaration as to Lobbying

The Tenderer confirms and warrants that:

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

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

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

Disclosure [Add disclosure here.]

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

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

Signature of Authorized Signatory for the Tenderer

Date

Name and Title

Signature of Authorized Signatory for the Tenderer

Date

Name and Title

Name of Tenderer

Initials of Signing Officer

INVITATION TO TENDER ("ITT") N0. PS20201114

CONTRACTOR FOR HARO STREET TRANSMISSION MAIN REPLACEMENT – GILFORD MINI-PARK

FORM OF AGREEMENT

between

_____

and

CITY OF VANCOUVER

_____, 20_____

This AGREEMENT (this "**Agreement**") is made as of the _____ day of _____.

BETWEEN:

CITY OF VANCOUVER, having an office at
453 West 12th Avenue
Vancouver, British Columbia, V5Y 1V4

(hereinafter referred to as the "**Owner**")

OF THE FIRST PART

AND:

[NTD: INSERT CONTRACTOR NAME/ADDRESS]

(hereinafter referred to as the "**Contractor**")

OF THE SECOND PART

WHEREAS:

A. The *Owner* has appointed **Ivan Malis** (hereinafter referred to as the "**Contract Administrator**" for the purposes of this *Contract*) to act as its sole and exclusive agent for purposes of managing and administering the performance of the *Work* by the *Contractor* in accordance with the *Specifications*, *Drawings* and other *Contract Documents*; and

B. The *Contractor* has agreed with the *Owner* to perform the *Work* and to furnish all plant, tools, equipment, labour, products, material and supervision necessary therefor as hereinafter set forth.

NOW THEREFORE THIS AGREEMENT WITNESSES as follows:

ARTICLE 1 ROLE OF THE CONTRACT ADMINISTRATOR

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

ARTICLE 2 WORK

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

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

ARTICLE 3 CONTRACT DOCUMENTS

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

(a) this Agreement and the following schedules:

(i) Schedule 1 – Supplemental General Conditions;

(ii) Schedule 2 – Specifications and Drawings (the *Specifications* and Drawings listed in Schedule 2 that are not included in Schedule 2 are incorporated by reference);

(iii) Schedule 3 - Schedule of Quantities and Prices;

(iv) Schedule 4 - Subcontractors and Suppliers;

(v) Schedule 5 – Construction Schedule;

(vi) Schedule 6 – Performance and Labour and Material Payments Bonds;

(vii) Schedule 7 – Insurance Certificates;

(viii) Schedule 8 – Force Account Labour and Equipment Rates;

(ix) Schedule 9 - Insurance;

(x) Schedule 10 – City Pre-Contract Hazard Assessment Form

(xi) Schedule 11 – Contractor Pre-Contract Hazard Form

(b) the "Master Municipal General Conditions" contained within Volume II of the Master Municipal Construction Document (printing 2009), as supplemented by the Supplemental General Conditions attached hereto as Schedule 1 (collectively, the "**General Conditions**");

(c) the Tender;

(d) the *Specifications* and *Drawings* (i.e., those not included in Schedule 2 but incorporated herein by reference);

(e) the *Traffic Management Plan* provided by the *Contractor* to the *Owner* (incorporated by reference); and

(f) insert any other relevant documents to be incorporated by reference.

3.2 The *Contract Documents* are complementary and what is called for by any one shall be as binding as if called for by all. The intent and spirit of the *Contract Documents* is that the *Contractor* is required to complete the *Work* in every detail within the times and for the purposes designated, and that the *Contractor* shall furnish and do any and everything necessary for such purposes notwithstanding any omission from the *Contract Documents*.

ARTICLE 4 SCHEDULE OF WORK

4.1 The *Contractor* will commence the *Work* as directed in writing by the *Owner*.

4.2 The *Contractor* will perform the *Work* diligently and in accordance with the *Construction Schedule*. The *Contractor* will:

(a) achieve *Substantial Performance* of the *Work* on or before July 20, 2021; and

(b) achieve *Total Performance* of the *Work* on or before August 20, 2021;

(collectively, the "**Contract Time**"), subject to the provisions of the *Contract Documents* for adjustments to the *Contract Time*.

4.3 Time shall be of the essence in this *Contract*.

ARTICLE 5 PAYMENT

5.1 **Contract Price**

(a) The *Contract Price* (inclusive of all PST, GST and other taxes, duties assessments, charges and fees, all permit and inspection costs, and all WorkSafeBC assessments relating to the Work) to do, perform and supply all the *Work* in accordance with, and perform all the obligations specified by, the *Contract Documents* is **[To Be Determined].**

(b) The GST payable by the *Owner* to the *Contractor* is **[To Be Determined]**. This amount is included in the *Contract Price*.

(c) The (i) aforesaid GST and (ii) the PST and all other taxes, duties, assessments, charges and fees included in the *Contract Price* will be remitted by the *Contractor* to the applicable authorities as and when the *Owner* pays the *Contract Price* to the *Contractor* or as earlier required by applicable law.

(d) All amounts are in Canadian dollars.

(e) The *Contract Price* shall be subject to adjustments as provided for in the *Contract Documents*.

(f) The payment for any *Work* under this *Contract* which shall be made to the *Contractor* by the *Owner* shall not be construed as an acceptance of any *Work* as being in accordance with the *Contract Documents*. The issuance of the *Certificate of Total Performance* shall constitute a waiver by the *Contractor* of all claims except those previously made in writing and still unsettled, if any,

and specified by the *Contractor* in its application for final payment pursuant to Section 5.2(c) above.

ARTICLE 6 NOTICES

6.1 Unless otherwise specifically provided in the *Contract Documents*, all notices, instructions, orders or other communications in writing shall be conclusively deemed to have been given to the *Contractor* if delivered to the *Contractor* personally (or in the case of a company, to any of its officers or directors personally), or to the *Contractor*'s superintendent or foreman, or delivered by mail to the *Contractor* at the business address of the *Contractor* set forth below:

Contractor:

[NTD: Insert Contractor information]

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

Owner:

City of Vancouver
453 West 12th Avenue
Vancouver, British Columbia
V5Y 1V4

Attention: **[insert]**,

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

Contract Administrator:

[insert]

6.3 Any of the said addresses may be changed from time to time by written notice to the other party.

6.4 Any such notices, instructions, orders, requests or other communications sent by mail as aforesaid shall be deemed to have been given on the second business day following the mailing thereof.

ARTICLE 7 GENERAL

7.1 All capitalized terms used by not defined in this Agreement shall have the meaning given to them in the *General Conditions*.

7.2 This Agreement shall inure to the benefit of and be binding upon the respective successors and permitted assigns of the parties hereto.

7.3 Except as expressly set forth in the foregoing Section 7.1 or in Schedule 1, nothing in this Agreement shall be construed to give any rights or benefits to anyone other than the *Owner* and the *Contractor*.

7.4 This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and cancels and supersedes any prior understandings and agreements between the parties hereto with respect thereto. There are no representations, warranties, terms, conditions, undertakings or collateral agreements, express, implied or statutory, between the parties in relation to the subject matter hereof other than as expressly set forth in this Agreement.

7.5 No modification of or amendment to this Agreement is valid or binding unless set forth in writing and fully executed by the parties hereto and no waiver of any breach of any term or provision of this Agreement is effective or binding unless made in writing and signed by the party purporting to give such waiver and, unless otherwise provided, is limited to the specific breach waiver.

7.6 This Agreement is governed by and must be construed in accordance with the laws of the Province of British Columbia.

7.7 This Agreement is subject to the exclusive jurisdiction of the courts in the Province of British Columbia except to the extent necessary to enforce, in another jurisdiction, any judgment of any court in the Province of British Columbia.

7.8 The *Contractor* agrees to do all things and execute all deeds, instruments, transfers or other documents as may be necessary or desirable to give full effect to the provisions of this Agreement and the transactions contemplated by it.

7.9 If any term or condition of this Agreement is for any reason held to be illegal, invalid, ineffective, inoperable or otherwise unenforceable, it shall be severed and deemed to be deleted from this Agreement and the validity and enforceability of the remainder of this Agreement shall not be affected or impaired thereby. If any term or condition of this Agreement is found to be illegal, invalid ineffective, inoperable or otherwise unenforceable, but would not be so if some part of it were deleted, the term or condition shall apply with such modifications as may be necessary to make it enforceable.

7.10 This Agreement may be executed in any number of counterparts. All counterparts, taken together, constitute one instrument. A party may execute this Agreement by signing any counterpart.

7.11 Delivery of an executed signature page to this Agreement by either party by electronic transmission shall be as effective as delivery of a manually executed copy of this Agreement by such party.

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

CITY OF VANCOUVER
by its authorized signatories:

Signature: _____

Name: _____

Title: _____

Signature: _____

Name: _____

Title: _____

Signature: _____

Name: _____

Title: _____

[INSERT NAME OF CONTRACTOR]
by its authorized signatories:

Signature: _____

Name: _____

Title: _____

Signature: _____

Name: _____

Title: _____

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

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

	Specification		
1.83	**City of Vancouver Standard Detail Drawing**	Add 1.83.1	"*City of Vancouver Standard Detail Drawings*" means the manual of supplementary standard detail drawings to the MMCD produced by the City of Vancouver.
1.84	**Competent Authority**	Add 1.84.1	"*Competent Authority*" means: (a) any multinational, federal, provincial, state, regional, municipal, local or other government or governmental body and any ministry, department, division, bureau, agent, agency, commission, board or authority of any government or governmental body, domestic or foreign; (b) any domestic, foreign or international judicial, quasi-judicial or administrative court, tribunal, commission, board, panel, arbitrator or arbitral body acting under the authority of any of the foregoing; or (c) any quasi-governmental or private body exercising any statutory, regulatory, expropriation or taxing authority under the authority of any of the foregoing.
1.85	**Engineer**	Add 1.85.1	*"Engineer"* means the *City Engineer*.
1.86	**Environmental Law**	Add 1.86.1	"**Environmental Law**" means any Law which imposes any obligations relating to: (a) the protection, management, conservation or restoration of the natural environment; (b) reporting, licensing, permitting, investigating, remediating and cleaning up in connection with any presence or Release, or the threat of the same, of Hazardous Materials; and (c) the manufacture, processing, distribution, use, treatment, storage, disposal, transport, handling and the like of Hazardous Materials, including those pertaining

			to occupational health and safety.
1.87	**Intellectual Property Rights**	Add 1.87.1	"*Intellectual Property Rights*" means any and all current and future proprietary rights provided under patent law, copyright law, design patent or industrial design law, or any other applicable statutory provision or common law principle, including trade secret law, that may provide a right in ideas, formulae, algorithms, concepts, inventions, know-how, computer software, database or design, or the expression or use thereof, whether registered or unregistered, together with any right to apply for or register any of the foregoing.
1.88	**Invitation to Tender**	Add 1.88.1	"*Initiation to Tender*" means the Owner's Invitation to Tender No. PS20201114.
1.89	**Key Personnel**	Add 1.89.1	"**Key Personnel**" means the Contractor's or Subcontractor's personnel identified as key personnel in the Invitation to Tender.
1.90	**Laws**	Add 1.90.1	"**Laws**" means all laws, statutes, codes, ordinances, decrees, rules, regulations, by-laws, judicial or arbitral or administrative or ministerial or departmental or regulatory judgments, orders, decisions, rulings, determinations or awards of any Competent Authority whether or not having the force of law and any legal requirements or bases of liability under the common law or civil law, including all such Laws relating to Taxes, the environment, human health or safety, pollution and other environmental degradation, and hazardous materials , which affect or are otherwise applicable to the Work, the Contractor, the Site or any other lands affected by the Work.
1.91	**Living Wage**	Add 1.91.1	*"Living Wage"* means the hourly wage established by the *Living Wage Certifier* from time to time, which includes: (i) direct wages; and (ii) the value of any non-mandatory benefits such as paid sick leave, employer-paid Medical Services Plan premiums and extended health benefits.
1.92	**Living Wage Certifier**	Add 1.92.1	*"Living Wage Certifier"* means the Living Wage for Families Campaign, any successor entity, or, in the event the Living Wage for Families Campaign ceases to carry on operations, such other *Living Wage* certification entity designated by the *Owner* to the *Contractor* in writing.
1.93	**Living Wage Employee**	Add 1.93.1	*"Living Wage Employee"* means any and all employees of the *Contractor* and all *Subcontractors* of the *Contractor* that perform any part of the *Work* on a property owned by or leased to the *Owner*,

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

			consisting of the written requirements and standards for products, systems, workmanship, quality, and the services necessary for the performance of the *Work.*
1.105	**Street**	Add 1.105.1	*"Street"* means public rights-of-way belonging to the City of Vancouver and includes lanes.
1.106	**Student**	Add 1.106.1	*"Student"* means an individual who is enrolled in a school, college, university or other educational institution and is employed by the *Contractor* or a *Subcontractor*, as the case may be, to obtain practical workplace experience as a requirement of or credit for their education.
1.107	**Tender**	Add 1.107.1	"*Tender*" means the Contractor's tender, tendered in response to the Invitation to Tender.
1.108	**Third-Party Property**	Add 1.108.1	**"***Third-Party Property***"** means a property owned by a third party on which some or all of the Work is to be performed.
1.109	**Third-Party Utility**	Add 1.109.1	*"Third-Party Utility"* means a utility within a City of Vancouver right-of-way other than those owned by the City of Vancouver.
1.110	**Warranty Period**	Add 1.110.1	*"Warranty Period"* shall have the same meaning as *Maintenance Period*.
2.0	**DOCUMENTS**		
2.1	**Execution**	Add 2.1.0	The *Contractor* shall deliver all required submittals as described in the *Notice of Award*, and in a format acceptable to the *Owner* within the time specified in the *Notice of Award*
		Delete 2.1.1	Delete 2.1.1
		Delete 2.1.2 and replace with	The *Contractor* shall sign the *Contract Documents* and return them to the *Contract Administrator* within 15 *Days* after receiving them and the *Contract Administrator* shall forward them to the *Owner* for signing.
2.2	**Interpretation**	Delete 2.2.4 and replace with	Should any difference exist between the *Drawings* and *Specifications*, or should any errors or inconsistency occur in any or between any of the *Drawings* and *Specifications*, the *Contractor*, before proceeding, shall bring them to the attention of the *Contract Administrator*. The *Contract Administrator* shall resolve the error or inconsistency and the *Contractor* shall proceed with the *Work* in the manner directed by the *Contract Administrator*. The *Contract Administrator* will furnish from time to time such detail drawings and specifications as the *Contract Administrator* may consider necessary for the *Contractor's* guidance. These detail

drawings and specification shall be considered *Drawings* and *Specifications*, respectively, and shall take precedence over any previously furnished *Drawings* or *Specifications*, and shall be considered as explanatory of them and not as indicating *Changes* in the *Work* or as giving rise to any entitlement to a change in the *Contract Price*.

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

(a) *Agreement*

(b) Addenda

(c) Supplementary General Conditions

(d) General Conditions

(e) Project Specific Specifications

(f) *City of Vancouver Construction Specifications*

(g) MMCD Specifications

(h) City of Vancouver Standard Detail Drawings

(i) MMCD Standard Detail Drawings

(j) Tender

(k) Invitation to Tenders

(l) All other *Contract Documents*

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

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

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

		Add 2.2.5	Notwithstanding GC 2.2.4, in the event of any inconsistency between the *Drawings* and Specifications or between any other *Contract Documents* or within any *Contract Documents* which could be construed as creating an ambiguity regarding the amount of *Work* involved, the cost or amount of product to be supplied, the *Contract Price* being lower or higher, or any other similar discrepancy or inconsistency, the discrepancy or conflict will be resolved as follows: (1) the more stringent will take precedence over the less stringent; (2) the more expensive item will take precedence over the less expensive; and if none of the foregoing rules (1) and (2) can be applied by the *Contract Administrator*, the more specific provision will take precedence over the less specific.
		Add 2.2.6	In this *Contract*, the masculine includes the feminine and bodies corporate, and each includes the others. Also, any reference to the singular includes the plural where appropriate.
2.3	**Instructions to Tenderers, General Conditions, Specifications, Standard Detail Drawings**	Delete 2.3.1	Delete 2.3.1
2.4	**Copies of Contract Documents**	Append to 2.4.1	All *Drawings*, *Specifications*, model and copies thereof furnished by the *Contract Administrator* are and shall remain the *Owner's* property. Such documents and models are to be used only with respect to the *Work*, are not to be copied or revised in any manner without the written authorization of the *Contract Administrator* and are to be returned to the *Contract Administrator* on request at the completion of the *Work*.
2.5	**Master Municipal Specifications and Standard Detail Drawings**	Add 2.5	The *Contract Documents* incorporate by reference the "Master Municipal Specifications and Standard Detail Drawings" contained within Volume II of the Master Municipal Construction Document (printing 2009), as supplemented by the City of Vancouver Standard Detail Drawings (rev. 2019) and the City of Vancouver Construction Specifications(rev. 2018).
3.0	**CONTRACT ADMINISTRATOR**		

3.1	**Appointment**	Delete 3.1.2 and replace with	If for any reason the *Contract Administrator's* appointment is discontinued, then the *Owner* shall immediately notify the *Contractor* and appoint a replacement.
3.2	**Authority**	Add 3.2.3	Resolution of any discrepancy in technical nature between this manual, and any other referenced sources such as *MMCD* that is not covered by other *City* regulations, shall be at the sole discretion of the *Contract Administrator, in consultation with the City Engineer.*
3.3	**Contract Administrator**	Append to 3.3.7	The *Contract Administrator* is not required to acknowledge any communications from the *Contractor's* personnel, except for the *Superintendent* set out in the *Contract*. Any communications which occurs with personnel other than the *Superintendent*, regardless of format, which are not acknowledged by the *Contract Administrator* in writing, may, at the *Contract Administrator's* sole discretion shall have no bearing on any portion of the *Contract*.
		Delete 3.3.8 and replace with	The *Contract Administrator, in consultation with the City Engineer,* shall conduct inspections to determine the dates of *Substantial Performance* and *Total Performance.*
		Add 3.3.10	The *Contract Administrator, in consultation with the City Engineer,* has the authority to stop the progress of the *Work* whenever in the *Contract Administrator's* opinion such stoppage may be necessary to ensure the safety of life, or the *Work* or neighbouring property. This includes authority to make *Changes* in the *Work*, and to order, assess and award the cost of work extra to the *Contract* or otherwise, as may in the *Contract Administrator's* opinion be necessary in such circumstances. The *Contract Administrator* shall within 2 *Days* confirm in writing any instructions given verbally.
3.4	**Inspection and Site Inspector**	Append to 3.4.6	Such inspections may extend to any or all parts of the *Work* and to the preparation or manufacture of the products to be used whether on *Site* or elsewhere. *Site Inspectors* and surveyors shall not be authorized to revoke, alter, enlarge or accept any portion of the *Work* or to issue instructions contrary to the *Drawings* and *Specifications*.
		Add 3.4.9	In the absence of *Contract Administrator*, any of the *Contract Administrator's* personnel, whom the *Contract Administrator* may designate in writing to the Contractor to supervise the *Work*, shall have (subject to the instructions of the *Contract Administrator*) full power to decide as to the

			manner of conducting and executing the *Work* in every particular aspect, subject to the limitations to the *Contract Administrator's* authority as contained within the *Contract Documents*, and the *Contractor* shall follow the instructions or orders of the person so designated.
3.5	**Progress Payments**	Add 3.5.2	The *Contractor* shall provide the *Contract Administrator* with daily breakdowns of units installed as it relates to payment, complete with corresponding weigh tickets or other relevant documentation. These summaries will be provided on intervals determined by the *Contract Administrator*, but will be no greater than 5 *Days*.
		Add 3.5.3	The *Contractor* shall not work on the *Site*, or cause the delivery of materials for which delivery slips submitted to the *Owner* are the basis of payment unless the *Site Inspector* is present, unless otherwise approved in writing by the *Contract Administrator*.
3.6	**Contract Interpretation and Decisions**	Delete 3.6.1 and replace with	The *Contract Administrator* will be the interpreter of the *Contract Documents* and the judge of the performance of both parties to the *Contract*. Interpretations and decisions of the *Contract Administrator* shall be consistent with the *Contract Documents*.
		Add 3.6.4	Notwithstanding GC 3.6.3, on all questions relating to the acceptability of material, machinery or plant equipment, classifications of material or *Work*, the proper execution, progress or sequence of the *Work*, quantities and the interpretation of these *Specifications* or *Drawings*, the decision of the *Contract Administrator*, in consultation with the *City Engineer*, shall be final and binding, and shall be a condition precedent to any payment under the *Contract*.
4.0	**CONTRACTOR**		
4.1	**Control of the Work**	Add 4.1.0	The *Contractor* shall not commence the *Work* or procure any material therefore until it has received the *Notice to Proceed* from the *Owner*. Forthwith after the receipt of the *Notice to Proceed*, the *Contractor* shall at once begin and continuously carry on to completion (subject as herein provided) the *Work* and shall complete and give full possession thereof to the *Owner* before the date for *Total Performance* specified herein, unless a longer period shall be allowed in writing by the *Contract Administrator*, in which case it shall be carried on to completion and possession given to the *Owner* within the additional time so allowed. No progress

			or interim estimate or certificate shall release the *Contractor* or its surety from any responsibility or shall be taken as evidence of any such release, or as an acceptance of any *Work* or material, or as a waiver of any condition herein. The whole *Work* and every portion and detail thereof shall, at the time of completion, be put and left by the *Contractor* in good and satisfactory condition, finished in all respects and at the time must be fully up to the requirements of the *Drawings* and *Specifications* in every particular aspect; and all surplus and refuse material and rubbish must be removed by the *Contractor* from the vicinity of the *Work*; the *Site* must be left by the *Contractor* in a neat and tidy condition; all damages to adjacent property, including pavements, foot walks, boulevards, sod, trees, shrubs and plants, or other things injured or interfered with by the *Contractor*, or in any way due to its *Work*, must be made good by the *Contractor*; all wages must be paid, and every other requirement of the *Contract* must be complied with by the *Contractor*.
		Add 4.1.3	The *Contractor* shall maintain all areas disturbed with competent temporary repair to the satisfaction of the *Contract Administrator, in consultation with* the *City Engineer,* until such areas are permanently repaired. In the event the *Contractor* fails or neglects to carry out such tasks for whatever reasons, the *City* may do the necessary repairs at the expense of the *Contractor*.
4.3	**Protection of Work, Property, and the Public**	Delete 4.3.1 and replace with	In performing the *Work,* the *Contractor* shall protect the *Work* and the *Owner's* property and other person's property from damage. The *Contractor* shall at the *Contractor's* own expense make good any such damage which arises as the result of the *Contractor's* operations.
		Append to 4.3.4(1)	It shall be the responsibility of the *Contractor* to locate all existing mains and services, including but not limited to: water, gas, electricity, telephone, sewers, drains, catchbasin leads, and culverts to preserve and protect them from damage during the *Work*, and to arrange for their relocation if required. No payment will be made to the *Contractor* for the cost of finding these mains and services or the delay incurred by checking and adjusting lines and/or grades to avoid conflict with these mains and services. The *Contractor* shall avoid interruptions to services and the use of "cut and

	replace" methodology except with the express written consent of the *Contract Administrator,* in consultation with the *City Engineer*.
	The *Contractor* shall notify the *Contract Administrator* of any conflict between existing mains and services and the *Work* described in the *Contract Documents* for the *Contract Administrator* to revise the *Work* accordingly. The *Contractor* will be responsible for the cost of adjusting or relaying any previously completed existing work as a result of conflicting utilities. If relocation of existing mains and services is required by any direct conflict between these mains and services and the *Work* in the *Contract Documents* which, in the opinion of the *Contract Administrator*, cannot be avoided by adjustments in the location of the *Work*, the cost of the relocation shall be borne by the *Owner*.
Append to 4.3.4(2)	In performing *Work* on or near *Third-Party Utilities* or where it is necessary to cut, move or alter these *Third-Party Utilities*, the *Contractor* shall communicate and coordinate with the *Third-Party Utility* as it relates to schedule, timing, site safety and compliance in the utility alterations or relocations as part of performing the overall *Work*.
Add 4.3.4(4)	The Contractor shall submit a confirmation letter to the *Contract Administrator*, at least 1 week prior to any excavation Work, confirming that the *Contractor* has identified all the existing utilities within the proposed alignments and trenches, and no conflicts exist between the existing utilities and the proposed *Work*.
Add 4.3.7	Before commencing any construction *Work* as described in the *Drawings* and *Specifications*, the *Contractor* shall provide to the *Contract Administrator* photographs of pre-existing conditions of the area that will be disturbed during construction operations. Photographs must be obtained as follows: (1) Every 10m interval in easements; (2) Every 20m interval in paved areas; (3) Wherever any tree or structure may be damaged due to construction activity; and, (4) Any other location as directed by the *Contract Administrator*. The photographs shall be taken with a digital camera 5 megapixels or better and catalogued in albums saved on flash drives.

		Add 4.3.8	The extents of rights-of-way to be provided by the *Owner* is shown on the *Contract Drawings*. Where any part of the *Work* is to be performed on *Third-Party Property*, the *Owner* shall arrange for and acquire required rights-of-way. The *Contractor* shall perform all such *Work* in accordance with all agreements between the *Owner* and each *Third-Party Property* owner. On completion of any *Work on a Third-Party Property*, the *Contractor* shall deliver to the *Contract Administrator*, a formal release in writing, in a form provided by the *Owner*, signed by the owner *Third-Party Property* on which the *Work* was performed, verifying that the *Contractor* has restored the *Third-Party Property* to that owner's satisfaction, and that the *Third-Party Property* owner is waiving all claims upon the *Contractor* or the *Owner* as a result of the *Work*. Where the *Contractor* makes private arrangements for the use of *Third-Party Property*, the *Contractor* shall obtain a signed document from the owner of the *Third-Party Property* granting such permission to the *Contractor* and provide a copy to the *Contract Administrator*.
		Add 4.3.9	If the *Contractor* does not make good any damage caused to a *Third-Party Property* in a timely and satisfactory manner, then at the discretion of the *Contract Administrator*, *Other Contractors* may be engaged by the *Owner* to make good the damage caused by the *Contractor*, with the costs of such repair work to be deducted from progress payments owing to the *Contractor* or otherwise recovered from the *Contractor*.
4.4	**Temporary Structures and Facilities**	Append to 4.4.1	The *Contractor* will submit designs and plans for temporary structures and facilities to the *Contract Administrator* for review and comment, but such review shall not relieve the *Contractor* of any responsibility. The *Contractor* shall make good at the *Contractor's* expense immediately all defects arising from the *Contractor's* faulty design, equipment or application thereof.
		Add 4.4.3	Temporary structures erected by the *Contractor* shall remain the *Contractor's* property and be removed from the *Site* on completion of the *Work*.
4.5	**Errors, Inconsistencies or Omissions in**	Add 4.5.4	Any work or material not herein specified or shown on the *Drawings*, but which by fair implication, in the judgement of the *Contract Administrator*,

	the Contract Documents		should be included therein, shall be done or furnished by the *Contractor* as part of their *Contract* as though shown or included in the *Drawings* and *Specifications*.
4.6	**Construction Schedule**	Delete 4.6.1 and replace with	The *Contractor* shall prepare and submit to the *Contract Administrator*, within 10 *Days* after issuance of the *Notice of Award*, a construction schedule (the "*Baseline Construction Schedule*") consistent with the *Substantial Performance* and *Total Performance* dates set out herein. This schedule is in addition to the *Preliminary Construction Schedule* provided in the *Contractor's* Tender, showing additional details and all dates on which each material component of the *Contractor's* proposed program of operations will be performed so as to attain *Substantial Performance* and *Total Performance* on the required dates. The *Contract Administrator* will review schedules and return reviewed copy within 10 *Days* after receipt. *Contractor* shall resubmit finalized schedules within 5 *Days* after return of reviewed copy. Instruct recipients to report any problems anticipated with the schedule to *Contractor* within 10 *Days*. The *Construction Schedule(s)* must be in conformance with the Construction Schedule requirements set out in the *Specifications*. The *Contractor* shall immediately advise the *Contract Administrator* of any deviations from, or proposed changes to, the *Construction Schedule*. If, in the opinion of the *Contract Administrator*, the *Construction Schedule* as submitted is inadequate to ensure the completion of the *Work* within the time limited therefore, or is otherwise not in accordance with the *Tender*, or if the *Work* is not being adequately or properly prosecuted in any respect, the *Contract Administrator*, without derogating from the *Owner's* rights under the *Contract*, shall have the right to require the *Contractor* to submit a new *Construction Schedule* providing for proper and timely completion of the *Work*, and the *Contractor* shall be entitled to no claim for extension of time on account of such requirement, and such new *Construction Schedule*, when accepted by the *Contract Administrator*, shall be a *Contract Document*.
		Append to 4.6.2	*Contractor* shall submit an *Adjusted Baseline Schedule* with each application for payment or as directed otherwise by the *Contract Administrator*.

		Delete 4.6.6 and replace with	The time for the performance of the *Work* shall commence on the date specified in the *Notice to Proceed*, or if not so specified, on the date the *Notice to Proceed* is issued. Subject to a contrary provision in the *Contract Documents*, the *Owner* shall issue the *Notice to Proceed* within 14 *Days* of receipt of a complete set of accurate and compliant documentation from the *Contractor* as stipulated in the *Notice of Award*. Failure by the *Owner* to issue the *Notice to Proceed* within the 14 *Days*, shall entitle the *Contractor* to a claim for delay under GC 13.1.1.
		Add 4.6.8	If the alteration of a *Third-Party Utility* is required to complete the *Work*, the *Contractor* shall notify, coordinate and allow sufficient time for the companies or authorities to relocate their *Third-Party Utilities*. It is the *Contractor's* responsibility to ensure all *Work*, including *Third-Party Utility* relocations, is coordinated and completed in a *Reasonable Time* as part of the overall *Work*. In the event the *Contractor* has been diligent and made significant effort and attempts in coordinating with the *Third-Party Utility* companies or authorities and having their relocations accelerated, any and all costs incurred as a result of the *Third-Party Utility* companies' ability, or inability, to relocate the *Third-Party Utilities* are considered incidental and any such delays are considered *Delays* in accordance with GC 13.3.
4.8	**Workers**	Add 4.8.0	The *Contractor* agrees to employ appropriate trade people for the *Work*. Where the trades people are covered by collective agreements, the *Contractor* shall abide by the conditions of the collective agreements covering such trades people. The *Contractor* shall endeavour to avoid labour problems and minimize *Work* stoppages, jurisdictional or other labour disputes on the *Site*.
		Add 4.8.2	The *Contractor* shall ensure that all workers, including *Subcontractor* employees, are always fit for work within the public right-of-way. There will be no tolerance for the use of inappropriate language, harassing behaviours, influence of drugs and/or alcohol and all clothing shall be suitable for the *Site* and not contain inappropriate messaging. The *Contract Administrator* and/or their representative may request the removal of a worker by the *Superintendent*, if in their opinion the

behaviour is not suitable of a *Contractor* representing the *Owner*.

Add 4.8.3

The *Contractor* shall provide disability awareness training for employees, including *Subcontractor* employees, if the *Site* is adjacent to health or community facilities catering to members of the public with mobility, visual or hearing challenges.

The *Contractor* shall provide cultural awareness training for employees, including *Subcontractor* employees, if the *Site* is reasonably suspected to have a high potential to be of cultural importance to First Nations.

Add 4.8.4

(1) Notwithstanding any other provision of any *Contract Document* but subject to GC.4.8.4(2), the *Contractor* shall pay all *Living Wage Employees* not less than the *Living Wage*.

(2) Notwithstanding GC.4.8.4(1), the *Contractor* has up to 6 months from the date on which any increase in the *Living Wage* is published by the *Living Wage Certifier* to increase wages for all *Living Wage Employees* such that all *Living Wage Employees* continue to be paid not less than the *Living Wage*.

(3) A breach by the *Contractor* of its obligations pursuant to this GC shall be deemed to constitute a failure by the *Contractor* to comply with the requirements of the *Contract* to a substantial degree and shall entitle the *Owner* to terminate the *Contract* in accordance with GC 15.

(4) The *Contractor* shall maintain up-to-date records and accounts which clearly document its satisfaction of the requirements of this GC 4.8.4 and shall make the same available to the *Owner* upon request. The *Owner* may request copies of all such records and accounts which shall be provided to the *Owner* by the *Contractor* (subject to reimbursement of the *Contractor's* reasonable copying costs and any other direct costs and expenses, if any) at any time prior to the expiry of 1 year after *Total Performance* or earlier termination of this *Contract*. Any records and accounts provided by the *Contractor* in accordance with this GC 4.8.4 shall be treated by the *Owner* as confidential information.

The *Contractor* shall, at the direction of the *Owner*, post signs at sites that are owned by or leased to

			the *Owner*, including all *Streets*, sidewalks and other public rights of way, informing *Living Wage Employees* of the obligations of the *Contractor* and *Subcontractor* pursuant to this GC 4.8.4 and providing contact information to report any breaches thereof. The *Owner* shall supply the *Contractor* with all such signs and the *Contractor* shall return all such signs upon completion of the *Work* or otherwise at the request of the *Owner*.
4.10	**Contractor to Provide Labour, Materials and Equipment**	Delete 4.10.1 and replace with	The *Contractor* at its own expense shall provide all necessary temporary buildings and storage grounds and shall furnish all necessary labour, materials and plant, including supervision, products, tools, construction machinery, water, heat, light, and power, together with all proper and required facilities for moving and transporting the same, so that the *Contract* and all *Work* required to be done under it can and will be carried on in a workmanlike manner, properly, satisfactorily, continuously and expeditiously, to completion, to the *Contract Administrator*'s, in consultation with the *City Engineer,* satisfaction in all respects. Should any plant, equipment, appliance, materials or workmanship which the *Contract Administrator or City Engineer* may deem to be inferior or unfit for use in or on the *Work* be brought on the *Site* or used, the same shall be wholly removed therefrom within 24 hours after notification to that effect from the *Contract Administrator*, and in the case of failure or neglect on the part of the *Contractor* to remove the same the *Contract Administrator* may cause the same to be taken away at the *Contractor's* expense, and deposited, wasted or otherwise disposed of in any locality, place or way the *Contract Administrator* considers convenient or proper, and the *Contractor* shall forthwith pay to the *Owner* on demand, all expenses incurred including storage, if any, or the same may be deducted or collected by the *Owner* The *Contractor* shall, at their own expense, arrange for and provide adequate supplies of water, electricity or other source of power and light, etc., wherever required for the construction and maintenance of the *Work*.
		Add 4.10.2	Where there are *Key Personnel* the *Contractor* shall: (1) use best endeavours to retain *Key Personnel* for the duration of the provision of the *Work*; (2) take reasonable steps to ensure that *Key* Personnel dedicate their time fully to the Work

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

			of GC 4.8.4 apply to all *Subcontractors*.
4.12	**Tests and Inspections**	Add 4.12.1	The *Contractor* shall be notified of all deficiencies discovered by the *Contract Administrator* or *City Engineer* upon completion of each inspection. The *Contractor* shall provide a schedule for correction or correct such deficiencies within 7 *Days* of the notice.
		Add 4.12.2	If any material, design or installation *Work* does not conform to any of the *Contract Documents*, the *Contract Administrator* and the *City Engineer* have the authority to stop *Work* and order the removal of unsatisfactory materials or require *the Contractor to re-perform the Work in compliance with the Contract Documents*. The *Contractor* will be held liable for all costs associated with the removal of and / or the reconstruction of *Work* which is not in accordance with the *Contract Documents*, as determined by the *Contract Administrator or City Engineer, as applicable*.
		Add 4.12.3	Where tests or inspections by designated testing laboratory reveal *Work* not in accordance with the *Contract Documents*, the *Contractor* shall pay costs for additional tests or inspections as the *Contract Administrator* or *City Engineer* may require verifying acceptability of corrected *Work*.
		Add 4.12.4.1	The *Contract Administrator, City Engineer,* and *Site Inspectors* shall have free and uninterrupted access to any and all parts of the *Work* area and the plants that are producing the materials for the purpose of making inspections and taking samples of materials being used. The *Contractor* shall furnish labour and facilities to: (1) Provide access to *Work* to be inspected and tested. (2) Facilitate inspections and tests. Make good *Work* disturbed by inspection and test.
		Add 4.12.4.2	Testing of materials, assembled components and systems to be carried out at the *Contractor's* cost by an independent third-party testing laboratory approved by the *Contract Administrator*.
		Add 4.12.10	The *Contractor* shall not schedule *Work* that will require inspection beyond an eight-hour *Day*, or forty hour week without the *Contract Administrator's* prior approval. Any extra cost incurred by the *Owner in connection with inspections of Work scheduled outside the foregoing parameters*, whether approved or not,

			may be deducted from the *Contractor's* subsequent progress payment.
		Add 4.12.11	Prior to the *Work* being inspected by the *City Engineer*, the *Contractor* shall make whatever preliminary tests are necessary to assure that the materials and equipment is in accordance with the *Drawings* and *Specifications*.
4.13	**Rejected Work**	Add 4.13.4	If the *Contractor* does not make good any rejected work in a timely and satisfactory manner, then at the discretion of the *Contract Administrator*, *Other Contractors* may be engaged by the *Owner* to make good the rejected work, with the costs of such repair work to be deducted from progress payments owing to the *Contractor* or otherwise recovered from the *Contractor*.
4.16	**Notice of Disruption**	Add 4.16.2	Notifications pursuant to GC.4.18.1 must be in compliance with the requirements of the *City of Vancouver Construction Specifications* (**Error! Reference source not found.***).*
4.17	**No Promotion of Relationship with the Owner**	Add 4.17.1	The *Contractor* shall not disclose or promote its relationship with the *Owner*, including by means of any verbal declarations, announcements, sales, marketing or other literature, letters, client lists, press releases, brochures or other written materials without the express prior written consent of the *Owner* (except as may be necessary for the *Contractor* to perform the *Contractor's* obligations under the terms of the *Contract*). The *Contractor* shall not use the *Owner's* logo or any of the *Owner's* official marks without the express prior written consent of the *Owner*.
4.18	**Hours of Work**	Add 4.18.1	The *Contractor* must comply at all times with all applicable requirements of the *City of Vancouver's Noise By-law*. The *Contractor* shall keep the *Contract Administrator* advised on the proposed hours of *Work* so that inspection can be co-ordinated. *Work* without inspection shall not be permitted. The *Owner's* employees work between the hours of 7:30 a.m. and 3:30 p.m. on all *weekdays except statutory holidays*. The *Contractor* shall not schedule any work to be performed by the *Owner's* crews outside these hours except by special arrangement agreed to by the *Contract Administrator* or in case of emergency.
4.19	**Assignment**	Add 4.19.1	Neither party to the *Contract* shall assign the *Contract* or a portion thereof without the written consent of the other, which consent shall not be

			unreasonably withheld.
4.20	**Approved Equals**	Add 4.20.1	Contractor may request the Owner to approve alternate materials, products or equipment ("**Approved Equals**") for items indicated in the Contractor documents, provided such Approved Equals comply in all respects with the applicable Specifications. Applications for Approved Equals must be in writing and supported by appropriate supporting information, data, specifications and documentation. The Owner is not obligated to review or accept any applications for an Approved Equal and may decide to accept an application for an Approved Equal in its sole discretion.
5.0	**SHOP DRAWINGS**		
5.1	**Preparation of Shop Drawings**	Delete 5.1.3 and replace with	The *Contract Administrator* or *City Engineer* may require that a *Shop Drawing* be stamped by a registered Professional Engineer with appropriate skill and knowledge indicating that the *Shop Drawing* has been prepared in compliance with applicable codes and design standards and good engineering practice.
		Delete 5.1.4 and replace with	If the *City Engineer or Contract Administrator* requires the review and stamping by a Professional Engineer of *Shop Drawings* that are of a type which, according to usual construction practice, are not so reviewed and stamped, then the cost of such review and stamping shall be paid by the *Owner*.
		Add 5.1.5	Manufacturer's standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and other standard descriptive data may be accepted in lieu of *Shop Drawings*, as determined by the *Contract Administrator, in consultation with the City Engineer,* and provided the following conditions are met: (1) Information is deleted which is not applicable to the project. (2) The standard information is supplemented with additional information applicable and specific to the *Work*.
5.2	**Submission of Shop Drawings**	Delete 5.2.1 and replace with	The *Contractor* shall submit *Shop Drawings*, product data and samples to the *Contract Administrator* in a timely way and in an orderly sequence so as to permit the *Contract Administrator and City Engineer* a reasonable opportunity to review the provided information without causing a delay to the *Work* or to the work of *Other Contractors*. The *Contractor* shall submit a *Shop Drawing* schedule in accordance with the *Specifications* related to the

			Construction Schedule. The *Contractor* shall schedule submissions at least 10 *Days* before the date that reviewed submission will be needed. The *Contractor* shall submit the number of copies of *Shop Drawings* and product data which the *Contractor* requires for distribution plus two (2) copies which will be retained by the *Contract Administrator*. *Shop Drawings* shall be prepared and submitted in compliance with the requirements of the *City of Vancouver Engineering Design Manual and Construction Specifications (***Error! Reference source not found.***)*.
		Delete 5.2.4 and replace with	Unless otherwise noted, the *Shop Drawings* may be in CAD format, or other format at selection of the *Contractor*.
5.3	**Review by Contract Administrator**	Delete 5.3.1 and replace with	The *Contract Administrator, in consultation with the City Engineer,* will review *Shop Drawings* submitted by the *Contractor* and return them in accordance with an agreed-to schedule, if any, or otherwise with reasonable promptness so as not to cause delay to the *Work*. Contractor shall coordinate the timing of all submissions required pursuant to the Contract Documents with the performance of the *Work* to which the submission relates. Individual *Shop Drawings* will not be reviewed until all related drawings are available.
		Delete 5.3.2 and replace with	The *Contractor* shall make any changes in *Shop Drawings* which the *Contract Administrator* or *City Engineer* may require consistent with the *Contract Documents* and resubmit unless otherwise directed by the *Contract Administrator or City Engineer*. When resubmitting, the *Contractor* shall notify the *Contract Administrator* in writing of any revisions other than those requested by the *Contract Administrator or City Engineer.*
		Delete 5.3.3 and replace with	When a submitted *Shop Drawing* is acceptable to the *Contract Administrator, in consultation with the City Engineer,* as provided by this GC then the *Contract Administrator* shall date and mark the *Shop Drawing* as "Reviewed" and return it to the *Contractor*. The *Contract Administrator* shall date and mark the number of copies submitted.
6.0	**OTHER CONTRACTORS**		
6.2	**Coordination and Connection**	Delete 6.2.1 and replace with	The *Contractor* shall afford all facilities for the execution of any *Other Work* which may be undertaken by the *Owner* or by such parties as may

			be employed by them, so that such work may be properly and conveniently completed, and the *Contract Administrator* shall have full authority to make and enforce such regulations as the *Contract Administrator* may deem necessary for the conduct of the work; and the *Contractor* shall proceed in such manner and complete in such order such portions of the *Work* as the *Contract Administrator* may require, and the *Contract Administrator* shall be the sole judge as to what facilities are due and proper, and can be afforded without any undue interference with the execution of the *Contract*. The *Contractor* shall at all times give free access and every reasonable facility to the employees of the *Owner* and to *Other Contractors*, to such portion of the work and adjoining land as may be necessary to enable them to execute and maintain work of any description; such accommodation and access being regulated and directed by the *Contract Administrator* and no inconvenience or alleged inconvenience arising therefrom shall form any ground for claims, losses or damages, compensation or otherwise, by the *Contractor* against the *Owner*.
7.0	**CHANGES**		
7.1	**Changes**	Delete 7.1.3 and replace with	Additional work that the *Owner* may wish performed that does not satisfy the requirements of subparagraphs (1) and (3) of GC 7.1.1 is extra Work ("*Extra Work*") and not a *Change*. Pursuant to GC 8, *Extra Work* may be declined by the *Contractor* or may, upon agreement between the parties, be undertaken as *Extra Work*.
		Delete 7.1.4 and replace with	A variation between the actual quantity and the estimated *Tender Quantity* for that item set out in the *Schedule of Quantities and Prices* of not more than plus or minus the percentage set out in GC 9.4.1 shall not be a Change unless the variation is greater than such percentage, in which case the provisions of GC 9.4 shall apply.
7.2	**Contemplated Change Order**	Add 7.2.3	If the *Contemplated Change Order* is for work, which if executed and incorporated would impact a critical path element of the *Work*, then any delay in the *Contractor's* provision of a response to the *Contemplated Change Order greater than 10 days*, will be deemed a Delay by the *Contractor* as defined in GC 13.2.
7.4	**Optional Work**	Delete 7.4.1 and replace with	*Optional Work* will only be included in the *Work* if the *Contract Administrator* so directs by *Change Order*, and in such event the *Contractor* shall

			perform the *Optional Work* as part of the *Work*, for the price tendered at the time of bid and with schedule extension as provided for in the *Contract Documents* (if any).
9.0	**VALUATIONS OF CHANGES AND EXTRA WORK**		
9.2	**Valuation Method**	Delete 9.2.1 and replace with	Adjustments to the *Contract Price* on account of *Changes* shall be valued by *Force Account*.
9.4	**Quantity Variations**	Delete 9.4.1 and replace with	If for any reason, including an addition or deletion under GC 7.1.1.a or GC 7.1.1.b respectively, the actual quantity of an item listed in the *Schedule of Quantities and Prices* constructed or provided by the *Contractor* varies more than plus or minus the *Variance Threshold Percentage* from the estimated quantity for that item as listed in the *Schedule of Quantities and Prices* (the "Tender Quantity"), then either the *Owner* or the *Contractor* may by written notice request a revised *Contract Price* in consideration of such change in quantities.
		Delete 9.4.3 and replace with	If notice is delivered to either party pursuant to GC 9.4.1, the *Contract Price* shall be revised as follows: (1) in the case where the actual quantity an of item constructed or provided is less than the quantity of an item listed in the *Schedule of Quantities and Prices* by more than the *Variance Threshold Percentage*, the *Contract Price* shall be decreased by an amount equal to the unit price of the applicable item as listed in the *Schedule of Quantities and Prices* multiplied by the quantity of unit that constitute the amount of the item constructed or provided less than the *Variance Threshold Percentage; and* (2) in the case where the actual quantity an of item constructed or provided is more than the quantity of an item listed in the *Schedule of Quantities and Prices* by more than the *Variance Threshold Percentage*, the *Contract Price* shall be increased by an amount equal to the unit price of the applicable item as listed in the *Schedule of Quantities and Prices* multiplied by the quantity of unit that constitute the amount of the item constructed or provided in excess of the *Variance Threshold Percentage.*
		Delete 9.4.4	If either party requests a revision to the *Contract Price* pursuant to GC 9.4.1, the *Contractor* shall

			make available to the *Contract Administrator* all documentation reasonably required to verify that the actual amount of the applicable item constructed or provided by the *Contractor* is greater or less than, as the case may be, the quantity set out in the *Schedule of Quantities and Prices* by no less than the *Variance Threshold Percentage*.
		Delete 9.4.5	Delete 9.4.5
10.0	**FORCE ACCOUNT**		
10.1	**Force Account Cost**	Delete 10.1.1 and replace with	Payment for *Work* based on *Force Account* shall be calculated as follows: (5) the costs of labour will be determined by the labour rates specified in Schedule 8 of the *Contract Documents* (Force Account Labour and Equipment Rates); and (6) the costs of equipment will be determined by the construction equipment rates specified in Schedule 8 of the *Contract Documents* (Force Account Labour and Equipment Rates); in each case, such costs shall be deemed to include all amounts on account of overhead, profit, administrative, and any other indirect expenses or allowances, provided in all cases that the foregoing represents in the aggregate no greater than 10% of the costs set out in Schedule 8.
		Add 10.1.2	No compensation will be made for standby of the *Contractor's* labour or owned equipment, unless otherwise previously agreed to in writing. In the case of an occurrence of standby, the standby hours will be separated from the actual hours worked on the records.
		Add 10.1.3	In the completion of *Work* based on *Force Account*, the *Contractor* shall take all reasonable efforts to minimize the effects and costs of the *Work* based on *Force Account*, and this obligation shall be taken into account in the determination of the *Contractor*'s entitlement to a *Contract* extension and reimbursement of costs. If in the opinion of the *Contract Administrator*, the *Contractor* is using an unsuitable methodology, the *Contractor* will be immediately advised that *Work* based on *Force Account* is to cease and will not recommence until the *Contractor* has presented an acceptable methodology.
10.3	**Submit Accurate Records**	Append to 10.3.1	Neither the *Contract Administrator* nor their site representative's signature upon the submitted daily

			sheet forms any agreement for payment, only an agreement on the hours worked under *Force Account*.
12.0	**HAZARDOUS MATERIALS**		
12.1	**Risk of Hazardous Materials**	Add 12.1.4	The *Contractor* shall conduct no *Work* on materials that are potentially *Hazardous Materials* without prior testing. Responsibility for testing will be agreed upon prior to commencing *Work*.
12.3	**Directions for Hazardous materials**	Delete 12.3.2 and replace with	The *Work* shall be performed in full compliance with all *Laws* applicable to any *Hazardous Materials* encountered at the *Place of the Work* by an *Approved Abatement Contractor*.
13.0	**DELAYS**		
13.1	**Delay by Owner or Contract Administrator**	Add 13.1.2	No additional *Contract Time* and no additional reimbursement will be owed to the *Contractor* by the *Owner*, for instances where the delay by *Owner* or *Contract Administrator* is as a direct result of a preceding Delay by the *Contractor*.
13.3	**Unavoidable Delay**	Add 13.3.2	A delay for *Abnormal Weather* will only be considered if the *Contractor* can show that one or more of the following apply: (1) A weather condition, as determined by the *Contract Administrator*, that prevents the *Contractor* from proceeding with at least 60% of the normal labour and equipment force, for at least 5 hours on a component of the *Work*, which if delayed is on the critical path of the most up to date *Construction Schedule*, and as such will delay the completion of the *Work*; (2) The *Contractor* cannot reasonably complete other *Work* on the *Site* to advance the schedule; AND (3) The Contractor complies with the requirements of GC.13.6.3 And, that the *Contractor* has pursued alternate construction methodologies to mitigate potential delays for contractual *Work* in advance of the expected seasonal weather.
13.9	**Liquidated Damages for Late Completion**	Delete 13.9.1 and replace with	If the *Contractor* fails to meet the *Milestone Date* for *Substantial Performance* as set out herein (and as may be adjusted pursuant to the provisions of the *Contract Documents)*, then the *Owner* may deduct from any monies owing to the *Contractor* for the *Work*: (1) as a genuine pre-estimate of the *Owner's*

increased costs for the *Contract Administrator* and the *Owner's* own staff caused by such delay an amount of *$1500.00* per day or pro rata portion for each *Day* that actual *Substantial Performance* is achieved after the *Substantial Performance Milestone Date*; plus

(2) all direct out-of-pocket costs, such as costs for safety, security, or equipment rental, reasonably incurred by the *Owner* as a direct result of such delay.

If the monies owing to the *Contractor* are less than the total amount owing by the *Contractor* to the *Owner* under (1) and (2) then any shortfall shall immediately, upon written notice from the *Owner*, and upon *Substantial Performance*, be due and owing by the *Contractor* to the *Owner*.

Add 13.9.2

If the *Contractor* fails to meet the date agreed to for *Total Performance* or any other *Milestone Date*, the *Owner* may deduct monies as set out in GC 13.9.1.

15.0 OWNERS RIGHTS ON CONTRACTORSS DEFAULT

15.0 Contractor Default

Add 15.0.0

The *Owner*, without prejudice to any other right, may elect to terminate the *Contract* forthwith upon notice to the *Contractor* if:

(1) the *Contractor* fails to comply with the *Notice to Proceed*;

(2) the *Contractor* commits an act of bankruptcy or becomes a bankrupt or makes a general assignment for the benefit of the *Contractor's* creditors;

(3) a receiver is appointed for the *Contractor's* business;

(4) the *Contractor* fails, on reasonable notice from the *Contract Administrator*, in consultation with the *City Engineer*, to supply enough proper labour, equipment, or products;

(5) the *Contractor* does not pay promptly the *Contractor's* employees, *Subcontractors* or suppliers;

(6) the *Contractor* does not comply with the requirements of the WorkSafeBC Regulations, or otherwise fails to meet the safety requirements

of the *Contract*; or

(7) the *Contractor* persistently or substantially breaches any provision of this *Contract*.

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

15.3 Termination

Append to 15.3.1(1)

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

Add 15.3.3

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

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

Add 15.3.4

The fulfilment by the *Contractor* of any stipulation in the *Contract* may be enforced by legal proceedings and judgement, or order of Court, without prejudice to any other remedy herein contained. Neither the *Owner* nor any of its officials, officers, employees or other agents shall

			be liable or accountable to the *Contractor* in any way for the manner in which, or the price at which the *Work*, or any portion thereof, may have been or may be done or completed by the *Owner*. No proceeding taken pursuant to this GC 15 or pursuant to any other provision of the *Contract* shall at any time be deemed to be an assignment of the *Contract* or of any portion thereof, unless otherwise agreed to in writing.
15.4	**Termination of Contract Without Default of Contractor**	Add 15.4.1	The *Contract Administrator* may, as agent for and on behalf of the *Owner*, at the *Contract Administrator's* discretion terminate the *Contract* at any time upon written notice to the *Contractor* notwithstanding the fact that the *Contractor* may not then be in default, in which event the *Owner* shall be liable to the *Contractor* only for *Work* done and materials delivered at or to the *Site* up to the date of the termination plus reasonable demobilization costs up to a maximum of $*[_____]*. Upon payment of the aggregate of the aforesaid sums, the *Owner*, the *Contract Administrator* and the *Contractor* shall be released from their liabilities or obligations under the *Contract* save and except that the liabilities and obligations of the *Contractor* shall continue with respect to: (i) deficiencies and warranties in the portion of the *Work* completed prior to termination; and (ii) the indemnification requirement set out in GC.22.
16.0	**CONTRACTORS RIGHTS ON OWNERS DEFAULT**		
16.3	**Notice of Default**	Delete 16.3.1 and replace with	If: (8) the *Contract Administrator* fails to issue a certificate in accordance with the provisions of GC 18.1.1; or (9) the *Owner* fails to pay the *Contractor* when due the amounts certified by the *Contract Administrator* or awarded by arbitration or court; or (10) the *Owner* fails to provide the *Contract Documents* as required by GC 2.1.1; then the *Contractor* may give written notice to the *Contract Administrator*, with a copy to the *Owner*, that the *Owner* is in default and demand that the *Owner* correct the default within 20 *Days*, and if the

			Owner fails to make the correction then, without prejudice to any other right or remedy the *Contractor* may have, the *Contractor* may stop the *Work* or terminate the *Contract*.
17.0	**DISPUTES**		
17.9	**Attornment to Jurisdiction of Courts of British Columbia**	Add 17.9	Notwithstanding any other provision of the *Contract*, the *Owner* and the *Contractor* irrevocably and unconditionally attorn to the jurisdiction of the courts of British Columbia, and courts to which appeals therefrom may be taken, in respect of any dispute or claim arising under or relating to the *Contract*.
18.0	**PAYMENT**		
18.1	**Preparation of the Payment Certificat**	Add 18.1	5 *Days* prior to the end of the calendar month, the *Superintendent* shall compile and submit a summary of the daily quantities for *Work* completed within the past month. This shall be included with other deliverables such as the *Adjusted Baseline Schedule*, *Quality Management* reports, and supporting documentation in GC 18.2.1.
18.4	**Holdbacks**	Delete 18.4.1 and replace with	Builders Lien Holdback: The *Owner* shall: (1) hold back 10%, or other percentage as required by the *Builders Lien Act*, of any amounts due to the *Contractor* as a builders lien holdback; and (2) if the *Place of the Work* is a highway, City *Street*, or right-of-way then, notwithstanding that a lien cannot be registered against the *Place of the Work*, hold back the percentage that would have been required if the *Builders Lien Act* did apply of any amounts due to the *Contractor* as a builders lien holdback, on the same conditions as though such hold back was a requirement of the *Builders Lien Act*, including making payment from such hold back directly to *Subcontractors*.
		Add 18.4.6	*Maintenance Security Hold Back*: The *Owner* shall hold back 5%, of any amounts due to the *Contractor* as a maintenance security holdback, to cover the costs of corrections to defective *Work* that may be required. The *Contractor* may substitute a letter of credit, in the amount of the *Maintenance Security Holdback*, in a form and from a financial institution acceptable to the *Owner*, for the *Maintenance Security Holdback*.
18.5	**Payment**	Delete 18.5.1 and replace with	During progress of the *Work*, the *Contractor* may make application to the *Contract Administrator* for

payment, in the form of an invoice accompanied by:

(1) a *Payment Certificate* approved by the *Contract Administrator* as per GC 18.1,

(2) a sworn declaration that all amounts relating to the *Work*, due and owing as of the end of the month to third parties including all *Subcontractors* and suppliers, have been paid, and

(3) such other documentation reasonably required by the *Contract Administrator* as may be necessary to establish to the *Contract Administrator's* satisfaction the compliance by the *Contractor* with the conditions of the *Contract.*

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

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

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

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

Delete 18.5.3 and replace with

If for any reason the *Owner* disputes the net amount shown for payment on a *Payment Certificate* the

			Owner shall, within the time specified in this GC, pay to the *Contractor* any amount not disputed and also deliver to the *Contractor* and the *Contract Administrator* written reasons for any deductions. The dispute by the *Owner* of the correct amount owning shall be a *Dispute* and the written reasons for any deduction shall constitute a *Dispute Notice*.
		Add 18.5.4	After 55 calendar days have elapsed from the date of the *Certificate of Substantial Performance* issued in accordance with GC 18.6 and upon the *Contract Administrator's* satisfaction that no encumbrance, lawful claim or lien exists, the *Owner* will, within a further 10 calendar days, make payment to the *Contractor* of all monies due under this *Contract* at the date of *Substantial Performance*, including the release of all remaining *Builders Lien Act* holdback amounts, if any, but retaining at least twice the estimated value of the certified deficiencies, and retaining the *Maintenance Security Holdback*. Upon the issuance of the *Certificate of Total Performance*, the *Owner* will make a final payment of all monies owing to the *Contractor* under the *Contract*, except for the Maintenance Security Holdback, which shall be released as per GC 18.5.1.
		Add 18.5.5	Upon the issuance of the *Certificate of Total Performance*, the *Owner* will make a final payment of all monies owing to the *Contractor* under the *Contract*, except for the *Maintenance Security Holdback*, which shall be released as per GC 18.5.1.
		Add 18.5.6	Where payment is not made in accordance with the payment provisions contained in GC 18.5, the overdue amount shall bear interest at the lending rate of the Bank of Montreal for its prime commercial customers and such interest shall be calculated from and after the date upon which such payment was due and shall accrue until the date that payment of the overdue amount together with interest is made. This interest obligation on the *Owner* shall constitute the sole remedy of the *Contractor* for late payment.
18.6	**Substantial Performance**	Add 18.6.3 (3)	A completed set of legible, marked up as-constructed prints and survey point file containing all inverts, casting elevations and all other information required for the production of *Record Drawings*. If additional information is required, the *Contract Administrator* will cause that information to be obtained, and in doing so, will deduct the costs to the *Owner* from the final progress payment.

		Delete 18.6.4 and replace with	The *Owner*, the *Contract Administrator* and the *Contractor* shall inspect the *Work* and any remaining deficiencies shall be detailed and included on the *Certificate of Substantial Performance*. The date of *Substantial Performance* shall be as stated in this Certificate. Upon issuance of the *Certificate of Substantial Performance* to the *Contractor*, the *Contract Administrator* shall set a reasonable date for the *Total Performance* of the *Work*.
		Add 18.6.7	For the purposes of the *Builders Lien Act* (to the extent applicable), the *Certificate of Substantial Performance* as described herein shall serve as the *Contract's* certificate of completion, and the date of *Substantial Performance* stated in the Certificate shall be deemed to be the date of the Certificate's issuance.
18.10	**Statutory Declarations**	Add 18.10.1	The *Contractor* shall submit with each of the *Contractor's* applications for payment such statutory declarations as may be required herein, which shall be sworn in duplicate by the *Contractor*, or by such person on behalf of the *Contractor* as the *Contract Administrator* may approve. (1) Prior to payment and as condition to any payment, the *Contract Administrator* may at any time require the *Contractor* to file with the *Contract Administrator* a statutory declaration showing that all wages for the various classes of labour, the hire of trucks, equipment, etc., employed in or about the *Site*, all products or other things supplied for use in or upon the *Work* and amounts due to *Subcontractors* and suppliers have been paid and satisfied and that there is no encumbrance, lawful claim or lien accruing for labour or services in connection with the *Work*. Should any amounts be due and unpaid for wages, equipment, hire, products and *Subcontractors* or suppliers as above listed or any encumbrance, lawful claim or lien accrue, the amounts shall be listed on a duly attested statement, in duplicate, and attached to the statutory declaration referred to above. The *Contract Administrator* may at any time, if the *Contract Administrator* deems it advisable, require from the *Contractor* a statement showing the rates of wages paid by the *Contractor* for the various classes of labour, the rates of hire of trucks and equipment employed

and the prices and quantities of any products supplied for use in or upon the *Work* and may also require the statement to show in detail the names of unpaid employees, the rates of wages and amounts due to each, and the names of creditors, quantities, prices and amounts due to each. Such statement shall be duly attested in duplicate as above and be a condition precedent to the right of the *Contractor* to receive payment.

(2) Prior to final payment and as a condition to issuance by the *Contract Administrator* of a *Certificate of Total Performance*, the *Contractor* shall file with the *Contract Administrator* a statutory declaration showing that all *Work* in respect of the *Contract* has been completed; all accounts, detailed in the first sentence of Section (1) of this General Condition have been paid and satisfied and there is no encumbrance, lawful claim or lien accruing for labour, products or services in connection with the *Work*; and payments already received and due under the final payment application are accepted by the *Contractor* as full compensation for everything furnished and done by the *Contractor* under the *Contract*.

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

18.11 Money Due to Owner

Add 18.11.1

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

			retained may be unascertained.
19.0	**TAXES, DUTIES AND GST**		
19.4	**Non-Resident Witholding Tax**	Add 19.4.1	If the *Contractor* is, at any time, a non-resident of Canada, within the meaning of the *Income Tax Act* (Canada) as amended, then, and the *Contractor* hereby so agrees, the *Owner* may deduct from all money payable under the *Contract* and remit to the Receiver-General of Canada, the Government of Canada or the Canada Revenue Agency sums required to be withheld and remitted by the *Income Tax Act* (Canada), as amended. The *Owner* will receive a further credit under the *Contract* for money withheld as of and from the date of the withholding (regardless of when or whether remitted) and no interest will be payable by the *Owner* on sums withheld, not remitted as aforesaid and later paid directly to the *Contractor*.
20.	**LAWS, NOTICES, PERMITS AND FEES**		
20.2	**Permits**	Delete 20.2.1 and replace with	Except for *Owner Permits*, the *Contractor* shall obtain all permits, licenses, approvals and certificates which, as of the *Tender Closing Date*, are required for the performance of the *Work* (collectively the "*Contractor Permits*"). *Contractor Permits* shall include all municipal construction permits and approvals. The *Contractor* shall pay all *Contractor Permit* fees.
		Delete 20.2.2 and replace with	Unless otherwise noted in the *Contract Documents*, the *Owner* shall obtain those permits, clearances and approvals that are required for operation of the completed project, including any permanent easements or other permanent property rights, land use approvals (such as zoning) or environmental approvals (such as Federal Department of Fisheries and Oceans) (collectively the "*Owner Permits*"). The *Owner* shall obtain all *Owner Permits* in a timely manner so as not to delay the progress of the *Work*.
		Add 20.2.3	All *Work* within *City* properties shall be carried out and completed within the stated terms and conditions of any applicable permit, specification and bylaw.
		Add 20.2.4	It is the *Contractor's* responsibility to seek clarification and instruction from the *Contract*

			Administrator regarding construction activities that are not covered by the applicable permits, bylaws and *City* and *MMCD* Specifications. In the event of any variation between this manual and *City* bylaws, the bylaws shall prevail.
21.0	**WORKERS COMPENSATION REGULATIONS**		
21.0	**Payment of WorkSafeBC Assessments**	Add 21.0.0	The *Contractor* agrees that it shall at its own expense procure and carry or cause to be procured and carried and paid for, full WorkSafe BC coverage for itself and all workers, employees, servants and others engaged in or upon any *Work* or service which is the subject of this *Contract*. The *Contractor* agrees that the *Owner* has the unfettered right to set off the amount of the unpaid premiums and assessments for such WorkSafe BC coverage against any monies owing by the *Owner* to the *Contractor*. The *Owner* shall have the right to withhold payment under this *Contract* until the WorkSafe BC premiums, assessments or penalties in respect of *Work* done or service performed in fulfilling this *Contract* have been paid in full.
21.2	**Contractor is "Prime Contractor"**	Delete 21.2.1 and replace with	Unless otherwise specified in the *Contract Documents* or notified to the contrary by the *Contract Administrator*, the *Contractor* is the "Prime Contractor" for the purpose of all *Laws* relative to occupational health and safety, including the discharge of all duties of the "Prime Contractor" under the *Workers Compensation Act* (British Columbia), notwithstanding that the *Owner*, the *Contract Administrator* or *Other Contractors* may provide from time to time some of the services normally provided by such "Prime Contractor". In this GC.4.2 "Prime Contractor" has the definition ascribed to the term "prime contractor" under the *Workers Compensation Act* (British Columbia).
		Add 21.2.2	If the *Contractor* is the "Prime Contractor", the *Contractor* shall: (1) comply with all Laws, and all reasonable rules established by the Owner of which the Contractor is given timely notice through the Contract Administrator, relative to occupational health and safety; (2) initiate, maintain and supervise all safety programs and measures in connection with the performance of the Work, which programs and measures shall respond fully to the

requirements of all Laws relative to occupational health and safety, all to the satisfaction of the Contract Administrator;

(3) conduct regular safety meetings at the Site, no less frequently than weekly, record minutes of such meetings and give copies of such minutes to the Contract Administrator on a weekly basis;

(4) supply and maintain at the Site all safety equipment necessary to protect workers and others from accident or injury;

(5) supply and maintain at the Site all personnel, equipment and supplies necessary for the provision of appropriate first-aid to any worker or person suffering an accident or injury at or about the Site, and establish an emergency procedure for prompt removal of any such person from the Site to a hospital, clinic or medical office for further treatment; and

(6) prior to commencement of construction, the Contractor will:

a. complete and file a "Notice of Project" with the WorkSafeBC in compliance with Section 20.2 of the WorkSafeBC Rules, and

b. post the Notice of Project at the *Site*, and

c. provide a copy of the Notice of Project to the *Owner* and confirm in writing that the Notice of Project has been posted at the *Site*.

If, or for so long as the *Contractor* is not the "Prime Contractor", the *Contractor* shall:

(1) comply with all Laws, and all reasonable rules established by the Owner of which the Contractor is given timely notice through the *Contract Administrator*, relative to occupational health and safety;

(2) comply with all reasonable directions issued by the "Prime Contractor" regarding compliance with *Laws*, and rules established by the *Owner*, relative to occupational health and safety; and

(3) attend all *Site* safety meetings convened by the "Prime Contractor".

Whether or not the *Contractor* is the "Prime Contractor", it shall:

(1) report immediately to the "Prime Contractor"

(if not the Contractor) and the *City Engineer* all accidents and injuries of any kind or severity occurring on or about the Site and involving employees of the Contractor or any Subcontractor, or any other person of which the Contractor is aware, and arising out of or in connection with the Work;

(2) confirm in writing each report made under subparagraph (1) above; and

(3) respect and adhere to the *Owner*'s safety and training polices relative to the *Site* and the *Work*.

If the *Contract Administrator* determines that the *Contractor* is not in compliance with its obligations as "Prime Contractor", if applicable, the *Owner* may, but is not obliged to, provide some or all of the services required to discharge those obligations. All costs incurred by the *Owner* in providing such services shall be paid by the *Contractor* to the *Owner*, and may be deducted from any amount then or thereafter becoming due to the *Contractor* under the *Contract*.

Add 21.2.3 Upon request of the *Contract Administrator* or the *Owner*, the *Contractor* will provide the *Owner* and the *Contract Administrator* with the *Contractor*'s or any *Subcontractors*' WorkSafeBC registration number.

Add 21.2.4 Concurrently with making any application for payment under this *Contract*, the *Contractor* will provide the *Owner* with written confirmation that the *Contractor* and all *Subcontractors* are registered in good standing with WorkSafeBC and that all assessments have been paid.

Add 21.2.5 The *Contractor* may or may not have received, as part of the *Contract Documents*, a "Pre-Contract Hazard Assessment" prepared by or for the *Owner* pursuant to the *Owner*'s statutory obligations under the WorkSafeBC/H&S Regulation (Section 119 of the WCA) as an "owner of a workplace". Despite the *Owner*'s statutory obligations, the *Contractor* now acknowledges and agrees that the *Contractor* may not rely on the "Pre-Contract Hazard Assessment" and now agrees to assume by the terms of this *Contract* full responsibility for carrying out the *Owner*'s obligations under Section 119 of the WCA, including without limitation and by way of example only, conducting all due diligence inquiries of all applicable *Owner* staff and departments in order to ascertain what, if any, information is known or has

			been recorded by *Owner* staff about the *Site* that is necessary to identify and eliminate or control hazards to the health or safety of persons at the *Site*. The *Owner* now agrees to make all reasonable efforts to assist the *Contractor* in obtaining timely access to *Owner* staff and *Owner* records for this purpose. The *Contractor* will immediately start conducting such due diligence inquiries and must complete and deliver written confirmation of the completion of such inquiries to the *Contract Administrator* prior to the *Owner* being obligated to issue the *Notice to Proceed*.
		Add 21.2.6	The *Contractor* will indemnify the *Owner* and hold harmless the *Owner* from all manner of claims, demands, costs, losses, penalties and proceedings arising out of or in any way related to: (1) unpaid WorkSafeBC assessments of the *Contractor* or any other employer for whom the *Contractor* is responsible under this *Contract*; (2) the acts or omissions of any person engaged directly or indirectly by the *Contractor* in the performance of this *Contract*, or for whom the *Contractor* is liable pursuant to the *Contractor*'s obligations as the Prime Contractor, and which acts or omissions are or are alleged by WorkSafeBC to constitute a breach of the WorkSafeBC/H&S Regulation or other failure to observe safety rules, regulations and practices of WorkSafeBC, including any and all fines and penalties levied by WorkSafeBC; or (3) any breach of the Contractor's obligations under this GC4.2.
22.1	**Contractor to Indemnify**	Delete 22.1 and replace with	The *Contractor* releases the *Owner*, its officers, officials, employees and agents from all costs, losses, damages and expenses, including those caused by personal injury, death, property damage, loss and economic loss arising out of, suffered or experienced by the *Contractor*, its *Subcontractors*, and their respective officers, employees and agents, or suffered or experienced by any other entity or person in connection with the performance of the *Work*. Despite the provision of insurance coverage by the *Owner*, the *Contractor* hereby agrees to indemnify and save harmless the *Owner*, its elected officials, officers, employees and authorized representatives and each of them from and against losses, claims,

			damages, actions, and causes of actions that the *Owner* may sustain, incur, suffer or be put to at any time either before or after the expiration or termination of the *Contract*, that arise out of the acts of the *Contractor*, its *Subcontractors*, or their respective officers, employees or agents under the *Contract*. This indemnity will not affect or prejudice the *Owner* from exercising any other rights that may be available to it at law or in equity. The release and indemnity set out in this GC will survive the expiry or sooner termination of the *Contract*.
22.2	**Owner to Indemnify**	Deleted 22.2.2 and replace with	If the *Owner* performs work at the *Place of the Work* at the same time as the *Contractor* is performing the *Work*, then the *Owner* shall indemnify and hold harmless the *Contractor*, and the *Contractor's* agents and employees from and against claims, demands, losses, costs, damages, actions, suits or proceedings by third parties that arise out of, or are attributable to, the negligent acts or omissions of the *Owner*, the *Owner's* agents, or employees in the performance of that work.
22.4	**Patent Infringement**	Add 22.4	*Contractor* hereby agrees to indemnify and save harmless the *Owner*, its elected officials, officers, employees and authorized representatives and each of them from and against losses, claims, damages, actions, and causes of actions that the *Owner* may sustain, incur, suffer or be put to at any time either before or after the expiration or termination of the *Contract*, that arise out of any actual or alleged infringement of any *Intellectual Property Rights* caused by the performance of the Work or the use of any process, work, material, matter, thing or method used or supplied by the *Contractor* or any *Subcontractor* in the performance of the *Work*.
24.0	**INSURANCE**		
24.1	**Required Insurance**	Delete 24.1.1 to 24.1.6 and replace with	(1) The *Contractor* shall obtain and maintain throughout the term of the *Contract* and the prosecution of the *Work*, all of the insurance policies described in Schedule 9 of the *Contract Documents*. (2) All insurance coverage described in Schedule 9 of the *Contract Documents* shall be issued by an insurance carrier or agent acceptable to the *Owner* and licensed to conduct business in the Province of British Columbia. (3) Upon request of the *City Engineer* or the

Owner, the *Contractor* shall be required to deliver a Certificate of Insurance, and where required by the *Owner's* Director of Risk Management, certified copies of all policies and endorsements, evidencing the placement and endorsement of insurance in accordance with this GC 24.

(4) Contractors and their *Subcontractors* shall be required to furnish evidence of the renewal of policies described in this GC by renewal certificate, endorsement or certified copy to be received by the *Owner* at least 15 calendar days prior to the expiry date of the policy.

(5) If the *Contractor* fails to obtain and maintain insurance as required hereunder, or if the *Owner* does not approve any insurance policy or policies submitted to the *Owner* and the *Contractor* thereafter does not meet the requirements of the *Owner* as to terms and conditions of the insurance policy, the *Owner* shall have the right to place and maintain such insurance in the name of the *Contractor*. The cost thereof shall be payable by the *Contractor* to the *Owner* on demand, and the *Owner* may deduct the cost thereof from any monies which are due or may become due to the *Contractor*. If coverage should lapse, all *Work* by the *Contractor* shall be stopped until satisfactory evidence of renewal is produced.

(6) Each policy described in Schedule 9 of the *Contract Documents* shall be required to be endorsed to provide the following notice for policy changes and cancellations to the *Owner*: "It is understood and agreed that this policy will not be cancelled, reduced, materially altered or changed without the insurer giving at least 30 calendar days' prior written notice by registered mail to the City of Vancouver."

(7) In addition to the requirements of Schedule 9 of the *Contract Documents*, each *Contractor* and each of its *Subcontractors* shall provide at its own cost any additional insurance which it is required by law to provide or which it considers necessary.

All deductibles shall be for the account of and be paid by the *Contractor* upon demand by the *Owner*. The *Owner* shall have the right to deduct amounts for which the *Contractor* is responsible under this GC 24 from any monies which are due or may

become due to the *Contractor*.

25.0 MAINTENANCE PERIOD

25.1 Correction of Defects

Delete 25.1.1 and replace with

The *Contractor* shall, at the *Contractor's* own expense, promptly correct defects or deficiencies in the *Work* that appear prior to and during the period of two years from the date of the *Certificate of Substantial Performance*, or such longer periods as may be specified in the *Contract Documents* for certain products or *Work* (the "*Maintenance Period*'), including damage caused by backfill deficiency.

Add 25.1.4

Whether the *Contractor* should replace defective products or *Work*, or repair the same, shall be determined by the *Contract Administrator*. Should the *Contractor* fail to make good defects within 3 *Days* after being notified by the *Owner* to do so, the *Owner* at its option may do so and all costs, charges and expenses so incurred may be deducted or collected by the *Owner* as provided in GC 18.11, provided that the *Owner* shall first deduct such amounts from the *Maintenance Security Holdback*. If the *Owner* assesses the defects to be dangerous or determines that an emergency situation exists, the *Owner*, at the *Owner's* discretion will effect repairs immediately and all costs, charges and expenses so incurred may be deducted or collected by the *Owner* as provided in 18.11 – Money Due to *Owner*; provided that the *Owner* shall first deduct such amounts from the *Maintenance Security Holdback*.

The decision of the *Owner* shall be final as to the necessity of repairs or of any *Work* done or required to be done under the provisions of the *Contract* and for the amounts expended thereunder. If in the opinion of the *Contract Administrator*, it is in the *Owner's* best interests (taking into account effects on the *Owner's* overall schedule, the difference in value between the *Work* as performed and that called for by the *Contract Documents*, and other relevant factors) not to correct defective *Work* or *Work* not provided in the *Contract Documents*, the *Contract Administrator* will assess the amount which should be deducted from the amount otherwise due to the *Contractor* and will assess the length of time by which the obligations should be extended in order to put the *Owner* in as close a position financially and in terms of the useful life of the *Work* as would have been the case had the *Contractor* performed the *Work* as called for by the

Contract Documents. For further certainty, the *Contract Administrator* may extend the *Warranty Period* in appropriate circumstances to a minimum of twice the *Warranty Period* originally provided for under the *Contract Documents*, subject always to the above parameters.

END OF Supplementary General Conditions

SCHEDULE 2
SPECIFICATIONS AND DRAWINGS

The following is the list of Specifications and Drawings referred to in Article A-3:

[To be added.]

All are incorporated by reference in the form made available by the City during the ITT.

SCHEDULE 3
SCHEDULE OF QUANTITIES AND PRICES

When the Contract is finalized, this Schedule will be based on the breakdown of the tendered price in relation to the particular Work for which the Contract is awarded, as provided in the successful Tenderer's Form of Tender.

SCHEDULE 4
SUBCONTRACTORS AND SUPPLIES

The following are Subcontractors that the Contractor will use for the Work:

Subcontractor	Address	Division/Section Of Work
[To be completed, based on Tender]		

The following are Suppliers that the Contractor will use for the Work:

Supplier	Manufacturer	Address	Item
[To be completed, based on Tender]			

SCHEDULE 5
CONSTRUCTION SCHEDULE

Insert the construction schedule provided in response to the Notice of Award, as accepted by the City.

SCHEDULE 6
PERFORMANCE AND LABOUR AND MATERIALS PAYMENT BONDS

Attach copies of performance bond and labour and material payment bond provided after contract award.

(see attached)

SCHEDULE 7
INSURANCE CERTIFICATES

Attach copies of insurance certificates for the project provided after Contract award.

(see attached)

SCHEDULE 8
FORCE ACCOUNT LABOUR AND EQUIPMENT RATES

When Contract is finalized, insert table of labour and equipment rates provided with successful Tenderer's Form of Tender

SCHEDULE 9
INSURANCE REQUIREMENTS

1. **All Risk Course of Construction Insurance**

(a) *Coverage*

"All Risks" of physical loss or damage.

(b) *Property Insured*

(i) *At Site*

All materials, equipment and machinery, labour and supplies of any nature whatsoever, Work in progress, including property of the insured or of others for which the insured may have assumed responsibility, to be used in or incidental to the Site preparations, demolition or existing structures, erection and/or fabrication and/or reconstruction and/or repair of the project insured, commencing when the property becomes at the insured's risk, at the Site, and while there awaiting, during and subsequent to erection and/or fabrication and/or repair and/or testing.

(ii) *Transit*

Property to enter into and form a part of the project insured, from the commencement of loading at the original point of shipment anywhere in Canada or the continental United States of America, but excluding such property in the course of manufacturing or processing within buildings at the manufacturer's or supplier's site.

(iii) *Off-Site*

Off-Site coverage shall apply to property that is to be incorporated into and form a part of the project insured, anywhere in Canada or the Continental United States of America, but excluding such property while in transit or in the course of manufacturing or processing within buildings at the manufacturer's or supplier's site.

(c) *Insureds*

The Owner, the Contractor, and their respective officials, officers, employees and agents.

(d) *Term*

During the period of the construction operations and also during any period in which the property insured is being prepared for use and while partially used or occupied; provided all coverage shall cease when the Work has been formally accepted as complete by the Owner, whichever shall first occur.

(e) *Limit and Deductibles at Site*

(i) Limit of *Liability*: Full replacement value of the Work

(ii) Deductible not to exceed $5,000.

2. **"Wrap Up Liability Insurance"**

(a) *Insureds*

The Owner, the Engineer, the Contractor, and all Subcontractors, and their respective officials, officers, employees and agents.

(b) *Limits*

Bodily injury liability and property damage liability including aggregate products and completed operations: $10,000,000 for each occurrence.

(c) *Extensions of Coverage*

(i) Broad form products and completed operations liability, including coverage for activities of the Contractor and Subcontractors during the completed operations period;

(ii) Owner's and contractor's protective liability;

(iii) Blanket contractual liability;

(iv) Contingent employer's liability;

(v) Personal injury liability;

(vi) non-owned automobile liability;

(vii) Cross liability or severability of interest clause;

(viii) Employees as additional insureds;

(ix) Blasting, collapse, underpinning, shoring, pile driving, dredging or grading activities;

(x) Loading and unloading of automobiles;

(xi) Hoist liability;

(xii) Unlicensed and specially licensed vehicles;

(xiii) Operation of attached machinery;

(xiv) Limited pollution liability arising out of hostile fire and sudden and accidental release of contaminants.

(d) *Deductibles*

Deductible not to exceed $5,000.

(e) *Cross Liability*

The insurance shall apply to any action brought against any one of the insureds by any other insured in the same manner as though separate policies were issued to each.

(f) *Term*

Period of construction or completion of the Work, whichever shall first occur, plus 24 months for completed operations liability thereafter.

(g) *Waiver of Subrogation*

It is understood and agreed that in the event of a loss and upon payment of claim hereunder, the insurer will waive the any right of subrogation against the Owner, the Engineer and all architects, engineers or consultants engaged in or connected with the construction and Site preparation and related operations of the Work and any of their servants, agents, employees, and parent, subsidiary, affiliated or associated firms.

3. **Automobile Insurance**

A standard owner's form automobile policy for licensed vehicles providing third party liability and accident benefits insurance as provided by the Insurance Corporation of British Columbia (Autoplan) in accordance with applicable British Columbia law, with the minimum limits as follows:

Bodily injury and property damage (third party limit) inclusive limit: $5,000,000.

4. **Contractor's Equipment Insurance**

"All Risk" insurance with insurers acceptable to the Owner, covering all construction equipment, owned or rented, or for which the Contractor or any of its Subcontractors may be responsible. In the event of loss or damage to the said construction equipment, or any part thereof, the Contractor or the Subcontractor, as the case may be, shall, if so requested by the Owner in writing, forthwith replace such damaged or destroyed construction equipment.

It is understood and agreed that in the event of a loss and upon payment of claim hereunder, the insurer will waive any right of subrogation against the Owner, the Engineer and all architects, engineers or consultants engaged in or connected with the construction and Site preparation and related operations of the Work and any of their servants, agents, employees, and parent, subsidiary, affiliated or associated firms.

5. **Contractor's Pollution Liability Insurance**

The Contractor will obtain or cause its Subcontractors to obtain contractor's pollution liability insurance including "Non Owned Disposal Sites" ("NODS") coverage for a limit

not less than $2,000,000.00 per occurrence with a deductible not greater than $50,000.00 covering third party bodily injury, property damage and clean-up costs arising out of a pollution event including but not limited to unexpected and unintentional spill, discharge, emission, dispersal, leakage, migration, release or escape of pollutants including Polychlorinated Biphenyl ("PCB"). Coverage will include the transportation, loading and unloading of materials. The **c**overage is to include the Contractor as a named insured**.**

6. **Professional Liability Insurance**

The Contractor's sub-contracting erection engineer will be required to obtain and carry a professional (errors and omissions) liability insurance policy with limits of not less than $2,000,000 per occurrence (and aggregate coverage of not less than $5,000,000) and a deductible of not more than $50,000, protecting the sub-contracting engineer against all claims for loss or damage arising out of any wrongful act or error or omission of the erection engineer or its personnel in the performance of the Work.

SCHEDULE 10
CITY PRE-CONTRACT HAZARD ASSESSMENT FORM

See attached.

SCHEDULE 10

CITY PRE-CONTRACT HAZARD ASSESSMENT FORM

CONTRACT TITLE: HARO ST TRANSMISSION MAIN REPLACEMENT – GILFORD MINI-PARK

CONTRACT NAME & NO.: PS20201114

PROJECT MANAGER (CITY EMPLOYEE): Ivan Malis

Purpose

This document shall be completed by the project manager, who shall list all the **known** worksite hazards and all the **existing** work process hazards that will be associated with the upcoming contract. The completed document shall then be provided to all potential contractors, as part of the tender package, so the project can be bid appropriately based on the known worksite hazards.

Definitions

Project Manager – the City employee designated to be the liaison with the contractor for the purpose of managing, overseeing, coordinating or in any other way administering the contract.

Instructions for Completion

The document must be completed in full. Choices for each entry are:

Y – Yes - the known worksite hazard or existing work process hazard does exist

N – No - the known worksite hazard or existing work process hazard does not exist*

NA – Not Applicable - worksite hazard or existing work process is not applicable for this contract type

TBD - a third party (environmental consultant) will address the issue (primarily for a hazardous materials assessment)

*based on reasonable estimation from all input by persons with expertise or relevant knowledge and understanding

Information from Hazardous Materials Assessments Provided by a Third Party

A hazardous materials assessment may be completed prior to the Project Manager completing the Owners List of Known Workplace Hazards. Any such assessment should be referenced by the Project Manager in this document and provided with the tender package. Hazardous materials may include asbestos, lead, crystalline silica, ammonia, PCB's, CFC's, moulds, mercury, ozone depleting substances (ODS), radioactive substances.

Assistance in Completing this Document

If you have questions while completing this document, or are unsure if the listed hazards apply, please seek assistance from Health and Safety (604.871.6078 or healthandsafety@vancouver.ca).

HAZARD OR ISSUE	**Project Manager**
1. **Asbestos-containing Materials - disturbance or penetrations of flooring, walls, ceiling tiles, pipe lagging, ac pipe, transite siding, particularly in older facilities; e.g., furniture/fixture installation, carpeting/flooring services, and boiler repair/tune-up services,** streetlights, abandoned Telus conduit, etc.	**Yes (Y) No (N) Not Applicable (NA) To Be Determined (TBD)**
a) Asbestos containing materials (ACM) may be encountered	**Y**
b) A hazardous materials assessment for asbestos is provided in the tender package	**N**
c) A hazardous materials assessment for asbestos is the responsibility of the contractor	**Y**

2. **Lead-containing Materials -** disturbance of lead-based paint, particularly in older facilities. Also present in certain electrical circuitry and metal alloys; .e.g., overhead bridge crane maintenance/repair, high-voltage cable splicing services, boiler repair/tune-up services, fixture installation services, and chiller maintenance/repair services.	**Yes (Y) No (N) Not Applicable (NA) To Be Determined (TBD)**
a) Inorganic lead-containing materials may be encountered	**N**
b) A hazardous materials assessment for lead is provided in the tender package	**NA**
c) A hazardous materials assessment for lead is the responsibility of the contractor	**N**

3. **Other hazardous materials -** may include ammonia, PCBs, CFCs, moulds, mercury, ozone depleting substances (ODS), radioactive substances, sewage, unknown contaminated materials, other: (list other here)_____	**Yes (Y) No (N) Not Applicable (NA) To Be Determined (TBD)**
a) A hazardous materials assessment for ammonia is provided in the tender package	**NA**
b) A hazardous materials assessment for (list the specific hazardous material) will be provided in the tender package	**NA**
c) A hazardous materials assessment for (list the specific hazardous materials) will be the contractors responsibility	**NA**

4. **CONFINED SPACES** - working in vaults, chambers, pits, tanks, etc.; e.g., construction, inspection and testing services, water/fuel storage tank clean-out services, and utility corrosion inspection services.	**Yes (Y) No (N) or Not Applicable (NA)**

a) A hazard assessment (for entry and inspection only) from the City of Vancouver is provided in the tender package	**NA**
b) The City of Vancouver shall provide procedures to isolate adjacent piping, or to lock out equipment (complicated systems only)	**NA**
c) The contractor shall be responsible for isolation and lockout procedures in the confined space	**NA**

5. **Lock Out -** industrial equipment maintenance, power machinery repair services, pump maintenance/repair services, mechanical refrigeration systems, elevator repair, overhead bridge crane maintenance/repair services, cathodic protection services, hydraulic test systems repair/service, and air compressor rebuilding services.	**Yes (Y) No (N) or Not Applicable (NA)**
a) Lockout will be required to isolate or prevent the unexpected release of energy (electrical, mechanical, hydraulic, chemical, thermal, kinetic, gravitational, pneumatic)	**Y**
b) Work will be performed on or near energized equipment, lines, or circuits	**Y**

If yes to a) or b) describe:

There are currently lights on roads near the closure area that will need to be turned off, and locked out, before any extension work is undertaken

6. **Fall Protection -** tree pruning, window and ledge cleaning, window replacement, overhead bridge crane maintenance/repair services, roll-up door replacement, tent installation, awning/canopy installation, overhead air exchange installation, construction inspection and testing services.	**Yes (Y) No (N) or Not Applicable (NA)**
a) Workers will be exposed to a potential fall in excess of 3 m (10 feet), or to a fall of less than 3 m which would likely result in a serious injury (ex. impalement on rebar)	**N**
b) Scaffolding or ladders will be required to be secured to a building or structure	**NA**

7. **Overhead and Underground Utilities - tree pruning services, tree removal, utility relocation or replacement, underground utility identification (digging with powered equipment), concrete sawing services, pole painting**	**Yes (Y) No (N) or Not Applicable (NA)**
a) There will be electrical hazards associated with overhead power lines such as limits of approach and contact	**Y**
b) Necessary assurances (in writing) have (or will be) obtained by the City, through the utility company, for any work where minimum limits of approach cannot be maintained (provide documentation and review at pre job meeting with the successful contractor candidate)	**Y**
c) Necessary assurances must be obtained (in writing) by the successful contractor, through the utility company, for any work where minimum limits of approach will not be able to be maintained	**Y**

d) Underground or hidden utilities are located on the job site. Any excavation or drilling work in proximity to an underground utility service must be undertaken in conformity with the requirements of the owner of that utility service	**Y**

If yes to c), and the specific physical locations where minimum limits of approach will not be able to be maintained are known, how will this information be provided to the contractor?

There are numerous gas lines and other utilities that are underground throughout the site.

There are overhead power lines and other overhead services that are adjacent to the site.

8. **CONSTRUCTION, EXCAVATION, SHORING AND DEMOLITION**	**Yes (Y) No (N) or Not Applicable (NA)**
a) As Prime Contractor, the City of Vancouver project manager will submit the Notice of Project	**NA**
b) Workers will be required to enter an excavation over 1.2m (4 ft) in depth	**N**

9. **CHEMICALS, SOLVENTS, FUMES, VAPORS, AND/OR DUSTS** (existing work processes or known worksite hazard only) – ice rinks, swimming pools, cleaning solvents, adhesives, paints, coatings, binders; e.g., storage tank clean-out services, countertop installation (epoxies), and flooring	**Yes (Y) No (N) or Not Applicable (NA)**
a) The worksite has chemicals solvents, fumes, vapors or dusts that may affect the contractor	**Y**
b) Material Safety Data Sheets for chemicals currently in use at the worksite will be available, on request, to the contractor	**N**

If yes to a), list the work processes and/or chemicals in use:

It may be dusty at times or the construction activity may stir up dust in which case dust suppression is required.

10. **NOISE –** (existing work processes only)	**Yes (Y) No (N) or Not Applicable (NA)**
a) Employees will be exposed to noise levels above 85dbA	**Y**

OTHER HAZARDS (NOT IDENTIFIED ABOVE)	**Yes (Y) No (N) or Not Applicable (NA)**
a) eye hazards (throughout the site)	**Y**
b) fires/explosion (Landfill active face, composting facility, flare station, equipment, throughout the site)	**Y**
c) mobile equipment/vehicle traffic (throughout the site)	**Y**
d) needle stick/blood borne pathogens (in garbage/on wheels/tracks of equipment) –	**Y**
e) spills (known/unknown materials)	**Y**
f) trip/slip hazards (throughout the site)	**Y**
g) violence (public)	**Y**
h) Equipment tipping/rollover (RDO, active face, compost, demolition area)	**Y**
i) Hot surfaces (equipment, flare station)	**Y**
j) Bee stings and allergies – site is adjacent to a bee pollinator park	**Y**

KNOWN WORKPLACE HAZARDS LIST COMPLETED BY	
Project Manager Name (print): Ivan Malis	
Project Manager Signature: Ivan Malis	**Date: November 18, 2020**
Title: Senior Project Manager, Project Delivery Branch	**Phone: 604-873-7392**

SCHEDULE 11
CONTRACTOR PRE-CONTRACT HAZARD ASSESSMENT FORM

See attached.

SCHEDULE 11
CONTRACTOR PRE-CONTRACT HAZARD ASSESSMENT FORM

[Completed form to be attached to the finalized agreement.]

CONTRACT TITLE

_____

PROJECT MANAGER (CITY EMPLOYEE)

_____

CONTRACTOR REPRESENTATIVE

_____

CONTRACT NAME &

_____

Purpose

This document shall be completed by the contractor awarded the contract, who shall identify all the **known and potential work process hazards** associated with the contract. The contractor, who is responsible for all identified actions, shall provide a completed Contractors Pre-Work Hazard Identification (CHI) document to the Project Manager (City employee) for review and consultation before the contract work begins.

Reference Material

In order to complete this document, the contractor should reference a completed copy of the **List of Known Workplace Hazards**, initially provided with the tender package. The contractor is also responsible to reference any **Hazardous Materials Assessments**, provided by the City with the tender package, and possibly referenced in the List of Known Workplace Hazards document.

Instructions for Completion

The document must be completed in full. Choices for each entry are:

Y – Yes – this work process or worksite hazard will exist for this contract and are the responsibility of the contractor

N – No – Even though the work process or worksite hazard will exist, it will not be the responsibility of the contractor

NA – Not Applicable - the work process or worksite hazard is not applicable for this contract

TBD - a third party (environmental consultant) will address the issue (primarily for a hazardous materials assessment)

Each grouping of safety hazards or issues in this document (bold text, capitalized) may list some examples of work tasks where this hazard may be encountered. These examples are not conclusive; there may be other examples of work tasks that create this hazard or issue.

Documentation and Training Requirements

During the contract term, the contractor may be requested by the City of Vancouver, and shall provide documented evidence for items identified with a **(D)** in this document.

The summary table at the end of the document provides all potentially required documentation, and if applicable, the WCB OHS Regulation reference.

For any identified hazard marked with a **(T)**, the contractor is responsible to train their employees.

HAZARDOUS MATERIALS

The contractor is responsible for providing additional information on hazardous materials which may be encountered as part of the work process, yet not identified in the List of Known Workplace Hazards.

HAZARD OR ISSUE	**Contractor Confirmation**
1. **ASBESTOS-CONTAINING MATERIALS -** disturbance or penetrations of flooring, walls, ceiling tiles, pipe lagging, ac pipe, transite siding, particularly in older facilities; e.g., furniture/fixture installation, carpeting/flooring services, and boiler repair/tune-up services.	**Yes (Y) No (N) Not Applicable (NA) or To Be Determined (TBD)**
a) We have reviewed the hazardous materials assessment for asbestos provided by the City of Vancouver (or third party) in the tender package	**Y N NA TBD**
b) We will provide a written hazardous materials assessment for asbestos	**Y N NA TBD**
c) We have a written Asbestos Program **(D)**	**Y N NA**
d) As Prime Contractor, we will submit a Notice of Project Asbestos(NOP-A) to WorksafeBC at least 24 hours in advance of the project startup	**Y N NA**

2. **LEAD-CONTAINING MATERIALS -** disturbance of lead-based paint, particularly in older facilities. Also present in certain electrical circuitry and metal alloys; .e.g., overhead bridge crane maintenance/repair, high-voltage cable splicing services, boiler repair/tune-up services, fixture installation services, and chiller maintenance/repair services.	**Yes (Y) No (N) or Not Applicable (NA)**
a) We have reviewed the hazardous materials assessment for lead provided by the City of Vancouver (or third party) in the tender package	**Y N NA TBD**
b) We will provide a written hazardous materials assessment for lead	**Y N NA TBD**
c) We have a written exposure control program for Lead **(D)**	**Y N NA**

3. **OTHER HAZARDOUS MATERIALS -** may include PCBs, CFCs, molds, mercury, ozone depleting substances (ODS), radioactive substances, sewage and unidentified contaminated hazardous materials, other: (list other here) _____	**Yes (Y) No (N) or Not Applicable (NA)**
a) We have reviewed the hazardous materials assessment for (insert hazardous material type here) provided by the City of Vancouver, or a third party, in the tender package	**Y N NA TBD**
b) We have reviewed the hazardous materials assessment for (insert hazardous material type here) provided by the City of Vancouver, or a third party, in the tender package	**Y N NA TBD**
c) We will provide a hazardous materials assessment for (insert hazardous material type here)	**Y N NA TBD**
d) We will provide a hazardous materials assessment for (insert hazardous material type here)	**Y N NA TBD**

4. **CONFINED SPACES -** working in vaults, chambers, pits, tanks, etc.; e.g., construction, inspection and testing services, water/fuel storage tank clean-out services, and utility corrosion inspection services.	**Yes (Y) No (N) or Not Applicable (NA)**
a) We have reviewed the confined space hazard assessment provided by the City of Vancouver in the tender package	**Y N NA TBD**

b) We have a written confined space entry program **(D)**	**Y N NA**
c) Our employees have received confined space training **(T)**	**Y N NA**
d) We shall complete a confined space hazard assessment specific to the work to be performed **(D)**	**Y N NA**
e) We shall develop site specific written safe operating procedures (including evacuation and rescue components) prior to starting work **(D)**	**Y N NA**
f) We shall identify and record isolation points **(D)**	**Y N NA**
g) We will develop alternate procedures (as per WCB OHS Regulation # 9.22) to be used to isolate adjacent piping containing harmful substances **(D)**	**Y N NA**
h) We will provide for the services of rescue persons	**Y N NA**

If yes to g), provide brief description:

_____

_____

_____

5. **LOCK OUT -** industrial equipment maintenance, power machinery repair services, pump maintenance/repair services, mechanical refrigeration systems, elevator repair, overhead bridge crane maintenance/repair services, cathodic protection services, hydraulic test systems repair/service, and air compressor rebuilding services.	**Yes (Y) No (N) or Not Applicable (NA)**
a) We will be required to lock out in order to isolate or prevent the unexpected release of energy (electrical, mechanical, hydraulic, chemical, thermal, kinetic, gravitational, pneumatic)	**Y N NA**
b) We will perform work on, or near, energized equipment, lines or circuits	**Y N NA**

Note: If yes to a) or b) above, no work may be performed until reviewed by City of Vancouver project manager or project manager designate.
If yes to a) or b) describe:

_____

_____

_____

6A. FALL PROTECTION - tree pruning, window and ledge cleaning, window replacement, overhead bridge crane maintenance/repair services, roll-up door replacement, tent installation, awning/canopy installation, overhead air exchange installation, construction inspection and testing services.	**Yes (Y) No (N) or Not Applicable (NA)**
a) Our employees will be exposed to a potential fall in excess of 3 m (10 feet), or to a fall of less than 3 m which would likely result in a serious injury (ex. impalement on rebar)	**Y N NA**
b) We will produce a written Fall Protection Plan for work that will occur more than 25 feet above grade, or, if written procedures (control zone) are to be used as the means of fall protection **(D)**	**Y N NA**
c) Our employees who will be required to use fall protection have received training **(T)**	**Y N NA**

If yes to a), describe:

_____

_____

_____

6B. SCAFFOLDING AND LADDERS - window replacement or cleaning, tree pruning, roll-up door replacement, tent installation, and awning/canopy installation.	**Yes (Y) No (N) or Not Applicable (NA)**
a) Our employees will use scaffolding or ladders for access to the work	**Y N NA**
b) The scaffolding or ladders will be exposed to wet and/or slippery conditions	**Y N NA**
c) We will ensure scaffolding or ladders are secured before accessing the worksite	**Y N NA**
d) Scaffolding will be erected and dismantled only by qualified workers	**Y N NA**

7. **OVERHEAD POWER LINES AND UNDERGROUND UTILITIES -** tree pruning services, tree removal, utility relocation or replacement, underground utility identification services, concrete sawing services, pole painting	**Yes (Y) No (N) or Not Applicable (NA)**
a) There are electrical hazards associated with overhead power lines such as limits of approach and contact	**Y N NA**
b) We will obtain necessary assurances, in writing, through the utility company, for any work where minimum limits of approach cannot be maintained	**Y N NA**
c) Underground or hidden utilities may be on the job site and we shall contact the Project Manager and BC OneCall at least four business days prior to the start of any excavation work	**Y N NA**
d) In the event of an inadvertent utility strike, we will have a written procedure for immediate notification of both the utility company and WorkSafeBC **(D)**	**Y N NA**

8. **CONSTRUCTION, EXCAVATION, SHORING AND DEMOLITION**	**Yes (Y) No (N) or Not Applicable (NA)**
a) As Prime Contractor, we will submit a Notice of Project (NOP) to WorksafeBC at least 24 hours in advance of the project startup date	**Y N NA**
b) Workers may be required to enter an excavation over 1.2m (4 ft) in depth	**Y N NA**
c) We will develop site specific written safe operating procedures, including evacuation and rescue components, prior to starting any excavation work **(D)**	**Y N NA**
d) Shoring will be installed in accordance with Part 20 of the WorkSafeBC OH&S Regulation	**Y N NA**
e) We will provide safe means of entry and exit for excavations	**Y N NA**
f) We will provide for the services of rescue persons and equipment (excavation rescue)	**Y N NA**
g) We will develop a demolition/salvage plan **(D)**	**Y N NA**
h) We will evaluate the demolition materials for reuse or recycling	**Y N NA**
i) We will protect passers-by from potential hazards	**Y N NA**

9. **CHEMICALS, SOLVENTS, FUMES, VAPORS, AND DUSTS -** cleaning solvents, adhesives, paints, coatings, binders; e.g., storage tank clean-out services, countertop installation (epoxies), and flooring	**Yes (Y) No (N) or Not Applicable (NA)**
a) We will complete a hazard assessment for chemicals we will use in our work, and if chemicals already exist at the workplace, our assessment will identify possible results of any reactions between our chemicals and those of the Citys operations	**Y N NA**

10. **NOISE AND VIBRATION -** includes installations and heavy equipment operation. Noise examples for 85 – 90 dbA (at noise source) include forklift, smoke alarm, table saw. Whole body vibration examples include truck or equipment operator and jackhammer operation	**Yes (Y) No (N) or Not Applicable (NA)**
a) Our employees will be exposed to noise levels above 85dbA	**Y N NA**
b) We have a written hearing conservation program **(D)**	**Y N NA**
c) Our employees will be exposed to excessive levels of whole body vibration (WBV)	**Y N NA**

11. **OCCUPATIONAL HEALTH AND SAFETY PROGRAM**	**Yes (Y) No (N) or Not Applicable (NA)**
a) We have a written Safety Program **(D)**	**Y N NA**
b) We will make regular inspections of all workplaces	**Y N NA**
c) We will immediately investigate any reported unsafe conditions and correct as required	**Y N NA**
d) We will investigate all incidents and provide written incident reports to the Project Manager	**Y N NA**
e) We will develop a written plan **(D)** identifying how risk to the public and workers will be minimized (may include the use of barriers and safe entry/exit points from the worksite)	**Y N NA**

12. **FIRST AID**	**Yes (Y) No (N) or Not Applicable (NA)**
a) First aid equipment, supplies, facilities and services will be readily accessible during working hours	**Y N NA**
b) We will complete a first aid assessment **(D)**	**Y N NA**
c) We will post site drawings and signs indicating the location of, and how to summon, first aid	**Y N NA**
d) We will develop an effective means of communication between the first aid attendant and the work areas	**Y N NA**

13. **FIRE PROTECTION -** solvents, fuels, soldering, torch cutting, or heating devices; e.g., gasoline and diesel fuel delivery services, flooring services, fire suppression service, and water pipe repair services	**Yes (Y) No (N) or Not Applicable (NA)**
a) We will weld, solder, or cut with a torch	**Y N NA**
b) We will use or store flammable/combustible liquids	**Y N NA**
c) We will use temporary heating devices	**Y N NA**
d) We will provide water and/or fire extinguishers on the job site	**Y N NA**

14. **PERSONAL PROTECTIVE EQUIPMENT (PPE)**	**Yes (Y) No (N) or Not Applicable (NA)**
a) We will ensure our workers have appropriate personal protective clothing and equipment (e.g., safety footwear, hi-vis vests, hardhats, eye protection, face protection, hearing protection, chemical gloves/clothing)	**Y N NA**
b) We have a written PPE program **(D)**	**Y N NA**

15. **RESPIRATORY PROTECTION**	**Yes (Y) No (N) or Not Applicable (NA)**
a) The work will involve materials or processes requiring respiratory protection	**Y N NA**
b) We have a written respiratory protection program **(D)**	**Y N NA**

16. **TOOLS MACHINERY AND EQUIPMENT**	**Yes (Y) No (N) or Not Applicable (NA)**
a) We will use powder-actuated tools.	**Y N NA**
b) Our employees who operate equipment have been trained and are qualified in use of that equipment. **(T)**	**Y N NA**

If yes to a), describe:

_____

_____

17. **CRANES, FORKLIFTS, AND MANLIFTS -** heavy or oversized goods delivery, tree pruning, overhead bridge crane maintenance/repair, and roll-up door replacement.	**Yes (Y) No (N) or Not Applicable (NA)**
a) We will use a crane, forklift, manlift or other lifting equipment	**Y N NA**
b) Our lifting and rigging equipment is certified where applicable, and inspected on a regular basis	**Y N NA**
c) Our operators shall have a valid operators certificate (mobile crane or tower crane) or have received training (boom lift, scissor lift or forklift) **(T)**	**Y N NA**
d) Only lifting attachments approved for use by the forklift manufacturer will be used	**Y N NA**

18. **RIGGING**	**Yes (Y) No (N) or Not Applicable (NA)**
a) We will lift or sling loads overhead	**Y N NA**
b) We will inspect ropes, hooks and slings before use on each shift	**Y N NA**

19. **MOTOR VEHICLES AND HEAVY EQUIPMENT -** goods delivery, personnel transportation services, trailer relocation services, oil/water pumpout and recycling services, asphalt grinding and asphalt sealing services, weed/brush abatement and mowing services, landscape hydroseed services, tree stump grinding, and concrete sawing and removal	**Yes (Y) No (N) or Not Applicable (NA)**
a) We will use motor vehicles or heavy equipment at the work location	**Y N NA**
b) All operators have a valid provincial driver's license	**Y N NA**
c) We will inspect vehicles, including safety features (e.g., ROPS)	**Y N NA**

20. **TRAFFIC CONTROL**	**Yes (Y) No (N) or Not Applicable (NA)**
a) There will be uncontrolled movement of vehicular traffic at the worksite	**Y N NA**
b) We will develop a written traffic control plan **(D)**	**Y N NA**
c) We will put in place any required traffic control devices	**Y N NA**
d) The traffic control devices conform to the Ministry of Transportation and Infrastructure (MoTI) *"Traffic Control Manual for Work on Roadways"*	**Y N NA**
e) We will provide Traffic Control Persons (TCP's) as required by law	**Y N NA**

21. **CRYSTALLINE SILICA DUST**	**Yes (Y) No (N) or Not Applicable (NA)**
a) Our work will involve jackhammering, rotohammering, drilling, grinding or other disturbance of concrete or stone, creating potential exposure to silica dust	**Y N NA**

22. Additional Concerns	**Yes (Y) No (N) or Not Applicable (NA)**
We foresee additional health and safety concerns associated with the work	**Y N NA**

If yes, describe:

a) _____

b) _____

c) _____

d) _____

e) _____

f) _____

Describe the control measures each of the concerns listed above:

a) _____

b) _____

_____

c) _____
_____

d) _____
_____

e) _____
_____

f) _____
_____

PRE CONTRACT HAZARD ASSESSMENT COMPLETED BY	
Contractor's Representative Name (print):	
Contractor's Representative Signature:	**Date:**
Title:	**Phone:**

CONTRACTOR'S DESIGNATE RESPONSIBLE FOR ONSITE SAFETY	
Name (print):	
Title:	**Phone:**

SUMMARY OF DOCUMENTATION **(D)** TO BE PROVIDED BY THE CONTRACTOR upon request by the City of Vancouver (documentation required as per Workers Compensation Board Occupational Health and Safety (WCB OHS) Regulation, the Workers' Compensation Act (WCA) or the City	Yes (Y) or Not Applicable (NA)

of Vancouver)	
a) Safety Program (WCB OHS Regulation Parts 3.1-3.3)	
b) Asbestos Exposure Control Plan (WCB OHS Regulation Part 6.3)	
c) Lead (Pb) Exposure Control Plan (WCB OHS Regulation Part 6.60)	
d) Respiratory Protection Program (WCB OHS Regulation Part 8.5)	
e) Confined Space Entry Program (WCB OHS Regulation Parts 9.5 and 9.6)	
f) Plan for minimizing risk to public and to workers (City of Vancouver)	
g) Personal Protective Equipment (PPE) Program (WCB OHS Regulation Part 8.5)	
h) Hearing Conservation Program (WCB OHS Regulation Part 7.5)	
i) Confined Space Hazard Assessment (WCB OHS Regulation Part 9.9)	
j) Work Procedure, including evacuation and rescue, for confined space (WCB OHS Regulation Part 9.10 and 9.11)	
k) Identification of Isolation Points (confined space) (WCB OHS Regulation Part 9.19)	
l) Alternate procedures to isolate adjacent piping (confined space) (WCB OHS Regulation Part 9.22)	
m) Fall Protection Plan (WCB OHS Regulation Part 11.3)	
n) Traffic Control Plan (Ministry of Transportation and Infrastructure (MOTI) manual, as referenced in WCB OHS Regulation Part 18.3)	
o) In the event of a utility strike, a written procedure for notification of Utility Provider (WCB OHS Regulation Part 4.18) and WorksafeBC (Workers' Compensation Act Part 3, Division 10, Sec. 172 (1)(c))	
p) Work Procedure (including evacuation and rescue) for excavations (City of Vancouver)	
q) Demolition/Salvage Plan (City of Vancouver in reference to WCB OHS Regulation Part 20.112)	
r) First Aid Assessment (WCB OHS Regulation Part 3.16 (2))	

SUMMARY OF TRAINING REQUIREMENTS (T) OF CONTRACTOR EMPLOYEES (for any persons completing this type of work throughout the duration of the contract)	**Yes (Y) or Not Applicable (NA)**
a) Confined Space Entry (WCB OHS Regulation Part 9.8)	
b) Fall Protection (WCB OHS Regulation Part 11.2 (6))	
c) Equipment Operation (WCB OHS Regulation Part 4.3 (1) (b)(i) (ii))	
d) Mobile Equipment (ex. boom lift, scissor lift, forklift) (WCB OHS Regulation Part 16.4)	
e) For any work on energized City electrical infrastructure. Contractor will need to complete Appendix R prior to contract signing. Electrical Work on energised circuits. This includes testing and troubleshooting and verification of lockout.	