



City of Coquitlam

Contract Documents 77810

Walls Ave - Lebleu to Marmont Frontage Improvements



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Contract No.77810
Walls Ave - Lebleu to Marmont Frontage Improvements
Project Construction Documents

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Invitation to Tenderers



INVITATION TO TENDER

DATE OF ISSUE: February 26, 2021

Tender No. 77810

Walls Ave - Lebleu to Marmont Frontage Improvements

The City of Coquitlam (the "City") invites tenders for **Contract 77810 – Walls Ave - Lebleu to Marmont Frontage Improvements**, generally consisting of the following, but not limited to:

Road improvements on Walls Avenue between Lebleu Street to Marmont Street, approximately 400 meters of Local Road including Concrete Curb & Gutter, Concrete Sidewalk, Storm and Sanitary Connections, Water Service Connections, Street Trees, Pavement Markings, Street Lighting, Retaining Wall, BC Hydro, Shaw & Telus Underground Ducting, and 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

Friday, March 19, 2021

("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 files 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 77810

Walls Ave - Lebleu to Marmont Frontage Improvements

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: **Walls Ave - Lebleu to Marmont Frontage Improvements**

Reference No. **77810**

- | | | |
|------------|-------------------------|--|
| 1.0 | Introduction | <p>1.1 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> <p>Road improvements on Walls Avenue between Lebleu Street to Marmont Street, approximately 400 meters of Local Road including Concrete Curb & Gutter, Concrete Sidewalk, Storm and Sanitary Connections, Water Service Connections, Street Trees, Pavement Markings, Street Lighting, Retaining Wall, BC Hydro, Shaw & Telus Underground Ducting, and other miscellaneous and incidental works as further described in the Contract Documents.</p> <p>1.2 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 | <p>2.1 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> <p>2.2 <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 <i>Tender Closing Date</i>. <u>All sections of this publication are by reference included in the <i>Contract Documents</i>.</u></p> <p>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</p> |

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 19, 2021

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.

Please Note: Due to Covid-19 prevention measures, in-person tender submissions will not be accepted. It is also reasonable to consider that City staff may be given a work from home mandate. Under this scenario, Fax submissions may not be received. Be advised that filing electronically through Qfile will be the most reliable method during these uncertain times.

- 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**

**Obtaining
Documents**

- .a Telus and Shaw will be supplying all their conduits for the pre-duct crossings. Contractor shall coordinate with Telus & Shaw for supply and delivery of these conduits on site as per Section 26 56 01S, Clause 1.9.4.
- 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 302
1107 Homer Street
Vancouver BC V6B 2Y1
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, BC 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 Intermunicipal Business License prior to commencement of work or supply of materials. For more information, contact Business Licence 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 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. 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.
	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 A tender should be on the Form of Tender as provided and be signed by the authorized signatory(s) as follows:
		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
- 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 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); and
 - 5.3.5 Appendix 5 – a complete list of all subcontractors, if any, that the tenderer will use for the *Work* including full names.
 - 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 with 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 <i>Tender Closing Time</i> , a tender shall remain valid and revocable 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 <i>Work</i> . |
| 15.0 | Award | 15.1 | In exercising its discretion, the <i>Owner</i> 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 <i>Work</i> . |

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 <i>Owner</i> reserves the right to object to any of the subcontractors listed in a tender. If the <i>Owner</i> objects to any of the subcontractor(s) then the <i>Owner</i> 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 Work 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. 77810

Walls Ave - Lebleu to Marmont Frontage Improvements

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)

Friday, March 19, 2021

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 2021

THE CITY OF COQUITLAM
3000 Guildford Way
Coquitlam BC 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: Walls Ave - Lebleu to Marmont Frontage Improvements

Reference No. 77810

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 30, 2021**; 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 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 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 TENDER****Contract 77810****Walls Ave - Lebleu to Marmont Frontage Improvements****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. / (Supplementary Contract Specifications)	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 57 015	ENVIRONMENTAL PROTECTION				
2.01	(1.6.1)	ESC supply & installation, maintenance and removal			Incidental to Contract	
3.00	01 58 015	PROJECT IDENTIFICATION				
3.01	(1.3.1)	Construction Zone Information Signs	ea.	5		
4.00	03 30 205	CONCRETE WALKS, CURBS AND GUTTERS				
4.01	(1.4.3)	Concrete Curb & Gutter - Wide Base - MMCD C5	l.m	800		
4.02	(1.4.5)	Concrete Sidewalk & Walkway connectors & Wheelchair Letdown - 100mm thick - Broom Finished c/w 100mm Granular base; and as shown and described in the Contract Documents	sq.m	1,150		
4.03	(1.4.5)	Concrete Driveway Letdown, Sidewalk Crossing, and Driveways - COQ-C7 & COQ-C7B - 190mm thick c/w 100mm granular base; and as shown and described in the Contract Documents	sq.m	330		
4.04	(1.4.5)	Concrete Driveway Reinstatement, c/w 100mm granular base, Broom Finish	sq.m	70		
4.05	(1.4.5)	Concrete Driveway Reinstatement, c/w 100mm granular base, Stamped Concrete (Provisional)	sq.m	30		
4.06	(1.4.5)	Concrete Driveway Reinstatement, c/w 100mm granular base, Exposed Aggregate (Provisional)	sq.m	60		
4.07	(1.4.5)	Concrete Driveway Reinstatement, c/w 100mm granular base, Concrete Pavers (Provisional)	sq.m	15		
4.08	(1.4.10)	Tactile Strip - 24x48in - Access Tile, Yellow color - removable type	ea.	12		
5.00	03 30 535	CAST-IN-PLACE CONCRETE				
5.01	(1.5.3)	Concrete Stairs - Back of Sidewalk to Property Line (Provisional)	l.m	35		
6.00	03 40 015	PRECAST CONCRETE				
6.01	1.4.1	0.6m x 0.6m Paver - Front Boulevard - Concrete Connector Walkway	ea.	28		
6.02	(1.4.6)	Allan Block Retaining Wall (Includes clear crushed gravel, perf pipe, backfill, capstone) - segmental retaining wall (Provisional)	sq.m	20		
7.00	26 56 015	ROADWAY LIGHTING				
7.01	1.9.2	Supply & installation of Roadway Lighting (ALL) Works including any removal, adjustments and disposal needed to complete the work and as shown on the Contract Drawing	l.s.	1		
7.02	(1.9.4)	Empty Ducts (c/w strings, caps on both ends); Telus & Shaw to supply their own rpvc ducts	l.s.	1		
8.00	31 05 17	AGGREGATES AND GRANULAR MATERIALS				
8.01	1.4.1	Imported Granular Fill, 75mm SGSB (Provisional)	tonne	300		
8.02	1.4.1	Clear Crushed, 19mm (Provisional)	tonne	30		
9.00	31 11 015	CLEARING AND GRUBBING				
9.01	(1.4.1)	Clearing & grubbing	l.s.	1		
9.02	1.4.2	Removal and disposal of Douglas Fir including stumps in front of 1061 Walls Ave (Provisional)	l.s.	1		
10.00	31 24 135	ROADWAY EXCAVATION, EMBANKMENT AND COMPACTION				
10.01	(1.8.4)	Removal and disposal of Existing Asphalt (all Depths), including asphalt curb, concrete, paver or sidewalks	sq.m	4,300		
10.02	(1.8.5)	Common Excavation including Off Site Disposal (includes retaining wall) (Provisional)	cu.m	1,500		
11.00	32 11 16.15	GRANULAR SUBBASE				
11.01	(1.4.3)	75mm Minus Granular Sub Base (Provisional)	tonne	750		
12.00	32 11 235	GRANULAR BASE				
12.01	(1.4.3)	25mm Minus Granular Base, variable thickness (Provisional)	tonne	1,200		
13.00	32 12 165	HOT-MIX ASPHALT CONCRETE PAVING				
13.01	(1.5.1)	Asphaltic Concrete Paving - Upper Course #1 (75mm, 1 lift)	tonne	610		
13.02	(1.5.3)	Asphaltic Concrete Paving - Driveways & sidewalks - Upper Course #2 (50mm, 1 lift), c/w 100mm Granular base	tonne	45		
13.03	1.5.4	Keyed in Extruded Asphalt Curb - 150mm high	l.m	30		
14.00	32 17 235	PAINTED PAVEMENT MARKINGS				
14.01	(1.5.3)	Supply & Installation Thermoplastic Pavement Markings (LAFRENTZ ROAD MARKINGS)	l.s.	1		
14.02	(1.5.4)	Remove and Reinstall existing signage	ea.	4		

ITEM NO.	MMCD Ref. / (Supplementary Contract Specifications)	DESCRIPTION	UNIT	QTY	UNIT PRICE	EXTENDED AMOUNT
15.00	32 31 13	CHAIN LINK FENCES AND GATES				
15.01	1.5.3	Remove & Reinstall Existing Fence (Provisional)	l.m	20		
16.00	32 91 215	TOP SOIL AND FINISH GRADING				
16.01	(1.4.1)	Imported Topsoil - 150mm Thick for Sod	cu.m	150		
16.02	(1.4.1)	Growing Medium - Boulevard Tree Planting Trench - includes excavation, backfill, growing medium and as shown in Contract Drawings and described in Contract Documents(not paid where Boulevard Retention Trench is installed)	cu.m	610		
16.03	(1.4.1)	50mm Bark mulch (Provisional)	cu.m	4		
17.00	32 92 235	SODDING				
17.01	(1.8.1)	Sodding	sq.m	1,000		
18.00	32 93 015	PLANTING OF TREES, SHRUBS, AND GROUND COVERS				
18.01	(1.9.1)	Stewartia Pseudocamellia (Japanese Stewartia) 7cm Cal/B&B 2.0m STD.	ea.	17		
18.02	(1.9.1)	Styrax Japonicus Snowcone (Japanese Snowbell) 7cm Cal/B&B 2.0m STD.	ea.	15		
19.00	33 11 015	WATERWORKS				
19.01	(1.8.4)	19mm Service Connections - COQ-W2k as shown in Contract Drawings and as per Appendix B	ea.	3		
19.02	(1.8.4)	38mm Service Connections - COQ-W2d as shown in Contract Drawings and as per Appendix B	ea.	23		
19.03	(1.8.14)	Fire Hydrant Terminal City C71P c/w Storz	ea.	2		
20.00	33 30 015	SANITARY SEWERS				
20.01	(1.6.3)	Service Connections - 150mm SDR28 PVC c/w IC, as described in Contract Documents and as shown in Appendix B, COQ-S7A	ea.	9		
20.02	(1.6.3.1)	Service Connections Repair/Replacement (Provisional)	l.m	10		
20.03	(1.6.4)	Inspection Chambers - MMCD S9	ea.	4		
21.00	33 40 015	STORM SEWERS				
21.01	(1.6.3.1)	Storm Service Connection Repair/Replacement (Provisional)	l.m	25		
21.02	(1.6.4)	Inspection Chambers - MMCD S9 (Provisional)	ea.	13		
21.03	(1.6.5)	Catch Basin/Lawn Basin connection - 150mm SDR28 PVC	l.m	140		
21.04	(1.6.6)	French Drain (includes pipe, bedding, cleanout, tie-in to LB)	ea.	1		
21.05	(1.6.6)	Boulevard Retention Trench - COQ-SW3/SW4 (includes excavation, backfill materials, growing medium)	l.m	170		
21.06	(1.6.6)	Boulevard Retention Trench - Decant Piping (includes perf pipe, caps, cleanout, trench dam and tie in to C/B)	ea.	4		
21.07	(1.6.6)	Boulevard Retention Trench - Dispersal Piping (includes perf pipe, caps, cleanout, tie-in's to C/Bs / LBs)	ea.	4		
22.00	33 44 015	MANHOLES AND CATCHBASINS				
22.01	(1.5.2)	Top Inlet Catch Basin with 600mm Offsite Manhole - COQ-S11B (Provisional)	ea.	8		
22.02	(1.5.2)	Top Inlet Catch Basin MMCD S11 (Provisional)	ea.	8		
22.03	(1.5.2)	Side Inlet Catch Basin - COQ-S11A	ea.	2		
22.04	(1.5.2)	Lawn Basin - COQ-S12A Type 1, 300mm c/w bottom, as per Appendix B	ea.	8		
22.05	(1.5.3)	Manhole Frame and Lid Replacement & Adjustments	ea.	7		
22.06	1.5.4	Removal, Capping & Disposal of Catch Basins	ea.	8		

Total Tendered Price (exclude GST): \$ _____

(Transfer the amount to Form of Tender Summary Page 1)

Name of Contractor: _____

**APPENDIX 2
FORM OF TENDER**

**Contract 77810
Walls Ave - Lebleu to Marmont Frontage Improvements**

**PRELIMINARY CONSTRUCTION SCHEDULE
(See paragraph 5.3.2 of the Instructions to Tenderers)**

INDICATE SCHEDULE WITH BAR CHART WITH CONSTRUCTION DURATIONS

CONSTRUCTION ACTIVITY	April				May				June					July			
	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4

Completion Date: **Must be completed before July 30, 2021**

Proposed Disposal Site: _____

**APPENDIX 3
FORM OF TENDER**

**Contract 77810
Walls Ave - Lebleu to Marmont Frontage Improvements**

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 77810
Walls Ave - Lebleu to Marmont Frontage Improvements**

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 77810
Walls Ave - Lebleu to Marmont Frontage Improvements**

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 77810
Walls Ave - Lebleu to Marmont Frontage Improvements**

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 _____, 2021 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 _____, 2021.

SIGNED, SEALED AND DELIVERED
In the presence of:

_____)	_____
)	PRINCIPAL
)	
)	_____
)	SURETY

**APPENDIX 7
FORM OF TENDER**

**Contract 77810
Walls Ave - Lebleu to Marmont Frontage Improvements**

CERTIFICATE OF COMPLIANCE for CONTRACT INSURANCE

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

Contract Number: 77810

Contract Name: Walls Ave - Lebleu to Marmont Frontage Improvements

Description of Work:

Road improvements on Walls Avenue between Lebleu Street to Marmont Street, approximately 400 meters of Local Road including Concrete Curb & Gutter, Concrete Sidewalk, Storm and Sanitary Connections, Water Service Connections, Street Trees, Pavement Markings, Street Lighting, Retaining Wall, BC Hydro, Shaw & Telus Underground Ducting, and 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 _____ 2021.

Contract: Walls Ave - Lebleu to Marmont Frontage Improvements

Reference No. 77810

BETWEEN:

The City of Coquitlam
3000 Guildford Way
Coquitlam BC 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 30, 2021**, 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, BC 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 BC 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, DESIGN AND CONSTRUCTION)

Representative as Per G.C. 17

(MANAGER, CAPITAL PROJECTS AND INSPECTIONS)

Walls Ave - Lebleu to Marmont Frontage Improvements

Reference No: 77810

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 2016

Walls Ave - Lebleu to Marmont Frontage Improvements

Reference No: 77810

Schedule 2

LIST OF DRAWINGS AND APPENDICES

(Complete Listing of all Drawings, Plans, Sketches and Appendices that are part of the Contract Documents)

Bound in this Document:

Appendix A: Traffic Management Detail Specifications

Appendix B: Supplementary Detailed Drawings

Appendix C: As-Built Records

Appendix D: Street Lighting Inspection Report

NOT Bound in this Document: Full Size Contract Drawings

TITLE	SHEET NUMBER	REVISION DATE	REVISION NUMBER
Walls Ave – Lebleu St to Marmont St Frontage Improvements - Cover Page - Binnie	-	-	-
Walls Ave - General Notes	1 of 17	2021-02-26	3
Walls Ave - Road Details	2 of 17	2021-02-26	3
Walls Ave - Roadworks - Plan & Profile	3 of 17	2021-02-26	3
Walls Ave - Roadworks - Plan & Profile	4 of 17	2021-02-26	3
Walls Ave - Roadworks - Plan & Profile	5 of 17	2021-02-26	3
Walls Ave - Roadworks - Cross Sections	6 of 17	2021-02-26	3
Walls Ave - Roadworks - Cross Sections	7 of 17	2021-02-26	3
Walls Ave - Roadworks - Cross Sections	8 of 17	2021-02-26	3
Walls Ave - Roadworks - Cross Sections	9 of 17	2021-02-26	3
Walls Ave - Roadworks - Cross Sections	10 of 17	2021-02-26	3
Walls Ave - Service Connection - Plan	11 of 17	2021-02-26	3
Walls Ave - Service Connection - Plan	12 of 17	2021-02-26	3
Walls Ave - Landscaping Plan	13 of 17	2021-02-26	2
Walls Ave - Landscaping Details	14 of 17	2021-02-26	2
Walls Ave - Street Lighting	1 of 3	11-02-2021	
Walls Ave - Street Lighting	2 of 3	11-02-2021	
Walls Ave - Street Lighting	3 of 3	11-02-2021	

Supplementary General Conditions

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

File #: 11-5330-20/77810/1 Doc #: 3981055.v1

SUPPLEMENTARY GENERAL CONDITIONS

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These Supplementary General Conditions must be read in conjunction with the General Conditions contained in
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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](#)

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 he 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 he deems necessary.

In case the Contractor decides to work on a day which is a Statutory Holiday, he 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.

4.2	Safety	4.2.2	<p>(Add new clause 4.2.2 as follows): <i>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 City Coquitlam Utility Control Centre (604-927-6287).</i></p>
4..3	Protection of Work, Property and the Public	4.3.1	<p>(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 Contactor must obtain a written release from the owner of the damaged property.</p>
		4.3.5.1	<p>(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.</p>
		4.3.7	<p>(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 <i>Owner</i>, shall be provided by the <i>Contractor</i> at his own cost, with no liability to the <i>Owner</i>.</p>
4.6	Construction Schedule	4.6.1	<p>(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.</p>
		4.6.6	<p>(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.</p>
		4.6.8	<p>(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 of the reason for the extension. The Contract Administrator will adjust the schedule at his discretion upon receipt of a written request.</p>
4.7	Superintendent	4.7.4	<p>(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</p>

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

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 him for the purposes of the Contract who, in the opinion of the Contract Administrator, is incompetent or has conducted himself 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 himself 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 himself 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 himself 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 himself.

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 him for the purposes of the Contract who, in the opinion of the Contract Administrator, is incompetent or has conducted himself 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

(Replace clause 4.12.1 as follows):

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 ***(Add clause 4.12.11 as follows):***
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 ***(Replace clause 4.14.1 as follows):***
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 ***(Add new clause 4.16.2 as follows):***
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 ***(Replace clause 7.1.3 as follows):***
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 ***(Add new clause 7.4.2 as follows):***
If there are Optional items or Provisional items included in the *Schedule of Quantities and Prices*, those items shall be used only as directed and at the sole discretion of the Contract Administrator. 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 he 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.

**13.8 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 \$50,000 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 as 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

24.1.1

(Replace section 24.0 as follows):

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 he would if he had arranged such insurance himself.

24.3.4 Responsibility of Contractor – Direct Damage Insurance:

If the Contractor fails to do all or anything that is required of him 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 Oblige to Principal under the Contract less the amount properly paid by Oblige 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 Oblige named herein or the heirs, executors, administrators, or successors of Oblige.

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

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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

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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' 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 #: **77810**

Contract Name: **Walls Ave - Lebleu to Marmont Frontage Improvements** (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 #: 11-5330-20/77810/1 Doc #: 3997161.v1

Supplementary Contract Specifications

to the
**MASTER MUNICIPAL SPECIFICATIONS
Volume II – Platinum Book**

Walls Ave – Lebleu to Marmont Frontage Improvements

CONTRACT 77810

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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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CONTRACT SPECIFIC NOTATIONS

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, 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 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
- Waste Connections / GFL Environmental (garbage/recycling pick-up)
- City Utilities Maintenance (or representatives)

1.05 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 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.

1.06 Lane Closure Restrictions

Refer to: Appendix A: Traffic Management Detail Specifications.

A Road and Sidewalk Closure Permit is required for each instance of closure and 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.

A copy of the approved Road and Sidewalk Closure Permit must be held on site by both the Site Superintendent and the person/company responsible for the traffic control implementation.

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

Costs to complete the works taking the above restrictions into consideration shall be incidental to work described in other sections.

Costs to complete the works taking the above restrictions into consideration shall be included in the prices bid in the Schedule of Quantities and Prices.

CONTRACT SPECIFIC NOTATIONS

- 1.07 Survey Layout** Construction layout will be staked out by the Contractor as outlined in Supplementary General Conditions.
- 1.08 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 & sanitary services at the mains & 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 utilities & services 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.
- 1.09 Manholes & 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.
- 1.10 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.
- The Contractor shall be responsible to contact the appropriate utility company with in 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 paving
- 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 paid by the contractor.
- 1.11 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.
- 1.12 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.

CONTRACT SPECIFIC NOTATIONS

- | | | |
|-------------|---|--|
| 1.13 | 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. |
| 1.14 | 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. |
| 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 | <p>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. This work is considered incidental to the Contract.</p> <p>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, regardless of the 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.</p> <p>Payment for this work will be treated as incidental to payment for work described in other Sections.</p> |
| 2.03 | Asphalt Milling Operations | <p>Asphalt milling activities shall be done in such manner so as to cause the least disruption and inconvenience to traffic and area residents.</p> <p>The Contractor will be required to provide a plan and schedule for milling sections and the subsequent paving activities and have that approved by the Contract Administrator. This schedule is to be updated as required and take into consideration weather conditions and weather forecasts to ensure work subsequent to milling can be completed in appropriate weather.</p> <p>MILLING OF EXTENSIVE AREAS THAT CANNOT BE PAVED WITHIN 48 HOURS PERIOD (2 DAYS) WILL NOT BE PERMITTED.</p> |
| 3.00 | MANDATORY MEETINGS AND CONTRACTOR REPRESENTATIVES AND SUBCONTRACTORS | |
| 3.01 | Pre-Construction Meeting Requirements | <p>After the Award of the Contract, the Contractor (Project Manager & 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:</p> <ol style="list-style-type: none"> 1. A Detailed Construction Schedule showing the start date & completion date and the 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 |

CONTRACT SPECIFIC NOTATIONS

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 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 an accurate project record document in final form prior to applying for Substantial Performance including any video report. Record documents to include changes in the Issued for Construction Drawings, new elevation, offsets & location of all utilities, manhole rim, catchbasin rim, vaults, valve boxes, inverts walkways/sidewalks, and any unknown/new utilities found on site. Legal holdbacks will not be released until record documents have been submitted and accepted by the Contract Administrator.

END OF SECTION

QUALITY CONTROL

- 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.
- 1.1 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.
- 1.2 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* may 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.
- 1.3 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 CCIL 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.

QUALITY CONTROL

- 1.4 Survey Layout** The Contractor shall be responsible for all survey layouts.
- The Contractor shall be responsible for the preservation of all layout stakes and marks. If at any time during the progress of the work any error shall appear or arise in the position, levels, dimensions or alignment of any part of the work, the Contractor shall stop work on his portion of the project and shall notify the Contract Administrator. The Contractor shall make all the necessary corrections required.
- 1.5 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.
- 1.6 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
- 1.7 Access to Work** Allow inspection testing agencies access to Work.
- 1.8 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, min. 1 test if < 500m²
 - 2.2 Sieve: 1 test / placed material / 250 TONNES
 3. Granular Subbase
 - 3.1 Compaction: 1 test/500m²/150mm depth of granular subbase, min. 1 test if <500m²
 - 3.2 Sieve: 1 test / placed material / 250 TONNES
 4. Embankment (Subgrade)
 - 4.1 Compaction: 1 test/ 50m² / 0.15m depth of fill, min. 1 test if < 50m²
 - 4.2 Sieve: 1 test / placed material / 100 TONNES
 5. Asphalt
 - 5.1 Marshall test: 1 test per 250 TONNES placed, per mix specified, min. 1 / day
ASTM D1559, D3203, C117, C136
 - 5.2 Superpave: 1 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, min. 1 test if < 500m²
 7. Concrete Tests
 - 7.1 Air, Slump & 1 Set Cylinders: 1 test / 10 m³, min. 1 set / day
- 1.9 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 qualified professional to the satisfaction of the Contract Administrator.</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 is responsible to ensure and maintain all business/residential vehicles, cyclists 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.</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 his 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, he 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

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.

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 his 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.

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.

Add 1.4.3.7

Immediately notify the *Contract Administrator* and the City of any leaks or spills of prohibited materials that occur at the *Place of Work*.

Add 1.4.3.8

Ensure that any fuel stored on-site is located at least 15 meters 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.
		Add 1.4.3.10	During all phases of the operation, the Contractor shall take precautions to abate nuisance caused by mud or dust by clean up, sweeping, sprinkling with water or dust control, or other means as necessary to accomplish results satisfactory to the Contract Administrator.
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, regardless of the condition of the catch basins prior to starting 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

PROJECT IDENTIFICATION

**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 - Clause 6.5 includes supply, placement &
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) including supply,
placement, communication management & removal as required for
traffic & pedestrian safety will be incidental to payment for work
described in other Sections, unless shown otherwise in the Schedule
of Quantities and Prices.

When shown in the Schedule of Quantities and Prices, payment for
CMS used for only a fraction of a month will be paid prorata.

END OF SECTION

CONCRETE WALKS, CURBS AND GUTTER

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, excluding granular subbase & base, includes supply and placing of the concrete curb and gutter, tie-ins, transitions, subgrade preparation, compaction, saw cutting, 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 payment item, Common Excavation – offsite disposal, 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 32 11 16.1S and 32 11 23S, Granular Subbase and Granular Base, respectively.</p>
		Delete 1.4.5 and replace with the following	<p>Payment for concrete sidewalks, letdowns, driveways, walkways, stamp concrete, paver stone, infills, concrete exposed aggregate and all concrete ramps includes supply and installation, saw cutting, granular base, regrading of driveways for proper tie-in, field fit and adjustments, subgrade preparation under the concrete sidewalks, infills, driveways and walkways and will be made separately for each specified thickness and type of finish.</p> <p>Payment for excavation and disposal of native excavated material will be made under payment item, Common Excavation – offsite disposal, in the Schedule of Quantities and Price.</p> <p>Payment includes supply, installation and removal of temporary gravel letdown and driveway tie-in at final grade c/w vertical curve (as needed) to ensure vehicle will not bottom out. Payment includes Quality Control (QC) through test drive by Contractor on letdown and driveway using a standard sedan car. Final grade to be approved and tested by the City as part of Quality Assurance (QA) and to follow Supplementary General Condition, Clause 4.12.</p>
		Add 1.4.10	<p>Payment for Detectable/Tactile Warning Surface Tile includes supply and placing of Access Tile Model # ACC-R-2x4 (or approved equal) Truncated Dome Detectable Warning Tactile Surface 2'x4' replaceable cast in place - Yellow Color and installation as per the Manufacture's Specifications.</p>
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 by 1200 mm.</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</p>

completed to the satisfaction of the utility owner. Riser rings will not be accepted.

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.

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

- | | | | |
|------------|------------------------------------|-------------------------|--|
| 1.5 | Measurement and
Payment | Add to 1.5.3 as follows | <p>Reinforced cast-in-place stairs to be measured horizontally from landing at back of curb to front of sidewalk, and/or from back of sidewalk to landing at PL. Landing without reinforced bars or poured separately from stairs' rise and run will be paid under Section 03 30 20S, Concrete Walks, Curbs and Gutters.</p> <p>Handrails (if required at the sole discretion of the Contract Administrator) are to be paid under Force Account.</p> |
|------------|------------------------------------|-------------------------|--|

PRECAST CONCRETE

**1.4 Measurement and Add 1.4.6
 Payment**

Payment for an Allan Block Retaining Wall includes all work and incidentals, site preparation, 19mm Clear Crush Drain Rock backfill, SDR28 perforated pipe, weep hole, and capstone but excludes the sidewalk and base. Measurement of height of all for purposes of calculating areas for payment will be taken from the bottom of the installed block to top of cap above the block.

Payment will be made at the respective unit prices bid in the Schedule of Quantities and Prices.

Payment for excavation and disposal of excavated material for the wall construction and removal of any existing retaining wall will be made under payment item, Common Excavation – offsite disposal, in the Schedule of Quantities and Price.

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. |
| 1.9 | Measurement and Payment | Add 1.9.4 | Supply and installation of conduits / ducts to include all labor, equipment and materials required to complete the installation as specified in the contract and/or shown on Contract Drawings. Payment includes coordinating with Third Party Utilities for supply and delivery/pick up of supplied materials. |

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	.1 Minimum conductor size to be as follows, unless specified otherwise on <i>Contract Drawing</i> : .1 No 6 AWG for feeder conductors in conduit. .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.

ROADWAY LIGHTING

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</p>

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.
 - .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

2.0 PRODUCTS

2.3 Pit Run Gravel

Add to 2.3.2

The use of recycled concrete shall be approved by the *Contract Administrator* 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 *Contract Administrator* 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 *Contract Administrator* 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:

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

CLEARING AND GRUBBING

**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 include removal and disposal of all branches, stumps, trees, debris, hedges, timbers, logs and vegetation to complete the work and as shown on the Contract Drawings or as directed by the Contract Administrator. Works include cutting of branches & falling of trees affected by Work to create the necessary clearance to accommodate the construction and intended function of the Work, and as shown on Contract Drawing.

Payment includes trimming of small branches from trees or hedges as required, branch cutting/pruning to have a clean cut flush to branch collar and use of an approved tree paint to repair damage to surviving vegetation where branches have been removed.

Existing grass and top soil removal will be paid under Common Excavation, less the portion under Grubbing as defined in Clause 1.2.

END OF SECTION

SHRUB AND TREE PRESERVATION

1.3	Measurement and Payment	Delete 1.3.1 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.
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'.
3.0	EXECUTION		
3.1	Existing Trees	Add 3.1.7	The <i>Contractor</i> is responsible to minimize damage to all trees which are to remain.
		Add 3.1.8	The <i>Contractor</i> 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 <i>Contract Administrator</i> and the City for tree damage where proper notification was not received from the <i>Contractor</i> . 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 <i>Work</i> .
		Add 3.1.9	Place protective fencing/barricades as per Coquitlam Standard Detail Drawings COQ-R26, where identified on the Contract Drawings. <i>Contractor</i> shall maintain fence in good condition during construction.
		Add 3.1.10	When work is to be performed inside fenced areas, <i>Contractor</i> shall take care to avoid damage to existing vegetation. Work to be done inside areas of existing vegetation to be retained includes: <ul style="list-style-type: none"> .1 Removal of isolated trees as directed by the <i>Contract Administrator</i> 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.
3.4	Pruning	Add 3.4.2	Do not cut roots or branches of retained trees without approval of the <i>Contract Administrator</i> and the City.

END OF SECTION

**1.4 Measurement and
 Payment**

Delete 1.4 in its
entirety and
replace with the
following

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

END OF SECTION

**1.4 Measurement and
 Payment**

Delete 1.4 in its
entirety and
replace with the
following

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

END OF SECTION

1.0 GENERAL

1.8 Limitations of Open Trench

1.8.1
Replace last sentence
with the following

If circumstances do not permit complete backfilling of all trenches, and where permitted by the *Contract Administrator* and the City, adequately protect all open trenches or excavations with approved fencing or barricades and, where required, with flashing lights.

2.0 PRODUCTS

2.2 Use of Specified Materials

Delete 2.2.1.2

Delete Pit Run Sand

Delete 2.2.3.3

Delete Pit Run Sand

3.0 EXECUTION

3.3 Excavation

Delete 3.3.1.2 and
replace with the
following

Connections to existing waterworks systems are to be made by the *Contractor* under the inspection / supervision of the *Contract Administrator* and the City.

3.6 Surface Restoration

Delete 3.6.2.4 and
replace with the
following

Restore lawns with approved topsoil and sod to match existing lawn.

Delete 3.6.3.1 and
replace with the
following

Restore surface with a minimum 100 mm of 19 mm granular road base material.

Delete 3.6.7.5 and
replace with the
following

Restore Pavement as detailed on Coquitlam Standard Detail Drawing COQ-G4. Temporary patch shall be a minimum thickness of 50 mm thickness. Permanent restoration to existing asphalt thickness (minimum of 75 mm) with a 35 mm key where existing thickness permits. A 50 mm key is required on Arterial and Collector Roadways. Dry if necessary and paint clean, dry edge with asphalt emulsion (tack coat).

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 meters calculated from measurements taken by the Contract Administrator in the areas of excavation for road widening areas.
2. Cross-sections will be taken after clearing and grubbing and after stripping of existing topsoil immediately prior to excavation of material to be incorporated into work.
3. Where determined by the Contract Administrator that truck box volume will be used to determine excavation quantities the volume per load shall be determined using 75% of the truck load quantity. The following is to be used for payment:

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

4. 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.
5. Payment for on site re-use includes excavation, transport, temporary stockpiling, placement, compaction, boning, adjustment of moisture content, spreading and grading of material anywhere on site or within the work zone, as needed, to establish the roadway & pathway cross-section.

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.

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

COLD MILLING

**1.5 Measurement and
Payment**

Delete 1.5 and
replace with the
following

Payment for cold milling is incidental to work described in Section 31
24 13S, Clause 1.8.4, and includes cost of mobilization,
demobilization and demonstration milling test section.

END OF SECTION

GRANULAR SUBBASE

- | | | | |
|------------|--------------------------------|---|--|
| 1.4 | Measurement and Payment | Delete 1.4.1 and replace with the following | Measurement for granular subbase of variable thickness will be for actual quantity placed based on weigh tickets provided to Contract Administrator as loads are delivered. |
| | | Delete 1.4.2 and replace with the following | Measurement for granular subbase for each specified thickness will be for the actual area placed. |
| | | Delete 1.4.3 and replace with the following | Payment for Subsection 1.4.1 & 1.4.2 above includes supply, placement and compaction of granular subbase material, adjustment of moisture content, and boning to establish the road cross-section, shall be included in the unit price bid in the Schedule of Quantities and Prices. |
| | | Delete 1.4.4 and replace with the following | Payment for removal of unsuitable subgrade including disposal off-site prior to direct placement of granular subbase will be made under Section 31 24 13 – 1.8.5 Common Excavation. |
| 2.0 | PRODUCTS | | |
| 2.1 | Specified Materials | Delete | 2.1.1.1: Select Granular Subbase
2.1.1.2: 75 mm Pit Run Gravel
2.1.1.4: Pit Run Sand
2.1.1.5: Approved Native Material
2.1.1.7: River Sand |

END OF SECTION

GRANULAR BASE

1.4	Measurement and Payment	Delete 1.4.1 and replace with the following	Measurement for granular base of variable thickness will be for actual quantity placed based on weigh tickets provided to Contract Administrator as loads are delivered.
		Delete 1.4.2 and replace with the following	Measurement for granular base for each specified thickness will be for the actual area placed.
		Delete 1.4.3 and replace with the following	Payment for Subsection 1.4.1 & 1.4.2 above includes supply, placement and compaction of granular base material, adjustment of moisture content, and boning to establish the road cross-section, shall be included in the unit price bid in the Schedule of Quantities and Prices.
		Delete 1.4.4 and replace with the following	Payment for removal of unsuitable subgrade including disposal off-site prior to direct placement of granular subbase will be made under Section 31 24 13 – 1.8.5 Common Excavation.
2.0	PRODUCTS		
2.1	Granular Base	Add 2.1.1.3	25 mm minus crushed gravel conforming to the gradation specifications for Collector/Arterial Roads under Section 31 05 17S – 2.10.3.
3.0	EXECUTION		
3.5	Proof Rolling	Delete 3.5.1 and replace with the following	For proof rolling, use fully loaded single axle, to 80 KN (18, 000 lb) minimum, dump truck.
		Add 3.5.7	<p>Prior to paving with asphalt concrete, the base surface shall be checked by the <i>Contract Administrator</i> and the City, for deflections utilizing a Benkelman Beam, in order to insure that the final rebound requirements can be obtained with the asphalt pavement. In the event that such deflection is in excess of those required to produce the final standards, then the base shall be adequately strengthened by additional gravel or asphalt concrete to insure that final deflections as follows are not exceeded.</p> <p>The Benkelman spring rebound value of the completed pavement surface shall not at any point exceed 0.75 mm for arterial industrial roads and lanes, 1.15 mm for collector roads, and 1.5 mm for local roads and lanes as determined in the procedures outlined in the Transportation Association of Canada publication “Pavement Management Guide.”</p>

END OF SECTION

ASPHALT TACK COAT

- | | | | |
|-----|--------------------------------|---|---|
| 1.5 | Measurement and Payment | Delete 1.5.1 and replace with the following | Payment for all work performed under this Section will be incidental to payment for work described in other Sections unless shown otherwise in the Schedule of Quantities and Prices. |
| | | Delete 1.5.2 and replace with the following | Pavement surface cleaning, as per section 32 01 11, and all other work incidental to the application of tack coat is deemed to be incidental to payment for work described in other Sections unless shown otherwise in the Schedule of Quantities and Prices. |
| 3.0 | EXECUTION | | |
| 3.2 | Application | Add to 3.2.3 | Asphalt tack coat to be applied using a truck mounted spray bar unless otherwise approved by the <i>Contract Administrator</i> and the City. Contractor shall demonstrate, to the <i>Contract Administrator</i> and the City, prior to application that all spray nozzles are operational and providing a consistent application. |

END OF SECTION

1.0 GENERAL

1.4 Submission of Mix Design

Delete 1.4.1 and replace with the following

Submit asphalt concrete mix design, including RAP content and trial mix test results to Contract Administrator for review at least two weeks prior to commencing work.

1.5 Measurement and Payment

Delete 1.5.1 and replace with the following

Payment for asphaltic concrete paving includes all construction joint preparation, asphaltic surface milling to tie into existing asphalt, saw cutting, supply and placing of the asphaltic concrete, tack coat, compaction and cleaning frames, covers and lids of castings affected and taped temporary pavement markings.

Measurement for asphaltic concrete paving for the specified design mixes will be made at the respective unit prices bid in the Schedule of Quantities and Prices and incorporated into Work will be asphalt concrete actually based on weigh tickets provided to the Contract Administrator as loads are delivered.

The contractor will not receive any additional compensation above the respective unit prices bid in the Schedule of Quantities and Prices for Hand Work, Special Equipment & Machinery to complete the Hot Mix Asphaltic Paving Work as shown on the Contract Drawings or as directed by the Contract Administrator.

For measurement and payment purposes, Contract Administrator may calculate payment on actual area paved to the thickness specified in in the Schedule of Quantities and Prices and as shown on the Contract Drawings.

Delete 1.5.3 and replace with the following

Payment for asphaltic concrete sidewalks, pathways, driveways, and infill strips paving includes all construction joint preparation, saw cutting, supply and placing of the asphaltic concrete, tack coat, compaction and cleaning frames, covers and lids of castings affected, and 100mm granular base.

Measurement for asphaltic concrete paving for the specified design mixes for will be made at the respective unit prices bid in the Schedule of Quantities and Prices and incorporated into Work will be asphalt concrete actually based on weigh tickets provided to the Contract Administrator as loads are delivered.

Payment for this item includes all applicable materials and work described in 1.5.1. Work includes all necessary adjustments on site during construction to achieve proper tie-in to existing driveways as directed by Contract Administrator. Adjustments performed under this section shall be incidental to payment for work described in other Sections.

1.6 Inspection and Testing

Add 1.6.3

Test cores will be taken by the *Contract Administrator* in the areas of new paving and will include cores along construction joints to ensure compliance with the required design and compaction.

2.0 PRODUCTS

2.1 Materials

Add 2.1.2.1

Usage of recycled asphalt shingles will not be permitted.

Add 2.1.2.2

Usage of softening agents, rejuvenators, or recycling agents will not be permitted.

2.2	Mix Design	Delete 2.2.2 and replace with the following	Mix may contain up to a maximum of 15 % by mass of RAP for Upper Course Asphalt and 20 % by mass of RAP for Lower Course Asphalt without a special mix design. The <i>Contract Administrator</i> and the City may approve higher proportion of RAP if <i>Contractor</i> demonstrates ability to produce mix meeting requirements of the specification.
		Delete 2.2.3.2 Marshall Stability and replace with the following	Marshall Stability at 60°C for both lower and upper courses to be 10 KN min.
3.0	EXECUTION		
3.3	Preparation	Delete 3.3.3 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. Utility adjustment within the paved surface will be considered incidental to the <i>Work</i> unless otherwise noted in the <i>Contract Documents</i>.</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 cooperate with any utility company providing their own adjustments.</p> <p>The <i>Contractor</i> shall be responsible to contact the appropriate utility company with in minimum of seventy-two (72) hours of the work. No adjustment shall be made without the written approval of the utility company.</p> <p><u>All manholes must be vertically adjusted a minimum of twenty-four (24) hours prior to paving.</u> The use of riser rings for adjusting manhole frames and value boxes will not be permitted.</p>
3.7	Joints	Delete 3.7.5 and replace with the following	Construct butt joints at locations as shown on the <i>Contract Drawing</i> and as directed in the field by the <i>Contract Administrator</i> and the City.

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 manufactured by LAFRENTZ ROAD MARKINGS, 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 covers removal of existing markings, 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, temporary removal, cleaning and re-installation of existing, and sign installations (complete). The City will supply signs to supplement existing signs as required. Payment includes all labor, materials and incidentals to complete the work.

1. Installation of each new sign pole, cap, sleeve and trapezoidal base includes all costs to supply all materials, labour and equipment and incidentals, as shown on Standard Detail Drawings SS-E11.1 & SS-E11.2, necessary to the install sign structure as shown on the Contract Drawings and as directed by the Contract Administrator.

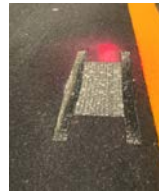
2. Installation of each new sign pole, cap, sleeve, galvanized steel bracket for no post barrier, as per MOT Drawing # SP635-3.8.3, includes all costs to supply all materials, labour and equipment and incidentals necessary to the sign structure as shown on the Contract Drawings and as directed by the Contract Administrator.

3. The unit price payment is for each city supplied aluminum sign installed on a sign pole includes sign mount clamps & all costs to supply all materials, labour and equipment and incidentals necessary to install each sign as directed by the Contract Administrator.

4. Installation of each 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.

Add 1.5.5

Payment for the installation of Snowplowable Raised Pavement Markers (RPM) will include all labour, equipment, and materials required to install RPMs to manufacturer's specifications. Asphalt grinder tool bit to be used must mirror the image of the RPM being installed as shown:



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.

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.

3.0 EXECUTION

3.3 Application

Add to 3.3.1.3

Temporary raised pavement markings (TRPMs) are to be provided on all multi-lane 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

1.0 GENERAL

1.0 General Requirements

Delete 1.0.1 and replace with the following

.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

Payment includes supply and installation of growing medium, boulevard tree trench, burk mulch and imported top soil that is free from any noxious weeds, fungal growth, mushroom, and any contaminants, and as described in the Schedule of Quantities and Proces. Payment will be made separately and includes supply of material, on-site handling, preparing the landscape area subgrade, placing, grading, raking, compacting top soil and application of fertilizers. Payment for top soil will be for actual volume placed onsite at specified thickness.

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

			<p><i>Contract Administrator</i> and the City for approval prior to commencing work. Soil analysis shall include measurements of:</p> <ul style="list-style-type: none"> .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 <p>.6 At the discretion of the <i>Contract Administrator</i> and the City submit up to two (2) additional samples, at intervals outlined by the <i>Contract Administrator</i> and the City, of <i>Growing Medium</i> 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 <i>Contract Administrator</i> and the City for review.</p> <p>.7 The <i>Contractor</i> is responsible for soil analysis and requirements for amendments to supply <i>Growing Medium</i> as specified. Failure to satisfy these contractual requirements could result in the <i>Contractor</i> being required to remove unacceptable <i>Growing Medium</i> at their expense.</p> <p>.8 Notify the Contract Administrator at least forty-eight (48) hours prior to <i>Growing Medium</i> placement for inspection.</p> <p>.9 Refer to General Conditions, Clause 4.12 Tests and Inspections.</p>
1.6	Product Handling	Add 1.6	<ul style="list-style-type: none"> .1 All materials to be handled and adequately protected to prevent damage. Do not handle <i>Growing Medium</i> in an excessively wet, extremely dry, frozen condition or in any manner in which structure may be adversely affected. <i>Growing Medium</i> whose structure has been damaged by handling under these conditions shall be rejected and shall be replaced by the <i>Contractor</i> 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 <i>Growing Medium</i> and amendments from windblown soil particles, weed seeds and from insects. Contamination of the <i>Growing Medium</i> and amendments may result in their rejection for use. .4 Store fertilizer and chemical amendments in the manufacturer's original containers. .5 All <i>Growing Medium</i> shall be delivered to site <u>premixed</u> from a recognized <i>Growing Medium</i> source ensuring consistency throughout the mix.
2.0	PRODUCTS	Delete 2.0 and replace with the following	
2.1	Materials		<ul style="list-style-type: none"> .1 <i>Growing Medium</i> Preparation <ul style="list-style-type: none"> .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 <i>Growing Medium</i> 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*.
- .4 Manure
- .1 Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth and free from salt or other harmful chemicals, such as any used to artificially hasten decomposition.
- .2 All particles in manure to pass a 6.35 mmm sieve.
- .3 Salt content shall give a reading of less than 0.5 millimhos/cm at 25 degrees C.
- 2.2 Nutrient Requirements**
- .1 Nutrient requirements shall meet the BCSLA/BCNTA Landscape Standard *Growing Medium* requirements for nitrogen, phosphorus, potassium, calcium, magnesium, boron, sodium cation exchange capacity, carbon to nitrogen ratio.
- .1 Boron: not to exceed 1.0ppm
- .2 Sodium: Sodium absorption ratio(SAR) not to exceed 8.0
- .3 Total Nitrogen: to be 0.2-0.4% by weight
- .4 Available Phosphorous: to be 50-100 ppm
- .5 Available Potassium: to be 50-70 ppm
- .6 Cation Exchange Capacity: to be 30 to 50 meq.
- .7 Carbon to nitrogen ratio: Maximum 40:1.
- 2.3 Salinity**
- .1 The electrical conductivity of the liquid taken from the soil pH evaluation shall not exceed 3.0 millimhos/cm at 25 degrees C before additions of fertilizers and/or liming agents.
- 2.4 Drainage Rate**
- .1 Percolation shall be such that mixing, handling and placement to be done in such a manner that the minimum saturated hydraulic conductivity show on Table – '*Growing Medium Properties for Different Applications*' (found herein these specifications) is achieved and no standing water is visible 60 minutes after at least 10 minutes of moderate to heavy rain or irrigation.
- 2.5 Growing Medium Source**
- .1 Import planting medium or manufactured planting medium from off-site sources. Do not obtain from agricultural land, bogs or marshes.
- .2 Supplier of Growing Medium shall be as per the Coquitlam Approved Products List.
- 2.6 Bark Mulch**
- .1 Mulch backfilled surfaces of planting beds and other areas indicated on drawings.
- .1 Organic Mulch: Apply 50 mm average thickness of organic mulch, and finish level with adjacent *Finish Grades*. Do not place mulch against plant stems.
- .2 Supplier of Bark Mulch shall be as per the Coquitlam Approved Products List.
- .3 Dark brown in colour and free of all soil, stones, roots or other extraneous matter, and free of weeds, seeds and spores.

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 cuspatd 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 mixture	Percentage of
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 at 25 degC	3.0 milliohms/cm
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.

			<p>.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> <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>
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 <i>Owner</i> .
		Delete 3.2.5 and replace with the following	Course cultivate entire area which is to receive <i>Growing Medium</i> 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 <i>Contract Administrator</i> 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><i>Growing Medium</i> shall be imported and stockpiled on site in a location approved by the <i>Contract Administrator</i> and the City.</p> <p>.1 Carry out stock piling operation such that the <i>Growing Medium</i> structure is not compromised through compaction, vibration or other actions.</p> <p>.2 Stock piled <i>Growing Medium</i> shall be protected from rain, drying and contaminants.</p> <p>.3 <i>Growing Medium</i> 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 <i>Growing Medium</i> and replacement at no cost to the <i>Owner</i>.</p>
3.4	Placing Growing Medium	Delete 3.4.2 and replace with the following	Place <i>Growing Medium</i> 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 <i>Sub Grade</i> 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: .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
		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	.1 Addition of amendment components shall be at the rates indicated in the <i>Growing Medium</i> analysis recommendations via the following methods: .1 Lime: Applied with mechanical spreaders over entire planting areas and contained planters. .1 Do not apply by hand. .2 Mix thoroughly into the top 100 mm of <i>Growing Medium</i> . .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 <i>Growing Medium</i> .
3.6	Finish Grading	Delete 3.6.1 and replace with the following Add 3.6.3	Manually fine grade <i>Growing Medium</i> installation to contours and elevations shown on drawings or as directed by <i>Contract Administrator</i> and the City. Eliminate rough spots and low areas to ensure positive drainage. <i>Finish Grade</i> of <i>Growing Medium</i> 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	.1 Ensure all paved areas, tops of planters, adjacent surfaces have been thoroughly cleaned. Ensure all discoloration of adjacent surfaces as a result of <i>Growing Medium</i> installation have been removed. .2 Dispose of materials not required and repair any damage to adjacent surfaces (as determined by the <i>Contract Administrator</i> and the City) off site at no additional cost to the <i>Owner</i> .
3.10	Weed Control	Add 3.10	.1 Ensure all weeds and weed roots that have germinated during the course of work of this section have been eliminated from <i>Growing Medium</i> . .2 Provide the City Representative and Consultant with a written outline of weed removal methodology seven (7) days prior to starting weed removal operations.
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

SODDING

1.0	GENERAL	Delete 1.0.2 and replace with the following	This section is based on the "British Columbia Landscape Standards and the B.C. Nursery Trades Association. This standard is intended to set a level of quality which is equalled or bettered in the construction documents.
1.4	Handling and Storage	Delete 1.4.3 and replace with the following	Schedule sod deliveries such that sod installation occurs within twenty-four (24) hours of being lifted from the source sod farm.
		Delete 1.4.4 and replace with the following	Sod shall be neatly stacked or rolled at the source sod farm, delivered and unloaded on sturdy pallets which are no more than 3 pallets high.
1.5	Drainage Control	Delete 1.5.1 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, growing medium or hydraulic seed is detained and cleaned prior to discharge from <i>Place of Work</i> .
1.6	Samples	Add 1.6.2	Submit one (1) square meter of sod to the <i>Contract Administrator</i> and the City for review. Ensure sample is complete with name of sod farm, base soil type, seed mix percentage.
		Add 1.6.3	<i>Contract Administrator</i> and the City shall review sod sample for approval prior to installation. The sample accepted by the review will form the standard by which the project will be supplied.
		Add 1.6.4	Should the <i>Contractor</i> require the source of sod 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 sod substitution sample and include the name of sod farm, base soil type, seed mix percentage for <i>Contract Administrator</i> and the City review prior to the delivery.
1.8	Measurement and Payment	Delete 1.8.1 and replace with the following	Payment for nursery sod includes supply and placing of sod as shown on the Contract Drawings or as directed by the Contract Administrator and grass maintenance to meet Conditions of Total Performance. Payment includes protection from damage caused by any living creature.
2.0	PRODUCTS		
2.1	Sod	Delete 2.1.1 and replace with the following	Sod to be approved by the <i>Contract Administrator</i> and the City and to be nursery grown, true to type, conforming to standards of nursery Sod Growers' Association and their Nursery Sod Specifications. Sod to be quality, cultured turf grass grown from seed approved by Canada Department of Agriculture, free of disease, clovers, stones, pests and debris.
		Add 2.1.1.1	Nursery sod: .1 Shall be No. 1 Premium grade and contain only species of grass indicated on the supplier's certificate. .2 Sod shall be 'non-netted'
		Add 2.1.1.2	Table Guideline of Approved Sod Mix Ratios

Supreme Soil Base Sod	
(Elka II) Perennial Ryegrass	40%
(Shamrock) Kentucky Bluegrass	30%
(Cindy) Chewing Red Fescue	30%

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Seed Rate: 50g per square metre	
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		Add 2.1.8	All sod shall be completely free of invasive and/or noxious broadleaf weeds, grasses including but not limited to poa annua, disease, fungi, detrimental nematodes and detrimental insects.
2.2	Water	Delete 2.2.1 and replace with the following	Potable, free of impurities that would inhibit seed germination. <i>Contractor</i> to ensure adequate water is available to maintain seeded areas during germination and in a vigorously growing, healthy state until <i>Total Performance</i> of work of this section.
2.3	Fertilizer	Add 2.3.2	Fertilizer shall be complete synthetic slow release fertilizer. Type and application shall be as required by the growing medium analysis report.
2.4	Wooden Pegs	Add 2.4	.1 Wooden Pegs shall be 19 mm x 19 mm x 150 mm long No. 1 grade or better Hem/fir.
2.5	Binder Twine	Add 2.5	.1 Binder Twine shall be hemp based multiple strand string.
2.6	Flagging Tape	Add 2.6	.1 Flagging Tape shall be 30 mm wide, biodegradable ribbon tape made of non-woven cellulosic material, and red color, or an approved equivalent.
3.0	EXECUTION		
3.1	Finish Grade Preparation	Delete 3.1.2 and replace with the following	Prior to the placement of sod <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, growing medium 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 growing medium and make adjustments as directed by <i>Contract Administrator</i> and the City.
		Delete 3.1.5 and replace with the following	Fine grade growing medium to lines and levels shown on Contract Drawings. Ensure that all low spots, humps and irregularities are eliminated prior to review by <i>Contract Administrator</i> and the City.
3.2	Sodding	Delete 3.2 and replace with the following	.1 Sod shall not be placed during hot dry summer periods, at freezing temperatures, or over frozen growing medium. .2 Allow sod to dry sufficiently during wet weather to prevent tearing during lifting and handling. .3 Handle sod carefully to minimize tearing and dropping of soil. .4 Placement of Sod: .1 Lay sod in rows smooth and flush to adjoining grass areas and paving and top surfaces of curbs unless shown otherwise on <i>Contract Drawing</i> . Ensure there is a full roll width between the new sod and any adjoining surfaces. Small cut pieces from a full roll will not be accepted. .2 Stagger joints and ensure that sod sections are butted closely together without overlapping or leaving gaps between sections. .3 Cut out irregular or thin sections with a sharp knife. .4 Cut sod to fit tight around landscape elements. .5 Cut sod to create clean, smooth lines along all plant beds.

SODDING

- .5 Placement of Sod on Slopes:
 - .1 Lay sod with the length of each sod section parallel to slope taking extra care to ensure that sod sections are butt tight and each sod section is set in a staggered formation.
 - .2 On slopes exceeding 3:1 gradient ensure sod is secured with wooden pegs at intervals of not more than 450 mm along the center of each section. Ensure wooden pegs are driven flush with the sod.
 - .3 Prior to acceptance of sod areas that have been secured with wooden pegs either remove the wooden pegs or drive each wooden peg at least 50 mm below finished grade.
 - .4 Where required, place erosion control mesh or netting and secure with stakes or staples sunk firmly into ground to a minimum depth of 150 mm at maximum intervals of 4 meters along pitch of slope. Place stakes or staples horizontally across slope at intervals equal to width of mesh or netting minus 150 mm and drive flush with top of sod.
- .6 Use a light roller to ensure that there is full, close contact between sod and growing medium. Use of a heavy roller to correct irregularities in grade is not permitted.
- .7 Ensure all sodded areas are watered immediately after installation. Verify that water applied to has penetrated through sod into top 100 mm of growing medium. Continue watering operations as needed to ensure that adequate moisture content is maintained to encourage deep root growth and healthy, vigorous leaf growth.
- .8 Protect newly placed sod from heavy foot traffic during installation and until acceptance by the *Contract Administrator* and the City. Protection shall include but is not limited to placement of wood planks or plywood of sufficient thickness to bear the imposed weight and prevent damage to sod or displacement and/or compaction of sod/growing medium.
- .9 Sod that has been damaged by construction operation, construction / site personnel or construction traffic shall be replaced at no cost to the *Owner*. Replacement shall include removal of growing medium, regarding of sub grade, replacing growing medium and sod as required.
- .10 Water sod area immediately with sufficient amounts to saturate sod and upper 100 mm of growing medium. Do not allow the sod to dry out so that the joints become visible.

3.4 Grass Maintenance

Delete 3.4 and replace with the following

- .1 Maintenance of sodded areas shall begin immediately after sodded 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* have 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 Sod Cutting: After the 'first' cut of sodded lawn areas 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 sodded lawn areas shall occur when a uniform grass height of 75 mm has been attained. First cut shall be to a height of 65 mm.

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- .2 Continue regular weekly cutting at a height of 65 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 offsite.
- .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 Sodded lawn areas shall 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.
- .5 All maintenance equipment and practices are to conform to the BC Landscape Standard Level 2 'Groomed'.
- .6 Protect all sodded areas against trespassing and from damage at all times clearly marked, staked, string and flagging tape.
- .1 Perimeter Protection: Where directed by the *Contract Administrator* and the City, sodded areas shall be surrounded by a 900 mm high barrier made up of the following components:
 - .1 Wood posts placed at 1.8 meters on centre.
 - .2 Wood Posts to be driven to a depth of 300mm.
 - .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 *Total Performance* issued. Upon acceptance by *Contract Administrator* and the City, remove perimeter fence and dispose of off site.

3.5 Condition for Total Performance

Delete 3.5.1 and replace with the following

Conditions for *Total Performance* of Sodded areas:

- .1 Sodded areas exhibit fully established root systems.
- .2 No seams are visible between sod sections.
- .3 Sod areas are smooth and evenly graded. No depressions, foot marks or vehicle tracks.
- .4 Sod is free of bare and dead spots and does not have any broadleaf weeds, noxious grasses including but not limited to poa annua.
- .5 No surface growing medium is visible when grass has been cut to height of 65 mm.
- .6 Sodded areas have been cut a minimum of two (2) times, at seven (7) day intervals.
- .7 Sodded areas are a uniform green colour with no discoloured sections or patches.

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			.8 Sodded areas exhibit a thick, dense, uniform and healthy appearance.
		Add 3.5.2	Lawns sodded after September 30 th will be not be reviewed for <i>Total Performance</i> until April 30 th the next year.
3.6	Guarantee / Maintenance	Delete 3.6.1 and replace with the following	The <i>Contractor</i> hereby guarantees that the sod will remain free of weeds and defects for a period of one (1) year from the date of <i>Substantial Performance</i> . The <i>Contractor</i> shall make all corrections, adjustments and replacements required as a result of failure of all products in this section. During the <i>Maintenance Period</i> , the <i>Contractor</i> will replace sodded areas, determined by <i>Contract Administrator</i> and the City, to be dead or failing at the end of the <i>Maintenance Period</i> . Replacements to be made at next appropriate season and, conditions of guarantee will apply to all replacement seeding for one full growing season.
		Delete 3.6.2 and replace with the following	The Owner reserves the right to extend the <i>Contractor's Maintenance Period</i> and responsibilities for one (1) additional year if, at end of the initial guarantee period, the development and growth of the sod is not sufficient to ensure future survival.

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</p> | <p>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, root barrier, Treegator, shrubs, plants & etc. as applicable and as shown on Contract Drawing, and other incidental specified under this Section including watering and maintenance to meet Conditions of Total Performance.
		Add 1.9.3	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:

			<ul style="list-style-type: none"> .1 Coniferous and broadleaved 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.
			<ul style="list-style-type: none"> .9 Tree Spade Dug Plant Material <ul style="list-style-type: none"> .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	<ul style="list-style-type: none"> .1 Tree trunk protections shall be extrusion mold process, polyethylene with UV protectors as per Approved Products List.
2.14	Burlap	Add 2.14	<ul style="list-style-type: none"> .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	<ul style="list-style-type: none"> .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.

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| 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. |
| | | | .6 | Planting Areas shall be excavated to the following depths: |

3.3 Planting

Delete 3.3 and replace with the following

- .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.
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- .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.

	<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

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 *Contract Administrator* 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 *Contractor* at no cost to the *Owner*.
- .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.
 - .2 Remove all deleterious material and debris from planting areas.

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| | | | .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. |
| | | | .2 | Spread composted mulch to minimum depth of 50 mm. |
| | | | .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 | .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 | .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. |

3.10 Conditions for Total Performance

Delete 3.10 and and replace with the following

- .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.
- .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

WATERWORKS

1.8	Measurement and Payment	Delete 1.8.2 and replace with the following	<p>Payment for watermain will include location and exposure of existing utilities, saw cutting and disposal of pavement, trench excavation, disposal of surplus / displaced excavated material, support of utility poles and adjacent piping, supply and installation of all pipe, bends, bolts, gaskets, thrust blocks, couplings, restraints and tie rods, all nuts, bolts and fasteners to be 304 stainless steel or better, application of petrolatum mastic on all metal but non stainless water appurtenances, blind flanges, caps, fittings and related materials, tie-ins, bedding, approved native excavated backfill material compacted in place, import backfill, cleaning, pressure and leakage testing including all labor, material and equipment required to complete the test, flushing, disinfection where required, granular sub-base, granular base, all surface restoration as specified under Section 31 23 01 – Sub-section 3.6, COQ-G4 and all other work and materials necessary to complete installation as shown on Contract Drawings, as described in Schedule of Quantities and Prices, and as specified under this Section; and</p> <p>Payment includes pre-determining of existing watermain OD by Contractor prior to start of work for proper joint restraint sizing.</p> <p>Measurement for watermain will be made along the centerline of the main, through the valves and fittings, with no deduction for length of valve or fittings, over surface after work has been completed; and</p> <p>Native excavated material approved for re-use as trench backfill shall have all cobbles greater than 150 mm diameter removed and disposed off-site and shall be granular in nature and free from organic materials. Native excavated material shall not be used as trench backfill where moisture content does not permit compaction to specified density. Where native excavated material is unacceptable for use as trench backfill, imported trench backfill shall be supplied, placed, and compacted to specified density.</p>
		Delete 1.8.3 and replace with the following	<p>Payment for inline gate valves or butterfly valves including Terminal City Nelson Type valve boxes, restraints; and for fittings (crosses, tees, bends, reducers, blind flanges, caps, anchors and etc.) will be made for items identified on Contract Drawings and installed as part of watermain as described under 1.8.2 in this Section.</p> <p>Payment for fittings, unless specified in the Schedule of Quantities and Prices, performed under this section will be incidental to payment for work described in other Sections.</p> <p>Measurement will be for each respective item installed without deduction of length of valves and fittings from length of pipe measured for payment under 1.8.1 and 1.8.2 in this Section.</p>
		Delete 1.8.4 and replace with the following	<p>Payment for new, renewal, transfer and capping of service connection includes locating and cutting the existing service supply, removal and disposal of concrete meter box, curb stop, piping and meter (where applicable), supply and installation by direct tapping, corporation stops, reconnecting to the existing main using a MacDonald compression coupling ("funny nut"), curb stops, service pipes, saddles and all related fittings and appurtenances specified and/or shown on Standard Detailed Drawing COQ-W2a (except where noted), COQ-W2k, COQ-W2d, WM-3, new meter and appurtenances, all labor, material and equipment including use of tapping machine and reconnecting to the existing service at or near</p>

property line or as shown on the Contract Drawings including any fittings and repair couplings. Payment also includes all applicable work described in 1.8.2.

Measurement for service connection will be for each complete service installed, including all appurtenances, length of service pipe installed and length of riser.

Payment includes re-use of existing cast iron Terminal City Nelson Type style valve box c/w lid marked "WATER" and supply and installation of new pvc riser.

Delete 1.8.7 and replace with the following

Payment for supply and installation of a new blow-off assembly includes supply and installation of all materials, works and appurtenances as shown on the Contract Drawings. Payment includes all applicable work described in 1.8.2.

Measurement will be made at the lump sum price bid for each blow-off assembly installed.

Delete 1.8.13 and replace with the following

Payment for all tie-ins to existing watermain will include all pipe materials, tapping tee and valve, fittings, test points, blow off assembly, joint restraints, excavation to expose the existing main to confirm location, grade, size, material & condition and prepare the existing watermain, couplers, caps, restraints, tie-rods, all nuts, bolts and fasteners to be 304 stainless steel or better, application of petrolatum mastic on metal but non stainless water appurtenances, bedding and backfill material on pipe zone, testing and disinfection, cutting and disposal of the existing mains, permanent capping c/w restraints, removal of any decommissioned valves boxes, removal of any decommissioned valves and fittings to accommodate the new and existing main, temporary fittings to provide service changeovers and coordinating all tie-in works with City Staff and as described on the Contract Documents and Drawings. Payment includes all applicable work described in 1.8.1 and 1.8.2.

Add 1.8.14

Payment for new hydrants installed on the new main includes the hydrant body, c/w Storz "quick connect" pump nozzle, lateral connections from mainline tee off watermain to hydrants, all new pipe, isolation gate valve, valve box & cover, valve stem riser pipe, bends, couplings (Robar 1506), any necessary pipe extensions to achieve the required hydrant height, concrete thrust block, tie rods, bedding material, testing and disinfection, surface restoration as indicated in the requirements in 1.8.2 of this Section and all other incidental work as shown on Standard Detail Drawing W4.

Measurement will be made at the unit price bid for each hydrant assembly installed.

2.0 PRODUCTS

2.2 Mainline Pipes, Joints and Fittings

Add to 2.2.1.1

Pipe: to AWWA C151, and shall meet the following Pressure Class or Thickness Class:

- .1 100 mm – 350 mm – Thickness Class 50
- .2 400 mm & greater – PC 350

Delete 2.2.2.2 and replace with the following

Joints: It is mandatory that the push-on integrally thickened bell and spigot type conform to ASTM D3139 Clause 6.2 with single elastomeric gasket to ASTM F477.

WATERWORKS

Delete 2.2.4.13 and
replace with the
following

Joint Restrain Devices: General Requirements:

- .1 Ductil iron castings to ASTM A536.
- .2 Anti-corrosion coating of ductile iron castings to AWWA C219, AWWA C210, AWWA C213 or AWWA C550.
- .3 Bolts and nuts high strength low alloy steel to AWWA C111 or as specified in Contract Documents, stainless steel to ASTM F593 or ASTM F738 for bolts and ASTM F594 or ASTM F836 for heavy hex nuts. Rolled threads, fit and dimensions to AWWA C111.
- .4 Tie rods to 2.2.3.8 of this Section
- .5 Restrainers for ductile iron pipe shall be mechanical joint fittings or push-on joint fittings with tie rod.
- .6 Restrainers for PVC pipe shall be mechanical joint fittings or push-on joint fittings with tie rod lugs.
- .7 Restrained harnesses or integral restrain systems manufactures as part of the pipe joint.
- .8 All joint restraint systems for PVC pipe be approved by the specific PVC pipe manufacturer, and that they do not derate the pipe manufacturer's recommended working pressures.
- .9 Restrainers for PVCO pipe shall be mechanical joint fittings or push-on joint fittings with tie rod lugs.
- .10 All joint restraint systems for PVCO pipe be approved by the specific PVCO pipe manufacturer, and that they do not derate the pipe manufacturer's recommended working pressures.

Add 2.2.7

Oriented Polyvinyl (PVC) Pressure Pipe:

- .1 Pipe:
 - .1 Pipe to be manufactured to specifications for pipe size ranges as follows:
 - .1 Pipes 100 to 600 mm diameter – AWWA C909.
 - .2 Pipes to be certified by Canadian Standards Association for pipe size ranges 100 mm to 600 mm dia. – CSA B137.3.1.
 - .2 Cast iron pipe equivalent outside diameter.
 - .3 To be compatible with specified mechanical joint and push-on joint fittings and valves without use of apecial adapters.
- .2 Joints: Push-on integrally thickened bell and spigot type to AWWA C909 Clause 4.3.3.2 (a.) with single elastomeric gasket to ASTM F477.

**2.3 Valves and Valve
Boxes**

Delete 2.3.1.3 and
replace with the
following

Valves 400 mm and larger shall be butterfly valves.

Delete 2.3.1.4

Delete 2.3.4 and
replace with the
following

Blow-Down or Blow-Off Valves: 50 mm to 300 mm as specified for mainline gate valves.

Delete 2.3.6.1.1

WATERWORKS

		Delete 2.3.6.1.2 and replace with the following	Circular type valve box shall be Nelson style cast iron.
		Delete 2.3.7.1 and replace with the following	Curb stop valve boxes on 19 mm dia. to 38 mm dia. shall be as shown on Coquitlam Standard Detail Drawings COQ-W2b, COQ-W2j.
		Delete 2.3.7.2	
		Delete 2.3.7.3 and replace with the following	Curb stop valve boxes (300 mm from property line) alternative on 19 mm dia. to 38 mm dia. services without operating rods to be assembled as specified for Mainline Valve Boxes 2.3.6.1.2, and shown on Coquitlam Standard Detail Drawings COQ-W2b, COQ-W2j. Service boxes may be Nelson style PVC, except when located in driveways.
		Delete 2.3.7.5 and replace with the following	Corporation stop valve boxes (at mainline tees or tappings) on services 50 mm dia. and larger as specified for Mainline Valve Boxes per Coquitlam Standard Detail Drawings COQ-W2e, COQ-W2f.
2.5	Service Connections, Pipes, Joints and Fittings	Delete 2.5.1 and replace with the following	Pipe diameter 19 mm to 75 mm to be Type K annealed copper to ASTM B88M.
2.6	Hydrants	Delete 2.6.1.6 and replace with the following	Pump nozzle shall be "quick connect" STORZ type. STORZ type nozzle must be painted gloss black.
		Delete 2.6.2 and replace with the following	Colour: Tremclad Rust Paint Body – Fire Red Hose Caps and Bonnet – Bright Yellow
2.8	Granular Pipe Bedding and Surround Material	Add 2.8.3	Bedding and surround material shall be Type 1 under Section 31 05 17 – 2.7 or 19 mm minus clear crushed gravel.
3.0	EXECUTION		
3.6	Pipe Installation	Add 3.6.15	When the watermain crosses a storm or sanitary sewer, the watermain shall be installed a minimum 0.5 m clear above the sewer. Where this is not possible, the watermain shall have a minimum 0.3 m clearance under the sewer with all joints within a 3.0 m horizontal distance from the sewer wrapped with heat shrink plastic or packed and wrapped with petrolatum tape in accordance to the following standards: .1 ANSI/AWWA C214 (factory applied) .2 ANSI/AWWA C209 (field applied) .3 ANSI/AWWA C217-90 (petrolatum tape) .4 All materials used are to have zero health hazard Installation shall be in accordance with the requirements of the Regional Health Engineer under the Health Act.
3.10	Service Connection Installation	Delete 3.10.4	
		Delete 3.10.5 and replace with the following	Tappings in cast iron or ductile iron mains to AWWA CISI pipe to be made using double strap saddles specified in 2.5.3 of this Section.

		Add 3.10.13	Water service connections (19 mm and 25 mm) must be installed as one continuous length of pipe.
3.18	Cleaning and Preliminary Flushing	Add 3.18.5	<p>Water mains 400 mm and larger shall be swabbed as per the following procedure:</p> <ol style="list-style-type: none">1. <u>Purpose and Scope</u><ol style="list-style-type: none">.1 To remove any possible contaminants introduced into the water main through pipe storage or installation activities.2. <u>Swab Requirements</u><ol style="list-style-type: none">.1 Swabs are to be of a polyurethane foam construction, minimum 2 lb/ft³ density.2 Swabs are to be new. Used swabs will not be accepted..3 Swab outside diameter must be minimum 1 nominal size larger than the largest diameter main to be swabbed (eg. 150 mm main requires minimum 200 mm diameter swabs).4 Swab length must be minimum 1.5 times the outside diameter.3. <u>Swab Entry Point</u><ol style="list-style-type: none">.1 2 swabs are to be inserted into the beginning of the first length of water main installed into the trench. Swabs are to have a minimum of 1-meter separation between them..2 Minimum 300 grams of calcium hypochlorite granules are to be installed in between the 2 swabs.4. <u>Swab Discharge Point</u><ol style="list-style-type: none">.1 Swabs are to be discharged from the water main at the end of the installation (ie-permanent or temporary dead end).2 A temporary connection for a discharge assembly of minimum 150 mm (100 mm is acceptable for 100 mm water main only) is to be made to the end of the new water main pipe (connection to a blow off assembly is not acceptable)..3 The discharge assembly must consist of a 90-degree elbow and appropriate fittings to adapt to 150 mm "camlock" style layflat hose. The assembly must have adequate thrust protection to avoid blowing off during the swabbing procedure..4 The 150 mm layflat hose must extend above the surface of the existing ground.5. <u>General Swabbing Requirements</u><ol style="list-style-type: none">.1 Swabbing to be performed after the satisfactory completion of all pipe work (as determined by the city inspector), and prior to flushing, pressure testing, and chlorination of the new water main..2 Swabbing of the water main is to be witnessed by the City of Coquitlam..3 Although a minimum of 2 swabs must be used for each run, additional swabs may be required depending on the time required for the water to run clear after swab discharge. This determination will be made by the City of Coquitlam.

- .4 Swabs are to be used once only. Additional new swabs will be required for additional swab runs if deemed necessary by the city.
- .5 Swabs must be stored and handled hygienically.
- .6 The contractor must provide all labour and materials required to carry out the swabbing procedure.
- .7 Swabbing should be completed from a low point to a high point where possible.
- .8 A plan to complete the swabbing must be submitted to the City of Coquitlam prior to the work taking place for approval.
- .9 The contractor must take all necessary action to prevent flooding of the discharge area.

6. Swabbing Procedure

- .1 The length of main within the swabbing run must have all connections larger than 25 mm isolated by closing appropriate valves.
- .2 The new main is to be filled and swabs propelled via a certified backflow prevention device (double check valve assembly) and water meter from the existing system. The connection to the existing system will form part of the plan submitted to the city for approval.
- .3 Appropriate flow is to be used to propel the swabs at approximately .75 meter per second velocity. See following list for appropriate flow:

Main diameter (mm)	Approximate flow required to produce 0.75 m/s velocity (l/s)
100	6.3
150	12.6
200	25.2
250	37.9
300	56.8
600	227.2

- .4 Upon discharge of the swabs, the main must be flushed until the water runs clear.
- .5 The supply point can then be slowly closed.
- .6 Additional swabs must be run through the water main if excessive debris is noted to be discharged from the main or there is excessive clean up time after the swabs are discharged.

3.23 Connection to Existing Mains

Delete 3.23.1 and replace with the following

Connections to existing waterworks systems will be made by the Contractor under the supervision of the Contract Administrator. Make all necessary arrangements with the Contract Administrator and the City to schedule work to prevent construction delays.

Add 3.23.2

Provide written notification to all affected residents a minimum 48 hours prior to service interruption.

Add 3.23.3

Arrange shutdown of the existing valves by the City. *Contractor* shall not operate any valves without prior approval of the *Contract Administrator* and the City.

Add 3.23.4

Provide temporary water service while existing service is interrupted as detailed in *Contract Drawing* or Project Specific Specifications.

WATERWORKS

- Add 3.23.5 Fittings used for tie ins should be cleaned of all foreign material and sprayed with a 1% hypochlorite solution prior to assembly. Disinfect all pipes and fittings installed at the connection.
- Add 3.23.6 *Contractor* shall be responsible for the costs for the City to flush and purge all air from existing mains and services in the area affected by the water service interruption.
- Add 3.23.7 Procedures for Bacteriological Tests shall be as described in AWWA C651-99. No connection to existing water mains will be authorized until final results of coliform bacterial testing have been received and reviewed by the Water Superintendent.
- All samples shall be taken by the City Water Utility.
- All valve operation shall be handled by the City Water crews.
- The *Contractor* shall provide sampling points, one every 366m plus the end of each main segment. The *Contractor* shall provide all labour to temporarily connect and disconnect the new main in order to properly acquire test samples.
- Initial flushing, testing and chlorination will be undertaken by the *Contractor* from a water source approved by the Water Superintendent.
- Coordination for the bacterial testing and tie in shall be coordinated by the project Engineering Inspector and the Water Superintendent prior to final flushing.
- The *Contract Administrator* shall review with the Water Superintendent and the *Contractor* sampling locations and appurtenances.
- The *Contract Administrator* shall check and record chlorine residual prior to final flushing.
- After final flushing the City Water crew will collect two sets of samples 24 hours apart. Samples will be taken at least every 366m of the new main as well as the terminus and all branches.
- Test results will be delivered to the Water Superintendent who will provide a copy to the Contract Administrator.
- The Water Superintendent will judge the adequacy of the test results and issue an authorization to connect.
- City Water crews will provide shutdown and flushing as required.
- 3.25 Permanent Capping of Existing Water Service Connections Add 3.25 Permanent capping of existing water service connections to be completed as per Coquitlam standard Detail Drawings COQ-W2g, COQ-W2h, COQ-W2i.

END OF SECTION

1.0 GENERAL

1.6	Measurement and Payment	Delete 1.6.1 and replace	<p>Payment for sanitary sewer will be made separately for various sections of sanitary sewer consistent with pipe materials, diameters and backfill requirements shown on the Contract Drawings and described under individual payment items in the Schedule of Quantities.</p>
		Delete 1.6.2 and replace with	<p>Payment for sanitary sewers includes asphalt & concrete saw cutting, disposal of pavement, trench excavation, disposal of surplus excavated material, removal and disposal of existing pipes, supply and installation of all pipe, fittings and related materials, tie-ins other than noted in Clause 1.6.7, bedding and all import backfill material, approved native backfill, granular base, granular Subbase, cleaning and flushing, testing (if applicable), all surface restoration under Section 31 23 01 – Sub-section 3.6 including permanent pavement restoration and all other work and materials necessary to complete installation as shown on Contract Drawings and specified under this Section; and</p> <p>Payment for concrete driveway and curb & gutter will be made under Section 03 30 20S.</p> <p>Native excavated material approved for re-use as trench backfill shall be used on boulevard and outside of paved roadway area and shall have all cobbles greater than 150 mm diameter removed and disposed off-site and shall be granular in nature and free of organic materials. Native excavated material shall not be used as trench backfill where the moisture content does not permit compaction to the specified density. Where native excavated material is unacceptable for use as trench backfill, imported trench backfill shall be supplied, placed, and compacted to specified density. Imported trench backfill shall not be used without the prior approval of the Contract Administrator.</p> <p>Payment includes by-pass pumping to include all pumps, labour and materials required to facilitate the work. Payment for the by-pass pumping will be incidental. Payment includes all applicable materials and work described in 1.6.4.1.</p> <p>Measurement for sanitary sewer will be made along the ground from the start of new pvc pipe to the terminus of the new pvc pipe.</p>
		Delete 1.6.3 and replace with	<p>Payment for new service connections includes 150mm SDR28 PVC pipe unless otherwise specified, shear band couplers, bends, increaser, pvc wye, stubs, caps, sanded stubs, manhole preparation for connection, Le-Ron inspection chamber c/w locking collar and red lid and all related fittings and components specified and/or shown on Standard Detail Drawings. Payment includes all applicable service pipes, materials and work described in 1.6.2.</p> <p>Measurement for service connection will be for each complete service installed, including the inspection chamber, length of service pipe installed and length of riser.</p>
		Add 1.6.3.1	<p>Payment for sanitary service connection repair/replacement includes 150mm SDR28 PVC pipe, shear band couplers, bends, increaser, stubs and all related fittings and components specified and/or shown on Standard Detail Drawings. Payment includes all applicable service pipes, materials and work described in 1.6.2.</p> <p>Measurement and payment for sanitary connection repair/replacement will be made at the unit price bid per lineal meter</p>

of service lead installed as measured along the ground from the downstream end of work done in Clause 1.6.4 to the terminus of the repair.

Add 1.6.4

Payment is to supply and install Le-Ron molded sanitary inspection chambers c/w locking collar & red lid including the riser as per COQ-S7A, COQ-S8A and MMCD S9 at each location. The tendered price is to include all labour, shear band couplers, 2m PVC SDR28 pipe stubs and all related fittings and components specified and/or shown on Standard Detail Drawings and all such other items that may be required to complete the work as specified. Payment includes all applicable materials and work described in 1.6.2.

A City crew will be inspecting the service connection by hand video prior to the Contractor's installing the IC. The Contractor shall notify the City inspector once the section of the service connection is ready for hand video. Payment includes assisting City crew in hand videoing the service connection. Based on the hand video result, City assessment or apparent condition of the pipe, repair/replacement is to be done under Clause 1.6.3.1. Repair/replacement shall only be done as approved by Contract Administrator or City inspector.

NOTE: Depth specified on the utility connection record without an IC is typically measured from the top of the clean out wye.

Payment includes work as described in 1.6.4.1

Add 1.6.4.1

Remove and dispose of all trees, roots, vegetation, organic matter and stumps that are located in the right of way and which fall within the work area (including stripping of ditches). Trim small branches from trees or hedges as required and where necessary use an approved tree paint to repair damage to surviving vegetation where branches have been removed. Obtain the Contract Administrator's approval before trees are removed. Replace shrubs and trees that are located on private properties that are damaged during construction.

Materials removed from within the right of way are the property of the private property owner. Materials removed within private property remain the property of the private property owner.

Discard materials obtained from within the right of way and from adjacent private properties that are not suitable for reuse or not wanted by private owners at an approved dump site.

Where possible and as agreed with the *Contract Administrator*, reuse topsoil obtained from within the right of way.

Brooks Boxes with a steel lid are to be provided for inspection chambers located in driveways as necessary. Payment for the Brooks Boxes will be incidental.

Payment includes support of poles if necessary and manhole barrel preparation to accommodate the service connection.

Lump sum to include for all labour, materials, and equipment required to supply and install the work as specified and restore surface to its original conditions or better.

SANITARY SEWERS

Add to Clause 1.6.7

Payment includes all applicable works in Clause 1.6.2.

2.0 PRODUCTS

**2.5 Granular Pipe
Bedding and
Surround Material**

Add 2.5.3

Pipe bedding shall be 19 mm clear crushed rock or as approved by the Contract Administrator. Surround material above the springline within the pipe zone may be Type 2.

3.0 EXECUTION

**3.8 Connections to
Existing Mainline
Pipes**

Delete 3.8.1 and
replace with

Connections with two sizes smaller or less to existing mainlines shall be made by removal of the section of the main and replacement with a manufactured PVC wye complete with stubs and double hub PVC couplings for PVC mains and approved shear band couplings for other mainline materials.

The contractor shall video inspect all connections to existing mains following completion of installation.

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	<p>Payment for storm sewers includes trench excavation, dewatering, bypass pumping, on-site reuse of surplus/displaced material, removal and disposal of existing pipes, supply and installation of all pipe, wyes, cap, fittings and related materials, tie-ins to existing or new storm pipe or manhole other than noted in Clause 1.6.9, construction joints, bedding, import backfill, native backfill, , granular base, granular Subbase, 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; and</p> <p>Measurement for storm sewer will be made horizontally from manhole centerline to manhole centerline over surface work has been completed.</p> <p>Native excavated material approved for re-use as trench backfill shall have all cobbles greater than 150 mm diameter removed and disposed off-site and shall be granular in nature and free from organic materials. Native excavated material shall not be used as trench backfill where moisture content does not permit compaction to specified density. Where native excavated material is unacceptable for use as trench backfill, imported trench backfill shall be supplied, placed, and compacted to specified density.</p> <p>Payment for concrete driveway and curb & gutter will be made under Section 03 30 20S.</p> <p>Payment includes by-pass pumping to include all pumps, labour and materials required to facilitate the work. Payment for the by-pass pumping will be incidental. Measurement for storm sewer will be made along the ground from the start of new pvc pipe to the terminus of the new pvc pipe.</p>
		Delete 1.6.3 and replace with	<p>Payment for new service connections includes 150mm SDR28 PVC pipe, shear band couplers, bends, increaser, pvc wye, stubs, caps, sanded stubs, manhole preparation, inserta tee, Le-Ron inspection chamber c/w locking collar and green lid and all related fittings and components specified and/or shown on Standard Detail Drawings. Payment includes all applicable service pipes, materials and work described in 1.6.2.</p> <p>Measurement for service connection will be for each complete service installed, including the inspection chamber, length of service pipe installed and length of riser.</p>
		Add 1.6.3.1	<p>Payment for storm service connection repair/replacement includes 150mm SDR28 PVC pipe, shear band couplers, bends, sanded stubs, inserta tee, increaser, stubs and all related fittings and components specified and/or shown on Standard Detail Drawings. Payment includes all applicable service pipes, materials and work described in 1.6.2 unless specified otherwise in the Schedule of Quantities and Prices.</p> <p>Measurement and payment for storm lead repair/replacement will be made at the unit price bid per lineal meter of service lead</p>

STORM SEWERS

			installed as measured along the ground from the downstream end of work done in Clause 1.6.4 to the terminus of the repair.
		Delete 1.6.4 and replace with	<p>The lump sum payment is to supply and install Le-Ron molded storm inspection chambers c/w locking collar & green lid including the riser as per COQ-S7A, COQ-S8A and MMCD S9 at each location. The tendered price is to include all labour, shear band couplers, 2m PVC SDR 28 pipe stubs and all related fittings and components specified and/or shown on Standard Detail Drawings and all such other items that may be required to complete the work as specified. Payment includes all applicable materials and work described in 1.6.2.</p> <p>A City crew will be inspecting the service connection by hand video prior to the Contractor's installing the IC. The Contractor shall notify the City inspector once the section of the service connection is ready for hand video. Payment includes assisting City crew in hand videoing the service connection. Based on the hand video result, City assessment or apparent condition of the pipe, repair/replacement is to be done under Clause 1.6.3.1. Repair/replacement shall only be done as approved by Contract Administrator or City inspector.</p> <p>NOTE: Depth specified on the utility connection record without an IC is typically measured from the top of the clean out wye.</p> <p>Brooks Boxes with a steel lid are to be provided for inspection chambers located in driveways as necessary. Payment for the Brooks Boxes on a driveway will be incidental.</p> <p>Payment includes support of poles if necessary and manhole barrel preparation to accommodate the service connection.</p>
		Delete 1.6.5 and replace with the following	<p>Payment for catchbasin or lawn basin leads include all applicable materials and work described in 1.6.2</p> <p>Measurement for catchbasin leads or lawn basin leads will be made horizontally from mainline pipe to centreline of catchbasin or lawn basin for each pipe size installed with no regards to depth range.</p>
		Delete 1.6.6 and replace with the following	<p>Payment for french drain, dispersal trench, retention trench includes all applicable materials and work described in 1.6.2, and will include pvc pipe, excavation, removal and disposal of excavated or displaced material, trench dam, clean out, perforated pipe, growing medium, tie-in into catch basins/lawn basins and/ or storm sewer, drain rock, fittings, filter fabric surround and all other work incidental to complete the work as shown on the Contract Drawing and COQ-SW3 / COQ-SW4.</p> <p>Pyment for catch basins and lawn basins will be made under Section 33 44 01S – Clause 1.5.2.</p>
2.0	PRODUCTS		
2.2	PVC Pipe, Mainline Smooth Wall	Delete 2.2.1 pipe size ranges and replace with the following	<p>200 mm dia. – 375 mm dia. to ASTM D3034</p> <p>450 mm dia. – 1,200 mm dia. to ASTM F679</p>
2.3	PVC Pipe, Mainline Profile	Delete 2.3	

STORM SEWERS

2.6	Service Connections	<p>Delete 2.6.1 and replace with the following</p> <p>Delete 2.6.8.1</p> <p>Delete 2.6.8.2 and replace with the following</p> <p>Add 2.6.8.3</p>	<p>Storm service connections to be PVC DR 28 150 mm diameter minimum or as specified on <i>Contract Drawings</i>.</p> <p>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.</p> <p>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.</p>
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	<p>Add 3.16.1</p> <p>Add 3.16.2</p>	<p>Permanent capping of existing storm sewer connections to be completed as per Coquitlam Standard Detail Drawing COQ-S18.</p> <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
- Payment includes supply and installation of new catchbasin/lawnbasin as described in Schedule of Quantities and Prices including catch basin base, concrete barrel, concrete riser, pvc sanded stub, donut ring, off-set sump, H20 rated concrete frame/lid, metal frame, top inlet and grate, aluminum trapping hood and all labor, material and equipment required to complete the work from specified invert to finishing level and as per Standard Detail Drawing as described in Schedule of Quantities and Prices. Payment includes excavation, disposal of surplus excavated material, base preparation, bedding, import backfill, catchbasin/lawnbasin preparation to accommodate catchbasin/lawnbasin connection, installation of all in-situ concrete work, all labor, material, equipment and necessary work for installing the catchbasin/lawnbasin.
- Catchbasin/lawnbasin lead work will be made under Section 33 40 01S – Clause 1.6.5.
- 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 item in the Schedule of Quantities.
- No payment will be made under these items for cleaning Valve Boxes, Monument Boxes, Manhole Frames & Covers and Lids of Castings as part of the operation for asphaltic concrete paving.
- No Payment will be made for adjusting External Utilities Valve Boxes, Monument Boxes, Gas valve boxes, Lawn Drains, Cleanouts and Inspection Chambers, these adjustments will be treated as incidental work unless otherwise specified.
- All manholes & valve boxes must be vertically adjusted a minimum of 24 hours prior to paving.
1. Manhole frames and lids adjustment and replacement will be defined as supplying and installing a new manhole frame and lid and setting to the finished grade. Adjustments and replacements shall include jackhammering, removal and disposal of the existing frame and lid, replacement, removal of concrete bricks, addition or removal of precast concrete riser rings, cement mortar, supply and installation of new manhole frame and lid set to final grade, temporary asphalt ramping and all other incidental work.
- Manhole frames and lids adjustments ONLY is the re-use of existing frames and lids and all the necessary work as described above.

2. Water Valve Box replacements will be defined as supplying and installing a new Nelson Type Terminal City Water Valve Box frame & lid and setting to the finished grade. Replacements shall include jackhammering, removal and disposal of the existing frame and lid and all other incidental work. Adjustment of water valves on existing new watermain
3. Catchbasins frame and lid replacement will be defined as setting as supplying and installing a new catchbasin frame & lid to the correct elevation. Adjustments shall include jackhammering, removal of the existing grating and frame and all other incidental work. Payment includes excavation, disposal, removal of concrete bricks, removal or addition of precast concrete riser rings, cement mortar, disposal of surplus excavated material, cast-in-place concrete, pipes, fittings and related materials together with all labour, materials and equipment required. Catch basin lead work is considered to be incidental to payment for catch basin lead work described in other sections.

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

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

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 *Work*, 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 Control, Vehicle Access and Parking 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 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 1** 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: [Road and Sidewalk Closure Permit](#)

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.
- 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) working days after 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. This includes maintaining a 1.5m width walkway or pathway through the construction site for pedestrians.
 - .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. 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 ten (10) minutes in duration; for occasional interruption of traffic for construction activities if traffic volumes permit.
- .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 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.
- 3.2 Road and Sidewalk Closure Permits
- .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.
- 3.3 Traffic Control Personnel & Equipment
- .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.
 - .2 There must be sufficient Traffic Control Persons (TCPs) on site to appropriately and safely direct traffic in all sections of the Work.
- 3.4 Signage
- 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.
- 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.

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.

3.5 Detours

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.

3.6 Abrupt Changes in
Surface Elevations

The Contractor shall minimize any abrupt changes in roadway elevation left exposed to traffic during both working and non-working hours.

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

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 Good Neighbor Practice

The Contractor, crew and subcontractors, shall not park their private vehicles on the same street they will be working on. Contractor is responsible to find alternative parking accommodation to minimize any inconvenience to the residents.

3.9 Temporary Pavement
Markings

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 TRAFFIC RESTRICTIONS

4.1 Road and Sidewalk
Closure Permits

.1 Minimum of Single Lane Alternating Traffic must be accommodated at all times. If necessary and only at the discretion of the Contract Administrator, Local Traffic Only may also be approved at one block at a time.

.2 A Road and Sidewalk Closure Permit is required for each instance of closure and 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.

A copy of the approved Road and Sidewalk Closure Permit must be held on site by both the Site Superintendent and the person/company responsible for the traffic control implementation.

.3 Total Road Closure Is Not Permitted.

.4 Detours will only be permitted as approved by the Contract Administrator and must have a complete Traffic Control Plan indicating detour route, signing, and duration. Detours will not be allowed without sufficient lead time for commercial and retail operation to react appropriately to detour information provided to them.

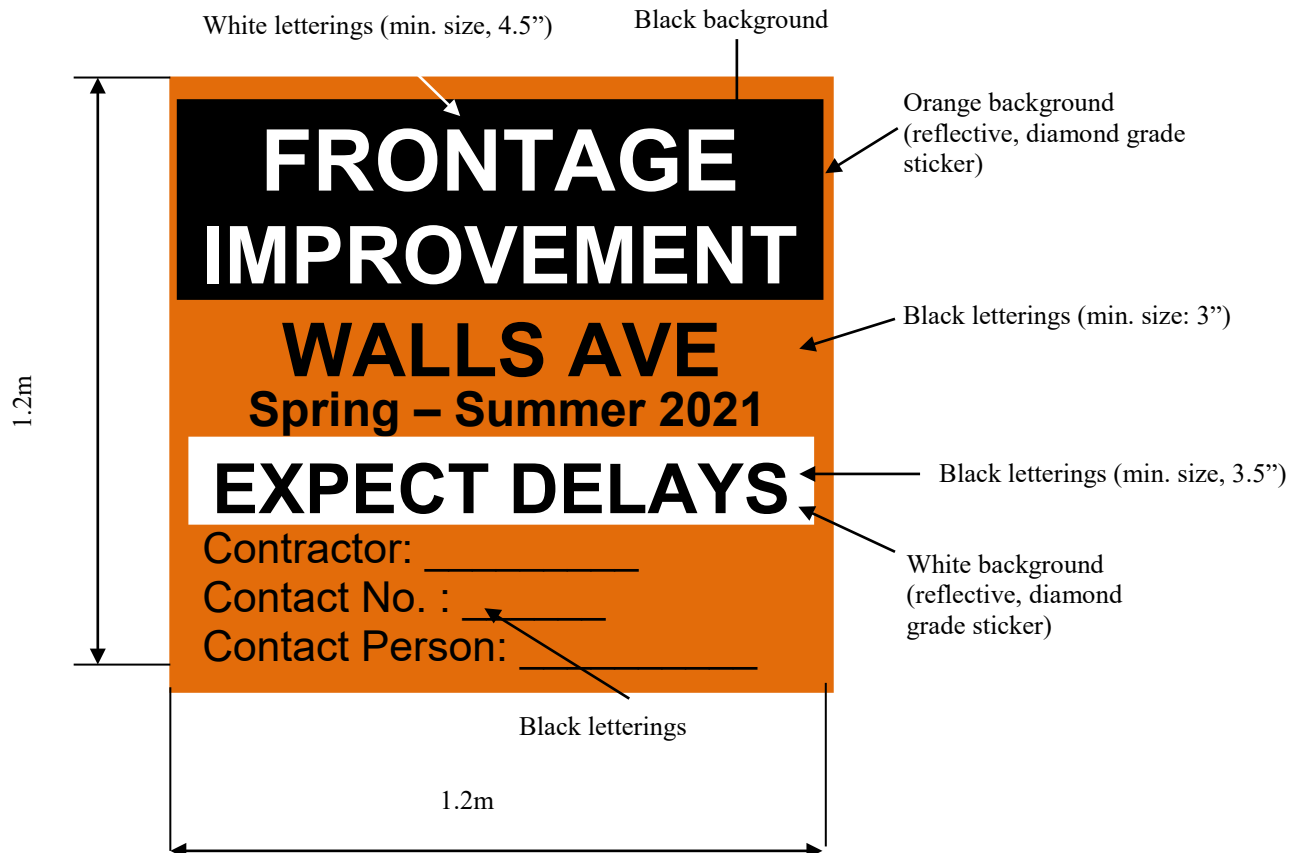
4.2	Lane Closure Restrictions	<p>.1 For each of the road sections affected:</p> <ul style="list-style-type: none">- Road and Sidewalk Closures will be reviewed for appropriateness during the allowable hours of work.- Access to properties to be maintained- Sufficient Traffic Control Persons are required for each Road and Sidewalk Closure (or any work activities), <u>including side street intersections</u>, to safely guide traffic through the work site.
5.0	HOURS OF WORK	
5.1	Allowable Hours of Work	<p>.1 The hours of work shall be from 0700 h to 1900 h inclusive Monday to Friday and 0900 h to 1800 h inclusive Saturdays, unless noted otherwise.</p> <p>.2 Some allowances may be made for paving operations, depending on a proposal acceptable to the Contract Administrator.</p> <p>.3 Line Marking work may be performed at night, (21:00 to 05:00). No work is allowed on Sundays without specific written permission from Contract Administrator.</p>
6.0	CONSTRUCTION OPERATIONS	
6.1	Truck Routes	<p>.1 The Contractor is restricted to the City's designated Truck Routes. The current Truck Route Map is available on the City's website at www.coquitlam.ca and can be found under Residents, Transit & Transportation, Trucking Routes.</p>
6.2	Road Specific Considerations	<p>.1 The Contractor shall ensure safe passage of all pedestrians and all types of vehicles. The Traffic Management Plan must accommodate businesses, school, residences and pedestrian during construction activities.</p> <p>All City Traffic Counts are available on the City's web site at: Coquitlam Traffic Data</p>
6.3	Work Stoppage Due to Traffic	<p>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. Contractor is responsible for the costs associated with this work shut-down.</p>
6.4	Construction Activity and Signage	<p>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.</p>
6.5	Construction Zone Information Signs	<p>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:</p> <ul style="list-style-type: none">- southbound, SW corner of Rochester Ave & Nelson St- northbound, NE corner Stewart Ave & Nelson St

- southbound, SW corner of Rochester Ave & Lebleu St
- northbound, NE corner Stewart Ave & Lebleu St
- westbound, NE corner Walls Ave & Marmont St

(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:



APPENDIX 1



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): 77810

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

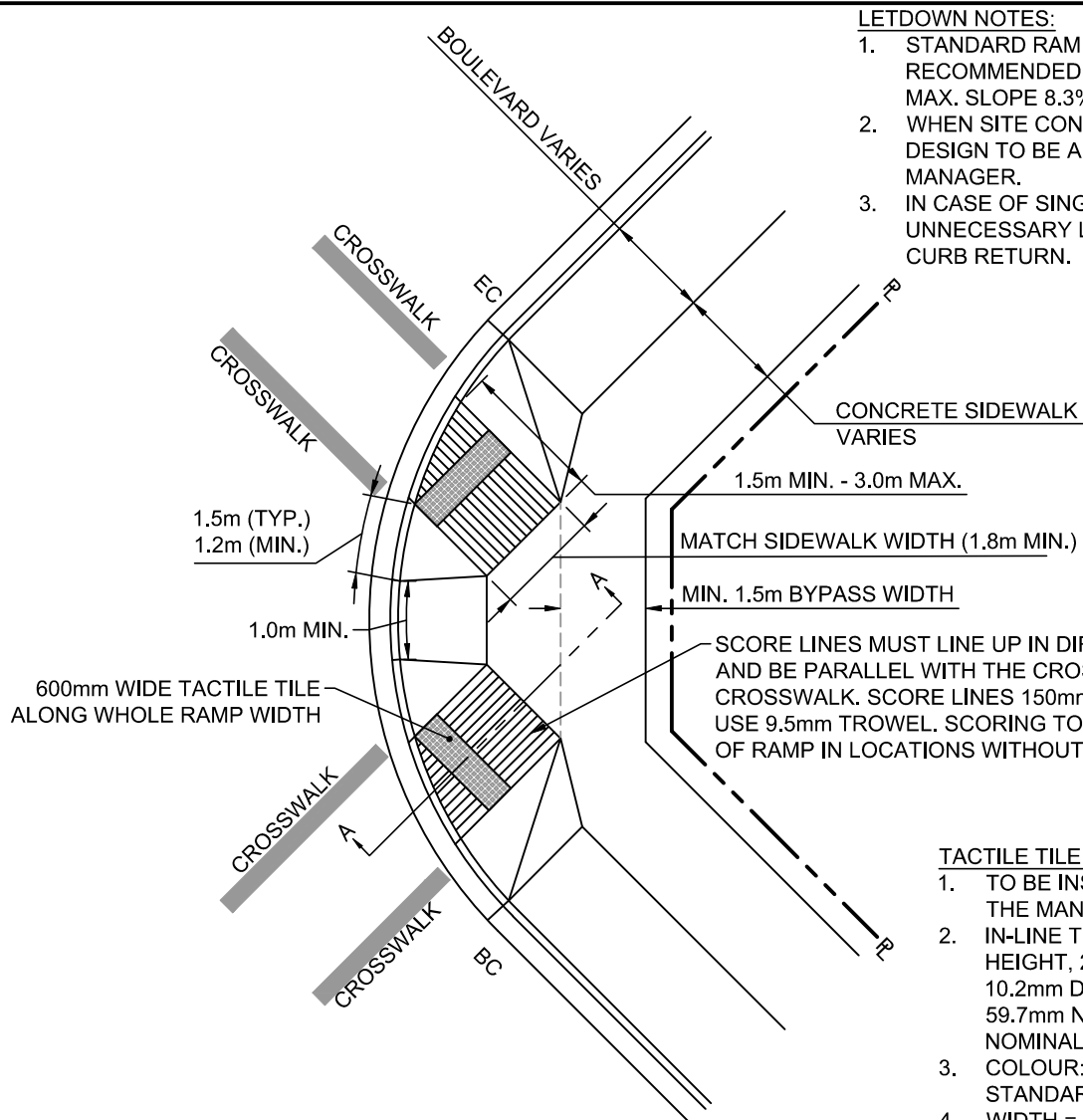
Office Use Only PERMIT STATUS

- ☐ Permit Fee
- ☐ Prime Contractor Letter
- ☐ Certificate of Insurance
- ☐ Traffic Control Plan
- ☐ Impact to bus service
- ☐ 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

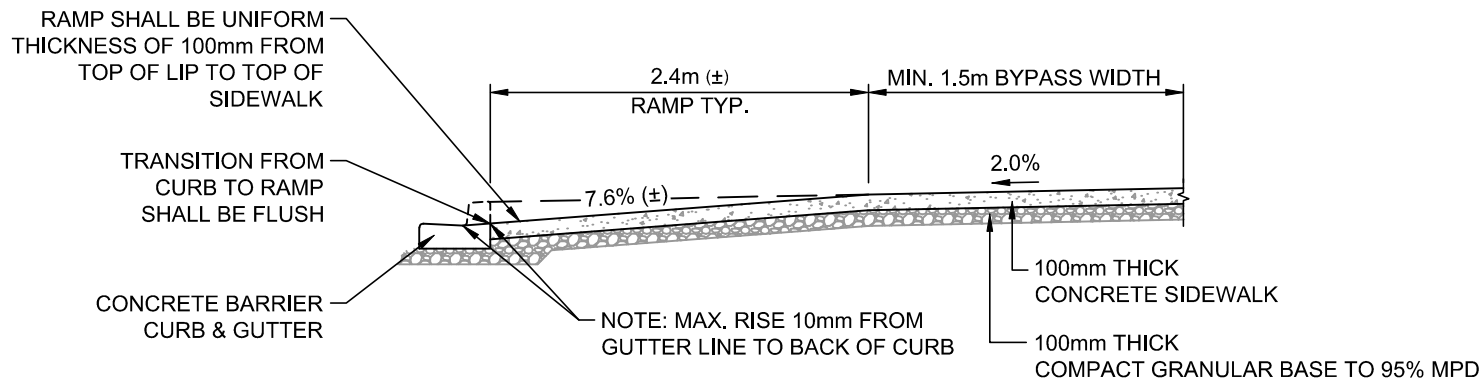
***Appendix B –
Supplementary
Detailed Drawings***

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 LETDOWNSECTION A-A CURB RAMP

PLOTTED: 19-NOV-20

**SPLIT LETDOWN AT INTERSECTION
WITH BOULEVARD**

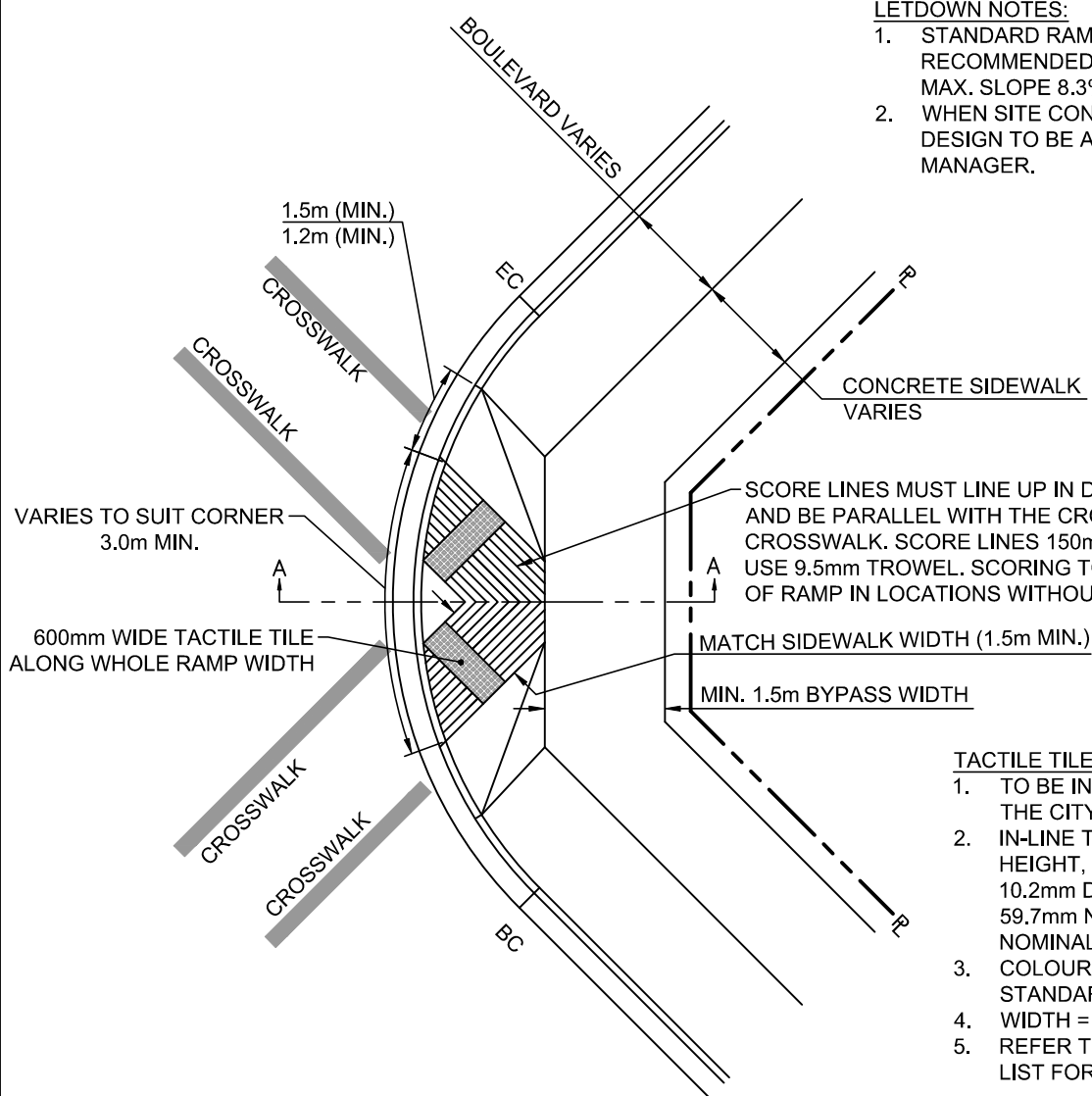
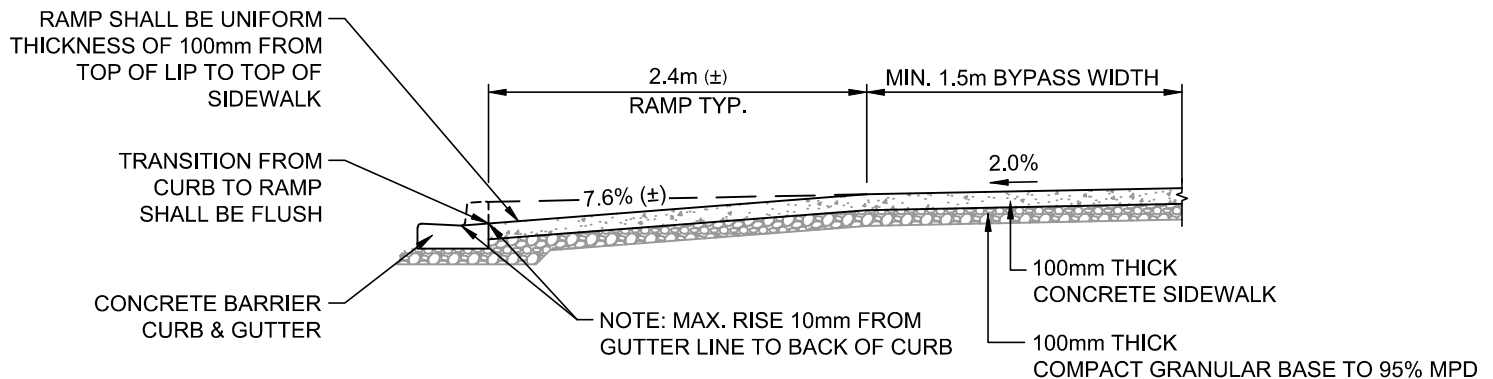
DATE: NOV/2020

DRAWN: GA

SCALE: N.T.S.

DRAWING NUMBER:

COQ-C9A

**SINGLE LETDOWN****SECTION A-A CURB RAMP**

PLOTTED: 19-NOV-20

**SINGLE LETDOWN AT INTERSECTION
WITH BOULEVARD**

DATE: NOV/2020

DRAWN: GA

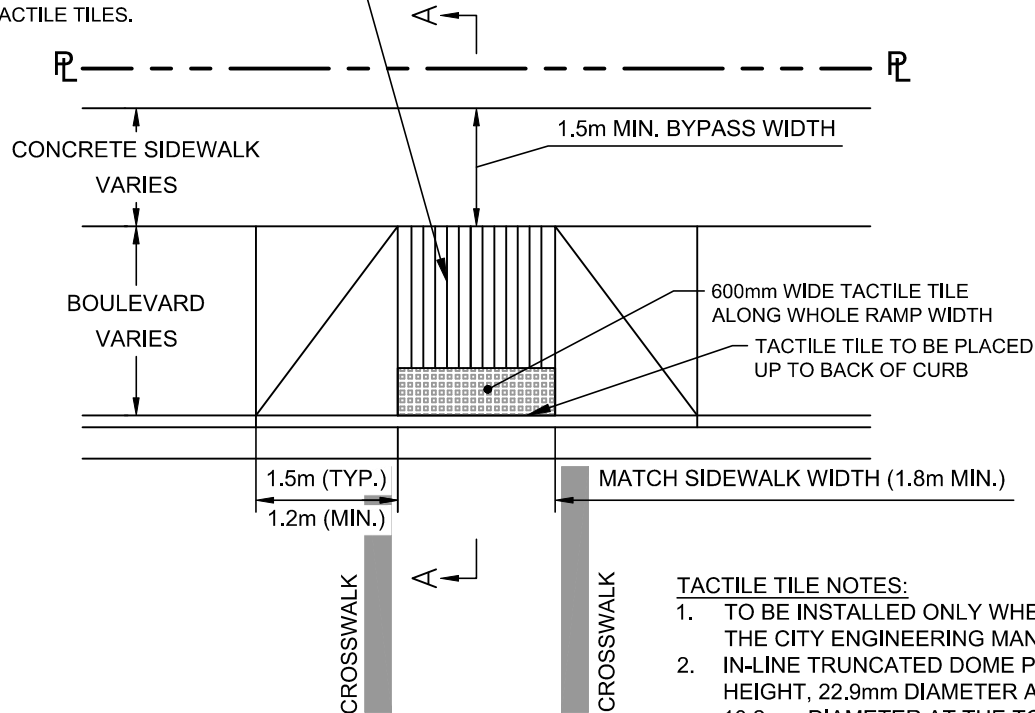
SCALE: N.T.S.

DRAWING NUMBER:

COQ-C9B

SCORE LINES MUST LINE UP IN DIRECTION OF TRAVEL AND BE PARALLEL WITH THE CROSSING OR MARKED CROSSWALK. SCORE LINES 150mm APART TO FILL RAMP. USE 9.5mm TROWEL. SCORING TO EXTEND FULL LENGTH OF RAMP IN LOCATIONS WITHOUT TACTILE TILES.

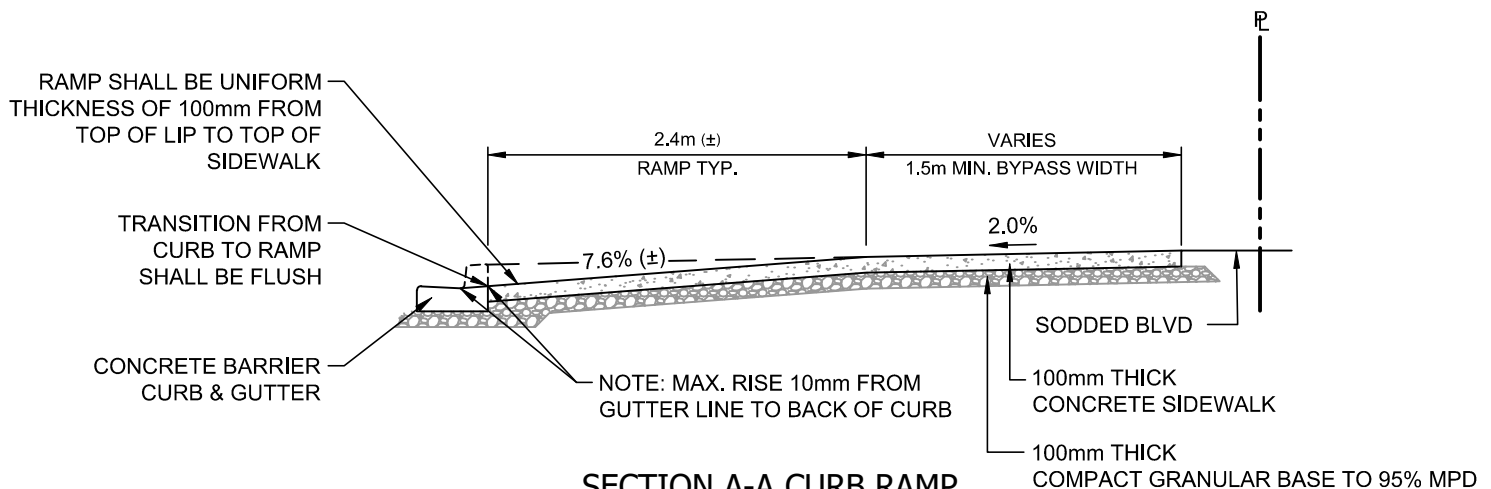
NOTE: STANDARD RAMP LENGTH: 2.4m AT CENTRE OF RAMP. RECOMMENDED RAMP SLOPE: 7.6% (±). MAX. SLOPE 8.3% (1:12) WHERE TOPOGRAPHY PERMITS. WHEN SITE CONDITIONS DO NOT PERMIT TYPICAL LAYOUT DESIGN TO BE APPROVED BY THE CITY ENGINEERING MANAGER.



SINGLE RAMP

TACTILE TILE NOTES:

1. TO BE INSTALLED ONLY WHEN PRESCRIBED BY THE CITY ENGINEERING 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.



SECTION A-A CURB RAMP

PLOTTED: 19-NOV-20

SINGLE CURB RAMP LETDOWN

DATE:	NOV/2020
-------	----------

DRAWN: GA

SCALE: N.T.S.

DRAWING NUMBER:

COQ-C9C

ON
E
MP.
END

CONCRETE SIDEWALK
VARIES

SLOPE
DOWN
(MAX 8.3%)

SLOPE
DOWN
(MAX 8.3%)

TACTILE TILE TO BE PLACE
UP TO BACK OF CURB

2.0m
(TYP.)

MATCH SIDEWALK WIDTH (1.8m MIN.)

600mm WIDE TACTILE TILE
ALONG WHOLE RAMP WIDTH

CROSSWALK

CROSSWALK

PRESCRIBED BY THE

1. TO BE INSTALLED ONLY WHEN PRESCRIBED BY THE CITY ENGINEERING 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.

RAMP SHALL BE UNIFORM THICKNESS OF 100mm FROM TOP OF LIP TO TOP OF SIDEWALK

TRANSITION FROM CURB TO RAMP SHALL BE FLUSH

CONCRETE BARRIER CURB & GUTTER

S/W WIDTH RAMP TYP.

2.0%

3H:1V MAX.

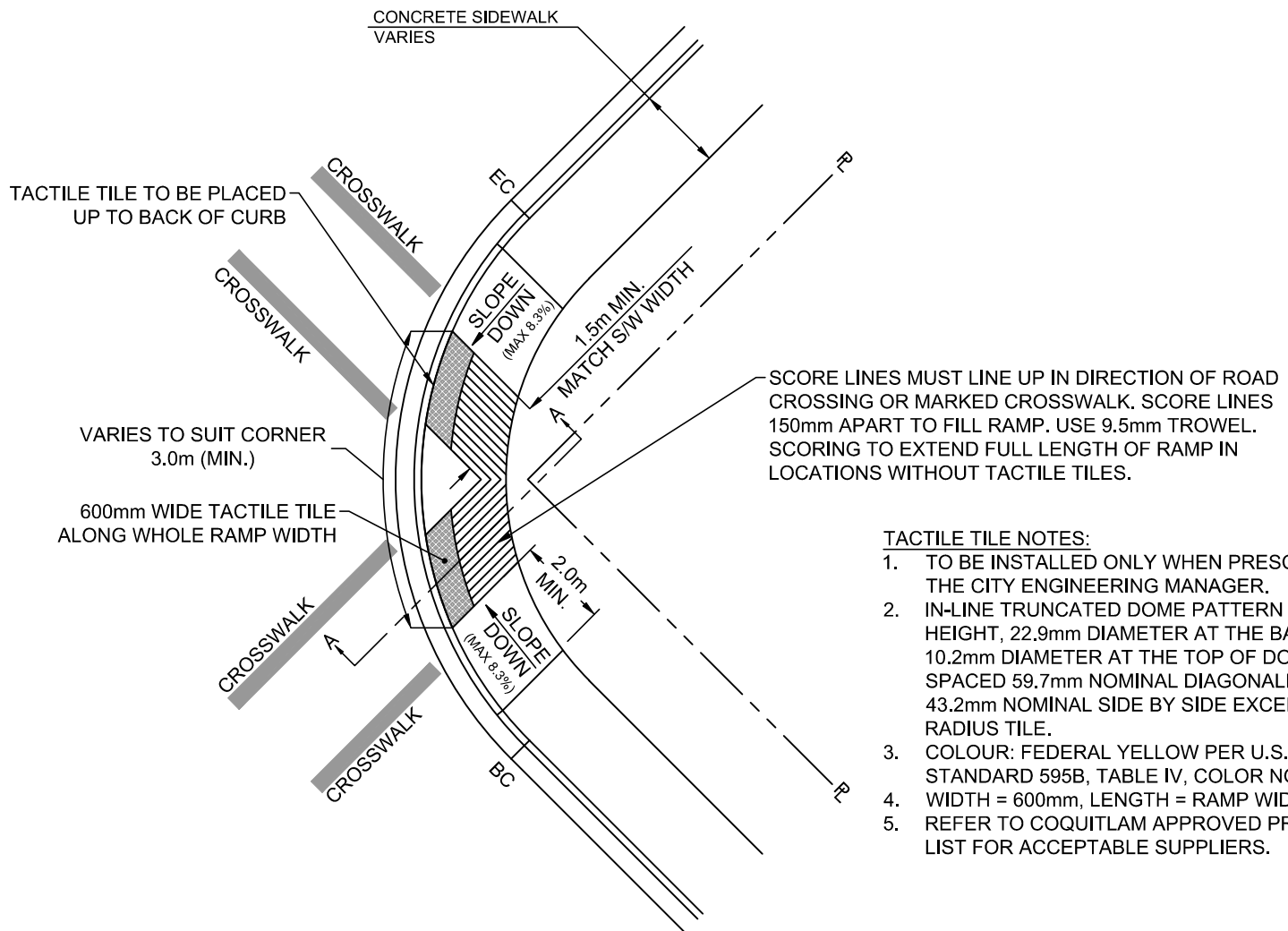
100mm THICK CONCRETE SIDEWALK

100mm THICK COMPACT GRANULAR BASE TO 95% MPD

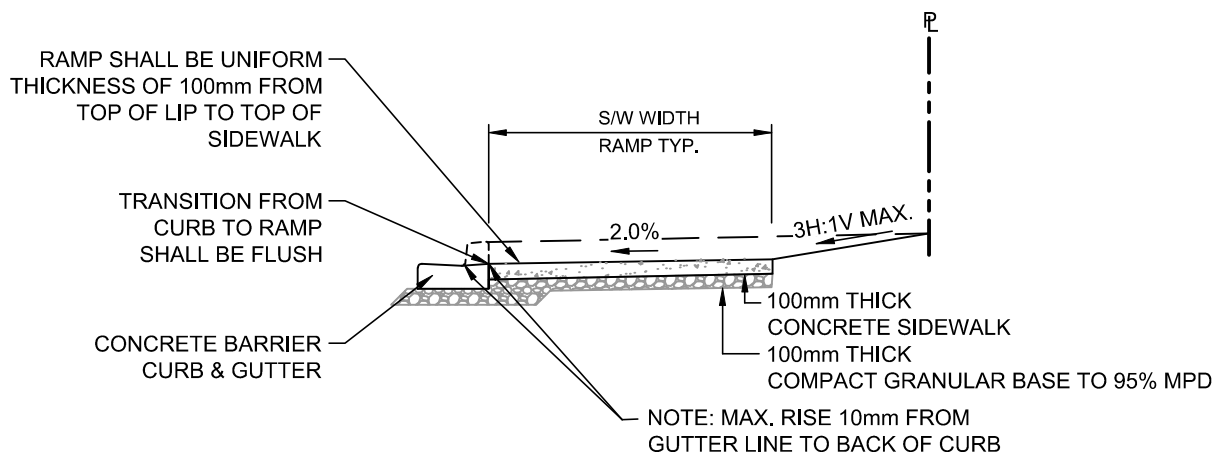
NOTE: MAX. RISE 10mm FROM GUTTER LINE TO BACK OF CURB

R

DRAWING NUMBER:
COQ-C9D

**TACTILE TILE NOTES:**

1. TO BE INSTALLED ONLY WHEN PRESCRIBED BY THE CITY ENGINEERING 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.

COMBINED LETDOWN**SECTION A-A CURB RAMP**

PLOTTED: 19-NOV-20

**PARALLEL CURB RAMP - COMBINED
LETDOWN WITHOUT BOULEVARD**

DATE: NOV/2020

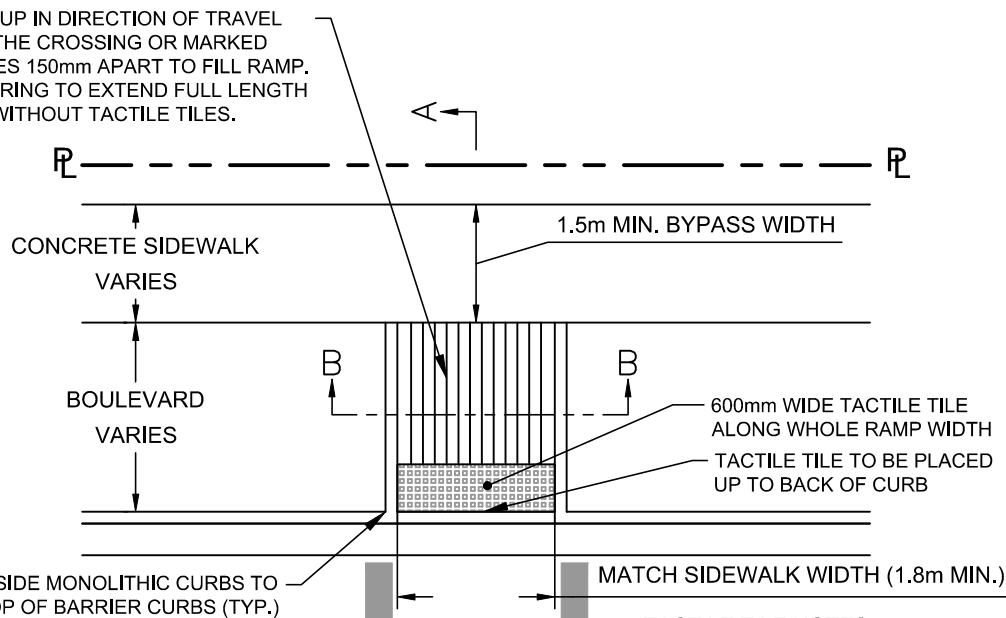
DRAWN: GA

SCALE: N.T.S.

DRAWING NUMBER:

NOTE: STANDARD RAMP LENGTH: 2.4m AT CENTRE OF RAMP. RECOMMENDED RAMP SLOPE: 7.6% (\pm).
MAX. SLOPE 8.3% (1:12) WHERE TOPOGRAPHY PERMITS. WHEN SITE CONDITIONS DO NOT
PERMIT TYPICAL LAYOUT DESIGN TO BE APPROVED BY THE CITY ENGINEERING MANAGER.

SCORE LINES MUST LINE UP IN DIRECTION OF TRAVEL
AND BE PARALLEL WITH THE CROSSING OR MARKED
CROSSWALK. SCORE LINES 150mm APART TO FILL RAMP.
USE 9.5mm TROWEL. SCORING TO EXTEND FULL LENGTH
OF RAMP IN LOCATIONS WITHOUT TACTILE TILES.

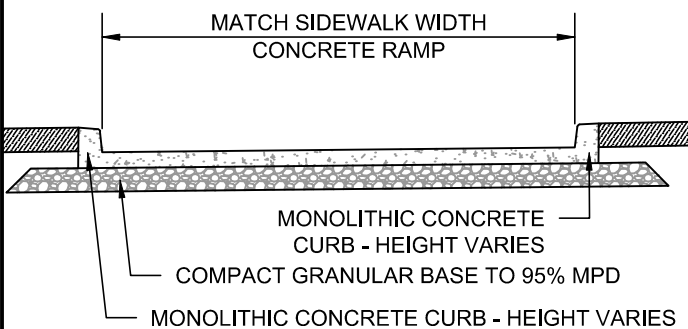


TACTILE TILE NOTES:

1. TO BE INSTALLED ONLY WHEN PRESCRIBED BY THE CITY ENGINEERING 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.

SINGLE RAMP

SECTION B-B CURB RAMP



TOP OF MONOLITHIC SIDE CURBS
SLOPE UP AT 2% TO SIDEWALK

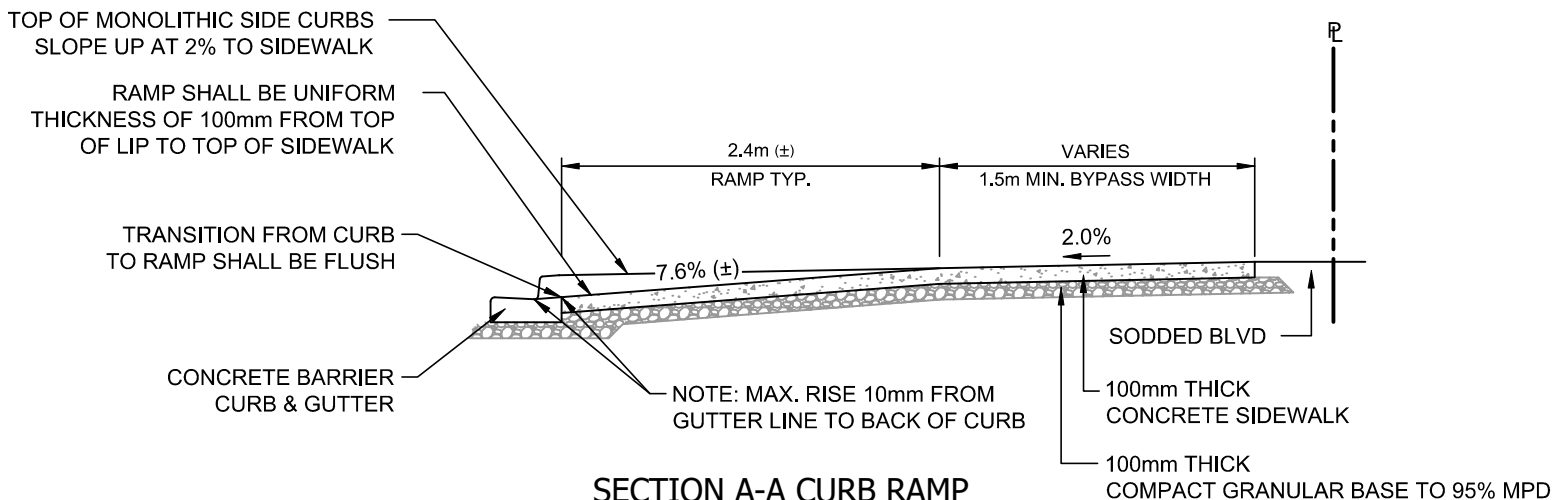
RAMP SHALL BE UNIFORM
THICKNESS OF 100mm FROM TOP
OF LIP TO TOP OF SIDEWALK

TRANSITION FROM CURB
TO RAMP SHALL BE FLUSH

CONCRETE BARRIER
CURB & GUTTER

NOTE: MAX. RISE 10mm FROM
GUTTER LINE TO BACK OF CURB

SECTION A-A CURB RAMP



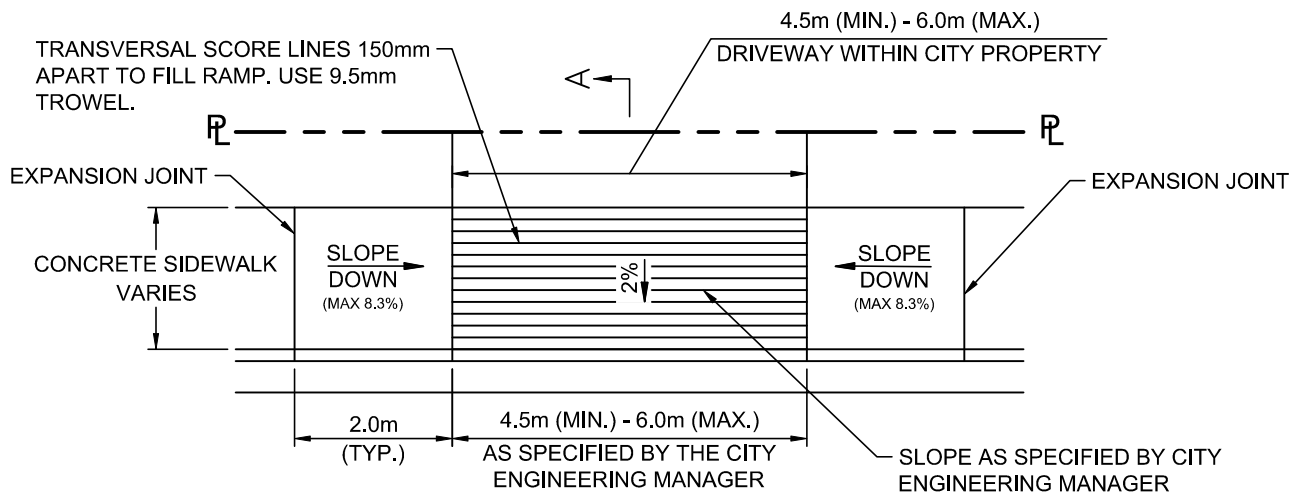
SINGLE CURB RAMP LETDOWN WITH CURB CUT

DATE: NOV/2020

DRAWN: GA

SCALE: N.T.S.

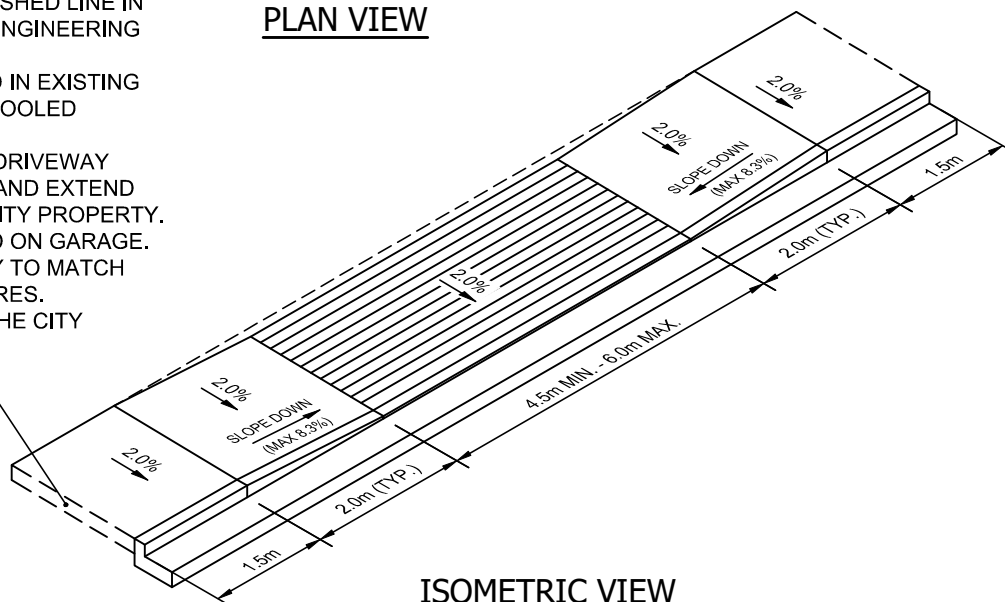
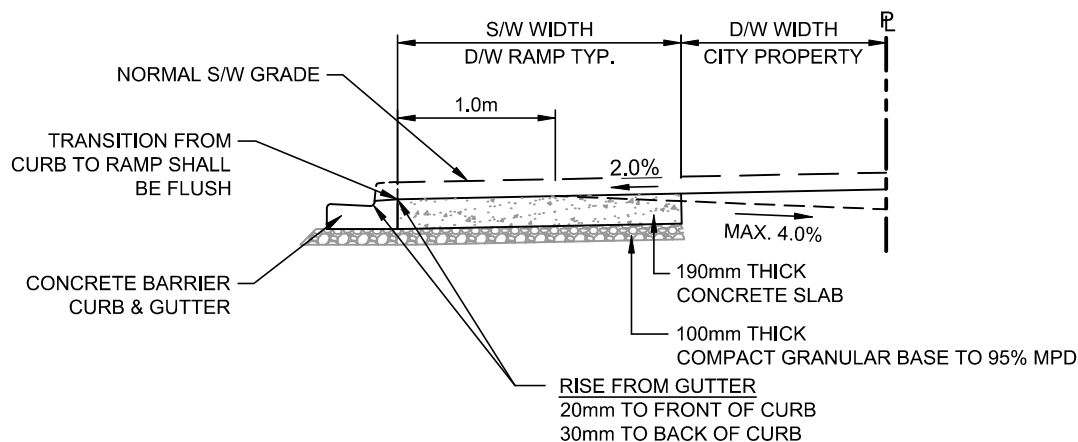
DRAWING NUMBER:

**NOTES:**

1. WHERE DRIVEWAY IS AT LOWER GRADE THAN SIDEWALK, CROSSING SLOPES, BREAKOUT POINT AND D/W GRADE AS INDICATED BY DASHED LINE IN SECTION IF APPROVED BY THE CITY ENGINEERING MANAGER.
2. WHERE NEW CROSSING IS INSTALLED IN EXISTING SIDEWALK, BREAKOUT TO NEAREST TOOLED TRANSVERSE LINE.
3. WHERE SIDEWALK DOES NOT EXIST, DRIVEWAY MUST START AT TOP OF CURB RAMP AND EXTEND AT 45° TO A MAX WIDTH OF 6.0m ON CITY PROPERTY.
4. DRIVEWAY LETDOWN TO BE CENTRED ON GARAGE.
5. DRIVEWAY WIDTH ON CITY PROPERTY TO MATCH WIDTH OF LETDOWN EXCLUDING FLARES.
6. SLOPE DRIVEWAY AS SPECIFIED BY THE CITY ENGINEERING MANAGER.

PLAN VIEW

SLAB THICKENS TO 190mm FOR ONE SIDEWALK PANEL PAST THE CURB RAMP

**ISOMETRIC VIEW****SECTION A-A CURB RAMP**

PLOTTED: 19-NOV-20

**LOCAL, COLLECTOR
DRIVEWAY CROSSING OF
CURB, GUTTER AND SIDEWALK**

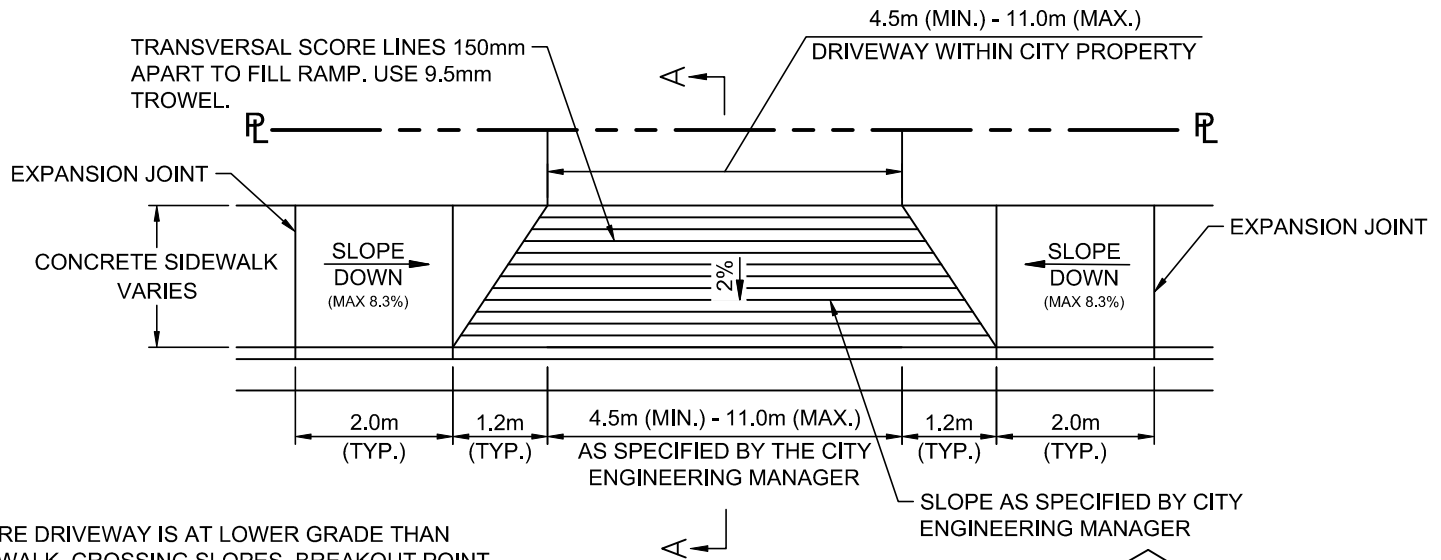
DATE: NOV/2020

DRAWN: GA

SCALE: N.T.S.

DRAWING NUMBER:

COQ-C7

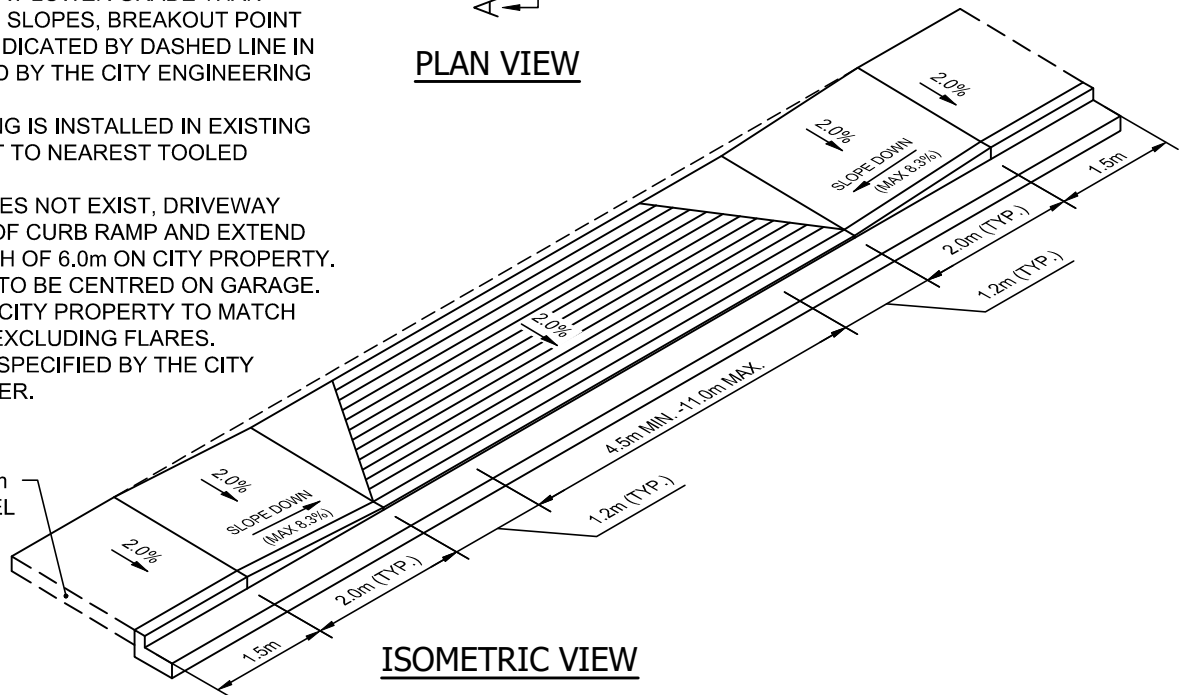


PLAN VIEW

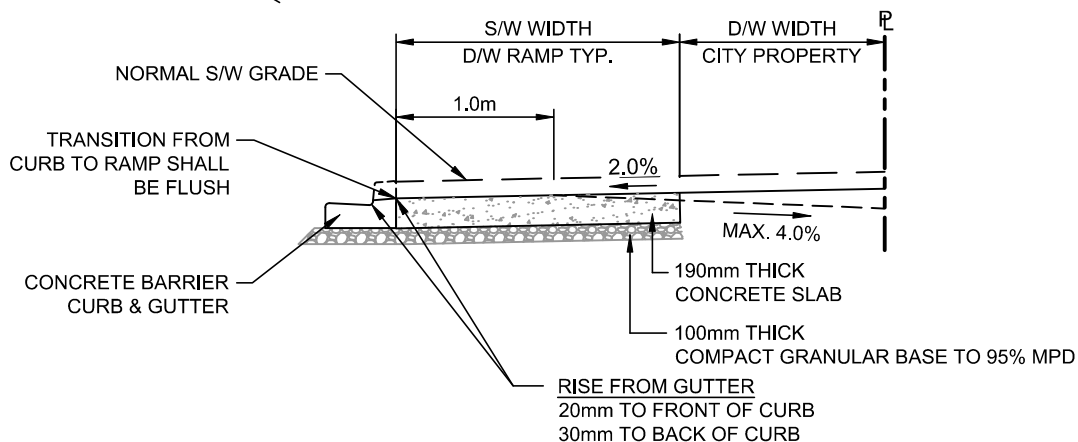
NOTES:

1. WHERE DRIVEWAY IS AT LOWER GRADE THAN SIDEWALK, CROSSING SLOPES, BREAKOUT POINT AND D/W GRADE AS INDICATED BY DASHED LINE IN SECTION IF APPROVED BY THE CITY ENGINEERING MANAGER.
2. WHERE NEW CROSSING IS INSTALLED IN EXISTING SIDEWALK, BREAKOUT TO NEAREST TOOLED TRANSVERSE LINE.
3. WHERE SIDEWALK DOES NOT EXIST, DRIVEWAY MUST START AT TOP OF CURB RAMP AND EXTEND AT 45° TO A MAX WIDTH OF 6.0m ON CITY PROPERTY.
4. DRIVEWAY LETDOWN TO BE CENTRED ON GARAGE.
5. DRIVEWAY WIDTH ON CITY PROPERTY TO MATCH WIDTH OF LETDOWN EXCLUDING FLARES.
6. SLOPE DRIVEWAY AS SPECIFIED BY THE CITY ENGINEERING MANAGER.

SLAB THICKENS TO 190mm
FOR ONE SIDEWALK PANEL
PAST THE CURB RAMP



ISOMETRIC VIEW



SECTION A-A CURB RAMP

PLOTTED: 19-NOV-20

INDUSTRIAL, COMMERCIAL DRIVEWAY CROSSING OF CURB, GUTTER AND SIDEWALK

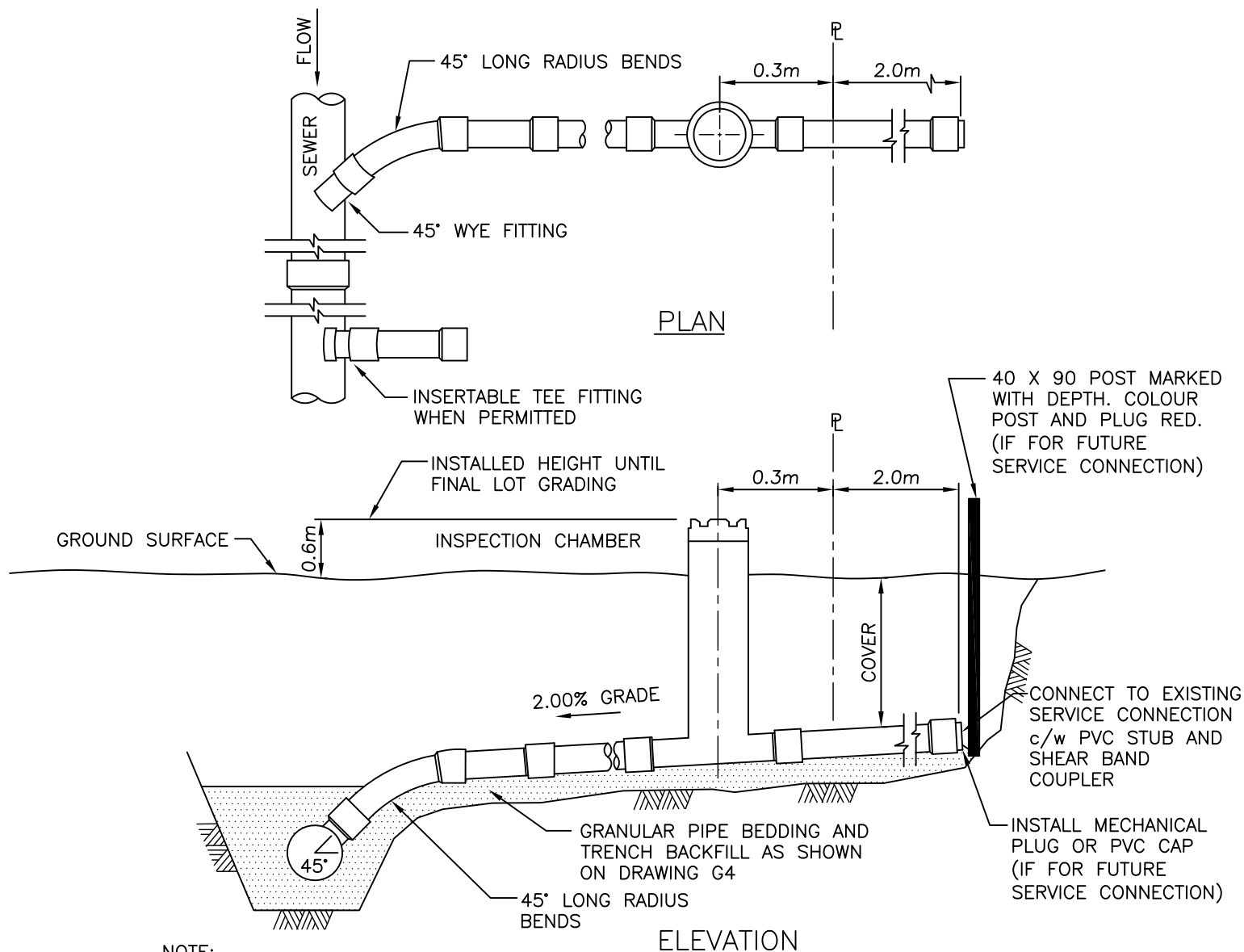
DATE:	NOV/2020
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DRAWN: GA

SCALE: N.T.S.

DRAWING NUMBER:

COQ-C7A



NOTE:

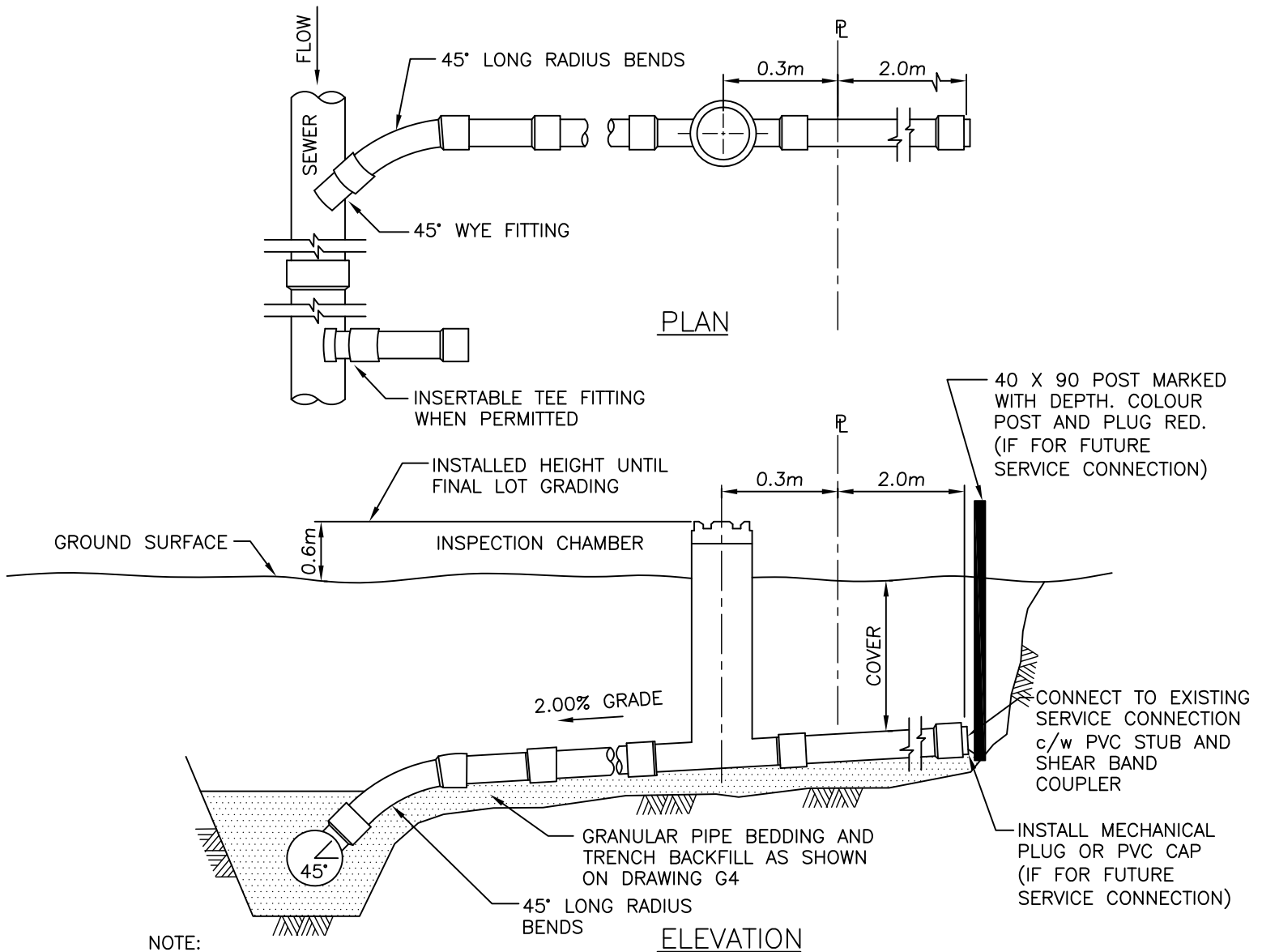
1. CONNECTIONS TO BE 100mm PVC SDR28 OR AS SPECIFIED ON CONTRACT DRAWINGS OR AS DIRECTED BY CONTRACT ADMINISTRATOR.
2. CONNECTION TO BE INSTALLED AT 2% GRADE FROM WYE AT MAIN TO PROPERTY LINE UNLESS OTHERWISE INDICATED ON THE CONTRACT DRAWINGS OR AS APPROVED BY CONTRACT ADMINISTRATOR. ONLY 45 DEGREE LONG RADIUS CAN BE USED FOR BENDS.
3. DISTANCE OF INSPECTION CHAMBER AND MARKER AS SHOWN OR AS SPECIFIED ON CONTRACT DRAWINGS OR AS DIRECTED BY CONTRACT ADMINISTRATOR.
4. SEE DRAWING S9 FOR DETAILS OF INSPECTION CHAMBER AND INSTALLATION REQUIREMENTS.
5. IC LID (RED COLOR) TO BE 25mm BELOW THE BASE OF SOD FINAL ELEVATION.
6. LOCATION OF INSPECTION CHAMBER AND MARKER AS SHOWN OR AS SPECIFIED ON CONTRACT DRAWINGS UNLESS OTHERWISE DIRECTED BY CONTRACT ADMINISTRATOR.
7. IN DRIVEWAYS, INSPECTION CHAMBER IS TO BE INSTALLED WITH BROOKS BOX. BROOKS BOX WITH METAL LID IS TO BE INSTALLED PARALLEL TO THE DIRECTION OF THE FLOW.

PLOTTED: 13-Jul-20

**SANITARY SEWER SERVICE
CONNECTION**

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

DRAWING NUMBER:
COQ-S7A



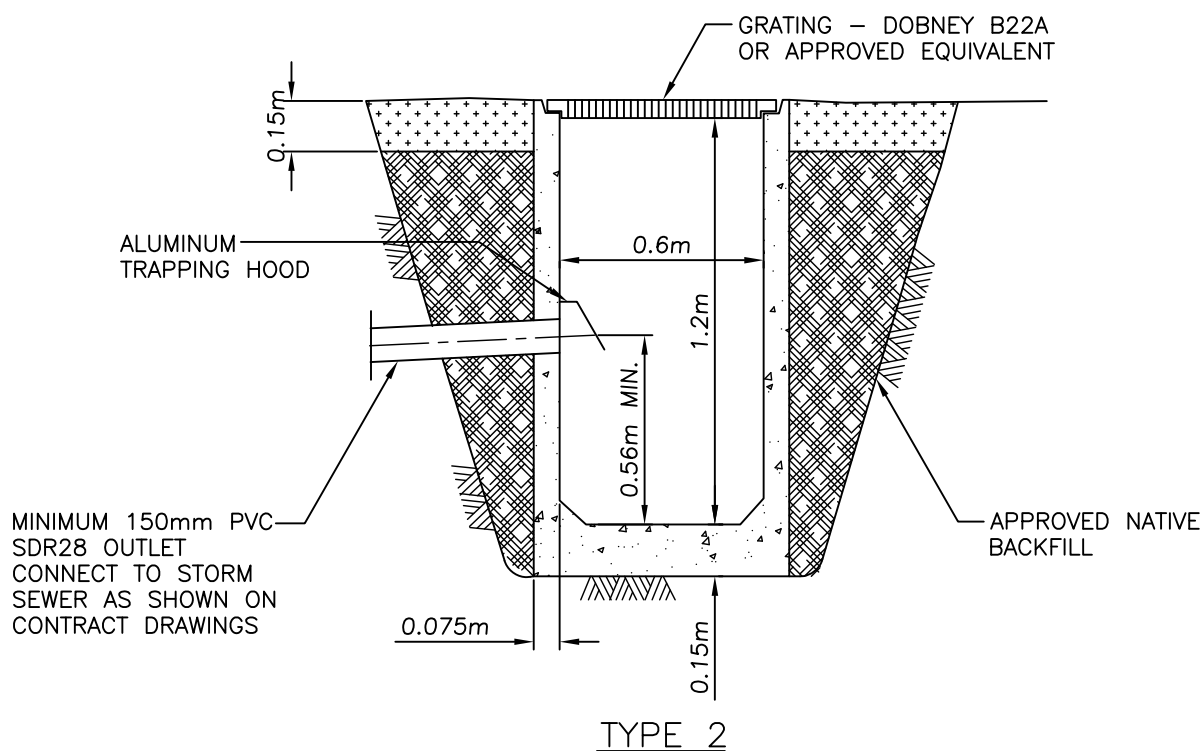
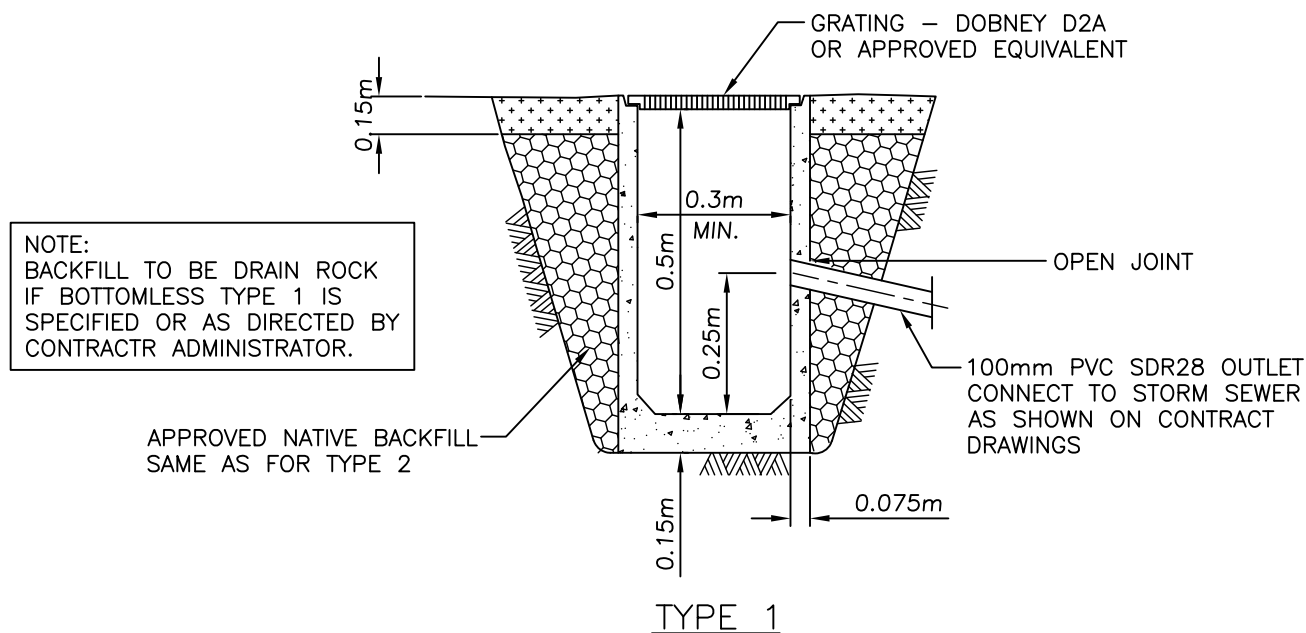
1. CONNECTIONS TO BE 150mm PVC SDR28 MINIMUM OR LARGER AS SPECIFIED ON CONTRACT DRAWINGS OR AS DIRECTED BY CONTRACT ADMINISTRATOR.
2. CONNECTION TO BE INSTALLED AT 2% GRADE FROM WYE AT MAIN TO PROPERTY LINE UNLESS OTHERWISE INDICATED ON THE CONTRACT DRAWINGS OR AS APPROVED BY CONTRACT ADMINISTRATOR. ONLY 45 DEGREE LONG RADIUS CAN BE USED FOR BENDS.
3. DISTANCE FROM PL OF INSPECTION CHAMBER AND MARKER AS SHOWN OR AS SPECIFIED ON CONTRACT DRAWINGS OR AS DIRECTED BY CONTRACT ADMINISTRATOR.
4. SEE DRAWING S9 FOR DETAILS OF INSPECTION CHAMBER AND INSTALLATION REQUIREMENTS.
5. IC LID (GREEN COLOR) TO BE 25mm BELOW THE BASE OF SOD FINAL ELEVATION.
6. LOCATION OF INSPECTION CHAMBER AND MARKER AS SHOWN OR AS SPECIFIED ON CONTRACT DRAWINGS UNLESS OTHERWISE DIRECTED BY CONTRACT ADMINISTRATOR.
7. IN DRIVEWAYS, INSPECTION CHAMBER IS TO BE INSTALLED WITH BROOKS BOX. BROOKS BOX WITH METAL LID IS TO BE INSTALLED PARALLEL TO THE DIRECTION OF THE FLOW.

PLOTTED: 13-Jul-20

STORM SEWER SERVICE CONNECTION

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

DRAWING NUMBER:
COQ-S8A

NOTE:

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

PLOTTED: 13-Jul-20

LAWN DRAINS

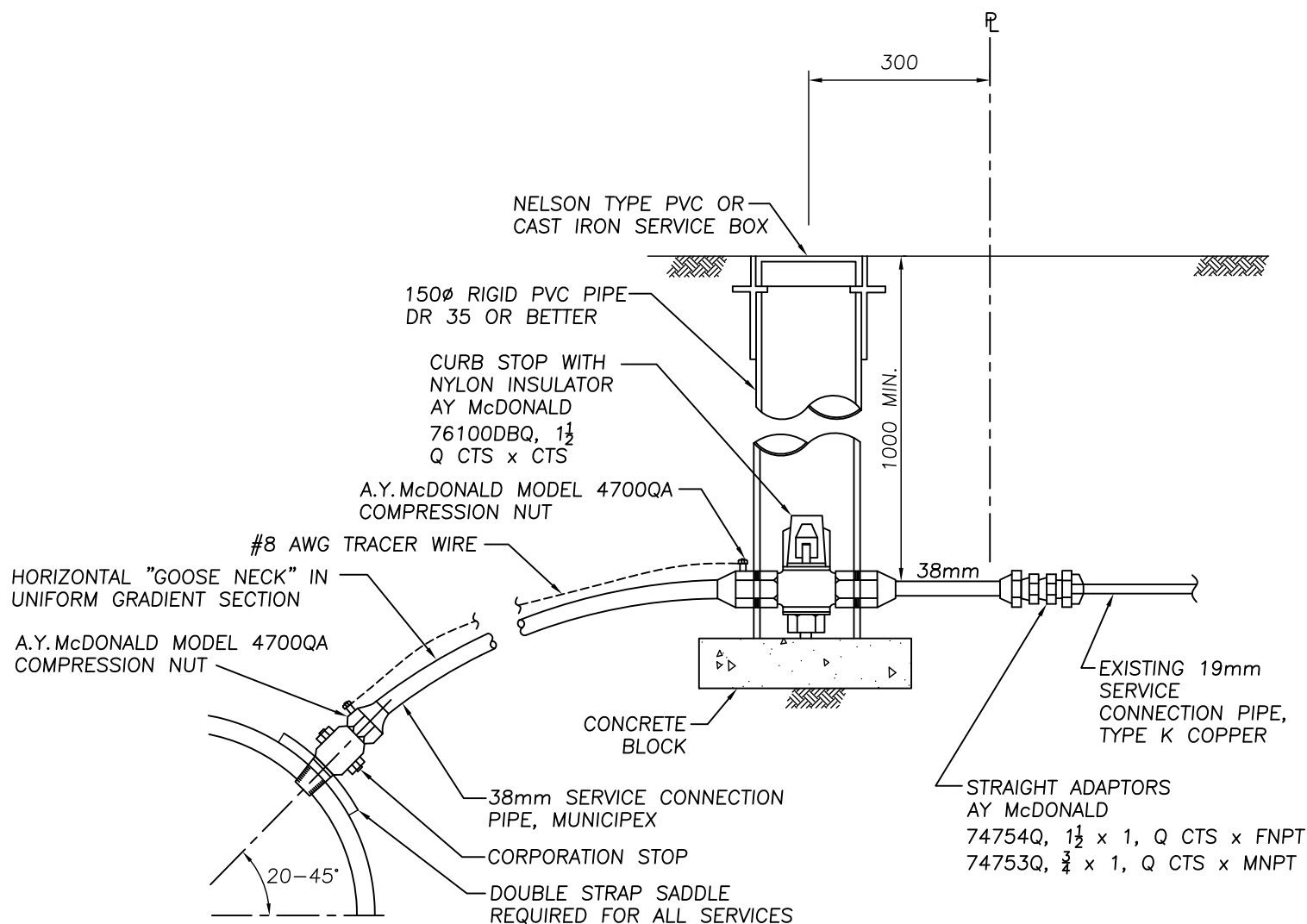
DATE: JULY/2020

DRAWN: REY

SCALE: N.T.S.

DRAWING NUMBER:

COQ-S12A



NOTE:

1. THIS DETAIL FOR SERVICES 38mm ONLY.
2. SERVICE SADDLES TO SECTION 33 11 01.
3. INSTALL #8 AWG TRACER WIRE FROM CORPORATION STOP TO CURB STOP.
4. NYLON INSULATOR ON CURB STOP SHALL BE INSTALLED ON THE PROPERTY SIDE OF VALVE.
5. WHEN CURB STOP INSTALLED IN DRIVEWAY A CAST IRON VALVE BOX MUST BE USED.
6. CORPORATION STOPS ARE TO BE POSITIONED UPRIGHT TO ALLOW OPERATION FROM THE SURFACE.
7. REFER TO CONTRACT DRAWINGS AND SECTION 33 11 01 FOR DETAILED SPECIFICATIONS.

PLOTTED: 3-Dec-20

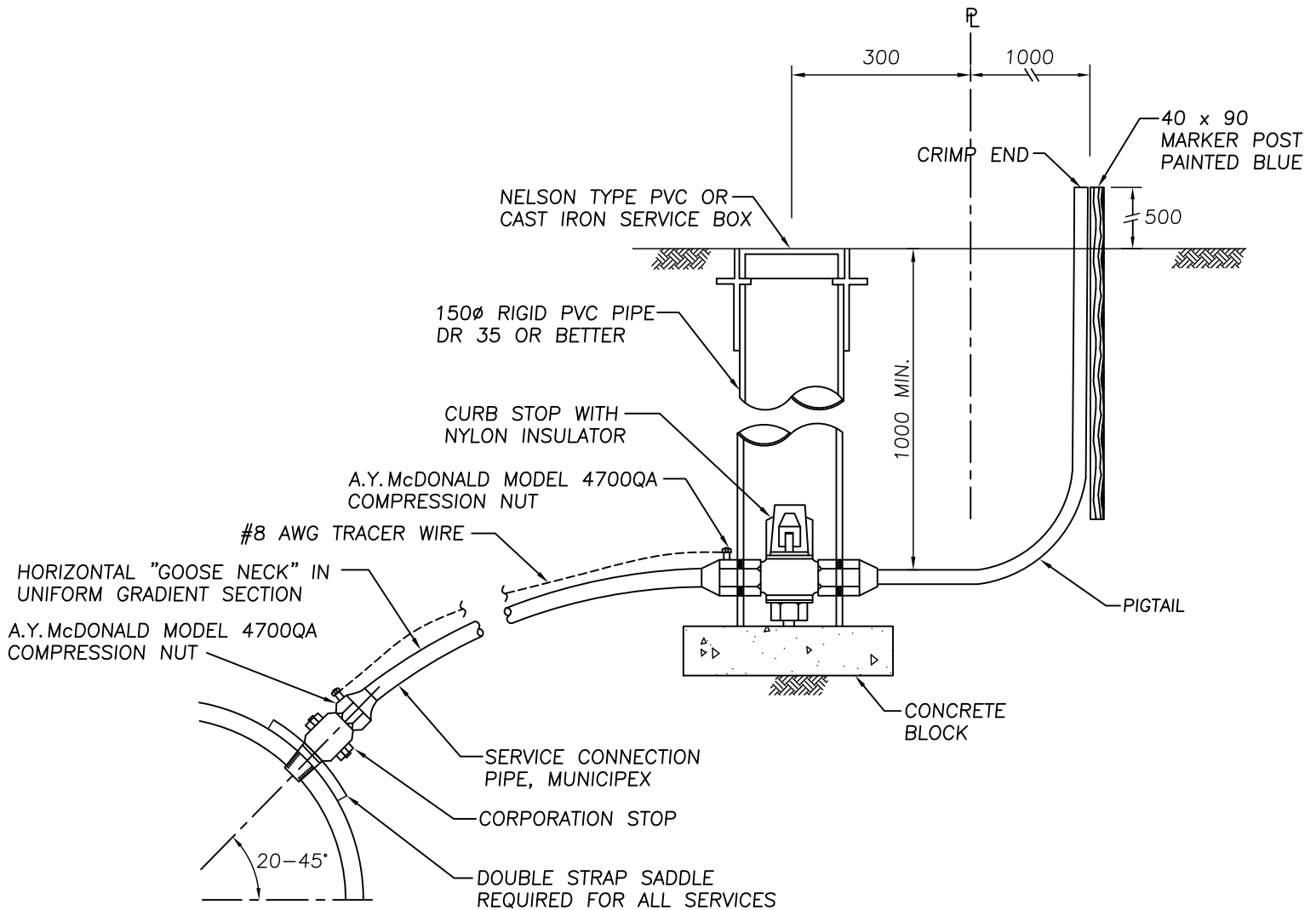
WATER SERVICE CONNECTION 38mm TO 19mm DIAMETER

DATE: DECEMBER/2020

DRAWN: REY

SCALE: N.T.S.

DRAWING NUMBER:
COQ-W2d



NOTE:

1. THIS DETAIL FOR SERVICES 19 TO 38mm ONLY.
2. SERVICE SADDLES TO SECTION 33 11 01.
3. INSTALL #8 AWG TRACER WIRE FROM CORPORATION STOP TO CURB STOP.
4. NYLON INSULATOR ON CURB STOP SHALL BE INSTALLED ON THE PROPERTY SIDE OF VALVE.
5. WHEN CURB STOP INSTALLED IN DRIVEWAY A CAST IRON VALVE BOX MUST BE USED.
6. CORPORATION STOPS ARE TO BE POSITIONED UPRIGHT TO ALLOW OPERATION FROM THE SURFACE.
7. REFER TO CONTRACT DRAWINGS AND SECTION 33 11 01 FOR DETAILED SPECIFICATIONS.

PLOTTED: 3-Dec-20

WATER SERVICE CONNECTION
19 TO 38mm DIAMETER

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

DRAWING NUMBER:
COQ-W2k

SUBMITTAL DATA SHEET

DD 14

Service Fitting – 4700QA

CTS Q-Comp Nut with Anode

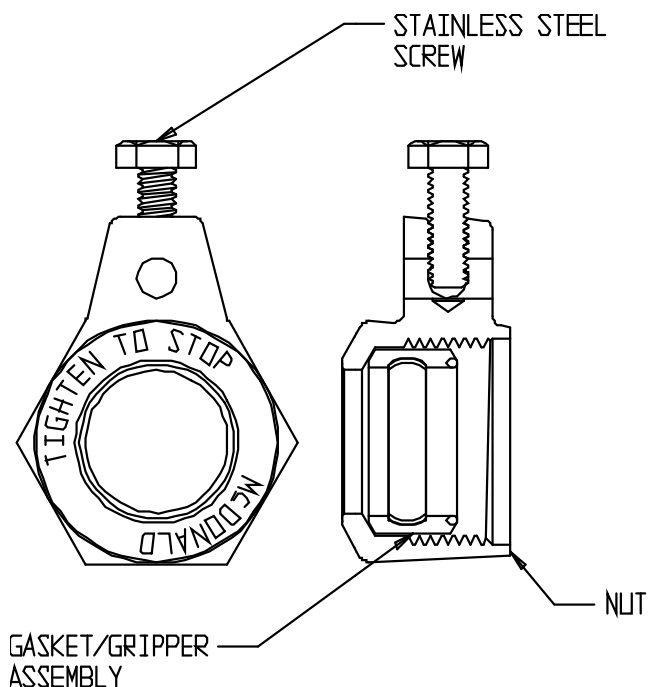


PLATE NO.	SIZE
4700QA 3/4	3/4 CTS
4700QA 1	1 CTS
4700QA 1 1/4	1 1/4 CTS
4700QA-12 1 1/2	1 1/2 CTS
4700QA-12 2	2 CTS
4700QA-16 1 1/2	* 1 1/2 CTS CO
4700QA-16 2	* 2 CTS CO

* NOTE: CORP ASSEMBLY NUTS
MARKED "CO" BY A.Y. McDONALD.

SUBMITTAL INFORMATION

- Manufactured in compliance with ANSI/AWWA C800 (latest revision)
- Brass components conform to ASTM B62 and ASTM B584, UNS C83600 -85-5-5-5 (latest revision)
- Large wrench flats provided for proper installation
- Insert stiffeners required on all flexible plastic connections



A.Y. McDonald Mfg. Co.
P.O. Box 508
Dubuque, IA 52004-508

Toll Free: 1-800-292-2737
Fax: 1-800-832-9296
Hours: 7:00 a.m. – 5:00 p.m., CST

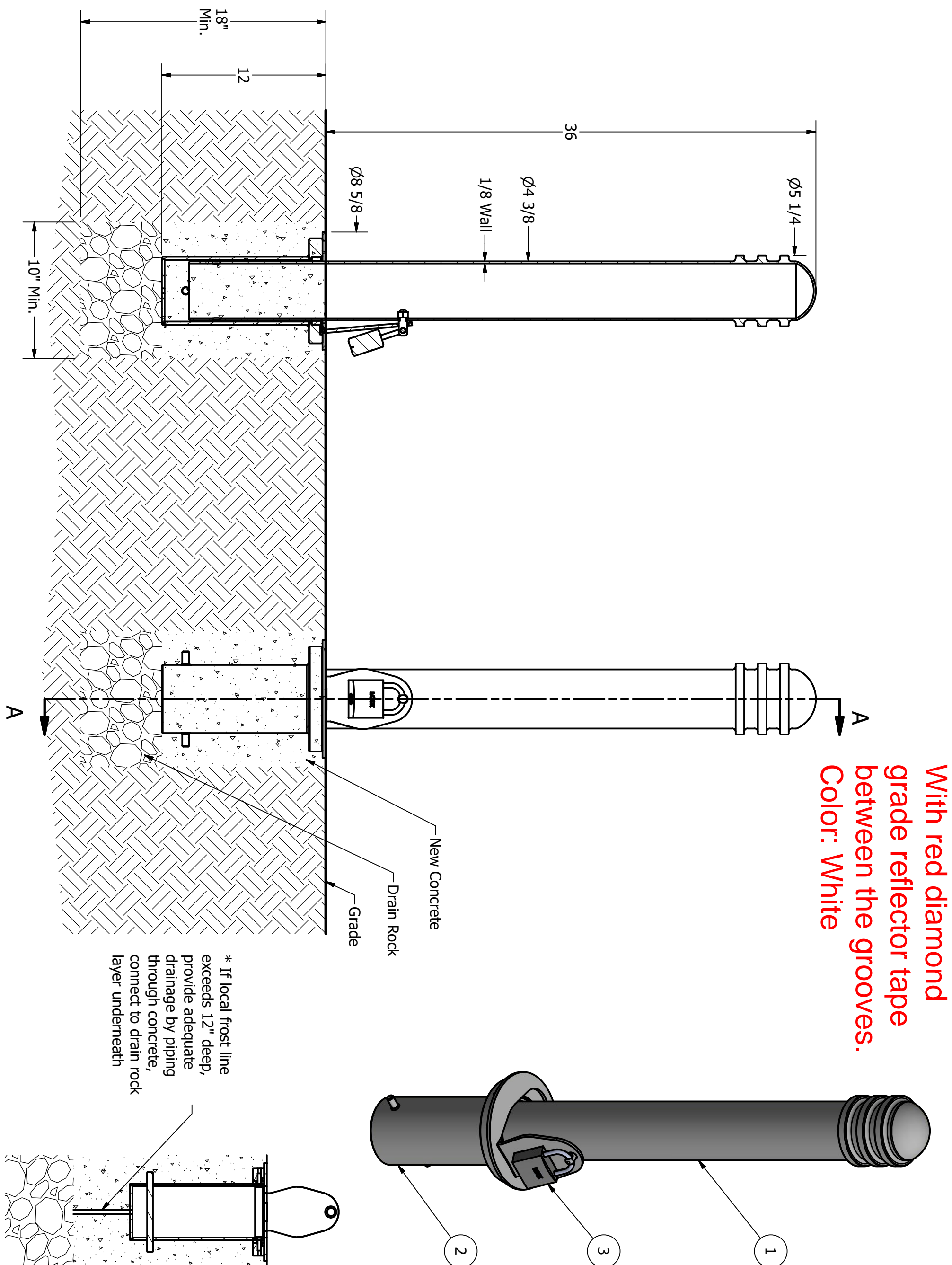
sales@aymcdonald.com
www.aymcdonald.com

A.Y. McDonald considers the information on this assembly drawing correct when published. Item and option availability, including specifications, are subject to change without notice.

Submitted by:

02-15

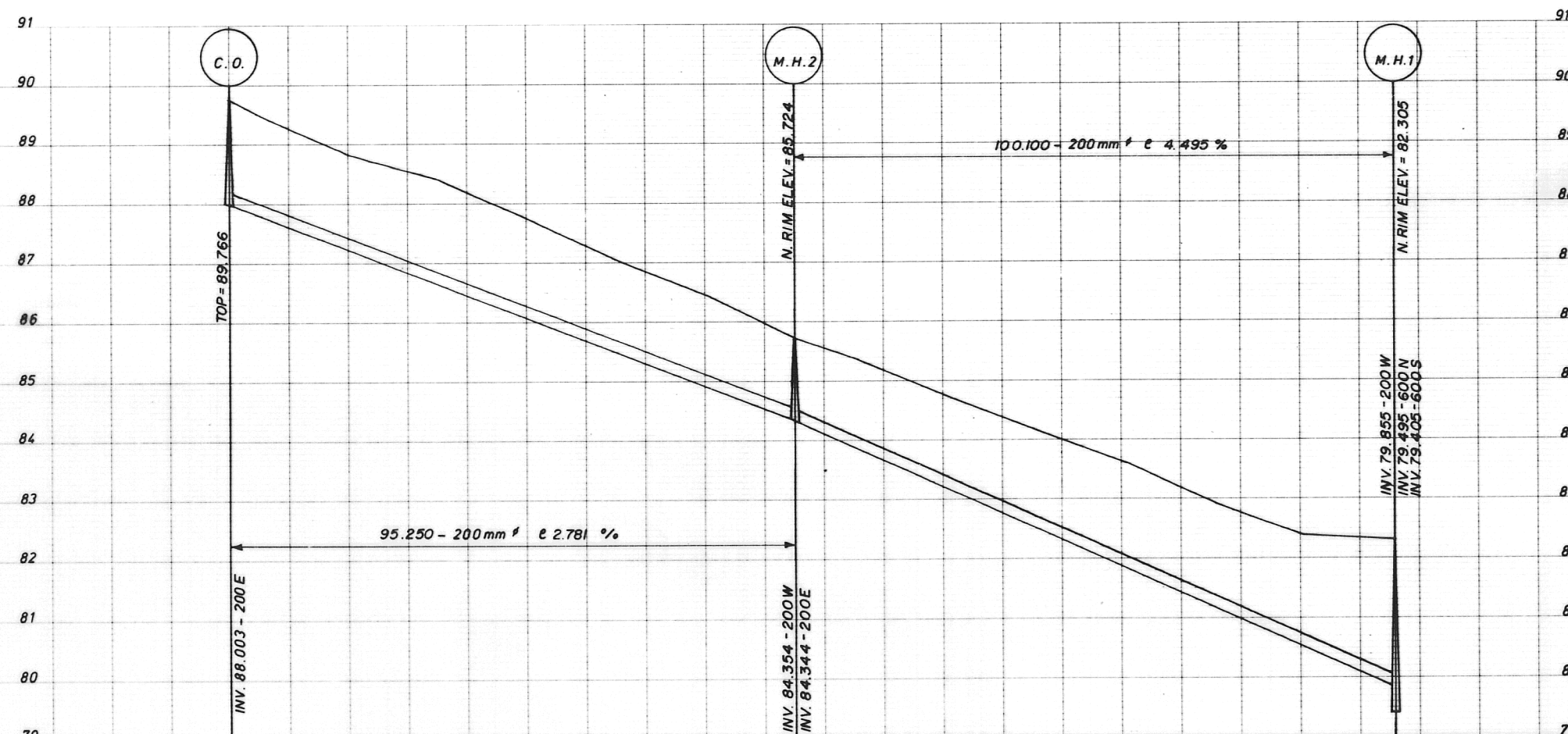
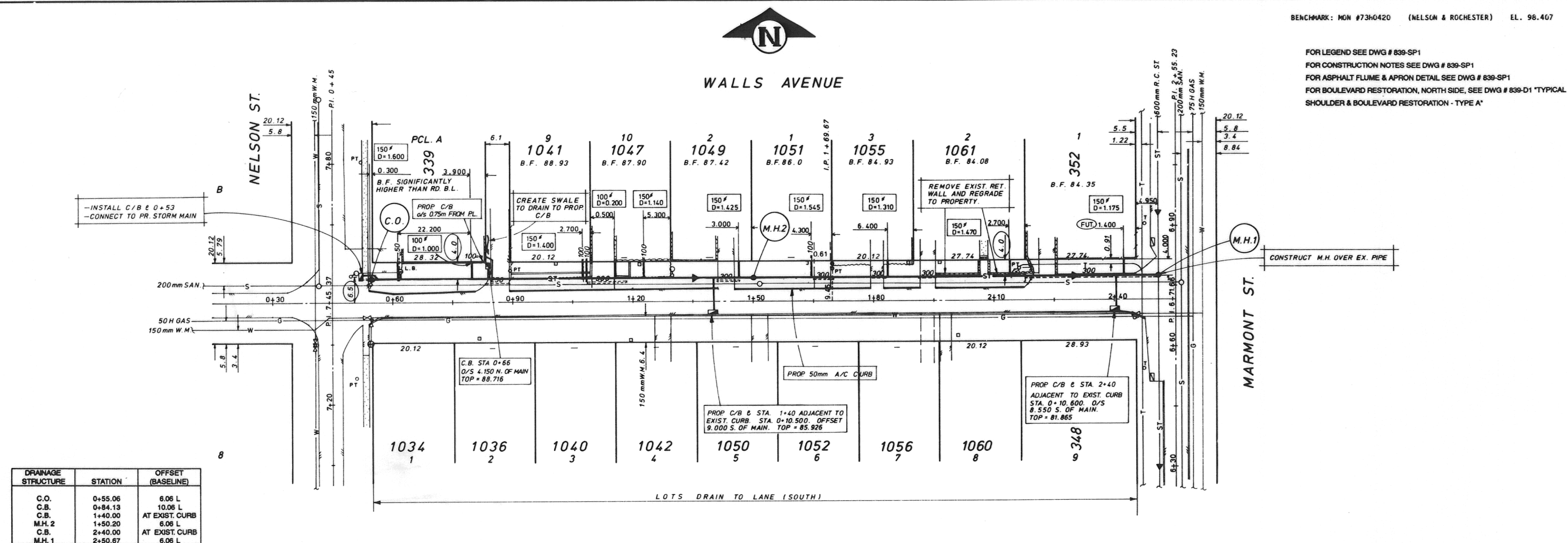
Bollard Post, Model R-7901



Appendix C – As-Built Records

As-Builts are available in the City's website,
<https://www.coquitlam.ca/701/City-Maps>

D-1119



FIELD BOOK No.	Pg. No.	No.	DATE	REVISION	BY
		1	20 02 89	REVISE BOULEVARD RESTORATION	C.E.
			June 90	'AS CONSTRUCTED'	


R.F. BINNIE & ASSOCIATES LTD.

 # 103 7382 WINSTON STREET
 BURNABY, B.C. V5A 2G9
 PHONE 420-1721

CONSULTING CIVIL ENGINEERS

CLIENT **DISTRICT OF COQUITLAM****STORM SEWER**
 WALLS AVENUE - NORTH SIDE
 NELSON ST. - MARMONT ST.

 SURVEYED BY B.B.
 DRAWN BY S.G.
 DESIGNED BY M.K.
 APPROVED BY

 SCALES
 VERTICAL 1" = 50'
 HORIZONTAL 1" = 100'

DATE JUNE 1986

DRAWING No.

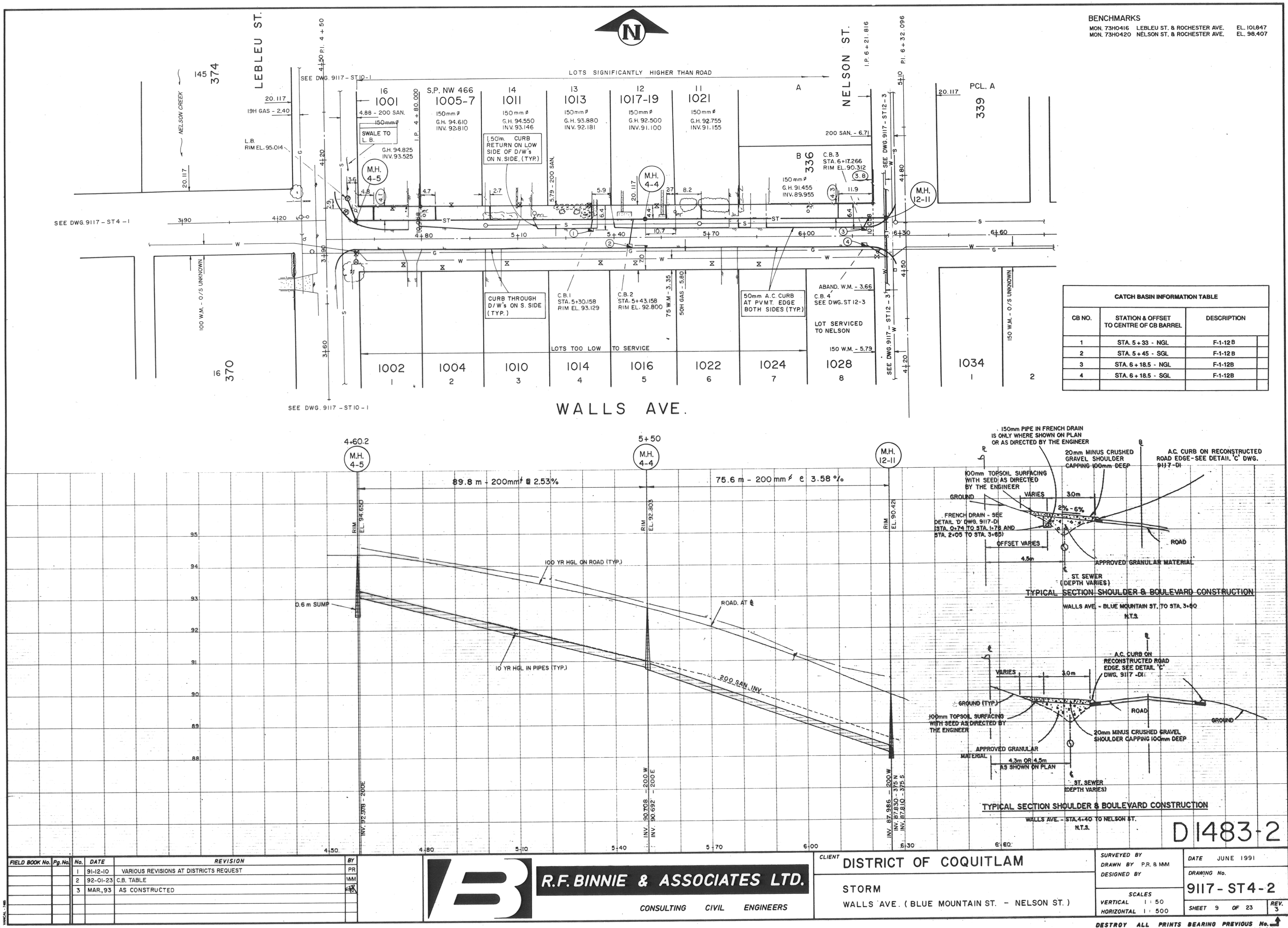
613-ST13-1

SHEET 22 OF 23

REV 1

DESTROY ALL PRINTS BEARING PREVIOUS No.

D 1483-2



FIELD BOOK No.	Pg. No.	No.	DATE	REVISION	BY
		1	91-12-10	VARIOUS REVISIONS AT DISTRICT'S REQUEST	PR
		2	92-01-23	C.B. TABLE	MM
		3	MAR, 93	AS CONSTRUCTED	PR



R.F. BINNIE & ASSOCIATES LTD.
CONSULTING CIVIL ENGINEERS

CLIENT **DISTRICT OF COQUITLAM**

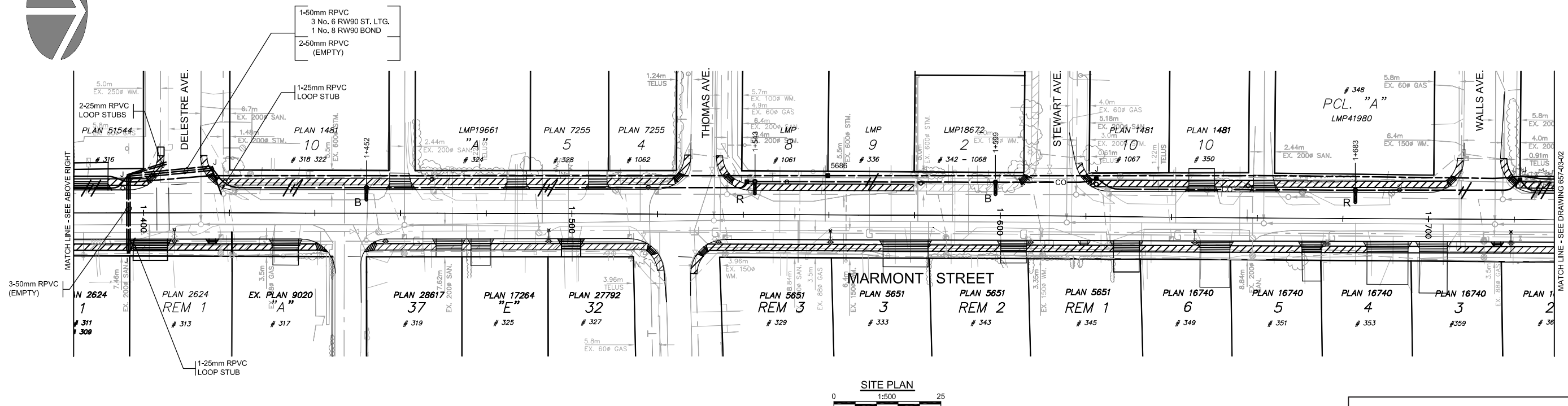
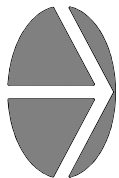
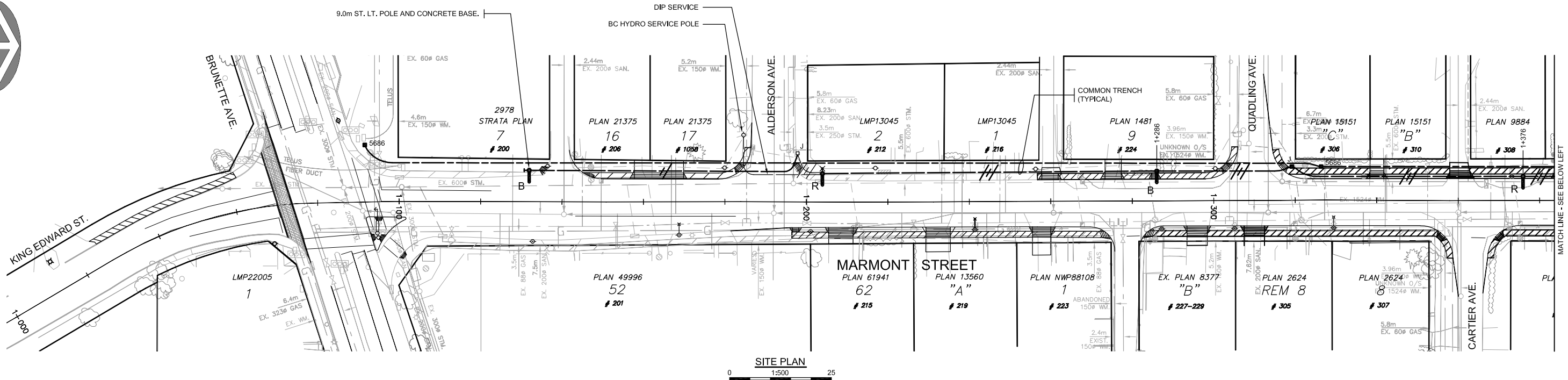
STORM
WALLS AVE. (BLUE MOUNTAIN ST. - NELSON ST.)

SURVEYED BY
DRAWN BY P.R. & MM
DESIGNED BY

DATE **JUNE 1991**
DRAWING No. **9117-ST4-2**
SHEET **9** OF **23** REV. **3**

SCALES
VERTICAL 1:50
HORIZONTAL 1:500

DESTROY ALL PRINTS BEARING PREVIOUS No. 1



ILLUMINANCE DESIGN CRITERIA		
ITEM	DESIGN REQUIREMENTS	DESIGN ACHIEVED
STREET NAME(S)	MARMONT STREET	
PEDESTRIAN CONFLICT AREA	LOW	
ROAD CLASSIFICATION	COLLECTOR	
ILLUMINATION TYPE	150W H.P.S. - FLAT GLASS / BC HYDRO LEASE LIGHTING	
SPACING (MAX)	48m STAGGERED	
ILLUMINATION LEVEL (AVG.)	9.0 lux	9.0 lux
UNIFORMITY RATIO (AVG.:MIN.)	4:1	3.3:1

IMPORTANT:
HYDRO, GAS AND TELEPHONE ARE NOT SHOWN ON THE CITY OF COQUITLAM AS-BUILTS OR RECORD DRAWINGS. CONTACT BC HYDRO, TERASEN GAS AND TELUS FOR CURRENT AS-BUILTS PERTAINING TO THESE UTILITIES.

NOTE:
LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED BY A PIPE LOCATOR AND MANUAL DIGGING. ALL OR ANY EXISTING STRUCTURES ARE NOT NECESSARILY SHOWN.

THIS PHOTOCOPY IS SUPPLIED BY THE CITY OF COQUITLAM FOR GENERAL INFORMATION ONLY AND THE ACCURACY OF INFORMATION CONTAINED ON THE DOCUMENT IS NOT GUARANTEED BY THE CITY.

COQUITLAM RECORD DRAWING NO.
●E0930-01
C0027-01

REFER TO 657-03-02 FOR NOTES AND LEGEND

No.	DATE	BY	CHK'D	REVISION
2	2004-05-25	E.R.		RECORD DRAWING
1	2003-07-14	M.E.		ISSUED FOR CONSTRUCTION
	2003-05-23	R.F.		ISSUED FOR TENDER

Aplin & Martin Consultants Ltd.
201 - 12448 - 82 Avenue, Surrey, BC V3W 3E9 Tel: 604-597-958

**STREET LIGHTING AND COMMUNICATION
CONDUIT INSTALLATION MARMONT STREET
BRUNETTE AVENUE TO AUSTIN AVENUE
COQUITLAM, BC**

PROJECT No.
657-03-01 of 04

SHEET No.
1 of 4

REVISION
2

DMD
DMD & ASSOCIATES LTD.
ELECTRICAL CONSULTANTS
Unit 1B - 19044 95A Avenue
Surrey, BC, Canada V4N 4P2
Web: www.dmdeng.com Phone: 604-888-9010
E-mail: office@dmdeng.com Fax: 604-888-9011

DESIGNED	MORRIS SIGNORELLI
DRAWN	JORGE MONCADA
CHECKED	
DATE	MARCH 23, 2003
SCALE:	1:500
SEAL	

NEW	EXISTING	
		<p>POST TOP ORNAMENTAL STREETLIGHT POLE (5.1m 100W HPS, IES TYPE 2 MCO. DIST. TWSTPAK C/W PHOTOCELL AND 40A STREET LIGHT SERVICE PANEL INSIDE A 0.9m SERVICE BASE (MCMC DWG. E7.2 THRU E7.5)</p>
		<p>FUTURE POST TOP ORNAMENTAL STREETLIGHT POLE (6m 100W HPS, IES TYPE 2 MCO. DIST. TWSTPAK.</p>
		<p>EXISTING BC HYDRO POLE WITH RENTAL LUMINAIRE</p>
		<p>1-53mm RPVC (SERVICE CONDUIT) C/W 3 No. 6 RW90</p>
		<p>STUB OUT AND RUN 32mm RPVC FOR FUTURE EXTENSION (CAP CONDUIT AT END OF RUN)</p>
R		LUMINAIRE ON RED PHASE CONDUCTOR
B		LUMINAIRE ON BLACK PHASE CONDUCTOR

IMPORTANT:
HYDRO, GAS, TELEPHONE
THE CITY OF COQUITAMA
CONTACT BC HYDRO
CURRENT AS-BUILT

NOTE:
LOCATION OF ELECTRICAL
APPROXIMATE
LOCATOR AND
STRUCTURES ARE

1. UNLESS OTHERWISE INDICATED, SERVICE BASES SHALL BE PER MMCD SPECIFICATIONS AND DRAWINGS. LATEST MMCD APPLIES.
2. UNLESS OTHERWISE INDICATED, THE SERVICE BASE AND ACCESS COVERS ARE TO BE GALVANIZED, PRIMED AND POWER-COATED IN COLOUR. EQUIVALENT TO COQUITLAM LAMP STANDARD GREEN. GENERAL PAINT #16-214 B1Y12F36 EXTERIOR UV STABILIZED INDUSTRIAL ENAMEL, OR WESTCOAST ENGINEERING FERN FERN COQUITLAM PWD P5399-9.
3. THE SERVICE BASE SHALL HAVE TWO 3/8-16 THREADED HOLES IN THE UPPER FLANGE AND MATING CLEARANCE HOLES ON THE COVER. THESE HOLES SHALL BE AT THE TOP, ONE HOLE ON EITHER SIDE OF THE LOCKING TAB. THE CONTRACTOR SHALL PROVIDE 2 EACH 3/8-16 STAINLESS STEEL BOLTS AND FLAT WASHERS. AFTER FINAL INSPECTION, THE CITY MAY INSTALL SECURITY BOLTS.
4. THE SERVICE BASE COVER MUST NOT BE A SNUG FIT INTO THE SERVICE BASE OPENING. SOME LEeway MUST BE PROVIDED TO FIT THE LOCKING TAB AND BOLTS THROUGH THE CLEARANCE HOLES.
5. THE LOCKING TAB SHALL BE OF A ROBUST DESIGN AND MANUFACTURE, AND SHALL ACCEPT A STANDARD CITY PROVIDED PADLOCK. A WCE BULLDOG PRODUCT SHALL NOT BE INSTALLED.
6. THE SERVICE BASE SHALL BE PROVIDED WITH ONE INTERNAL BONDING TAB. THE COLOUR-FINISHED SURFACE SURROUNDING THE BOND TAB SHALL BE GROUND OFF TO BARE STEEL FOR THE ELECTRICAL BOND ADHERENCE. TO ENSURE A PROPER BOND AND REDUCE CORROSION OR RUSTING, THE BONDING STUD SHALL BE INSTALLED IMMEDIATELY AFTER THE GRINDING.
7. THE ELECTRICIAN SHALL PROVIDE A SUITABLY-SIZED RW90 BOND WITH A RING LUG FROM THIS TAB INTO THE ELECTRICAL PANEL ONTO THE BONDING BUSS. THE 3/8-16 BOLT SHALL CONSIST OF ONE 3/8-16 BOLT, FLAT WASHER, SPLIT LOCK WASHER AND HEX NUT. TIGHTEN TO SPECIFICATIONS.
8. THE ELECTRICAL PANEL WITHIN THE SERVICE BASE SHALL BE FABRICATED FROM STAINLESS STEEL OR ALUMINUM. THE ELECTRICAL PANEL SHALL BE SET STRAIGHT, AND PARALLEL TO INTERNAL SERVICE BASE SURFACES. AMPERAGE CAPACITIES PER DESIGN DRAWINGS. PANEL SHALL BEAR ELECTRICALLY APPROVED LABELS FOR USE IN CANADA. SUCH AS CSA, CEC, ULC. SPECIAL INSPECTIONS, ETC.
9. THE PHOTOELECTRIC CELL (PEC) CIRCUIT FUSING SHALL USE A 10-A KTK TYPE FUSE AND SUITABLE FRONT PANEL MOUNTED FUSE-HOLDER. THE FUSE SHALL NOT BE HIDDEN INSIDE THE PANEL. PUSHBUTTON CIRCUIT BREAKERS ARE NOT ACCEPTABLE.
10. THE PEC BYPASS SWITCH SHALL BE HEAVY-DUTY, 2-POSITION MAINTAINED, ROTARY ON/OFF SWITCH. ALLAN-BRADLEY TYPE, OR APPROVED EQUIVALENT. A TOGGLE SWITCH IS NOT ACCEPTABLE.
11. THE FRONT PANEL FUSE-HOLDER AND THE PEC BYPASS SWITCH SHALL BE PROVIDED WITH LABELS, DETAILS PER MMCD DRAWINGS.
12. THE SERVICE BASE SHALL BE MOUNTED ON AN APPROPRIATE SIZED CONCRETE BASE PROVIDED WITH A V-GROOVE TO DRAIN WATER. ENSURE V-GROOVE IS FREE OF CONCRETE SLAG. IF A V-GROOVE IS NOT AVAILABLE, THEN FLAT WASHER SHALL BE PLACED BETWEEN THE CONCRETE AND THE BOTTOM OF THE SERVICE BASE.
13. STREET LIGHTS MOUNTED ON A SERVICE BASE SHALL BE WIRED PER MMCD DRAWINGS. THE WIRING TO THE LUMINAIRE SHALL BE GROUPED TOGETHER, AND SEPARATE OF THE PEC WIRING. GROUPING SHALL BE DONE WITH ELECTRICIANS TAPE.
14. GAPS OR OPENINGS BETWEEN THE STREET LIGHT POLE BASE FLANGES, THE OPENINGS FOR THE NUTS AND BOLTS, TO THE TOP OF THE SERVICE BASE, SHALL BE SEALED WITH RTV SEALANT.

IMPORTANT:
HYDRO, GAS, TELEPHONE AND CABLE **ARE NOT SHOWN** ON THE CITY OF COQUITLAM AS-BUILTS OR RECORD DRAWINGS. CONTACT BC HYDRO, FORTIS BC, TELUS AND SHAW FOR CURRENT AS-BUILTS PERTAINING TO THESE UTILITIES.

NOTE:
LOCATION OF EXISTING UTILITIES SHOWN ARE
APPROXIMATE ONLY AND SHOULD BE CONFIRMED BY A PIPE
LOCATOR AND MANUAL DIGGING. ALL OR ANY EXISTING
STRUCTURES ARE NOT NECESSARILY SHOWN.

THIS PHOTOCOPY IS SUPPLIED BY THE CITY OF COQUITLAM
FOR GENERAL INFORMATION ONLY AND THE ACCURACY OF
INFORMATION CONTAINED ON THE DOCUMENT IS NOT
GUARANTEED BY THE CITY.

Technical drawing of a typical service pole, showing side and plan views.

Side View Details:

- Fixture to be: POWERLITE TWISTPAK SERIES TWT C/W 28" HOOD POLYCARBONATE REFRACTOR & HOUSE SIDE SHIELD.
- INSTALL WITH OPTIONAL INTEGRAL ALUMINUM HOUSE SIDE SHIELDS
- POST TOP ADAPTOR
- CCT. R OR B 100W HPS
- HOUSE SIDE
- 5100 OCTAGONAL
- NOVA or WESTCOAST HAND HOLE COVER LOCK ANTI-WIRE TH DEVICE (SEE NOTE 1)
- 40A-120/240V MMCD STYLE SERVICE BASE AND LOAD CENTRE
- TYPE C3 CONC. BASE PER MMCD DWG. CE1.31
- 900
- 1200

Plan View Details:

- ACROSS STREET
- 40A-120/240V SERVICE BASE AND LOAD CENTRE
- SPECIAL TYPE C3 CONCRETE BASE
- Plan View Dimensions: $\phi 32$, $\phi 32$, $\phi 32$, $\phi 25$, $\phi 50$

3. UNLESS OTHERWISE INDICATED, ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MMCD (CURRENT ISSUE) AND THAT OF THE CITY OF COQUILTAM CURRENT SUBDIVISION CONTROL BYLAW AND MUST PASS THEIR INSPECTIONS. PLEASE CONTACT THE PROJECT COORDINATOR 72 HOURS PRIOR TO COMMENCING CONSTRUCTION.
2. CHECK BEFORE YOU DIG. THE CONTRACTOR SHALL REFER TO CIVIL "AS-BUILT" DRAWINGS FOR ALL UTILITIES, SERVICE LOCATIONS AND DETAILS. THE EXACT LOCATION OF THESE UTILITIES SHALL BE DETERMINED ON SITE.
3. PRIOR TO STREET LIGHT BASE INSTALLATIONS, THE CONTRACTOR SHALL ENSURE THAT ALL STREET LIGHT POLES AND FIXTURES SHALL BE A MINIMUM OF 3.0m CLEAR OF ALL HYDRO POLES AND OVERHEAD PRIMARY WIRES, AND 0.30m CLEAR OF ALL OVERHEAD SECONDARY WIRES.
4. THE CONTRACTOR SHALL NOTIFY PROVINCIAL AND MUNICIPAL INSPECTORS 24 HOURS PRIOR TO COMMENCEMENT OF UNDER GROUND AND ELECTRICAL WORK.
5. THE CONTRACTOR SHALL OBTAIN ALL EQUIPMENT APPROVAL PERMITS FROM THE ELECTRICAL SAFETY BRANCH. THE ELECTRICAL SAFETY BRANCH SHALL BE MADE AWARE OF THE (POSSIBLE) USE OF AN IRRIGATION SYSTEM WITHIN THE STREET LIGHT POLES.
6. MINIMUM DEPTH FOR UNDER GROUND DUCTING SHALL BE 600mm BELOW BOULEVARD AND SIDEWALKS AND 900mm BENEATH ASPHALT, AND AS PER COQUILTAM STANDARD DRAWING E-1.
7. ALL POLES, ARMS, SERVICE BASES, ETC., ARE TO BE GALVANIZED, PRIMED AND POWDER COATED IN COLOR. EQUIVALENT TO COQUILTAM LAMP STANDARD GREEN. GENERAL PAINT #16-214 B1Y2F36 EXTERIOR UV STABILIZED INDUSTRIAL ENAMEL, OR WEST COAST ENGINEERING GREEN FEM COQUILTAM PWD P5399-9.
8. ALL POLE HAND HOLE ACCESS SHALL UTILIZE EITHER NOVA POLE OR WEST COAST ENGINEERING HEAVY DUTY HAND HOLE COVERS WITH ASSOCIATED LOCKS, RE-ENFORCED BACKING BARS AND PROVIDED WITH ROUND HOCKEY PUCK STYLE LOCKS. KEYS TO BE SUPPLIED TO COQUILTAM TRAFFIC OPERATIONS.
9. EACH LUMINAIRE SHALL BE WIRED WITH No. 12 RW90. BLACK AND WHITE FOR 120V SERVICE, BUT 208V FOR 240V SERVICE.
10. EACH STREET LIGHT LUMINAIRE SHALL BE PROVIDED WITH A TRON-HEBB-AA WATER PROOF FUSE HOLDER, C/W 2 TYPE "L" INSULATING BOOTS, OR APPROVED EQUIVALENT. EACH FUSE HOLDER SHALL BE PROVIDED WITH ON 10-A BUSS KTK-TYPE FUSE, WIRED LINE CONDUCTOR(S). FOR 240V SERVICES, ONE FUSE SHALL BE IN EACH FUSE CONDUCTOR. THE FUSE HOLDER(S) SHALL BE ACCESSIBLE FROM THE HAND HOLE ACCESS AT THE POLE BASES.
11. ALL LUMINAIRE SHALL BE BONDED WITH A NUMBER 12 RW90 CONDUCTOR (GREEN). THE CONTRACTOR SHALL SUPPLY A PIGTAIL SPLICE WITH A RING LUG TERMINAL FOR THE BOND STUD.
12. THE BONDING STUD IN EACH POLE SHALL COMPRISE OF ONE 3/8-16 BOLT, 2.0 INCHES LONG, ONE SPLIT LOCK WASHER, AND TWO HEX NUTS. THE SPLIT LOCK-WASHER SHALL BE SUID ONTO THE BOLT ON THE INSIDE OF THE POLE, AND HELD TIGHTLY IN PLACE WITH THE FIRST NUT. THIS NUT SHALL BE TIGHTENED TO SPECIFICATIONS. THE SECOND TERMINAL SHALL BE SANDWICHED BETWEEN THE TWO HEX NUTS. THE LAST NUT HOLDS THE RING TERMINAL IN PLACE. THIS NUT SHALL BE TIGHTENED TO SPECIFICATIONS. THE POLE MANUFACTURER/CONTRACTOR SHALL ENSURE THE AREA AROUND THE BONDING NUT ON THE INSIDE OF THE POLE IS PAINT FREE TO OBTAIN A SOLID MECHANICAL AND ELECTRICAL BOND CONNECTION.
13. ALL POLES SHALL BE BONDED WITH A No. 8 RW90 CONDUCTOR (GREEN). THE CONTRACTOR SHALL SUPPLY A PIGTAIL SPLICE WITH RING LUG TERMINAL FOR BOND STUD.
14. ALL JUNCTION BOXES SHALL BE BONDED. THE SPLICES SHALL BE FULLY SEALED WITH TAPE CONSISTING OF BISHOP BI-SIDE, PHILLIPS ROTUNDRUN OR 3M SELF-HEALING TAPE; COVERED WITH PVC TAPE AND DIPPED IN 3M SCOTCHCOAT, OR APPROVED EQUIVALENT.
15. ALL JUNCTION BOXES SHALL BE PROVIDED WITH RPVC BARS TO SUPPORT THE ELECTRICAL CONNECTIONS AND FUSE HOLDERS. THE RPVC BARS SHALL BE ATTACHED INTO THE JUNCTION BOX SIDEWALLS, AND THE ELECTRICAL CONNECTIONS / FUSE HOLDERS, SHALL BE TIE-WRAPPED IN PLACE.
16. ALL JUNCTION BOXES WITH METALLIC LIDS SHALL BE BONDED WITH A No. 8 RW90 CONDUCTOR (GREEN). THE CONTRACTOR SHALL SUPPLY A PIGTAIL SPLICE WITH RING LUG TERMINAL FOR THE BOND STUD.
17. EMPTY CONDUITS / CONDUITS ONLY (CO) SHALL BE PROVIDED WITH A NYLON PULL LINE, AND EACH END SHALL BE CAPPED.
18. STANDING WATER IS NOT PERMITTED IN CONDUITS. CONDUITS WITH WATER SHALL BE BLOWN CLEAR OF WATER.
19. HYDRO SERVICE (DIP) CONNECTIONS SHALL BE PER MMCD OR PER BC HYDRO STANDARDS. RIGID METAL CONDUIT IS NOT ACCEPTABLE. RPVC CONDUIT SHALL BE PROTECTED WITH A STEEL CONDUIT GUARD AND ATTACHED TO WOOD POLE WITH LAG BOLTS (PER MMCD E8.1).
20. ALL WIRING SHALL BE STRANDED RW90 TYPE, COLOUR AS PER COLOUR CODE TABLE.

- 1.0 POST-TOP LUMINAIRES SHALL BE AMERICAN ELECTRIC / TWISTPAK REFRACTOR C/W 28 INCH HOOD, POLYCARBONATE REFRACTOR AND HOUSE SIDE SHIELD. BULB TWISERS WATTAGES TO BE AS SHOWN ON THE DRAWING, ADD OPTIONAL INTERNAL ALUMINUM HOUSE SIDE SHIELD.
- 2.0 DOWN LUMINAIRES SHALL BE COBRA-TYPE FIGURES C/W FLAT LENSES AND CLEAR PS LAMPS. LAMP WATTAGE TO BE AS PER THE DRAWINGS.
- 3.0 ALL LUMINAIRES SHALL BE PROVIDED WITH LAMP WATTAGE LABELS (BLACK LETTERING ON YELLOW BACKGROUND), 10-100, 15-150, 25-250, 40-400.

LIGHTING DESIGN CRITERIA			
ROADWAY/SIDEWALK NAME		WALLS AVENUE	
ROADWAY			
RECOMMENDED ILLUMINANCE	4 LUX	ILLUMINANCE DELIVERED	5.0 LUX
RECOMMENDED UNIFORMITY	6:1	UNIFORMITY DELIVERED	1:1
CLASSIFICATION	LOCAL	PEDESTRIAN	LOW
ILLUMINATION TYPE BASED ON LLF=0.75 ~100w HPS TWISTPACT FIXTURE. I.E.S TYPE III DISTRIBUTION (STAGGERED ARRANGEMENT MAX 50M SPACING)			

ITEM	CONDUCTOR COLOUR
LUMINAIRE CCT. R	RED
LUMINAIRE CCT. B	BLACK
NEUTRAL	WHITE
GROUND/BOND	GREEN
ALL WIRING SHALL BE STRANDED RW90	


PLEASE CONTACT GREAT NORTHERN ENGINEERING
AT 1-855-463-2266 EXT. 102
3 WORKING DAYS PRIOR TO PLANNED BASE INSTALLATION TO
ARRANGE FOR A CHECK OF THE LAYOUT AGAINST KNOWN
UTILITIES FOR THE ENGINEER TO RESOLVE ANY CONFLICTS

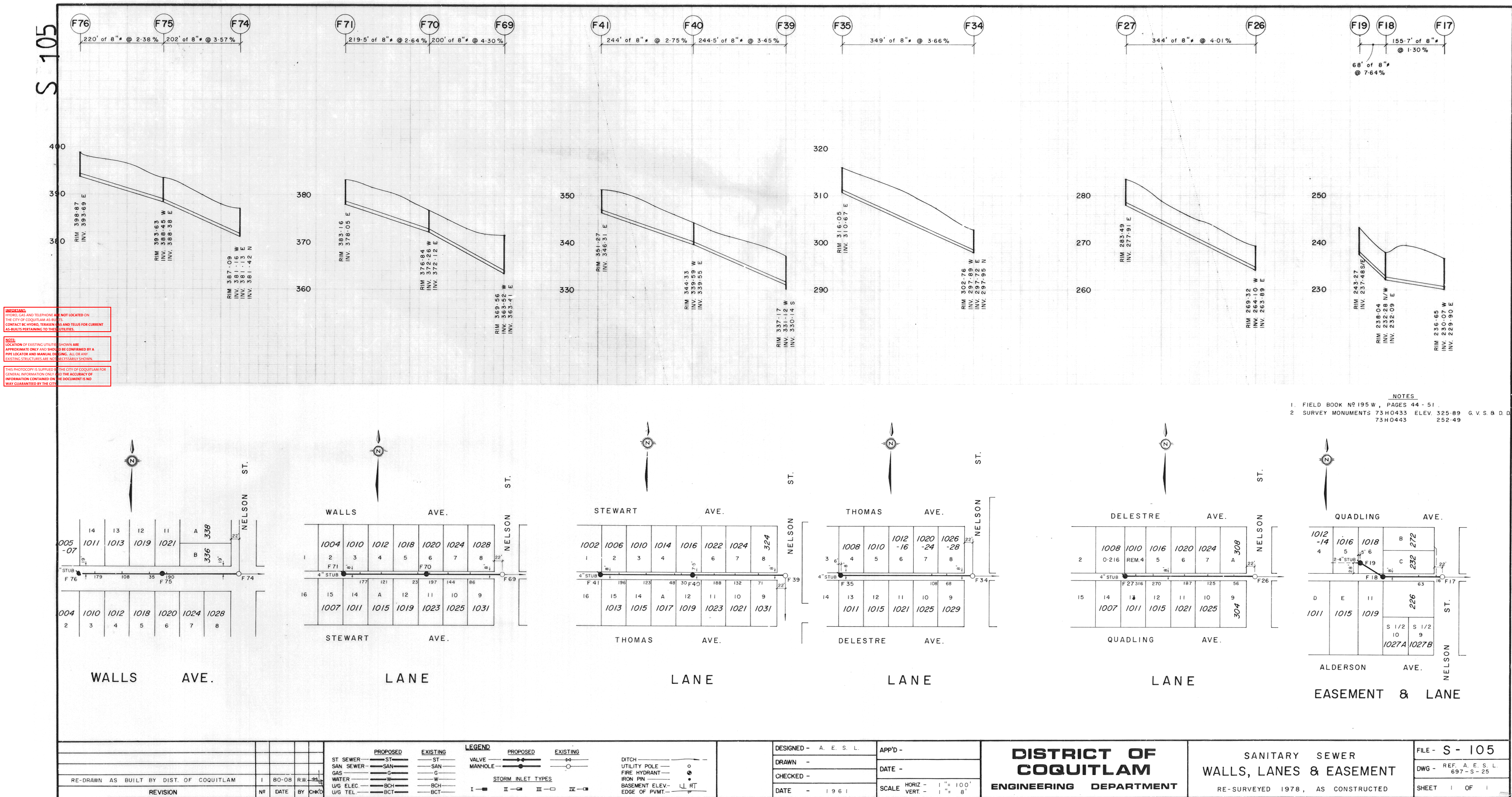
THE CONTRACTOR SHALL ENSURE THAT ALL POLES AND APPURTENANCES WILL BE A MINIMUM OF 3.0m CLEAR OF OVERHEAD PRIMARY WIRING AND 0.3m CLEAR OF OVERHEAD SECONDARY WIRING PRIOR TO INSTALLING POLE BASES.

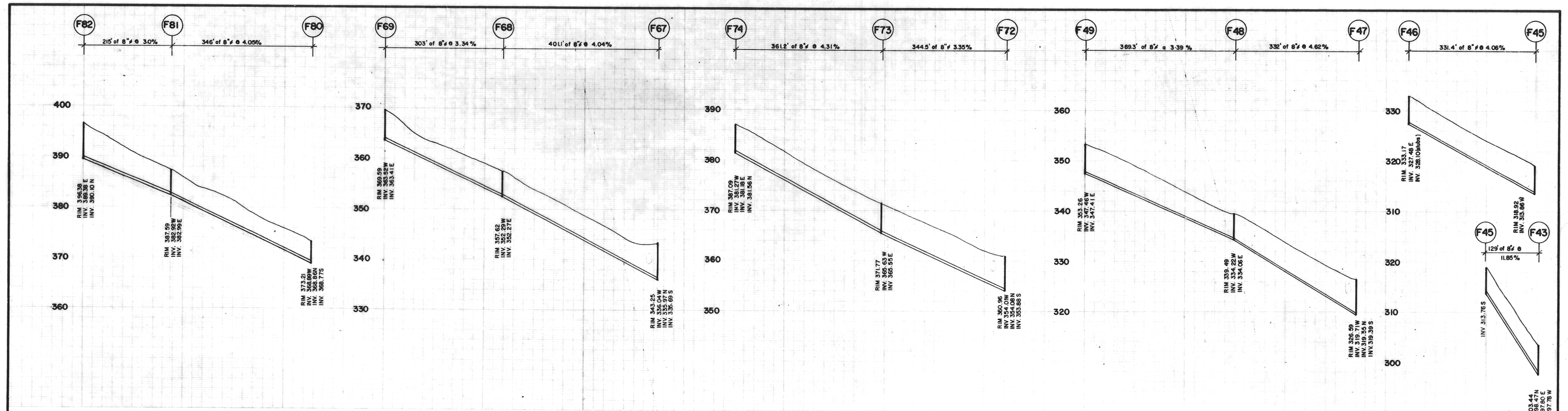
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH OCCUR DUE TO THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.



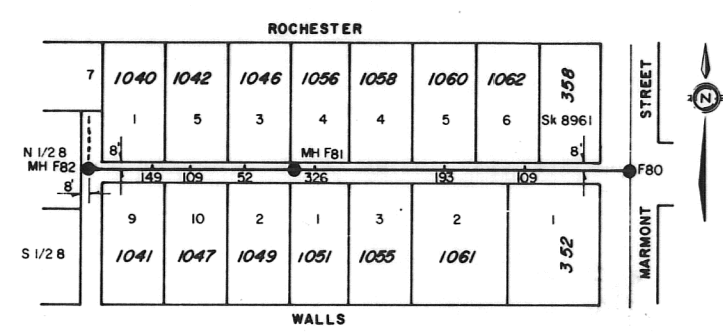
SUITE 206 8363 128TH STREET
SURREY, B.C. V3W 4G1
TEL: (604) 543 8044 FAX: (604) 543 8104
EMAIL: CIVIL@MAINLANDENG.COM

	SCALE	1:250	COQUITLAM PROJECT NO.	DRAWING NO.
	DESIGNED	JF	13 009893 SD/1	1
	DRAWN	JF	COQUITLAM DRAWING NO.	
	CHECKED	JP	MAINLAND PROJECT NO.	
	APPROVED	CC	C-1357	
		DATE	16/12/06	REV. 3

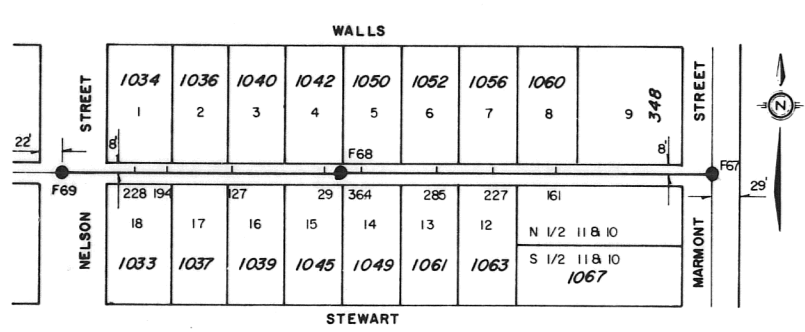




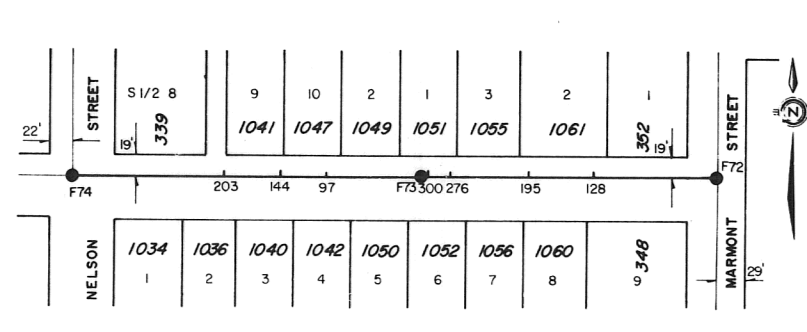
NOTES
FIELD BOOK NO 195 T & 195 W



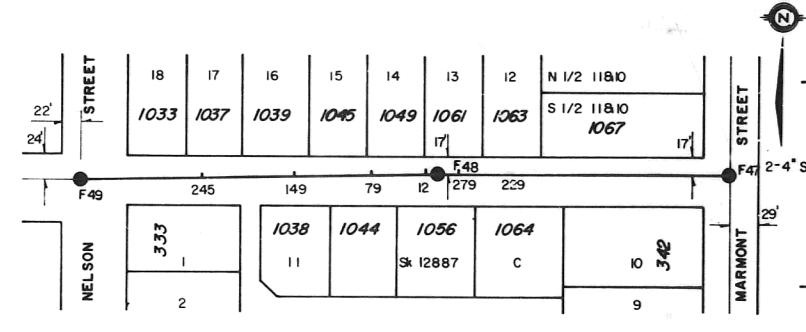
LANE N. of WALLS



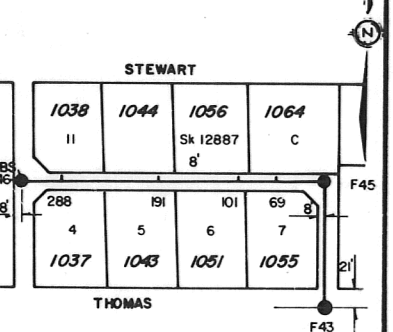
LANE N. of STEWART



WALLS STREET

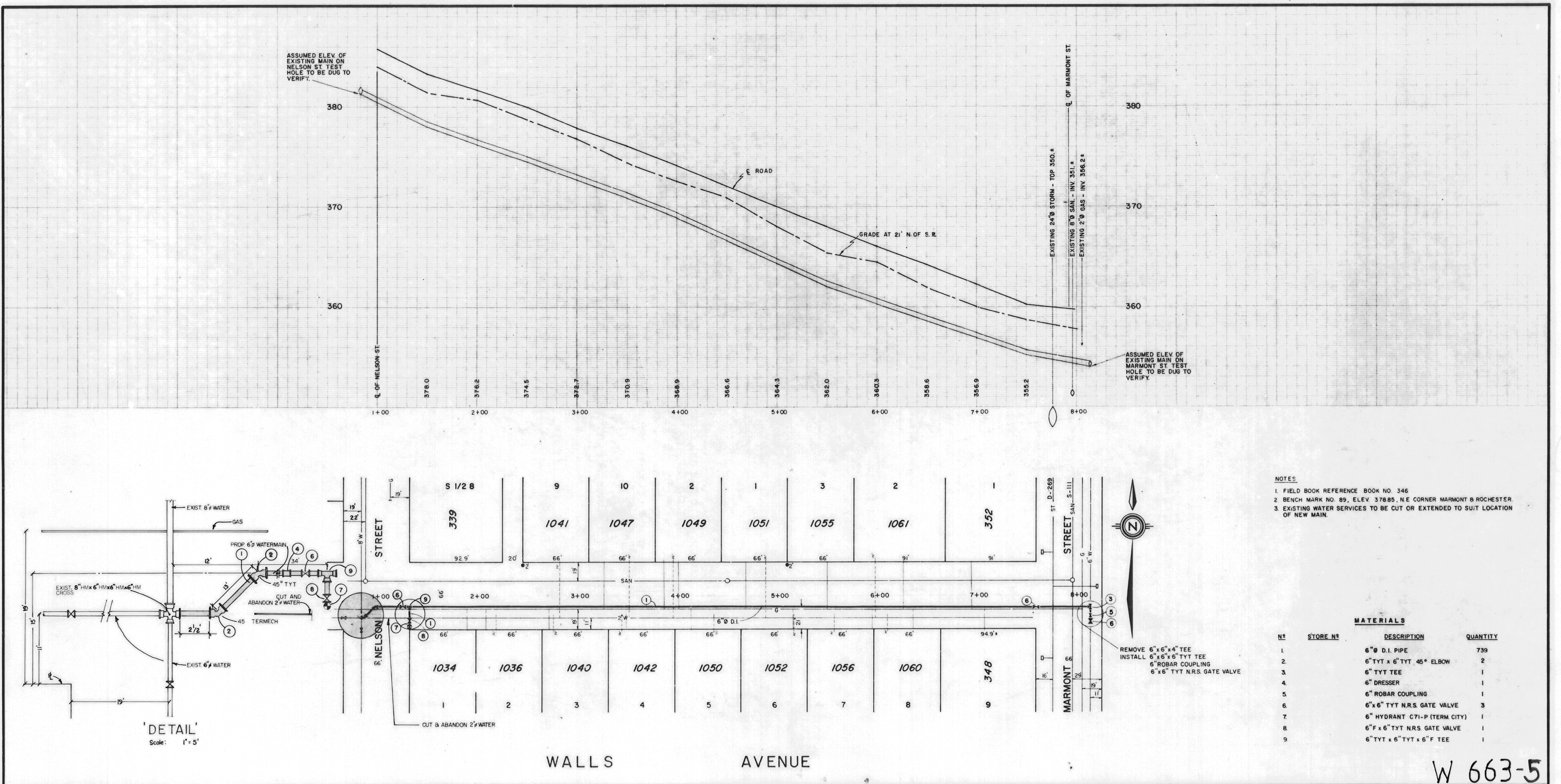


STEWART STREET



LANE N. of THOMAS

REVISION				NO	DATE	BY	CHKD
ST SEWER - ST				PROPOSED			
SAN SEWER - SAN				EXISTING			
GAS - G				VALVE			
WATER - W				MANHOLE			
UG ELEC - BCH				STORM INLET TYPES			
UG TEL - BCT				I - II - III - IV			
DITCH				UTILITY POLE			
FIRE HYDRANT				IRON PIN			
BASEMENT ELEV.				EDGE OF PMT.			
DESIGNED - AESL				APP'D -			
DRAWN - W.H.				DATE -			
CHECKED -				SCALE			
DATE - JULY 1978				HORIZ - 1" = 100'			
				VERT - 1" = 8'			
DISTRICT OF COQUITLAM ENGINEERING DEPARTMENT				SANITARY SEWER			
				WALLS ST; STEWART ST. LANES of WALLS; STEWART & THOMAS RE-SURVEYED 1978, AS CONSTRUCTED			
				FILE - S-110			
				DWG -			
				SHEET 1 OF 1			



- NOTES
- 1. FIELD BOOK REFERENCE BOOK NO. 346
 - 2. BENCH MARK NO. 89, ELEV. 378.85, N.E. CORNER MARMONT & ROCHESTER.
 - 3. EXISTING WATER SERVICES TO BE CUT OR EXTENDED TO SUIT LOCATION OF NEW MAIN.

MATERIALS		
Nº	STORE Nº	DESCRIPTION
1		6" Ø D.I. PIPE
2		6" TYT x 6" TYT 45° ELBOW
3		6" TYT TEE
4		6" DRESSER
5		6" ROBAR COUPLING
6		6" x 6" TYT N.R.S. GATE VALVE
7		6" HYDRANT C71-P (TERM. CITY)
8		6" F x 6" TYT N.R.S. GATE VALVE
9		6" TYT x 6" TYT x 6" F TEE

AS BUILT				OCT 77 JZO			
REVISION				Nº	DATE	BY	CHK'D

ST SEWER	ST	ST
SAN SEWER	SAN	SAN
GAS	G	G
WATER	W	W
UG ELEC.	BCH	BCH
UG TEL.	BCT	BCT

PROPOSED	EXISTING
ST	ST
SAN	SAN
G	G
W	W
BCH	BCH
BCT	BCT

VALVE	MANHOLE
II	III
IV	IV

DITCH	UTILITY POLE
FIRE HYDRANT	IRON PN
BASEMENT ELEV.	EDGE OF PYMT
LI	RT

DESIGNED - JLC	APP'D - [Signature]
DRAWN - Wm H & NBL	DATE - 4 May 77
CHECKED - [Signature]	SCALE HORIZ - 1" = 40'
DATE - FEB 77	SCALE VERT - 1" = 4'

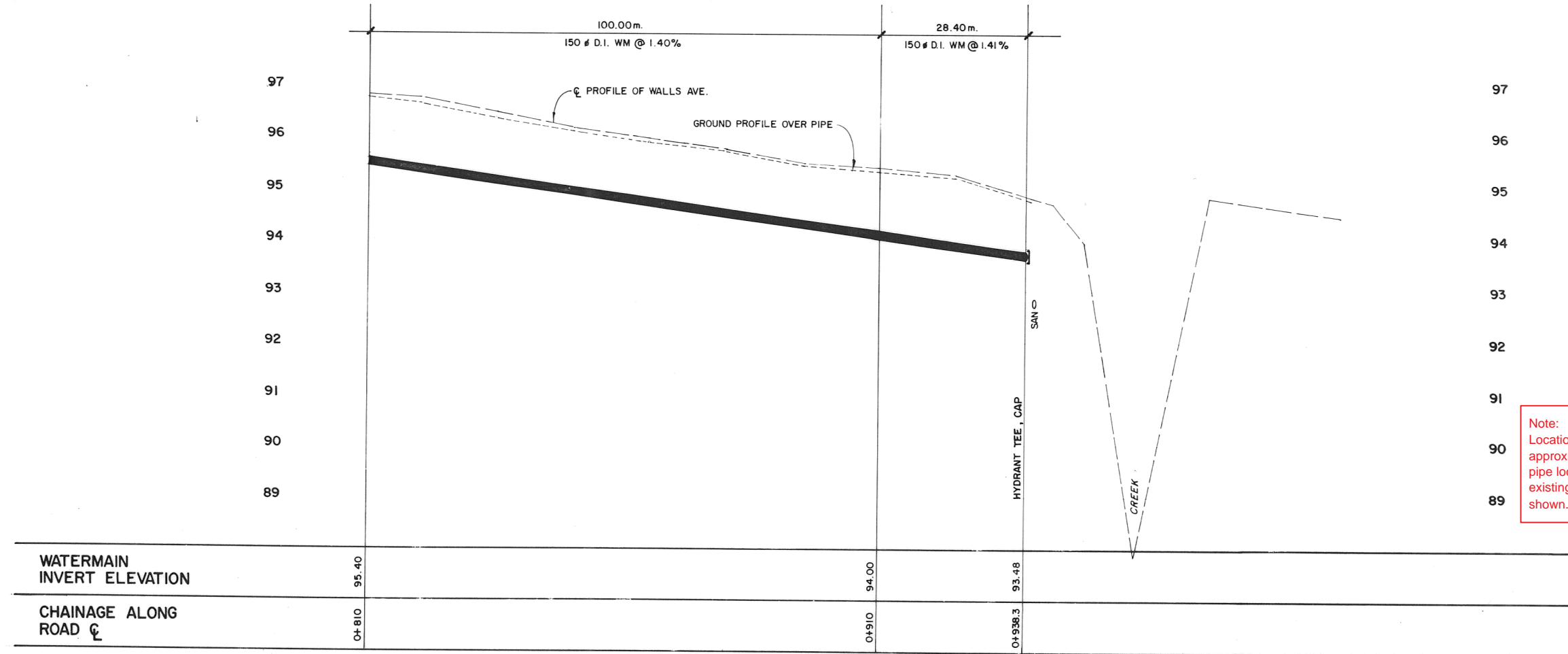
DISTRICT OF COQUITLAM	
ENGINEERING DEPARTMENT	

6" Ø WATERMAIN ON WALLS AVENUE	
BETWEEN NELSON & MARMONT ST.	

FILE - 010 - 041 - 3
DWG - 663
SHEET 1 OF 1

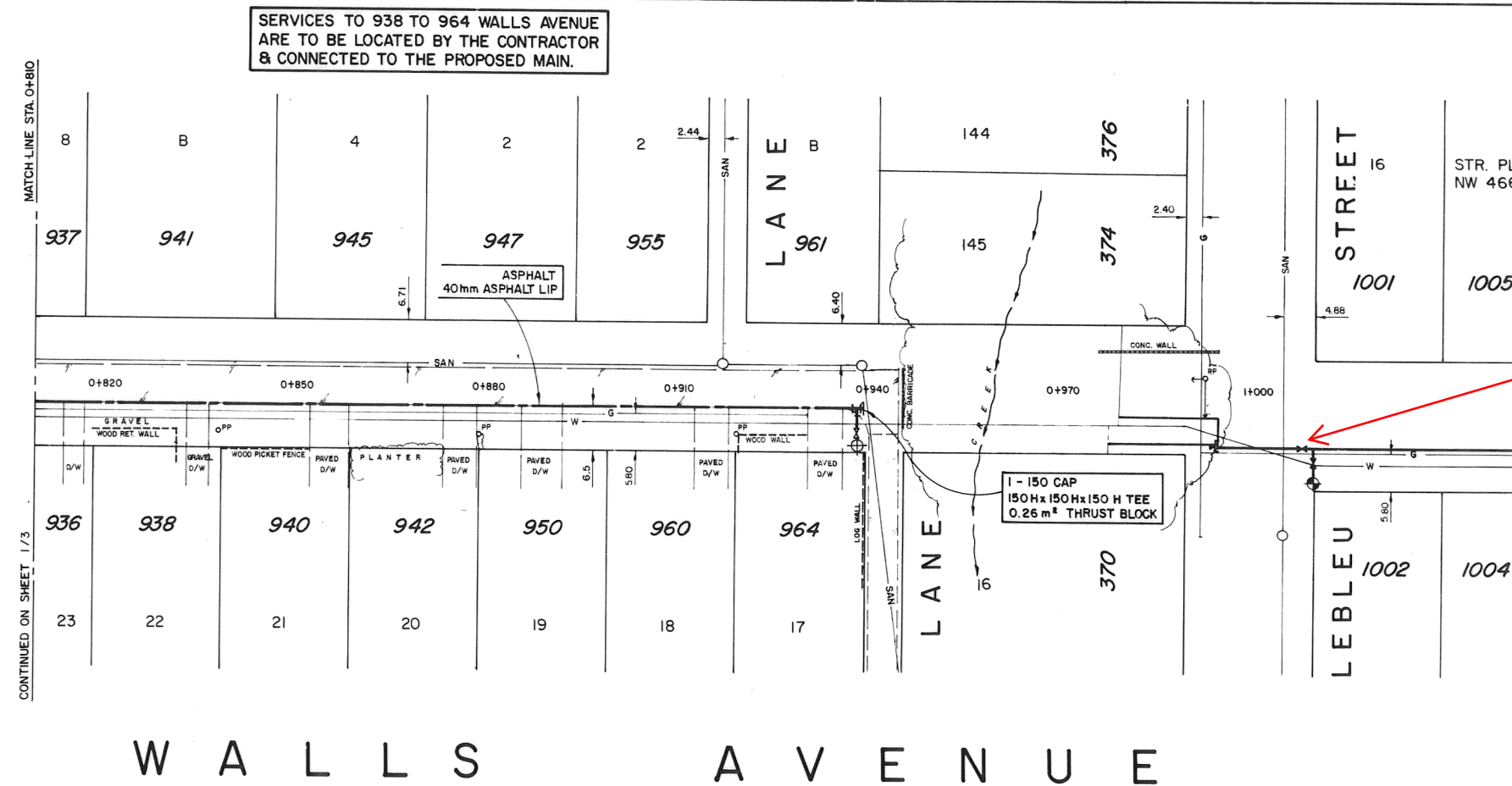
W 663-5

W 1274 - 2



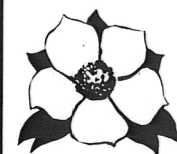
Note:
Location of existing utilities shown are approximate and should be confirmed by pipe locator and manual digging. All or any existing structures are not necessarily shown.

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W A L L S A V E N U E

W-1274-2 (2/3)



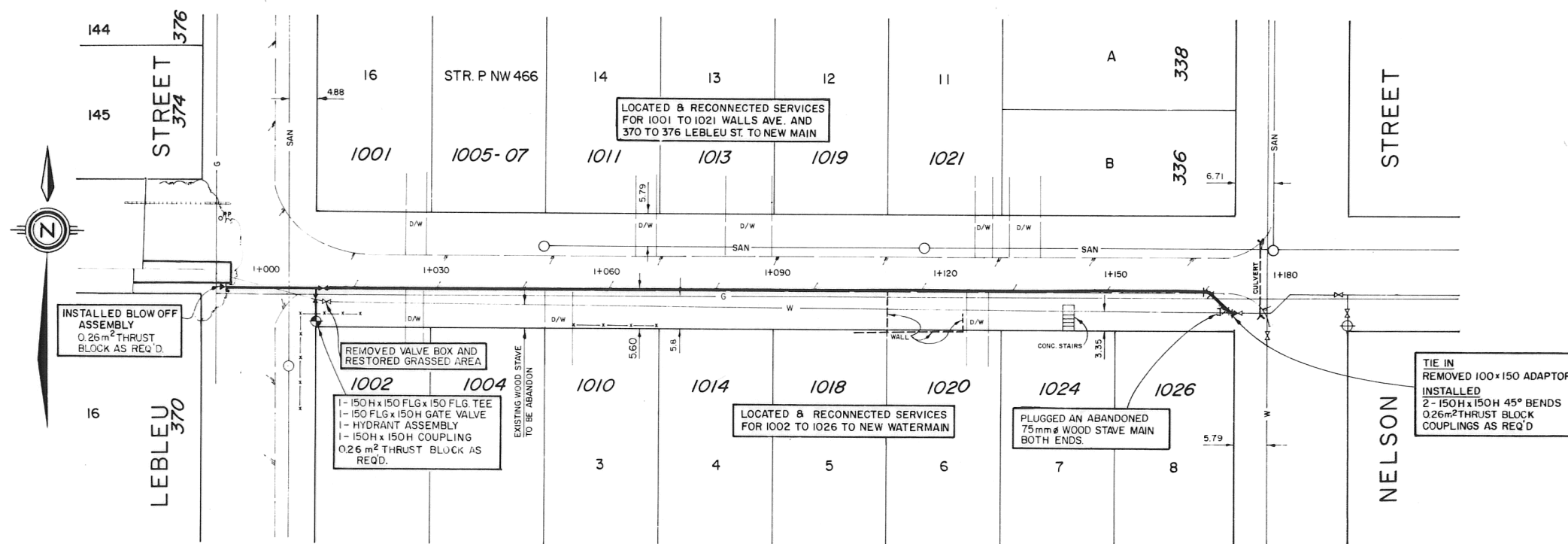
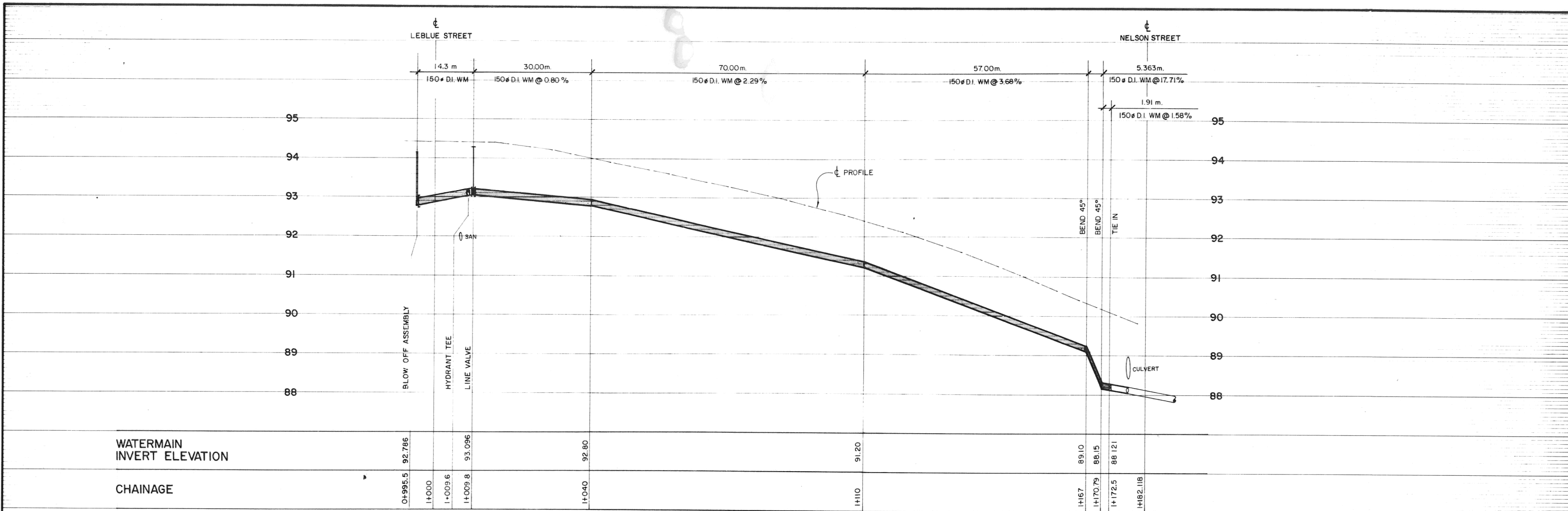
Proposed	Existing	Legend
STORM SEWER - ST	STORM SEWER - ST	DITCH
SAN SEWER - SAN	SAN SEWER - SAN	UTILITY POLE
GAS - G	GAS - G	FIRE HYDRANT
WATER - W	WATER - W	IRON PIN
UG ELECTRIC - ECH	UG ELECTRIC - ECH	BASEMENT ELEV
UG TELEPHONE - BCT	UG TELEPHONE - BCT	EDGE OF P.V.M.T.
VALVE - V	VALVE - V	INTEG SURVEY MON
MANHOLE - M	MANHOLE - M	

REV	N	DATE	DRN	CHD
91-01	RW			
AS CONSTRUCTED				

DISTRICT OF COQUITLAM Engineering Department		FILE -05 02 90-34
DESIGNED - MC	CONSULTANTS DWG NO -	
DRAWN - EDC	DISTRICT DWG NO - 90-34	
METRIC SCALE - 1:	SHEET 2 OF 3	
APPROVED -		
DATE - MAY 1990		

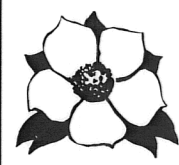
WATERMAIN REPLACEMENT
WALLS AVENUE
WEST OF LEBLEU STREET

W 1274 -3



W A L L S A V E N U E

W-1274-3 (3/3)



Proposed	Existing	Legend
STORM SEWER	ST	DITCH
SAN SEWER	SAN	UTILITY POLE
GAS	G	FIRE HYDRANT
WATER	W	IRON PIN
UG ELECTRIC	BCH	BASEMENT ELEV
UG TELEPHONE	BCT	EDGE OF PMT
VALVE	V	INTG SURVEY MON
MANHOLE	M	

STORM INLET TYPES -

REV	N	DATE	DRN	CHD
91-01	RW			
AS CONSTRUCTED				

DISTRICT OF COQUITLAM Engineering Department

DESIGNED - M.C.
DRAWN - EDC
METRIC SCALE
APPROVED -
DATE - SEPT 1989

WATERMAIN REPLACEMENT
WALLS AVENUE
LEBLEU STREET TO NELSON STREET

FILE - 05 02 89-23
CONSULTANTS DWG NO -
DISTRICT DWG NO - 89-23
SHEET 3 of 3

***Appendix D –
Street Lighting
Inspection Report***



Street Lighting Inspection Report

CAUTION: Where possible, all inspections must be carried out prior to BC Hydro connections. Once electrical connections have been made, the inspections must be performed with the MAINS circuit breaker turned OFF, and locked out.

This report is in addition to the **Coquitlam Street Lighting** Inspection report, issued by Coquitlam civil inspectors.

Project: _____ SLIM No. _____

Address / Location / Cross Street: _____

Electrical Contractor: _____ Permit No. _____

Contact Name: _____ Phone: _____

Inspector: _____ Inspection date: _____

MM/DD/YYYY

- **BC Electrical Permit / Coquitlam Street Light Inspection Report**
 - **BC Electrical permit:** Permit #, proper address, electrical contact name & phone, quantity of lights, service details, grounding electrode, etc.
 - **Coquitlam Inspection form:** Location, contractor name & phone, site details, number of lights & wattages, drawings and civil inspector name & phone number
 - Review street lighting plans.
- **Hydro DIP Service (if used)**
 - RPVC conduit held down with clamps and lag bolts (per MMCD).
 - RPVC conduit section from grade up to 3-meters, install 3-meters of rigid steel guard over RPVC. Steel guard attached to wood pole with lag bolts (per MMCD).
 - Check for weather head a quantity of conductors (no bond conductor)
 - Proper sized conductors and colours per plans, MMCD or BC Hydro standards
 - All conductors stranded. Colours per plans
- **Hydro tub**
 - Check for quantity of conductors: black, red, white (no bond conductor)
- **Concrete Bases**

Bases for street lighting poles and service bases

 - Proper quantity of conduits per plans
 - Top of base approximately 70-mm (2.5 inches) above final grade
 - Top of base level, check 2-axis
 - V-groove to drain water (remove any concrete slag in groove). If no V-groove, then washers between base and concrete

- **Conduits (if available for viewing)**
 - Check proper locations and installation per plans
 - 600-mm below boulevard and sidewalks; 900-mm below asphalt
 - Check for yellow CAUTION tape placement
 - Check sizes per plans
 - Conduits clear of obstructions, CB's, other services.
 - All conduits provided with pull cords
 - Empty conduits, both ends capped.
- **Service Base / Kiosk / Electrical Panel**
 - Service base / Kiosk in proper location, orientation, and per approved plans
 - Top of base level, check 2-axis
 - **Enclosure bonding adherence:** paint around pole bonding stud opening shall be ground off to bare steel / galvanizing.
 - **Bond stud details** (one 3/8 bolt, 2 nuts, one split lock-washer). Assembled within pole: Split lock-washer between first nut and pole surface and tighten this nut; install rig lug and another nut and tighten 2nd nut on to the ring lug / first nut.
 - Bond conductor terminated within electrical panel at the bonding buss
 - All conductors stranded copper. Colours per plans
 - Terminal connections on terminal blocks, contactor and splitter buss, are tight
 - Electrical panel shall meet MMCD, aluminum or stainless steel, per plans.
 - Electrical panel mounted with 4 bolts & nuts.
 - Proper main disconnect breaker. Define here: _____ Amps
 - Branch breakers (if used):
 - Proper branch breakers. List here: _____
 - All branch breakers labelled on a water resistant label
 - Photo Cell (PEC) c/w 10-Amp fuse & panel-mounted holder
 - PEC Bypass switch shall be provided with a 3-position rotary switch (OFF-HAND-AUTO –or– HAND-OFF-AUTO). A 2-position toggle switch is no longer acceptable.
 - PEC conductors:
 - To be terminated on a 3-position terminal block within the electrical panel.
 - If no terminal block, wire PEC conductors on to the PEC bypass switch shall be a direct connection - no spliced conductors with wire nuts.
- **Receptacles (if used):**
 - GFCI or corrosion resistant
 - Provided with covers. If individual covers, then provided with spring action covers.
 - Eyebolts in close proximity to the receptacle, to tie off power cords, span support cables, etc.
 - All conductors stranded copper, sized and colours per plans
 - Inline fuse-holder:
 - Check for proper assembly - LOAD side to luminaire,
 - Pull on conductors to check for proper crimping.
 - Receptacle fuse, note part number: _____
 - Receptacle conductors taped together, separate of luminaire & PEC conductors

○ Street light poles / fixtures

In 2017/2018, city will have started using LED luminaires. In preparation for LED lighting, many developers have installed LED lighting. The notes below are the same if HPS or LED.

- Street light locations versus driveways (2-m), trees (6-m), CB's (2-m), etc.
- Base flange level, check 2-axis
- Proper fixture / wattage label (i.e. 10 = 100W, 15 = 150W, 42 = 42 watt (LED), etc.). Circle whichever applies
- Check all hand-holes
- **Pole bonding adherence:** interior paint around pole bonding stud opening shall be ground off to bare steel / galvanizing. The stud and hardware installed immediately after grinding (no rust/corrosion)
- **Pole bond stud details** (one 3/8 bolt, 2 nuts, one split lock-washer). Assembled within pole: Split lock-washer between first nut and pole surface and tighten this nut; install rig lug and another nut and tighten 2nd nut on to the ring lug / first nut.
- All conductors stranded copper, colours per plans
- Pole bonding conductors: Two #6 RW90, a #12 RW90 to luminaire, pig-tailed together and with a # 6 RW90 to a suitable ring lug to the pole bonding stud. Ring lug between the 2 nuts
- Proper PEC conductors:
 - Constant run of conductors from the electrical panel to the PEC (no splices or wire nuts)
 - Red, black, white (#12 RW90 minimum). Taped together and with a PEC label
- Proper luminaire conductors: black, white, green (#12 RW90 minimum). Taped together and with a label
- Luminaire conductors taped together, separate of the PEC conductors
- PEC conductors (#12 RW90 minimum) separately bundled from the luminaire conductors
- Inline fuse-holder:
 - Check for proper assembly - LOAD side to luminaire,
 - Pull on conductors to check for proper crimping.
- Proper luminaire fuse. Fuse part number: _____
- All large gauge conductors, #6 and larger, 3 conductors or more, splices shall utilize split bolts, duct seal, rubberized tape, covered in vinyl tape and then scotch coated
- Generally, wire nuts will be a future maintenance issue.

○ **Junction Boxes (if used)**

Coquitlam uses SYNERTECH junction boxes, moving away from precast concrete boxes with steel lids. The steel lids will be a maintenance issue in following years.

- Proper locations, tops set to final grade and per plans
- If SYNERTECH junction boxes:
 - If in boulevards, grassed a concrete ring surrounding outer lip.
 - Security using PENTA bolts and flat washers.
- Junction box lids may not be marked (comm boxes shall be labelled COMM)
- Steel lids bonded (if powered conductors within)
- All large gauge conductors, #8 and larger, 3 conductors or more, splices shall utilize split bolts, rubberized tape, covered in vinyl tape. Wire nuts are permitted for #12 and smaller conductors. Generally, wire nuts will be a future maintenance issue.
- Conductors used in JB's must be rated for immersed in water (RW90 or better). CABTIRE cables not approved for permanent installations.
- Conductors labelled with yellow wire tags, marked with applicable circuits, and water proof ink
- Check for fuses and fuse-holders. Fuse-holders labelled with yellow wire tags, marked with water proof ink to indicate applicable circuits.
- Check for RPVC support bars (if required)
- All conduits provided with nylon pull cords
- Empty conduits capped at each end (if visible)

○ **Security**

Security hardware is required on all:

- New poles:
 - WCE Bulldog cover & round lock and reinforced backer bar on all poles. Contractor issues keys to Coquitlam Traffic Operations staff.
 - Nova Pole security cover, reverse thread security bolt and reinforced backer barn. Tool bit issued by contractor to Coquitlam Traffic Operations staff.
 - One security vendor style only per project. Combinations of Nova and WCE not permitted.
- Service bases shall be provided with a robust padlocking tab, and 3/8-16 threaded holes on either side of the padlock tab.
- Padlocks supplied by TRAFOPS staff and installed on service bases or kiosks ("L" for lighting; "T" for combination Traffic / Street lighting)

Should there be major electrical or safety issues with this inspection, do not activate the MAINS circuit breakers.

For new service bases and street lighting approval to connect:

- When BC Hydro does connect, the street lights should be active during daylight. This generally advises the developers or Coquitlam civil inspectors that power is connected and TRAFOPS staff will be notified to test.

- Check all street light operations, house side shields and orientation.
- Combination panels only: Turn on all breakers, except those not connected (i.e. Traffic Controller, etc.)
- Run street / pathway lighting for a minimum of 15-minutes. Ensure all lights working as intended
- Set PEC bypass switch from HAND to AUTO. The internal contactor should de-activate (loud clunk) and the lights should go off. If the contactor re-activates, there is a problem – most likely a bad PEC or wiring.
- If all is okay, install cover or close kiosk door, apply a street lighting padlock.

If pictures are available, attach with this report. Pictures should be in reduced file sizes.