



City of Coquitlam

Contract Documents 77103

Austin Avenue Improvements (Walker St – Brookmere Ave MUP)



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Invitation to Tenderers



INVITATION TO TENDER

DATE OF ISSUE: February 21, 2023

Tender No. 77103

Austin Avenue Improvements (Walker St – Brookmere Ave MUP)

The City of Coquitlam invites tenders for **Contract 77103 – Austin Avenue Improvements (Walker St – Brookmere Ave MUP)**, generally consisting of the following, but not limited to:

- Concrete Works including Cast in Place Retaining Wall, Concrete Sidewalk, Letdowns, Reinforced Concrete Boulevard and Minor Curb and Gutter installation.
- Storm Works including Headwall Installation and Storm Main Extension.
- Electrical Works including New Street lighting, Traffic Signal Controller and Cabinet Relocation and Intersection Reconfiguration
- Tree Planting and Landscaping
- Other miscellaneous and incidental works as further described in the Contract Documents.

Tender Documents and Drawings are available for downloading from the City of Coquitlam website: www.coquitlam.ca/BidOpportunities

Printing of Tender documents and drawings is the sole responsibility of the Tenderers.

Tenders submitted must be accompanied by a copy of the original specified 10% Bid Bond and will be received:

On or Before 2:00 pm local time

Wednesday, March 15, 2023

("Closing Date and Time")

Instructions for Tender Submission

Tender submissions are to be consolidated into one (1) .pdf file and uploaded electronically through QFile, the City's file transfer service accessed at website: qfile.coquitlam.ca/bid

1. In the "Subject Field" enter: Tender Number and Name
2. **Add consolidated Tender file in PDF format, and Appendix 1 in XLS format**, and Send (Ensure your web browser remains open until you receive 2 emails from Qfile to confirm upload is complete.)

Tenders will not be opened in public. The unevaluated Tender results will be forwarded to all participants by email.

Inquiries

All inquiries are to be submitted in writing by email, no later than 3 full business days prior to Tender Closing Time quoting the Tender Name and Number sent to:

Email: bid@coquitlam.ca

Addenda

Tenderers are required to check the City's website for any updated information and Addenda issued before the Closing Date at: www.coquitlam.ca/BidOpportunities

Any changes to the Tender documentation will be issued by means of written Addenda and posted on the City's website and will form part of the Tender. No amendment of any kind to the Tender is effective unless it is posted in a formal written Addendum on the City website. Upon submitting a Tender, Tenderers will be deemed to have received notice of all Addenda that are posted on the City's website and deemed to have considered the information for inclusion in the Tender submitted.

The City does not retain a bidder's list or bidder's registry. Tenderers are encouraged to register as plan takers and may view the Tender Documents and Drawings by contacting the Vancouver Regional Construction Association (VRCA), website: www.my.vrca.ca, ph: 604-294-3766, or email vrca@vrca.ca, quoting the Coquitlam Tender Reference Number.

Should there be any discrepancy in the documentation provided, the City's original file copy shall prevail.

Tenders shall remain open for acceptance for 60 days following the submission Closing Date.

The City reserves the right to accept or reject any or all Tenders and the lowest or any Tender may not necessarily be accepted. The City also reserves the right to cancel any request for Tender at any time without recourse by the Tenderer.

The City, prior to award of any Tender, may negotiate with the Tenderer presenting the lowest price compliant Tender, for changes in the Work, materials, specifications or conditions without having any duty or obligation to advise any other Tenderers or to allow them to modify their Tenders, and the City will have no liability to any Tenderer as a result of such negotiations or modifications.

The City will not be responsible for any costs incurred by the Tenderer in preparing the Tender.

Procurement of goods and services is conducted in accordance with Chapter 5 of the Canadian Free Trade Agreement (CFTA) and the New West Partnership Trade Agreement (NWPTA).

M. Pain
Purchasing Manager

Instructions to Tenderers

Tender 77103

Austin Avenue Improvements (Walker St – Brookmere Ave MUP)

INSTRUCTIONS TO TENDERERS

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INSTRUCTIONS TO TENDERERS

(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT - TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

The City of Coquitlam

Contract: **Austin Avenue Improvements (Walker St – Brookmere Ave MUP)**

Reference No. **77103**

- | | | | |
|------------|-------------------------|------------|--|
| 1.0 | Introduction | 1.1 | <p>These Instructions apply to and govern the preparation of tenders for this <i>Contract</i>. The <i>Contract</i> is generally for the following work:</p> <ul style="list-style-type: none">• Concrete Works including Cast in Place Retaining Wall, Concrete Sidewalk, Letdowns, Reinforced Concrete Boulevard and Minor Curb and Gutter installation.• Storm Works including Headwall Installation and Storm Main Extension.• Electrical Works including New Street lighting, Traffic Signal Controller and Cabinet Relocation and Intersection Reconfiguration.• Tree Planting and Landscaping.• Other miscellaneous and incidental works as further described in the Contract Documents. |
| | | 1.2 | <p>All inquiries regarding this Tender are to be submitted in writing referencing the Tender Name and Number sent to:</p> <p>E-mail bid@coquitlam.ca</p> <p>All inquiries will be received a minimum of 3 full business days prior to Tender Closing Time.</p> <p>Inquiries received after that time may not receive a response.</p> |
| 2.0 | Tender Documents | 2.1 | <p>The Tender Documents which a Tenderer should review to prepare a Tender consist of all of the <i>Contract Documents</i> listed in Schedule 1 entitled “Schedule of Contract Documents”. Schedule 1 is attached to the Agreement which is included as part of the Tender Package. The <i>Contract Documents</i> include the drawings listed in Schedule 2 to the Agreement, entitled “List of Contract Drawings”.</p> |
| | | 2.2 | <p><u>A portion of the Contract Documents are included by reference. Copies of these documents have not been included with the tender package.</u> These documents are the General Conditions, Specifications and Standard Detail Drawings. They are those contained in the publication entitled “Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings”. Refer to Schedule 1 to the Agreement or, if not specified in Schedule 1, then the applicable edition shall be the most recent edition as of the date of the</p> |

Tender Closing Date. All sections of this publication are by reference included in the Contract Documents.

- 2.3 Any additional information made available to Tenderers prior to the Tender Closing Time by the Owner or representative of the Owner, such as geotechnical reports or as-built plans, which is not expressly included in Schedule 1 or Schedule 2 to the Agreement, is not included in the Contract Documents. Such additional information is made available only for the assistance of Tenderers who must make their own judgments about its reliability, accuracy, completeness and relevance to the *Contract*, and neither the Owner nor any representative of the Owner gives any guarantee or representation that the additional information is reliable, accurate, complete or relevant.
- 3.0 Submission of Tenders**
- 3.1 Tenders must be submitted on the Tender Form provided, accompanied by a copy of the original 10% Bid Bond quoting the Tender Name and Number, and be uploaded to the City's file transfer website.
- Tenders must be received on or before:
- Tender Closing Time: 2:00 p.m. local time**
Tender Closing Date: March 15, 2023
- For the purpose of the Tender submission, digital copies of original documents and signatures sent electronically are accepted. Original documents are required upon request by the City.
- Instructions for Tender Submission**
- 3.2 **Tender submissions are to be consolidated into one (1) PDF file and uploaded electronically through QFile, the City's file transfer service accessed at website: <http://qfile.coquitlam.ca/bid>**
- 1. In the "Subject Field" enter: Tender Number and Name**
- 2. Add consolidated Tender file in PDF format and Appendix 1 in XLS format, and Send** (ensure your web browser remains open until you receive 2 emails from Qfile to confirm upload is complete and was sent to email: bid@coquitlam.ca)
- Tenderers are responsible to allow for ample time to complete the submission process. For assistance, phone 604-927-3037 or Fax 604-927-3035.**
- 3.3 Tenders submitted shall be deemed to be received when displayed as a new email in the in-box of the above email address. The City will not be responsible for any delay or for any Tenders not received for any reason, including technological delays or issues by either party's network or email program, and the City will not be liable for any damages associated with Tenders not received.
- 3.4 The City reserves the right to accept late Tenders to allow for technological delays. The City also reserves the right to accept Tenders received by fax (604-927-3035) or email: bid@coquitlam.ca.
- Bids received in-person or by courier will not be accepted.**

- 3.5 Tenders will not be opened in public. The unevaluated results will be forwarded to participants by email.
- 3.6 Tender submissions are subject to the Freedom of Information and Protection of Privacy Act and contents may be disclosed if required to do so, pursuant to the Act.

**4.0 Additional
Instructions to
Tenderers**

Additional Instructions to Tenderers

**Obtaining
Documents**

- 4.1 The following documents which are referred to and form part of the Contract Document package may be obtained as follows:
- Copies of the Master Municipal Construction Documents Volume II (2009), General Conditions, Specifications and Standard Detail Drawings are available separately from:

Support Services Unlimited
Suite 102
211 Columbia Street
Vancouver, B.C. V6A 2R5
Tel: 604-681-0295
Fax: 604-305-0424
 - City of Coquitlam Supplementary Specifications and Detailed Drawings to the MMCD 2009 Edition.

City of Coquitlam Engineering & Public Works Department
3000 Guildford Way
Coquitlam, B.C. V3B 7N2
Tel: 604-927-3500
Fax: 604-927-3525

Copies of the City of Coquitlam Supplementary Specifications and Detailed Drawings to the MMCD 2009 Edition are available for viewing and downloading off the City of Coquitlam website:

[Supplementary Specifications and Detailed Drawings to MMCD](#)

**Test
Excavations**

- 4.2 Prior to the excavation of test holes on road allowances or privately owned property the Tenderer shall obtain permission from the Municipality or Owner of the property and comply with their requirements for restoration of disturbed surfaces and utilities. Failure to comply with Municipal by-laws restricting this practice may result in prosecution of the offending party.

**Business
License**

- 4.3 The successful Tenderer shall provide evidence of a City of Coquitlam Business License or Tri-Cities Inter-Municipal Business License prior to commencement of work or supply of materials. For more information, contact Business License Division Ph: 604-927-3085 or apply online at website: [City of Coquitlam Business License](#)

No Claim

- 4.4 Except as expressly and specifically permitted in these Instructions to Tenderers, no Tenderer shall have any claim for any compensation of any kind whatsoever, as a result of participating in this Tender, including

			accepting a non-compliant bid and by submitting a Tender, each Tenderer shall be deemed to have agreed that it has no claim.
	No Cost	4.5	The City will not under any circumstances be responsible for any costs incurred by the Tenderer in preparing the Tender.
	Right to Accept or Reject any Tender	4.6	<p>The City reserves the right to accept or reject any or all Tenders and the lowest or any Tender may not necessarily be accepted. In its sole discretion, the City may reject or retain for its consideration, tenders which are nonconforming because they do not contain the content or form required by the instructions to tenderers or for failure to comply with the process for submission set out in these instructions to tenderers.</p> <p>The City specifically reserves the right to reject all Tenders if none is considered to be satisfactory and, in that event, at its option, to call for additional Tenders.</p>
	Negotiation	4.7	The City, prior to award of any Tender, may negotiate with the Tenderer presenting the lowest price compliant Tender, for changes in the Work, materials, specifications or conditions without having any duty or obligation to advise any other Tenderers or to allow them to modify their Tenders, and the City will have no liability to any Tenderer as a result of such negotiations or modifications.
	Cancellation of Tender	4.8	The City reserves the right to cancel any request for Tender at any time without recourse by the Tenderer. The City has the right to not award this work for any reason including choosing to complete the work with the City's own forces.
	Conflict of Interest	4.9	Tenderers shall disclose any actual or potential conflicts of interest and existing business relationships it may have with the City, their elected or appointed officials or employees.
	Collusion	4.10	Tenderers will not discuss or communicate with one another in regards to the preparation of their Tenders. Each Tenderer will ensure that its participation in the Tender process and that of its team members is conducted without collusion or fraud. Failure to comply with this requirement may lead to disqualification without further notice or warning.
	Instruction to Tenderers – Part II		Delete Instructions to Tenderers – Part II Contained in the Edition of the Publication “Master Municipal Construction Documents 2009” and replace with the following:
5.0	Tender Requirements	5.1	<p>A tender should be on the Form of Tender as provided and be signed by the authorized signatory(s) as follows:</p> <p>5.1.1 if the tenderer is a partnership or joint venture then the name of the partnership or joint venturer should be included, and each partner or joint venturer should sign personally; if a partner of joint venture is a corporation then such corporation should sign as indicated in paragraph 5.1.3 below; and</p>

- 5.1.2 if the tenderer is a corporation then the full name of the corporation should be included, together with the names and signatures of authorized signatories.
 - 5.1.3 For the purpose of the Tender submission, digital copies of original documents and electronic signatures are accepted. Original documents are required upon request by the City.
 - 5.2 A tender must be accompanied by tender security ("*Bid Security*") in the form of:
 - 5.2.1 a copy (digital or Electronic copy is acceptable) of the original bid bond in an amount equal to 10% of the Tender Price, issued by a surety licensed to carry on the business of suretyship in British Columbia in a form reasonably satisfactory to the *Owner*;
 - 5.3 Tenderer should be competent and capable of performing the various items of work. Tenderer shall complete the following statement sheets appended to the Form of Tender:
 - 5.3.1 Appendix 1 – the Schedule of Quantities and Prices;
 - 5.3.2 Appendix 2 – a "*Preliminary Construction Schedule*", generally in the form attached as Appendix 2 to the Form of Tender, and showing *Substantial Performance* by the date or within the duration, shown in paragraph 2.2 of the Form of Tender.
 - 5.3.3 Appendix 3 – name and brief description of the previous experience of the *Superintendent* the tenderer will use for the *Work*;
 - 5.3.4 Appendix 4 – a list of previous comparable work, including a brief description of that work, approximate contract value, and references (with phone numbers);
 - 5.3.5 Appendix 5 – a complete list of all subcontractors, if any, that the tenderer will use for the *Work* including full names.; and
 - 5.3.6 Appendix 7 – is provided for information only, to indicate the Contract Insurance is to be submitted by the successful Tenderer upon Notice of Award.
 - 5.4 The successful tenderer will, within 15 *Days* of receipt of the written *Notice of Award*, be required to deliver to the *Owner* the items listed in FT 5.1.1, including a Performance Bond and a Labour and Material Payment Bond as described in FT 5.1.1(a), failing which the provisions of FT 6.1 will apply.
- 6.0 **Qualifications, Modifications, Alternative Tenders**
 - 6.1 Tenders which contain qualifications, or omissions, so as to make comparison which other tenders difficult, may be rejected by the *Owner*.

- 6.2 A tenderer may, at the tenderer's election, submit an alternative tender ("*Alternative Tender*") which varies the materials, products, designs or equipment by the *Owner as Approved Equals* as the case may be, but an *Alternative Tender* must be in addition to, and not in substitution for a tender which conforms to the requirements of the *Contract Documents*.
- 6.3 The only *Alternative Tender* that the *Owner* may accept is an *Alternative Tender* submitted by that tenderer whose conforming tender, submitted as required by paragraph 6.2 of these Instructions to Tenderers, would have been accepted by the *Owners* in the preference to other conforming tenders, if no *Alternative Tenders* had been invited.
- 7.0 Approved Equals**
- 7.1 Prior to the *Tender Closing Time and Date*, a tenderer may request the *Owner* to approve materials, products, or equipment ("*Approved Equal*") to be included in a tender in substitution for items indicated in the *Contract Documents*.
- 7.2 Applications for an *Approved Equal* must be in writing, and supported by appropriate supporting information, data, specifications, and documentation.
- 7.3 If the *Owner* decides in its discretion to accept an *Approved Equal*, then the *Owner* will issue an addendum to all tenderers.
- 7.4 The *Owner* is not obligated to review or accept an application for an *Approved Equal*.
- 8.0 Inspection of the Place of the Work**
- 8.1 All tenderers, either personally or through a representative, are responsible to examine the *Place of the Work* before submitting a tender. A tenderer has full responsibility to be familiar with and make allowance in the tender for all conditions at the *Place of the Work* that might affect the tender, including any information regarding subsurface soil conditions made available by the *Owner*, the location of the *Work*, local conditions, topographical soil conditions, weather and access. Unless otherwise specified in the *Contract Documents*, a tenderer is not required to do subsurface investigations. By submitting a tender, a tenderer represents that the tenderer has examined the *Place of the Work*, or specifically elected not to. No additional payments or time extensions shall be claimable or due because of difficulties relating to conditions at the *Place of the Work* which were reasonably foreseeable by a contractor qualified to undertake the *Work*.
- 8.2 Tenderers are referred to GC 11.2.1 regarding **Concealed or Unknown Conditions**.
- 9.0 Interpretation of Contract Documents**
- 9.1 If a tenderer is in doubt as to the correct meaning of any provision of the *Contract Documents*, the tenderer may request clarification as instructed in paragraph 1.2 of the Instructions to Tenderers.
- 9.2 If a tenderer discovers any contradictions or inconsistencies in the *Contract Documents* or its provisions, or any discrepancies between a provision of the *Contract Documents* and conditions at the *Place of the Work as* observed in an examination under paragraph 8 of the person named in paragraph 1.2 of the Instructions to Tenderers.

- 9.3 If the *Owner* considers it necessary, the *Owner* may issue written addenda to provide clarification (s) of the *Contract Documents*.
- 9.4 No oral interpretation or representations from the *Owner* or any representative of the *Owner* will affect, alter, or amend any provision of the *Contract Documents*.
- 10.0 Prices**
- 10.1 The Tendered Price will represent the entire cost excluding *GST* to the *Owner* of the complete *Work* based on the estimated quantities in the *Schedule of Quantities and Prices* of the Form of Tender. Notwithstanding the generalities of the above, tenderers shall include in the tendered prices (including unit prices, lump sum prices, or other forms of pricing) sufficient amounts to cover:
- 10.1.1 the costs of all labour, equipment and material included in or required for the *Work*, including all items which, whole not specifically listed in the *Schedule of Quantities and Prices*, are included in the *Work* specifically or by necessary inference from the *Contract Documents*;
 - 10.1.2 all assessments payable with respect to labour as required by any statutory scheme such as unemployment insurance, holiday pay, insurance, CPP and all employee benefits and the Workers Compensation Act;
 - 10.1.3 all overhead costs, including head office and on-site overhead costs, and all amounts for the *Contractor's* profit.
- 10.2 The tendered prices and all subcontracts must allow for compliance with all applicable laws regarding trade or other qualifications of employees performing the *Work*, and payment of appropriate wages for labour included in or required for the *Work*.
- 11.0 Taxes**
- 11.1 The tendered prices shall cover all taxes and assessments of any kind payable with respect to the *Work*, but shall not include *GST*. *GST* shall be listed as a separate line item as required by GC 19.3.
- 12.0 Amendment of Tenders**
- 12.1 A tenderer may amend or revoke a tender by giving written notice, delivered by Email or fax, to the office referred to in paragraph 3.4 of the Instructions to Tenderers at any time up until the *Tender Closing Date and Time*. An amendment or revocation that is received after the *Tender Closing Date and Time* shall not be considered and shall not affect a tender as submitted.
- 12.2 An amendment or revocation must be signed by an authorized signatory of the tenderer in the same manner as provided by paragraph 5.1 of these Instructions to Tenderers.
- 12.3 Any amendment that expressly or by inference discloses the tenderer's *Tender Price* or other material element of the tender such that, in the opinion of the *Owner*, the confidentiality of the tender is breached, will invalidate the entire tender.

- 12.4 An acceptable form of a tender amendment which tenderers may, but are not required to, use is as follows:

“Contract: _____
(TITLE OF CONTRACT)
Reference No. _____
(OWNER’S CONTRACT REFERENCE NO.)
TO: _____
(NAME OF OWNER)

We the undersigned wish to amend our tender which we submitted for the above *Contract* by deleting the following tendered prices or items from our tender:

(TENDERED PRICES AND/OR TENDER ITEMS IN THE TENDER THAT ARE TO BE AMENDED)

and substituting the following revised tendered prices or items:

(REVISED TENDERED PRICES OR TENDER ITEMS)

The extensions in our tender should be adjusted accordingly, and our ***Tender Price*** as set out in Appendix 1 of our submitted **Form of Tender**, and on the ***Schedule of Quantities and Prices***, increased / decreased by \$_____, excluding GST. We have not included our revised ***Tender Price*** in order to preserve the confidentiality of our tender.

Signed and delivered the ____ day of _____, 20__.”

- 12.5 If a tender amendment or revocation is sent by fax, the tenderer assumes the entire risk that equipment and staff at the office referred to in paragraph 3.4 of the Instructions to Tenderers will properly receive the fax containing the amendment or revocation before the *Tender Closing Date and Time*. The *Owner* assumes no risk or responsibility whatsoever that any fax will be received as required by paragraph 12.1 of these Instructions to Tenderers, and shall not be liable to any tenderer if for any reason a fax is not properly received.

**13.0 Duration of
Tenders**

- 13.1 After the *Tender Closing Time*, a tender shall remain valid and irrevocable as set out in paragraph 5.1 of the Form of Tender.

**14.0 Qualifications
of Tenderers**

- 14.1 By submitting a tender, a tenderer is representing that it has the competence, qualifications and relevant experience required to do the *Work*.

- 15.0** **Award** 15.1 In exercising its discretion, the *Owner* will have regard to the information provided in the Appendices to the Form of Tender as described under IT5.3 including the proven experience of the tenderer, and any listed subcontractors, to do the *Work*.

Tenders received will be evaluated to provide the City with greatest value based on quality, service, price and experience. Evaluation Criteria will include but is not limited to:

1. Ability to meet specifications and required completion date
2. Contractor's past experience, references, reputation and compliance to specifications
3. Demonstrated successful experience on similar projects and specific equipment installation
4. Price: purchase price, maintenance costs, availability of parts and service, warranty and compatibility with existing equipment and/or conditions
5. Any other criteria, the City deems, at its sole discretion, necessary to evaluate Tenders;
6. Lowest price will not necessarily be accepted.

The City may, in its absolute discretion, not award to a Tenderer if the Tenderer, or any officer or director of a corporate Tenderer, is or has been engaged, either directly or indirectly through another corporation or legal entity, in a legal action against the City and its elected and appointed officers and employees or any of them in relation to:

- a) any other contract or services; or
- b) any matter arising from the City's exercise of its powers, duties or functions under the *Local Government Act*, the *Community Charter* or any other enactments; within five years of this Tender Offer.

For purposes of this section, the words "legal action" includes, without limitation, mediation, arbitration, hearing before an administrative tribunal or lawsuit filed in any court.

Without limiting the City's sole discretion, in determining whether or not to award to a Tenderer pursuant to this clause, the City will consider such factors as whether the legal action is likely to affect the Tenderer's ability to work with the City and its employees, agents, consultants and representatives or any of them and whether the City's past experience with the Tenderer in the matter that resulted in the legal action indicates that the City is likely to incur increased staff and legal costs or either of them in the administration of this contract if it is awarded to the Tenderer.

In the event that the lowest total Tender Price by two or more Tenderers is the same amount, the City will select a Tenderer with an overall satisfactory performance record in having completed work on previous relevant projects that are provided as references, and on City projects. Information obtained from references will not be disclosed or discussed

with any Tenderer. If all references are equal, selection will be determined by a coin toss in a manner to be directed by the City.

Where only one Tender is received the City may reject such and re-tender on a selected basis.

- 15.2 The *Owner* will notify the successful tenderer in writing.
- 15.3 If there are any discrepancies in the *Schedule of Quantities and Prices* between the unit prices and the extended totals then the unit prices shall be deemed correct, and corresponding corrections shall be made to the extended totals. If a unit price or extended total has been omitted, the following shall apply:
- a) If a unit price is given but the corresponding extended total has been omitted, then the extended total shall be calculated from unit price and the estimated quantity, and inserted as the extended total;
 - b) If an extended total is given but the corresponding unit price has been omitted, then the unit price shall be calculated from the extended total and estimated quantity, and inserted as the unit price;
 - c) If both the unit price and the corresponding extended total for a tender item have been omitted, then the following test shall be applied to determine whether the tender shall be rejected as incomplete:
 - (i) the highest of the unit prices tendered by other tenderers for that tender item shall be used as the test unit price, and the corresponding test extended total shall be calculated from the test unit price and the estimated quantity;
 - (ii) if the test extended total for the tender item exceeds 1% of the revised total *Tender Price*, including the test extended total, or if the revised total *Tender Price*, including the test extended total, alters the ranking of the tenderers according to the lowest *Tender Price*, then the omitted unit price for that tender item is deemed to materially affect the *Tender Price* relative to other tenders and the tender shall be rejected;
 - (iii) if the tender is not rejected under subparagraph (ii) of this IT 15.3 (c), then the unit price and the extended total for that tender item shall both be deemed to be, and the costs for that tender item shall be zero deemed to be included in other tender items prices;
 - d) In no event shall page totals in the *Schedule of Quantities and Prices* or the total *Tender Price* be used to calculate missing extended totals or unit prices.

- 15.4 Upon receiving notification of being the successful Tenderer, the Tenderer shall submit a Pandemic Prevention Policy and Procedures (4P) document detailing occupational health and safety policies to prevent the spread of Covid-19 to the public, the Tenderer's employees, and sub-contractors during construction operations. The Owner reserves the right to require additions or changes to the 4P document prior to the execution of the Contract. After the Contract is in place, the Contractor will be expected to enforce the 4P document to the satisfaction of the Contract Administrator. If the Contract Administrator deems the 4P document is not being satisfactorily followed, the Contract Administrator may stop work at the sole expense of the Contractor until the Contractor's employees and sub-contractors have been provided proper training and orientation in regard to the 4P document.
- 16.0 Subcontractors**
- 16.1 The *Owner* reserves the right to object to any of the subcontractors listed in a tender. If the *Owner* objects to any of the subcontractor(s) then the *Owner* will permit a tenderer to, within 5 days, propose a substitute subcontractor(s) acceptable to the *Owner* provided that there is not resulting adjustment in the *Tender Price* or the completion date set out in paragraph 2.2 of the Form of Tender. A tenderer will not be required to make such substitution and, if the *Owner* objects to a listed *Subcontractor(s)*, the tenderer may, rather than propose a substitute subcontractor(s), consider its tender rejected by the *Owner* and by written notice withdraw its tender. The *Owner* shall, in the event, return the tenderer's bid security
- 17.0 Optional Work**
- 17.1 If the *Schedule of Quantities and Prices* includes any tender prices for *Optional or Provisional Work*, as defined in GC 7.4.1, the tenderers must complete all the unit prices for such *Optional or Provisional Work*. Such tender prices shall not include any general overhead costs, or other costs, or profit, not directly related to the *Optional or Provisional Work*.
- 17.2 Notwithstanding that the *Owner* may elect not to proceed with the *Optional or Provisional Work*, the tender prices for any *Optional or Provisional Work*, including the extended totals for *Optional or Provisional Work* unit prices, shall be included in the *Tender Price* for the purpose of any price comparisons between tenders.

Form of Tender



Form of Tender

Tender No. 77103

Austin Avenue Improvements (Walker St – Brookmere Ave MUP)

Summary

Name of **Contractor**: _____

Tender Price (exclude GST): \$ _____
(FROM APPENDIX 1 OF FORM OF TENDER)

Tender submitted must be accompanied by a copy of the original 10% Bid Bond and will be received

On or before 2:00 pm (local time)
Wednesday, March 15, 2023

Instructions for Tender Submission

Tender submissions are to be consolidated into one (1) .pdf file and uploaded electronically through QFile, the City's file transfer service accessed at website: qfile.coquitlam.ca/bid

- 1. In the "Subject Field" enter:** Tender Number and Name
- 2. Add consolidated Tender file in PDF format, and Appendix 1 in XLS format, and Send** (ensure your web browser remains open until you receive 2 emails from Qfile to confirm upload is complete and was sent to the correct email address: bid@coquitlam.ca)

Tenderers are responsible to allow ample time to complete the Tender submission process. If assistance is required, phone 604-927-3037 or fax 604-927-3035.

March 2023

THE CITY OF COQUITLAM
3000 Guildford Way
Coquitlam, B.C. V3B 7N2

(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT - TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER
STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

Contract Name: Austin Avenue Improvements (Walker St – Brookmere Ave MUP)

Reference No. 77103

TO OWNER:

1 WE, THE UNDERSIGNED:

- 1.1 have received and carefully reviewed all of the *Contract Documents*, including the Instructions to Tenderers, the City of Coquitlam Supplementary General Conditions, the City of Coquitlam Supplementary Contract Specifications, the specified edition of the "Master Municipal Construction Documents – General Conditions, Specifications and Standard Detail Drawings" and the following Addenda:

_____;
(ADDENDA, IF ANY)

- 1.2 shall fully disclose any actual or potential conflicts of interest and existing business relationships we may have with the City, their elected or appointed officials or employees:

- 1.3 have full knowledge of the *Place of the Work*, and the *Work* required; and

- 1.4 have complied with the Instructions to Tenderers; and

2 ACCORDINGLY WE HEREBY OFFER:

- 2.1 to perform and complete all of the *Work* and to provide all the labour, equipment and material all as set out in the *Contract Documents*, in strict compliance with the *Contract Documents*; and
- 2.2 to achieve *Substantial Performance* of the *Work* on or before **July 13, 2023**; and
- 2.3 to do the *Work* for the price, which is the sum of the products of the actual quantities incorporated into the *Work* and the appropriate unit prices set out in Appendix 1, the "*Schedule of Quantities and Prices*", plus any lump sums or specific prices and adjustment amounts as provided by the *Contract Documents*. For the purposes of tender comparison, our offer is to complete the *Work* for the "*Tender Price*" as set out on Appendix 1 of this Form of Tender. Our *Tender Price* is based on the estimated quantities listed in the *Schedule of Quantities and Prices*, and excludes *GST*.

3 WE CONFIRM:

- 3.1 that we understand and agree that the quantities as listed in the *Schedule of Quantities and Prices* are estimated, and that the actual quantities will vary.
- 3.2 that we understand and agree that the owner is in no way obliged to accept this Tender.

4 WE CONFIRM:

- 4.1 that the following Appendices are attached to and form a part of this tender:
- 4.1.1 the Appendices as required by paragraph 5.3 of the Instructions to Tenderers - Part II; and
 - 4.1.2 the *Bid Security* as required by paragraph 5.2 of the Instructions to Tenderers - Part II.
 - 4.1.3 the Certificate of Compliance on the form provided in Appendix 7 of this Form of Tender.

5 WE AGREE:

- 5.1 that this tender will be irrevocable and open for acceptance by the *Owner* for a period of **60** calendar days from the day following the *Tender Closing Date and Time*, even if the tender of another Tenderer is accepted by the *Owner*. If within this period the *Owner* delivers a written notice ("*Notice of Award*") by which the *Owner* accepts our tender we will:
- 5.1.1 within **15 Days** of receipt of the written *Notice of Award* deliver to the *Owner*:
 - a) a Performance Bond and a Labour and Material Payment Bond, each in the amount of 50% of the *Contract 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 *Owner*;
 - b) a "clearance letter" indicating that the Tenderer is in WCB compliance; and
 - c) a copy of the insurance policies as specified in SGC Section 24 indicating that all such insurance coverage is in place and;
 - d) a letter confirming the *Contractor* as "Prime Contractor" for the Contract as specified in SGC Section 21.2.1.
 - 5.1.2 within **2 Days** of receipt of written "*Notice to Proceed*", or such longer time as may be otherwise specified in the *Notice to Proceed*, commence the *Work*; and
 - 5.1.3 sign the Contract Documents as required by GC 2.1.

6 WE AGREE:

- 6.1 that, if we receive written *Notice of Award* of this *Contract* and, contrary to paragraph 5 of this Form of Tender, we:
- 6.1.1 fail or refuse to deliver the documents as specified by paragraph 5.1.1 of this Form of Tender; or
 - 6.1.2 fail or refuse to commence the *Work* as required by the *Notice to Proceed*,

then such failure or refusal will be deemed to be a refusal by us to enter into the Contract and the *Owner* may, on written notice to us, award the *Contract* to another party. We further agree that, as full compensation on account of damages suffered by the *Owner* because of such failure or refusal, the *Bid Security* shall be forfeited to the *Owner*, in an amount equal to the lesser of:

- 6.1.3 the face value of the *Bid Security*; and
- 6.1.4 the amount by which our *Tender Price* is less than the amount for which the *Owner* contracts with another party to perform the *Work*.

7 OUR ADDRESS is as follows:

Phone: _____ - _____ - _____

Fax: _____ - _____ - _____

Email: _____

Attention: _____

This Tender is executed this _____ day of _____, 20_____.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

8 WE CONFIRM:

8.1 our Goods and Services Tax (GST) registration status is as follows:

8.1.1 for information purposes, our GST Registration Number is:

(GST REGISTRATION NUMBER)

or;

8.1.2 by signature hereunder, we certify we are **not required** to provide a registration number:

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

APPENDIX 1
FORM OF TENDERContract 77103
Austin Avenue Improvements (Walker St - Brookmere Ave MUP)

SCHEDULE OF QUANTITIES AND PRICES

(see paragraph 5.3.1 of the Instruction to Tenderers)

(All Tender and Contract Prices shall NOT include GST. GST will apply upon payment)**(Should there be any discrepancy in the information provided, the City's original file copy shall prevail)**

ITEM NO.	MMCD Ref./ (SS)	DESCRIPTION	UNIT	QTY	UNIT PRICE	EXTENDED AMOUNT
1.00	01 55 00	TRAFFIC CONTROL, VEHICLE ACCESS AND PARKING				
1.01	1.5.1	Traffic Control and Management			Incidental to Contract	
2.00	01 57 01\$	ENVIRONMENTAL PROTECTION				
2.01	(1.6.1)	ESC supply & Installation, Maintenance and Removal			Incidental to Contract	
3.00	01 58 01\$	PROJECT IDENTIFICATION				
3.01	(1.3.1)	1.2m x 1.2m Static Construction Zone Information Sign	ea.	5		
3.02	(1.3.2)	Changeable Message Signs (CMS) (x2 Sign)	month	5		
4.00	03 30 20\$	CONCRETE WALKS, CURBS AND GUTTERS				
4.01	(1.4.3)	MMCD C5 Concrete Barrier Curb & Gutter c/w slot paving (excl. gravels)	lin.m	90		
4.02	(1.4.5)	Concrete Sidewalk, Infill Slopes & Wheelchair Letdowns- Broom Finish -100mm thick (excl. gravels)	sq.m	1,340		
4.06	(1.4.10)	Tactile Strip - 24in x 60in - Access Tile, Yellow Colour, Removable Type - Provisional	each	3		
5.00	03 30 53	CAST IN PLACE CONCRETE				
5.01	1.5.3	Concrete Retaining Wall - Provisional	cu.m	243		
6.00	26 56 01	ROADWAY LIGHTING				
6.01	1.9.2	Supply and Installation of All Roadway and Pedestrian Lighting Works including any removal, adjustments and disposal needed to complete the work and as shown on the Contract Drawings	L.S.	1		
7.00	31 05 17\$	AGGREGATES AND GRANULAR MATERIALS				
7.01	(1.4.3)	19mm Granular Base	tonne	850		
8.00	31 11 01\$	CLEARING AND GRUBBING				
8.01	(1.4.1)	Clearing and Grubbing	L.S.	1		
9.00	31 11 41	SHRUB AND TREE PRESERVATION				
9.01	1.3.1	Tree Protection (Including Tree Protection Fencing COQ-R26)	L.S.	1		
10.00	31 24 13\$	ROADWAY EXCAVATION, EMBANKMENT & COMPACTION				
10.01	(1.8.4)	Removal of Existing Concrete and Asphalt Flatwork (all depths) (Incl. Sawcut & Offsite Disposal)	sq.m	165		
10.02	(1.8.4)	Removal of Existing Concrete Curb	lin.m	90		
10.03	(1.8.4)	Removal of No Post Barrier & Bollards (Incl. Off Site Disposal)	each	3		
10.04	(1.8.5)	Common Excavation (Incl. Stripping, Top Soil Removal & Off Site Disposal)	cu.m	1500		
11.00	32 17 23\$	PAINTED PAVEMENT MARKINGS				
11.01	(1.5.3)	Permanent Thermoplastic Pavement Markings and Stencils (includes Eradication of Existing Pavement Markings) as Per Contract Drawings	L.S.	1		
11.02	(1.5.4)	Install Traffic Signage on New Pole and Base (City to supply all new sign tabs)	each	3		
11.03	(1.5.4)	Install or Adjust Traffic Signage on Existing Pole or Streetlight (City to supply all new sign tabs)	each	2		
11.04	(1.5.4)	Relocate Existing Sign Pole & Install or Adjust New Traffic Signage	each	1		
12.00	32 31 13\$	CHAIN LINK FENCES AND GATES				
12.01	(1.5.1)	Install New Chainlink Fence (MMCD 13) - Provisional	lin.m	340		
12.02	(1.5.4)	MMCD C14 (Powder Coated Black) Handrail - Embedded Mounting	lin.m	360		
12.03	(1.5.5)	Remove & Replace Existing Chainlink Fence (MMCD 13)	lin.m	16		
13.00	32 91 13.23\$	STRUCTURAL SOIL				
13.01	(1.8.1)	Structural Soil	cu.m	650		
14.00	32 91 21\$	TOPSOIL AND FINISH GRADING				
14.01	(1.4.1)	Imported Topsoil - 150mm thick	cu.m	620		
15.00	32 92 19	HYDRAULIC SEEDING				
15.01	1.8.2	Hydraulic Seeding (lawn grass #1, sun and shade mix)	sq.m	110		
16.00	32 93 01\$	PLANTING OF TREES, SHRUBS AND GROUND COVERS				
16.01	(1.9.1)	European Hornbeam Tree, 6cm Cal/B&B as described in Contract Drawings c/w Treegator Slow Release Watering Bag, Trunk Protector, Support Stakes and 1.0m Deep Bark Mulch Well Tree Well - Provisional	each	8		
16.02	(1.9.1)	Katsura Tree, 6cm Cal/B&B as described in Contract Drawings c/w Treegator Slow Release Watering Bag, Trunk Protector, Support Stakes and 1.0m Deep Bark Mulch Well Tree Well - Provisional	each	2		
16.03	(1.9.1)	Fraser's Photinia, #10 Pot as described in Contract Drawings c/w 75mm Deep Bark Mulch - Provisional	each	7		
16.04	(1.9.1)	Ninebark, #10 Pot as described in Contract Drawings c/w 75mm Deep Bark Mulch - Provisional	each	6		
16.05	(1.9.1)	Ocean Spray, #10 Pot as described in Contract Drawings c/w 75mm Deep Bark Mulch - Provisional	each	6		
17.00	33 40 01\$	STORM SEWER				
17.01	(1.6.2)	450mm dia. Conc Pipe (Type C-76 III)	lin.m	7		
17.02	(1.6.6)	100mm PVC Perforated Pipe within Retaining Wall (incl. drain rock, filter fabric, cleanouts and tie-in to existing catchbasin sump)	lin.m	390		
18.00	33 42 13	PIPE CULVERTS				
18.01	1.5.3	11-13 Headwall c/w Rip Rap	L.S.	1		
19.00	33 44 01\$	MANHOLES AND CATCHBASINS				
19.01	(1.5.2)	Lawn Basin Type 1 (COQ-S12A) - Provisional	each	1		
19.02	(1.5.3)	Junction Box, Communication Box (5686 Service Box) & Water Valve (Terminal City Nelson Type) Adjustment Only	each	9		

ITEM NO.	MMCD Ref./ (SS)	DESCRIPTION	UNIT	QTY	UNIT PRICE	EXTENDED AMOUNT
20.00	34 41 135	TRAFFIC SIGNALS				
20.01	(1.9.2)	Traffic Signal Installation and Modifications including Controller Relocation as Shown In Contract Drawings	L.S.	1		
20.02	(1.9.4)	Remove and Reinstate Detector Loops - Provisional	each	4		

Total Tendered Price (exclude GST): \$ _____
(Transfer the amount to Form of Tender Summary Page 1)
Name of Contractor: _____

APPENDIX 2

FORM OF TENDER

Contract 77103

Austin Avenue Improvements (Walker St – Brookmere Ave MUP)

PRELIMINARY CONSTRUCTION SCHEDULE

(See paragraph 5.3.2 of the Instructions to Tenderers)

INDICATE SCHEDULE WITH BAR CHART WITH CONSTRUCTION DURATIONS

Construction Activity	March	April				May				June				July	
	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2

Substantial Completion Date: **July 13, 2023**

Proposed Disposal Site: _____

APPENDIX 3

FORM OF TENDER

Contract 77103

Austin Avenue Improvements (Walker St – Brookmere Ave MUP)

EXPERIENCE OF SUPERINTENDENT

(See paragraph 5.3.3 of the Instructions to Tenderers)

Proposed Project Superintendent _____

List of Project Experience

PROJECT:		Dates:	
Work Description:			
Responsibility:			
Owner/Reference:		Phone NO:	

PROJECT:		Dates:	
Work Description:			
Responsibility:			
Owner/Reference:		Phone NO:	

PROJECT:		Dates:	
Work Description:			
Responsibility:			
Owner/Reference:		Phone NO:	

APPENDIX 4

FORM OF TENDER

Contract 77103

Austin Avenue Improvements (Walker St – Brookmere Ave MUP)

CONTRACTOR'S COMPARABLE WORK EXPERIENCE

(See paragraph 5.3.4 of the Instructions to Tenderers)

PROJECT:		VALUE (\$):	
OWNER:		Phone Number:	
Work Description:			

PROJECT:		VALUE (\$):	
OWNER:		Phone Number:	
Work Description:			

PROJECT:		VALUE (\$):	
OWNER:		Phone Number:	
Work Description:			

PROJECT:		VALUE (\$):	
OWNER:		Phone Number:	
Work Description:			

APPENDIX 5

FORM OF TENDER

Contract 77103

Austin Avenue Improvements (Walker St – Brookmere Ave MUP)

SUBCONTRACTORS

(See paragraph 5.3.5 of the Instructions to Tenderers)

Trade:		Tender Item:	
Work Description:			
Subcontractor:		Phone No:	

Trade:		Tender Item:	
Work Description:			
Subcontractor:		Phone No:	

Trade:		Tender Item:	
Work Description:			
Subcontractor:		Phone No:	

Trade:		Tender Item:	
Work Description:			
Subcontractor:		Phone No:	

Trade:		Tender Item:	
Work Description:			
Subcontractor:		Phone No:	

APPENDIX 6

FORM OF TENDER

Contract 77103
Austin Avenue Improvements (Walker St – Brookmere Ave MUP)

Bid Bond

NO. _____ \$ _____

KNOW ALL MEN BY THESE PRESENTS THAT

As Principal, hereinafter called the Principal, and

As Surety, hereinafter called the Surety, are held and firmly bound unto

As Obligee, hereinafter called the Obligee, in the amount of

_____ Dollars (\$ _____) lawful money of
Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their
heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a written Tender to the Obligee, dated the _____ day of
_____, 2023, for Contract _____.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the aforesaid Principal shall have the Tender
accepted within sixty (60) days from the Closing Date of Tender and the said Principal will, within the time required,
enter into a formal contract and give good and sufficient bonds to secure the performance of the terms and conditions
of the Contract, then this obligation shall be null and void; otherwise the Principal and Surety will pay unto the Obligee
the difference in money between the amount of the bid of the said Principal and the amount for which the Obligee
legally contracts with another party to perform the work if the latter amount be in excess of the former.

The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

Any suit under this Bond must be instituted before the expiration of six (6) months from the date of this Bond.

IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these
presents to be sealed with its corporate seal duly attested by the signature of its Attorney-In-Fact,
this _____ day of _____, 2023

SIGNED, SEALED AND DELIVERED

In the presence of:

_____)	_____
_____)	PRINCIPAL
_____)	_____
_____)	SURETY
_____)	

APPENDIX 7

FORM OF TENDER

Contract 77103

Austin Avenue Improvements (Walker St – Brookmere Ave MUP)

CERTIFICATE OF COMPLIANCE for CONTRACT INSURANCE

This is provided for information to certify that the Tenderer does hereby undertake and agree to supply to the City of Coquitlam, upon award, contract insurance listed below for the project requirements indicated:

Contract Number: **77103**

Contract Name: **Austin Avenue Improvements (Walker St – Brookmere Ave MUP)**

Description of Work:

- Concrete Works including Cast in Place Retaining Wall, Concrete Sidewalk, Letdowns, Reinforced Concrete Boulevard and Minor Curb and Gutter installation.
- Storm Works including Headwall Installation and Storm Main Extension.
- Electrical Works including New Street lighting, Traffic Signal Controller and Cabinet Relocation and Intersection Reconfiguration.
- Tree Planting and Landscaping.
- Other miscellaneous and incidental works as further described in the Contract Documents.

Commercial General Liability: **\$5,000,000 limit**

Special Coverage Required:	YES	NO	Special Coverage Description
	()	(X)	Shoring and Underpinning Hazard
	()	(X)	Pile Driving and Vibrations
	(X)	()	Excavation Hazard
	()	(X)	Demolition
	()	(X)	Blasting

We also certify that the insurance coverage will meet the requirements of the Supplementary General Conditions Section 24 – Insurance, included as part of the Contract Documents, and that the proof of insurance will be provided on the City of Coquitlam Certificate of Insurance form, without amendments, except for the exclusions noted above.

Name of Tenderer (printed)

Authorized Signature

Date

Agreement

AGREEMENT

Between Owner and Contractor

(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT - TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

THIS AGREEMENT made in duplicate this ____ day of _____ 2023.

Contract: Austin Ave Improvements (Walker Street – Brookmere Ave MUP)

Reference No. 77103

BETWEEN:

The City of Coquitlam
3000 Guildford Way
Coquitlam, B.C. V3B 7N2

(the "Owner")

AND:

(the "Contractor")

The *Owner* and the *Contractor* agree as follows:

1 THE WORK - START/COMPLETION DATES

- 1.1 The *Contractor* will perform all *Work* and provide all labour, equipment and material and do all things strictly as required by the *Contract Documents*.
- 1.2 The *Contractor* will commence the *Work* in accordance with the *Notice to Proceed*. The *Contractor* will proceed with the *Work* diligently, will perform the *Work* generally in accordance with the construction schedules as required by the *Contract Documents* and will achieve *Substantial Performance* of the *Work* on or before **July 13, 2023**, subject to the provisions of the *Contract Documents* for adjustments to the *Contract Time*.
- 1.3 Time shall be the essence of the Contract.

2 CONTRACT DOCUMENTS

- 2.1 The “*Contract Documents*” consist of the documents listed or referred to in Schedule 1, entitled “Schedule of Contract Documents”, which is attached and forms a part of this Agreement, and includes any and all additional and amending documents issued in accordance with the provisions of the *Contract Documents*. All of the *Contract Documents* shall constitute the entire *Contract* between the *Owner* and the *Contractor*.
- 2.2 The *Contract* supersedes all prior negotiations, representations or agreements, whether written or oral, and the *Contract* may be amended only in strict accordance with the provisions of the *Contract Documents*.

3 CONTRACT PRICE

- 3.1 The price for the *Work* (“*Contract Price*”) shall be the sum in Canadian dollars of the following:
- a) the product of the actual quantities of the items of *Work* listed in the *Schedule of Quantities and Prices* which are incorporated into or made necessary by the *Work* and the unit prices listed in the *Schedule of Quantities and Prices*; plus
 - b) all lump sums, if any, as listed in the *Schedule of Quantities and Prices*, for items relating to or incorporated into the *Work*; plus
 - c) any adjustments, including any payments owing on account of *Changes* and agreed to *Extra Work*, approved in accordance with the provisions of the *Contract Documents*.
- 3.2 The *Contract Price* shall be the entire compensation owing to the *Contractor* for the *Work* and this 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 PAYMENT

- 4.1 Subject to applicable legislation and the provisions of the *Contract Documents*, the *Owner* shall make payments to the *Contractor*.
- 4.2 If the *Owner* fails to make payments to the *Contractor* as they become due in accordance with the terms of the *Contract Documents* then interest calculated at 2% per annum over the prime commercial lending rate of the Royal Bank of Canada on such unpaid amounts shall also become due and payable until payment. Such interest shall be calculated and added to any unpaid amounts monthly.

5 RIGHTS AND REMEDIES

- 5.1 The duties and obligations imposed by the *Contract Documents* and the rights and remedies available hereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.
- 5.2 Except as specifically set out in the *Contract Documents*, no action or failure to act by the *Owner*, *Contract Administrator* or *Contractor* shall constitute a waiver of any of the parties’ rights or duties

afforded under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach under the *Contract*.

6 NOTICES

- 6.1 Communications among the *Owner*, the *Contract Administrator* and the *Contractor*, including all written notices required by the *Contract Documents*, may be delivered by email, by hand or by fax, or by pre-paid registered mail to the addresses as set out below:

The *Owner*:

The City of Coquitlam
3000 Guildford Way
Coquitlam, B.C. V3B 7N2

Tel: 604-927-3500
Fax: 604-927-3505

The *Contractor*:

Tel:
Fax:
Email:
Attention:

The *Contract Administrator*:

The City of Coquitlam
3000 Guildford Way
Coquitlam, B.C. V3B 7N2

Tel:
Fax:
Email:
Attention:

- 6.2 A communication or notice that is addressed as above shall be considered to have been received:
- a) immediately upon delivery, if delivered by hand; or
 - b) immediately upon transmission if sent or received by email or fax; or
 - c) after 5 days from date of posting if sent by registered mail.
- 6.3 The *Owner* or the *Contractor* may, at any time, change its address for notice by giving written notice to the other at the address then applicable. Similarly if the *Contract Administrator* changes its address for notice then the *Owner* will give or cause to be given written notice to the *Contractor*.

- 6.4 The sender of a notice by email or fax assumes all risk that the fax will be received properly, and the provisions of paragraph 12.5 of the Instructions to Tenderers Part II apply to the sender.

7 GENERAL

- 7.1 This *Contract* shall be construed according to the laws of British Columbia.
- 7.2 The *Contractor* shall not, without the express written consent of the *Owner*, assign this *Contract*, or any portion of this *Contract*.
- 7.3 The headings included in the *Contract Documents* are for convenience only and do not form part of this *Contract* and will not be used to interpret, define or limit the scope or intent of this *Contract* or any of the provisions of the *Contract Documents*.
- 7.4 A word in the *Contract Documents* in the singular includes the plural and, in each case, vice versa.
- 7.5 This agreement shall enure to the benefit of and be binding upon the parties and their successors, executors, administrators and assigns

This agreement shall enure to the benefit of and be binding upon the parties and their successors, executors, administrators and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first written above.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY AND POSITION - PRINT)

Owner:

The City of Coquitlam

(MANAGER CAPITAL PROJECTS AND INSPECTIONS)

Representative as Per G.C. 17

(MANAGER DESIGN AND CONSTRUCTION)

Austin Avenue Improvements (Walker Street – Brookmere Ave MUP)

Reference No: 77103

Schedule 1

Schedule of Contract Documents

(INCLUDE IN LIST ALL DOCUMENTS INCLUDING, IF ANY, SUPPLEMENTARY GENERAL CONDITIONS, SUPPLEMENTARY SPECIFICATIONS, SUPPLEMENTARY STANDARD DETAIL DRAWINGS)

The following is an exact and complete list of the *Contract Documents*, as referred to in Article 2.1 of the Agreement.

NOTE: The documents noted with “*” are contained in the “Master Municipal Construction Documents – General Conditions, Specifications and Standard Detail Drawings”, edition dated 2009. All sections of this publication are included in the *Contract Documents*.

1. Agreement, including all Schedules;
2. The following Addenda:
 - As issued
3. Supplementary General Conditions, if any;
4. General Conditions*;
5. Supplementary Specifications, if any;
6. Detail Specifications, if any;
7. Specifications*;
8. Supplementary Detail Drawing, if any;
9. Standard Detail Drawings*;
10. Executed Form of Tender, including all Appendices;
11. Drawings listed in Schedule 2 to the Agreement – “List of Drawings”, if any;
12. Instructions to Tenderers;
13. COQUITLAM “Supplementary Specifications Master Municipal Construction Documents” March 2022

Austin Avenue Improvements (Walker Street – Brookmere Ave MUP)

Reference No: 77103

Schedule 2

LIST OF DRAWINGS

(Complete Listing of All Drawings, Plans and Sketches That Are Part of the Contract Documents)

Bound in this Document:

Appendix A: Traffic Management Detail Specifications

Appendix B: Additional Information

Bound Separately:

Full Size Contract Drawings

TITLE	DRAWING NO.	REVISION NO.	DATE
COVER	00/11		
ROAD WORKS - AUSTIN AVENUE SIDEWALK - TYPICAL SECTIONS	01/11	D	2023/02/10
ROAD WORKS - AUSTIN AVENUE SIDEWALK – PLAN AND PROFILE	02/11	D	2023/02/10
ROAD WORKS - AUSTIN AVENUE SIDEWALK – PLAN AND PROFILE	03/11	D	2023/02/10
ROAD WORKS - AUSTIN AVENUE SIDEWALK – PLAN AND PROFILE	04/11	D	2023/02/10
ROAD WORKS - AUSTIN AVENUE SIDEWALK – PLAN AND PROFILE	05/11	D	2023/02/10
ROAD WORKS - AUSTIN AVENUE SIDEWALK – PLAN AND PROFILE	06/11	D	2023/02/10
ROAD WORKS - AUSTIN AVENUE SIDEWALK – CROSS SECTIONS	07/11	D	2023/02/10
ROAD WORKS - AUSTIN AVENUE SIDEWALK – CROSS SECTIONS	08/11	D	2023/02/10
ROAD WORKS - AUSTIN AVENUE SIDEWALK – CROSS SECTIONS	09/11	D	2023/02/10
ROAD WORKS – AUSTIN AVENUE SIDEWALK – STRUCTURAL GENERAL NOTES	10/11	D	2023/02/10
ROAD WORKS - AUSTIN AVENUE SIDEWALK – STRUCTURE DETAILS	11/11	D	2023/02/10
STREET LIGHTING – AUSTIN AVENUE – WEST OF GUILBY STREET	1/4	-	2023/02/17
STREET LIGHTING – AUSTIN AVENUE – WEST OF GUILBY STREET	2/4	-	2023/02/17
TRAFFIC SIGNAL – AUSTIN AVENUE – GUILBY STREET	3/4	-	2023/02/17
TRAFFIC SIGNAL – AUSTIN AVENUE – GUILBY STREET	4/4	-	2023/02/17

Supplementary General Conditions

SUPPLEMENTARY GENERAL CONDITIONS

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1.0 DEFINITIONS

- 1.1 Abnormal Weather** 1.1.1 **(Replace clause 1.1.1 as follows):**
Abnormal Weather” means temperature, precipitation, wind or other weather conditions in which the monthly average, differs from the statistical average for that condition in that period by more than one standard deviation, calculated based on data available from Environment Canada. Coquitlam’s Burke Mountain Rain Gauge will be used to compare the rainfall summary versus the available data from Environment Canada.
[City of Coquitlam Rainfall](#)

2.0 DOCUMENTS

- 2.2 Interpretation** 2.2.4 (1) **(Replace clause 2.2.4 (1) as follows):**
The Contract Documents shall govern and take precedence in the following order as listed in Schedule 1 of the Agreement, taking precedence over all Contract Documents.

4.0 CONTRACTOR

- 4.1 Control of the Work** 4.1.1 **(Add to clause 4.1.1 as follows):**
The *Contractor* is responsible for all survey layout for the construction of the Work to the design specifications and/or elevations as shown on the contract drawings or as amended on site by the Contract Administrator.

- 4.1.2 **(Add to clause 4.1.2 as follows):**
The Contractor shall not deposit any material upon any street, sidewalk, boulevard or other property, without the Contract Administrator’s or the Owner’s permission, nor shall they allow the same to remain longer than necessary. All surplus spoil and rubbish and other waste material shall be removed from the site so that the area of work is cleaned up and restored to as clean a condition as it was before the Contract started, within four days of the Contract Administrator’s written request to do so, failing which the Owner may carry out the work or have the work carried out by others and recover the costs from the Contractor or may deduct the cost from any monies due or that may become due to the Contractor.

- 4.1.3 **(Add new clause 4.1.3 as follows):**
Work can be performed during the normal weekday working hours of 0700h to 1900h, unless specified otherwise in Supplementary Specifications - Appendix A: Traffic Management Detail Specifications. Written permission from the Contract Administrator will be required for any works to be performed outside of the normal working days of Monday to Friday.

No Sunday work will be permitted, except in case of emergency and then only with the written permission of the Contract Administrator and to such extent as they deem necessary.

In case the Contractor decides to work on a day which is a Statutory Holiday, they shall provide the Contract Administrator in writing at least (4) days in advance of such holiday, stating

those places where said work is to be conducted. In case the Contractor fails to give such notice in advance of any Statutory Holiday, no work within the terms of the contract shall be done on such holiday.

The cost of inspections on a Sunday or on a Statutory Holiday by City staff/s will be at Contractor's expense.

4.2 Safety

4.2.2

(Add new clause 4.2.2 as follows):

In an emergency, gas pipeline rupture or leak, Contact FortisBC's 24 Hour Emergency Line (1-800-663-9911) and Coquitlam Fire (911) immediately and then the City of Coquitlam's Utility Control Centre (604-927-6287).

4.3 Protection of Work, Property and the Public

4.3.1

(Replace clause 4.3.1 as follows):

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. If the Contractor causes damage to private property, the Contractor must obtain a written release from the owner of the damaged property.

4.3.5.1

(Add clause 4.3.5.1 as follows):

The Contractor shall notify the Contract Administrator immediately if damage occurs to any City or third party utility or structure.

4.3.7

(Add new clause 4.3.7 as follows):

Any lands other than those upon which the work is to be performed, which may be required for temporary facilities, storage purposes or access to the work site, other than those provided by the *Owner*, shall be provided by the *Contractor* at his own cost, with no liability to the *Owner*.

4.6 Construction Schedule

4.6.1

(Replace clause 4.6.1 as follows):

The Contractor shall within the time set out in the Form of Tender prepare and submit to the Contract Administrator for his approval a construction schedule (the Baseline Construction Schedule) indicating the planned start and completion dates of major activities of the Work. The Baseline Construction Schedule shall be in more detail than the Preliminary Construction Schedule and shall indicate completion of the Work in compliance with any specified Milestone Dates, including Substantial Performance.

4.6.6

(Replace clause 4.6.6 as follows):

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. The Notice to Proceed will not be issued until the documentation required under paragraph 5.1.1 of the Form of Tender has been submitted and the construction schedule has been approved.

4.6.8

(Add new clause 4.6.8 as follows):

Any requests to lengthen the work schedule shall be made in writing by the Contractor within five working days of knowledge

These Supplementary General Conditions must be read in conjunction with the General Conditions contained in the Master Municipal Construction Documents, Volume II, Printed 2009

of the reason for the extension. The Contract Administrator will adjust the schedule at his discretion upon receipt of a written request.

4.7 Superintendent

4.7.4

(Add new clause 4.7.4 as follows):

The key personnel named in the Contractor's Tender response, shall remain in these key positions throughout the project. In the event that key personnel leave the Contractor's firm, or for any unknown reason are unable to continue fulfilling their role, the Contractor must propose a suitable replacement, and obtain written consent from the Owner. Acceptance of the proposed replacement is at the sole discretion of the Contract Administrator and the Owner.

4.8 Workers

4.8.2

(Add new clause 4.8.2 as follows):

The Contractor shall, upon the request of the Contract Administrator, remove any person employed by them for the purposes of the Contract who, in the opinion of the Contract Administrator, is incompetent or has conducted themselves improperly, and the Contractor shall not permit a person who has been removed to return to the Place of Work.

4.9 Materials

4.9.3

(Add new clause 4.9.3 as follows):

The Contractor shall, at his cost,

- a) Be responsible for storing all of the materials supplied for the Work either by themselves or the Owner, until it has been incorporated into the completed Work;
- b) Store all materials in a manner which will prevent damage from the weather, dirt, foreign matter, vandalism and theft;
- c) Arrange for and/or verify the time of delivery of all materials to be supplied by themselves or the Owner to ensure that delivery will coincide with his work schedules.
- d) Examine with the Contract Administrator the quantities and details of all materials supplied by the Owner at the time and place of delivery or those materials already at the Place of Work, and prepare and sign a Statement of Materials Acceptance, specifically noting and rejecting any defective material;
- e) Replace all materials supplied by themselves or the Owner which are found to be stolen, missing or damaged while under his care;
- f) Replace all materials found to be defective in manufacture which have been supplied by themselves.

4.11 Subcontractors

4.11.3

(Replace clause 4.11.3 as follows):

The Contractor shall, upon notice of the Contract Administrator, remove any Subcontractor employed by them for the purposes of the Contract who, in the opinion of the Contract Administrator, is incompetent or has conducted themselves improperly, and the Contractor shall not permit the Subcontractor who has been removed to return to the Place of Work. The removal of a Subcontractor under this clause shall not be considered a Change and the Contract Price and the Contract Time shall not be adjusted.

4.12	Test and Inspections	4.12.1	<i>(Replace clause 4.12.1 as follows):</i> The Contractor shall perform or cause to be performed all tests, inspections and approvals of the Work as described in the Contract Documents or as required by the Contract Administrator as part of Quality Control. The Contractor shall complete all the necessary testing at the frequencies described in the Contract Document unless otherwise approved by the Contract Administrator. Acceptable test and inspection results will not relieve the Contractor of its obligations under the Contract to correct defects or deficiencies in the Work.
		4.12.11	<i>(Add clause 4.12.11 as follows):</i> Failure to follow DFO/FLNRO BMPs and the approved permit for Instream Works or as instructed by Contract Administrator will result in shut-down of the work. The Contractor must take all steps to mitigate impacts to aquatic resources, environment and habitats before work can re-start on site. No claim will be accepted by the Owner for costs associated with this work shut-down.
4.14	Final Clean-up	4.14.1	<i>(Replace clause 4.14.1 as follows):</i> Prior to applying for Substantial Performance, the Contractor shall remove all surplus products, tools, construction machinery and equipment relating to the Work that is not required for the performance of the remaining Work. The Contractor shall also remove waste, debris and waste products other than caused by the Owner or Other Contractors, and leave the Place of Work clean and suitable for occupancy by the Owner unless otherwise specified in the Contract Documents or directed by the Contract Administrator.
4.16	Notice of Disruption	4.16.2	<i>(Add new clause 4.16.2 as follows):</i> Written notice must be provided to all properties which may be physically affected by the construction not less than one week and not more than two weeks prior to construction. Notify occupants directly affected by the work 48 hours in advance of commencement of construction. Cost of notifying area occupants of ensuing construction and delivery of the notices is incidental to the Contract.
7.0	CHANGES		
7.1	Changes	7.1.3	<i>(Replace clause 7.1.3 as follows):</i> Additional work that the Owner may wished performed that does not satisfy the requirements of subparagraphs (a) and (b) of GC 7.1.1 is extra work (Extra Work) and is 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.
7.4	Optional Work	7.4.2	<i>(Add new clause 7.4.2 as follows):</i> If there are Optional items or Provisional items included in the <i>Schedule of Quantities and Prices</i> , those items shall be used only as directed and at the sole discretion of the Contract

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Administrator through the issue of a Change Order. These items will be paid at the contract unit price as part of regular progress payments. Only quantities used will be eligible for payment. No claim will be accepted for unused Optional or Provisional quantities. Clause 9.4 Quantity Variations will not be applicable for these items.

**9.0 VALUATION OF
CHANGES AND EXTRA
WORK**

9.2 Valuation Method 9.2.4

(Replace clause 9.2.4 as follows):

Once a quotation is accepted by the Contract Administrator, or other agreement reached between the Contract Administrator and the Contractor regarding adjustments to the Contract Price or Contract Time on account of a Change or Extra Work, the Contractor shall not be entitled to claim or receive additional payment, or adjustment to the Contract Time on account of a Change or Extra Work.

9.4 Quantity Variation 9.4.1

(Replace clause 9.4.1 as follows):

If for any reason, including an addition or deletion under GC 7.1.1(1) or 7.1.1(2) respectively, the actual quantity of a unit price item varies by more than plus or minus the Variance Threshold Percentage from the estimated quantity for that unit price item listed in the Schedule of Quantities and Prices (the "Tender Quantity") or as otherwise agreed to pursuant to these Contract Documents, then either the Owner or the Contractor may by written notice request the other party to agree to a revised unit price, considering the change in quantities. A party shall make a request for a revised unit price as soon as reasonably possible after the party concerned becomes aware of the quantity variation.

9.4.2 ***(Delete clause 9.4.2 (2))***

10.0 FORCE ACCOUNTS

10.1 Force Account Costs 10.1.1(1)

(Add to clause 10.1.1(1) as follows):

Costs for the Contractor's Superintendent, Project Managers, Health and Safety Personnel, and Office/Administration Staff are not eligible for labour costs as those costs are considered incidental to the mark up owing for overhead and labour.

10.1.1(4) ***(Replace clause 10.1.1(4) as follows):***

Force Account Work performed by a subcontractor shall be paid for in the lesser of: (i) the amount provided by subparagraphs (1), (2) and (3) of this GC, plus a mark-up of 5%, or (ii) the actual amount the Contractor pays the subcontractor including a mark-up of 10% on such actual costs to cover all overhead and profit.

**12.0 HAZARDOUS
MATERIALS**

**12.2 Discovery of
Hazardous Materials**

12.2.2

(Replace clause 12.2.2 as follows):

If the Contract Administrator observes any materials at the Place of Work that the Contract Administrator knows or suspects may be Hazardous Materials, then the Contract Administrator shall immediately give written notice to the Contractor and the Contractor shall immediately stop the Work or portion of the Work as required by GC 12.2.1(1).

13.0 DELAYS

**13.1 Delay by Owner or
Contract Administrator**

13.1.2

(Add new clause 13.1.2 as follows):

The Owner may at any time suspend the work or any portion thereof provided they gives the Contractor five (5) days' written notice of delay. The Contractor shall resume work upon written notice from the Owner. The Contractor shall be entitled to:

- a) An extension of the Contract time equivalent to the length of suspension of work.
- b) Reimbursement by the Owner for directly related out-of-pocket additional costs, reasonably and necessarily incurred by the Contractor as a result of such suspension. No additional payment will be made to the Contractor for any loss of profits or overhead.

13.3 Unavoidable Delay

13.3.1

(Add to clause 13.3.1 as follows):

Beyond the reasonable control of the Contractor also includes pandemic or community outbreak

**13.8 Direction to Stop or
Delay**

13.8.3

(Add new clause 13.8.3 as follows):

The Contract Administrator may order the Contractor to stop work if at any time the Contract Administrator is of the opinion that there exists a danger to life or property.

**13.9 Liquidated Damages
for Late Completion**

13.9.1

(Replace clause 13.9.1 as follows):

If the Contractor fails to meet the Milestone Date for Substantial Performance as set out in the Form of Tender, paragraph 2.2 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) An amount of \$1,000.00 for each calendar day the 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.

18.0 PAYMENT

**18.1 Preparation of
Payment Certificate**

18.1.1 ***(Replace clause 18.1.1 as follows):***
The Contract Administrator shall prepare and issue a certificate for the period ending the last calendar day of the month.

18.4 Holdbacks

18.4.2 ***(Add to clause 18.4.2 as follows):***
At the sole discretion of the Contract Administrator, an amount equivalent to 10% of the contract award value or 200% of a reasonable estimate, whichever is higher, may be held without interest until all deficiencies have been remedied and accepted by the Contract Administrator.

**18.6 Substantial
Performance**

18.6.5 ***(Replace clause 18.6.5 as follows):***
The Owner may release any builders lien holdback on the 56th day following the date of Substantial Performance, or other date as required by law, but the Owner may hold back the amounts for any deficiencies or filed builders liens as provided in GC 18.4.2, 18.4.3 and 18.4.4.

18.6.6 ***(Replace clause 18.6.6 as follows):***
The *Contract Administrator*, as defined herein, shall be the *Payment Certifier* responsible under Section 7 of the *Builders Lien Act* for certifying *Substantial Performance* of the *Work* of the *Contractor*, but not the *Work* of *Subcontractors*. The *Contractor* shall cooperate with and assist the *Contract Administrator* by providing information and assistance in a timely manner as the *Contract Administrator* considers necessary to carry out the duties of the *Payment Certifier* for the *Contract*.

The *Contractor* shall be the *Payment Certifier* responsible under Section 7 of the *Builders Lien Act* for certifying *Substantial Performance* of the *Work* of each *Subcontractor*. Prior to certifying completion for a *Subcontractor*, the *Contractor* shall consult the *Contract Administrator* and obtain the *Contract Administrator's* comments on the status of completion by the *Subcontractor*, including any deficiencies or defects in the *Subcontractor's Work* noted by the *Contract Administrator*. The *Contractor* will indemnify and save the *Owner* harmless from any and all liability the *Owner* may have to anyone arising out of the certification by the *Contractor* of *Substantial Performance* for that *Subcontractor*.

Notwithstanding any other provision of the *Contract*, no payments will be due or owing to the *Contractor* so long as a Lien filed by anyone claiming under or through the *Contractor* remains registered against the Project of any lands, or interest therein, on which *Work* for the project was performed. Failure of the *Contractor* to remove all Liens promptly will entitle the *Owner* to damages.

**21.0 WORKERS
COMPENSATION
REGULATIONS**

**21.2 Contractor is “Prime
Contractor”**

21.2.1 *(Add to clause 21.2.1 as follows):*

Prior to the issuance of the “Notice to Proceed” the Contractor must provide a signed “Prime Contractor Designation” form as provided in Appendix IV of these Supplementary General Conditions.

24.0 INSURANCE

24.1 General

(Replace section 24.0 as follows):

24.1.1 Importance of Prompt Attention to Insurance Requirements:

The Contractor shall provide the Owner with satisfactory evidence that the insurance required to be provided under this GC is in full force and effect.

24.1.2 Acceptable Insurance Carriers:

The insurer issuing any policy, or other document which is evidence of insurance to the Contractor, shall be an insurer licensed by the Superintendent of Insurance in the Province of British Columbia and registered with the Department of Insurance for Canada in Ottawa, except the Insurance Corporation of British Columbia, which is not subject to this condition.

24.1.3 Owner’s Right to Change Terms:

Notwithstanding anything contained in the Contract Documents, the Owner will have the right to request a change to the specified terms and conditions respecting insurance at the sole option of the Owner. The Contractor will be notified in writing of any changes required by the Owner and will provide a quotation for such work.

24.1.4 Delivery of Insurance Documents:

All insurance policies or other acceptable specified documents shall be delivered to, and accepted by, the Owner before the Contract Documents are signed. No work shall be commenced by the Contractor or by anyone acting on the instructions of the Contractor, until the required Insurance Documents have been accepted by the Owner and the Contract Documents have been duly signed by the Owner and the Contractor.

24.1.5 Owner’s Right to Insure:

Should the Contractor for any reason not comply with the specified requirements with respect to the insurance, the Owner will, at the Owner’s option, have the right to purchase all or any part of such insurance which, in the opinion of the Owner, may be required to provide the specified insurance, and, in the event of so doing, the Owner will have the right to pay the premiums for such insurance and to withhold the amount of premiums so paid from any amount due and payable to the Contractor under the Contract.

24.2 Required Insurance

24.2.1

General

Damage to work (excluding Building Contracts where Section 24.3, Paragraph 24.3.1, Further Responsibilities of Contractor, applies).

The Contractor shall be responsible for any and all loss, or damage, whatsoever which may occur on or to the works, completed or otherwise, until such time as the entire works have been completed and the Notice of Acceptance has been issued by the Owner, except that loss or damage caused solely by an act of the Owner. In the event of any loss or damage occurring, the Contractor shall, on notice from the Contract Administrator, immediately put the works into the condition it was immediately prior to such loss or damage, all at the

Contractor's expense, except where such loss or damage was caused solely by an act of the Owner.

The Contractor shall be responsible for any and all loss or damage whatsoever which may occur on or to the works, completed or otherwise, arising out of the negligence of the Contractor, any subcontractors, and the employees or agents of any of them.

24.2.2

Public Liability Insurance:

(Other than Automobile Third Party Liability Insurance):

Evidence of Insurance:

The Contractor shall deposit with the Owner, before the work commences, a Certificate of Insurance, signed by an authorized representative of the insurer, such certificate to be as shown in Appendix III.

Effective Dates and Terms:

The effective date of the Certificate of Insurance shall be the date of the execution of the Contract Agreement and the term of this policy shall be from such effective date until a date not less than twelve (12) months after the date of Substantial Performance completion of all work under the Contract.

Limits of Liability:

For bodily injury and for property damage shall be inclusive limits not less than \$5,000,000.

24.2.3

Public Liability Insurance (Automobile):

The Contractor shall deposit with the Owner before the work commences a Certificate of Insurance with respect to owned automobiles on ICBC Form No. APV 47 entitled "Confirmation of Insurance Coverage" and with respect to Non-Owned Automobiles including hired automobiles and Contractual Liability on ICBC non-owned automobile policy Form APV 29 (if non-owned automobile coverage is not included under the comprehensive general liability coverage) each signed by an authorized representative of the Insurance Corporation of British Columbia.

**24.3 Physical Loss or
Damage With Respect
to New Buildings under
Construction and/or
Major Additions to
Existing Structures**

24.3.1 Responsibility for Placing Insurance:

The types of insurance required under this section will be provided and maintained at the expense of the City of Coquitlam during the term of the Contract and will be as follows unless otherwise changed by specific endorsement to these Insurance Specifications.

24.3.2 Insurance Coverage Required:

Builders Risk Completed Value "All Risks" Course of Construction Insurance. This policy will be written in the names of the City of Coquitlam and the Contractor with loss payable as their respective interests may appear.

24.3.3 Responsibility of Contractor – Limitations of cover and deductibles:

The insurance provided by the City of Coquitlam as described herein will not provide the Contractor with full protection against any and all kinds of loss or damage which may arise out of the Contract. It is, therefore, the responsibility of the Contractor to fully understand the scope of the cover provided with particular attention to the exclusions, limitations of cover and deductible provisions contained in the Insuring Agreements of the policies and it is further the responsibility of the Contractor to take out at the Contractor's expense, whatever other additional insurance the Contractor may consider necessary or desirable for his protection subject as hereinafter provided. The Contractor shall act in the same manner on insurance made available through the City of Coquitlam as they would if they had arranged such insurance themselves.

24.3.4 Responsibility of Contractor – Direct Damage Insurance:

If the Contractor fails to do all or anything that is required of them concerning insurance, the City of Coquitlam may do what is required and any monies expended by the City of Coquitlam for that purpose shall be repayable and recoverable from the Contractor. Should any action, failure or negligence of the Contractor result in higher insurance costs being incurred by the City of Coquitlam, such additional costs shall be payable or recoverable from the Contractor.

24.3.5 Responsibility of Contractor – Machinery and Equipment Belonging to Others:

Unless otherwise directed by the City of Coquitlam in writing, the Contractor shall carry insurance covering loss or damage to construction machinery, tools and equipment owned by and/or on bare rental from a third party or parties and used by the Contractor in performing the work, which insurance shall be in a form satisfactory to the City of Coquitlam and having coverage in accordance with the actual cash value of such construction machinery, tools and equipment. Such policies shall also provide for subrogation to be waived against the City of Coquitlam. A certified copy of the policy shall be delivered to the City of Coquitlam not later than thirty days after the commencement of work under the Contract.

- 24.3.6 **Contractor's Waiver of Liability to Coquitlam:**
The Contractor hereby releases the City of Coquitlam from any and all liability for damages to the extent that such damages are covered by the course of construction insurance referred to in Section 24.3 of these specifications.
- 24.3.7 **Liability of Contractor:**
Neither the providing of insurance by the Contractor or the City of Coquitlam in accordance with the requirements hereof, nor the insolvency, bankruptcy, nor failure of any insurance company to pay any claim accruing shall be held to waive any of the provisions of this Contract with respect to the liability of the Contractor or otherwise.
- 24.3.8 **Responsibility of Contractor for protection of work, persons and property:**
The Contractor and all persons employed by the Contractor or under his control, and all employees and subcontractors, shall use due care that no person or property is injured, and that no rights are infringed in the prosecution of the work. Contractors shall take particular care to protect the work against loss or damage caused by riot, vandalism or malicious mischief and shall be at the expense of the Contractor provide all necessary safeguards in the form of watchmen and/or watch dog protection to prevent loss or damage of this type. The payment of deductibles is the responsibility of the Contractor and if not paid by the Contractor such amounts shall be deducted by the City of Coquitlam from payment due to the Contractor. These deductibles will normally be \$250.00 each claim.
- 24.3.9 **Action to be taken in the event of loss or damage to the work covered by the Contract:**
When any loss or damage occurs to the work or to any materials and supplies on the site of the work, the Contractor shall remove any and all damaged or destroyed property and shall rebuild or replace the damaged or destroyed work, materials, or supplies and complete the work to the satisfaction of the Owner. For such removal, rebuilding, or replacing, the Contractor shall be entitled to receive from the Owner the amount of insurance monies received by the Owner pursuant to the said adjustment which amount shall be paid to the Contractor as the work of rebuilding or replacing proceeds, and in accordance with the Agreement. Damage or destruction of the whole or any part of the work shall not affect the rights and obligations of either party under the Agreement, except that in such event the Contractor shall be entitled to such reasonable extension of time to complete the work as the Architect and/or Contract Administrator may decide.

24.3.10 **Further responsibility of Contractor:**
Other than with respect to loss or damage arising out of insured risks and herein before specified, the Contractor shall be responsible for all loss or damage whatsoever which may occur on or to the works completed or otherwise, until such time as the entire works have been completed and the Notice of Acceptance has been issued by the Owner, except that loss or damage caused solely by an act of the Owner.

In the event of any loss or damage occurring, the Contractor shall on notice from the Owner immediately put the works into the condition it was immediately prior to such loss or damage, all at the Contractor's expense except as previously stated.

24.3.11 **Owner Not Responsible for Loss or Damage or Loss of Use of Property of Contractors and their Employees:**
The Owner will not be responsible for securing or paying for insurance of any kind other than as specified in Section 24.3 of these specifications nor will the Owner have any responsibility whatsoever for loss or damage from whatever cause occurring to property owned, leased, or otherwise in the possession of the Contractor, subcontractors or their employees including, without restricting the generality of the foregoing, machinery, equipment, tools, supplies, and clothing at the construction site or elsewhere including loss of use of same.

24.4 **Additional Insured** 24.4.1 **The Contractor shall ensure the following are named as "additional insured" on the liability policy for this contract:**

- The City of Coquitlam

The City may identify private properties that are directly affected by construction. If so, the Contractor shall include the legal owners of these properties named as "additional insured" on the liability policy for this contract.

25.0 MAINTENANCE PERIOD

25.1 **Correction of Defects** 25.1.4 ***(Add new clause 25.1.4 as follows):***
The Owner is authorized to make repairs to defects or deficiencies if, ten days after giving written notice, the Contractor has failed to make or undertake with due diligence the required repairs. However, in the case of emergency where, in the opinion of the Owner, delay is not reasonable, repairs may be made without notice being sent to the Contractor. All expenses incurred by the Owner in connection with repairs made pursuant to GC 25 shall be paid by the Contractor or may be deducted from the Maintenance Security, or other holdbacks. The Contractor shall promptly pay any shortfall.

**27.0 CONTRACTOR
PERFORMANCE
EVALUATION**

27.1

(Add new clause 27.1 as follows):

After the completion of the Contract, the Contractor will be evaluated on their performance of the Work. The evaluation will provide percentage scores on the following categories:

1. *Contract Administration*
2. *Construction Management*
3. *Schedule Management*
4. *Communications*
5. *Resource Management and Contractor Performance*
6. *Quality Management*

An evaluation summary report may be issued to the Contractor with scores for each of these categories. Upon request, the Contractor may attend a meeting with the City to discuss the evaluation.

This internal evaluation may be reviewed for reference on subsequent tenders with the City. Evaluation scores can form part of the tender analysis and influence contract award decisions. Evaluation Scores in categories that are below 50% may result in a suspension of tendering privileges with the City.

APPENDIX I

PERFORMANCE BOND

NO. _____ \$ _____

KNOW ALL MEN BY THESE PRESENTS THAT

As Principal, hereinafter called the Principal, and

As Surety, hereinafter called the Surety, are held and firmly bound unto

As Obligee, hereinafter called the Obligee, in the amount of

_____ Dollars
(\$)

lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a written contract with the Obligee, dated the _____

day of _____, 20____, for

in accordance with the drawings and specifications submitted, therefore, which contract, drawings and specifications and addenda thereto, to the extent provided for, are by reference made part hereof and are hereinafter referred to as the Contract.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Principal shall promptly and faithfully perform said Contract (including any addenda thereto, provided such addenda do not collectively increase the amount to be paid to the Principal by more than twenty per cent (20%) of the amount of the Contract except with the written consent of the Surety) then this obligation shall be null and void; otherwise, it shall remain in full force and effect.

Whenever the Principal shall be, and declared by Obligee to be, in default under the Contract, the Obligee having performed Obligee's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

1. Complete the Contract in accordance with its terms and conditions, or
2. Obtain a bid or bids for submission to Obligee for completing the Contract in accordance with its terms and conditions, and upon determination by Obligee and Surety of the lowest responsible bidder, arrange for a contract between such bidder and Obligee and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this

These Supplementary General Conditions must be read in conjunction with the General Conditions contained in the Master Municipal Construction Documents, Volume II, Printed 2009

paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term 'balance of the contract price', as used in this paragraph, shall mean the total amount payable by Obligee to Principal under the Contract less the amount properly paid by Obligee to Principal.

Any suit under this Bond must be instituted before the expiration of two (2) years from date on which the Notice of Acceptance under the Contract is issued.

The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Obligee named herein or the heirs, executors, administrators, or successors of Obligee.

IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its Attorney-in-fact, this _____ day of _____ 20____.

SIGNED, SEALED and DELIVERED
In the presence of

)
)
)
)
)

PRINCIPAL

SURETY

APPENDIX II

LABOUR AND MATERIAL PAYMENT BOND

(Private Contracts – Trustee Form)

NO. _____

\$ _____

Note: This Bond is issued simultaneously with another Bond in favour of the Obligee conditioned for the full and faithful performance of the Contract.

KNOW ALL MEN BY THESE PRESENTS THAT

As Principal, hereinafter called the Principal, and

As Surety, hereinafter called the Surety, are, subject to the conditions hereinafter contained, held and firmly bound unto

As Trustee, hereinafter called the Obligee, for the use and benefit of the Claimants, their and each of their heirs, executors, administrators, successors and assigns in the amount of

Dollars
(\$ _____) lawful money of Canada, for the payment of which sum well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns jointly and severally, firmly by these presents.

SIGNED AND SEALED this _____ day of _____, 20____.

WHEREAS, the Principal has entered into a written contract with the Obligee dated the _____ day of _____, 20____, for

which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Principal shall make payment to all Claimants for all labour and material used or reasonably required for use in the performance of the Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A Claimant for the purpose of this Bond, is defined as one having a direct contract with the Principal for labour, material, or both, used or reasonably required for use in the performance of the Contract, labour and material being construed to include the part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment directly applicable to the Contract provided that a person, firm or corporation who rents equipment to the Principal to be used in the performance of the Contract under a contract which provides that all or any part of the rent is to be applied towards the

These Supplementary General Conditions must be read in conjunction with the General Conditions contained in the Master Municipal Construction Documents, Volume II, Printed 2009

purchase price thereof shall only be a Claimant to the extent of the prevailing industrial rental value of such equipment for the period during which the equipment was used in the performance of the Contract. The prevailing industrial rental value of equipment shall be determined, insofar as it is practical to do so, in accordance with and in the manner provided for in the latest revised edition of the publication of the Canadian Construction Association entitled "Rental Rates on Contractors' Equipment" published prior to the period during which the equipment was used in the performance of the Contract.

2. The Principal and the Surety hereby jointly and severally agree with the Oblige as Trustee that every Claimant who has not been paid as provided for under the terms of his contract with the Principal before the expiration of a period of ninety (90) days after the date on which the last of such Claimant's work or labour was done or performed or materials were furnished by such Claimant, may as a beneficiary of the trust herein provided for, sue on this Bond, prosecute the suite to final judgment for such sum or sums as may be justly due to such Claimant under the terms of his said contract with the Principal and have execution thereon. Provided that the Oblige is not obliged to do or take any act, action or proceeding against the Surety on behalf of the Claimants or any of them to enforce the provisions of this Bond. If any act, action or proceeding is taken either in the name of the Oblige or by joining the Oblige as a party to such proceedings then such act, action or proceeding shall be taken on the understanding and basis that the Claimants or any of them who take such act, action or proceeding shall indemnify and save harmless the Oblige against all costs, charges and expense or liabilities incurred thereon and any loss or damage resulting to the Oblige by reasons thereof. Provided still further that subject to the foregoing terms and conditions, the Claimants or any of them may use the name of the Oblige to sue on and enforce the provisions of this Bond.
3. No suit or action shall be commenced hereunder by any Claimant:
 - a) unless such Claimant shall have given written notice within the time limits hereinafter set forth to each of the Principal, Surety and Oblige, stating with substantial accuracy the amount claimed. Such notice shall be served by mailing the same by registered mail to the Principal, Surety and Oblige at any place where an office is regularly maintained for the transaction of business by such persons or served in any manner in which legal process may be served in the Province or other part of Canada in which the subject matter of the contract is located. Such notice shall be given (i) in respect of any claim for the amount or any portion thereof required to be held back from the Claimant by the Principal under either the terms of the Claimant's contract with the Principal or under the Mechanic's Liens Legislation applicable to the Claimant's contract with the Principal whichever is the greater within one hundred and twenty (120) days after such Claimant should have been paid in full under the Claimant's contract with the Principal; (ii) in respect of any claim other than for the holdback or portion thereof referred to above within one hundred and twenty (120) days after the date upon which such claimant did or performed the last of the work or labour or furnished the last of the materials for which such claim is made under the Claimant's contract with the Principal.
 - b) after the expiration of one (1) year following the date on which Principal ceased work on the Contract including work performed under guarantees provided in the Contract.
 - c) Other than in a court of competent jurisdiction in the Province or District of Canada in which the subject matter of the Contract or any part thereof is situated and none elsewhere, and the parties hereto agree to submit to the jurisdiction of such court.
4. The amount of this Bond shall be reduced by and to the extent of any payments made in good further and in accordance with the provisions which may be filed of record against the subject matter of the Contract, whether or not claim for the amount of such lien be presented under and against this Bond.
5. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its Attorney-in-fact the day and year first above written.

SIGNED, SEALED and DELIVERED

In the presence of

)
)
)
)
)

PRINCIPAL

SURETY

These Supplementary General Conditions must be read in conjunction with the General Conditions contained in the Master Municipal Construction Documents, Volume II, Printed 2009

APPENDIX III

CERTIFICATE OF INSURANCE

This Certificate issued to the City of Coquitlam is to certify that policies of insurance, as described below, have been issued to the Insured named below and are in force at this time. It is understood and agreed that thirty (30) days' prior written notice by registered mail of any material alterations, transfer, assignment or cancellation of any of the policies listed below, either in part or in whole, will be given to the holder of this Certificate.

- A. This Certificate is issued to: **City of Coquitlam**
3000 Guildford Way
Coquitlam, BC V3B 7N2
- Named Insured and Mailing Address:
- B. CONTRACT NUMBER AND/OR NAME Description of the Work:
- C. INSURANCE POLICY
- Name of Insurer: Liability Limit:
Policy Number: Expiry Date:
Effective Date:
- D. INSURANCE COVERAGE
- COMMERCIAL GENERAL LIABILITY** coverage is required to insure against liability from the activities arising out of operations or work in connection with the above-described project, including liability arising out of the use of City property.
- D.1 The minimum limit shall be \$5,000,000.00 inclusive per occurrence against bodily injury, personal injury and property damage.
- D.2 The City of Coquitlam, its employees, officers, agents and volunteers are added as Additional Insureds, but only with respect to operations conducted by or on behalf of the Named Insured in connection with the above-described project, operations or work.
- D.3 This insurance shall be primary as regards the City of Coquitlam, its employees, officers, agents and volunteers as Additional Insureds.
- D.4 Any deductible or reimbursement clause contained in the policy shall not apply to the City of Coquitlam and shall be the sole responsibility of the Named Insured.
- D.5 The insurance shall include the following coverages:
- D.5.1 Cross Liability Clause
- D.5.2 Non-Owned Automobile Liability
- D.5.3 Unlicensed Automobile Liability
- D.5.4 Blanket Contractual Liability
- D.5.5 Broad Form Property Damage Liability
- D.5.6 Owner's & Contractor's Protective Liability
- D.5.7 Products & Completed Operations Liability
- D.6 Indicate provision of special coverage for this project as required by the City:
- | YES | NO | Special Coverage Description |
|-----|-----|---|
| () | (X) | Shoring and Underpinning Hazard |
| () | (X) | Pile Driving and Vibrations |
| (X) | () | Excavation Hazard |
| () | (X) | Demolition |
| () | (X) | Blasting |
| D.7 | () | () PROFESSIONAL LIABILITY INSURANCE for Consultant Service Agreements |

The *Consultant* shall obtain and maintain for the duration of the *Services* as described in the Agreement, at its own cost, Professional Liability Insurance on terms and from an insurer satisfactory to the City of Coquitlam.

The Professional Liability Insurance policy shall insure the *Consultant's* legal liability for errors, omissions and negligent acts, to the extent of no less than \$500,000.00 per Claim and \$1,000,000.00 Aggregate.

Authorized Signature and Stamp

Date

Name and Title

City's broker to return to City Representative

Department

These Supplementary General Conditions must be read in conjunction with the General Conditions contained in the Master Municipal Construction Documents, Volume II, Printed 2009



APPENDIX IV

PRIME CONTRACTOR DESIGNATION

Subject: **Prime Contractor Designation**

Contract #: **77103**

Contract Name: **Austin Avenue Improvements (Walker St – Brookmere Ave MUP)** (the "Project")

_____ (the "Contractor") represents, acknowledges and agrees that:

1. in accordance with section 118 of the Workers Compensation Act, R.S.B.C. 1996, c. 492 (the "Workers Compensation Act"), the Contractor shall be the "Prime Contractor" and is qualified to act as the "Prime Contractor" in respect of the Project;
2. the Contractor accepts the duties and responsibilities for coordination of health and safety in accordance with the Workers Compensation Act and further agrees that it will do everything necessary to establish and maintain a system or process that will insure compliance with the Workers Compensation Act and the Regulations thereto;
3. the Contractor shall fulfill all the obligations of an "Owner" under section 119 of the Workers Compensation Act in respect of the Project site; and
4. that the City of Coquitlam has fulfilled its obligations as an "Owner" under section 119 of the Workers Compensation Act, in respect of the Project site.

Prime Contractor Name & Address:

Prime Contractor Signature

Date

Print Name

Please return a signed copy of this memo to the City of Coquitlam. If you have any questions, please contact the City's Health and Safety Advisor at 604-927-3068.

Supplementary Contract Specifications

These Supplementary Contract Specifications must be read in conjunction with the Specifications contained in the Master Municipal Construction Documents, Volume II, Printed 2009 and the City of Coquitlam Supplementary Specifications and Detailed Drawings

File #: 11-5330-20/77103/1 Doc #: 4660880.v1

Supplementary Contract Specifications

to the
MASTER MUNICIPAL SPECIFICATIONS
Volume II – Platinum Book

AUSTIN AVENUE IMPROVEMENTS (WALKER ST – BROOKMERE AVE MUP)

CONTRACT 77103

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The following Supplementary Specifications are to be considered part of the Specifications. These Supplementary Specifications take precedence over the Master Municipal Specifications.

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1.00 CONTRACT SPECIFIC INSTRUCTIONS

1.01 Schedule of Work

All work under this Contract is to be completed by the designated Substantial Performance Date as described in the Contract Documents. The Contractor must provide sufficient resources in a continuous effort and site presence to complete all the work within the allotted time. As set out in the MMCD the Contractor must provide updates to the construction schedule biweekly.

1.02 Coordination of Work

The Contractor shall be responsible to consult with all affected businesses, residents and transportation companies regarding delays, detours, and any other works affecting any transit service in the area, and will be responsible to coordinate the works with City crews and other contractors working in the area. If working area is to become a multiple-employer workplace as defined by WorkSafe BC, the Contractor shall remain the Prime Contractor.

1.03 Outside Agency Approval

In accordance with the Contract Documents, the Contractor is responsible to consult with and obtain any approval required to meet and comply with all the conditions required from outside agency such as, but not limited to, BC One Call, Metro Vancouver, BC Hydro, Telus, Kinder Morgan, and Fortis BC in the area of the place of Work.

1.04 Waste Collection Coordination

1. Contractor is responsible to accommodate all waste collection vehicles and cart pick up schedules throughout construction. Collection schedule can be found in <https://www.coquitlam.ca/157/Collection-Calendar-Guidelines>.
2. If waste collection will be impacted the contractor is responsible to:
 - a. Provide advanced notification to:
 - i. The City's Solid Waste staff at 604-927-3500 or wastereduction@coquitlam.ca; and
 - ii. The City's Contract Administrator.
 - b. Provide access for collection trucks to closed streets due to road work; or
 - c. Move waste carts for collection:
 - i. The Contractor is required to ensure each cart is labelled with the property address and returned to the correct address after collection (each cart has its own individual cart identification code and is specifically assigned to each property). **Contractors will be responsible for the costs to replace missing carts.**
3. Contractor's Request for Change in Collection Time (e.g. PM to AM):
 - i. The Contractor must provide residents with as much notice as possible – minimum 5 working days.
 - ii. The contractor must follow all conditions of Clause 1.04 and is responsible to deal with any missed collections. For example, taking garbage to the United Boulevard Recycling and Waste Centre or covering the cost associated for any missed collection to be rescheduled.

Questions: wastereduction@coquitlam.ca

1.05 Cooperation with Emergency and Maintenance Activities

The Contractor will be responsible to cooperate with regular maintenance or emergency vehicles and staff for access to the site when required including:

- Fire, Police, and Ambulance
- Collection (garbage/recycling pick-up)
- City Utilities Maintenance (or representatives)
- Other Contractors

1.06 Site Safety

The Contractor is responsible to ensure the construction site is safe at all times for workers, pedestrians, and vehicle traffic. During non-working hours, the Contractor

CONTRACT SPECIFIC NOTATIONS

must ensure that the site has all potentially hazardous areas appropriately identified and protected, and also must provide appropriate signage, lighting, and markings for the direction of vehicle and pedestrian traffic, all to ensure the safety of the public. Supply and use of this equipment is considered incidental to the contract.

Manhole lids, valve boxes and other appurtenances within the roadway that may present a traffic hazard during construction must be clearly marked for traffic.

Manhole lids left raised in preparation for paving must have a rubberized protector ring painted with bright color for traffic safety. Supply and use of this equipment is considered incidental to the contract.

1.07 Lane Closure Restrictions

The Contractor shall refer to Contract Supplementary Specifications Section 01 55 00S and to Appendix A: Traffic Management Detail Specifications.

The Contractor must take the above information into account in the preparation and submission of the Tender.

1.08 Survey Layout

Construction layout will be staked out by the Contractor as outlined in Supplementary General Conditions.

1.09 Location of Existing Utilities

The Contractor is responsible to verify the depth and location of all utilities (watermains, storm mains, sanitary mains etc.), including outside agency utilities (i.e. Fortis BC Gas Mains etc.) and service connections (water, storm and sanitary services at the mains, and property lines) by hand digging or by Hydro-Vac in the presence of the Inspector.

Pre-locates must be completed as soon as possible after award of the Contract so changes can be completed by the Engineer prior to site construction. Contact Metro Vancouver for location of their utilities and BC One for location of other outside agency utilities. The Contractor will not receive any compensation or allowance for delays if work is halted due to utility and service connections not located prior to commencing construction.

City of Coquitlam does not guarantee water, storm or sanitary services connections are perpendicular to the mains or property lines, the Contractor will not receive any compensation for the time to locate these connections or for exposing hidden services at the property lines.

Payment for this work will be treated as incidental to payment for work described in other Sections.

1.10 Manholes and Valves

Access to manholes and valves must be maintained at all time for City utilities crews and external utility companies. In case of an emergency the cost for exposing any buried manhole or valve covers during construction will be paid by the Contractor.

1.11 Utility Adjustments - City Infrastructure and/or Other Agency Infrastructure

The Contractor is responsible for adjusting all utilities, belonging to Coquitlam and/or other agencies that are affected by the road works. All adjustments to utilities must be completed to the satisfaction of the utility owner. Utility adjustment will be considered incidental to the contract unless otherwise noted in the Contract Documents.

The Contractor should note that certain utility owners may decide to complete their own adjustments. The Contractor will be required to cooperate with any utility company providing their own adjustments.

CONTRACT SPECIFIC NOTATIONS

The Contractor shall be responsible to contact the appropriate utility company within a minimum of seventy-two (72) hours of the work. No adjustment shall be made without the written approval of the utility company.

- | | | |
|------|--|--|
| 1.12 | Accesses | The Contractor is responsible to maintain all business/residential vehicles and pedestrian accesses open at all times, the Contractor may provide temporary accesses if the affected owner agrees. All costs associated with temporary accesses will be at the Contractor's expense. |
| 1.13 | Verification of Dimensions and Quantities | Before proceeding with work the Contractor shall visit the site and check and verify dimensions and quantities. Report variations between drawings and site conditions to the Contract Administrator before proceeding with work. Payment for this work will be treated as incidental to payment for work described in other Sections. |
| 1.14 | Precautions | Protect areas under construction from damage caused by excessive erosion, flooding, heavy rains, etc. Repair or replace unprotected damaged areas as directed by the Contract Administrator at no cost to the Owner. |
| 1.15 | Work by Others | The Contractor is required to accommodate the City crews, Contractors, Developers and Utility companies in their scheduling and sequencing of work at no cost to the Owner. |
| 1.16 | FORTIS BC Emergency Protocol | In an emergency, gas pipeline rupture or leak, Contact Fortis BC 24 Hour Emergency Line (1-800-663-9911) & Fire Department (911) immediately and then City of Coquitlam's Utility Control Centre (604-927-6287) |
| 1.17 | Temporary Asphalt Pavement Restoration | <p>The Contractor will be required to backfill all trenches (in paved areas) and place a temporary patch (50mm of hot mix asphalt), as per Coquitlam Standard Drawing COQ-G4, the same day excavation is made, unless otherwise approved by the Contract Administrator.</p> <p>Temporary asphalt patch on driveways is not required, but access must be maintained for property owners.</p> |
| 1.18 | Adjustment in Elevation | "Change in Design" is a significant alteration to the original design or for additional work not shown in Contract Drawings or described in contract documents. Adjustment in elevation of sidewalk/driveway is specified in the contract drawing and described in contract documents, and is not considered a "Change in Design". The need for a "Change in Design" will be determined by the Contract Administrator. |
| 1.19 | Measurement for Payment | Payment for all work performed under this section will be incidental to work in other Sections, unless otherwise described in Schedule of Quantities and Prices. |
| 2.00 | CONSTRUCTION ACTIVITY | |
| 2.01 | Construction Materials in Sewer Manholes and Pipe | The Contractor is responsible to ensure that construction activities do not deposit construction materials (e.g. gravels) into the storm sewer or sanitary sewer manholes or pipe. The City has a video record of the pipe before construction. Prior to Substantial Performance, the City may again video inspect the lines to ensure no problems exist due to construction activities under this contract. If problems are encountered, the Contractor will be responsible for the cost of the video and all costs associated with the cleaning of the pipe. |
| 2.02 | Site Clean-up During Construction and End of Construction | The Contractor will be responsible for the complete clean-up of the work site during construction, at the end of construction, and prior to the Substantial Performance review. The Contractor shall ensure prompt and tidy cleanup of any debris or materials within the Vancouver Golf Club property. Any damage to the golf course |

green must be repaired immediately to the satisfaction of the City's Contract Administrator. This work is considered incidental to the Contract.

The work will include cleaning of all catch basins periodically or as directed by the Contract Administrator within the Work area, or nearby location as affected by the Work, to the same or better condition of the catch basins prior to starting the Work. All cleaning is to be performed by vacuum truck to the satisfaction of the Contract Administrator and will include off-site disposal of waste material.

Payment for this work will be treated as incidental to payment for work described in other Sections.

**3.00 MANDATORY MEETINGS
AND CONTRACTOR
REPRESENTATIVES AND
SUBCONTRACTORS**

**3.01 Pre-Construction Meeting
Requirements**

After the Award of the Contract, the Contractor (Project Manager and Superintendent) will be required to attend a Pre-Construction Meeting with the Contract Administrator and provide all necessary information required by the Contract Administrator prior to provision of a Notice to Proceed. Items required to be provided at the meeting include:

1. A Detailed Construction Schedule showing the start date, completion date, and durations of major work components showing how all work will be completed within the Contract Duration.
2. Proof of Insurance
3. Performance Bond and Labour and Materials Payment Bond
4. WCB Clearance Letter and Copy of Notice of Project
5. City of Coquitlam Business License
6. A copy of portions of your Health and Safety Plan including the Title Page, Table of Contents, and portion showing latest revision date.

**3.02 Contract Schedule,
Contract Duration, and
Charges**

A detailed, realistic construction schedule for this project will be required to be presented at the pre-construction meeting. The schedule must show major components and durations.

All work under this project is to be completed within the designated Contract Duration as contained in the signed Contract Agreement, or as formally amended.

**3.03 Contract Superintendent
and Subcontractors**

In compliance with the MMCD General Conditions, Section 4.7, Superintendent, the Contractor shall have a competent senior representative, (the "Superintendent") in FULL TIME attendance at the Place of Work while work is being performed for the duration of the contract.

This FULL TIME attendance is also required when work is being performed by Subcontractors.

Work done by Subcontractors is to be directed by the Superintendent and monitored on site ensuring conformance to the Contract Documents and other particular direction to the Superintendent by the Contract Administrator.

The Owner and Contract Administrator are not responsible for the direction of Subcontractors.

**3.04 Changes of Contractor
Representatives &
Subcontractors**

The Superintendent and Subcontractors indicated in the Form of Tender shall not be changed unless:

1. The Owner requests a replacement.

CONTRACT SPECIFIC NOTATIONS

2. The Contractor submits an application for a change, in writing, to the Contract Administrator with the change being approved in writing.

3.05 Mobilization and Demobilization

Payment for mobilization and demobilization of all equipment, labour and materials (both from the Contractor and all sub-contractors) shall be incidental.

END OF SECTION

1.0 GENERAL

1.3 Submission

Delete 1.3.2 and
replace with the
following

Submit one copy of accurate project record documents in final form prior to applying for Substantial Performance including all video and material testing reports. Record documents to include changes in the Issued for Construction Drawings, new elevation, location of all walkways and sidewalks, all utilities, manhole rims, catchbasin rims, vaults, valve boxes and inverts affected by the Work.

Substantial Performance and release of Holdbacks will not be issued until record documents have been submitted and accepted by the *Contract Administrator* and the City.

END OF SECTION

- 1.0 QUALITY**
- The Contractor shall provide a final product conforming to the Contract Documents and the intent of the work.
- The work is to be accurate to the dimensional and tolerance requirements of the contract.
- Payment will be subject to adjustments based on quality assurance tests performed by the Contract Administrator.
- 1.01 Quality Control (QC) by Contractor**
- The MMCD (2009) definition of “Quality Control” is the process by which the *Contractor* checks specific materials, products, and workmanship to ensure strict conformance with the Contract Documents.**
- The Contractor is fully responsible for quality control of the materials, production, and construction processes.
- Quality control tests shall be performed by the Contractor, at their own expense, to ensure that products meet the contract specifications.
- Failure by the Contractor to conduct adequate quality control testing during production and construction will negate the Contractor’s ability to appeal the quality assurance tests used for acceptance/rejection of the work.
- Under no circumstances will QC test results produced after completion of the Quality Assurance (QA) results be considered for appeal purposes.
- Any changes in the Work with respect to the location, grade, or line shall be approved in advance by the Contract Administrator. Failure to notify the Contract Administrator of changes in writing may result in rejection of Work.
- 1.02 Inspection of Work, Quality Assurance, and Material Testing, by the Owner**
- The MMCD (2009) definition of “Quality Assurance” means the process by which the *Owner* evaluates if the work is being constructed in accordance with the Contract Documents. This definition will be used for this contract.**
- The *Contract Administrator* will provide construction review through spot inspections and spot materials testing for Quality Assurance.
- Any materials testing results indicating a non-conformance to the Contract Documents will require construction corrective action by the *Contractor*.**
- All subsequent testing to corrective action to verify conformance to the Contract Documents will be the full responsibility of the *Contractor*.**
- Inspection review by the Owner will not relieve the Contractor from providing a product that meets or exceeds the requirements of the Contract Documents.
- 1.1 Inspection**
- Materials testing shall be as described in MMCD General Conditions, Section 4.12 with the following change:
- Delete Section 4.12.2(a) and insert the following:
- Where the MMCD specification clauses for Inspection and Testing indicate the Contract Administrator will arrange for all testing for work described in this section will be amended to read The Contractor will arrange for and pay for all testing for work described in this section. The testing shall take place at the following prescribed rates and as directed by the contract administrator. The contract administrator has the authority to call for testing, up to the rates and frequencies specified, at the Contractors cost.

All testing covered under this item shall be performed by a CSA certified laboratory and technicians with copies of all test results to be sent directly to the Contract Administrator. Re-testing resulting from failed first tests shall be at the Contractors expense.

1.2 Survey Layout

All Survey Layout will be completed by the Contractor in accordance with the Contract Drawings and Coordinate System set out within them. The Contractor will be provided digital AutoCAD files but shall be responsible to confirm elevations and tie in locations and report any discrepancies prior to construction.

1.3 Testing

Contractor shall carry out inspection and testing (QC) to ensure compliance with Contract Documents. Contractor shall submit test results within one week of testing to the Contract Administrator.

The Contractor shall provide test results prior to the preparation of the payment certificate.

**1.4 Contractors
Responsibilities**

Furnish labour and facilities to:

1. Provide access to work to be inspected
2. Facilitate inspections and tests
3. Make good work disturbed by inspection and tests

1.5 Access to Work

Allow inspection testing agencies access to Work.

1.6 Tests

Test rates and frequencies (excluding failed tests), when not defined in the MMCD or Detail Specifications Sections shall be at the following frequencies:

1. Trench Backfilling and Compaction

1.1 Compaction: 1 test / 10 lm / 300mm lift

1.2 Sieve: 1 test / placed material / 50 m³

2. Granular Base

2.1 Compaction: 1 test / 500m² / 100mm depth of granular base

2.2 Sieve: 1 test / placed material / 250 TONNES

3. Granular Subbase

3.1 Compaction: 1 test/500m² / 300mm depth of granular subbase

3.2 Sieve: 1 test / placed material / 250 TONNES

4. Embankment (Subgrade)

4.1 Compaction: 1 test/ 50m² / 300mm depth of fill

4.2 Sieve: 1 test / placed material / 100 TONNES

5. Asphalt

5.1 Marshall test: test per 250 TONNES placed, per mix specified, min. 1 / day
ASTM D1559, D3203, C117, C136

5.2 Superpave: test per 250 TONNES placed, per mix specified, min. 1 / day
CAI-SP2, ASTM D3203, C117, C136

5.3 Cores: 1 per 500 m²/lift

5.4 Continuous asphalt density testing during paving.

6. Subgrade Preparation

6.1 Compaction & Moisture: 1 test / 500 m²

7. Concrete Tests

7.1 Air, Slump & 1 Set Cylinders: 1 test / 10 m³, min. 1 set / day

**1.7 Measurement for
Payment**

Payment for all work performed under this section will be incidental to payment for work described in other Sections

END OF SECTION

1.0	GENERAL	Add 1.0.6	<p>The <i>Contractor</i> is responsible for all temporary traffic control on the streets required for completion of the work. The <i>Contractor</i> will be responsible to provide a Traffic Management Plan (TMP) for approval (5) five working days prior to any lane closures taking place. TMP is to be prepared by a professional certified by the American Traffic Safety Services Association.</p> <p>The TMP shall outline the approach to traffic management, show recognition and minimization of risks indicates signing locations, identify Traffic Control Persons (TCP) stations, show lane shifting and proposed closures.</p> <p>The Contractor shall ensure safe passage of vehicles, cyclists and pedestrian through the work zone.</p>
		Add 1.0.7	<p>A Road and Sidewalk Closure Permit is required from Coquitlam for all work affecting pedestrian and traffic flow related to construction. A permit is required for each specific construction interference with pedestrian and traffic flow. The road and sidewalk closure permit form can be obtained for use from the City's website at http://www.coquitlam.ca. The Contractor must follow the approved TMP. Any changes to this TMP must be submitted to City's Traffic Operations for approval</p>
		Add 1.08	<p>Refer to Appendix A – Traffic Management Detail Specifications</p>
1.4	Traffic Control	Delete 1.4.1 and replace with the following	<p>The Contractor shall conduct their operations so as to cause the minimum obstruction and inconvenience to traffic and to places of business and residences adjacent to the Place of Work. No greater quantity of work shall be undertaken at any one time than can be properly conducted with due regard to the rights and interests of the public as may be determined by the Contract Administrator.</p> <p>The Contractor is to provide at all times safe and convenient means of approach and entrance to adjoining lanes, driveways, buildings and property both for vehicles and pedestrians to the satisfaction of the Contract Administrator. For this purpose, they shall construct and maintain suitable and safe platforms, approaches, structures, bridges, diversions or other works.</p> <p>Where traffic must cross open trenches, the Contractor shall provide suitable bridges. Where trenches have been backfilled or where road improvements are incomplete the Contractor shall take any steps necessary to prevent potholes or other traffic hazards. Where the Contract Administrator so instructs or where Contract Specifications so require, the Contractor shall provide temporary asphalt patching of such hazards.</p>
		Add 1.4.9.3.1	<p>The <i>Contractor</i>, as required by the <i>Contract Administrator</i> and the City, is to supply Construction Zone information signs (stationary), refer to MMCD 01 58 01 for the required identification signage.</p> <p>The <i>Contractor</i> is responsible for the removal of the signs at the completion of the work.</p>
		Delete 1.4.10.1.3 and replace with the following	<p>When workmen or equipment are employed over travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.</p>

**1.5 Measurement for
Payment**

Delete 1.5.1 and
replace with the
following

Payment for all work, unless included in the Schedule of Quantities
and Prices, performed under this section will be incidental to
payment for work described in other Sections.

END OF SECTION

1.0 GENERAL

1.0.3 Erosion and
Sediment Control
Supervisor

Add 1.03

The Erosion and Sediment Control (ESC) Supervisor is the Qualified Professional who is experienced in implementing ESC Plans and who is responsible for the inspection and monitoring of ESC Facilities to ensure these are installed and maintained in accordance with the ESC Plan, and if necessary, are modified during construction to ensure compliance with the Stream and Drainage System Protection Bylaw No. 4403, 2013.

1.2 Temporary Erosion
and Sediment
Controls

Delete 1.2.1 and
replace with the
following

Properly drain all portions of the site. Protect the site and the watercourses to which it drains, directly or indirectly, against erosion and siltation in accordance with a Sediment Control Plan under the City of Coquitlam Stream and Drainage System Protection Bylaw No. 4403, 2013 during construction and until the maintenance period is completed. Ensure no silt, gravel, debris or other deleterious substance resulting from construction activity discharges into existing drainage systems or watercourses or onto highways or adjacent property. The *Contractor* is responsible for all damage that may be caused by water backing up or flowing over, through, from or along any part of the work or otherwise resulting from their operations.

Keep existing culverts, drains, ditches and watercourses affected by the work clear of excavated material at all times. When it is necessary to remove or alter any existing drainage structure, provide suitable alternative measures for handling the drainage. Adequately support culverts and drainpipes across trenches to prevent displacement and interference with the proper flow of water due to trench settlement.

Sweep streets, and clean catch basins, manhole sumps, detention tanks, and maintain siltation controls as often as the *Contract Administrator* and the City deems necessary.

Follow all Federal and Provincial regulations and guidelines respecting protection of fish, fish habitat, and watercourses.

Delete 1.2.2.2 and
replace with the
following

Do not operate construction equipment in watercourses.

Add 1.2.2.9

All work must be carried out during favorable and low water conditions.

Add 1.2.2.10

Any fill used on this project shall be certified inert and from a source which is confirmed to be free of contaminants.

Add 1.2.2.11

All work within a watercourse must be undertaken and completed in isolation of all flowing water to maintain downstream water quality and unrestricted flows.

1.4 Environmental
Protection

Add 1.4.3.5

Immediately contain and clean up any leaks and spills of prohibited materials at the *Place of Work*.

Add 1.4.3.6

Ensure that a well-stocked spill kit is on-site at all times and that the *Contractor's* employees are familiar with appropriate spill response techniques. Any spill of reportable quantities must be immediately

			reported to the Provincial Emergency Program's 24 hour phone line at 1-800-663-3456.
		Add 1.4.3.7	Immediately notify the <i>Contract Administrator</i> and the City of any leaks or spills of prohibited materials that occur at the <i>Place of Work</i> .
		Add 1.4.3.8	Ensure that any fuel stored on-site is located at least 15 metres from the nearest stream, and is placed within a bermed and lined area, in order to prevent leaks or spills into the environment.
		Add 1.4.3.9	All equipment and machinery must be in good working condition (power washed), free of leaks or excess oil and grease. No equipment refueling or servicing shall be undertaken within a minimum of 15 meters of any water course or surface water drainage.
1.6	Measurement and Payment	Delete 1.6.1 and replace with the following	Payment for all work, unless included in the Schedule of Quantities and Prices, performed under this section will be incidental to payment for work described in other Sections.
		Add 1.6.2	Payment for the poly cover or temporary tarps over stock pile materials or exposed road subgrades shall be treated as incidental work.
1.8	Clean Up	Add 1.8.2	The work will include cleaning of all catch basins within the work area, or nearby location as affected by the Work and all manholes and/or sewers affected by work done under this contract. All cleaning is to be performed by vacuum truck to the satisfaction of the Contract Administrator and will include off-site disposal of waste material.
1.9	Archaeological / Historical Resources	Add 1.9	Immediately cease work and inform the <i>Contract Administrator</i> and the City, if any archaeological or historical resources are encountered during construction. Leave these resources in place and do not disturb them in any way.

END OF SECTION

**1.3 Measurement and
Payment**

Delete 1.3.1 and
replace with the
following

Payment for the installation of 1.2m x 1.2m static construction
Information signs as shown in Appendix A – Traffic Management
Detail Specifications includes supply, placement and removal, and
will be incidental to payment for work described in other Sections,
unless shown otherwise in the Schedule of Quantities and Prices.

Add 1.3.2

Payment for changeable message signs (CMS) includes supply,
placement, communication management and removal as required
for traffic and pedestrian safety.

END OF SECTION

1.4	Measurement and Payment	Delete 1.4.3 and replace with the following	<p>Payment for machine placed or hand formed C5 wide base concrete curb and gutter, excluding granular base, includes supply and placing of the concrete curb and gutter, tie-ins, transitions, subgrade preparation, compaction, saw cutting, slot paving and will cover all straight and curve sections and will be made separately for each specified type.</p> <p>Payment for excavation and disposal of excavated material will be made under Section 31 24 13S – Roadway Excavation, Embankment and Compaction as shown in the Schedule of Quantities and Price.</p> <p>Payment for granular subbase and granular base under curb and gutter will be made under payment items in Section 31 05 17S – Aggregate and Granular Materials.</p>
		Delete 1.4.5 and replace with the following	<p>Payment for broom finished or stamped concrete sidewalks, infill, slopes, ramps and wheelchair letdowns, excluding granular base, includes supply and placing of the concrete, grid reinforcement as required, tie-in's, field fits and adjustments and will be made separately for each specified thickness and type.</p> <p>Payment for granular base and compaction under sidewalk will be made under payment items in Section 31 05 17S – Aggregate and Granular Materials.</p>
		Add 1.4.10	Payment for Detectable/Tactile Warning Surface Tile includes supply and placing of "Access Tile" or "Amor-Tile" (or approved equal) Truncated Dome Detectable Warning Tactile Surface, replaceable cast in place - Yellow Color and installation as per the Manufacture's Specifications.
2.1	Materials	Delete 2.1.5.1 and replace with the following	<p>Hand-formed and hand-placed concrete:</p> <p>Slump: 80 mm</p> <p>Air entrainment: 5 to 8%.</p> <p>Maximum aggregate size: 20 mm.</p> <p>Minimum cement content: 335 kg/m³.</p> <p>Minimum 28 day compressive strength: 32 MPa.</p>
		Add 2.1.7	<p>Tactile warning surface tile shall be replaceable cast-in-place style. Truncated domes shall be in square grid pattern with a 5 mm nominal raised height, base diameter of 23 mm and top diameter of 11.5 mm. Dome spacing range shall be between 40 mm – 60 mm.</p> <p>Color of the panel shall be Federal Yellow (Y) per US Federal Standard 595B Table IV, Color No. 335.</p> <p>Minimum size of the panel shall be 600 mm in width by varying lengths, contingent on the application..</p>
3.0	EXECUTION		
3.5	Concrete Placement	Delete 3.5.9 and replace with the following	<p>The <i>Contractor</i> is responsible for adjusting all utility manhole frames and valve boxes, belonging to Coquitlam and/or other agencies that are affected by the road works. All adjustments to utilities must be completed to the satisfaction of the utility owner. Riser rings will not be accepted.</p> <p>The <i>Contractor</i> should note that certain utility owners may decide to complete their own adjustments. The <i>Contractor</i> will be required to</p>

cooperate with any utility company providing their own adjustments.

The *Contractor* shall be responsible to contact the appropriate utility company within a minimum of seventy-two (72) hours of the work. No adjustment shall be made without the written approval of the utility company. All manholes must be vertically adjusted a minimum of twenty four (24) hours prior to concrete placement.

3.9 Expansion Joints

Delete 3.9.1 and replace with the following

Form transverse expansion joints at both ends of curb returns and at maximum spacing of 9.0 m for sidewalks, 30.0 m of curb and gutter, at each end of driveway crossing, at tangent point of circular work, and on either side of catch basins.

END OF SECTION

1.0 GENERAL

- | | | |
|--------------------------------------|---|---|
| 1.3 Shop Drawings | Delete 1.3.4 and replace with the following | Shop drawings for pole structures, where required, to be sealed by a Professional Engineer registered in British Columbia. |
| 1.4 Electrical Energy Supply | Add 1.4.4 | The Electrical <i>Contractor</i> shall process a letter of application to the City of Coquitlam for the Utility Company and attain all required permits. |
| 1.5 Contractor Qualifications | Add 1.5.3 | All on-site traffic signal installations shall be under the responsibility of a primary journeyman electrician with IMSA Level 1 Roadway Lighting Certification and have a minimum of three (3) years experience maintaining and installing street lighting systems. This primary journeyman electrician is expected to be on the work site and report work progress to City of Coquitlam's Traffic Operations staff, in addition to reporting to the <i>Contract Administrator</i> . |
| 1.6 Permits and Tests | Add 1.6.4 | <i>Contractor</i> shall provide the BC Safety Electrical Permit, and arrange all inspections with the City. The inspection entails, but not limited to, Coquitlam's Street Lighting Inspection Report, which can be obtained from Coquitlam's Traffic Operations staff. |
| | Add 1.6.5 | <i>Contractor</i> to obtain approval of all buried portions of the installation from the City Inspector before any backfill is commenced. |
| 1.8 Record Drawings | Add 1.8.2 | Final payment(s) will be withheld until record drawings are received. |

2.0 PRODUCTS

- | | | |
|----------------------------------|---|--|
| 2.1 General | Delete 2.1.2 and replace with the following | All products supplied to be new, in accordance with <i>Contract Documents</i> . All products are to meet Canadian Electrical Code requirements and be certified by either CSA, UL®, or Intertek Testing Systems (Warnock Hersey) and be supplied with the certifier's label. |
| | Delete 2.1.3 and replace with the following | All products shall be in accordance with the City of Coquitlam's List of Approved Materials and Products List. Any products not listed with in the Approved List shall default to the current BCMOTI specification. |
| | Delete 2.1.5 and replace with the following | Equipment models listed within the City of Coquitlam's List of Approved Materials and Products shall be confirmed with the City immediately prior to their order to ensure that they are current. Cut-sheets, equipment make, model and serial number list to be provided to the City by the <i>Contractor</i> . |
| 2.2 Conduit | Add 2.2.1.3 | All exposed metallic surfaces to be hot dip galvanized. |
| 2.3 Trench marker Tape | Add 2.3.2 | Detectable (Magnetic) marker tape shall be used in all trenches containing interconnection (communications) conduit. |
| 2.6 Concrete Bases | Add 2.6.2 | Maximum of four (4) conduits shall enter the base of a luminaire pole, however more than four (4) may enter a service base. |
| 2.8 Conductors and Cables | Add 2.8.5 | <p>.1 Minimum conductor size to be as follows, unless specified otherwise on <i>Contract Drawing</i>:</p> <p>.1 No 6 AWG for feeder conductors in conduit.</p> |

			.2 No 8 AWG for bond conductors in conduit.
			.3 No 12 AWG for luminaire conductors in poles.
2.9	Conductor Tags	Delete 2.9 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.11	Fuses and Fuse Holders	Delete 2.11 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.13	Receptacles	Add 2.13.3	Receptacles shall have a spring loaded cast aluminum covers.
		Add 2.13.4	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.14	Luminaires	Add 2.14.6	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.19	Service Panels	Add 2.19.1	Type 40A 120/240V, 60A 120/240V roadway lighting and 100A 120/240V combination roadway lighting / traffic signal, per <i>Contract Drawing</i> to include items listed within the 2009 MMCD Section 34 41 13 - Traffic Signals - 2.11.2
		Add 2.19.2	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.20	Wire Anti-Theft Devices	Add 2.20.1	Handhole access shall utilize security covers with reinforced backing bars.
3.0	EXECUTION		
3.1	General	Add 3.1.5	During the installation of the lighting system, maintain the existing system as noted on the <i>Contract Drawing</i> . If temporary or permanent relocations of related lighting equipment are required, such equipment shall be reinstated as required under the <i>Contract Documents</i> or as directed by the <i>Contract Administrator</i> .
3.3	Concrete Bases	Add 3.3.7	Concrete service bases detailed on Standard Detail Drawings CE1.3 and CE1.4, Type C1 and C3 service bases shall have five (5) conduits. See Coquitlam Standard Detail Drawing SS-E7.3.
		Add 3.3.8	All concrete bases shall be pre-cast concrete only, unless noted on <i>Contract Drawing</i> or directed by the <i>Contract Administrator</i> .
3.4	Junction Boxes and Vaults	Delete 3.4.1 and replace with the following	Install junction boxes as shown on Standard Detail Drawings E2.2 to E2.4. Install vaults as shown on Coquitlam Standard Detail Drawing SS-E2.5.
		Add 3.4.5	Bell end fittings shall be installed in all conduits entering junction boxes or vaults.
		Add 3.4.6	All junction boxes shall be provided with RPVC bars to support electrical connections and fuse holders. The RPVC bars shall be attached into the junction box side walls with the electrical connections/fuse holders tie-wrapped in place and installed in the up-right position.

		Add 3.4.7	Junction boxes requiring 3 or more sections must be approved by the City of Coquitlam's Traffic Operations staff.
3.5	Underground Conduit	Delete 3.5.2 and replace with the following	Minimum cover over conduits to be 600 mm in boulevard areas and 900 mm in roadway areas.
		Delete 3.5.3 and replace with the following	Place trench marker tape 300 mm above installed conduit in trench. Trench marker tape not required for conduits installed via trenchless technology.
		Delete 3.5.5 and replace with the following	Empty conduits shall have a No. 8 HB Yellow/Green Mk pull string and capped at both ends.
		Add 3.5.6	Conduit run shall contain no more than the equivalent of 4 – 90-degree bends.
		Add 3.5.7	Conduits shall be blown out with compressed air, from both ends if necessary, then swabbed out to remove stones, dirt, water and other material which may have entered during installation.
		Add 3.5.8	All conduits entering poles and cabinets shall be sealed with "Duct Seal".
		Add 3.5.9	Conduit depth of bury to be recorded when a trenchless technology method is used.
		Add 3.5.10	Conduit shall not be bent in the field. Only factory bends will be accepted.
3.7	Electrical	Delete 3.7.2 and replace with the following	Mount electrical service panels in service base or on poles as shown on Standard Detail Drawings E7.2, E7.6 to E7.9, as well as Coquitlam Standard Detail Drawings SS-E7.3 to SS-E7.5.
3.8	Wiring	Delete 3.8.3 and replace with the following	Make conductor splices in handholes. See Standard Detail Drawing E7.11 for splice details.
		Delete 3.8.6 and replace with the following	Wire each luminaire and receptacle separately from the base of pole.
		Delete 3.8.7 and replace with the following	Neatly arrange and bundle wiring in junction boxes, pole handholes and service panels. Conductor connections in all access points to be installed in the up-right position, allowing for easy access
		Delete 3.8.11 and replace with the following	Bond all luminaires and receptacles with No. 12 RW90 green conductor, and steel junction box lids with No. 8 RW90 green conductor.
3.9	Pole Mounted Receptacle	Delete 3.9.1 and replace with the following	Pole mounted receptacles to be installed as detailed on the <i>Contract Drawing</i> and Coquitlam Standard Detail Drawings SS-E7.19 to SS-E7.23.
3.10	Luminaires and Photocells	Add 3.10.4	NEMA wattage label shall be visible at the bottom of the luminaire on all fixtures.

3.11	Grounding & Bonding	Add 3.11.5	Ground plates and grounding conductors are to have a minimum of 5 meters clearance between them and other utility grounding.
		Add 3.11.6	Remove all paint around bonding studs on inside of pole to expose the galvanized or metal surface prior to bonding equipment.
3.13	Pole Finish Application	Delete 3.13 and replace with the following	<p>.1 Prior to producing a powder finish product the supplier must provide a Certificate of Compliance indicating that they have met or exceeded the following specifications. The supplier will name their independent testing agency and this information will be submitted to the City for their files.</p> <p>.2 The application process will be as follows:</p> <p>.1 The pole or product will be hot dip galvanized.</p> <p>.2 Powder will only be applied after the product is completely fabricated. No welding or bending will take place after the powder is applied.</p> <p>.3 The pole or product will be thoroughly cleaned by brush blasting in accordance with SSPC-SP7. The brush blast will maintain a minimum profile of 0.5 mils. If brush blasting is done off site then the product will be covered and shielded from any dirt or moisture during its return to the powder applicators facility. Where poles or products are not kept clean and dry or have any signs of flash rust they will be returned for further brush blasting.</p> <p>.4 Once at the applicators facility the pole or product will be thoroughly cleaned and dried with an air gun. All hand marks or grease spots will be cleaned with a mild solvent.</p> <p>.5 After brush blasting the entire pole or product will be pre-baked in an oven at 220 degrees C for at least 30 minutes to 1 hour, depending on steel thickness. The pre-baking must be done to prevent out-gassing during the curing cycle.</p> <p>.6 The base powder coat will then be applied electrostatically while the pole or product is cooling from the 220 degrees C pre-bake period to allow the powder to melt and fuse to the surface. The base coat will be a minimum of 3 mils in thickness.</p> <p>.7 After base coat is applied and set the topcoat will be applied to a thickness of 3 to 5 mils. The pole or product will be returned to the oven and heated to 190 to 220 degrees C (temperature will not exceed pre-bake) for a minimum of 25 minutes, depending on steel thickness. Thicker product material may require longer bake cycles to fully cure. Upon removal of the pole or product from the oven it will be left to rest until the pole or product is cool enough to the touch.</p> <p>.8 Once the topcoat has cured and the poles or product cooled, they will then be individually wrapped (min 4" overlapping method) with 1/8" foam wrap over the entire pole or product. The poles or product will be bundled together and separated with suitable wood dunnage to avoid contact between the poles, product or other bundles. All bundles themselves will be fully wrapped with foam and with stretch-wrap as noted above. The poles or products will be handled and shipped with great care to prevent damage; damaged product will be cause for rejection of the item(s).</p>

- .3 Testing process will be as follows:
 - .1 Each run of product in an oven will have at least one sample tested for:
 - .2 Adhesion – The finished powder surface will have minimum pull-off strength exceeding 1000 PSI as tested in accordance with ASTM D4541.
 - .3 Quality – The finished powder surface will be free from any holidays (skips or misses) as tested in accordance with ASTM D4541. The product will also be free from wrinkles, orange peel, cracking, pinholes, fish eyes, blisters, etc by visual inspection.
 - .4 Color – The color will be verified to be within 3 DE of specialized color.
 - .5 An independent firm such as CanSpec Testing who are qualified to test powder finish will do the testing at the supplier's expense. The result of tests must accompany the Certificate of Compliance and will be made available to the City or their representative upon request. A supplier who fails to test product as noted above will have their product rejected until the testing is completed and the product deemed acceptable by the testing agency.
 - .6 Where the tested product fails on a given production run then a minimum of 30 % of the entire production run will be tested. If no other failures are found then the individual failed product will be stripped, reapplied and re-tested until it passes. If any of the 30% of product tested fails then the entire order will be stripped, reapplied and retested until it passes.
- .4 Field repairs will be undertaken as required to fix any scratches or imperfections in the final finish. Field repairs will be done as follows:
 - .1 Feather the damaged area with sandpaper.
 - .2 Clean area with solvent.
 - .3 Let dry.
 - .4 Neatly brush on an application of Aliphatic Urethane Acrylic Semi-Gloss High Build applied at 2-4 mils DFT over the entire sanded and damaged area. The ambient conditions will be dry and over 10 degrees C when the paint is applied.
 - .5 The pole supplier will warranty the integrity of the surface for a minimum of 1 year from the date of installation. The warranty will include all labour and materials required to provide replacement product if required. The powder finish will be the responsibility of the pole supplier. The warranty will apply to fading, blistering, cracking or chipping of the surface.

END OF SECTION

1.4	Measurement and Payment	Delete 1.4.1 and replace with the following	Measurement for 19mm granular base placed underneath walkways, curbs, multi-use pathway or underneath concrete retaining wall of variable thickness will be for actual quantity placed based on weigh tickets provided to Contract Administrator as loads are delivered.																				
		Add 1.4.2	Measurement for 19mm granular base for each specified thickness will be for the actual area placed.																				
		Add 1.4.3	Payment for Subsection 1.4.1 & 1.4.2 above includes supply, subgrade preparation, placement, compaction of aggregates, adjustment of moisture content, boning to establish the cross-section, shall be included in the unit price bid in the Schedule of Quantities and Prices.																				
2.0	PRODUCTS																						
2.3	Pit Run Gravel	Add to 2.3.2	The use of recycled concrete shall be approved by the <i>Contract Administrator</i> and the City prior to use.																				
		Add 2.3.3	Asphalt millings free from contaminated and other extraneous material, conforming to the specified gradations may be used as pit run gravel. The use of asphalt millings shall be approved by the <i>Contract Administrator</i> and the City prior to use.																				
2.7	Granular Pipe Bedding and Surround Material	Add to 2.7.1	All recycled or other extraneous materials shall be approved by <i>Contract Administrator</i> and the City prior to use.																				
2.10	Granular Base	Delete 2.10.2																					
		Add 2.10.3	All 25 mm minus granular base is to conform to the following gradation specifications for Collector / Arterial Roads:																				
			<table><tr><th>Sieve Designation (mm)</th><th>Percent Passing (%)</th></tr><tr><td>25</td><td>100</td></tr><tr><td>19</td><td>80-100</td></tr><tr><td>12.5</td><td>75-90</td></tr><tr><td>9.5</td><td>50-85</td></tr><tr><td>4.75</td><td>35-70</td></tr><tr><td>2.36</td><td>25-50</td></tr><tr><td>1.18</td><td>15-35</td></tr><tr><td>0.30</td><td>5-20</td></tr><tr><td>0.075</td><td>0-5</td></tr></table>	Sieve Designation (mm)	Percent Passing (%)	25	100	19	80-100	12.5	75-90	9.5	50-85	4.75	35-70	2.36	25-50	1.18	15-35	0.30	5-20	0.075	0-5
Sieve Designation (mm)	Percent Passing (%)																						
25	100																						
19	80-100																						
12.5	75-90																						
9.5	50-85																						
4.75	35-70																						
2.36	25-50																						
1.18	15-35																						
0.30	5-20																						
0.075	0-5																						
		Add 2.10.4	The intention of the Gradation Chart is to identify the desired mix of size of aggregate in the granular base. The Target Percentage Passing is the middle of the shown Range. Tests that show sieve values of Percent Passing that are consistently low or consistently high in two (2) or more consecutive tests will be considered to be non-conforming.																				

**2.11 Recycled Aggregate
Material**

Delete 2.11.1 and
replace with the
following

Aggregates containing recycled material may be utilized if approved by the Contract Administrator and the City. In addition to meeting all other conditions of the specifications, recycled material should not reduce the quality of the construction achievable with quarried materials. Recycled material shall consist only of aggregates, crushed portland cement concrete, or asphalt that is free of impurities.

END OF SECTION

**1.4 Measurement and
 Payment**

Delete 1.4.1 and
replace with the
following

Payment for all clearing and grubbing will be made at lump sum price and includes removal and disposal of all branches, holly stems, blackberry bushes, hedges, timbers, logs, grasses, vegetation and debris to complete the work and as shown on the Contract Drawings or as directed by the Contract Administrator.

Works includes the trimming of branches to create the necessary clearance to accommodate the construction and intended function of the Work, and as shown on Contract Drawings. Trimming to have a minimum 2.5m vertical and 0.5m horizontal clearance from the sidewalk, unless otherwise directed by the Contract Administrator.

END OF SECTION

2.0 PRODUCTS

2.1 Materials	Add 2.1.10	Protective Fencing: Posts - Pressure treated wood 100 mm dia.; Post to be 1.8 m to 2.0m in height at 2.0 m O.C. Snow fence as per Coquitlam Approved Products List; Flagging Tape - 4" Orange glow - 'Tree Retention Area'.
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2.0 EXECUTION

3.1 Existing Trees	Add 3.1.7	The Contractor is responsible to minimize damage to all trees which are to remain.
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Add 3.1.8	The Contractor will be responsible for all claims and costs including the cost of examination by an Arborist, repair, removal and replacement of trees, as required by the Arborist, the Contract Administrator and the City for tree damage where proper notification was not received from the Contractor. Damage will be assessed based on the International Society of Arboriculture Guidelines. The term shall be for a period of one year following the date of Substantial Performance of the Work.
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Add 3.1.9	Place protective fencing/barricades as detailed on Coquitlam Standard Detail Drawings COQ-R26, where shown on <i>Contract Drawings</i> . Contractor shall maintain fence in good condition during construction.
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Add 3.1.10	When work is to be performed inside fenced areas, Contractor shall take care to avoid damage to existing vegetation. Work to be done inside areas of existing vegetation to be retained includes:
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- .1 Removal of isolated trees as directed by the Contract Administrator and the City.
- .2 Selective pruning and tree removal at edges to create tidy and well-shaped forest edge.
- .3 Placing planting soil and planting of trees.

Add 3.1.11	Do not park, service or fuel vehicles within the vegetation retention areas.
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3.4 Pruning	Add 3.4.2	Do not cut roots or branches of retained trees without approval of the Contract Administrator and the City.
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END OF SECTION

1.8 Measurement and Payment

Delete 1.8.4 and replace with the following

Payment under this item will only apply to removal of the components included in this item under a separate operation as shown on the Contract Drawings or as directed by the Contractor Administrator. No payment will be made under this item for removal of these components as part of the operation for common excavation, and such removal will be treated as common excavation.

Payment will be made at the respective unit prices bid in the Schedule of Quantities and Prices and will include all labour, and equipment required to complete the work, including offsite disposal. It is the responsibility of the contractor to locate and verify all utilities.

Delete 1.8.5 and replace with the following

Payment for Common Excavation includes:

1. Unless noted in the Schedule of Quantities and Prices as removal in square meters, common excavation will be measured in cubic metres calculated from measurements taken by the Contract Administrator in the areas of excavation (stripping inclusive).
2. Cross-sections will be taken after clearing and grubbing immediately prior to excavation of material to be incorporated into work.
3. Cross-section will be taken after excavation to design elevation and prior to placement of fill.
4. Where determined by the Contract Administrator that truck box volume will be used to determine excavation quantities, the table below will be used.

Truck Type	Material Type	Volume (cu.m)
Tandem	ordinary material	7
Tandem	asphalt/concrete/pipe	4
Triaxle	ordinary material	8
Triaxle	asphalt/concrete/pipe	5
Tandem and Pony	ordinary material	11
Tandem and Pony	asphalt/concrete/pipe	7.5
Triaxle and Pony	ordinary material	13
Triaxle and Pony	asphalt/concrete/pipe	9
Tandem and Transfer	ordinary material	19
Tandem and Transfer	asphalt/concrete/pipe	13

5. Contractor to provide truck slips detailing location type of common excavation, time loaded and location of dump site. The slips are to be given to Contract Administrator by the end of shift or Contract Administrator can deny quantities subsequently submitted.
6. Payment for on-site reuse includes grading, adjustment of moisture content and compaction of the reused material

Payment will be made at the respective unit prices bid in the Schedule of Quantities and Prices and will include all labour, and equipment required to complete the work, including offsite disposal. It is the responsibility of the contractor to locate and verify all utilities.

Delete 1.8.10 and
replace with the
following

Payment for replacement of areas of unsuitable sub-grade revealed or identified will include excavation with off-site disposal, and all remedial work required to achieve a suitable subgrade. Payment with be based on the cubic metre volume removed. Payment for this item includes all applicable materials and work described in 1.8.5.

Payment for backfill using granular base or aggregate will be made under payment items in Section 31 01 17S – Aggregates and Granular Materials.

2.0 PRODUCTS

2.2 Specified Materials

Delete 2.2.1.3

Pit Run Sand

Delete 2.2.1.4

River Sand

Delete 2.2.2

END OF SECTION

PAINTED PAVEMENT MARKINGS

1.0 GENERAL

1.2 Scope

Delete 1.2.1 and replace with the following

Pavement Markings: Miscellaneous taped temporary and permanent pavement paint markings including pedestrian crosswalk, merge and diverge markings, stop lines, solid and broken line road lane markings including edge lines of merge and diverge markings, bike symbols, etc. to be provided as shown on the *Contract Drawing*.

1.5 Measurement and Payment

Delete 1.5.2 and replace with the following

All permanent markings shall be marked with thermoplastic road markings as specified under Section 32 17 23S, 2.1 Materials, unless shown otherwise in the Schedule of Quantities and Prices.

Delete 1.5.3 and replace with the following

The lump sum payment for permanent thermoplastic pavement markings includes eradication of existing pavement markings as shown on the Contract Drawings, and covers supplying all materials and completing all the permanent thermoplastic pavement markings necessary to provide markings as shown on the Contract Drawings.

NOTE: PAYMENT FOR PERMANENT THERMOPLASTIC PAVEMENT MARKINGS WILL NOT BE MADE UNTIL ALL TEMPORARY PAVEMENT MARKINGS AND REFLECTIVE DEVICES HAVE BEEN REMOVED.

Delete 1.5.4 and replace with the following

Payment for signage includes all sign poles, bases, sleeves, sign relocations and sign installations (complete). The City will supply all sign tabs as required.

.1 Installation of each new sign pole, cap, sleeve and trapezoidal base includes all costs to supply all materials, labour and equipment and incidentals necessary to the sign structure as shown on the Contract Drawings and as directed by the Contract Administrator.

.2 Installation of each sign City supplied aluminum sign on a lamp standard pole or sign pole includes sign mount clamps and all costs to supply all materials, labour and equipment and incidentals necessary to install each sign as directed by the Contract Administrator.

.3 Installation of each new City supplied aluminum sign installed on an existing sign pole includes sign mount clamps and all costs to supply all materials, labour and equipment and incidentals necessary to install each sign as directed by the Contract Administrator.

2.0 PRODUCTS

2.1 Materials

Delete 2.1.1 and replace with the following

All permanent paint markings shall be marked with thermoplastic manufactured by LAFRENTZ Road Markings, HITEX North America (HiBrite Extrude Thermoplastic), or ENNIS-FLINT (Extruded Thermoplastic).

Delete 2.1.6 and replace with the following

Pavement Markings:

Delete 2.1.7 and replace with the following

Thermoplastic material

.1 Material composition shall be at the discretion of the manufacturer subject to the approval of the Contract

Administrator and the City. Each formulation shall be identified by a code number.

- .2 No retained water when tested by ASTM D-570.
- .3 Specific gravity of the supplied product shall be within 3 % of that specified for the selected formulation.
- .4 Material shall not deteriorate upon contact with deicing chemicals, gasoline, diesel fuel or grease dropped by traffic.
- .5 Material shall not break down, deteriorate, scorch or discolour, if held within the application temperature range specified by the manufacturer for a period of four hours and it must be able to be reheated from room temperature to the application temperature four (4) times without showing any of these detrimental effects.
- .6 When applied at the temperature recommended by the manufacturer and at a film thickness of 2 to 4 mm, the material shall set solid and show no tracking under traffic after elapsed times as follows:
 - .1 Two (2) minutes at an air temperature of 10° C, relative humidity less than 75 %, and road surface temperature from 10° C to 20° C.
 - .2 Five (5) minutes at an air temperature of 32° C, relative humidity less than 75 %, and road surface temperature from 35° C to 50° C.
 - .3 The drying time under conditions intermediate between the two air temperatures shall be interpolated using a straight line model.
- .7 The quantity, type, and gradation of the component reflecting glass spheres premixed in the thermoplastic material shall be at the discretion of the manufacturer, but shall provide retroreflection levels specified below.

Add 2.1.10

Snowplowable Raised Pavement Markers (RPMs) shall be Stimsonite (Ennis) model# 101PL series marker. Install per manufacturers procedures.

Add 2.1.11

Green Surface Treatment:

- .1 Material approved shall be "Traffic Patterns" thermoplastic by Ennis-Flint or MMA (Methyl Methacrylate).
- .2 The MMA Skid Resistant Material shall meet the following requirements:
 - .1 Be Ultra-Violet Stable.
 - .2 Be ISO Certified Durable Road Marking Material.
 - .3 Utilize 0.5mm – 1mm aggregate within the MMA to create skid resistance of 49 BPN.
 - .4 Green Colour (Pantone #) to be approved prior to application.
- .3 Product details and specification to be submitted to *Owner* for Final Approval.

3.0 EXECUTION

3.3 Application

Add to 3.3.1.3

Temporary raised pavement markings (TRPMs) are to be provided on all collector and arterial roadways as directed by the *Contract Administrator* and the City.

Delete 3.3.3.3 and
replace with the
following

Thermoplastic material shall be heated in the melter to a
temperature of 382 °F.

END OF SECTION

CHAIN-LINK FENCE

1.5	Measurement and Payment	Delete 1.5.1 and replace with the following	Payment for the removal and replacement of chain link fence includes fence removal and excavation of existing posts, off site disposal of existing materials and all materials and work as shown on MMCD C13 to install new chain link fence. Measurement will be made along the surface of the ground for length of each item of fence installed.
			Temporary construction fence will be required in areas where chainlink fence is removed prior to installation and will be considered incidental to the Work as described above.
		Delete 1.5.4 and replace with the following	Payment for MMCD C14 (powder coated black) handrails includes all materials, work, anchors, and incidentals shown on Contract Drawings for each type of installation. Measurement will be made along the surface of the ground for length of each item of handrail installed.
		Add 1.5.5	Payment for concrete railing post footings (300mm dia. X 600mm depth) includes all materials, work and incidentals shown on Contract Drawings for each type of installation. Measurement will be made for each post installed.
		Add 1.5.6	Payment for removal and reinstatement of existing bollards to include careful removal of existing Reliance Foundry R-7901 bollards, stockpiling, cleaning and all necessary new materials and incidentals to complete reinstatement as per Contract Drawings.

END OF SECTION

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|--|--|---|
| 1.0 GENERAL | <p>.1 <u>Section 32 91 13.23</u> refers to the labour, materials, and equipment necessary for the supply and installation of materials specified herein.</p> <ol style="list-style-type: none"> 1. Structural soil 2. Filter fabric | |
| 1.1 Related Works and Standards | <p>.1 Excavating, Trenching and Backfilling</p> <p>.2 Clearing and Grubbing</p> <p>.3 Shrub and Tree Preservation</p> <p>.4 Waterworks</p> <p>.5 Storm Sewers</p> <p>.6 Manholes and Catch Basins</p> <p>.7 Irrigation System</p> <p>.8 Trees, Shrubs and Ornamentals</p> | <p><u>Section 31 23 01</u></p> <p><u>Section 31 11 01</u></p> <p><u>Section 31 11 41</u></p> <p><u>Section 33 11 01</u></p> <p><u>Section 33 40 01</u></p> <p><u>Section 33 44 01</u></p> <p><u>Section 32 94 01S</u></p> <p><u>Section 32 93 10S</u></p> |
| 1.2 Quality Assurance | <p>.1 All structural soil material used in planting shall be from a source approved by the Contract Administrator and all similar materials supplied to the site shall be of similar nature and from a single source. 21 days prior to supplying any material to the site, inform the Contract Administrator of proposed source and provide a copy of an analysis undertaken by a recognized testing agency appointed by the Contract Administrator, at the Contractor's expense and indicating the particle size characteristics of the proposed material in written form as laid out in 2.1.1 of this Section.</p> <p>.2 All nutritive admixtures to structural soil material supplied to the site shall be from a source approved by the Contract Administrator and all similar nutritive admixtures supplied to the site shall be of similar nature and from a single source. 21 days prior to supplying any nutritive admixture, inform the Contract Administrator of proposed source and provide a copy of an analysis undertaken by a recognized testing agency appointed by the Contract Administrator, at the Contractor's expense and indicating the following characteristics of the proposed nutritive admixture:</p> <ol style="list-style-type: none"> 1. Gravel, sand and fines content each as a percentage of dry weight mineral fractions. 2. Organic material content as a percentage of dry weight. Acidity (pH). 3. Salinity in millimhos/cm at 25oC. 4. Basic fertility (total nitrogen available K, Ca, Mg, P). 5. Recommendations for incorporation of necessary amendments. <p>.3 Costs of imported materials shall include cost of modifications from source to ensure that these materials meet specifications.</p> <p>.4 The Owner may appoint a qualified Contract Administrator for the purpose of interpreting and evaluating the quality of the installation and materials used before, during and after construction.</p> <p>.5 Acceptance of material at source does not preclude future rejection if material fails to conform to requirements specified, or if its field performance is found to be unsatisfactory.</p> | |

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|------------|---|----|--|
| | | .6 | Structural Soil volume requirements for a tree is calculated at 60m ³ per tree in beds shared with other trees and 100m ³ per tree for isolated trees based on 25% planting median by volume. |
| 1.3 | Scheduling | .1 | Obtain approval from Contract Administrator of Schedule 14 days in advance of structural soil preparation or delivery of material to site. |
| | | | Schedule to include: <ol style="list-style-type: none"> 1. Date for commencement of preparation of structural soil at source. 2. Shipping dates. 3. Arrival dates on site. 4. Installation dates. |
| 1.4 | Field Review | .1 | Start-up meeting with Contract Administrator is required to confirm the areas of installation and mixing. If not previously submitted, ensure growing medium sample and test report, aggregate stone sample and structural soil sample and report are supplied at the start-up meeting. |
| | | .2 | Coordinate site meeting with Contract Administrator at the following times: <ol style="list-style-type: none"> 1. Drainage installation and connection; 2. Irrigation installation; 3. Mixing of structural soil mixture; 4. Installation of structural soil mixture; 5. Sub-grade preparation and layout; and 6. Installation of trees. |
| 1.5 | Samples | .1 | Provide 2 kg samples of all materials required for the preparation of structural soil minimum 14 days prior to commencement of installation as required by the Contract Administrator. |
| 1.6 | Product Handling | .1 | All materials used in the composition of structural soil shall not be prepared, worked or travelled upon when in a wet or frozen condition. |
| | | .2 | Limestone and other chemical amendments shall be supplied and handled in standard sealed, waterproof containers with net weight and product analysis clearly marked on the exterior package |
| 1.7 | Delivery, Storage and Protection | .1 | For structural soil prepared at source and delivered to site, deliver all materials to site in such a manner as to prevent damage to or separation of all materials used in the preparation of structural soil. |
| | | .2 | On-site storage of prepared structural soil shall be undertaken in such a manner as to prevent damage of separation of any materials. |
| | | .3 | Structural soils to be installed as soon as practicable after mixing, any structural soils stored overnight whether on-site or at source shall be covered with tarpaulin of material approved by the Contract Administrator until such time as material is installed. |
| | | .4 | All material to be stockpiled shall be protected in accordance with B.C. Ministry of Environment guidelines. |
| 1.8 | Measurement and Payment | .1 | Measurement for structural soil will be for actual quantity placed based on weight tickets provided to Contract Administrator as loads are delivered. Payment will include supply, installation, compaction of soil, and filter cloth (Non Woven Geotextile - Nilex 4535 or approved equal). All other costs will be considered incidental to the payment item. |
| 2.0 | PRODUCTS | | |

- 2.1 Soil Stabilizer / Nutritive Admixture** .1
1. Unless indicated otherwise, all material shall be imported from a source approved by the Contract Administrator.
 2. Material shall be friable, containing a minimum of four percent (4%) and maximum six percent (6%) organic matter by dry weight or 25% by volume (whichever is higher), free from stones and debris over 30mm. Acidity (pH) shall be in the range 5.5 to 7.5. Carbon to nitrogen ratio shall not exceed 40:1, and salinity shall not exceed 3.0 millimhos at 25 degrees Celsius. Gravel greater than 2mm shall not exceed ten percent (10%) of total by weight.
 3. Non-toxic organic binder to be approved by the Contract Administrator prior to inclusion in any structural soil mixture.
 - 1) "Humus Builder" by The Answer! Garden Products
 - 2) "The Natural Solution" by Sport Turf Inc.
 - 3) Equivalent product approved by Contract Administrator prior to commencement of mixing operations.
 - 4) Submit 5 kg sample of mixture to Contract Administrator prior to commencement of large scale mixing procedures.
 4. Planting Medium
 - 1) Provide all growing medium required to complete the work.
 - 2) Comply with the requirements of table below.
 - 3) Organic material in the growing medium must be well decomposed to prevent oxygen consumption caused as a result of decomposition of the organic matter in the soil

GROWING MEDIUM PROPERTIES FOR GAP-GRADED MIXTURE

Texture*	Percentage of Mixture
Gravel: greater than 2 mm – less than 75 mm	0%
Sand: greater than 0.05 mm – less than 2 mm	maximum 30%
Silt: greater than 0.002 mm – less than 0.05 mm	maximum 50%
Clay: less than 0.002 mm	maximum 30%
Clay & Silt Combined	maximum 60%
Acidity (pH)	6.0-7.0
Drainage: Minimum saturated hydraulic conductivity (cm/hr) in place	3.0
Salinity: Saturated extract conductivity shall not exceed:	3.0 millimhos/cm at 25oC
Organic Content: Percent of Dry Weight (%)	8 – 12%

* Particle size classes by the Canadian System of Soil Classification

- 2.2 Stone** .1
1. Clean inert stone of high angularity is preferred over washed gravel.
 2. Stone dimension aspect ratio should approach 1:1:1 with a maximum of 2:1:1 length: width: depth.
 3. Single size stone, 60 mm to 75 mm clear sieve designation: Blasted Quarry Rock.
 4. Aggregate to be used for structural soil shall be free of any foreign elements or material. Provide samples and test reports as described in Section 1.5 and 1.8.
 5. Aggregate quality: Material shall be sound hard, durable, free from soft, thin, elongated or laminated particles, organic material, clay lumps or material, or other substances that would act in a deleterious manner for use intended.
- 2.3 Granular Base** .1
1. To Master Municipal Specification Section 31 05 17 – Aggregates and Granular Materials.
- 2.4 Filter Fabric** .1
1. Non-woven filter fabric shall be installed as a separation layer directly above the compacted structural soil mixture. Do not install fabric until adequate compaction of the structural soil mixture has been confirmed.

- .2 Filter fabric shall be selected and designed to withstand wear and tear during construction without deterioration of its strength and filtering properties. Conform to the following ASTM designations.
- | | | |
|--------------------------|-------------|---------------------------|
| 1. Grab Tensile Strength | ASTM-D-4632 | .400 kN |
| 2. Tensile Elongation | ASTM-D-4632 | 50% |
| 3. Mullen Burst | ASTM-D-3786 | 1270 kPa |
| 4. Flow Rate | ASTM-D-4491 | 6110 l/min/m ² |
- .3 Fabric shall be Nilex 4535 or approved equivalent.

3.0 EXECUTION

3.1 Existing Subgrade

- .1 Excavate subgrade to establish tree pit/trench as indicated.
- .2 Areas designated as tree pits/trench for street tree planting shall be prepared to ninety five percent (95%) Modified Proctor Density and shall be free of stones, debris, roots branches, toxic materials, building materials and other deleterious materials, greater than 30 mm.

3.2 Preparation of Existing Grade

- .1 Verify that grades are correct. If discrepancies occur, notify Contract Administrator and do not commence work until directed.
- .2 Subgrade elevations shall slope parallel to the finished grades and/or toward the subsurface drain lines as indicated on the civil engineering drawings.
- .3 Do not proceed with the installation of the structural soil material until all walls, curbs, and utility work in the area has been installed.
- .4 Re-compact subgrade to requirements of Master Municipal Specifications and civil engineering drawings.

3.3 Mixing of Structural Soil

- .1 Ensure consistent even distribution of all components by thorough mixing. The ratio of components will vary and may require adjustment to ensure the soil volume is adequate to fill all voids.
- .2 Base Ratio of Materials for Structural Soil.
- 1) Mix structural soil to create a homogeneous product to the following table.

MATERIAL	AMOUNT	REFERENCE
Stone	4 m ³	Part 2.3
Growing Medium	1 m ³	Part 2.2
Soil Stabilizer	2 kg	Part 2.1

- .3 Moisten mixture with fine spray of clean potable water while mixing to activate soil stabilizer product.
- .4 Do not OVER MIX, OVER HANDLING can result in separation of the constituent materials. Further and final mixing will occur during the placement of the material.
- .5 All mixing shall be performed at the contractor's yard using appropriate soil mixing equipment. No mixing of soils at the project site shall be permitted unless approved by the Contract Administrator.

3.4 Placement of Structural Soil

- .1 Subgrade shall be approved by the Contract Administrator and unfrozen prior to placing structural soil.
- .2 Structural soil shall be moist, twenty-five to seventy-five percent (25%-75%) of field capacity, but not saturated with water when placed. Placement shall be handled to avoid damage to drainage structures, irrigation equipment, concrete structures or pavement.

STRUCTURAL SOIL

- | | | | |
|------------|--|----|---|
| | | .3 | Place mixture in 300mm lifts through entire area of structural soil mixture. Compact each lift to 95% MPD prior to placement of next lift. |
| | | .4 | Place structural soil such that finished grades are achieved as indicated and compact to achieve 95% of MPD. |
| | | .5 | Provide stamped Professional Engineer's Report to confirm compaction. Test to ensure uniform compaction rates have been achieved for each lift and in all areas of structural soil mixture. Refer to Quality Assurance, Section 1.4. |
| 3.5 | Installation of Filter Fabric | .1 | After approval of structural soil mixture compaction, install filter fabric, as indicated. |
| | | .2 | Ensure minimum 60cm overlap of all fabric seams and beyond edge of structural soil. |
| 3.6 | Finish Grading, Restoration and Reinstatement | .1 | All areas shall be graded to contours and elevations as indicated on contract drawings. Eliminate rough spots and low areas to ensure positive drainage. |
| | | .2 | Finish grade shall be as indicated and shall follow a level line |
| 3.7 | Tolerances | .1 | Finish grade shall be to within 15 mm of proposed grades within 3.0 m of any adjacent fixed elevation points and to within 15 mm of proposed grades over any other 3.0 m length. Finish grades shall be neither uniformly high nor low. |
| 3.8 | Surplus Material and Clean-Up | .1 | Dispose of surplus material off site to location approved by the Contract Administrator. |
| | | .2 | Leave all hard surfaces groomed clean of soil, amendments and debris following completion of structural soil preparation and placement. |

END SECTION

1.0 GENERAL

1.0 General Requirements

Delete
replace
following

1.0.1
with
the

.1 Section 32 91 21 refers to those portions of the Works that are unique to the supply, placement and finish grading of Growing Medium. This section must be referenced to and interpreted simultaneously with all other sections pertinent to the Works described herein.

For the purpose of this specification, the term "Growing Medium" shall mean a soil produced offsite by homogeneous blending of mineral particulates, micro organisms and organic matter which provides suitable medium for supporting intended plant growth and the term "Topsoil" shall mean on-site native or surface soil material which may be used as Growing Medium provided it meets standards set for imported material Growing Medium and can be modified to meet the requirements set out for specified Growing Medium.

Add 1.0.3

.3 For the purpose of this specification, the term 'Soil-Testing Laboratory' shall mean an independent laboratory, recognized by the landscape nursery industry, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

1.4 Measurement and Payment

Delete 1.4.1 and
replace with the
following

.1 Payment for growing/planting medium, top soil and bark mulch will be made separately for each type and includes supply of material, on-site handling, preparing the landscape area subgrade, placing, grading, raking, compacting (top soil), application of fertilizers complete with filter fabric where specified. Payment for growing medium will be for actual volume placed onsite.

1.5 Inspection and Testing

Delete 1.5 and replace
with the following

.1 The Contractor is responsible for testing imported Growing Medium and all related cost incurred. Testing shall be carried out by an approved Soil Testing Laboratory.

.2 The sample analysis shall be of tests done on the proposed Growing Medium from samples taken at the supply source within a minimum of 14 days in advance of Growing Medium placement. Allow 7 days for soil testing by the laboratory for each sample. The sample shall be picked up by the Soil Testing Laboratory from the supply source. The Growing Medium sample shall be a composite of at least three (3) samplings for the proposed source and shall be at least one (1) litre in volume.

.3 Forward a copy of all test results directly to the Contract Administrator and the City for review. The analysis shall outline the testing laboratory's required amendments such as sand, organic matter, fertilizers and lime to achieve adequate growing conditions.

.4 The Contractor shall not deliver any Growing Medium to the site until the test results have been reviewed and approved by the Contract Administrator and the City.

.5 All submitted soil analysis must be dated and include supplier name and phone number, project location and submitted to Contract Administrator and the City for approval prior to commencing work. Soil analysis shall include measurements of:

.1 Percent sand, fines, silt and clay

.2 Organic matter to 100%

- | | | | | |
|-----|------------------|---|----|--|
| | | | .3 | pH, acidifying additive required to achieve noted herein |
| | | | .4 | Water soluble salts |
| | | | .5 | Total carbon to nitrogen ration |
| | | | .6 | Total nitrogen and available levels of phosphorus, potassium, calcium & magnesium |
| | | | .6 | At the discretion of the Contract Administrator and the City submit up to two (2) additional samples, at intervals outlined by the Contract Administrator and the City, of Growing Medium taken from material delivered to the site. Samples shall be taken from a minimum of three (3) random locations and mixed to create a single uniform sample of testing. Results of these tests shall be forwarded to the Contract Administrator and the City for review. |
| | | | .7 | The Contractor is responsible for soil analysis and requirements for amendments to supply Growing Medium as specified. Failure to satisfy these contractual requirements could result in the Contractor being required to remove unacceptable Growing Medium at their expense. |
| | | | .8 | Notify the Contract Administrator at least forty-eight (48) hours prior to Growing Medium placement for inspection. |
| | | | .9 | Refer to General Conditions, Clause 4.12 Tests and Inspections. |
| 1.6 | Product Handling | Add 1.6 | .1 | All materials to be handled and adequately protected to prevent damage. Do not handle Growing Medium in an excessively wet, extremely dry, frozen condition or in any manner in which structure may be adversely affected. Growing Medium whose structure has been damaged by handling under these conditions shall be rejected and shall be replaced by the Contractor at their expense. |
| | | | .2 | Stockpile materials in bulk form in paved areas or in pre-approved areas of the site. Provide additional protection of storage under roof or tarpaulins. |
| | | | .3 | Take all precautions to prevent contamination of Growing Medium and amendments from wind blown soil particles, weed seeds and from insects. Contamination of the Growing Medium and amendments may result in their rejection for use. |
| | | | .4 | Store fertilizer and chemical amendments in the manufacturer's original containers. |
| | | | .5 | All Growing Medium shall be delivered to site premixed from a recognized Growing Medium source ensuring consistency throughout the mix. |
| 2.0 | PRODUCTS | Delete 2.0 and replace with the following | | |
| 2.1 | Materials | | .1 | Growing Medium Preparation |
| | | | .1 | Shall be prepared from Compost Material with Sand and other Soil Amendments as required to meet the specifications herein. |
| | | | .2 | Ensure commercial processing and mixing of Growing Medium components are done thoroughly by a mechanized screening process. Do not mix the components by hand. Ensure the resulting product is a homogeneous mixture having the required properties throughout free of stones 25 mm or larger in any dimension, woody plant parts, toxic materials, foreign object and other extraneous materials harmful to plant growth. Provide composted soil free from crabgrass, |

couch grass, equisetum, convolvulus, or other noxious weeds or seed or parts thereof.

.2 Inorganic Soil Amendments

- .1 Sand: Imported pit sand or river pump sand, free of impurities, chemicals, horsetails, and other noxious weeds. The saturation extract electrical conductivity of salinity shall not be greater than 3.0 millimhos/cm at 25 degrees C.

Sieve Size (mm)	Percent passing (%)
4.75	95-100
0.50	0-40
0.050	0-5

- .2 Fertilizers: Uniform in composition, free flowing and dry, granular, pill form, or pelleted commercial product with 50% of total nitrogen (if applicable) derived from natural organic material in a slowly available form delivered in unopened water proof containers with the manufacturer's guaranteed N-P-K analysis, type and trade name attached to each container. The planting soil test results will specify a formulation and application rate to achieve the levels of nitrogen, phosphorous and potassium required. Fertilizer to meet the requirements of the Canada Fertilizer Act.

- .1 Lime: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows:

- .1 Class: Class T, with a minimum 99 percent passing through No. 8 (2.36 mm) sieve and a minimum 75 percent passing through No. 60 (0.25 mm) sieve.

- .2 Provide lime in form of dolomitic limestone.

- .3 Perlite: Horticultural perlite, soil amendment grade.

.3 Organic Soil Amendments

- .1 Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 25 mm sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

- .1 Organic Matter Content: 50 to 60 percent of dry weight containing no cedar, redwood, wood or bark.

- .2 Colour: dark brown to black in colour.

.2 Peat:

- .1 Finely divided or granular texture, with a pH range of 6 to 7.5, containing partially decomposed moss peat, native peat, or reed-sedge peat and having a water-absorbing capacity of 1100 to 2000 percent.

.3 Wood Residual

- .1 Content of wood residuals such as Fir or Hemlock sawdust present in the Growing Medium shall not cause the total carbon to total Nitrogen ration to exceed 40:1.

- .2 Cedar or redwood sawdust shall not be present in Growing Medium.

2.7 Growing Medium Properties for Different Applications

Properties	Low Traffic Lawn Areas, Trees and Large Shrubs	High Traffic Lawn Areas	Planting Areas, Planters Shrubs & Groundcover
Texture: Particle size classes by Canadian System of Soil Classification	Percent of Dry Weight Mineral Fraction (%)		
Gravel (greater than 2 mm less than 75 mm)	0-10	0	0
Sand (greater than 0.05 mm and less than 2 mm)	50-70	80-90	50-70
Silt (larger than 0.002 mm and less than 0.5 mm)	10-30	5-20	10-30
Clay (less than 0.002 mm)	7-20	2-5	7-20
Organic Content Percent of Dry Weight	5-10	3-5	25-30
Drainage Minimum saturated hydraulic conductivity (cm/hr) in place	2.0	7.0	2.0
Acidity (pH)	6.0-6.5	6.0-6.5	5.0-6.0

2.8 Miscellaneous Products

- .1 Root Barrier: 400x610 mm linear root barrier, copolymer polypropylene, 50% recycled plastic, black in colour. Supplier of Root Barrier shall be as per the Coquitlam Approved Products List.
- .2 Construction Adhesive shall be as per the Coquitlam Approved Products List.
- .3 Drain Mat: Light duty, uv stable, impermeable cusped core bonded to a layer of non-woven filter fabric with the following minimum properties:
 - .1 Compressive Strength -718 kN/m² as per ASTM D-1621
 - .2 Flow Rate – 188 l/min/Metre as per ASTM D-4716
 - .3 Approximate profile thickness of 10 mm.
 - .4 Supplier of Drain Mat shall be as per the Coquitlam Approved Products List.
- .4 Filter Fabric: Install root barriers in accordance with manufacturer's reviewed installation instructions where indicated on reviewed drawings with vertical root directing ribs facing inwards towards trees or plants; connect panels together as required.
 1. Supplier of Filter Fabric shall be as per the Coquitlam Approved Products List.
- .5 Drain Rock: Shall consist of clean round stone or crushed rock. Acceptable material includes 19 mm drain rock or torpedo gravel conforming to the following gradations.

Percent Passing		
Sieve Designation	Coarse	Fine (Torpedo gravel)
25 mm	100	
19 mm	0-100	
9.5 mm	0-5	100
4.75 mm	0	50-100
2.36 mm		10-35
1.18 mm		5-15
0.60 mm		0-8
0.30 mm		0-5
0.15 mm		0-2

2.9 Structural Soil

- .1 Soil stabilizer shall be friable, containing a minimum of 4% and maximum of 6% organic matter by dry weight, free from stones and debris over 30 mm. Acidity (ph) shall be in the range 5.5-7.5. Carbon to nitrogen ratio shall not exceed 40:1, and salinity shall not exceed 3.0 milliohms at 25 deg C. Gravel greater than 2 mm shall not exceed 10% of total weight.
- .2 Supplier of Structural Soil shall be as per the Coquitlam Approved Products List.
- .3 Growing Medium to be a gap-graded mixture.
- .4

Texture of Growing Media	Percentage of mixture
Gravel: greater than 2 mm-less than 75 mm	0%
Sand: greater than 0.0 5mm-less than 2 mm	max 60%
Silt: greater than 0.002-less than 0.0 5mm	max 35%
Clay: less than 0.002mm	max 15%
Clay and silt combined	max 40%
Acidity (pH)	6.0-7.0
Drainage: minimum saturated hydraulic Conductivity (cm/hr) in place	3.0
Salinity: saturated extract conductivity shall not exceed	3.0 milliohms/cm at 25 degC
Organic content: percent of dry weight	8-12%
- .5 Stone ballast: Clean inert stone of high angularity is preferred over washed gravel. Stone dimension aspect ratio should be 1:1:1 with a maximum 2:1:1 length:width:depth. Single size stone, 60 mm-75 mm clear sieve designation: Blasted Quarry Rock. Aggregate to be used for structural soil shall be free of any foreign elements or material.
- .6 Structural Geotextile
 - Shall be installed as a structural filter layer directly above the compacted structural soil mixture. Do not install fabric until adequate compaction of the structural soil mixture has been confirmed. Filter fabric shall be selected and deigned to withstand wear and tear during construction without deterioration of its strength and filtering properties.
 - .1 Supplier of Geotextile shall be as per the Coquitlam Approved Products List.
- .7 Ground dolomite limestone containing no less than 85% of its total weight as calcium carbonate and magnesium carbonate shall be used to control ph level. The degree of grind for the limestone shall allow 100% of the total weight to pass a #10 (2 mm) sieve, 90% to pass a #18 (1 mm) sieve and 20% to pass a #40 (0.105 mm) sieve. Spread-easy fertilizer shall be used as a slow release fertilizer source of calcium and magnesium.

			<p>.8 Mixing of structural soil: Blend as per following ratios:</p> <p>.1 5 metric tones (MT) of aggregate</p> <p>.2 1 cubic meter of growing media</p> <p>.3 2 kg soil stabilizer</p> <p>.9 Moisten mixture with fine spray of clean potable water while mixing to activate soil stabilizer product. Do not over mix. Place mixture in 300 mm lifts through entire area of structural soil mixture. Compact each lift to 95% MPD prior to placement of next lift. Install filter fabric such to ensure a minimum of 60 cm overlap of all fabric seams and beyond edge of structural soil.</p>
2.10	Growing Medium	Add 2.10.18	Growing medium to be planter blend equivalent to "Level 2P" planter mix and compliant with Canadian Landscape Standards. Refer to "Level 2P Groomed" properties as per Table 6.3.5.3 "Properties of growing media for Level 2 Groomed and Level 3 Moderate Areas" of the Canadian Landscape Standard, page 83 complete).
		Add 2.10.19	All preparation and installations of growing medium to comply with Canadian Landscape Standards (typical).
3.0	EXECUTION		
3.2	Preparation of Subgrade	Delete 3.2.4 and replace with the following	Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials, soil contaminated with calcium chloride, toxic materials and petroleum products, and debris which protrudes more than 25 mm above the surface. Dispose of all removed material off site to approved offsite disposal area at no additional cost to the Owner.
		Delete 3.2.5 and replace with the following	Course cultivate entire area which is to receive Growing Medium to depth of 250mm. Cross cultivate those areas where equipment used for hauling and spreading has compacted soil.
		Add 3.2.6	Grade transitions shall be smooth and even and shall blend into surrounding areas as determined by the Contract Administrator and the City.
		Add 3.2.7	Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
3.3	Processing Growing Medium	Add 3.3.4	<p>Growing Medium shall be imported and stockpiled on site in a location approved by the Contract Administrator and the City.</p> <p>.1 Carry out stock piling operation such that the Growing Medium structure is not compromised through compaction, vibration or other actions.</p> <p>.2 Stock piled Growing Medium shall be protected from rain, drying and contaminants.</p> <p>.3 Growing Medium shall be free of subsoil, pests, roots, wood, construction debris, undesirable grasses including crabgrass or couch grass, noxious or weeds and weed seeds or parts thereof foreign objects and toxic materials. Presence of these contaminants shall be grounds for rejection of Growing Medium and replacement at no cost to the Owner.</p>
3.4	Placing Growing Medium	Delete 3.4.2 and replace with the following	Place Growing Medium to the required finished grades with adequate moisture, in uniform lifts of 100 mm to 150 mm compacted

			to 80 MPD during dry weather, over dry, unfrozen Sub Grade where planting is indicated free of any standing water.															
		Delete 3.4.5 and replace with the following	Minimum depths after settlement and 80% compaction: <table><tr><td>.1</td><td>Trees pits:</td><td>900 mm</td></tr><tr><td>.2</td><td>Shrub beds:</td><td>450 mm</td></tr><tr><td>.3</td><td>Ground cover areas:</td><td>300 mm</td></tr><tr><td>.4</td><td>Lawn areas:</td><td>300 mm</td></tr><tr><td>.5</td><td>Blvd. areas:</td><td>150 mm</td></tr></table>	.1	Trees pits:	900 mm	.2	Shrub beds:	450 mm	.3	Ground cover areas:	300 mm	.4	Lawn areas:	300 mm	.5	Blvd. areas:	150 mm
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.3	Ground cover areas:	300 mm																
.4	Lawn areas:	300 mm																
.5	Blvd. areas:	150 mm																
		Add 3.4.6	Increase sand content to 90% in the planting soil below lawns where heavy wear by pedestrians or maintenance equipment is anticipated. Increase sand content in a 1.5m wide strip at the bottom of swales, banks or other wet areas and as directed by the Landscape Architect. On steep south or west facing banks, reduce sand content in lawns and planting beds to 50 - 60% for better moisture retention.															
3.5	Applying Fertilizers	Delete 3.5 and replace with the following	<table><tr><td>.1</td><td>Addition of amendment components shall be at the rates indicated in the Growing Medium analysis recommendations via the following methods:</td></tr><tr><td>.1</td><td>Lime: Applied with mechanical spreaders over entire planting areas and contained planters. <table><tr><td>.1</td><td>Do not apply by hand.</td></tr><tr><td>.2</td><td>Mix thoroughly into the top 100 mm of Growing Medium.</td></tr><tr><td>.3</td><td>Do not allow lime to come into direct contact with nitrogen - phosphate - potash fertilizers.</td></tr></table></td></tr><tr><td>.2</td><td>Fertilizer: Applied with mechanical spreaders over entire planting areas and contained planters. Do not apply by hand. Do not mix into Growing Medium.</td></tr></table>	.1	Addition of amendment components shall be at the rates indicated in the Growing Medium analysis recommendations via the following methods:	.1	Lime: Applied with mechanical spreaders over entire planting areas and contained planters. <table><tr><td>.1</td><td>Do not apply by hand.</td></tr><tr><td>.2</td><td>Mix thoroughly into the top 100 mm of Growing Medium.</td></tr><tr><td>.3</td><td>Do not allow lime to come into direct contact with nitrogen - phosphate - potash fertilizers.</td></tr></table>	.1	Do not apply by hand.	.2	Mix thoroughly into the top 100 mm of Growing Medium.	.3	Do not allow lime to come into direct contact with nitrogen - phosphate - potash fertilizers.	.2	Fertilizer: Applied with mechanical spreaders over entire planting areas and contained planters. Do not apply by hand. Do not mix into Growing Medium.			
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3.6	Finish Grading	Delete 3.6.1 and replace with the following	Manually fine grade Growing Medium installation to contours and elevations shown on drawings or as directed by Contract Administrator and the City. Eliminate rough spots and low areas to ensure positive drainage.															
		Add 3.6.3	Finish Grade of Growing Medium shall be 25 mm from finished elevation of adjacent curb or planter wall unless otherwise noted on drawings.															
3.9	Clean-up	Delete 3.9 and add the following	<table><tr><td>.1</td><td>Ensure all paved areas, tops of planters, adjacent surfaces have been thoroughly cleaned. Ensure all discoloration of adjacent surfaces as a result of Growing Medium installation have been removed.</td></tr><tr><td>.2</td><td>Dispose of materials not required and repair any damage to adjacent surfaces (as determined by the Contract Administrator and the City) off site at no additional cost to the Owner.</td></tr></table>	.1	Ensure all paved areas, tops of planters, adjacent surfaces have been thoroughly cleaned. Ensure all discoloration of adjacent surfaces as a result of Growing Medium installation have been removed.	.2	Dispose of materials not required and repair any damage to adjacent surfaces (as determined by the Contract Administrator and the City) off site at no additional cost to the Owner.											
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3.10	Weed Control	Add 3.10	<table><tr><td>.1</td><td>Ensure all weeds and weed roots that have germinated during the course of work of this section have been eliminated from Growing Medium.</td></tr><tr><td>.2</td><td>Provide the City Representative and Consultant with a written outline of weed removal methodology seven (7) days prior to starting weed removal operations.</td></tr></table>	.1	Ensure all weeds and weed roots that have germinated during the course of work of this section have been eliminated from Growing Medium.	.2	Provide the City Representative and Consultant with a written outline of weed removal methodology seven (7) days prior to starting weed removal operations.											
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3.11 **Structural Soil** Add 3.11 .1 Refer to 2.9 in this specification and as shown on the Contract Drawings.

END OF SECTION

HYDRAULIC SEEDING

1.0 GENERAL

- | | | | |
|------|-----------------------------|---|--|
| 1.3 | Scheduling | Delete 1.3 and replace with the following | <ul style="list-style-type: none"> .1 Schedule all operations to ensure optimum environmental protection, grading, growing medium placement, planting, seeding or sodding operations as outlined in the specifications. .2 Schedule seeding to coincide with preparation of soil surface. .3 Organize scheduling to ensure a minimum of on-site storage of seed and fertilizer material, minimum movement and compaction of growing medium, and prompt watering operations. Coordinate work schedule with scheduling of other trades on site. .4 Plan, schedule and execute the work to ensure a supply of water for landscape purposes in adequate amounts and at adequate pressures for satisfactory irrigation of all seeded areas. |
| 1.4 | Handling and Storage | Add 1.4.2 | Protect existing Site features against damage or contamination due to Work of this Section. Make good all damage or contamination which occurs to the satisfaction of the Contract Administrator and the City. |
| | | Add 1.4.3 | Deliver seeds, mulch, fertilizers, tackifier and other products to the Site in manufacturer's original containers, clearly identified. Do not remove or deface labels or other identification. |
| 1.5 | Drainage Control | Delete 1.5 and replace with the following | Provide for proper water management and drainage of site during work of this section. Water management shall include silt traps, erosion control measures, temporary water collection ditches, as well as their adequate maintenance to ensure that storm water which may become laden with soil or growing medium or hydraulic seed is detained and cleaned prior to discharge from site. |
| 1.6 | Samples | Add to 1.6.1 | The <i>Contract Administrator</i> and the City may test for purity and germination. |
| 1.7 | Site Examination | Delete 1.7.1 and replace with the following | Examine site prior to the commencement of work to verify surface preparation is complete and has been accepted by the Contract Administrator and the City. |
| 1.10 | Quality Assurance | Add 1.10 | <ul style="list-style-type: none"> .1 <i>Contractor</i> to provide seed analysis that will include but is not limited to: <ul style="list-style-type: none"> .1 Name and address of supplier .2 Analysis of seed mixture .3 Percentage of pure seed .4 Year of production .5 Date and location of bagging .6 Percentage germination .2 The sample accepted by the review will form the standard by which the project will be supplied. .3 Should the <i>Contractor</i> require the source of seed supply to change during the construction a written request must be provided to the <i>Contract Administrator</i> and the City 48 hours in advance. The request shall be followed up by submission of proposed seed supplier and substitution seed analysis for <i>Contract Administrator</i> and the City review prior to the start of supply to the site. .4 All seed shall be delivered and stored in original containers in enclosed storage facility protected from the damage, weather, insects and rodents. |

HYDRAULIC SEEDING

2.0 PRODUCTS

2.1 Grass Seed

Delete 2.1 and replace with the following

- .1 Grass Seed shall be mixed and supplied by a recognized seed house and delivered in original containers, in accordance with Federal and Provincial seed laws having a minimum germination of 75% and minimum purity of 97%, and meet the requirements of the Government of Canada Seed Act for Canada No. 1 seed.
- .2 Seed mixtures to be approved by the *Contract Administrator* in the original packaging. The seed mixture for boulevards and landscaped areas shall be made up from a minimum of three (3) varieties of Perennial Rye, one (1) of Kentucky Bluegrass and three (3) varieties of Fescue from Coquitlam Approved Products List.
 - .1 Seed Mix shall be 50% Perennial Rye, 35% Fescues, 15% Kentucky Bluegrass.
 - .2 Seed Rate shall be 50g per square metre.

.3 Table Guideline of Approved Seed Mix Ratios.

% Seed Count	% Weight	Seed Varieties
15%	25%	All-Star Perennial Rye Grass
5%	15%	Elka II Perennial Rye Grass
20%	15%	Cindy Creeping Red Fescue
15%	15%	Shamrock Kentuck Bluegrass
20%	10%	Cindy Lou Creeping Red Fescue
15%	10%	Longfellow II Chewing Fescue
10%	10%	Gator 3 Perennial Rye Grass
Acceptable products shall be an all purpose sun / shade mix' conforming to the above mix ratios		

2.2 Hydraulic Mulch

Delete 2.2 and replace with the following

- .1 Provide hydraulic seeding solution containing a mulch of wood cellulose fibre specifically designed for hydraulic seeding containing no growth or germination inhibiting factors, and dyed green for visual metering during application.
- .2 Hydraulic mulch to be capable of dispersing rapidly in water to form a homogeneous slurry and remaining in such a state when agitated or mixed with other specified materials. When applied, hydraulic mulch is to be capable of forming absorptive mat, which will allow moisture to percolate into the underlying soil and to contain no growth or germination inhibiting factors.
- .3 Mulch is to be dry and free of weeds, weed seeds and other foreign material, and to be supplied in packages bearing manufacturer's label clearly indicating the weight and product name.
- .4 Mulch shall contain a colloidal polythacuride (or equivalent) tackifier which is to be adhered to mulch to prevent separation during shipment and to avoid chemical agglomeration during mixing in hydraulic mulching equipment. It shall be 'M-Binder' or approved alternative.

2.3 Water

Delete 2.3.1 and replace with the following

Water shall be potable, free of impurities that would inhibit sod growth. *Contractor* to ensure adequate water is available to maintain seeded areas during germination and in a vigorously growing, healthy state until *Total Performance* of work of this section.

2.5 Dolomite Lime

Add 2.5

- .1 Dolomite lime shall be finely ground, containing not less than 90% calcium carbonate.

HYDRAULIC SEEDING

2.6	Wood Posts	Add 2.6	.1	Wood posts shall be 38 mm x 38 mm x 1.5 m No. 1 Grade or better Hem/Fir, untreated wood.
2.7	Binder Twine	Add 2.7	.1	Bidner Twine shall be hemp based multiple strand string.
2.8	Flagging Tape	Add 2.8	.1	Flagging tape shall be 30 mm wide, biodegradable ribbon tape made of non woven cellulosic material, colour: red, or an approved equal.
3.0	EXECUTION			
3.1	Finish Grade Preparation	Delete 3.1.2 and replace with the following		Prior to the broadcast of seed <i>Contract Administrator</i> and the City to review and direct minor adjustments and refinements of finish grades prior to the <i>Contractor</i> proceeding. Review includes grades, <i>Growing Medium</i> depth and condition of finished surface. Subsequent to the <i>Contract Administrator</i> and the City review the <i>Contractor</i> shall re-grade, add <i>Growing Medium</i> and make adjustments as directed by <i>Contract Administrator</i> and the City.
		Delete 3.1.5 and replace with the following		Finish grade smooth to extent required for class of seeding to be carried out, firm against footprints, loose textured and free of all stones, roots, branches, etc. larger than 25 mm or required for removal for class of seeding to be carried out.
3.2	Seeding-General	Delete 3.2.1 and replace with the following		Carry out hydraulic seeding during periods which are most favourable for the establishment of a health stand of grass within the following calendar seasons: .1 Spring (April 1st to June 15th) .2 Fall (August 15th to September 30th). .3 Hydraulic seeding shall not take place during periods of rain, freezing and/or abnormally hot and dry weather.
3.4	Protection	Add 3.4.4		Protect all seeded areas against trespassing and from damage at all times clearly marked, staked, string and flagging tape.
		Add 3.4.5		Perimeter Protection: All seeded areas shall be surrounded by a 900 mm high barrier made up of the following components: .1 Wood posts placed at 1.8 metres on centre. .2 Wood Posts to be driven to a depth of 300 mm .3 String two (2) strands of hemp based binder twine (or equal product) between posts. Insure one full wrap of twine around each post. .4 Tie 300 mm strands of 'red' flagging tape at 450 mm intervals along the entire length of both strands of twine. .5 Maintain perimeter protection until <i>Total Performance</i> issued for seeded area. Upon acceptance remove perimeter fence and dispose of off site.
		Add 3.4.6		Hydraulic seeded areas that have been damaged by construction operation, construction/ site personnel or construction traffic shall be replaced at no cost to the <i>Owners</i> . Replacement shall include removal of <i>Growing Medium</i> , regarding of subgrade, replacing <i>Growing Medium</i> and reseeding as required.
3.5	Application for Hydraulic Seeding	Delete 3.5 and replace with the following	.1	Thoroughly mix seed, fertilizer and hydraulic mulch in water slurry and distribute uniformly over surface with an approved hydraulic mulcher.
			.2	All seeding is to be done during calm weather and on soil that is free of frost, snow, and standing water. Do not perform the work when wind exceeds 10 km/hr or when the soil is excessively dry.

- .3 Measure quantities of each material to be charged into hydraulic seeder/mulcher tank accurately either in mass or by commonly accepted system of mass-calibrated volume measurements. Add materials to tank while it is being filled with water and in following sequence:
 - .1 Seed
 - .2 Fertilizer
 - .3 Mulch
 - .4 Tackifier
 - .4 Thoroughly mix materials into a homogeneous water based slurry and distribute uniformly over the area and, all disturbed areas, to be hydraulically seeded.
 - .5 Seeding Rate:
 - .1 Apply at 435 kg/ha or, as recommended by supplier and approved by the *Contract Administrator* and the City.
 - .2 Fertilizer at the following rate: Evergrow 28-3-8 @ 29g/m²
 - .3 Fibre Mulch at the following rate: 15kg/m²
 - .4 Tackifier at the following rate: 45 kg/ha.
 - .6 Carry out hydraulic seeding with care to ensure homogeneous slurry does not come in contact with foliage of trees, shrubs or other susceptible vegetation.
 - .7 Do not spray homogeneous slurry on objects not expected to grow grass.
 - .8 Promptly rectify any overspray or damage that occurs during hydraulic seeding.
 - .9 Do not leave seed, fertilize, mulch and water slurry in tank for more than 4 hours. Slurry left in tank over maximum allowed time shall not be used for seeding and shall be disposed offsite.
 - .10 Follow up seeding with all maintenance procedures required to maintain the approved grades and obtain uniform germination. The *Contractor* is to carry out at no cost to the Owner, reseed operations at two (2) week intervals where germination has failed or wash outs have occurred.
- 3.7 Clean-up** Add 3.7.2 Flush all walks and paved areas clean to the satisfaction of the *Contract Administrator* and the City.
- 3.8 Grass Maintenance** Delete 3.8 and replace with the following
- .1 Maintenance of hydraulic seeded areas shall begin immediately after hydraulic seeding operation and shall continue until all deficiencies noted in the *Substantial Performance* review have been rectified to the satisfaction of the *Contract Administrator* and the City and conditions for *Total Performance* been achieved. The *Contractor* is to notify the *Contract Administrator* and the City in writing forty-eight hours (48) prior to stopping maintenance operations.
 - .2 Grass Cutting: After the 'first' cut of hydraulic seeded areas grass cutting operations shall be carried out on a weekly (seven day) basis until *Total Performance* by *Contract Administrator* and the City:
 - .1 First cut of seeded areas shall occur when a uniform grass height of 75 mm has been attained. First cut shall be to a height of 65 mm.
 - .2 Continue regular weekly cutting at a height of 50 mm until *Total Performance*.
 - .3 Cutting operations shall be such that each cut is at right angles to the previous cut.
 - .4 *Contractor* to remove grass clippings after each cut and dispose of off site.

- .5 Roll when required to remove any minor depressions or irregularities.
 - .6 Immediately repair seeded areas that show deterioration or bare spots. Top-dress all areas showing shrinkage due to lack of watering and seed with seed mix that matches the original seed mix.
 - .3 Fertilizer analysis shall conform to recommendations provided with *Growing Medium* analysis. Application of fertilizer shall follow manufacturers' recommendations noting that after October 1 lawn areas shall not be fertilized until April 15th of the following spring.
 - .4 Hydraulic seeded lawn areas to be kept free of invasive and/or noxious broadleaf weeds, grasses including but not limited to poa annua, disease, fungi, detrimental nematodes and detrimental insects.
- 3.9 Conditions for Total Performance** Delete 3.9 and replace with the following
- .1 Conditions for *Total Performance* of Hydraulic Seeded areas:
 - .1 Hydraulic seeded areas are vigorously growing, well established with a thick, dense and healthy green appearance.
 - .2 Hydraulic seeded areas shall not have any eroded or wash out areas, bare or dead spots and are free of invasive and/or noxious broadleaf weeds and grasses.
 - .3 No surface *Growing Medium* is visible when established hydraulic seeded areas have been cut to height of 38 mm
 - .4 Hydraulic seeded areas have been cut at least two (2) times, to a height of 38 mm a minimum of (7) days apart.
 - .5 Grass is free of grass varieties other than those specified.
 - .6 Grass is sufficiently established that its roots are growing into underlying *Growing Medium*.
 - .7 Specified maintenance procedures have been carried out.
 - .2 Areas hydraulic seeded after September 30th will not be reviewed for *Total Performance* until April 30th the next year.

END OF SECTION

PLANTING OF TREES, SHRUBS AND GROUND COVERS

1.0	GENERAL	Delete 1.0.1 and replace with the following	Section 32 93 01 refers to those portions of the Work that are unique to the sourcing, supplying, placing and maintaining the plant material indicated on the <i>Contract Drawing</i> and the Plant List(s). This section must be referenced to and interpreted simultaneously with all other sections pertinent to the Work described herein.
1.2	References	Delete 1.2.2 and replace with the following	Canadian Nursery & Landscape Association (CNLA) Standard for Nursery Stock (current edition).
		Add 1.2.4	The British Columbia Landscape & Nursery Association (BCLNA).
		Add 1.2.5	ANSI A-300 Tree Pruning Guidelines
1.3	Source Quality Control	Delete 1.3 and replace with the following	<p>.1 Seven (7) days prior to the <i>Contract Administrator</i> and the City review of plant material at source the <i>Contractor</i> shall confirm in writing availability of plant material noted on plant list.</p> <p>.2 Plant material will be supplied from nurseries who are certified by the Clean Plants program, Canadian Nursery Certification Institute (CNCI), current certification standard http://cleanplants.ca/. The certification shall include but is not limited to the requirements of the current active module(s), e.g. P. Ramorum module. The certification must extend to all fields and allied nursery operations where plant material is sourced. Only nurseries, fields and allied nursery operations that are certified will be permitted to supply plant material for this project.</p> <p>.1 Prior to the review of plant material by the <i>Contract Administrator</i> and the City the <i>Contractor</i> shall submit written documentation with CNCI certification stamp stating that the nursery has undergone all components of a certification program and has been audited to verify that all components are properly implemented.</p> <p>.2 The documentation submitted shall include but is not limited to the nurseries CNCI Clean Plants certification number.</p> <p>.3 Plant Material Review at the source nursery.</p> <p>.1 <i>Contractor</i> shall request for review of the plant material at source nursery to be a minimum of seven (7) days prior to scheduled review.</p> <p>.2 Shipping of plant material to the <i>Place of Work</i> shall not proceed until <i>Contract Administrator</i> has reviewed the plant material at the source nursery.</p> <p>.3 <i>Contract Administrator</i> and the City shall make one (1) visit to source nursery for review of plant material for entire project.</p> <p>.4 All plant material, including substitutions shall be gathered at one location for review.</p> <p>.5 <i>Contractor</i> shall accompany <i>Contract Administrator</i> during plant material review at the source nursery.</p> <p>.4 Plant Material Review at the <i>Place of Work</i></p> <p>.1 All plant material shall be reviewed at the <i>Place of Work</i> by the <i>Contract Administrator</i> and the City prior to planting.</p> <p>.2 Plant material that is rejected by the <i>Contract Administrator</i> shall be immediately removed from the <i>Place of Work</i> and replaced at the <i>Contractor's</i> expense.</p>

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| <p>1.4 Submittals and Scheduling</p> | <p>Delete 1.4 and replace with the following</p> | <ul style="list-style-type: none">.5 Imported Plant Material<ul style="list-style-type: none">.1 Plant material imported from out of province and out of country shall be accompanied with necessary federal and provincial permits and import licenses..2 The <i>Contractor</i> shall conform to all federal and provincial laws and regulations with regard to horticultural inspection of domestic and imported plant material..6 Condition of Plant Material<ul style="list-style-type: none">.1 Plant rootballs and containers shall be <u>completely free of noxious weeds and volunteer plants</u> including Horsetail and Morning Glory..2 Plant materials grown or supplied in <u>Fabric Containers</u> are <u>not acceptable</u>..7 All materials and execution to conform to the latest edition of the BCNTA Guide Specifications for Nursery Stock and the BCNTA Guide Specifications for Landscape Construction.
<ul style="list-style-type: none">.1 Submit inspection certificates as required by law for each shipment of plant material..2 <i>Contractor</i> shall provide in writing to the <i>Contract Administrator</i> and the City a minimum of seven (7) days prior to review of plant material at the source nursery a plant list confirming the quantity, botanical name, common name and size of plants specified..3 Substitutions<ul style="list-style-type: none">.1 <i>Contractor</i> shall provide in writing to the <i>Contract Administrator</i> and the City a minimum of seven (7) days prior to review of plant material at the source nursery a list of proposed substitutions for review..2 Plant substitutions shall be of similar genus and species and of equal or greater size as those originally specified. The list shall contain the following information:<ul style="list-style-type: none">.1 Botanical name, common name of the specified plant.2 Botanical name, common name of the proposed substitute plant.3 Pot size and plant size in the nursery.4 Planting Schedule<ul style="list-style-type: none">.1 <i>Contractor</i> shall provide in writing to the <i>Contract Administrator</i> and the City upon award of the <i>Contract</i> a detailed Planting Schedule outlining dates and duration of planting operations..2 Revisions to the Planting Schedule as a result of delays of any kind shall be submitted to the <i>Contract Administrator</i> and the City in a timely manner prior to the start of planting operations..3 Schedule all planting to ensure optimum environmental protection, grading, growing medium placement, planting, seeding, or sodding operations as outlined in these Specifications. Organize scheduling to ensure a minimum duration of on-site storage of plant material, minimum movement and compaction of growing medium, and prompt mulching and watering operations. Coordinate Work schedule with schedule of other trades on-site..4 Coordinate and schedule plating such that no damage occurs to plant material before and after placement. In particular, meet requirements of living plant material..5 Product Data |
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| | | | <ul style="list-style-type: none">.1 Contractor to submit a one (1) litre sample of Composted Mulch to the <i>Contract Administrator</i> and the City for review prior to delivery..2 Contractor to submit a one (1) litre sample of the Prepared Growing Medium to the <i>Contract Administrator</i> and the City for review prior to delivery..3 Contractor to submit three (3) copies of the anti-desiccant manufacturer product data and specification for <i>Contract Administrator</i> and the City review..4 Contractor to submit three (3) copies of the fertilizer manufacturer product data and specification for <i>Contract Administrator</i> and the City review..5 Contractor to submit three (3) copies of the Guying assembly including clamps, collar, guying wire, anchors and wire tighteners manufacturer product data and specifications for <i>Contract Administrator</i> and the City review. |
| 1.5 | Handling and Storage | Delete 1.5 and replace with the following | <ul style="list-style-type: none">.1 Coordinate shipping of plant material and excavation of planting pits to ensure minimum time lapse between nursery digging and on site planting..2 Ensure branches of trees and shrubs are bound securely into a confined mass during handling and transport..3 Do not bind planting stock with rope or wire that would damage bark, break or damage branches or damage the natural shape of the plant..4 Protect plant material against abrasion, and exposure to extreme temperature change during transit..5 Cover plant foliage and branches with tarpaulin to prevent loss of moisture during transit..6 Fully support root ball of large trees during all lifting operations..7 Do not lift trees or shrub by the trunk or branches. Plant material to be moved by lifting the root ball or container..8 Remove broken and damaged roots with clean cuts using sharp pruning shears..9 Temporary Storage/ Heel-In of Plant Material onsite<ul style="list-style-type: none">.1 Temporarily store trees, shrubs and miscellaneous plant material that cannot be planted immediately by heeling-in. Acceptable heel-in material include approved growing medium or sawdust..2 Ensure temporary storage/heel-in area is shaded and protected from the wind..3 Provide sufficient water at regular intervals to ensure health of plant material in the temporary storage/heel-in area..4 Plant material that has not been properly maintained in the storage/heel-in area and illustrates signs of degradation or stress will be rejected by the <i>Contract Administrator</i> and the City. Rejected plant material shall be replaced by the <i>Contractor</i>. |

1.9	Measurement and Payment	Delete 1.9.1 and replace with the following	Payment for trees will be for each tree of size & species specified. Payment for shrubs, grass, perennials, plugs and ground cover will be for each size & species specified. The unit price includes all preparatory work, supply and planting of the trees, support stakes, Treegator, shrubs, bark mulch and as shown on Contract Drawing, and other incidental specified under this Section including watering and maintenance to meet Conditions of Total Performance.
		Add 1.9.2	Payment for 400mm deep Root Barrier includes supply of all materials, labour, and equipment required to complete installations.
1.11	Substitutions	Add 1.11	.1 If it is impossible to obtain the particular plant material listed on the Landscape Drawing, the <i>Contractor</i> may be permitted to suggest substitutions with types and variations possessing the same characteristics. The <i>Contractor</i> must request any substitutions of trees in writing at least one (1) month and shrubs and groundcover at least one (1) month prior to planting. Substitutions must be approved by the <i>Contract Administrator</i> and the City.
1.12	Plant Material Supply and Search Area	Add 1.12	.1 Before substitutions of plant material are proposed, documented proof that materials are not available through search on the west coast of Canada and United States must be provided. Area of supply shall include, but not be limited to, all of Western North America.
1.13	Plant Material Identification	Add 1.13	.1 Plant materials that has been located by the <i>Contract Administrator</i> and the City and tagged for the project is to have the identification tags removed only after inspection and instruction by the <i>Contract Administrator</i> and the City after delivery to the <i>Place of Work</i> .
1.14	Plant Material Replacement	Add 1.14	.1 The <i>Contractor</i> shall remove from the <i>Place of Work</i> and immediately replace any plant material that has been determined by the <i>Contract Administrator</i> and the City to have died or failed to grow in a satisfactory manner during the guarantee or maintenance period. .2 The <i>Contractor</i> shall extend the guarantee on this replacement plant material for one (1) year from the date of replacement. .3 The <i>Contractor</i> shall continue such replacement and guarantee of plant material until the <i>Contract Administrator</i> and the City has determined that the <i>Conditions for Total Performance</i> have been met. .4 All required replacements shall be plants of the same size and species as specified on the plant list and shall be supplied and planted in accordance with the drawings, specifications and change orders thereto. .5 The cost of replacements resulting from theft, accidental damage, vandalism, carelessness, neglect on the part of others, shall be borne by the <i>Contractor</i> until the date of <i>Substantial Performance</i> .
2.0	PRODUCTS		
2.1	Plant Material	Delete 2.1 and replace with the following	.1 Plant Material Size .1 Overall plant spread to be measured when branches are in their natural position.

- .2 Height and spread dimensions refer to main body of plant and not from branch tip to branch tip.
- .2 Grade of plant material to be No. 1 grade or better.
- .3 Plant material obtained from areas with milder climatic conditions from those of the *Place of Work* is acceptable provided:
 - .1 Plant material is moved to the *Place of Work* prior to the breaking of buds at their original climatic zone.
 - .2 Plant material is heeled-in at a protected area until the climatic conditions are suitable for planting.
- .4 Plant materials shall have structurally sound, strong fibrous root system free of disease, insects, defects or injuries. All plants, typical of their species or variety, have a normal habit of growth and shall be first quality, sound, healthy, vigorous, well branched, and densely foliated, free of disease, insect pests, eggs or larvae.
- .5 Root Pruning at Source Nursery
 - .1 Plant material shall have been root pruned on a regular basis at the source nursery.
 - .2 Plant material shall be root pruned at least one growing season prior to delivery.
 - .3 Large trees shall be half root pruned during each of two successive growing seasons. The second root pruning shall have carried out a minimum of one growing season prior to delivery.
- .6 Shade, Ornamental and Evergreen Trees:
 - .1 Trees shall have straight trunks and a well-formed branch system which is characteristic of the species
 - .2 Trees shall exhibit clear signs of vigorous growth.
 - .3 Trees shall have good twig extension growth, branch spacing and trunk taper.
 - .4 Tree foliage shall be evenly distributed on upper 2/3 of the tree.
 - .5 Trees shall not have upright branches other than leaders.
 - .6 Trees shall have spreading branches with a single trunk and a single leader and, unless otherwise noted on plans or plant list.
 - .7 Tree trunks and branches shall not have any mechanical damage.
 - .8 Trees shall be in good health with no presence of insects or disease.
 - .9 Trees shall not have been 'headed back'.
- .10 Tree root balls shall be solid, kept moist at all times and/or protected from drying.
- .11 Trees shall not exhibit symptoms of root circling or girdling.
- .7 Container Grown Plant Material:
 - .1 Root ball to container relationship shall be of sufficient ratio to ensure room for healthy, vigorous root development.
 - .2 Plant material shall have been container grown for a minimum of one (1) growing season but not longer than two (2) growing seasons.
 - .3 The plant root systems that do not have the ability to "hold" growing medium when removed from the container will be rejected.

			.4 Root bound plant material will be rejected.
			.8 Balled and Burlapped Plant Material:
			.1 Coniferous and broadleafed evergreens over 2.4-meter-tall shall be dug with firm soil root ball.
			.2 Deciduous trees in excess of 3.0-meter height shall be dug with firm soil root ball.
			.3 Root ball diameter shall be a minimum of 230 mm (for each 25 mm caliper size.
			.4 Secure root-balls with burlap, heavy twine and rope.
			.5 Large tree root balls shall be double layer burlap wrapped. Burlap to be secured with drum laces made up of 10 mm (minimum) diameter rope.
			.9 Tree Spade Dug Plant Material
			.1 Plant material shall be dug with mechanized hydraulic spade or clamshell type digging equipment.
			.2 Root ball diameter shall be a minimum of 230 mm for each 25 mm caliper size.
			.3 Wire basket shall be lined with burlap. Root ball shall be laced and tied to wire basket with heavy rope.
			.4 Ensure trunk of tree is not damaged by wire basket, ties or rope.
2.2	Water	Delete 2.2.1 and replace with the following	Potable and free of minerals and impurities which are detrimental to plant growth.
2.3	Fertilizer	Add 2.3.2	Fertilizer shall be prolonged-release fertilizer tablets containing a minimum of 20% nitrogen, 10% phosphoric acid, and 5% potash (20-10-5) as per Approved Products List. Store in weatherproof storage space.
2.4	Mulch	Delete 2.4.1 and replace with the following	Composed mulch shall be 9 mm black/brown in colour with no cedar or redwood bark or wood material as per Approved Products List.
2.5	Stakes	Delete 2.5.1 and replace with the following	Stakes shall be pressure treated Hem/Fir, 75 mm dia. round, 2500 mm long. Stake fasteners shall be hot dipped galvanized or stainless steel.
2.8	Guying Wire	Delete 2.8.1 and replace with the following	Guying wire shall be direct burial or screw type disc guy anchor and guy system as per Approved Products List.
2.11	Anti-Desiccant	Delete 2.11.1 and replace with the following	Anti-Desiccant shall be wax-like emulsion, as per Approved Products List, that will provide a transpiration reducing film over the plant surface.
2.12	Flagging Tape	Delete 2.12.1 and replace with the following	Flagging tape shall be 30mm wide 'Red' PVC flagging tape as per Approved Products List.
2.13	Tree Trunk Protection	Add 2.13	.1 Tree trunk protections shall be extrusion mold process, polyethylene with UV protectors as per Approved Products List.
2.14	Burlap	Add 2.14	.1 Burlap shall be untreated, free from toxic contaminants and of sufficient strength to hold the rootball in a compact, stable mass that does not move relative to the main stem(s) of the tree or shrub.

2.15	Wire Baskets	Add 2.15	.1	Wire baskets shall be non-galvanized metal basket designed and manufactured for the purpose of tree moving. Basket shall be shaped to ensure that the root ball will allow a stable planting condition in accordance with standards noted.
2.16	Tree Ties	Add 2.16	.1	Tree ties shall be Flat woven polypropylene material. 20 mm wide, 544 Kg, break strength. extrusion mold process, polyethylene with UV protectors as per Approved Products List.
3.0	EXECUTION			
3.1	Pre-Planting Operations	Delete 3.1 and replace with the following	.1	Place stakes on site to identify location trees, shrubs and plant beds in accordance to the Landscape Plans.
			.2	<i>Contract Administrator</i> and the City to review all tree locations and plant bed layout prior to start of plant bed preparation and planting operation.
			.3	Anti-desiccants shall be applied only as directed by the <i>Contract Administrator</i> and the City. Application of anti-desiccant shall be in accordance with manufacturer's instructions.
			.4	Coordinate planting operations with other trades and project schedule.
			.5	All planting operations shall be done in a timely manner in accordance to the Planting Schedule.
			.6	Planting Schedule shall be updated as required by the <i>Contractor</i> to coincide with status of site and coordination with other trades. Provide the <i>Contract Administrator</i> and the City with updates to the schedule as required throughout the planting process.
3.2	Subgrade Preparation	Delete 3.2 and replace with the following	.1	The <i>Contractor</i> is responsible for confirming the location and extent of existing utilities prior to the start of all planting operations. All attempts should be made to ensure that utility services are maintained to all on and off site parties throughout the entire planting operation.
			2.	Tree Pits
			.1	Tree Pit Depth 900 mm minimum.
			.2	Width of tree pit shall be a minimum of 450 mm to 600 mm greater than diameter of the root ball.
			.3	Prior to the placement of growing medium scarify the sides and bottom of tree pits created with a tree spade to eliminate glazed surface.
			.3	Ensure tree pits dug in heavy or compacted soils exhibit the ability to drain freely by filling each tree pit with a minimum of 20 litres of water. Water should freely drain through subsoil within ten (10) minutes.
			.1	Notify <i>Contract Administrator</i> and the City if tree pits in any soil condition do not drain freely or if tree pit fills with ground water.
			.2	There shall be no standing water in the bottom of tree pit at time of planting.
			.4	Protect bottom of tree pit(s) against freezing.
			.5	Ensure tree pits and plant beds are kept well drained and free of contaminants and construction debris.

3.3 Planting

Delete 3.3 and replace
with the following

- .6 Planting Areas shall be excavated to the following depths:
 - .1 Shrub beds, perennials, ornamental grasses shall be 450 mm.
 - .2 Ground covers and annual flowers shall be 300 mm.
 - .3 Trees shall be 900 mm.
- .1 Planting operations shall be carried out under conditions that are conducive to healthy, vigorous growth of plant material.
- .2 Plant material shall be planted vertical, straight and plumb at locations staked in field and or noted on landscape plans.
- .3 Ensure orientation of plant material will give best appearance in relation to views from adjacent buildings, roads, walks or use areas.
- .4 Ensure planting depth of root ball is equal to the depth of root ball originally established in the nursery. The top of root ball shall be level with adjacent growing medium.
- .5 Ball and Burlap Plant Material: After plant has been lowered into plant bed or tree pit cut away all root ball ties from around trunk. Loosen burlap from around trunk and cut away minimum top 1/3 without disturbing root ball.
- .6 Container Grown Plant Material: Remove entire container (including biodegradable containers) without disturbing root ball. Score root ball vertically at six (6) locations evenly spaced around entire root ball to minimize girdling of roots.
- .7 Tree Spade Dug Root Balls: Cut wire basket around entire perimeter of root ball. Bend down top 2/3 of wire basket without disturbing root ball. Cut away all root ball ties from around trunk. Loosen burlap from around trunk and cut away minimum top 1/3 without disturbing root ball.
- .8 Backfill planting areas in 150 mm lifts to 2/3 of the depth tamping each lift of growing medium around root system to eliminate air voids. Do not use frozen or saturated growing medium for backfill operation.
- .9 Prior to placing remaining growing medium, thoroughly water planting areas, fill tree pits with water. Complete backfill operation only after water has completely penetrated into growing medium.
- .10 Build 100 mm high by 150 mm wide (4" high by 6" wide) saucer around outer edge of tree pit to assist with maintenance watering.
- .11 Tree Stabilization
 - .1 Guy or stake trees as directed by *Contract Administrator* and the City.
 - .2 Ensure guy pins and stakes are not placed through the root ball.
 - .3 Trees that have had root balls penetrated by guy pins and stakes will be rejected.
 - .4 Tie one (1) to two (2) flagging tape flags to all guy wires at a height that is clearly visible.
- .12 Place tree trunk protection around base of tree trunk as per manufacturer instructions.

			.1	Trees 100mm caliper or less shall have one protector. Do not interlock ends of tree protector.																																
			.2	Trees greater than 100mm caliper shall have a minimum of two interlocked protectors. Do not interlock outside ends.																																
			.13	Fertilize as per recommendations based on soil testing and place planting tablets at the following rates in prepared planting holes. Spread the tablets in each hole before planting.																																
				<table><tr><th></th><th><u>Plant/Container Size</u></th><th><u>Table Size</u></th><th><u>Tablets per Plant</u></th></tr><tr><td>.1</td><td>Trees</td><td>21g</td><td>1 per every 1.25mm of trunk caliper</td></tr><tr><td>.2</td><td>#15/ 45 cm tub</td><td>21g</td><td>3</td></tr><tr><td>.3</td><td>#7/ 35 cm tub</td><td>21g</td><td>3</td></tr><tr><td>.4</td><td>#5/ 30 cm pot</td><td>21g</td><td>2</td></tr><tr><td>.5</td><td>#3/ 27 cm pot</td><td>21g</td><td>2</td></tr><tr><td>.6</td><td>#2/ 21 cm pot</td><td>21g</td><td>1</td></tr><tr><td>.7</td><td>#1/ 15 cm pot</td><td>21g</td><td>1</td></tr></table>		<u>Plant/Container Size</u>	<u>Table Size</u>	<u>Tablets per Plant</u>	.1	Trees	21g	1 per every 1.25mm of trunk caliper	.2	#15/ 45 cm tub	21g	3	.3	#7/ 35 cm tub	21g	3	.4	#5/ 30 cm pot	21g	2	.5	#3/ 27 cm pot	21g	2	.6	#2/ 21 cm pot	21g	1	.7	#1/ 15 cm pot	21g	1
	<u>Plant/Container Size</u>	<u>Table Size</u>	<u>Tablets per Plant</u>																																	
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.3	#7/ 35 cm tub	21g	3																																	
.4	#5/ 30 cm pot	21g	2																																	
.5	#3/ 27 cm pot	21g	2																																	
.6	#2/ 21 cm pot	21g	1																																	
.7	#1/ 15 cm pot	21g	1																																	
3.4	Tree Support	Delete 3.4 and replace with the following	.1	Guy and stake all trees immediately after planting. Plant material not guyed or staked immediately shall be replaced if damaged.																																
			.2	Drive one (1) stake per tree vertically into the ground to a depth of 750 – 1000 mm, in such a manner so as not to injure the root or root ball.																																
			.3	Fasten tree to the crotch and midway between the crotch and the ground with galvanized wire protected by hose.																																
			.4	Trees to stand plumb upon completion of this operation.																																
3.6	Pruning	Delete 3.6 and replace with the following	.1	All pruning cuts shall be made with pruning saws or hook and blade pruning tools designed and manufactured for pruning operations. Anvil-type pruning tools shall not be used in any pruning operations.																																
			.2	Prune trees and shrubs after planting operation as directed by <i>Contract Administrator</i> and the City.																																
			.3	Prune each tree and shrub planted to preserve the natural character of the plant and in a manner appropriate to its particular requirement in the landscape design. Pruning in general shall be heavier on collected than on nursery-grown plants. Remove all soft wood sucker growth and all broken or badly bruised branches with a clean cut.																																
			.4	Employ clean sharp tools and make cuts without damaging the branch collar.																																
			.5	Do not damage the leader or lead branches. Plants which have had the main leader or lead branches damaged or removed will be rejected and replaced by the <i>Contractor</i> at no cost to the <i>Owner</i> .																																
			.6	Do not remove minor twig branches along the main structural branches.																																
3.7	Mulching	Delete 3.7 and replace with the following	1.	Prior to the application of composted mulch;																																
			.1	Manually remove all weeds and weed roots from root balls and adjacent growing medium.																																

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| | | | <ul style="list-style-type: none">.2 Remove all deleterious material and debris from planting areas..3 All fine grading shall be completed, the growing medium shall be loose and friable..4 The <i>Contract Administrator</i> and the City has reviewed of all planting areas. |
| | | | <ul style="list-style-type: none">.2 Spread composted mulch to minimum depth of 50 mm.<ul style="list-style-type: none">.1 Ensure finish composted mulch layer is a minimum of 12 mm below adjacent hard landscape surfaces and edges..2 Ensure mulch is kept 125 mm away from tree trunks and 75 mm away from stems of shrubs. |
| 3.8 | Clean-up | Delete 3.8 and replace with the following | <ul style="list-style-type: none">.1 Growing medium spilled onto pavement and growing medium stains on pavement or adjacent hard surfaces shall be cleaned up immediately..2 Remove from the site all pots, cans, surplus materials, and other debris resulting from planting operations..3 Ensure complete removal of planting tags, labels, strings, or other materials prior to substantial completion..4 Neatly dress and finish all planting areas and flush all walks and paved areas clean to the satisfaction of the Consultant and <i>Owner</i>. |
| 3.9 | Maintenance | Delete 3.9 and replace with the following | <ul style="list-style-type: none">.1 Maintenance of plants shall begin immediately after planting operation and shall continue in an uninterrupted fashion until all deficiencies noted in the <i>Substantial Performance</i> review have been rectified and the <i>Contract Administrator</i> and the City has provided to the <i>Contractor</i> written confirmation of the date of <i>Total Performance</i>..2 If for any reason the <i>Contractor</i> elects, on his own without the written consent of the <i>Contract Administrator</i> and the City to suspend maintenance operations, the <i>Contractor</i> shall provide the <i>Contract Administrator</i> and the City written notice of such action. Any damages or requirement for the replacement of plant material that as a result of the suspension of maintenance operations shall be the borne by the <i>Contractor</i> at no cost to the <i>Owner</i>..3 Maintenance of plant material includes but is not limited to watering at intervals sufficient to maintain healthy, vigorous growth, weeding of plant beds and tree pits, cultivating of growing medium, pruning, treatment of insects, molds, fungi or disease to the Level 2 "Groomed" as per the BCNLA Landscape Standard, Current Edition or as directed by consultant..4 Plant material shall be deep watered at least once per day when temperatures exceed 25 degrees Celsius..5 Water sufficiently to maintain soil moisture conditions for optimum establishment, growth and health of plant material without causing erosion..6 Supply equipment such as pumps, portable sprinklers systems, tank trucks, hose and sprinklers required for watering operations. Water trucks, if used for watering operations, must |

- service the site from adjacent roads until irrigation system is operational.
- .7 *Contractor* to ensure adequate moisture in plant root zone prior to winter freeze-up.
- .8 Reset all plants that have settled to plant depths approved by the *Contract Administrator* and the City prior to the placement of composted mulch.
- .9 Ensure tree guards, stakes, flagging tape on tree guy wire and tree ties are kept secure, taught and in proper repair.
- 3.10 Conditions for Total Performance** Delete 3.10 and and replace with the following
- .1 Conditions for *Total Performance*:
- .1 *Substantial Performance* shall have been granted by the *Contract Administrator* and the City and, Final Inspection at the end of the guarantee/warranty period.
- .2 All plant material is healthy; exhibiting signs of vigorous growth and meets the requirements of this specification.
- .3 Plant material installed less than ninety (90) days prior to frost will be accepted in following spring, thirty (30) days after start of growing season provided that final acceptance conditions are fulfilled.
- .4 Unless otherwise indicated in the *Contract Drawing* the original shape and form of the plant as reviewed by the *Contract Administrator* and the City has been maintained, leaders are in tact, there are no wounds or abrasions on trunks or branches.
- .5 Mulch has been maintained to specified depths.
- .6 All planting areas continue to be free draining with no signs of standing water.
- .7 All plant beds are completely free of weeds and noxious grasses.
- .2 The *Contractor* shall continue to maintain the work of this section until the *Contract Administrator* and the City provides written confirmation that *Total Performance* conditions have been met.

END OF SECTION

STORM SEWERS

1.6	Measurement and Payment	Delete 1.6.1 and replace with the following	Payment for storm sewer will be made at the unit price bid for storm sewer (regardless of depth) consistent with pipe materials, diameters and backfill requirements shown on the Contract Drawings and described under individual payment items in the Schedule of Quantities.
		Delete 1.6.2 and replace with the following	Payment for storm sewers includes location and exposure of existing utilities, trench excavation, dewatering and site isolation including management of the creek water flow system, disposal of all surplus excavated material, support of adjacent piping, supply and installation of all pipe, fittings and related materials, tie-ins to existing storm pipe, import backfill, cleaning and flushing, testing (if applicable), videoing and all other work and materials necessary to complete installation as shown on Contract Drawings and specified under this Section.
			Measurement for storm sewer will be made horizontally from headwall centerline to manhole centerline over surface work that has been completed.
		Delete 1.6.4 and replace with the following	Payment for cleanout for perforated pipe includes all applicable materials and work and components specified and/or shown on Standard Detail Drawing S6. Payment includes all applicable work described in 1.6.2.
		Delete 1.6.5 and replace with the following	Payment for catchbasin and lawn basin leads include all applicable materials and work described in 1.6.2
			Measurement for lawn basin leads will be made horizontally from the manhole to centreline of lawn basin for each pipe size installed with no regards to depth range.
2.0	PRODUCTS	Delete 1.6.6 and replace with the following	Payment for perforated drain pipe within retaining wall will be paid under Section 03 50 20 – Cast In Place Concrete
		Add 1.6.6.1	Payment for french drain includes all applicable materials and work described in 1.6.2 including excavation, 19mm clear crush drain rock, filter fabric surround, tying into existing storm sewers, and all other work incidental to the installation of french drain within retaining wall as shown on the Contract Drawing.
2.2	PVC Pipe, Mainline Smooth Wall	Delete 2.2.1 pipe size ranges and replace with the following	200 mm dia. – 375 mm dia. to ASTM D3034 450 mm dia. – 1,200 mm dia. to ASTM F679
2.3	PVC Pipe, Mainline Profile	Delete 2.3	
2.6	Service Connections	Delete 2.6.1 and replace with the following	Storm service connectons to be PVC DR 28 150 mm diameter minimum or as specified on <i>Contract Drawings</i> .
		Delete 2.6.8.1	
		Delete 2.6.8.2 and replace with the following	Connections to PVC pipe to be made with a performed wye fitting where mainline pipe is 300 mm diameter or smaller. For connections to PVC mainline pipe larger than 300 mm diameter an insertable tee for PVC pipe is permitted.

STORM SEWERS

		Add 2.6.8.3	Insertable tee fitting shall have a rubber collar which inserts into the mainline pipe to form a tight seal and shall have stainless steel band to secure the tee insert. The tee insert shall be a standard bell end with depth control lugs. The joint shall provide a minimum seal of 90 kPa on concrete and polyethylene pipe, and 190 kPa on PVC pipe.
2.9	Granular Pipe Bedding and Surround Material	Delete 2.9.3	Pipe bedding shall be 19 mm clear crushed rock or as approved by the <i>Contract Administrator</i> and the City.
3.0	EXECUTION		
3.8	Connections to Existing Mainline Pipe	Delete 3.8.3 and replace with the following	<p>For new connections to existing, smooth wall or profile, mainline sewers 300 mm and smaller, shall be made by removal of the section of the main and replacement with a preformed PVC wye fitting complete with stubs and double hub PVC couplings for PVC mains and approved shear band couplings for other mainline materials.</p> <p>For new connections to existing mainline greater than 300 mm, use of insertable tee will be permitted.</p>
3.10	Service Connection Installation	Delete 3.10.3 replace with the following	Inspection chambers shall be provided on all storm service connections as per Standard Detail Drawing S7. If inspection chamber is located in driveway, lane, or paved surface, Series 37 Brooks concrete box with lid shall be installed as per Standard Detail Drawing S9.
3.12	Inspection and Testing		The contractor shall video inspect completed storm sewers under 900 mm in diameter and all service connections following completion of the installation. The video inspection report shall be in a form specified by the Contract Administrator and the City. Copies of the video DVD and written report shall be forwarded to the Contract Administrator and the City. Refer to Section 33 01 30.1 and 33 01 30.1S CCTV Inspection of Pipelines.
3.16	Permanent Capping of Service Connections	Add 3.16.1	Permanent capping of existing storm sewer connections to be completed as per Coquitlam Standard Detail Drawing COQ-S18.
		Add 3.16.2	<p>A trenchless method of permanently capping a service may be required on an arterial road or on a road which has been paved within 5 years, as directed by the Manager.</p> <p>The trenchless technology used to cap the service must be approved by the Manager.</p>

END OF SECTION

1.0 GENERAL

1.1 Related Work

Add 1.1.6

Hot Mix Asphalt Concrete
Pavement Section 32 12 16

Add 1.1.7

Portland Cement Concrete
Paving Section 32 13 13

**1.5 Measurement and
Payment**

Delete 1.5.2 and
replace with the
following

Catchbasin and lawn basin installation will be defined as supplying and installing a new catch basin or lawn basin for each type specified and setting to the finished grade. Payment includes excavation, disposal of surplus excavated material, supply of all units, cast-in-place concrete, pipes, fittings and related materials together with all labour, materials and equipment required. Lead work is considered to be incidental to payment for work described in other sections.

Delete 1.5.3 and
replace with the
following

Adjustment of tops of existing units will be measured in units adjusted as defined below and paid for under their respective Items in the Schedule of Quantities.

No payment will be made under these items for cleaning Valve Boxes, Monument Boxes, Frames, Covers and Lids of Castings as part of the operation for asphaltic concrete paving.

No Payment will be made for Monument Boxes, Lawn Drains, Cleanouts and Inspection Chambers, these adjustments will be treated as incidental work.

The use of Steel/Metal Casting Risers Rings will not be accepted to adjust manholes or water valves to the final elevation (finish grade).

.1 Unit price for water valve box adjustment will include resetting of stand pipe and of the existing valve box and frame to finished grade and all other incidental work as required.

.2 Communication Box adjustment will be defined as adjusting a 5686 Service Box to finished grade including all materials, labour and incidentals required.

2.0 PRODUCTS

2.1 Materials

Add 2.1.7.3

Any frame and cover assembly creating a point load on the concrete riser rings will not be permitted.

Delete 2.1.12 and
replace with the
following

Catchbasin lids manufactured to ASTM C478M.

Delete 2.1.16.2

Delete 2.1.17

3.0 EXECUTION

**3.1 Excavation and
Backfill**

Add 3.1.2

For manholes, when base gravels are complete, excavate for grade rings and manhole frame assembly. Do not disturb the compacted road base beyond the excavation requirement.

3.3	Manhole Installation	Delete 3.3.12.2 and replace with the following	Allowable products are precast concrete risers and cast-in-place form system. Individual riser heights shall be 50mm, 75mm, or 100mm.
		Delete 3.3.12.5 and replace with the following	Proper layer of grout between the spacers, covering the entire surface of the rings, should be utilized.
		Delete 3.3.15 and replace with the following	Install drop structures as shown on the contract drawings to Coquitlam Standard Detail Drawing COQ-S4 and Standard Detail Drawing S3. Maximum allowable inside ramp shall be 250 mm invert to invert.
		Delete 3.3.17 and replace with the following	Ensure frames conform to design contour of pavement or existing surface. Manhole lids left raised in preparation for overlay paving shall have a rubberized protector ring or asphalt ramp. The use of riser rings for adjusting manhole frames will not be permitted.
3.5	Catchbasin Installation	Delete 3.5.1 and replace with the following	Install catchbasins as shown on Coquitlam Standard Detail Drawings COQ-S11A, COQ-S11B and Standard Detail Drawing S11, to general standards and installation procedures described under 3.3 of this Section.

END OF SECTION

1.0 GENERAL

- | | | |
|--------------------------------------|---|---|
| 1.3 Shop Drawings | Delete 1.3.4 and replace with the following | Shop drawings for pole structures, where required, to be sealed by a Professional Engineer registered in British Columbia. |
| 1.4 Electrical Energy Supply | Add 1.4.4 | The Electrical <i>Contractor</i> will process a letter of application to the City of Coquitlam for the Utility Company and attain all required permits. |
| 1.5 Contractor Qualifications | Add 1.5.3 | All on-site traffic signal installations shall be under the responsibility of a primary journeyman electrician with IMSA Level 2 Signal Certification and have successfully completed at least five (5) traffic signal system installations. This primary journeyman electrician is expected to have to be at the <i>Place of Work</i> and report work progress to City of Coquitlam's Traffic Operations staff, in addition to reporting to the <i>Contract Administrator</i> . |
| | Add 1.5.4 | <p><u>Fibre Optic Cable:</u></p> <p>.1 All fibre optic cable installations workmanship, material and/or installation practices and activity will be equal to or better than the standards established by the CAN/CSA T529-530-M90 Standards and the Canadian Electrical Code.</p> <p>.2 Those retained to complete the work must be authorized, trained and certified by the manufacturers they represent. They must have a minimum of two (2) years experience installing and testing multimode and single mode cables of all types as well as experience with LC and SC connectors.</p> <p>.3 Those retained to complete the work must have experience installing cabling for FDDI (Distribution System Data Interface) compliant 100 Mbit/sec, SONET, ATM, Token Ring or Ethernet networks using industry accepted systems and practices. Experience with leading manufactures fiber products and systems would be beneficial.</p> <p>.4 Those retained to complete the work must be prepared, trained and equipped to properly test the fibre cabling system, including the fibre transmission media and connectors. Each optical fibre of each section of cable will be tested using an "Optical Time Domain Reflectometer" (OTDR) and will meet the specifications before installation. After installation an "Optical Light-loss Testing Sets" (OLTS) will be mandatory to determine cable length, locate any fibre breaks or anomalies, measure attenuation of fibre's, connectors and assess fibre uniformity. Those retained to complete the work will provide a report showing all values measured during these tests.</p> |
| 1.6 Permits and Tests | Add 1.6.5 | <i>Contractor</i> shall provide the BC Safety Electrical Permit, and arrange all inspections with the City. The inspection entails, but not limited to, Coquitlam's "Intersection and Cabinet Start-up Checklist", which can be obtained from Coquitlam's Traffic Operations staff. |
| 1.8 Record Drawings | Add 1.8.2 | Final payment(s) will be withheld until record drawings are received. |
| 1.9 Measurement and Payment | Delete 1.9.2 and replace with the following | The traffic signal lump sum price includes all labour, equipment, and materials to complete the works as shown on the Contract Drawings and as specified in the Contract Documents. This shall consist of all permits and fees for electrical inspections, testing, other costs associated with electrical works undertaken by others, temporary and permanent asphalt restoration within conduit trench as described in the Contract Drawings and as described in these supplementary contract specifications. |

			The <i>installation</i> also includes pickup, delivery and installation of all materials supplied by the City, from the City's works yard, at 500 Mariner Way.
		Add 1.9.4	Payment for detector loop removal and reinstatement includes all labour, equipment and materials to complete the works as Shown on the Contract Drawings.
		Add 1.9.5	Payment by allowance for communication conduit relocation includes all labour, material and equipment to shift, or cut and re-splice the existing communication ducts along Austin Avenue as directed by the Contract Administrator. Payment includes coordination with Coquitlam's Telecom and Qnet Division. After hours' work will be required, in the event that cutting and re-splicing is to occur.
			Payment shall be made for the actual cost on Force Account basis as defined in GC 10.0.
2.0	PRODUCTS		
2.1	General	Delete 2.1.2 and replace with the following	All products supplied to be new, in accordance with <i>Contract Documents</i> . All products are to meet Canadian Electrical Code requirements and be certified by either CSA, UL®, or Intertek Testing Systems (Warnock Hersey) and be supplied with the certifier's label.
		Delete 2.1.3 and replace with the following	All products shall be in accordance with the City of Coquitlam's List of Approved Materials and Products List. Any products not listed with in the Approved List shall default to the current BCMOTI specification.
		Delete 2.1.5 and replace with the following	Equipment models listed within the City of Coquitlam's List of Approved Materials and Products shall be confirmed with the City immediately prior to their order to ensure that they are current. Cut-sheets, equipment make, model and serial number list to be provided to the City by the <i>Contractor</i> for each traffic signal location. Material supplied by City of Coquitlam and installed by <i>Contractor</i> , shall be shown in the <i>Contract Documents</i> .
2.2	Conduit	Add 2.2.1.3	All exposed metallic surfaces to be hot dip galvanized.
2.3	Trench marker Tape	Add 2.3.2	Detectable (manetic) market tape shall be used in all trenches containing interconnecton (communications) conduit.
2.5	Concrete Junction Boxes	Delete 2.5 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products. For Concrete Vaults: Refer to Coquitlam Standard Detail Drawing SS-E2.5.
2.8	Conductor Tags	Delete 2.8 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.10	Fuse and Fuse Holders	Delete 2.10 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.11	Service Panels	Add 2.11.5	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.16	Traffic and Pedestrian Signals	Delete 2.16.1 and replace with the following	Traffic signal heads to be yellow polycarbonate with 300 mm round signal indications, and conform to Section 601 Signal and Pedestrian Heads BCMOTI E&SMS V1. All primary and secondary signal heads shall have yellow aluminum backboards with 75 mm border of yellow prismatic retro-reflective sheeting (3M™ Scotchlite™ Diamond Grade™ VIP Reflective Sheeting Series 3990 or approved alternate).

TRAFFIC SIGNALS

		Delete 2.16.2 and replace with the following	Fire signal head assembly as per Coquitlam Standard Detail Drawing SS-E5.19.
		Add 2.16.3	Signal head backboards with plumbizer gaps or knock out sections will not be accepted for adjustable bracket signal head mounting method.
2.17	LED Signal Modules	Delete 2.17 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.19	Signal Mounting Hardware	Add 2.19.8	Primary signal head safety cable to be 3/32" galvanized steel aircraft cable.
		Add 2.19.9	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.20	Audible Signals	Delete 2.20 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.21	Pedestrian /Cyclist Pushbuttons	Delete 2.21 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.22	Luminaires	Add 2.22.6	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.29	Illuminated Crosswalk Signs	Delete 2.29 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products. Illuminated sign safety cable to be 3/32" galvanized steel aircraft cable.
3.0	EXECUTION		
3.1	General	Add 3.1.5	During the installation of the traffic signal system, maintain the existing traffic signal and/or signs as noted on the <i>Contract Drawing</i> . If temporary or permanent relocations of related traffic signal equipment or signs are required, such equipment shall be reinstated as required under the <i>Contract Documents</i> or as directed by the <i>Contract Administrator</i> .
3.3	Concrete Bases	Add 3.3.7	Concrete service bases detailed on Standard Detail Drawings CE1.3 and CE1.4, Type C1 and C3 service bases shall have five (5) conduits. See Coquitlam Standard Detail Drawing SS-E7.3.
		Add 3.3.8	Lifting cables on concrete controller bases shall be removed after base installation.
		Add 3.3.9	All concrete bases shall be pre-cast concrete only, unless noted on <i>Contract Drawing</i> or directed by the <i>Contract Administrator</i> .
3.4	Junction Boxes and Vaults	Delete 3.4.1 and replace with the following	Install junction boxes as shown on Standard Detail Drawings E2.2 to E2.4. Install vaults as shown on Coquitlam Standard Detail Drawing SS-E2.5.
		Add 3.4.5	Bell end fittings shall be installed in all conduits entering junction boxes or vaults.
		Add 3.4.6	Junction boxes requiring 3 or more sections must be approved by the City of Coquitlam's Traffic Operations staff.
		Add 3.4.7	All junction boxes shall be provided with RPVC bars to support electrical connections and fuse holders. The RPVC bars shall be

These Supplementary Contract Specifications must be read in conjunction with the Specifications contained in the Master Municipal Construction Documents, Volume II, Printed 2009 and the City of Coquitlam Supplementary Specifications and Detailed Drawings

TRAFFIC SIGNALS

			attached into the junction box side walls with the electrical connections/fuse holders tie-wrapped in place and installed in the up-right position.
3.5	Underground Conduit	Delete 3.5.2 and replace with the following	Minimum cover over conduits to be 600 mm in boulevard areas and 900 mm in roadway areas.
		Delete 3.5.3 and replace with the following	Place trench marker tape 300 mm above installed conduit in trench. Trench marker tape not required for conduits installed via trenchless technology.
		Delete 3.5.5 and replace with the following	Empty conduits shall have a No. 8 HB Yellow/Green Mk pull string and capped at both ends.
		Add 3.5.6	Conduit run shall contain no more than the equivalent of 4 – 90 degree bends.
		Add 3.5.7	Conduits shall be blown out with compressed air, from both ends if necessary, then swabbed out to remove stones, dirt, water and other material which may have entered during installation.
		Add 3.5.8	All conduits entering poles and cabinets shall be sealed with “Duct Seal”.
		Add 3.5.9	Conduit depth of bury to be recorded when a trenchless technology method is used.
		Add 3.5.10	Traffic signal communications conduit shall enter and leave junction boxes through bell end fittings in the horizontal position (no bends) and shall run straight through the junction box unless a change in alignment occurs, or as otherwise specified on the <i>Contract Drawing</i> .
		Add 3.5.11	Conduit shall not be bent in the field. Only factory bends will be accepted.
3.7	Traffic Signal and Pedestrian Head Mounting	Delete 3.7.1 and replace with the following	Install traffic signal and pedestrian signal heads as shown and Standard Detail Drawings E5.2 and E5.9 only. Banding straps shall be used for primary signal heads.
		Add 3.7.5	Primary traffic signal heads shall be safety cabled to the traffic signal pole arm using 3/32” galvanized steel aircraft cable looped through the traffic signal backboard and fastened with a rope clip.
3.8	Audible Signals	Delete 3.8.1 and replace with the following	Install audible signal in accordance with Coquitlam Standard Detail Drawing SS-E5.12.
3.10	Luminaires and Photocells	Add 3.10.4	NEMA wattage label shall be visible at the bottom of the luminaire on all fixtures.
3.13	Electrical Service Panels	Delete 3.13.1 and replace with the following	Mount electrical service panels in service base or on poles as shown on Standard Detail Drawings E7.2, E7.6 to E7.9, as well as Coquitlam Standard Detail Drawings SS-E7.3 to SS-E7.5.
3.14	Wiring	Delete 3.14.3 and replace with the following	With the exception of conductor spliced of detector loop wires to shield cables, make conductor splice in pole handholes. Make splices of detector loop wires to shielded cable in junction boxes.

TRAFFIC SIGNALS

		Delete 3.14.13 and replace with the following	Bond all signal heads and luminaires with No. 12 RW90 green conductor, and steel junction box lids with No. 8 RW90 green conductor.
		Add 3.14.14	Detector loop cable splices shall be soldered with rosin core solder (no acid core or acid flux) then cap with waterproof gel filled wire nut and tape with vinyl di-electric tape. Suspend and ty-wrap splices at top of junction box with open end of wire nut pointing down. Loop shield drain conductor shall cut and be isolated from the system ground. See Coquitlam Standard Detail Drawing SS-E8.4.
3.16	Traffic Controller	Add 3.16.8	Silicone sealant shall be applied to both sides of the rubber gasket, which is placed between the traffic signal cabinet and the concrete base to ensure a weather tight seal.
		Add 3.16.9	Traffic cabinet interior shall be kept dry during inclement weather.
3.17	Detector Loops	Delete 3.17.1 and replace with the following	Detector loops are to be round type or as specified on the <i>Contract Drawing</i> and approved by the City of Coquitlam's Traffic Operations staff. Install in accordance with Standard Detail Drawings E8.1, E8.3 and Coquitlam Standard Detail Drawings SS-E8.2 and SS-E8.4.
		Add 3.17.3	Loops in adjacent lanes shall be wound in opposite directions, i.e.; clockwise, counter clockwise, clockwise, etc.
		Add 3.17.4	Detector loops should be installed in the base lift of asphalt, unless otherwise specified by the Contract Administrator.
3.19	Advance Warning Signs	Add 3.19.2	Contrary to Standard Detail Drawing E10.3, Item A shall be a 300 mm signal head section with LED display.
		Add 3.19.3	Advance warning signs shall have yellow prismatic retro-reflective sheeting (3M™ Scotchlite™ Diamond Grade™ VIP Reflective Sheeting Series 3990 or approved alternate).
3.20	Grounding & Bonding	Add 3.20.5	Ground plates and grounding conductors are to have a minimum of 5 meters clearance between them and other utility grounding.
		Add 3.20.6	Grounding rod or plate electrodes shall not be installed inside the traffic signal cabinet base.
		Add 3.20.7	Remove all paint around bonding studs on inside of pole to expose the galvanized or metal surface prior to bonding equipment.
3.22	Pole Finish Application	Delete 3.22 and replace with the following	<p>.1 Prior to producing a powder finish product the supplier must provide a Certificate of Compliance indicating that they have met or exceeded the following specifications. The supplier will name their independent testing agency and this information will be submitted to the City for their files.</p> <p>.2 The application process will be as follows:</p> <p>.1 The pole or product will be hot dip galvanized.</p> <p>.2 Powder will only be applied after the product is completely fabricated. No welding or bending will take place after the powder is applied.</p> <p>.3 The pole or product will be thoroughly cleaned by brush blasting in accordance with SSPC-SP7. The brush blast will maintain a minimum profile of 0.5 mils. If brush blasting is done off site then the product will be covered and shielded from any dirt or moisture during its return to the powder applicators facility. Where poles or products are not kept</p>

clean and dry or have any signs of flash rust they will be returned for further brush blasting.

- .4 Once at the applicators facility the pole or product will be thoroughly cleaned and dried with an air gun. All hand marks or grease spots will be cleaned with a mild solvent.
 - .5 After brush blasting the entire pole or product will be pre-baked in an oven at 220 degrees C for at least 30 minutes to 1 hour, depending on steel thickness. The pre-baking must be done to prevent out-gassing during the curing cycle.
 - .6 The base powder coat will then be applied electrostatically while the pole or product is cooling from the 220 degrees C pre-bake period to allow the powder to melt and fuse to the surface. The base coat will be a minimum of 3 mils in thickness.
 - .7 After base coat is applied and set the topcoat will be applied to a thickness of 3 to 5 mils. The pole or product will be returned to the oven and heated to 190 to 220 degrees C (temperature will not exceed pre-bake) for a minimum of 25 minutes, depending on steel thickness. Thicker product material may require longer bake cycles to fully cure. Upon removal of the pole or product from the oven it will be left to rest until the pole or product is cool enough to the touch.
 - .8 Once the topcoat has cured and the poles or product cooled, they will then be individually wrapped (min 4" overlapping method) with 1/8" foam wrap over the entire pole or product. The poles or product will be bundled together and separated with suitable wood dunnage to avoid contact between the poles, product or other bundles. All bundles themselves will be fully wrapped with foam and with stretch-wrap as noted above. The poles or products will be handled and shipped with great care to prevent damage; damaged product will be cause for rejection of the item(s).
- .3 Testing process will be as follows:
- .1 Each run of product in an oven will have at least one sample tested for:
 - .2 Adhesion – The finished powder surface will have minimum pull-off strength exceeding 1000 PSI as tested in accordance with ASTM D4541.
 - .3 Quality – The finished powder surface will be free from any holidays (skips or misses) as tested in accordance with ASTM D4541. The product will also be free from wrinkles, orange peel, cracking, pinholes, fish eyes, blisters, etc by visual inspection.
 - .4 Color – The color will be verified to be within 3 DE of specialized color.
 - .5 An independent firm such as CanSpec Testing who are qualified to test powder finish will do the testing at the supplier's expense. The result of tests must accompany the Certificate of Compliance and will be made available to the City or their representative upon request. A supplier who fails to test product as noted above will have their product rejected until the testing is completed and the product deemed acceptable by the testing agency.

			<p>.6 Where the tested product fails on a given production run then a minimum of 30 % of the entire production run will be tested. If no other failures are found then the individual failed product will be stripped, reapplied and re-tested until it passes. If any of the 30% of product tested fails then the entire order will be stripped, reapplied and retested until it passes.</p> <p>.4 Field repairs will be undertaken as required to fix any scratches or imperfections in the final finish. Field repairs will be done as follows:</p> <p>.1 Feather the damaged area with sandpaper.</p> <p>.2 Clean area with solvent.</p> <p>.3 Let dry.</p> <p>.4 Neatly brush on an application of Aliphatic Urethane Acrylic Semi-Gloss High Build applied at 2-4 mils DFT over the entire sanded and damaged area. The ambient conditions will be dry and over 10 degrees C when the paint is applied.</p> <p>.5 The pole supplier will warranty the integrity of the surface for a minimum of 1 year from the date of installation. The warranty will include all labour and materials required to provide replacement product if required. The powder finish will be the responsibility of the pole supplier. The warranty will apply to fading, blistering, cracking or chipping of the surface.</p>
3.26	Uninterruptable Power Supply	Add 3.26.2	Uninterruptable power supply/cabinet to be installed on the side of the traffic controller cabinet as detailed on the <i>Contract Drawing</i> and Coquitlam Standard Detail Drawing SS-E7.24.
3.28	Illuminated Street Name Signs	Add 3.28.1	Install illuminated street name signs as detailed on the <i>Contract Drawing</i> and Coquitlam Standard Detail Drawing SS-E5.18
		Add 3.28.2	Illuminated street name signs shall be safety cabled to the traffic signal pole arm using 3/32" galvanized steel aircraft cable.
3.29	Emergency Vehicle Pre-emption	Add 3.29.1	Emergency vehicle pre-emption system to be installed as detailed on the <i>Contract Drawing</i> and Coquitlam Standard Detail Drawing SS-E5.16.
		Add 3.29.2	Cable shall be continuous with a minimum of 2m of cable slack to be provided at each end, with no splices. Cabinet termination to be completed by City.
3.30	PTZ/CCTV Cameras	Add 3.30.1	PTZ/CCTV cameras to be installed as detailed on the <i>Contract Drawing</i> . Contact the City of Coquitlam's Traffic Operations staff prior to installation.
		Add 3.30.2	Cable shall be continuous with a minimum of 2m of cable slack to be provided at each end, with no splices. Cabinet termination to be completed by City.
3.31	Radio Communications Equipment	Add 3.31.1	Radio communications equipment to be installed as detailed on the <i>Contract Drawing</i> . Contact the City of Coquitlam's Traffic Operations staff prior to installation.
		Add 3.31.2	Cable shall be continuous with a minimum of 2m of cable slack to be provided at each end, and with no splices. Cabinet termination to be completed by City.

TRAFFIC SIGNALS

3.32	Owner Supplied Materials	Add 3.32.1	Those retained to complete the work must notify the City in writing (seven) 7 days prior to the time materials are required.
		Add 3.32.2	Unless otherwise noted, those retained to complete the work will make all necessary arrangements and pay all costs for the collection of the materials and for delivery to the <i>Place of Work</i> . They will assume responsibility for materials at the time they are picked up.
		Add 3.32.3	<p>Owner supplied materials generally consist of the following:</p> <ul style="list-style-type: none"> .1 Traffic controller equipment and cabinet. .2 Uninterruptable power supply equipment and cabinet. .3 Emergency pre-emption equipment. <p>The exact list of materials supplied by the Owner to be confirmed with the City of Coquitlam Traffic Operations staff and <i>Contract Administrator</i>. In the case of private development projects requiring City supplied materials, the cost for supply and installation of these materials will be borne by the Developer.</p>
3.33	Fibre Optic Cable	Add 3.33	<ul style="list-style-type: none"> .1 Fibre optic cables will be terminated to a twelve (12) port LC coupler panel. .2 When installing Fibre Optic Communications Conduit, Fibre optic warning tape (150 mm wide orange plastic tape labelled "WARNING FIBRE OPTIC COMMUNICATIONS CABLE") and Detectable (Magnetic) marker tape is to be placed over all conduits containing fibre optic cable. .3 During installation of new boxes or with all existing boxes ensure that they have been cleared of any soil, sand or gravel and other materials that have accumulated in the base of the junction box. Ensure that all empty conduits have a proper RPVC coupling and cap inserted (friction fit - DO NOT GLUE) into each duct. Once the conduit is populated, replace cap with bell coupling and glue in place. .4 All communication conduits will be flushed with water and dried with compressed air. This process will be followed by pulling through a suitable size Blowing Mouse, a clean soft cloth and new No. 8 HB Yellow/Green Mk pull string .5 Perform a visual inspection of the proposed cable route and be aware of any potential problem areas. Locations in which cables will be terminated must be inspected and plans made for hardware and cable slack storage. Space and access for termination of the cable should be considered prior to starting the job. Develop a cable placement plan based upon the cable route survey and your available equipment and personnel resources. Submit a plan to the City for acceptance prior to starting work. .6 Be aware that any damage due to excessive pulling, bending, or crushing, may alter the cable's transmission characteristics to the extent that the cable section will have to be replaced at the Project's expense. .7 Fibre optic cables will be installed in continuous runs in conduit between the traffic signal controller cabinets (no splices are allowed).

TRAFFIC SIGNALS

- .8 DO NOT EXCEED THE MINIMUM BEND RADIUS OF THE FIBRE. During installation do not exceed the minimum bend radius as specified by the manufacture.
- .9 DO NOT IMPROPERLY PULL OR EXCEED THE CABLE'S RATED PULLING TENSION as specified by the cable manufacturer. Excess pulling may not actually break the fibre, but it can cause the fibre attenuation to increase so that the installed system may not operate within the specified requirements.
- .10 DO NOT EXCEED THE VERTICAL RISE SPECIFICATION as specified by the cable manufacturer unless intermediate tension relief is used. Secure the cable to new or existing supports wherever possible.
- .11 Take precautions to protect reeled and unreeled cable from any source of damage, whether attended or unattended. Be particularly careful with pre-connected sections of cable produced to meet specific length requirements as any damage to the cable may require replacement of the entire section.
- .12 If the cable must be unreeled during installation, the "figure-eight" configuration should be used to prevent kinking or twisting. Do not coil the cable in a continuous direction except for lengths of 30 meters or less. The preferred size of the "figure-eight" is about 4.5 meters in length, with each loop about 1.5 meters to 2.4 meters in diameter.
- .13 If a cable puller is used, ensure that the recommended pulling tension of the cable is not exceeded. Do not pull through junction boxes, especially 90-degree conduit fittings, unless precautions are taken to maintain the minimum bend radius.
- .14 When installing cable in conduits, ensure the conduit does not exceed the minimum bend radius. Avoid pull boxes unless the maximum bend radius can be maintained. In controller cabinets, fibre optic cables will be tied together with ty-wraps. Each cable will be labelled within 10 cm of the terminated ends with a tag and text stating the street intersection of the opposite cable end. Cables will be tagged in the controller cabinet and all other access points with "CAUTION, FIBRE OPTIC CABLE" tags. Leave enough cable slack at termination points to allow the cable to be routed through the termination hardware to a polishing/splicing table, plus a minimum of 3 meters additional slack. Cable slack will be coiled and secured with Velcro ties for breakaway protection. Cable to termination panel will be secured to cabinet with ty-wraps
- .15 If cable lubricants are necessary, ensure that they are compatible with the cable's outer sheath. Refer to the lubricant specification sheet to ensure compatibility. In all cases avoid the use of detergent-based lubricants, as these types of lubricants promote stress cracks.
- .16 Excess cable inside pull boxes will be coiled and mechanically secured in place with Velcro straps such that the minimum bend radius is not exceeded and the cable is suspended above the pull box. The Velcro straps are to provide 'breakaway' protection in the event of an accidental dig-up between pull boxes.
- .17 Adhesive warning labels 3M – 5016 – FO type or accepted alternate will be affixed to each fibre optic cable in each access

point. Access points include pull boxes and traffic signal controller cabinets. Decal strip holders, 3M – 5012 or accepted alternate, will be used and will be secured in place using cable ties. Warning labels will be oriented so they are visible and are not blocked by other cables or equipment.

- .18 After installation, each segment of each fibre will be tested using an Optical Time Domain Reflectometer (OTDR) and power meter equipment. Testing will be done in each direction on each fibre and at both 1310nm and 1550nm wavelengths. Launch cable will be used as per the OTDR manufacturer's specifications. Those retained to complete the work will provide a report detailing the results of each test including OTDR test results in graphical format, cable length, any fibre breaks or anomalies, attenuation of fibre's, connectors and fibre uniformity.
- .19 Final testing and inspection of the cable installation will be conducted with the City on-site.

END OF SECTION

Appendix A - Traffic Management Detail Specifications

1.0 GENERAL		.1 This Traffic Management detail specification refers to the Contractor's specific plans to identify project traffic risks affecting the <i>Work</i> , provide Traffic Control Plans, and to implement the traffic control for the safe passage of vehicles and pedestrian through the work zone.
1.1 Related Works		.1 Traffic Regulation MMCD Section 01 55 00S.
1.2 References		.1 WorkSafe BC, Occupational Health and Safety (OHS) Regulation, Section 18 – Traffic Control. .2 B.C. Ministry of Transportation (MOT) Traffic Control Manual for Work on Roadways.
1.3 Project Requirements		.1 Hours of Work and Traffic Restrictions for this project are identified in Appendix 1 of this document. .2 A Road and Sidewalk Closure Permit is required by Coquitlam for all work affecting traffic flow related to construction. A permit is required for each specific construction interference with traffic flow. The Road and Sidewalk Closure Permit Request form is attached as Appendix 2 to this document. A digital copy of the Road and Sidewalk Closure Permit form can be obtained for use during the contract from the City's website at www.coquitlam.ca/closure . .3 A Road and Sidewalk Closure Permit form application must be submitted to City's Traffic Operation Division 5 working days prior to start of work. Road and Sidewalk Closure Permits will be valid for a maximum period of one (1) week and, if still necessary, re-submittal of a Road and Sidewalk Closure Request is required.
1.4 Measurement and Payment		.1 For this Contract, payment for all work performed under this section, unless included in the Schedule of Quantities and Prices shall be treated as incidental work, including a Traffic Management Plan (TMP), Traffic Control Persons (TMP), traffic markings & all temporary traffic signs, devices as required for traffic & pedestrian safety; and all other items described in the Section 01 55 00S.
2.0 PRODUCTS		
2.1 Traffic Management Plan		.1 The Contractor is required to assign a Traffic Manager for the Contract with the responsibility of preparing the Traffic Management Plan and the Traffic Control Plans, as well as the responsibility for continuing implementation of traffic control for the Work.

- .2 The Traffic Management Plan (TMP) will consist of the following components:
 - .1 Identification of risks to traffic during the Work
 - .2 Traffic Control Plans for individual stages of the construction
 - .3 Incident Management Plan for the response to an unplanned event and recording of incident information.
 - .3 Submission of the TMP is to be made to the *Contract Administrator* within five (5) days of the *Notice of Award* of the *Contract*, and must be approved by the *Contract Administrator* prior to start of the *Work*.
 - .4 Review of the TMP will be performed by the Contract Administrator. Comments for revisions to the TMP will be returned to the *Traffic Manager* for implementations.
 - .5 The Contractor shall comply with all the requirements of applicable laws, rules, regulations, codes and orders of the municipal and other appropriate authorities concerned with work on streets or highways and shall post proper notices and/or signals, and provide necessary barriers, guards, lights, flagmen or watchmen as may be necessary for proper maintenance of traffic and protection of persons and property from injury or damage. All costs involved in respect to the above requirements will be deemed to be included in the Contract Price.
 - .6 The Contractor shall give due notice to local police and fire departments prior to beginning construction and shall comply in all respects with their requirements.
 - .7 The Contractor, during the progress of the work, shall make adequate provision to accommodate the normal traffic along streets and highways immediately adjacent to or crossing the work so as to cause the minimum of inconvenience to the general public.
 - .8 The Contractor is required to maintain local traffic and driveway access during all stages of construction.
 - .9 Where existing streets or roads are not available as detours, all traffic shall be permitted to pass through the work with as little inconvenience and delay as possible unless otherwise provided or authorized by the Contract Administrator. If half the street only is under improvement, the other half shall be conditioned and maintained as detour.
-
- | | |
|---------------------------------------|--|
| 2.2 Incident Management and Reporting | .1 The Contractor shall facilitate incident response vehicles and staff and move traffic safely and expeditiously through or around an |
|---------------------------------------|--|

incident on site and provide assistance to emergency response personnel as required. An incident includes, but is not limited to, motor vehicle accidents, emergency road repairs, disabled vehicles, and debris on the road. The immediate response to an emergency shall by necessity make use of available devices and equipment.

- .2 If an incident occurs on site, the Contractor will be required to submit a report to the Contract Administrator documenting details of the incident including event, location, date, time, action taken, duration and restoration of site.

2.3 Traffic Control Plans

- .1 The Contractor shall designate a qualified Traffic Control Supervisor for the works, per the requirements of WCB regulations Section 18.

The designated Traffic Control Supervisor may be the same individual that is designated as the Traffic Manager, or may be a separate individual qualified for the responsibilities of this function.

- .2 The Contractor shall prepare weekly the anticipated traffic control activities, locations, and durations for the upcoming week.
- .3 Permissible delays shall only be considered outside Peak Hours. Permissible delays are categorized as follows:
 - a) Minor Delays - Less than two (2) minutes in duration; for occasional interruption due to construction activities. These delays shall be coordinated with available breaks in the traffic flow.
 - b) Major Delays - Maximum five (5) minutes in duration; for occasional interruption of traffic for construction activities if traffic volumes permit. These delays shall be coordinated with available breaks in the traffic flow.
- .4 The Contractor is responsible for ensuring that the flow of traffic is unimpeded by construction-related activities.

3.0 EXECUTION

3.1 Traffic Control Plan

- .1 A copy of the approved current Traffic Plan must be held on site by both the Site Superintendent as well as the person/company responsible for the traffic control implementation.
- .2 Failure to produce a valid approved Traffic Plan on site, or having work not follow the Traffic Control Plan will result in immediate shut-down of the work. The Contractor will be required to safely restore facility conditions to allow traffic flow at their expense. The Contractor must take all steps to acquire an approved Traffic

		<p>Control Plan before work can re-start on site. No claim will be accepted by the Owner for costs associated with this work shut-down.</p>
3.2	Road and Sidewalk Closure Permits	<p>.1 The Contractor must have, on-site, a copy of an approved Road and Sidewalk Closure Permit valid for the work being done. Failure to produce a valid Road and Sidewalk Closure Permit on-site will result in shut-down of the work. Failure to comply on what is stated on the approved permit will result in shut-down of the work. The Contractor will be required to safely restore facility conditions to allow traffic flow at their expense. The Contractor must take all steps to acquire a Road and Sidewalk Closure Permit before work can re-start on site. No claim will be accepted by the Owner for costs associated with this work shut-down.</p>
3.3	Traffic Control Personnel & Equipment	<p>.1 The Contractor shall supply all necessary traffic control devices required to perform traffic control services for the project. Signs and traffic control devices not applying to existing conditions shall be removed. Where operations are carried out in stages, only those traffic control devices that apply to the current stage are to be left in place.</p> <p>.2 There must be sufficient Traffic Control Persons (TCPs) on site to appropriately and safely direct traffic in all sections of the Work.</p>
3.4	Signage	<p>.1 Supply, installation, maintenance and removal of all works-related signs shall be the responsibility of the Contractor. The location and type of each sign shall be indicated on the approved Traffic Control Plan, for each stage of the works.</p> <p>Traffic control signs and devices must be positioned and used as specified in the Traffic Control Plan and signs and devices must be located so as to allow traffic to move by or through the work area in a controlled manner and, if necessary, to come to a controlled stop with due regard for the prevailing weather and road conditions.</p> <p>Signs shall be checked daily for legibility, damage, suitability and location. Signs and delineators shall be cleaned as frequently as necessary to ensure full legibility and reflectance.</p>
3.5	Detours	<p>.1 Any proposed detours must be approved by the Contract Administrator and conducted in accordance with the approved Traffic Plan and the Traffic Control Manual for Work on Roadways.</p>
3.6	Abrupt Changes in Surface Elevations	<p>.1 The Contractor shall minimize any abrupt changes in roadway elevation left exposed to traffic during both working and non-working hours.</p>

A wedge of asphalt must be used as a transition to vertical differences in travelled areas and have a slope of 4:1 or less.

- 3.7 Cyclist and Pedestrian Access .1 The Contractor shall make provision for pedestrians, wheel chairs and bicycles to have safe access across the work zone at all times. If this cannot be readily accommodated, then acceptable detours and appropriate signs shall be provided.

- 3.8 Temporary Pavement Markings .1 The Contractor shall be responsible for the application and removal of all temporary pavement markings and reflective devices.

All temporary markings must be removed after installation of permanent markings.

4.0 CONSTRUCTION OPERATIONS

- 4.1 Work Stoppage due to Traffic .1 The City will not control or direct traffic control activities of the Contractor, but may require an immediate stop to any work where, in the sole opinion of the Contract Administrator, the provided traffic management plan is ineffective or creating unreasonable delays.

- 4.2 Construction Activity and Signage .1 The Contractor will be responsible to place other construction information signs as required to inform the public of construction activities, and ensure safe travel through the work site.

- 4.3 Changeable Message Sign (CMS) The following locations will require Changeable Message Signs (CMS) for the duration of the project:
1. Westbound on Austin Avenue
 2. Eastbound on Austin Avenue
- Exact locations to be discussed at the pre-construction meeting. These signs are required to be in service at least **5 normal work days prior to construction start** to provide advance warning to motorists. CMS must be able to handle minimum of 3 lines per page/screen.

- 4.5 Construction Zone Information Signs .1 The Contractor is required to provide, one week prior to start of work and for the duration of the Contract, stationary signs to inform traffic of existing and anticipated conditions at the following locations:

Guilby Street:

- Northbound near Austin Avenue

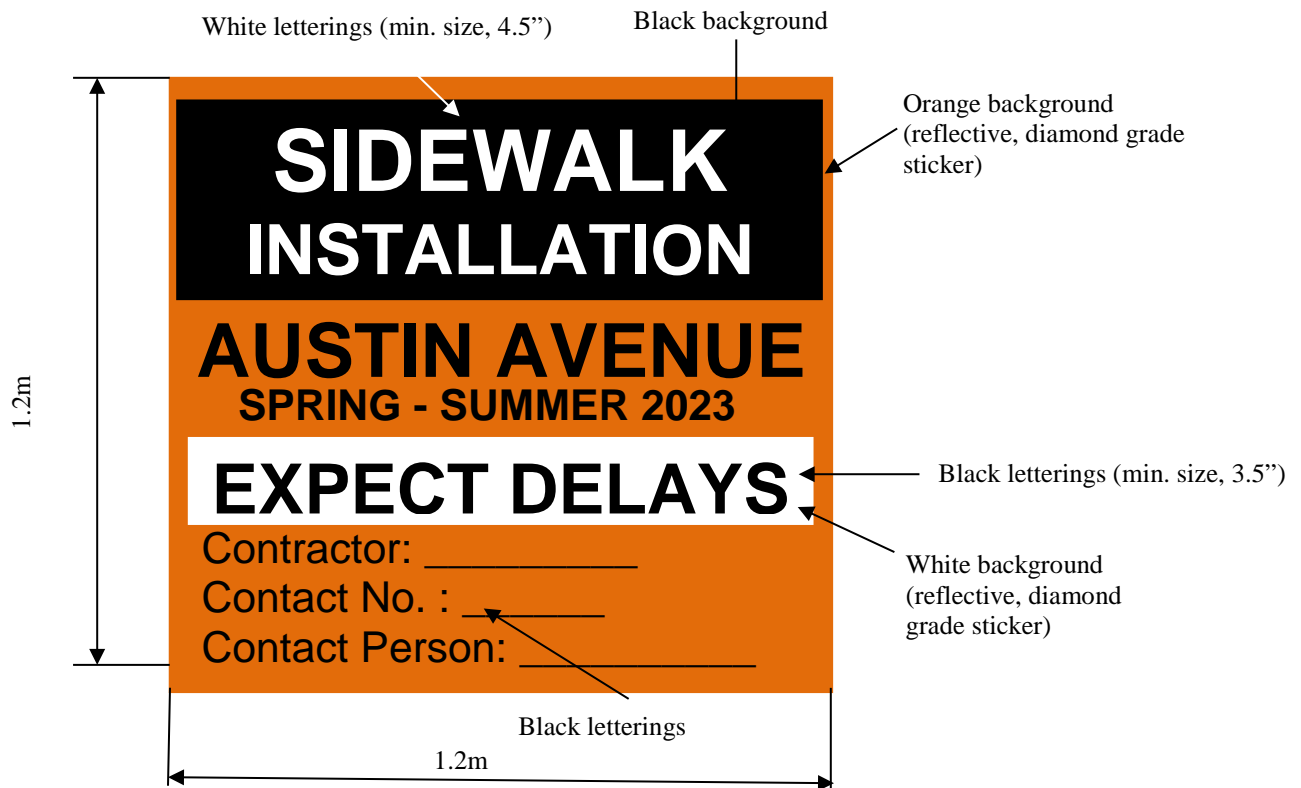
Walker Street:

- Northbound near Austin Avenue

Note: Exact locations to be determined on site by Contract Administrator.

Ensure that signs and locations are addressed in the Traffic Management Plan. All signs are to be removed at the end of the construction period.

Construction Zone Information Signs to follow specifications below:



Example Changeable Message Sign:



APPENDIX 1

CONTRACT HOURS OF WORK and TRAFFIC RESTRICTIONS

1.0	GENERAL	
1.1	Contract Number	77103
1.2	Contract Name	Austin Avenue Improvements (Walker St – Brookmere Ave MUP)
1.3	Contract Limits	Austin Avenue (Walker Street – Guilby Street)
2.0	ROAD SECTION	
2.1	Austin Avenue	<p>.1 Minimum of Single Lane Traffic in each direction must be accommodated at all times during construction, unless otherwise authorized by the Contract Administrator or defined by time of day lane closure restrictions.</p> <p>Total Road Closure for Austin Avenue will not be permitted</p> <p>.2 Lane closures for eastbound and westbound lanes are restricted to the following hours to accommodate rush hour traffic flows:</p> <ul style="list-style-type: none">• Westbound lanes on Austin Ave from 9:00 AM start time to 7:00 PM.• Eastbound lanes on Austin Ave from 7:00 AM start time to 3:00 PM.
3.0	HOURS OF WORK	
3.1	Allowable Hours of Work	<p>.1 Unless there are other contract restrictions for work times, work can be performed during the following weekday hours: 7:00 AM start time to 7:00 PM</p>
		<p>.2 Work is allowable on Saturdays but is restricted to a 9:00 AM start time to 5:00 PM</p>
		<p>.3 No work is allowed on Sundays or statutory holidays without specific permission arranged through the Contract Administrator.</p>
4.0	OPERATIONS	
4.1	Business and Residential Access	<p>.1 Ensure that Traffic Management Plan accommodates businesses and residences during construction activities.</p> <p>Business property access at the Vancouver Golf Course must be accommodated in the work operations.</p>
4.2	Good Neighbour Practice	<p>.1 Contractor is responsible to find alternative parking accommodation to minimize any inconvenience to residents.</p>

APPENDIX 2



City of Coquitlam
Road and Sidewalk Closure Permit Request

Traffic Operations Division
3000 Guildford Way, Coquitlam BC V3B 7N2
Phone: 604-927-6250 Fax: 604-927-6255
Email: trafficoperations@coquitlam.ca

Submit to the Traffic Operations Division a minimum of 5 business days prior to the intended closure date.

Permit Fee: ~~\$75.00 (Effective February 1, 2019)~~

Payment Methods – After review, and if approved, payment options will be emailed to the applicant.

Application Date: _____

City Project Number (if applicable): **77103**

Contact Information

Company Name: _____
Applicant Name: _____
Name of Contractor doing work for Company/Applicant: _____
Phone: _____ Fax: _____
24 Hour Emergency Phone: _____ Email: _____

Location, date and time, and traffic control plan information

I request approval to close (check all that apply): Direction: ☐ Northbound ☐ Southbound ☐ Eastbound ☐ Westbound

☐ Curb/Outside Lane ☐ Centre/Inside Lane ☐ Right Turn Lane ☐ Left Turn Lane ☐ Cycling Lane ☐ Sidewalk

☐ Single Lane Alternating Traffic ☐ Full Closure

Road/Street Name: _____

Location Description: _____

Date & Time Information: Dates: _____

Starting

Ending

Hours: _____

Starting

Ending

Purpose: _____

Will this closure disrupt: Bus Routes or Stops? ☐ Yes ☐ No If yes, the Applicant will need to contact Coast Mountain Bus Company regarding disruptions.

Will this closure disrupt: Garbage/Recycling Routes or Pick Up? ☐ Yes ☐ No If yes, the Applicant will need to assist the contractor and/or contact the City's Environmental Services Group. www.coquitlam.ca/trashtalk

Traffic Control Plan*:

(a) Traffic Management Manual for Work on Roadways Figure Number _____, or
(b) A Traffic Control Plan (*attach separately*) indicating signage, taper lengths, direction of traffic, work area, and north arrow

Traffic control persons (flag persons) on duty? ☐ Yes ☐ No If yes, specify how many: _____

** Important Notice: All operations within the road right-of-way must comply with Worksafe BC regulations and BC Ministry of Transportation standards for work on roadways.*

Application Checklist

- ☐ Permit Fee
- ☐ Prime Contractor Designation Letter
- ☐ City of Coquitlam Certificate of Insurance
- ☐ Traffic Control Plan or Traffic Management Manual for Work on Roadways Figure Number _____
- ☐ Coast Mountain Bus Company (Phone: 778-593-5774 | Email: special.events@coastmountainbus.com) contacted regarding impact to bus routes and bus stops
- ☐ City of Coquitlam Environmental Services Group (Phone: 604-927-3500 | Email: wastereduction@coquitlam.ca) contacted regarding impact to garbage/recycling routes and pick up

I HEREBY AGREE to the terms stipulated herein and further agree to indemnify and save harmless the City against any and all claims, actions, or expenses whatsoever or by whomsoever brought against the City by the reason of the City granting us this Road and Sidewalk Closure Permit. I further agree to accept responsibility to ensure proper situation control and street sweeping for the duration of the road or sidewalk obstruction.

Date

 _____
Applicant Signature

Office Use Only PERMIT STATUS

- | | | |
|---|--|--|
| <input type="checkbox"/> Permit Fee | <input type="checkbox"/> Prime Contractor Letter | <input type="checkbox"/> Certificate of Insurance |
| <input type="checkbox"/> Traffic Control Plan | <input type="checkbox"/> Impact to bus service | <input type="checkbox"/> Impact garbage and recycling collection |

☐ Request is denied for the following reason(s): _____

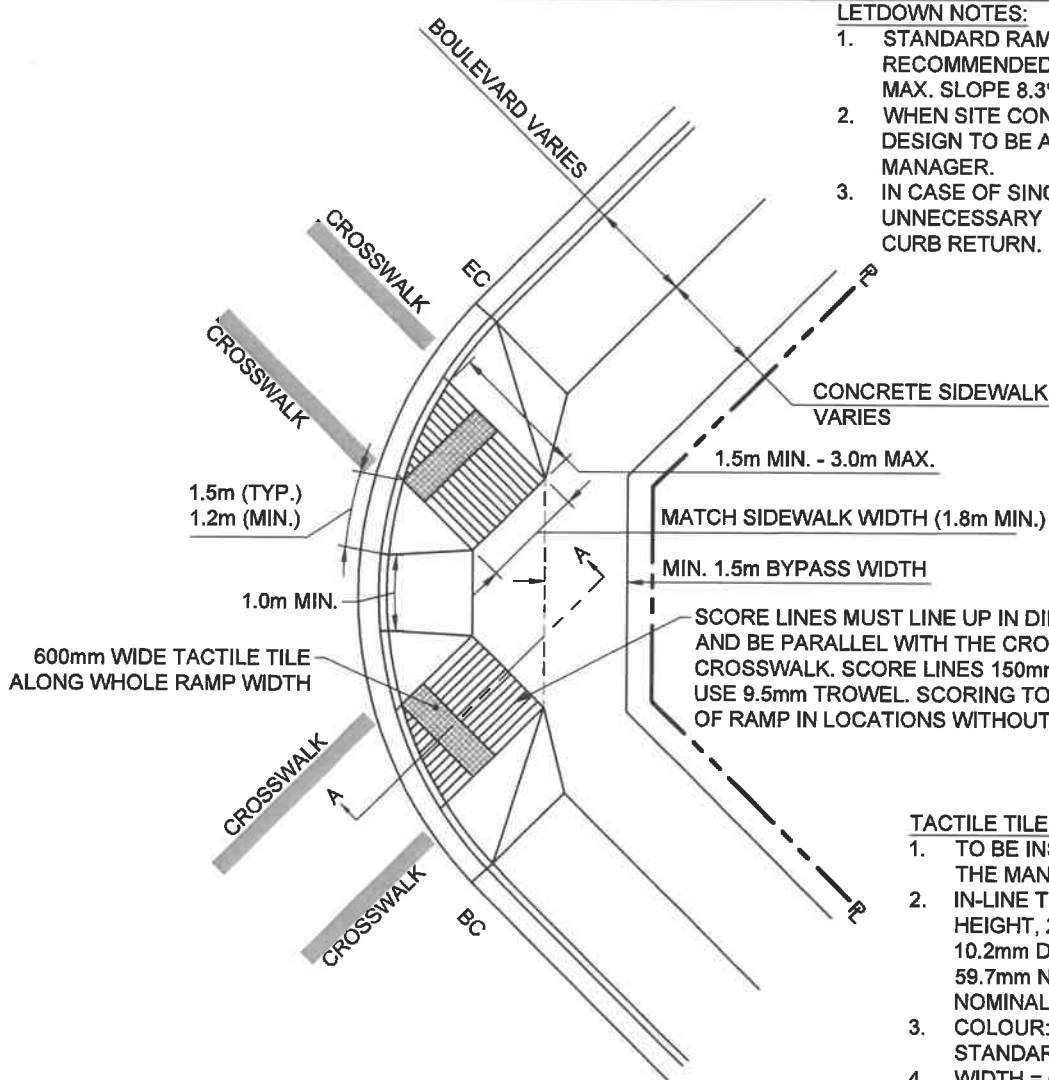
☐ Request is approved with the following change(s): _____

☐ Request is approved as submitted

Date

Traffic Technologist or Designate

Appendix B - Additional Information



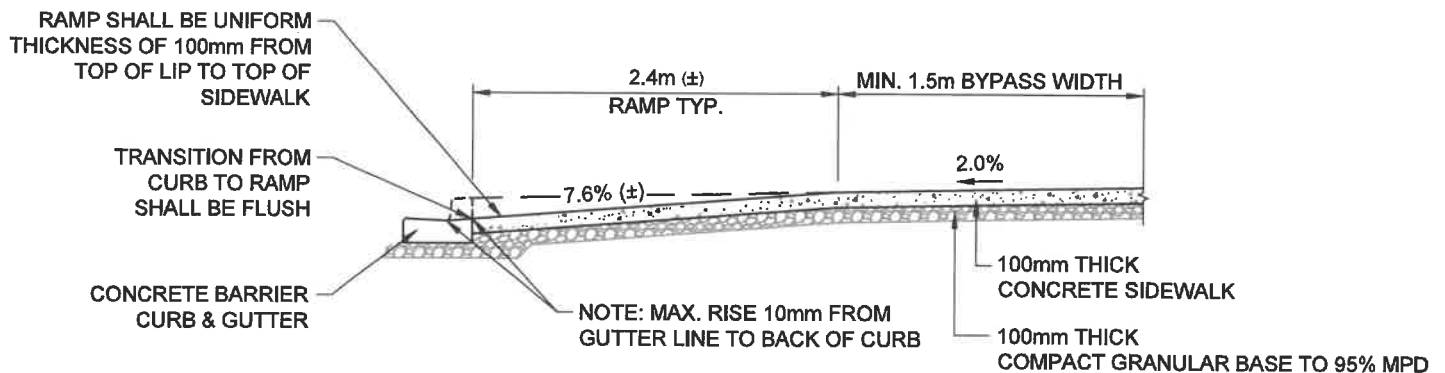
LETDOWN NOTES:

1. STANDARD RAMP LENGTH: 2.4m AT CENTRE OF RAMP. RECOMMENDED RAMP SLOPE: 7.6% (\pm) MAX. SLOPE 8.3% (1:12) WHERE TOPOGRAPHY PERMITS.
2. WHEN SITE CONDITIONS DO NOT PERMIT TYPICAL LAYOUT DESIGN TO BE APPROVED BY THE CITY ENGINEERING MANAGER.
3. IN CASE OF SINGLE CROSSING: REMOVE UNNECESSARY LETDOWN AND EXTEND BOULEVARD TO CURB RETURN.

TACTILE TILE NOTES:

1. TO BE INSTALLED ONLY WHEN PRESCRIBED BY THE MANAGER.
2. IN-LINE TRUNCATED DOME PATTERN 5.1mm IN HEIGHT, 22.9mm DIAMETER AT THE BASE AND 10.2mm DIAMETER AT THE TOP OF DOME SPACED 59.7mm NOMINAL DIAGONALLY AND 43.2mm NOMINAL SIDE BY SIDE EXCEPT FOR RADIUS TILE.
3. COLOUR: FEDERAL YELLOW PER U.S. FEDERAL STANDARD 595B, TABLE IV, COLOR NO.335.
4. WIDTH = 600mm, LENGTH = RAMP WIDTH
5. REFER TO COQUITLAM APPROVED PRODUCTS LIST FOR ACCEPTABLE SUPPLIERS.

SPLIT LETDOWN



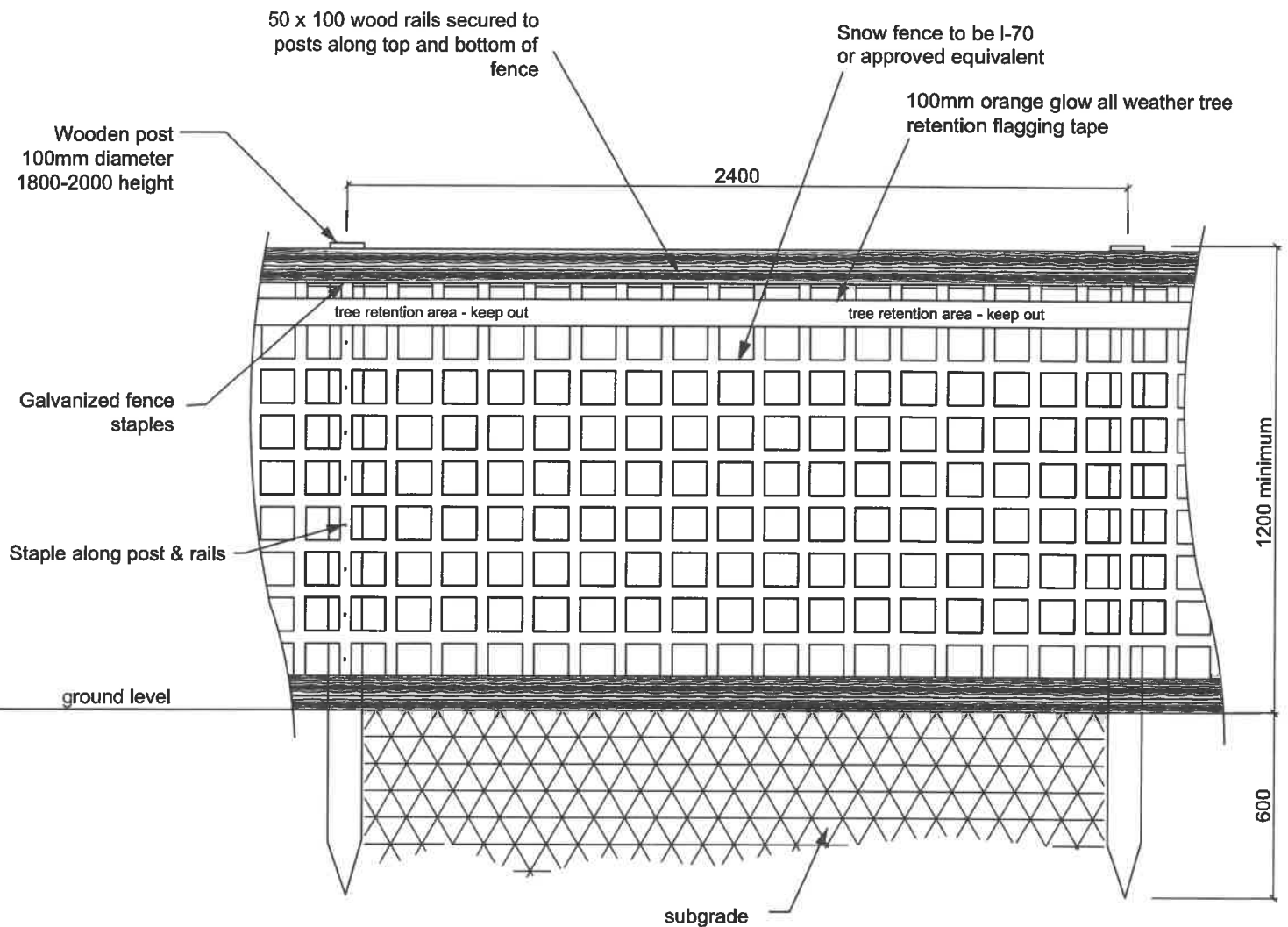
SECTION A-A CURB RAMP

PLOTTED: 19-NOV-20

**SPLIT LETDOWN AT INTERSECTION
WITH BOULEVARD**

DATE: NOV/2020
DRAWN: GA
SCALE: N.T.S.

DRAWING NUMBER:
COQ-C9A



Protection fence to be located at crown dripline or adjacent to hard surface, which ever is greater.

Manually excavate and cut tree roots within 1.0m of tree protection fence.

Machinery and storage is not permitted within 1.0m of tree protection area.

PLOTTED: 22-Feb-16

TREE PROTECTION FENCE

DATE: NOV/2014

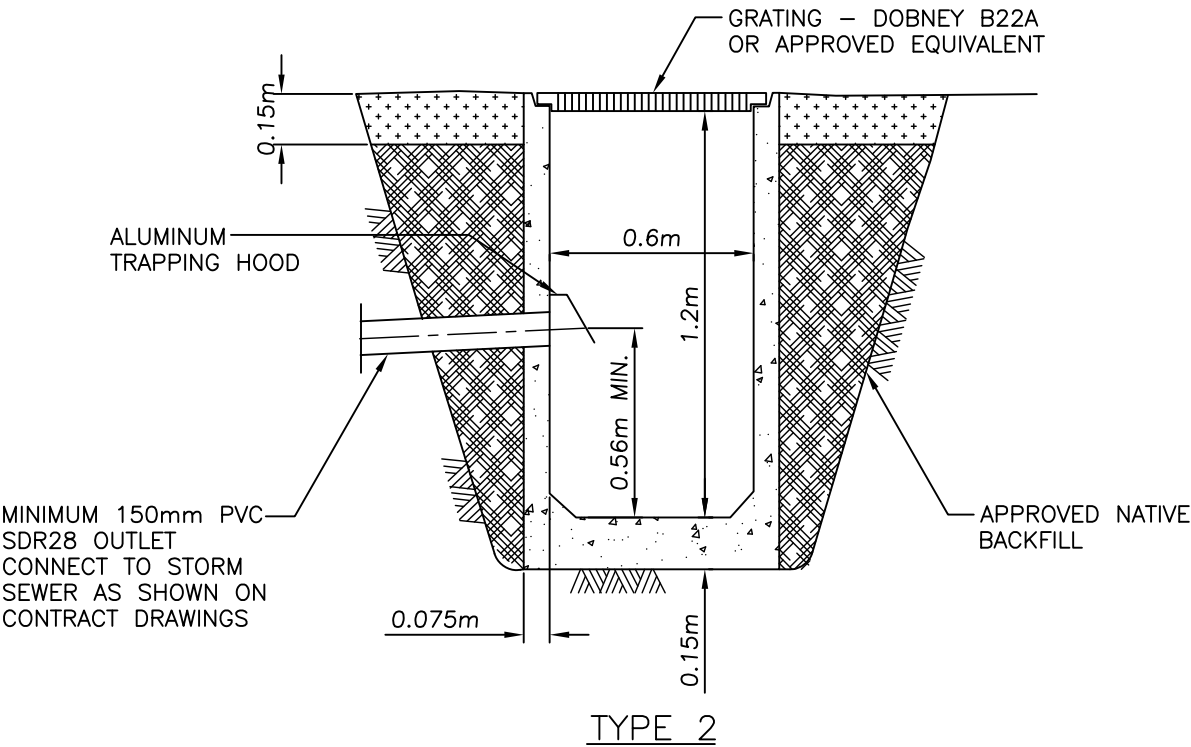
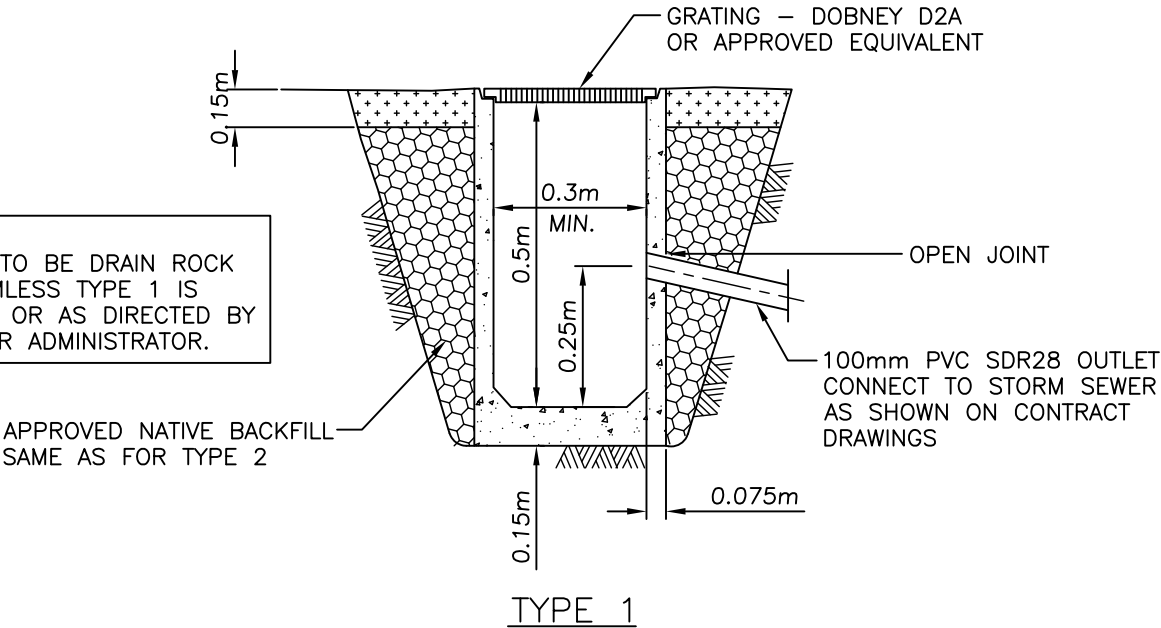
DRAWN: AJM

SCALE: N.T.S.

DRAWING NUMBER:

COQ-R26

NOTE:
BACKFILL TO BE DRAIN ROCK
IF BOTTOMLESS TYPE 1 IS
SPECIFIED OR AS DIRECTED BY
CONTRACTR ADMINISTRATOR.



NOTE:

1. REFER TO CONTRACT DRAWINGS, SECTION 33 44 01 FOR DETAILED SPECIFICATIONS.

PLOTTED: 13-Jul-20

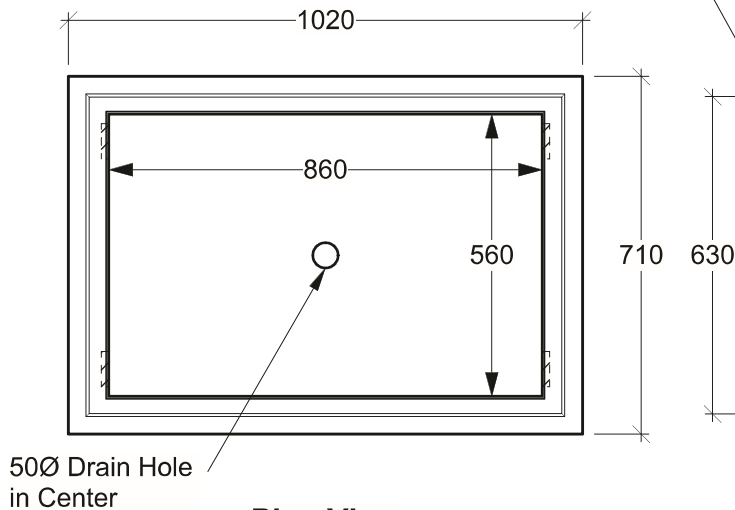
LAWN DRAINS

DATE:	JULY/2020
DRAWN:	REY
SCALE:	N.T.S.

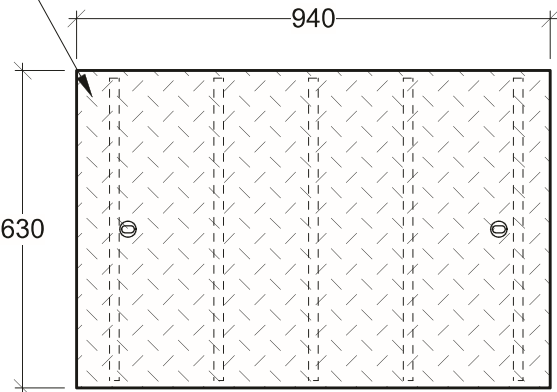
DRAWING NUMBER:
COQ-S12A

Painted Black, Boltdown, Steel Checker Plate Lids

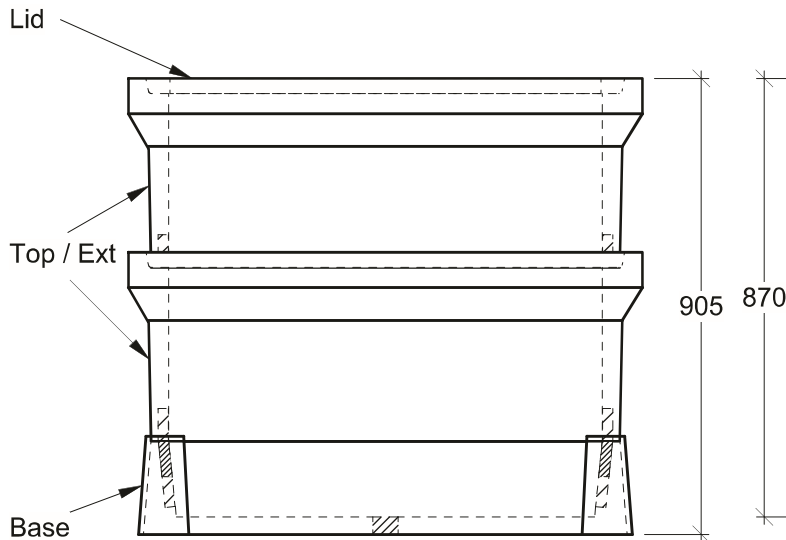
Options: Galvanizing, Padlock Recess
Remote Reader Holes
Weld Marking e.g. "ELEC"



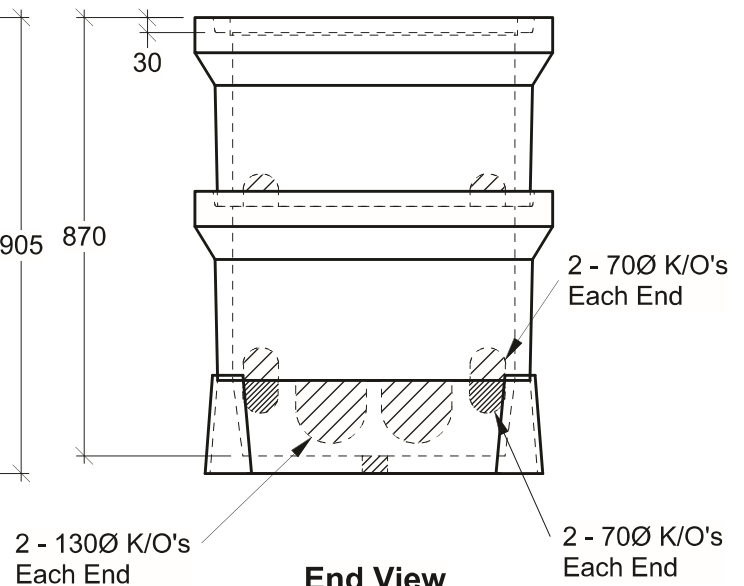
Plan View



Plan View - Lid



Side View



End View

General Notes:

- Products manufactured in accordance with CSA A23.4
- Designed for Boulevard (Off-Road) Use - H-20 Static Loading
- Steel Products manufactured under CSA W47.1 in accordance to CSA W59
- Site Installation, Backfilling & Suitability for Use is the responsibility of others.



19060 - 54th Avenue
Surrey, B.C. V3S 8E5

Tel (604) 576-1808
info@aeconcrete.com

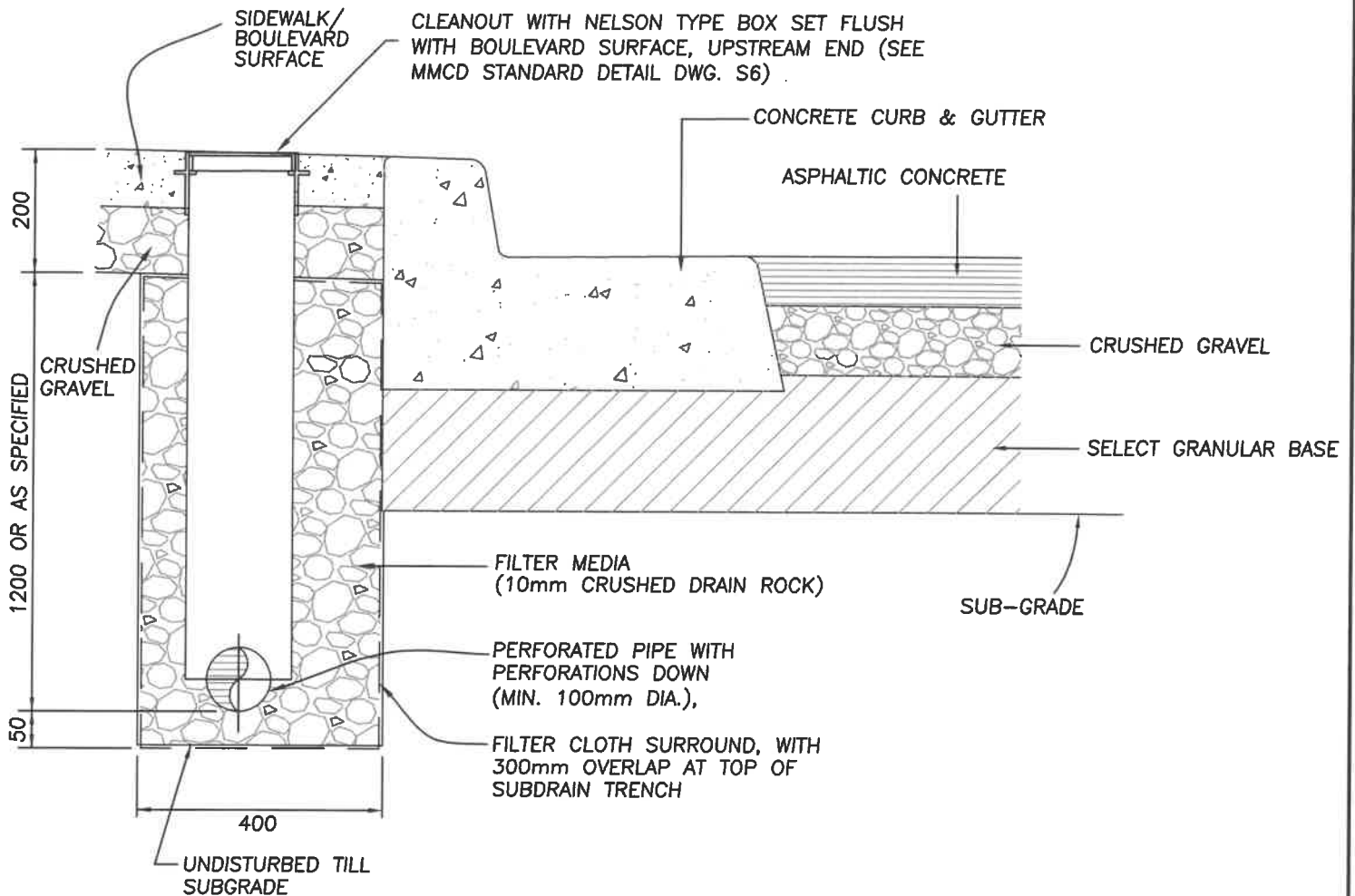
5686 Service Box - Complete

Lid: 100 lbs / 45 kgs
Top/Ext: 195 lbs / 90 kgs
Base: 175 lbs / 80 kgs Total: 665 lbs / 305 kgs

Scale: 1:15 mm

Rev: 28Jun08

Dwg#: **5686-N3-ZZZZ-C**



NOTES:

1. REFER TO CONSTRUCTION DRAWINGS FOR PROPOSED LOCATION AND DEPTH OF SUBDRAINS.
2. WHEN THE CENTRE LINE ROAD GRADE IS 2% OR GREATER, UNDERDRAINS SHALL ONLY BE REQUIRED FOR A LENGTH OF 6 METERS ON THE UPSTREAM SIDE OF THE CATCH BASIN.
3. ALL SUBDRAINS ARE TO BE CONNECTED TO CATCH BASINS OR THE STORM SEWER IF CATCH BASINS ARE NOT ACCESSIBLE.
4. IF THE SUB-GRADE IS SELF DRAINING IN THE OPINION OF THE GEOTECHNICAL ENGINEER, THE SUBDRAINS INSTALLATION MAY BE WAIVED.

PLOTTED: 26-Feb-16

PERFORATED PIPE SUBDRAIN

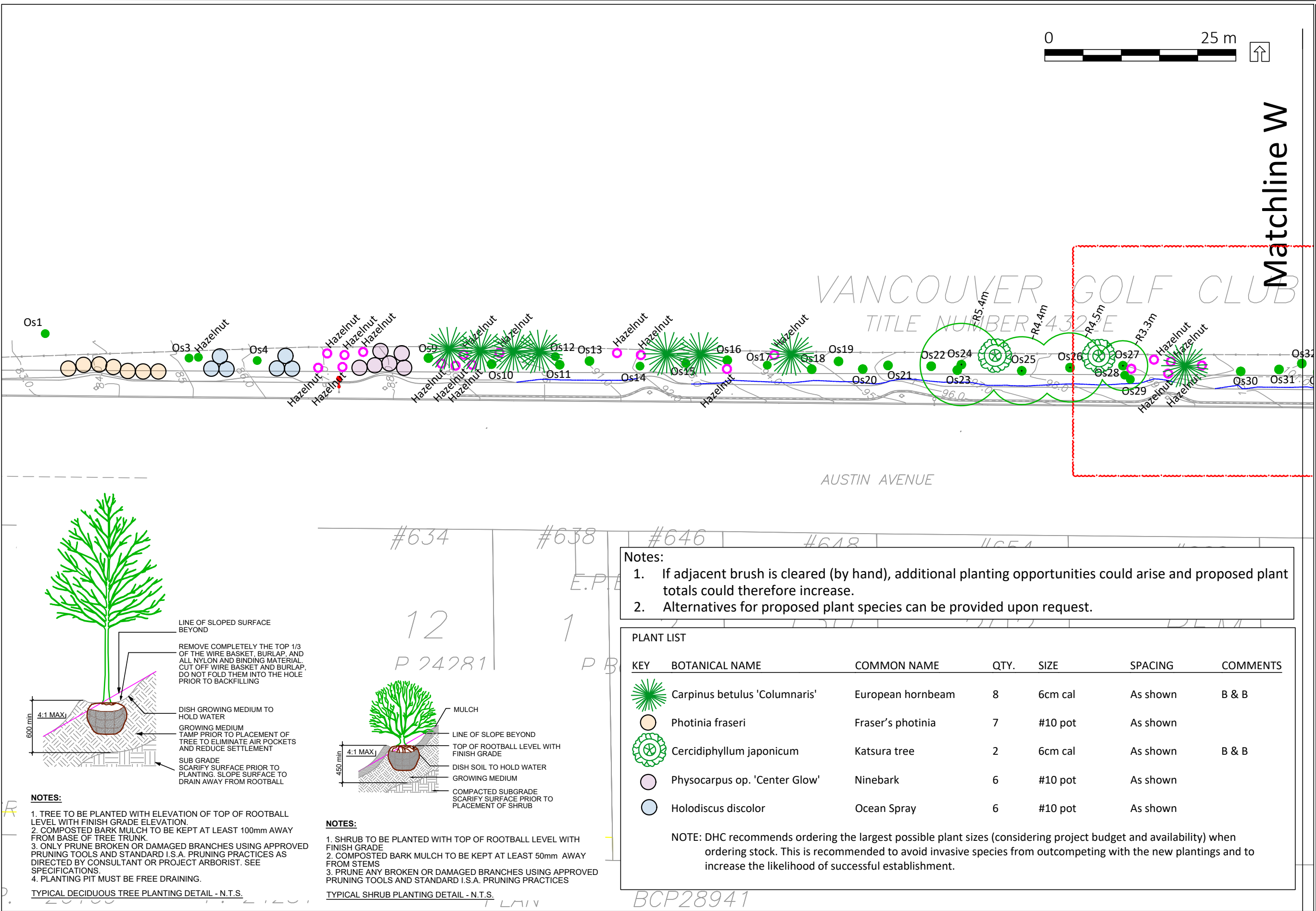
DATE: SEP/2014

DRAWN: REY

SCALE: N.T.S.

DRAWING NUMBER:

COQ-SW1



- LEGEND
- TREE PROTECTION ZONE
 - TREE PROTECTION FENCE
 - UN-SURVEYED TREE TO BE RETAINED
 - SURVEYED TREE TO BE RETAINED
 - TREE TO BE REMOVED
 - SURVEYED CITY TREE, DEAD and/or HAZARDOUS
 - SURVEYED VGC/SHARED TREE, DEAD and/or HAZARDOUS
 - SURVEYED CITY TREE, FOR REMOVAL DUE TO SIDEWALK CONFLICTS
 - SURVEYED VGC/SHARED TREE, FOR REMOVAL DUE TO SIDEWALK CONFLICTS

- NOTES
- The location of un-surveyed trees on this plan is approximate. Their location and ownership cannot be confirmed without being surveyed by a Registered BC Land Surveyor.
 - All tree protection fencing must be built to the relevant municipal bylaw specifications. The dimensions shown are from the outer edge of the stem of the tree.
 - The tree protection zone shown is a graphical representation of the critical root zone, measured from the outer edge of the stem of the tree. (1/2 the trees diameter was added to the graphical tree protection circles to accommodate the survey point being in the center of the tree)
 - Any construction activities or grade changes within the Root Protection Zone must be approved by the project arborist.
 - This plan is based on a topographic and tree location survey provided by the owners' Registered British Columbia Land Surveyor (BCLS) and layout drawings provide by the owners' Engineer (P Eng).
 - This plan is provided for context only, and is not certified as to the accuracy of the location of features or dimensions that are shown on this plan. Please refer to the original survey plan and engineering plans.
 - Tree Replacement symbols are not shown to scale, and the tree may not be planted in the exact location shown.
 - All planting works should be done in accordance with the current edition of Canadian Landscape Standards.

- REFERENCE DRAWINGS
- Base Survey by: Coquitlam Engineering & Public Works dated December 10, 2020

Matchline E

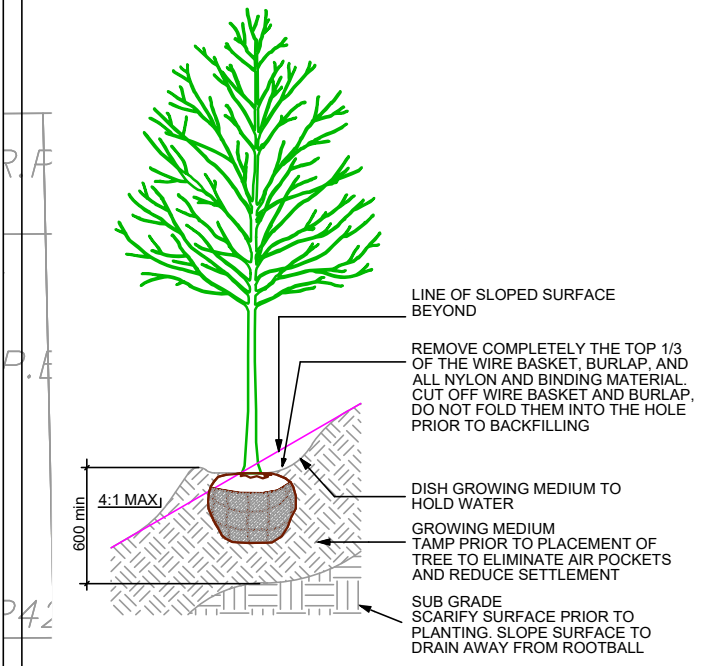
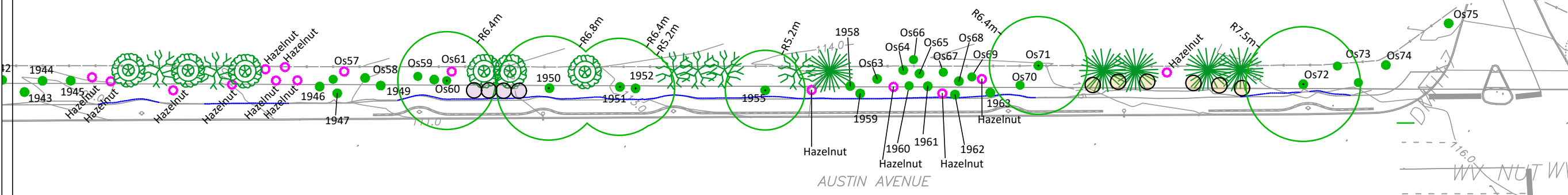
GOLF CLUB
4322E



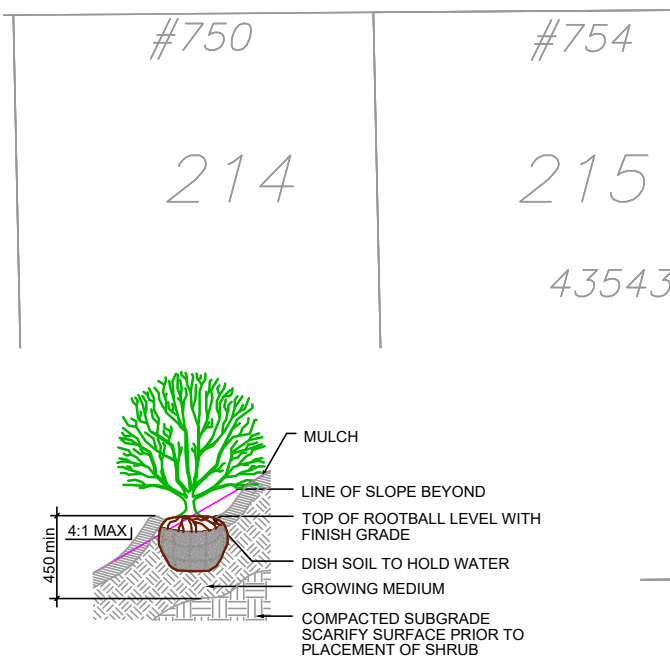
- LEGEND
- TREE PROTECTION ZONE
 - TREE PROTECTION FENCE
 - UN-SURVEYED TREE TO BE RETAINED
 - SURVEYED TREE TO BE RETAINED
 - TREE TO BE REMOVED
 - SURVEYED CITY TREE, DEAD and/or HAZARDOUS
 - SURVEYED VGC/SHARED TREE, DEAD and/or HAZARDOUS
 - SURVEYED CITY TREE, FOR REMOVAL DUE TO SIDEWALK CONFLICTS
 - SURVEYED VGC/SHARED TREE, FOR REMOVAL DUE TO SIDEWALK CONFLICTS

- NOTES
- The location of un-surveyed trees on this plan is approximate. Their location and ownership cannot be confirmed without being surveyed by a Registered BC Land Surveyor.
 - All tree protection fencing must be built to the relevant municipal bylaw specifications. The dimensions shown are from the outer edge of the stem of the tree.
 - The tree protection zone shown is a graphical representation of the critical root zone, measured from the outer edge of the stem of the tree. (1/2 the trees diameter was added to the graphical tree protection circles to accommodate the survey point being in the center of the tree)
 - Any construction activities or grade changes within the Root Protection Zone must be approved by the project arborist.
 - This plan is based on a topographic and tree location survey provided by the owners' Registered British Columbia Land Surveyor (BCLS) and layout drawings provide by the owners' Engineer (P Eng).
 - This plan is provided for context only, and is not certified as to the accuracy of the location of features or dimensions that are shown on this plan. Please refer to the original survey plan and engineering plans.
 - Tree Replacement symbols are not shown to scale, and the tree may not be planted in the exact location shown.
 - All planting works should be done in accordance with the current edition of Canadian Landscape Standards.

- REFERENCE DRAWINGS
- Base Survey by: Coquitlam Engineering & Public Works dated December 10, 2020



- NOTES:
- TREE TO BE PLANTED WITH ELEVATION OF TOP OF ROOTBALL LEVEL WITH FINISH GRADE ELEVATION.
 - COMPOSTED BARK MULCH TO BE KEPT AT LEAST 100mm AWAY FROM BASE OF TREE TRUNK.
 - ONLY PRUNE BROKEN OR DAMAGED BRANCHES USING APPROVED PRUNING TOOLS AND STANDARD I.S.A. PRUNING PRACTICES AS DIRECTED BY CONSULTANT OR PROJECT ARBORIST. SEE SPECIFICATIONS.
 - PLANTING PIT MUST BE FREE DRAINING.
- TYPICAL DECIDUOUS TREE PLANTING DETAIL - N.T.S.



- NOTES:
- SHRUB TO BE PLANTED WITH TOP OF ROOTBALL LEVEL WITH FINISH GRADE
 - COMPOSTED BARK MULCH TO BE KEPT AT LEAST 50mm AWAY FROM STEMS
 - PRUNE ANY BROKEN OR DAMAGED BRANCHES USING APPROVED PRUNING TOOLS AND STANDARD I.S.A. PRUNING PRACTICES
- TYPICAL SHRUB PLANTING DETAIL - N.T.S.

- Notes:
- If adjacent brush is cleared (by hand), additional planting opportunities could arise and proposed plant totals could therefore increase.
 - Alternatives for proposed plant species can be provided upon request.

PLANT LIST						
KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	SPACING	COMMENTS
	Carpinus betulus 'Columnaris'	European hornbeam	5	6cm cal	As shown	B & B
	Photinia fraseri	Fraser's photinia	6	#10 pot	As shown	
	Cornus kousa	Dogwood	6	6cm cal	As shown	B & B
	Cercidiphyllum japonicum	Katsura tree	5	6cm cal	As shown	B & B
	Physocarpus op. 'Center Glow'	Ninebark	4	#10 pot	As shown	
NOTE: DHC recommends ordering the largest possible plant sizes (considering project budget and availability) when ordering stock. This is recommended to avoid invasive species from outcompeting with the new plantings and to increase the likelihood of successful establishment.						