Coquitlam

City of Coquitlam

Contract Documents
51162-1

Sheffield Avenue Subdivision

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Contract No. 51162-1

Sheffield Avenue Subdivision

Project Construction Documents

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The complete **Project Construction Documents** consist of the following parts:

1. Standard Documents – supplied **Page**

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2. Standard Documents – not supplied

i) (available in the "MMCD – General Conditions, Specifications and Standard Detail Drawings")

- Instructions to Tenderers
- General Conditions
  - Schedule 17.5.3 – Letter Agreement with Referee
  - Flow Chart – Changes and Extra Work
  - Flow Chart – Dispute Resolution
- Specifications
- Standard Detail Drawings

ii) City of Coquitlam Supplementary Specifications for Contract Documents

Invitation to Tender

INVITATION TO TENDER

DATE OF ISSUE: **March 6, 2025**

We acknowledge with gratitude and respect that the name Coquitlam was derived from the hən̓q̓əmiń əm̓ word kʷikʷəƛ̓əm (kwee-kwuh-tlum) meaning "Red Fish Up the River". The City is honoured to be located on the kʷikʷəƛ̓əm (Kwikwetlem) traditional and ancestral lands, including those parts that were historically shared with the sq̓əc̓iy̓aʔɬ təməxʷ (Katzie), and other Coast Salish Peoples.

Tender No. 51162-1

Sheffield Avenue Subdivision

The City of Coquitlam invites tenders for **Contract 51162-1 - Sheffield Avenue Subdivision**, generally consisting of the following, but not limited to:

Construction of Concrete Curb & Gutter, Concrete Sidewalk, Concrete Driveway Letdowns, Road Paving, Water Services, Storm Sewer, Sanitary Sewer, Landscaping, Retaining Walls, BC Hydro/Telus/Shaw 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
March 27, 2025
("Closing Date and Time")

Addenda

Tenderers are required to check the City's website for any updated information, issued before the Closing Date at: www.coquitlam.ca/BidOpportunities. **Where in its sole discretion it considers it to be necessary or desirable, the City may issue Addenda to amend any portion of the Contract Documents.**

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 at 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
Manager Procurement

Instructions to Tenderers

Tender 51162-1

Sheffield Avenue Subdivision

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: **Sheffield Avenue Subdivision**

Reference No. **51162-1**

1.0 Introduction

1.1 These Instructions apply to and govern the preparation of tenders for this *Contract*. The *Contract* is generally for the following work:

Construction of Concrete Curb & Gutter, Concrete Sidewalk, Concrete Driveway Letdowns, Road Paving, Water Services, Storm Sewer, Sanitary Sewer, Landscaping, Retaining Walls, BC Hydro/Telus/Shaw Underground Ducting, and other miscellaneous and incidental works as further described in the Contract Documents.

1.2 All inquiries regarding this Tender are to be submitted in writing referencing the **Tender Name and Number** sent to:

E-mail **bid@coquitlam.ca**

The deadline for inquiries is **2:00 PM** local time, **Monday, March 24, 2025.**

INQUIRIES RECEIVED AFTER THIS DATE AND TIME MAY NOT RECEIVE A RESPONSE.

2.0 Tender Documents

2.1 The Tender Documents which a Tenderer should review to prepare a Tender consist of all of the *Contract Documents* 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 *Contract Documents* include the drawings listed in Schedule 2 to the Agreement, entitled "**List of *Contract Drawings***".

2.2 A portion of the Contract Documents are included by reference. Copies of these documents have not been included with the tender package. 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 *Tender Closing Date.* All sections of this publication are by reference included in the *Contract Documents*.

2.3 Any additional information made available to Tenderers prior to the Tender Closing Time by the Owner or representative of the Owner, such as geotechnical reports or as-built plans, which is not expressly included in Schedule 1 or Schedule 2 to the Agreement, is not included in the Contract Documents. Such additional information is made available only for the assistance of Tenderers who must make their own judgments about its reliability, accuracy, completeness and relevance to the *Contract*, and neither the Owner nor any representative of the Owner gives any guarantee or representation that the additional information is reliable, accurate, complete or relevant.

3.0 Submission of Tenders

3.1 Tenders must be submitted on the Tender Form provided, accompanied by a copy of the original 10% Bid Bond quoting the Tender Name and Number, and be uploaded to the City's file transfer website.

Tenders must be received on or before:

Tender Closing Time: **2:00 p.m. local time**
Tender Closing Date: **March 27, 2025**

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.

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 by email: bid@coquitlam.ca.

BIDS RECEIVED IN-PERSON, BY COURIER, OR BY FAX WILL NOT BE ACCEPTED.

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

3.6 Tender submissions are subject to the Freedom of Information and Protection of Privacy Act and contents may be disclosed if required to do so, pursuant to the Act.

4.0 Additional Instructions to Tenderers

4.1 Additional Instructions to Tenderers

Obtaining Documents

4.2 The following documents which are referred to and form part of the Contract Document package may be obtained as follows:

- Copies of the Master Municipal Construction Documents Volume II (2009), General Conditions, Specifications and Standard Detail Drawings are available separately from:

  Support Services Unlimited
  Suite 102
  211 Columbia Street
  Vancouver, B.C. V6A 2R5
  Tel: 604-681-0295
  Fax: 604-305-0424

- 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

4.3 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

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

No Claim

4.5 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 4.6 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 4.7 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 4.8 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 4.9 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 4.10 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 4.11 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 4.12 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 (digital or Electronic copy is acceptable) of the original bid bond in an amount equal to 10% of the Tender Price, issued by a surety licensed to carry on the business of suretyship in British Columbia in a form reasonably satisfactory to the *Owner*;

5.3 Tenderer should be competent and capable of performing the various items of work. Tenderer shall complete the following statement sheets appended to the Form of Tender:

5.3.1 Appendix 1 – the Schedule of Quantities and Prices;

5.3.2 Appendix 2 – a "*Preliminary Construction Schedule*", generally in the form attached as Appendix 2 to the Form of Tender, and showing *Substantial Performance* by the date or within the duration, shown in paragraph 2.2 of the Form of Tender.

5.3.3 Appendix 3 – name and brief description of the previous experience of the *Superintendent* the tenderer will use for the *Work*;

5.3.4 Appendix 4 – a list of previous comparable work, including a brief description of that work, approximate contract value, and references (with phone numbers);

5.3.5 Appendix 5 – a complete list of all subcontractors, if any, that the tenderer will use for the *Work* including full names.; and

5.3.6 Appendix 7 – is provided for information only, to indicate the Contract Insurance is to be submitted by the successful Tenderer upon Notice of Award.

5.4 The successful tenderer will, within 15 *Days* of receipt of the written *Notice of Award*, be required to deliver to the *Owner* the items listed in FT 5.1.1, including a Performance Bond and a Labour and Material Payment Bond as described in FT 5.1.1(a), failing which the provisions of FT 6.1 will apply.

6.0 Qualifications, Modifications, Alternative Tenders

6.1 Tenders which contain qualifications, or omissions, so as to make comparison which other tenders difficult, may be rejected by the *Owner*.

6.2 A tenderer may, at the tenderer's election, submit an alternative tender ("*Alternative Tender*") which varies the materials, products, designs or equipment by the *Owner as Approved Equals* as the case may be, but an *Alternative Tender* must be in addition to, and not in substitution for a tender which conforms to the requirements of the *Contract Documents*.

6.3 The only *Alternative Tender* that the *Owner* may acc*ept* 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, 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:

_____
_____
_____
(TEDNERED 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___."

13.0 Duration of Tenders

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

14.0 Qualifications of Tenderers

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

15.0 Award

15.1 In exercising its discretion, the *Owner* will have regard to the information provided in the Appendices to the Form of Tender as described under IT 5.3 including the proven experience of the tenderer, and any listed subcontractors, to do the *Work*.

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

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

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

a) any other contract or services; or

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

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

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

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

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

15.2 The *Owner* will notify the successful tenderer in writing.

15.3 If there are any discrepancies in the *Schedule of Quantities and Prices* between the unit prices and the extended totals then the unit prices shall be deemed correct, and corresponding corrections shall be made to the extended totals. If a unit price or extended total has been omitted, the following shall apply:

a) If a unit price is given but the corresponding extended total has been omitted, then the extended total shall be calculated from unit price and the estimated quantity, and inserted as the extended total;

b) If an extended total is given but the corresponding unit price has been omitted, then the unit price shall be calculated from the extended total and estimated quantity, and inserted as the unit price;

c) If both the unit price and the corresponding extended total for a tender item have been omitted, then the following test shall be applied to determine whether the tender shall be rejected as incomplete:

(i) the highest of the unit prices tendered by other tenderers for that tender item shall be used as the test unit price, and the corresponding test extended total shall be calculated from the test unit price and the estimated quantity;

(ii) if the test extended total for the tender item exceeds 1% of the revised total *Tender Price*,

including the test extended total, or if the revised total *Tender Price*, including the test extended total, alters the ranking of the tenderers according to the lowest *Tender Price*, then the omitted unit price for that tender item is deemed to materially affect the *Tender Price* relative to other tenders and the tender shall be rejected;

(iii) if the tender is not rejected under subparagraph (ii) of this IT 15.3 (c), then the unit price and the extended total for that tender item shall both be deemed to be, and the costs for that tender item shall be zero deemed to be included in other tender items prices;

d) In no event shall page totals in the *Schedule of Quantities and Prices* or the total *Tender Price* be used to calculate missing extended totals or unit prices.

16.0 Subcontractors

16.1 The *Owner* reserves the right to object to any of the subcontractors listed in a tender. If the *Owner* objects to any of the subcontractor(s) then the *Owner* will permit a tenderer to, within 5 days, propose a substitute subcontractor(s) acceptable to the *Owner* provided that there is not resulting adjustment in the *Tender Price* or the completion date set out in paragraph 2.2 of the Form of Tender. A tenderer will not be required to make such substitution and, if the *Owner* objects to a listed *Subcontractor(s)*, the tenderer may, rather than propose a substitute subcontractor(s), consider its tender rejected by the *Owner* and by written notice withdraw it tender. The *Owner* shall, in the event, return the tenderer's bid security

17.0 Optional Work

17.1 If the *Schedule of Quantities and Prices* includes any tender prices for *Optional or Provisional Work*, as defined in GC 7.4.1, the tenderers must complete all the unit prices for such *Optional or Provisional Work*. Such tender prices shall not include any general overhead costs, or other costs, or profit, not directly related to the *Optional or Provisional Work*.

17.2 Notwithstanding that the *Owner* may elect not to proceed with the *Optional or Provisional Work*, the tender prices for any *Optional or Provisional Work*, including the extended totals for *Optional or Provisional Work* unit prices, shall be included in the *Tender Price* for the purpose of any price comparisons between tenders.

Form of Tender

Form of Tender

Tender No. 51162-1

Sheffield Avenue Subdivision

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)
Thursday, March 27, 2025

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.

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

March 2025

(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: **Sheffield Avenue Subdivision**
Reference No.: **51162-1**

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 31, 2025**; and

2.3 to do the *Work* for the price, which is the sum of the products of the actual quantities incorporated into the *Work* and the appropriate unit prices set out in Appendix 1, the "*Schedule of Quantities and Prices*", plus any lump sums or specific prices and adjustment amounts as provided by the *Contract Documents*. For the purposes of tender comparison, our offer is to complete the *Work* for the "*Tender Price*" as set out on Appendix 1 of this Form of Tender. Our *Tender Price* is based on the estimated quantities listed in the *Schedule of Quantities and Prices*, and excludes *GST.*

3 WE CONFIRM:

3.1 that we understand and agree that the quantities as listed in the *Schedule of Quantities and Prices* are estimated, and that the actual quantities will vary.

3.2 that we understand and agree that the owner is in no way obliged to accept this Tender.

4 WE CONFIRM:

4.1 that the following Appendices are attached to and form a part of this tender:

4.1.1 the Appendices as required by paragraph 5.3 of the Instructions to Tenderers - Part II; and

4.1.2 the *Bid Security* as required by paragraph 5.2 of the Instructions to Tenderers - Part II.

4.1.3 the Certificate of Compliance on the form provided in Appendix 7 of this Form of Tender.

5 WE AGREE:

5.1 that this tender will be irrevocable and open for acceptance by the *Owner* for a period of **60** calendar days from the day following the *Tender Closing Date and Time*, even if the tender of another Tenderer is accepted by the *Owner*. If within this period the *Owner* delivers a written notice ("*Notice of Award*") by which the *Owner* accepts our tender we will:

5.1.1 within **15** *Days* of receipt of the written *Notice of Award* deliver to the *Owner*:

a) a Performance Bond and a Labour and Material Payment Bond, each in the amount of 50% of the *Contract Price*, issued by a surety licensed to carry on the business of suretyship in the province of British Columbia, and in a form acceptable to the *Owner*;

b) a "clearance letter" indicating that the Tenderer is in WCB compliance; and

c) a copy of the insurance policies as specified in SGC Section 24 indicating that all such insurance coverage is in place and;

d) a letter confirming the *Contractor* as “Prime Contractor” for the Contract as specified in SGC Section 21.2.1.

5.1.2 within **2** *Days* of receipt of written "*Notice to Proceed*", or such longer time as may be otherwise specified in the *Notice to Proceed*, commence the *Work*; and

5.1.3 sign the Contract Documents as required by GC 2.1.

6 WE AGREE:

6.1 that, if we receive written *Notice of Award* of this *Contract* and, contrary to paragraph 5 of this Form of Tender, we:

6.1.1 fail or refuse to deliver the documents as specified by paragraph 5.1.1 of this Form of Tender; or

6.1.2 fail or refuse to commence the *Work* as required by the *Notice to Proceed*,

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

6.1.3 the face value of the *Bid Security*; and

6.1.4 the amount by which our *Tender Price* is less than the amount for which the *Owner* contracts with another party to perform the *Work*.

7 OUR ADDRESS is as follows:

_____

_____

_____

Phone: _____ - _____ - _____

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
Sheffield Avenue Subdivision
Contract: 51162-1
SCHEDULE OF QUANTITIES AND PRICES
(see paragraph 5.3.1 of the Instruction to Tenderers)
(All prices and quotations including the Contract Prices shall Exclude GST)
Should there be any discrepancy in the information provided or submitted, the City's original file copy shall prevail

ITEM No.	MMCD Ref. (Supp. Spec.)	DESCRIPTION	UNIT	QTY	UNIT PRICE	EXTENDED AMOUNT
1.00	**01 55 00S**	**TRAFFIC CONTROL, VEHICLE ACCESS, AND PARKING**				
1.01	(1.5.1)	Traffic Control and Management	Incidental to Contract			
2.00	**01 57 01S**	**ENVIRONMENTAL PROTECTION**				
2.01	(1.6.1)	Erosion and Sediment Control (ESC)	Allowance		$ 30,000.00	$ 30,000.00
3.00	**01 58 01S**	**PROJECT IDENTIFICATION**				
3.01	(1.3.1)	1.2m x 1.2m Static Construction Zone Information Sign	each	4		
4.00	**03 20 20S**	**CONCRETE WALKS CURBS AND GUTTERS**				
4.01	(1.4.3)	Remove and Replace Concrete Curb & Gutter - Wide Base – MMCD C5, including granular base & subbase	lin.m	50		
4.02	(1.4.5)	Concrete Sidewalk - 100mm thick – Broom Finish, including granular base	sq.m	79		
4.03	(1.4.5)	Concrete Sidewalks and Driveway Letdowns - 190mm thick – Broom Finish, including granular base	sq.m	200		
5.00	**03 40 01S**	**PRECAST CONCRETE**				
5.01	(1.4.2)	Allan Block Retaining Wall - Two Row, including drain rock backfill	sq.m	240		
6.00	**31 23 17**	**ROCK REMOVAL**				
6.01	1.6	Rock Removals - **Provisional**	c.m.	25		
7.00	**31 24 13S**	**ROADWAY EXCAVATION, EMBANKMENT AND COMPACTION**				
7.01	(1.8.5)	Common Excavation - Off Site Disposal, includes Stripping & Top Soil Removal	c.m.	510		
7.02	(1.8.5)	Common Excavation – On Site Re-use	c.m.	520		
7.03	(1.8.7)	Import Fill - 75mm Minus	c.m.	2,080		
8.00	**32 01 16.7S**	**COLD MILLING**				
8.01	(1.5.4)	Surface Milling (35mm)	sq.m	60		
9.00	**32 12 13.1S**	**ASPHALT TACK COAT**				
9.01	(1.5.1)	Asphalt Tack Coat	sq.m	500		
10.00	**32 12 16S**	**HOT-MIX ASPHALT CONCRETE PAVING**				
10.01	(1.5.1)	Machine Placed Upper Course #2 (35mm Lift)	tonne	65		
11.00	**32 17 23S**	**PAINTED PAVEMENT MARKINGS**				
11.01	(1.5.4)	Pavement Markings (Crosswalk)	L.S.	1		
12.00	**32 91 21S**	**TOP SOIL AND FINISH GRADING**				
12.01	(1.4.1)	Top Soil - 150mm thick for Sod	c.m.	20		
13.00	**32 92 23S**	**SODDING**				
13.01	(1.8.1)	Boulevard Sodding	sq.m	130		
14.00	**33 11 01S**	**WATERWORKS**				
14.01	(1.8.4.1)	Water Service - 19mm dia. Municipex with #10 AWG Tracer Wire per Standard Detail COQ-W2l	lin.m	56		
15.00	**33 30 01S**	**SANITARY SEWERS**				
15.01	(1.6.2)	200mm DR35 PVC - Sanitary Main Pipe	lin.m	61		
15.02	(1.6.3)	100mm DR28 PVC - Sanitary Service Pipe	lin.m	30		
15.03	1.6.4	Inspection Chamber as per MMCD S9	each	7		
16.00	**33 40 01S**	**STORM SEWERS**				
16.01	(1.6.2)	250mm DR35 PVC - Storm Main Pipe	lin.m	62		
16.02	(1.6.3)	150mm DR28 PVC - Storm Service Pipe	lin.m	25		
16.03	1.6.4	Inspection Chamber as per MMCD S10	each	7		

ITEM No.	MMCD Ref. (Supp. Spec.)	DESCRIPTION	UNIT	QTY	UNIT PRICE	EXTENDED AMOUNT
16.04	(1.6.6)	100mm Perf. PVC Drain Pipe - Includes Drain Rock, Filter Fabric and Tie-ins to Main w/ Solid Pipe	lin.m	175		
17.00	**33 44 01S**	**MANHOLES, CATCHBASINS, AND LAWNBASINS**				
17.01	(1.5.1.1)	1050mm Sanitary Manhole (c/w Base, Benching, Lid, Slab, Cover & Frame)	each	2		
17.02	(1.5.1.1)	1050mm Storm Manhole (c/w Base, Benching, Lid, Slab, Cover & Frame)	each	2		
17.03	(1.5.1.2)	1050mm Sanitary Manhole Riser Sections	vert.m	3		
17.04	(1.5.1.2)	1050mm Storm Manhole Riser Sections	vert.m	4		
17.05	(1.5.1.5)	Manhole Connection - Outside Drop Type, as per MMCD S3	each	2		
18.00	**35 00 01S**	**BC HYDRO, SHAW, and TELUS, UTILITY WORK**				
18.01	(1.1)	BC Hydro Civil (ALL) Works	L.S.	1		
18.02	(1.1)	Telus Civil (ALL) Works	L.S.	1		
18.03	(1.1)	Shaw Cable Civil (ALL) Works	L.S.	1		

Name of Contractor _____

Total Tendered Price: (exclude GST) _____

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

APPENDIX 2

FORM OF TENDER

Contract 51162-1
Sheffield Avenue Subdivision

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				
	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	5

Substantial Completion Date: **July 31, 2025**

Proposed Disposal Site: _____

APPENDIX 3

FORM OF TENDER

Contract 51162-1
Sheffield Avenue Subdivision

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 51162-1
Sheffield Avenue Subdivision

CONTRACTOR'S COMPARABLE WORK EXPERIENCE
(See paragraph 5.3.4 of the Instructions to Tenderers)

PROJECT:		**VALUE ($):**	
OWNER:		**Phone No.:**	
Work Description:			

PROJECT:		**VALUE ($):**	
OWNER:		**Phone No.:**	
Work Description:			

PROJECT:		**VALUE ($):**	
OWNER:		**Phone No.:**	
Work Description:			

PROJECT:		**VALUE ($):**	
OWNER:		**Phone No.:**	
Work Description:			

APPENDIX 5

FORM OF TENDER

Contract 51162-1
Sheffield Avenue Subdivision

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 51162-1
Sheffield Avenue Subdivision

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 _____, 2025, 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 _____, 2025.

SIGNED, SEALED AND DELIVERED
In the presence of:

)
)
)
)
_____)

_____
PRINCIPAL

_____
SURETY

APPENDIX 7

FORM OF TENDER

Contract 51162-1
Sheffield Avenue Subdivision

CERTIFICATE OF COMPLIANCE for CONTRACT INSURANCE

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

Contract Number: **51162-1**

Contract Name: **Sheffield Avenue Subdivision**

Description of Work:

Construction of Concrete Curb & Gutter, Concrete Sidewalk, Concrete Driveway Letdowns, Road Paving, Water Services, Storm Sewer, Sanitary Sewer, Landscaping, Retaining Walls, BC Hydro/Telus/Shaw 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 _____ 2025.

Contract: **Sheffield Avenue Subdivision**

***Reference No*. 51162-1**

BETWEEN:

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

(the "*Owner*")

AND:

(the "*Contractor*")

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

1 THE WORK - START/COMPLETION DATES

1.1 The *Contractor* will perform all *Work* and provide all labour, equipment and material and do all things strictly as required by the *Contract Documents*.

1.2 The *Contractor* will commence the *Work* in accordance with the *Notice to Proceed*. The *Contractor* will proceed with the *Work* diligently, will perform the *Work* generally in accordance with the construction schedules as required by the *Contract Documents* and will achieve *Substantial Performance* of the *Work* on or before **July 31, 2025,** 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, or by hand, or by pre-paid registered mail to the addresses as set out below:

The *Owner:*

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

Tel: 604-927-3500

The *Contractor:*

Tel:
Email:
Attention:

The *Contract Administrator*:

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

Tel:
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
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*.

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

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

Contractor:

_____
(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

_____
(AUTHORIZED SIGNATORY)

_____
(AUTHORIZED SIGNATORY AND POSITION - PRINT)

Owner:

The City of Coquitlam

_____
(MANAGER, CAPITAL PROJECTS AND INSPECTIONS)
Representative as Per G.C. 17

_____
(SENIOR MANAGER, DESIGN AND CONSTRUCTION)

Sheffield Avenue Subdivision

Reference No: 51162-1

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 Drawings, if any;
9. Standard Detail Drawings*;
10. Executed Form of Tender, including all Appendices;
11. Drawings listed in Schedule 2 to the Agreement –"List of Drawings", if any;
12. Instructions to Tenderers;
13. COQUITLAM "Supplementary Specifications Master Municipal Construction Documents" March 2022

Sheffield Avenue Subdivision

Reference No: 51162-1

Schedule 2

LIST OF DRAWINGS

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

Bound in this Document:

Appendix A: Traffic Management Detail Specifications

Appendix B: BC Hydro, Telus & Shaw Manhole Specifications

Appendix C: Asbuilt Package

Bound Separately: Contract Drawings

TITLE	SHEET NO.	REVISION NO.	DATE
COVER	-	-	-
GENERAL NOTES	1/6	A	2025/03/05
GRADING PLAN	2/6	C	2025/03/05
RETAINING WALL & SITE SERVICING	3/6	C	2025/03/05
NEW DRIVEWAY, SIDEWALK, AND WATER	4/6	C	2025/03/05
ESC TYPICAL SECTIONS	5/6	A	2025/03/05
ESC PLAN	6/6	A	2025/03/05

Supplementary General Conditions

SUPPLEMENTARY GENERAL CONDITIONS

TABLE OF CONTENTS

1.0 DEFINITIONS

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

2.0 DOCUMENTS

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

4.0 CONTRACTOR

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

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

4.1.3 ***(Add new clause 4.1.3 as follows):***
Work can be performed during the normal weekday working hours of 0700h to 1900h, unless specified otherwise in Supplementary Specifications - Appendix A:

Traffic Management Detail Specifications. Written permission from the Contract Administrator will be required for any works to be performed outside of the normal working days of Monday to Friday.

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

In case the Contractor decides to work on a day which is a Statutory Holiday, they shall provide the Contract Administrator in writing at least (4) days in advance of such holiday, stating those places where said work is to be conducted. In case the Contractor fails to give such notice in advance of any Statutory Holiday, no work within the terms of the contract shall be done on such holiday.

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

4.2 Safety

4.2.2 ***(Add new clause 4.2.2 as follows):***
In an emergency, gas pipeline rupture or leak, Contact FortisBC's 24 Hour Emergency Line (1-800-663-9911) and Coquitlam Fire (911) immediately and then City of Coquitlam's Utility Control Centre (604-927-6287).

4.3 Protection of Work, Property and the Public

4.3.1 ***(Replace clause 4.3.1 as follows):***
In performing the Work, the Contractor shall protect the Work and the Owner's property and other person's property from damage. The Contractor shall at the Contractor's own expense make good any such damage which arises as the result of the Contractor's operations. If the Contractor causes damage to private property, the Contactor must obtain a written release from the owner of the damaged property.

4.3.5.1 ***(Add clause 4.3.5.1 as follows):***
The Contractor shall notify the Contract Administrator immediately if damage occurs to any City or third party utility or structure.

4.3.7 ***(Add new clause 4.3.7 as follows):***
Any lands other than those upon which the work is to be performed, which may be required for temporary facilities, storage purposes or access to the work site, other than those provided by the *Owner*, shall be provided by the *Contractor* at their own cost, with no liability to the *Owner*.

4.6 Construction Schedule

4.6.1 ***(Replace clause 4.6.1 as follows):***
The Contractor shall within the time set out in the Form of Tender prepare and submit to the Contract Administrator for their approval a construction schedule (the Baseline Construction Schedule) indicating the planned start and completion dates of major activities of the Work. The Baseline Construction Schedule shall be in more detail than the Preliminary Construction Schedule and shall indicate completion of the Work in compliance with any specified Milestone Dates, including Substantial Performance.

4.6.6 ***(Replace clause 4.6.6 as follows):***
The time for the performance of the Work shall commence on the date specified in the Notice to Proceed, or if not so specified, on the date the Notice to Proceed is issued. The Notice to Proceed will not be issued until the documentation required under paragraph 5.1.1 of the Form of Tender has been submitted and the construction schedule has been approved.

4.6.8 ***(Add new clause 4.6.8 as follows):***
Any requests to lengthen the work schedule shall be made in writing by the Contractor within five working days of knowledge of the reason for the extension. The Contract Administrator will adjust the schedule at their discretion upon receipt of a written request.

4.7 Superintendent

4.7.4 ***(Add new clause 4.7.4 as follows):***
The key personnel named in the Contractor's Tender response, shall remain in these key positions throughout the project. In the event that key personnel leave the Contractor's firm, or for any unknown reason are unable to continue fulfilling their role, the Contractor must propose a suitable replacement, and obtain written consent from the Owner. Acceptance of the proposed replacement is at the sole discretion of the Contract Administrator and the Owner.

4.8 Workers

4.8.2 ***(Add new clause 4.8.2 as follows):***
The Contractor shall, upon the request of the Contract Administrator, remove any person employed by them for the purposes of the Contract who, in the opinion of the Contract Administrator, is incompetent or has conducted themselves improperly, and the Contractor shall not permit a person who has been removed to return to the Place of Work.

4.9 Materials 4.9.3 ***(Add new clause 4.9.3 as follows):***

The Contractor shall, at their cost,

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

4.11 Subcontractors 4.11.3 ***(Replace clause 4.11.3 as follows):***

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

4.12 Test and Inspections 4.12.1 ***(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 a 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 through the issue of a Change Order. These items will be paid at the contract unit price as part of regular progress payments. Only quantities used will be eligible for payment. No claim will be accepted for

unused Optional or Provisional quantities. Clause 9.4 Quantity Variations will not be applicable for these items.

9.0 VALUATION OF CHANGES AND EXTRA WORK

9.2 Valuation Method

9.2.4 ***(Replace clause 9.2.4 as follows):***
Once a quotation is accepted by the Contract Administrator, or other agreement reached between the Contract Administrator and the Contractor regarding adjustments to the Contract Price or Contract Time on account of a Change or Extra Work, the Contractor shall not be entitled to claim or receive additional payment, or adjustment to the Contract Time on account of a Change or Extra Work.

9.4 Quantity Variation

9.4.1 ***(Replace clause 9.4.1 as follows):***
If for any reason, including an addition or deletion under GC 7.1.1(1) or 7.1.1(2) respectively, the actual quantity of a unit price item varies by more than plus or minus the Variance Threshold Percentage from the estimated quantity for that unit price item listed in the Schedule of Quantities and Prices (the "Tender Quantity") or as otherwise agreed to pursuant to these Contract Documents, then either the Owner or the Contractor may by written notice request the other party to agree to a revised unit price, considering the change in quantities. A party shall make a request for a revised unit price as soon as reasonably possible after the party concerned becomes aware of the quantity variation.

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

10.0 FORCE ACCOUNTS

10.1 Force Account Costs

10.1.1(1) ***(Add to clause 10.1.1(1) as follows):***
Costs for the Contractor's Superintendent, Project Managers, Health and Safety Personnel, and Office/Administration Staff are not eligible for labour costs as those costs are considered incidental to the mark up owing for overhead and labour.

10.1.1(4) ***(Replace clause 10.1.1(4) as follows):***
Force Account Work performed by a subcontractor shall be paid for in the lesser of: (i) the amount provided by subparagraphs (1), (2) and (3) of this GC, plus a mark-up of 5%, or (ii) the actual amount the Contractor pays the subcontractor including a mark-up of 10% on such actual costs to cover all overhead and profit.

12.0 HAZARDOUS MATERIALS

12.2 Discovery of Hazardous Materials 12.2.2

(Replace clause 12.2.2 as follows):
If the Contract Administrator observes any materials at the Place of Work that the Contract Administrator knows or suspects may be Hazardous Materials, then the Contract Administrator shall immediately give written notice to the Contractor and the Contractor shall immediately stop the Work or portion of the Work as required by GC 12.2.1(1).

13.0 DELAYS

13.1 Delay by Owner or Contract Administrator 13.1.2

(Add new clause 13.1.2 as follows):
The Owner may at any time suspend the work or any portion thereof provided they give the Contractor five (5) days' written notice of delay. The Contractor shall resume work upon written notice from the Owner. The Contractor shall be entitled to:

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

13.3 Unavoidable Delay 13.3.1

(Add to clause 13.3.1 as follows):
Beyond the reasonable control of the Contractor also includes pandemic or community outbreak

13.8 Direction to Stop or Delay 13.8.3

(Add new clause 13.8.3 as follows):
The Contract Administrator may order the Contractor to stop work if at any time the Contract Administrator is of the opinion that there exists a danger to life or property.

13.9 Liquidated Damages for Late Completion 13.9.1

(Replace clause 13.9.1 as follows):
If the Contractor fails to meet the Milestone Date for Substantial Performance as set out in the Form of Tender, paragraph 2.2 as may be adjusted pursuant to the provisions of the Contract Documents, then the Owner may deduct from any monies owing to the Contractor for the Work:

(1) An amount of $1,000.00 for each calendar day the actual *Substantial Performance* is achieved after the Substantial Performance Milestone Date; plus

(2) All direct out of pocket costs, such as costs for safety, security or equipment rental, reasonably incurred by the Owner as a direct result of such delay.

If the monies owing to the Contractor are less than the total amount owing by the Contractor to the Owner under (1) and (2) then any shortfall shall immediately, upon written notice from the Owner, and upon Substantial Performance, be due and owing by the Contractor to the Owner.

18.0 PAYMENT

18.1 Preparation of Payment Certificate

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

18.4 Holdbacks

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

18.6 Substantial Performance

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

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

The *Contractor* shall be the *Payment Certifier* responsible under Section 7 of the *Builders Lien Act* for certifying *Substantial Performance* of the *Work* of each *Subcontractor*. Prior to certifying completion for a *Subcontractor*, the *Contractor* shall consult the *Contract Administrator* and obtain the *Contract Administrator's* comments on the status of completion by the *Subcontractor*, including any deficiencies or defects in the *Subcontractor's Work* noted by

the *Contract Administrator*. The *Contractor* will indemnify and save the *Owner* harmless from any and all liability the *Owner* may have to anyone arising out of the certification by the *Contractor* of *Substantial Performance* for that *Subcontractor*.

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

21.0 WORKERS COMPENSATION REGULATIONS

21.2 Contractor is "Prime Contractor"

21.2.1 ***(Add to clause 21.2.1 as follows):***
Prior to the issuance of the "Notice to Proceed" the Contractor must provide a signed "Prime Contractor Designation" form as provided in Appendix IV of these Supplementary General Conditions.

24.0 INSURANCE ***(Replace section 24.0 as follows):***

24.1 General

24.1.1 **Importance of Prompt Attention to Insurance Requirements:**
The Contractor shall provide the Owner with satisfactory evidence that the insurance required to be provided under this GC is in full force and effect.

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

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

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

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

24.2 Required Insurance

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

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

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

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

24.2.2 **Public Liability Insurance:**
(Other than Automobile Third Party Liability Insurance):

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

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

Limits of Liability:
For bodily injury and for property damage shall be inclusive limits not less than $5,000,000.

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

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

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

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

24.3.3 **Responsibility of Contractor – Limitations of cover and deductibles:**

The insurance provided by the City of Coquitlam as described herein will not provide the Contractor with full protection against any and all kinds of loss or damage which may arise out of the Contract. It is, therefore, the responsibility of the Contractor to fully understand the scope of the cover provided with particular attention to the exclusions, limitations of cover and deductible provisions contained in the Insuring Agreements of the policies and it is further the responsibility of the Contractor to take out at the Contractor's expense, whatever other additional insurance the Contractor may consider necessary or desirable for his protection subject as hereinafter provided. The Contractor shall act in the same manner on insurance made available through the City of Coquitlam as 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 them concerning insurance, the City of Coquitlam may do what is required and any monies expended by the City of Coquitlam for that purpose shall be repayable and recoverable from the Contractor. Should any action, failure or negligence of the Contractor result in higher insurance costs being incurred by the City of Coquitlam, such additional costs shall be payable or recoverable from the Contractor.

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

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

24.3.6 **Contractor's Waiver of Liability to Coquitlam:**

The Contractor hereby releases the City of Coquitlam from any and all liability for damages to the extent that such

damages are covered by the course of construction insurance referred to in Section 24.3 of these specifications.

24.3.7 **Liability of Contractor:**

Neither the providing of insurance by the Contractor or the City of Coquitlam in accordance with the requirements hereof, nor the insolvency, bankruptcy, nor failure of any insurance company to pay any claim accruing shall be held to waive any of the provisions of this Contract with respect to the liability of the Contractor or otherwise.

24.3.8 **Responsibility of Contractor for protection of work, persons and property:**

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

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

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

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

IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its Attorney-in-fact, this_____day of_____20_____.

SIGNED, SEALED and DELIVERED
In the presence of

)
)
)
)
)

_____

_____
PRINCIPAL

_____
SURETY

APPENDIX II

LABOUR AND MATERIAL PAYMENT BOND

(Private Contracts – Trustee Form)

NO._____ $_____

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

KNOW ALL MEN BY THESE PRESENTS THAT

_____

As Principal, hereinafter called the Principal, and

_____

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

_____

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

_____Dollars

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

SIGNED AND SEALED this_____day of _____, 20____.

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

_____

_____

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

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

1. A Claimant for the purpose of this Bond, is defined as one having a direct contract with the Principal for labour, material, or both, used or reasonably required for use in the performance of the Contract, labour and material being construed to include the part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment directly applicable to the Contract provided that a person, firm or corporation who rents equipment to the Principal to be used in the performance of the Contract under a contract which provides that all or any part of the rent is to be applied towards the 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 Obligee 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 Obligee 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 Obligee or by joining the Obligee 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 Obligee against all costs, charges and expense or liabilities incurred thereon and any loss or damage resulting to the Obligee 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 Obligee 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 Obligee, stating with substantial accuracy the amount claimed. Such notice shall be served by mailing the same by registered mail to the Principal, Surety and Obligee at any place where an office is regularly maintained for the transaction of business by such persons or served in any manner in which legal process may be served in the Province or other part of Canada in which the subject matter of the contract is located. Such notice shall be given (i) in respect of any claim for the amount or any portion thereof required to be held back from the Claimant by the Principal under either the terms of the Claimant's contract with the Principal or under the Mechanic's Liens Legislation applicable to the Claimant's contract with the Principal whichever is the greater within one hundred and twenty (120) days after such Claimant should have been paid in full under the Claimant's contract with the Principal; (ii) in respect of any claim other than for the holdback or portion thereof referred to above within one hundred and twenty (120) days after the date upon which such claimant did

or performed the last of the work or labour or furnished the last of the materials for which such claim is made under the Claimant's contract with the Principal.

b) after the expiration of one (1) year following the date on which Principal ceased work on the Contract including work performed under guarantees provided in the Contract.

c) Other than in a court of competent jurisdiction in the Province or District of Canada in which the subject matter of the Contract or any part thereof is situated and none elsewhere, and the parties hereto agree to submit to the jurisdiction of such court.

4. The amount of this Bond shall be reduced by and to the extent of any payments made in good further and in accordance with the provisions which may be filed of record against the subject matter of the Contract, whether or not claim for the amount of such lien be presented under and against this Bond.
5. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

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

SIGNED, SEALED and DELIVERED
In the presence of

)
)
)
)
)

_____

_____
PRINCIPAL

_____
SURETY

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:
Policy Number:
Effective Date:

Liability Limit:
Expiry 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

Authorized Signature and Stamp

Date

Name and Title

City' broker to return to City Representative

Department

APPENDIX IV

PRIME CONTRACTOR DESIGNATION

Owner: **CITY OF COQUITLAM**
Contractor: _____
Contract / Permit #: **51162-1**
Project / Workplace: **Sheffield Avenue Subdivision** (the "Project")

By signing this Prime Contractor Designation form, the Contractor hereby:

1. agrees to be, and accepts designation as, the "prime contractor" for the purposes of the Workers Compensation Act, R.S.B.C. 2019, c. 1 (the "Act") and the Occupational Health and Safety Regulation, B.C. Reg. 223/2022 (the "Regulation") in respect of the Project and Workplace noted above;
2. represents and warrants that the Contractor is qualified and capable to perform the duties of prime contractor and that the undersigned signatory has the authority to accept designation as prime contractor and to bind the Contractor;
3. accepts the duty and responsibility for ensuring the activities of employers, workers and other persons at the Workplace relating to occupational health and safety are coordinated and agrees to do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with the Act and the Regulation in respect of the Workplace;
4. covenants and agrees to comply with the occupational health and safety provisions of the Act, the Regulation, any other applicable regulations under the Act, and any applicable orders;
5. acknowledges and agrees that the Owner has provided the Contractor the information known to the Owner that is necessary to identify and eliminate or control hazards to the health or safety of persons at the Workplace; and
6. agrees that the designation as prime contractor hereunder may not be assigned or revoked without the prior written consent of the Owner.

Prime Contractor Name: _____

Prime Contractor Address: _____

_____ _____
Prime Contractor Signature **Date**

_____
Print Name

Please return a signed copy of this designation to the City of Coquitlam, 3000 Guildford Way, Coquitlam, BC, V3B 7N2. If you have any questions, please contact the City of Coquitlam Health & Safety Manager at 604-927-3070.

Supplementary Contract Specifications

Supplementary Contract Specifications

to the
MASTER MUNICIPAL SPECIFICATIONS
Volume II – Platinum Book

SHEFFIELD AVENUE SUBDIVISION
CONTRACT 51162-1

TABLE OF CONTENTS

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

1.00 CONTRACT SPECIFIC INSTRUCTIONS

1.01 Schedule of Work

All work under this Contract is to be completed within the designated Contract Duration. 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 monthly.

1.02 Survey Layout

Construction layout will be staked out by the Contract Administrator.

1.03 Manholes & Valves

Access to manholes and valves must be maintained at all times 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.

1.04 Verification of Dimensions and Quantities

Before proceeding with work visit site and check and verify dimensions and quantities. Report variations between drawings and site conditions to the Contract Administrator before proceeding with work.

1.05 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.

1.06 Work by Others

The Contractor will be required to accommodate the following Contractors/utility companies in their scheduling and sequencing of work:

1. BC Hydro – underground cable installation and other works
2. Telus – underground cable installation and other works
3. Shaw Cable - underground cable installation and other works

1.07 Location of Existing Utiltities

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.

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

1.08 Approved Products

A list of products that have been approved for use within the City of Coquitlam can be found on the City's website (www.coquitlam.ca).

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 Completion, the City may again video inspect the lines to ensure no problems exist due to construction activities under this contract. If problems are encountered, the Contractor will be responsible for the cost of the video and all costs associated with the cleaning of the pipe.

2.02 Site Clean-up During Construction and End of Construction

The Contractor will be responsible for the complete clean-up of the work site during construction & at the end of construction and prior to the Substantial Performance review. This work is considered incidental to the Contract.

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

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

3.00 MANDATORY MEETINGS AND CONTRACTOR REPRESENTATIVES AND SUBCONTRACTORS

3.01 Pre-Construction Meeting Requirements

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

1. A Detailed Construction Schedule showing the start date & completion date and 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
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 is not responsible for the direction of Subcontractors.

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, test reports and Operation & Maintenance manual. 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 complete record documents, including reports and manuals, have been submitted and accepted by the Contract Administrator. Contractor to get sign off letter duly signed by the property owners when private side side is affected by the work. Properties to get the sign off letters will be at the sole discretion of the Contract Administrator. Payment for all work performed under this section will be incidental to work in other Sections, unless otherwise described in Schedule of Quantities and Prices.

END OF SECTION

1.0 QUALITY

The Contractor shall provide a final product conforming to the Contract Documents and the intent of the work.

The work is to be accurate to the dimensional and tolerance requirements of the contract.

Payment will be subject to adjustments based on quality assurance tests performed by the Contract Administrator.

1.01 Quality Control (QC) by Contractor

The MMCD (2009) definition of "Quality Control" is the process by which the *Contractor* checks specific materials, products, and workmanship to ensure strict conformance with the Contract Documents.

The Contractor is fully responsible for quality control of the materials, production, and construction processes.

Quality control tests shall be performed by the Contractor, at their own expense, to ensure that products meet the contract specifications.

Failure by the Contractor to conduct adequate quality control testing during production and construction will negate the Contractor's ability to appeal the quality assurance tests used for acceptance/rejection of the work.

Under no circumstances will QC test results produced after completion of the Quality Assurance (QA) results be considered for appeal purposes.

Any changes in the Work with respect to the location, grade, or line shall be approved in advance by the Contract Administrator. Failure to notify the Contract Administrator of changes in writing may result in rejection of Work.

1.02 Inspection of Work, Quality Assurance, and Material Testing, by the Owner

The MMCD (2009) definition of "Quality Assurance" means the process by which the *Owner* evaluates if the work is being constructed in accordance with the Contract Documents. This definition will be used for this contract

The *Contract Administrator* will provide construction review through spot inspections and spot materials testing for Quality Assurance.

Any materials testing results indicating a non-conformance to the Contract Documents will require construction corrective action by the *Contractor*.

All subsequent testing to corrective action to verify conformance to the Contract Documents will be the full responsibility of the *Contractor*.

Inspection review by the Owner will not relieve the Contractor from providing a product that meets or exceeds the requirements of the Contract Documents.

1.1 Inspection

Materials testing shall be as described in MMCD General Conditions, Section 4.12 with the following change:

Delete Section 4.12.2(a) and insert the following:

Where the MMCD specification clauses for Inspection and Testing indicate the Contract Administrator will arrange for all testing for work described in this section will be amended to read The Contractor will arrange for and pay for all testing for work described in this section. The testing shall take place at the following prescribed rates and as directed by the contract administrator. The contract administrator has the authority to call for testing, up to the rates and frequencies specified, at the Contractors cost.

All testing covered under this item shall be performed by a 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.

1.2 Survey Layout

Construction layout will be staked out by the Contract Administrator.

The Contractor shall, before commencing the work, satisfy himself as to the meaning and correctness of all stakes, marks, grade sheets and other notes.

The Contractor shall be responsible for the preservation of all layout stakes and marks established by the Contract Administrator. Should any layout stakes be disturbed, lost or destroyed after having once been given the Contractor shall at once notify the Contract Administrator in writing, and all expenses incurred by the Contract Administrator in replacing the stakes will be charged against the Contractor or may be deducted from any monies due or that may become due to the Contractor.

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 notify the Contract Administrator who will within a reasonable time verify the same. If the Contractor proceeds with the work after a discrepancy is discovered, he does so at his own risk. The Contractor shall make allowances in his work schedule for delays of this nature and shall not claim or be paid for related stand-by or shut-down time.

1.3 Testing

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

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

1.4 Contractors Responsibilities

Furnish labour and facilities to:

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

1.5 Access to Work

Allow inspection testing agencies access to Work.

1.6 Tests

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

1. Trench Backfilling and Compaction
1.1 Compaction: 1 test / 25 lm / 300mm lift
1.2 Sieve: 1 test / placed material / 50 m^3

2. Granular Base
2.1 Compaction: 1 test / 500m^2 / 100mm depth of granular base
2.2 Sieve: 1 test / placed material / 250 TONNES

3. Granular Subbase
3.1 Compaction: 1 test/500m^2 / 300mm depth of granular subbase
3.2 Sieve: 1 test / placed material / 250 TONNES

4. Embankment (Subgrade)
4.1 Compaction: 1 test/ 50m^2 / 300mm depth of fill
4.2 Sieve: 1 test / placed material / 100 TONNES

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

5.2 Superpave: 1 test per 250 TONNES placed, min. 1 / day
CAI-SP2, ASTM D3203, C117, C136
5.3 Cores: 1 per 500 m^2/lift
5.4 Continuous asphalt density testing during paving.

6. Subgrade Preparation
6.1 Compaction & Moisture: 1 test / 500 m^2

7.Concrete Tests
7.1 Air, Slump & 1 Set Cylinders: 1 test / 10 m^3, min. 1 set / day

1.7 Measurement for Payment

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

END OF SECTION

1.0	**GENERAL**	Add 1.0.6	The *Contractor* is responsible for all temporary traffic control on the streets required for completion of the work. The *Contractor* will be responsible to provide a Traffic Management Plan (TMP) for approval (5) five working days prior to any lane closures taking place. TMP is to be prepared by a professional certified by the American Traffic Safety Services Association. 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.
		Add 1.0.7	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.
		Add 1.0.8	Refer to Appendix A – Traffic Management Detail Specifications
1.4	**Traffic Control**	Delete 1.4.1 and replace with the following	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. 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. 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.
		Add 1.4.9.3.1	The *Contractor,* as required by the *Contract Administrator* and the City, is to supply Construction Zone information signs (stationary), refer to MMCD 01 58 01 for the required identification signage. The *Contractor* is responsible for the removal of the signs at the completion of the work.
		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.

1.5	**Measurement for Payment**	Delete 1.5.1 and replace with the following	Payment for all work, unless included in the Schedule of Quantities and Prices, performed under this section will be incidental to payment for work described in other Sections.

END OF SECTION

1.0 GENERAL

1.0.3	**Erosion and Sediment Control Supervisor**	Add 1.03	The Erosion and Sediment Control (ESC) Supervisor is the Qualified Professional who is experienced in implementing ESC Plans and who is responsible for the inspection and monitoring of ESC Facilities to ensure these are installed and maintained in accordance with the ESC Plan, and if necessary, are modified during construction to ensure compliance with the Stream and Drainage System Protection Bylaw No. 4403, 2013.
1.2	**Temporary Erosion and Sediment Controls**	Delete 1.2.1 and replace with the following	Properly drain all portions of the site. Protect the site and the watercourses to which it drains, directly or indirectly, against erosion and siltation in accordance with the provided 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. Any spill of reportable quantities must be immediately reported to the Provincial Emergency Program's 24 hour phone line at 1-800-663-3456.
		Add 1.4.3.7	Immediately notify the *Contract Administrator* and the City of any leaks or spills of prohibited materials that occur at the *Place of Work*.

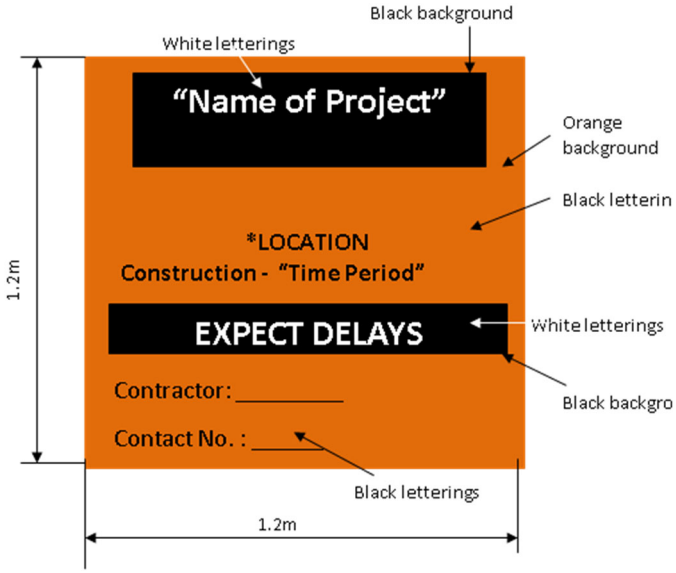
		Add 1.4.3.8	Ensure that any fuel stored on-site is located at least 15 metres from the nearest stream, and is placed within a bermed and lined area, in order to prevent leaks or spills into the environment.
		Add 1.4.3.9	All equipment and machinery must be in good working condition (power washed), free of leaks or excess oil and grease. No equipment refueling or servicing shall be undertaken within a minimum of 15 metres of any water course or surface water drainage.
1.6	**Measurement and Payment**	Delete 1.6.1 and replace with the following	Payment by allowance for Erosion and Sediment Control (ESC) will include silt fencing, interceptor channel/swale/ditch construction, interceptor drain pipe, check dams, catchbasin, socks, includes supply of materials to complete the work as shown on the Contract Drawings or as directed by the Contract Administrator. Payment shall be made for the actual cost on a Force Account basis as defined in GC 10.0.
		Add 1.6.2	Payment for this item as directed by the Contractor Administrator includes supply, placement, maintenance, materials, removal and incidentals required for environmental protection.
		Add 1.6.3	Payment for the poly cover or temporary tarps over stock pile materials or exposed road subgrades shall be treated as incidental work.
1.8	**Clean Up**	Add 1.8.2	The work will include cleaning of all catch basins within the work area, or nearby location as affected by the Work, and all manholes and/or sewers affected by work done under this contract. All cleaning is to be performed by vacuum truck to the satisfaction of the Contract Administrator and will include off-site disposal of waste material.
1.9	**Archaeological / Historical Resources**	Add 1.9	Immediately cease work and inform the *Contract Administrator* and the City, if any archaeological or historical resources are encountered during construction. Leave these resources in place and do not disturb them in any way.

END OF SECTION

1.3 Measurement and Payment

Delete 1.3.1 and replace with the following

Payment for the installation of 1.2m x 1.2m static construction notification signs (shown below) includes supply, placement & removal and will be paid for each sign placed as identified on the Schedule of Quantities and Prices and in the Contract Documents.



END OF SECTION

1.0 GENERAL

1.4	**Measurement and Payment**	Delete 1.4.3 and replace with the following	Payment for machine placed or hand formed C5 wide base concrete curb and gutter includes removal and offsite disposal of existing concrete, granular subbase & base, supply and placement of the concrete curbs and gutters, subgrade preparation under the concrete curbs and gutters, and will cover all straight and curve sections and will be made separately for each specified type.
		Delete 1.4.5 and replace with the following	Payment for concrete sidewalks, driveways, walkways, stamp concrete, infills and all concrete ramps, granular base, supply and placing of the concrete, subgrade preparation under the concrete sidewalks, in-fills, driveways and walkways and will be made separately for each specified thickness and type of finish.
		Add 1.4.10	Payment for Detectable/Tactile Warning Surface Tile includes supply and placing of "Access Tile" or "Amor-Tile" (or approved equal) Truncated Dome Detectable Warning Tactile Surface, replaceable cast in place - Yellow Color and installation as per the Manufacture's Specifications.

2.0 PRODUCTS

2.1	**Materials**	Delete 2.1.5.1 and replace with the following	Hand-formed and hand-placed concrete: Slump: 80 mm Air entrainment: 5 to 8%. Maximum aggregate size: 20 mm. Minimum cement content: 335 kg/m3. Minimum 28 day compressive strength: 32 MPa.
		Add 2.1.7	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. Color of the panel shall be Federal Yellow (Y) per US Federal Standard 595B Table IV, Color No. 335. Minimum size of the panel shall be 600 mm by 1200 mm.

3.0 EXECUTION

3.5	**Concrete Placement**	Delete 3.5.9 and replace with the following	The *Contractor* is responsible for adjusting all utility manhole frames and valve boxes, belonging to Coquitlam and/or other agencies that are affected by the road works. All adjustments to utilities must be completed to the satisfaction of the utility owner. Riser rings will not be accepted. 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. <u>All manholes must be vertically adjusted a minimum of twenty-four (24) hours prior to concrete placement.</u>

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

1.4	**Measurement and Payment**	Delete 1.4.2 and replace with the following	Payment for concrete block retaining walls c/w caps includes all work and incidentals outlined in the Contract Drawings, including but not limited to excavation, supply and installation of Allan Block retaining walls, drain rock backfill, and footing. Measurement of height of wall for the purpose of calculating area for payment will be taken from the top of the footing to the bottom of the cap above the block. Payment for concrete block retaining walls includes design, inspection, and final signoff from a Professional Engineer registered in the Province of British Columbia. Drain for retaining wall will be paid under item 16.04, Section 33 40 01S.

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

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 *Contractor* is responsible to minimize damage to all trees which are to remain.
		Add 3.1.8	The *Contractor* will be responsible for all claims and costs including the cost of examination by an Arborist, repair, removal and replacement of trees, as required by the Arborist, the *Contract Administrator* and the City for tree damage where proper notification was not received from the *Contractor*. Damage will be assessed based on the International Society of Arboriculture Guidelines. The term shall be for a period of one year following the date of Substantial Performance of the *Work*.
		Add 3.1.9	Place protective fencing/barricades as detailed on Coquitlam Standard Detail Drawings COQ-R26, where specied on the Contract Drawings. *Contractor* shall maintain fence in good condition during construction.
		Add 3.1.10	When work is to be performed inside fenced areas, *Contractor* shall take care to avoid damage to existing vegetation. Work to be done inside areas of existing vegetation to be retained includes: .1 Removal of isolated trees as directed by the *Contract Administrator* and the City. .2 Selective pruning and tree removal at edges to create tidy and well-shaped forest edge. .3 Placing planting soil and planting of trees.
		Add 3.1.11	Do not park, service or fuel vehicles within the vegetation retention areas.
3.4	**Pruning**	Add 3.4.2	Do not cut roots or branches of retained trees without approval of the *Contract Administrator* and the City.

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.
		Add 1.8.2	The use of road plates to cover excavations and restore travel lanes is not permitted in late Fall, Winter or if forecast indicates temperature equal or below 2 degrees Celsius, unless otherwise permitted by the Contract Administrator. Where construction necessitates the use of road plates, the Contractor is responsible for properly securing them (either pinned or recessed into the pavement) and feathered a minimum of 300mm with existing road asphalt on all four sides. The Contractor is responsible for repairing any pavement damage related to the plate installation.
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

1.0 GENERAL

1.7	**Seismic Survey and Monitoring**	Delete 1.7.1 and replace with the following	*Contractor* will arrange for assessment of adjacent buildings and structures to determine existing conditions and will provide building and structure owners with proposed blasting procedures and copies of assessment reports and seismic recording operations.
		Delete 1.7.2 and replace with the following	Cost of professional seismic survey and monitoring reports will be paid by *Contractor*.

END OF SECTION

1.8 Measurement and Payment

Delete 1.8.4 and replace with the following

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

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

Delete 1.8.5 and replace with the following

Payment for Common Excavation includes:

1. Unless noted in the Schedule of Quantities and Prices as removal in square meters, common excavation will be measured in cubic metres calculated from measurements taken by the Contract Administrator in the areas of excavation 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 full truck load volumes. 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.

		Delete 1.8.7 and replace with the following	Payment for imported embankment/subgrade fill, 75mm minus pit run gravel (in accordance to Clause 2.3 Pit Run Gravel in Section 31 05 17 – Aggregates and Granular Materials), includes compaction, transport, placement, boning, adjustment of moisture content, spreading and grading of material anywhere on site as needed, to establish the cross-section. Measurement will be for actual quantity placed based on weigh tickets provided to Contract Administrator as loads are delivered.
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

1.0 GENERAL

1.5 Measurement and Payment

Delete 1.5.4 and replace with the following

Payment for this item will be made for the depth specified in the Schedule of Quantities in the Form of Tender and is for the removal of existing asphalt, granular & native materials within the roadway to the depth specified, as detailed in the Contract Documents, regardless of removal method, as conditions of the existing asphalt pavement may or may not be suitable for removal by cold milling operations. If asphalt removal is done by excavation methods, there will be no common excavation quantity associated with the removal of granular to the removal depths indicated below design elevations.

Payment will be made for each square metre of asphalt removed, to the depths indicated in the Form of Tender, and includes the off-site disposal of all milled material. Payment includes mobilization, demobilization, demonstration milling test section, the cost of transport & disposal off-site, saw cutting, street sweeping or cleaning to allow for the placement of required thickness of asphaltic concrete. Saw cutting and milled key at project limits will be incidental under payment item 32 12 16 – Hot Mix Asphaltic Concrete Paving.

No additional payment will be made for multiple passes or remobilization, as required, to mill to the depth(s) specified in the Schedule of Quantities in the Form of Tender.

END OF SECTION

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

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.

END OF SECTION

1.5	**Measurement and Payment**	Delete 1.5.1 and replace with the following	Payment for asphalt tack coat will be for surface area of all portions of existing pavement to be tack coated in preparation for placement of hot mix asphaltic concrete.
		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 included in the unit price bid for tack coat.
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 *Contract Administrator* and the City. Contractor shall demonstrate, to the *Contract Administrator* 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, 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.
		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, compaction and cleaning frames, covers and lids of castings affected. 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.
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 or any other materials not specified in the Contract Documents 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 10 % by mass of RAP for Upper Course Asphalt and 15 % by mass of RAP for Lower Course Asphalt without a special mix design. The *Contract Administrator* and the City may approve higher proportion of RAP if *Contractor* 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	The *Contractor* 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 *Work* 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. The use of riser rings for adjusting manhole frames and value boxes will not be permitted.
3.7	**Joints**	Delete 3.7.5 and replace with the following	Construct butt joints at locations as shown on the *Contract Drawing* and as directed in the field by the *Contract Administrator* and the City.

END OF SECTION

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 1.5.4 and replace with the following	Payment for signage includes all sign poles, bases, sleeves, sign relocations and sign installations (complete). The City will supply signs. 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.

2.0 PRODUCTS

2.1	**Materials**	Delete 2.1.1 and replace with the following	All permanent paint markings shall be marked with thermoplastic manufactured by LAFRENTZ Road Markings, HITEX North America (HiBrite Extrude Thermoplastic), or ENNIS-FLINT (Extruded Thermoplastic).
		Delete 2.1.6 and replace with the following	Pavement Markings:
		Add 2.1.7	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 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 for growing medium, bark mulch, and top soil 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 growing medium will be for actual volume placed onsite.
1.5	**Inspection and Testing**	Delete 1.5 and replace with the following	.1 The *Contractor* is responsible for testing imported *Growing Medium* and all related cost incurred. Testing shall be carried out by an approved *Soil Testing Laboratory*. .2 The sample analysis shall be of tests done on the proposed *Growing Medium* from samples taken at the supply source within a minimum of 14 days in advance of *Growing Medium* placement. Allow 7 days for soil testing by the laboratory for each sample. The sample shall be picked up by the *Soil Testing Laboratory* from the supply source. The *Growing Medium* sample shall be a composite of at least three (3) samplings for the proposed source and shall be at least one (1) litre in volume. .3 Forward a copy of all test results directly to the *Contract Administrator* and the City for review. The analysis shall outline the testing laboratory's required amendments such as sand, organic matter, fertilizers and lime to achieve adequate growing conditions. .4 The *Contractor* shall not deliver any *Growing Medium* to the site until the test results have been reviewed and approved by the *Contract Administrator* and the City.

.5 All submitted soil analysis must be dated and include supplier name and phone number, project location and submitted to *Contract Administrator* and the City for approval prior to commencing work. Soil analysis shall include measurements of:
- .1 Percent sand, fines, silt and clay
- .2 Organic matter to 100%
- .3 pH, acidifying additive required to achieve noted herein
- .4 Water soluble salts
- .5 Total carbon to nitrogen ration
- .6 Total nitrogen and available levels of phosphorus, potassium, calcium & magnesium

.6 At the discretion of the *Contract Administrator* and the City submit up to two (2) additional samples, at intervals outlined by the *Contract Administrator* and the City, of *Growing Medium* taken from material delivered to the site. Samples shall be taken form a minimum of three (3) random locations and mixed to create a single uniform sample of testing. Results of these tests shall be forwarded to the *Contract Administrator* and the City for review.

.7 The *Contractor* is responsible for soil analysis and requirements for amendments to supply *Growing Medium* as specified. Failure to satisfy these contractual requirements could result in the *Contractor* being required to remove unacceptable *Growing Medium* at their expense.

.8 Notify the Contract Administrator at least forty-eight (48) hours prior to Growing Medium placement for inspection.

.9 Refer to General Conditions, Clause 4.12 Tests and Inspections.

1.6 Product Handling — Add 1.6

.1 All materials to be handled and adequately protected to prevent damage. Do not handle *Growing Medium* in an excessively wet, extremely dry, frozen condition or in any manner in which structure may be adversely affected. *Growing Medium* whose structure has been damaged by handling under these conditions shall be rejected and shall be replaced by the *Contractor* at their expense.

.2 Stockpile materials in bulk form in paved areas or in pre-approved areas of the site. Provide additional protection of storage under roof or tarpaulins.

.3 Take all precautions to prevent contamination of *Growing Medium* and amendments from wind blown soil particles, weed seeds and from insects. Contamination of the *Growing Medium* and amendments may result in their rejection for use.

.4 Store fertilizer and chemical amendments in the manufacturer's original containers.

.5 All *Growing Medium* shall be delivered to site premixed from a recognized *Growing Medium* source ensuring consistency throughout the mix.

2.0 PRODUCTS — Delete 2.0 and replace with the following

2.1 Materials

.1 *Growing Medium* Preparation
- .1 Shall be prepared from Compost Material with Sand and other Soil Amendments as required to meet the specifications herein.
- .2 Ensure commercial processing and mixing of *Growing Medium* components are done thoroughly by a

mechanized screening process. Do not mix the components by hand. Ensure the resulting product is a homogeneous mixture having the required properties throughout free of stones 25 mm or larger in any dimension, woody plant parts, toxic materials, foreign object and other extraneous materials harmful to plant growth. Provide composted soil free from crabgrass, couch grass, equisetum, convolvulus, or other noxious weeds or seed or parts thereof.

.2 Inorganic Soil Amendments

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

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

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

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

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

.2 Provide lime in form of dolomitic limestone.

.3 Perlite: Horticultural perlite, soil amendment grade.

.3 Organic Soil Amendments

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

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

.2 Colour: dark brown to black in colour.

.2 Peat:

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

.3 Wood Residual

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

.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 Grade*s. 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 cuspated core bonded to a layer of non-woven filter fabric with the following minimum properties:

.1 Compressive Strength -718 kN/m2 as per ASTM D-1621
.2 Flow Rate – 188 l/min/Metre as per ASTM D-4716
.3 Approximate profile thickness of 10 mm.
.4 Supplier of Drain Mat shall be as per the Coquitlam Approved Products List.

.4 Filter Fabric: Install root barriers in accordance with manufacturer's reviewed installation instructions where indicated on reviewed drawings with vertical root directing ribs facing inwards towards trees or plants; connect panels together as required.

1. Supplier of Filter Fabric shall be as per the Coquitlam Approved Products List.

.5 Drain Rock: Shall consist of clean round stone or crushed rock. Acceptable material includes 19 mm drain rock or torpedo gravel conforming to the following gradations.

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

2.9 Structural Soil

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

.2 Supplier of Structural Soil shall be as per the Coquitlam Approved Products List.

.3 *Growing Medium* to be a gap-graded mixture.

.4

Texture of Growing Media	Percentage of mixture
Gravel: greater than 2 mm-less than 75 mm	0%
Sand: greater than 0.0 5mm-less than 2 mm	max 60%
Silt: greater than 0.002-less than 0.0 5mm	max 35%
Clay: less than 0.002mm	max 15%
Clay and silt combined	max 40%
Acidity (pH)	6.0-7.0
Drainage: minimum saturated hydraulic Conductivity (cm/hr) in place	3.0
Salinity: saturated extract conductivity shall not exceed 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.

.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.

.8 Mixing of structural soil:
Blend as per following ratios:
.1 5 metric tones (MT) of aggregate
.2 1 cubic meter of growing media
.3 2 kg soil stabilizer

.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.

3.0 EXECUTION

3.2	**Preparation of Subgrade**	Delete 3.2.4 and replace with the following	Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials, soil contaminated with calcium chloride, toxic materials and petroleum products, and debris which protrudes more than 25 mm above the surface. Dispose of all removed material off site to approved offsite disposal area at no additional cost to the *Owner*.
		Delete 3.2.5 and replace with the following	Course cultivate entire area which is to receive *Growing Medium* to depth of 250mm. Cross cultivate those areas where equipment used for hauling and spreading has compacted soil.
		Add 3.2.6	Grade transitions shall be smooth and even and shall blend into surrounding areas as determined by the *Contract Administrator* and the City.
		Add 3.2.7	Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
3.3	**Processing Growing Medium**	Add 3.3.4	*Growing Medium* shall be imported and stockpiled on site in a location approved by the *Contract Administrator* and the City. .1 Carry out stock piling operation such that the *Growing Medium* structure is not compromised through compaction, vibration or other actions. .2 Stock piled *Growing Medium* shall be protected from rain, drying and contaminants. .3 *Growing Medium* shall be free of subsoil, pests, roots, wood, construction debris, undesirable grasses including crabgrass or couch grass, noxious or weeds and weed seeds or parts thereof foreign objects and toxic materials. Presence of these contaminates shall be grounds for rejection of *Growing Medium* and replacement at no cost to the *Owner*.
3.4	**Placing Growing Medium**	Delete 3.4.2 and replace with the following	Place *Growing Medium* to the required finished grades with adequate moisture, in uniform lifts of 100 mm to 150 mm compacted to 80 MPD during dry weather, over dry, unfrozen *Sub Grade* where planting is indicated free of any standing water.

		Delete 3.4.5 and replace with the following	Minimum depths after settlement and 80% compaction: .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 *Growing Medium* 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 *Growing Medium*. .3 Do not allow lime to come into direct contact with nitrogen - phosphate - potash fertilizers. .2 Fertilizer: Applied with mechanical spreaders over entire planting areas and contained planters. Do not apply by hand. Do not mix into *Growing Medium*.
3.6	**Finish Grading**	Delete 3.6.1 and replace with the following	Manually fine grade *Growing Medium* installation to contours and elevations shown on drawings or as directed by *Contract Administrator* and the City. Eliminate rough spots and low areas to ensure positive drainage.
		Add 3.6.3	*Finish Grade* of *Growing Medium* shall be 25 mm from finished elevation of adjacent curb or planter wall unless otherwise noted on drawings.
3.9	**Clean-up**	Delete 3.9 and add the following	.1 Ensure all paved areas, tops of planters, adjacent surfaces have been thoroughly cleaned. Ensure all discoloration of adjacent surfaces as a result of *Growing Medium* installation have been removed. .2 Dispose of materials not required and repair any damage to adjacent surfaces (as determined by the *Contract Administrator* and the City) off site at no additional cost to the *Owner*.
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 Growing Medium. .2 Provide the City Representative and Consultant with a written outline of weed removal methodology seven (7) days prior to starting weed removal operations.
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

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 equaled 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 *Place of Work*.
1.6	**Samples**	Add 1.6.2	Submit one (1) square metre of sod to the *Contract Administrator* and the City for review. Ensure sample is complete with name of sod farm, base soil type, seed mix percentage.
		Add 1.6.3	*Contract Administrator* 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 *Contractor* require the source of sod supply to change during the construction a written request must be provided to the *Contract Administrator* 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 *Contract Administrator* 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.
2.0	**PRODUCTS**		
2.1	**Sod**	Delete 2.1.1 and replace with the following	Sod to be approved by the *Contract Adinistrator* 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%
Seed Rate: 50g per square metre	

		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. *Contractor* to ensure adequate water is available to maintain seeded areas during germination and in a vigorously growing, healthy state until *Total Performance* of work of this section.
2.3	**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 *Contract Administrator* and the City to review and direct minor adjustments and refinements of finish grades prior to the *Contractor* proceeding. Review includes grades, growing medium depth and condition of finished surface. Subsequent to the *Contract Administrator* and the City review the *Contractor* shall re-grade, add growing medium and make adjustments as directed by *Contract Administrator* 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 *Contract Administrator* 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 *Contract Drawing*. 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.

.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 that 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 maintain 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.

.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 off site.

.5 Roll when required to remove any minor depressions or irregularities.

.6 Immediately repair seeded areas that show deterioration or bare spots. Top-dress all areas showing shrinkage due to lack of watering and seed with seed mix that matches the original seed mix.

.3 Fertilizer analysis shall conform to recommendations provided with growing medium analysis. Application of fertilizer shall follow manufacturers' recommendations noting that after October 1 lawn areas shall not be fertilized until April 15th of the following spring.

.4 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 Adinistrator* 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 metres 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. .8 Sodded areas exhibit a thick, dense, uniform and healthy appearance.
		Add 3.5.2	Lawns sodded after September 30th will be not be reviewed for *Total Performance* until April 30th the next year.
3.6	**Guarantee / Maintenance**	Delete 3.6.1 and replace with the following	The *Contractor* hereby guarantees that the sod will remain free of weeds and defects for a period of one (1) year from the date of *Substantial Performance*. The *Contractor* shall make all corrections, adjustments and replacements required as a result of failure of all products in this section. During the *Maintenance Period*, the *Contractor* will replace sodded areas, determined by *Contract Administrator* and the City, to be dead or failing at the end of the *Maintenance Period*. 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 *Contractor*'s *Maintenance Period* 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

1.0	**GENERAL**		
1.2	**References**	Delete 1.2.2.1 and replace with the following	National Association of Sewer Service Companies' (NASSCO's) Pipeline Assessment and Certification Program, version 6.x including addendums, or latest version.
1.3	**Submission of Certification**	Delete 1.3.1 and replace with the following	Submit copy of the CCTV operator's current NAASCO certification certificate to the Contract Administrator at least one week prior to the start of the CCTV inspection operations.
2.0	**PRODUCTS**		
2.1	**Equipment**	Delete 2.1.4 and replace with the following	The individual digital video playback files to be of MPEG file format.
		Add 2.1.5	The digital data file delivered to the City to be in PACP standard database file format version 6.x or latest.
3.0	**EXECUTION**		
3.1	**CCTV Inspection**	Delete 3.1.1 and replace with the following	CCTV operator to be certified by NASSCO (PACP/MACP/LACP).
		Delete 3.1.2 and replace with the following	NASSCO certified software must be used to produce inspection report and the data will be submitted in the PACP standardized database format. The review of this statement will be part of the evaluation of the tender. Submission to satisfy all of the specifications and report submissions per NASSCO's PACP (MACP/LACP) will be used as a benchmark for subsequent inspection report submission.
		Delete 3.1.11 and replace with the following	Note condition of pipe joints at manhole walls at the beginning and end of each pipeline; At the beginning of each pipeline or where surface wear of the pipe changes, pan to the invert and any direction as needed to report and record surface wear condition of the pipe using PACP (MACP/LACP) codes; Fill under remarks the observations if no surface wear observed due to good condition of pipe or unable to determine stating reason.
		Delete 3.1.14 and replace with the following	Stop camera at each defect, change of condition of pipe and service connection to record defect in accordance with PACP (MACP/LACP) codes.
		Delete 3.1.15 and replace with the following	Add PACP (MAC/LACP) code overlay to digital video at defects or connections in addition to continuously displayed data.
		Add 3.1.19	The inspection measurement and reporting units must be in metric system.
3.3	**Site Coding Sheets**	Delete 3.3.1 and replace with the following	Each pipeline length to be recorded according to the PACP. Any variation from the manual to be noted in the survey report.
		Delete 3.3.2 and replace with the following	Use standard coding form and standards of PACP:
		Delete 3.3.2.1	

		Delete 3.3.2.2	
		Delete 3.3.2.3 and replace with the following	Note observations as to condition of service connections beyond mainline in remarks column using standards codes as per PACP.
3.7	**Photographs and /or Digital Images**	Delete 3.7.1 and replace with the following	Photograph all major defects as defined by condition codes in PACP: B, CC, CL, CM, TFD, TBD, TSD, TRD, D, FC, FL, FM, H, IR, IG, JO, OB, JS, RM, RB, RT, and X.
		Delete 3.7.2.5 and replace with the following	PACP/MACP/LACP Condition Defect Code.
3.8	**Inspection Reporting Hard Copies & Digital Format**	Delete 3.8.2 and replace with the following	Present machine printed (hardcopy) and computer generated data base reports according to the PACP format.
		Delete 3.8.2.2 and replace with the following	Hardcopy reports to be presented in PACP standard format.
3.10	**Root cutting & Removal**	Delete 3.10.1 and replace with the following	Remove roots for condition codes RT, RM, and RB.
3.12	**Coding Accuracy**	Delete 3.12.1.2 and replace with the following	Detail accuracy 90%
		Delete 3.12.4 and replace with the following	An operator failing to meet the accuracy requirements on two occasions will not be permitted to code on the remainder of the project until they have successfully re-attended an Operator's Certification course, re-write and pass the NASSCO Pipeline Assessment Certification Program.

END OF SECTION

1.8	**Measurement and Payment**	Delete 1.8.4 and replace with 1.8.4.1	Payment for service connections includes locating and exposure of existing utilities, trench excavation, dewatering, on-site re-use of surplus/displaced material, bedding, pipe cover material, saddles, corporation stops, curb stops, supply and installation of Municipex service pipes c/w #10 AWG tracer wire, all valve boxes c/w lids marked "WATER" if not specified as a separate item on the SOQ, granular subbase, granular base, 50mm asphalt base lift, and all related fittings and appurtenances specified and/or shown on Standard Detail Drawings COQ-W2b-2, COQ-W2c, and COQ-W2l. 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.
2.0	**PRODUCTS**		
2.3	**Valves and Valve Boxes**	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.
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 or Municipex service pipes complete with #10 AWG tracer wire.
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**		
3.10	**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.

END OF SECTION

1.6	**Measurement and Payment**	Delete 1.6.1 and replace with the following	Payment for sanitary sewer will be made at the unit price bid for sanitary sewer (regardless of depth) consistent with pipe materials, diameters and backfill requirements shown on the Contract Drawings and described under individual payment items in the Schedule of Quantities.
		Delete 1.6.2 and replace with the following	Payment for sanitary sewers and fittings includes locating existing utiltities, trench excavation, dewatering, bypass pumping, on-site reuse of surplus/displaced material, supply and installation of all pipe, fittings and related materials, tie-ins to sanitary pipe, anchor blocks, construction joints, bedding, pipe cover, native backfill, cleaning and flushing, testing (if applicable), videoing and all other work and materials necessary to complete installation as shown on Contract Drawings and specified under this Section. Measurement for sanitary sewer will be made horizontally from manhole centerline to manhole centerline over surface work has been completed. 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.
		Delete 1.6.3 and replace with	Payment for new service connections includes 100mm SDR28 PVC pipe unless otherwise specified, bends, pvc wye, stubs, caps, stakes, manhole preparation for connection, inspection chamber c/w locking collar and red lid as per MMCD S9, 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. Payment will be made per the unit price bid for each sanitary service connection.
2.0	**PRODUCTS**		
2.1	**Concrete**	Add to 2.1.1 and 2.1.2	Prior approval from Contract Administrator and the City for use of concrete pipe in a sanitary sewer installation.
		Delete 2.1.3.4 and replace with the following	Lift insert opening not required to be grouted provided it does not extend beyond the depth of the engineered design.
2.3	**Service Connections**	Delete 2.3.8.1	
		Delete 2.3.8.2 and replace with the following	Connections to mainline PVC pipe to be made with a manufactured wye fitting when mainline pipe is 250 mm and smaller. For new connections to existing mainline greater than 250 mm use of insertable tee will be permitted
		Add 2.3.8.3	Insertable tee fitting shall have a rubber collar which inserts into the mainline pipe to form a tight seal and shall have stainless steel band to secure the tee insert. The tee insert shall be a standard bell end with depth control lugs. The joint shall provide a minimum seal of 90 kPa on concrete and polyethylene pipe, and 190 kPa on PVC pipe.

		Add 2.3.8.4	Rubber couplings for gravity sewers shall have stainless steel shear bands along the body of the coupling.
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* and the City.
3.0	**EXECUTION**		
3.8	**Connections to Existing Mainline Pipe**	Delete 3.8.3 and replace with the following	For new connections to existing PVC mainlines 250 mm and smaller shall be made by removal of the section of the main and replacement with a preformed extrusion molded PVC wye fittings complete with stubs and double hub PVC couplings for PVC mains and approved shear band couplings for other mainline materials. For new connections to existing mainline greater than 250 mm use of insertable tee will be permitted.
3.10	**Service Connection Installation**	Delete 3.10.3 and replace with the following	Inspection chambers shall be provided on all sanitary service connections as per Standard Detail Drawing S7. If inspection chamber is located in driveway, lane, or paved surface, Series 37 concrete box with lid shall be installed as per Standard Detail Drawing S9.
3.18	**Video Inspection**	Delete 3.18.1 and replace with the following	The contractor shall video inspect completed sanitary 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 Administator and the City. Refer to Section 33 01 30.1 and 33 01 30.1S CCTV Inspection of Pipelines.
3.21	**Permanent Capping of Service Connections**	Add 3.21.1	Permanent capping of existing sanitary service connections to be completed as per Coquitlam Standard Detail Drawing COQ-S18.
		Add 3.21.2	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. The trenchless technology used to cap the service must be approved by the Manager.

END OF SECTION

1.6	**Measurement and Payment**	Delete 1.6.1 and replace with the following	Payment for storm sewer will be made at the unit price bid for storm sewer (regardless of depth) consistent with pipe materials, diameters and backfill requirements shown on the Contract Drawings and described under individual payment items in the Schedule of Quantities.
		Delete 1.6.2 and replace with the following	Payment for storm sewers trench excavation, dewatering, bypass pumping, on-site reuse of surplus/displaced material, supply and installation of all pipe, wyes, fittings and related materials, mitre fitting & joints, tie-ins to storm pipe, anchor blocks, construction joints, bedding, pipe cover, native backfill, cleaning and flushing, testing (if applicable), videoing and all other work and materials necessary to complete installation as shown on Contract Drawings and specified under this Section. Measurement for storm sewer will be made horizontally from manhole centerline to manhole centerline over surface work has been completed. 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.
		Delete 1.6.3 and replace with with the following	Payment for new service connections includes 150mm SDR28 PVC pipe unless otherwise specified, bends, pvc wye, stubs, caps, stakes, manhole preparation for connection, inspection chamber c/w locking collar and green lid as per MMCD S10, 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. Payment will be made per the unit price bid for each sanitary service connection.
		Delete 1.6.5 and replace with the following	Payment for catchbasin, lawn basin & electrical box leads include all applicable materials and work described in 1.6.2 Measurement for catchbasin, lawn basin & electrical box leads be made horizontally from mainline pipe to centreline of catchbasin or lawn basin for each pipe size installed with no regards to depth range.
		Delete 1.6.6 and replace with the following	Payment for trench dams, dispersal trench and perforated drain pipes includes all applicable materials and work described in 1.6.2 of this Section and as shown on the Contract Drawings. Payment will include filter fabric surrond, drain pipes and fittings, cleanout, drain rock, dam sacks, connection to catch basin, lawn basin or manhole as described for each item in the Schedule of Quantities.
		Delete 1.6.8 and replace with the following	Payment for fiitings, unless specified in the Schedule of Quantities and Prices, performed under this section will be incidental to payment for work described in other Sections. Payment includes all applicable materials and work described in 1.6.2 & 1.6.5.

2.0	**PRODUCTS**		
2.2	**PVC Pipe, Mainline Smooth Wall**	Delete 2.2.1 pipe size ranges and replace with the following	200 mm dia. – 375 mm dia. to ASTM D3034 450 mm dia. – 1,200 mm dia. to ASTM F679
2.3	**PVC Pipe, Mainline Profile**	Delete 2.3	
2.6	**Service Connections**	Delete 2.6.1 and replace with the following	Storm service connectons to be PVC DR 28 150 mm diameter minimum or as specified on *Contract Drawings*.
		Delete 2.6.8.1	
		Delete 2.6.8.2 and replace with the following	Connections to PVC pipe to be made with a performed wye fitting where mainline pipe is 300 mm diameter or smaller. For connections to PVC mainline pipe larger than 300 mm diameter an insertable tee for PVC pipe is permitted.
		Add 2.6.8.3	Insertable tee fitting shall have a rubber collar which inserts into the mainline pipe to form a tight seal and shall have stainless steel band to secure the tee insert. The tee insert shall be a standard bell end with depth control lugs. The joint shall provide a minimum seal of 90 kPa on concrete and polyethylene pipe, and 190 kPa on PVC pipe.
2.9	**Granular Pipe Bedding and Surround Material**	Delete 2.9.3	Pipe bedding shall be 19 mm clear crushed rock or as approved by the *Contract Administrator* and the City.
3.0	**EXECUTION**		
3.8	**Connections to Existing Mainline Pipe**	Delete 3.8.3 and replace with the following	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. For new connections to existing mainline greater than 300 mm, use of insertable tee will be permitted.
3.10	**Service Connection Installation**	Delete 3.10.3 replace with the following	Inspection chambers shall be provided on all storm service connections as per Standard Detail Drawing S7. If inspection chamber is located in driveway, lane, or paved surface, Series 37 Brooks concrete box with lid shall be installed as per Standard Detail Drawing S9.
3.12	**Inspection and Testing**		The contractor shall video inspect completed storm sewers under 900 mm in diameter and all service connections following completion of the installation. The video inspection report shall be in a form specified by the Contract Administrator and the City. Copies of the video DVD and written report shall be forwarded to the Contract Administrator and the City. Refer to Section 33 01 30.1 and 33 01 30.1S CCTV Inspection of Pipelines.
3.16	**Permanent Capping of Service Connections**	Add 3.16.1	Permanent capping of existing storm sewer connections to be completed as per Coquitlam Standard Detail Drawing COQ-S18.

Add 3.16.2

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.

The trenchless technology used to cap the service must be approved by the Manager.

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 1.5.1.1 and replace with the following	Payment for all manholes will be on a unit rate basis per manhole, for the varying diameters/sizes, and includes excavation, on-site reuse of surplus/displaced material, dewatering, base preparation and compaction, manhole base, benching, lid, slab, frame & lid, cover, ladders & setting frame & lid to the finished grade, except riser for circular manholes in accordance with the Contract Drawings.	
		Delete 1.5.1.2 and replace with the following	Payment for manhole riser sections will be for risers of standard or non-standard heights required to complete manhole from specified invert to finishing level. Payment includes all risers as shown on the Standard Detailed Drawings. Measurement will be made vertically for the length of risers required from the top of the manhole base (cast-in-place or precast) to reach the underside of concrete lid or slab.	
		Delete 1.5.1.5 and replace with the following	Payment for outside drop type manhole connections includes all labour, materials, and equipment required to complete the work as per MMCD Standard Detail Drawing S3, and will be made for each manhole connection as shown on the Contract Drawings.	
		Delete 1.5.2 and replace with the following	Catchbasin and lawn basin Installation will be defined as supplying and installing a new catch basin or lawn basin for each type specified and setting to the finished grade. Payment includes excavation, on-site reuse of surplus/displaced excavated material, supply of all units, 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.	
2.0	**PRODUCTS**			
2.1	**Materials**	Add 2.1.7.3	Any frame and cover assembly creating a point load on the concrete riser rings will not be permitted.	
		Delete 2.1.12 and replace with the following	Catchbasin lids manufactured to ASTM C478M	
		Delete 2.1.16.2		
		Delete 2.1.17		
3.0	**EXECUTION**			
3.1	**Excavation and Backfill**	Add 3.1.2	For manholes, when base gravels are complete, excavate for grade rings and manhole frame assembly. Do not disturb the compacted road base beyond the excavation requirement.	

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

END OF SECTION

1.0	**GENERAL**		
1.1	**Measurement and Payment**	Add 1.1	Lump sum price, unless specified otherwise in the Schedule of Quantities and Prices, includes all labour, materials and equipment necessary to complete the installation of the underground utility ducts as shown on the Contract Drawings. The work is to conform to the most current utility company's Specifications. The payment includes the transport and installation of the vaults, precast concrete manholes, pads, splice boxes and ducts, including full excavation, form and concrete work, reinforcing steel, bricking and setting vaults, precast concrete manholes and splice boxes, frames & covers, supplying/laying duct(s), supply/backfilling & compaction of gravels & sands, import 75mm minus granular subbase backfill and all other work shown on the drawings or as specified in the utility company's Specifications.
2.0	**STANDARDS & SPECIFICATIONS**		
2.1	**BC Hydro**	Add 2.1	All construction to comply with most current BC Hydro Standards & Specifications No. 1323 and ds-ES54-Underground-Civil-Manual-2004.
2.2	**Telus**	Add 2.2	All construction to comply with most current Telus Standards & Specifications No. 6003 & 6020.
2.3	**Shaw Cable**	Add 2.3	All construction to comply with most current Shaw Cable Standards & Specifications.
2.4	**Fortis BC**	Add 2.4	All construction to comply with most current Fortis BC Standards & Specifications.
3.0	**MATERIALS**		
3.1	**BC Hydro Material List**	Add 3.1	Contractor is responsible to supply all civil materials to construct the works, including ducts & duct accessories, gravels, sands, concrete, reinforcing steel, forming lumber and other miscellaneous construction materials. Precast structures, manholes & vaults, shall be supplied by BC Hydro.
3.2	**Telus Material List**	Add 3.2	Contractor is responsible to supply all civil materials (additional to the below) to construct the works, including ducts & duct accessories, gravels, sands, concrete, reinforcing steel, forming lumber and other miscellaneous construction materials. Precast structures, manholes & vaults, shall be supplied by Telus.
3.3	**Shaw Cable Material List**	Add 3.3	Shaw Cable will provide all civil materials (additional to the below) to construct the works except for gravels, sands, concrete, reinforcing steel, forming lumber and other miscellaneous construction materials.

END OF SECTION

Appendix A -

Traffic Management Detail Specifications

These supplementary Specifications must be read in conjunction with the Master Municipal Specifications contained in the Master Municipal Construction Documents (Platinum), Volume II, 2009.

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 Regulation MMCD Section 01 55 00S.

1.2 References

.1 WorkSafe BC, Occupational Health and Safety (OHS) Regulation, Section 18 – Traffic Control.

.2 B.C. Ministry of Transportation (MOT) Traffic Control Manual for Work on Roadways.

1.3 Project Requirements

.1 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. A digital copy of the Road and Sidewalk Closure Permit form can be obtained for use during the contract from the City's website at www.coquitlam.ca/closure.

.2 A Road and Sidewalk Closure Permit form application must be submitted to the City's Traffic Operation Division five (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) days of the *Notice of Award* of the *Contract*, and must be approved by the *Contract Administrator* prior to start of the *Work*.

.4 Review of the TMP will be performed by the Contract Administrator. Comments for revisions to the TMP will be returned to the *Traffic Manager* for implementations.

.5 The Contractor shall comply with all the requirements of applicable laws, rules, regulations, codes and orders of the municipal and other appropriate authorities concerned with work on streets or highways and shall post proper notices and/or signals, and provide necessary barriers, guards, lights, flagmen or watchmen as may be necessary for proper maintenance of traffic and protection of persons and property from injury or damage. All costs involved in respect to the above requirements will be deemed to be included in the Contract Price.

.6 The Contractor shall give due notice to local police and fire departments prior to beginning construction and shall comply in all respects with their requirements.

.7 The Contractor, during the progress of the work, shall make adequate provision to accommodate the normal traffic along streets and highways immediately adjacent to or crossing the work so as to cause the minimum of inconvenience to the general public.

.8 The Contractor is required to maintain local traffic and driveway access during all stages of construction. 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 by the Contract Administrator. If half the street only is under improvement, the other half shall be conditioned and maintained as detour.

2.2 Incident Management and Reporting

.1 The Contractor shall facilitate incident response vehicles and staff and move traffic safely and expeditiously through or around an incident on site and provide assistance to emergency response personnel as required. An incident includes, but is not limited to, motor vehicle accidents, emergency road repairs, disabled vehicles, and debris on the road. The immediate response to an emergency shall by necessity make use of available devices and equipment.

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

2.3 Traffic Control Plans

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

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

.2 The Contractor shall prepare weekly the anticipated traffic control activities, locations, and durations for the upcoming week.

.3 Permissible delays shall only be considered outside Peak Hours. Permissible delays are categorized as follows:

a) Minor Delays - Less than two (2) minutes in duration; for occasional interruption due to construction activities. These delays shall be coordinated with available breaks in the traffic flow.

b) Major Delays - Maximum five (5) minutes in duration; for occasional interruption of traffic for construction activities if traffic volumes permit. These delays shall be coordinated with available breaks in the traffic flow.

.4 The Contractor is responsible for ensuring that the flow of traffic is unimpeded by construction-related activities.

3.0 EXECUTION

3.1 Traffic Control Plan

.1 A copy of the approved current Traffic Plan must be held on site by both the Site Superintendent as well as the person/company responsible for the traffic control implementation.

.2 Failure to produce a valid approved Traffic Plan on site, or having work not follow the Traffic Control Plan will result in immediate shut-down of the work. The Contractor will be required to safely restore facility conditions to allow traffic flow at their expense. The Contractor must take all steps to acquire an approved Traffic 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

.1 Supply, installation, maintenance and removal of all works-related signs shall be the responsibility of the Contractor. The location and type of each sign shall be indicated on the approved Traffic Control Plan, for each stage of the works.

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	.1	Any proposed detours must be approved by the Contract Administrator and conducted in accordance with the approved Traffic Plan and the Traffic Control Manual for Work on Roadways.
3.6	Abrupt Changes in Surface Elevations	.1	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	.1	The Contractor shall make provision for pedestrians, wheel chairs and bicycles to have safe access across the work zone at all times. If this cannot be readily accommodated, then acceptable detours and appropriate signs shall be provided.
3.8	Temporary Pavement Markings	.1	The Contractor shall be responsible for the application and removal of all temporary pavement markings and reflective devices. All temporary markings must be removed after installation of permanent markings.

4.0 TRAFFIC RESTRICTIONS

4.1	Road and Sidewalk Closure Permits	.1	Minimum of Single Lane Traffic in each direction and all local traffic must be accommodated at all times. Detours and full road closure (with Local Traffic Only) will only be allowed during placement of asphalt paving.
		.2	A City of Coquitlam 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 and Lane 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

.1 **For each of the road sections affected:**

- 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), including side street intersections, to safely guide traffic through the work site.

5.0 HOURS OF WORK

.1 **The hours of work shall be from 0700h to 1900h inclusive Monday to Friday and 0900h to 1800h inclusive Saturdays, unless noted otherwise.**

.2 Some allowances may be made for paving operations, depending on a proposal acceptable to the Contract Administrator.

.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.

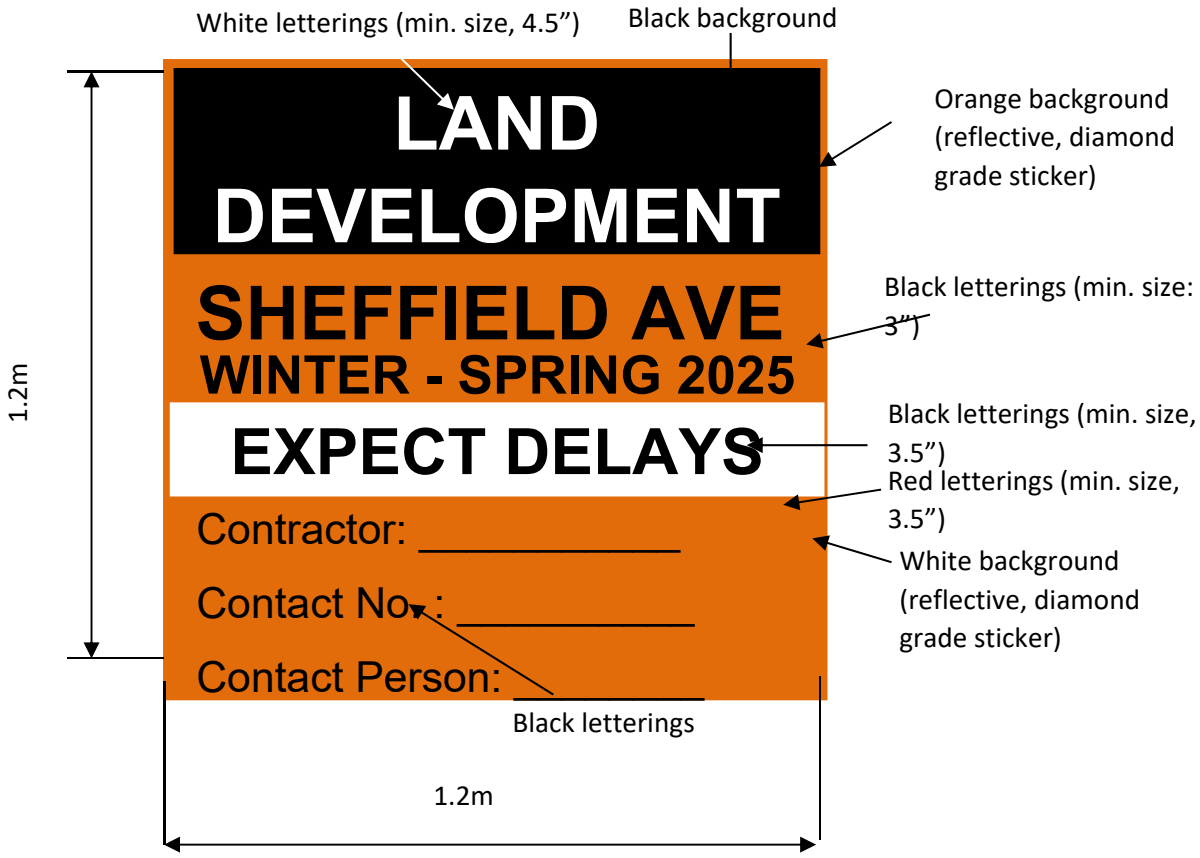
6.0 CONSTRUCTION OPERATIONS

6.1 Truck Routes

.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.

6.2	Road Specific Considerations	.1	Ensure that Traffic Management Plan accommodates businesses and residences during construction activities.
		.2	Contractor shall not schedule paving during garbage pick up day.
6.3	Work Stoppage Due to Traffic	.1	The City will not control or direct traffic control activities of the Contractor, but may require an immediate stop to any work where, in the sole opinion of the Contract Administrator, the provided traffic management plan is ineffective or creating unreasonable delays.
6.4	Construction Activity and Signage	.1	The Contractor will be responsible to place other construction information signs as required to inform the public of construction activities, and ensure safe travel through the work site.
6.5	Construction Zone Information Signs	.1	The Contractor is required to provide, one week prior to start of work, four stationary signs at intersections, one in each direction, to inform traffic of existing and anticipated conditions at entry points of the lane to be worked on, locations for these signs will be provided by the Contract Administrator. Signs to be re-used and transferred to the next location once lane is completed. 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. Exact locations to be determined on site by Contract Administrator.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LAND DEVELOPMENT
SHEFFIELD AVE
WINTER - SPRING 2025
EXPECT DELAYS
Contractor: _____
Contact No.: _____
Contact Person: _____
Orange background (reflective, diamond grade sticker)
Black letterings (min. size: 3”)
Black letterings (min. size, 3.5”)
Red letterings (min. size, 3.5”)
White background (reflective, diamond grade sticker)
Black letterings
1.2m
1.2m

APPENDIX 1

Coquitlam

City of Coquitlam
Road and Sidewalk Closure Permit Request

Traffic and Street Use Management Section
3000 Guildford Way, Coquitlam BC V3B 7N2
Phone: 604-927-6250 Email: StreetPermits@coquitlam.ca

~~Initial Permit: $150 ☐~~ ~~Renewal Permit: $75 ☐~~

Application Date: _____ **City Project or Film Permit Number** (if applicable): _____ 51162-1

- An Initial Permit is required for all new applications and when the location, type of work, or the type of traffic controls change from what was approved for the Initial Permit. The application needs to be received a minimum of 10 business days prior to the intended closure date.
- A Renewal Permit extends the rights and privileges of the approved Initial Permit and is required when the timeline needs to be extended. The application must be received a minimum of 5 business days prior to the intended extension date.

Development Site Address (if applicable): _____

Work location (street name, block number, to/from, at, etc.) _____

Contact Information

Applicant Company Name: _____

Applicant (person completing application form)

Name: _____ **Title:** _____

Phone: _____ **Email:** _____

Applicant's Signature: _____

Company Name (Prime Contractor): _____

Site Superintendent

Name: _____ **Title:** _____

Phone: _____ **Mobile:** _____ **Email:** _____

Permit Information

Start Date: _____ **End Date:** _____

Day(s) and Time(s): ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday From: 00:00 To: 00:00
☐ Saturday From: 00:00 To: 00:00 ☐ Sunday From: 00:00 To: 00:00

Specific Lanes: ☐ Curb ☐ Inside/Centre Lane ☐ Left Turn Lane ☐ Right Turn Lane ☐ Parking Lane
☐ All Lanes ☐ Sidewalk/MUP ☐ Bicycle Lane

Direction: ☐ Northbound ☐ Southbound ☐ Westbound ☐ Eastbound

Purpose of Work: ☐ Concrete Pour ☐ Utility Installation ☐ Curb Installation ☐ Other _____

This permit is related to: ☐ City Design and Construction ☐ City Parks ☐ External Environmental
☐ Development ☐ External/Utilities

City Contact (if applicable): _____

Office Use Only

Permit Conditions/Comments:

_____

_____ _____

Approved by *Date*

Application Checklist

⚠ **The following information must be provided. Incomplete applications will not be reviewed.**

1. ☐ Traffic Management Plan (TMP); **OR**
   ☐ Traffic Management Manual for Work on Roadways Figure Number: _____
2. ☐ **Project Category Determination** (per 2020 Traffic Manual for Work or Roadways).
   ☐ Initial Project Category Assessment
   ☐ Project Risk Analysis
   ☐ Category 1 ☐ Category 2 ☐ Category 3
3. ☐ **Prime Contractor Designation Letter**
4. ☐ **City of Coquitlam Certificate of Insurance**
5. ☐ **Notification Letter and Map** (required for all full road closures). A Notification Letter must be provided to all affected residents and businesses.
   ☐ Yes ☐ No ☐ Not Applicable
6. ☐ **Traffic Control Persons** (flag persons) **required?** All operations within the road right-of-way must comply with WorkSafe BC regulations and BC Ministry of Transportation standards for work on roadways.
   ☐ Yes ☐ No If yes, how many? _____
7. ☐ **Bus routes/stops impacted?** Applicant is to contact Coast Mountain Bus Company (with a minimum of 3 days' notice) Temporary Transit Changes Request Form. General information can be found by visiting Temporary Transit Changes.
8. ☐ **City of Coquitlam Solid Waste has been contacted?** Coquitlam Environmental Services contacted regarding impact to garbage/recycling routes and pick up Phone: 604-927-4300 Email: wastereduction@coquitlam.ca
   ☐ Yes ☐ No
   Are operations impacted? ☐ Yes ☐ No
   If Yes:
   - a plan to ensure continuous collection has been provided: ☐ Yes ☐ No
   - Day(s) of the week impacted: _____
   - Time(s) of the day impacted: ☐ a.m. ☐ p.m.
9. ☐ **Pedestrian / Bike Lanes impacted?** Please describe sidewalks and/or bicycle facilities that will be impacted by the proposed work.

   _____

   _____
10. ☐ **Is the work on, or will it impact a road along our Major Road Network?**
    ☐ Yes ☐ No

Additional information

- Only vehicles actively engaged in the performance of cleaning, clearing, maintenance, repair, construction or other work are permitted within work zones. Vehicles being used by Superintendents, Traffic Control Persons, and other construction personnel that are not actively engaged in work described above are not permitted within the work zone and are not permitted parking /stopping prohibitions.
- Closures of sidewalks, cycling facilities, lanes, and full road closures are only permitted during the time periods indicated on the approved permit. Traffic controls are not permitted outside of these approved permit hours.

Appendix B -

BC Hydro, Telus & Shaw Manhole Specifications

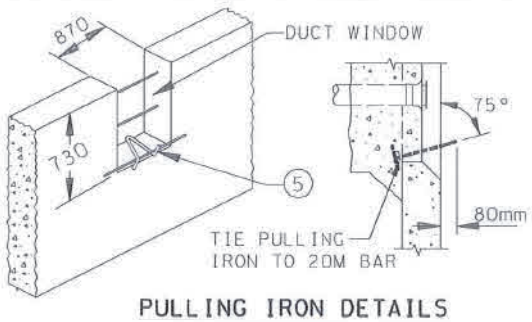
R3-REDRAWN 'OO-06-02 MF | R4-PULLING IRON REVISED. AUG'11 MK | R5-SUMP PIT LOCATIN REVISED. JUNE'12 MK

APPROXIMATE WEIGHTS:

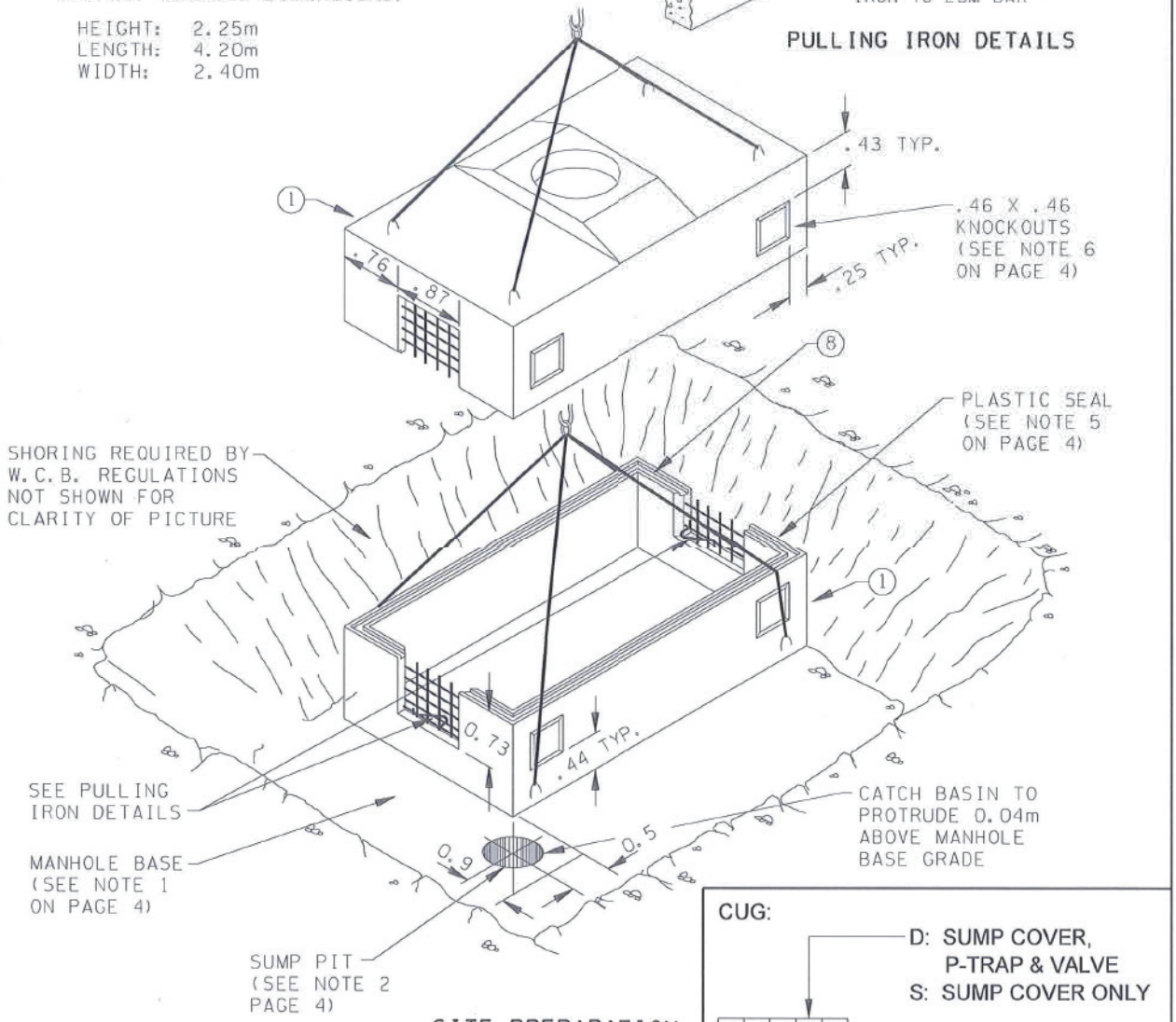
UPPER M/H SECTION: 6850kg.
LOWER M/H SECTION: 6150kg

APPROX. MANHOLE DIMENSIONS:

HEIGHT: 2.25m
LENGTH: 4.20m
WIDTH: 2.40m



PULLING IRON DETAILS



SITE PREPARATION FOR MANHOLE INSTALLATION

CUG:

MHPDA

D: SUMP COVER, P-TRAP & VALVE
S: SUMP COVER ONLY

CIVIL ADJUSTMENT FACTORS (A, B, C, D, OR E)

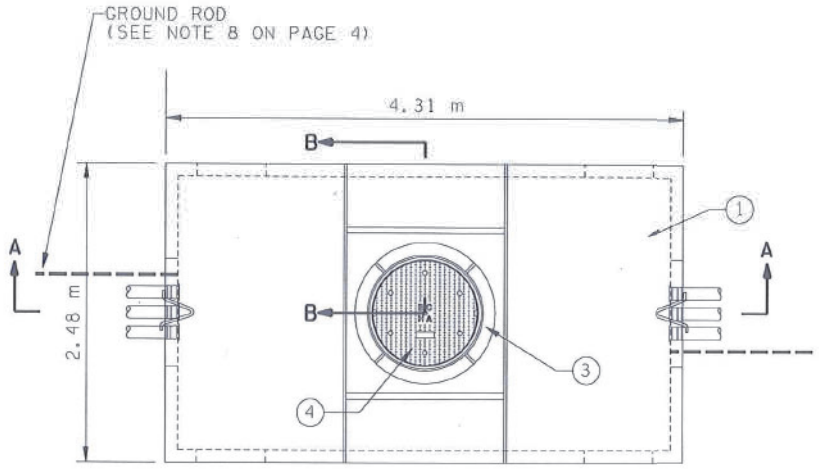
DRAFTER: DC

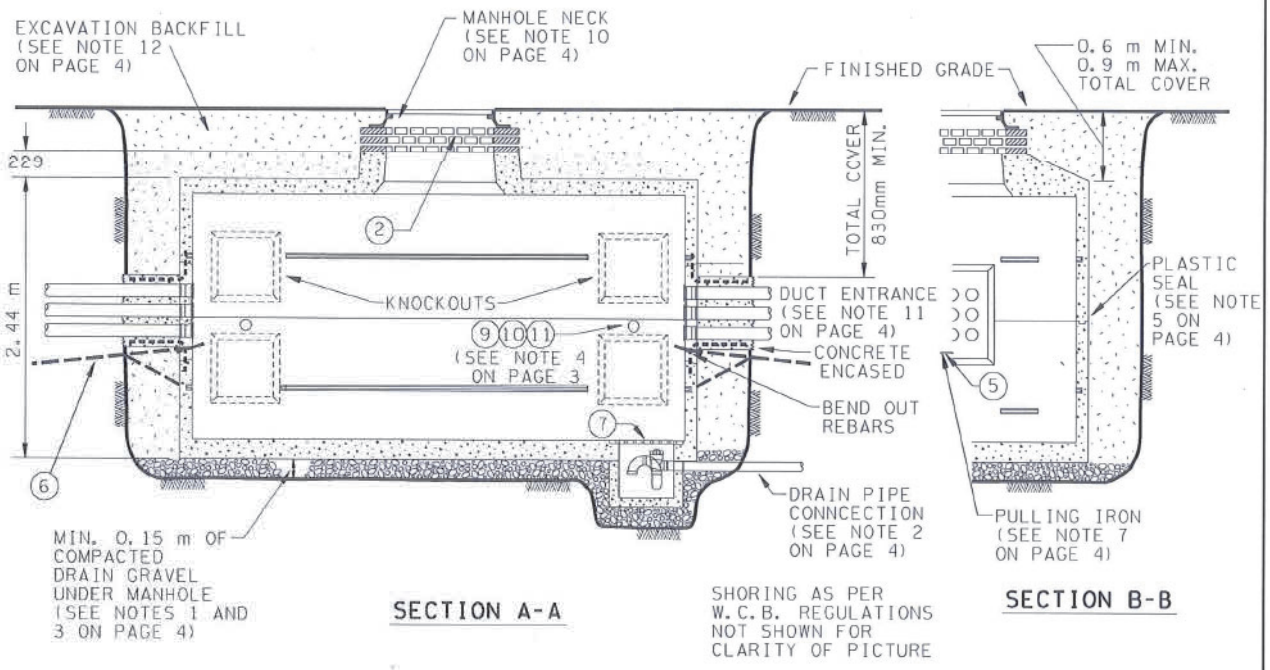
DESIGNER	RECOMMENDED	APPROVED
M. KELVIN	L. STEVANOVIC	F. DENNERT

ORIGINAL ISSUE DATE: MARCH 1980

PRECAST MANHOLE THROUGH TYPE INSTALLATION DETAILS

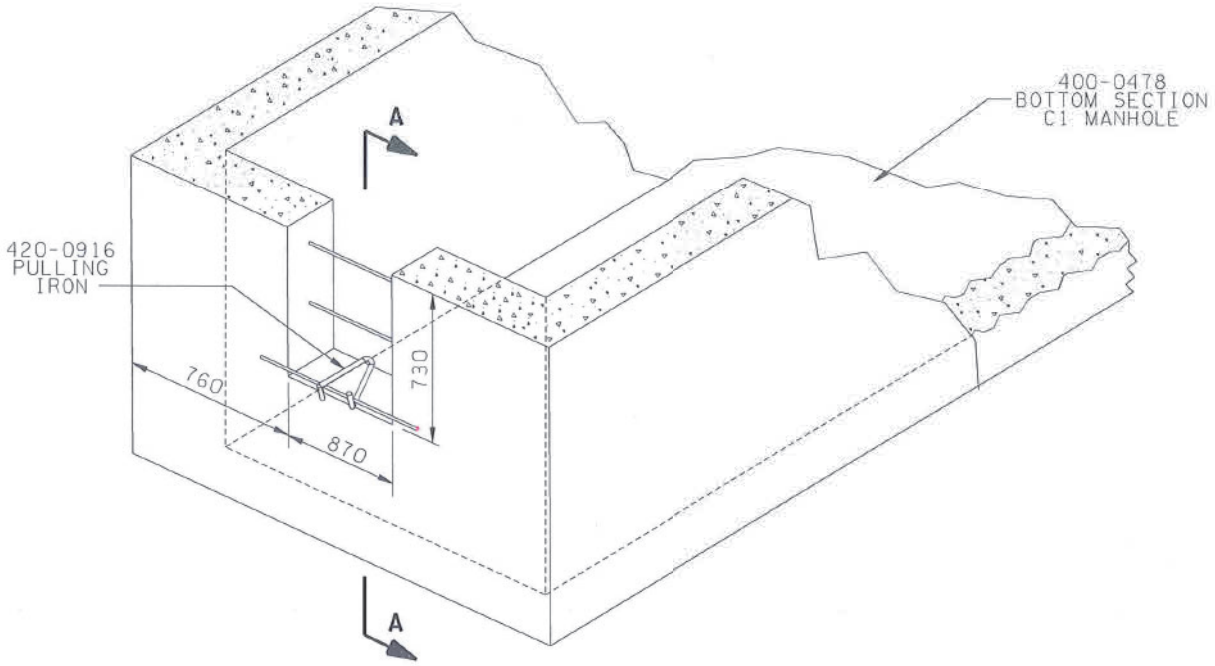
BCHydro DISTRIBUTION STANDARDS | PAGE 1 OF 4 | ES54 C1-01.01 | R. 5

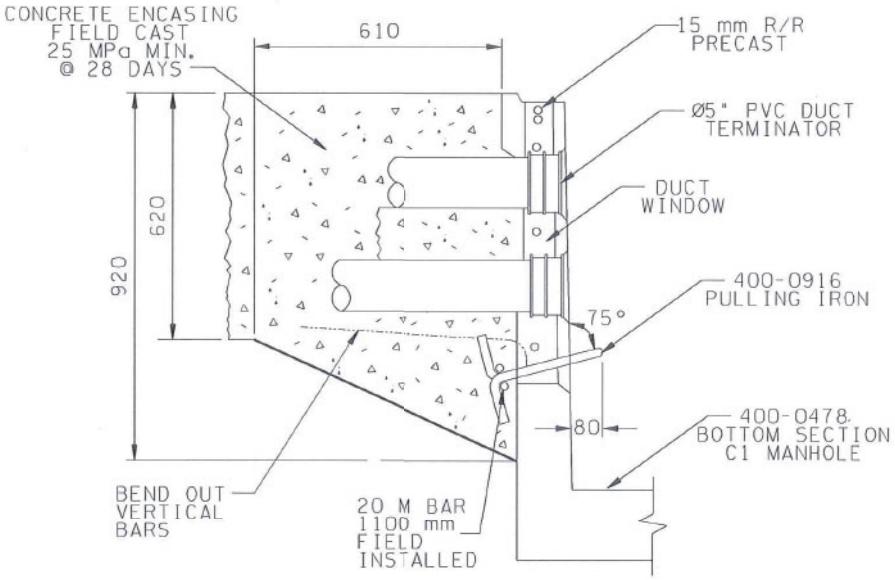




INSTALLATION DETAILS

DRAFTER: DC	DESIGNER	RECOMMENDED	APPROVED	PRECAST MANHOLE THROUGH TYPE INSTALLATION DETAILS		
	M. KELVIN	L. STEVANOVIC	F. DENNERT			
	ORIGINAL ISSUE DATE: MARCH 1980					
	BC hydro DISTRIBUTION STANDARDS			PAGE 2 OF 4	ES54 C1-01.02	R. 5





SECTION A-A

DRAFTER: DC	DESIGNER M. KELVIN	RECOMMENDED L. STEVANOVIC	APPROVED F. DENNERT	PRECAST MANHOLE THROUGH TYPE PULLING IRON INSTALLATION DETAILS		
	ORIGINAL ISSUE DATE: JULY 2011					
	BCHydro DISTRIBUTION STANDARDS			PAGE 3 OF 4	ES54 C1-01.03	R. 5

NOTES:

1. Excavate site allowing for 0.15 metres of 19 mm minus clear aggregate base.
2. Install sump, backwater valve with p-trap and drain pipe as shown on ES54 G2-01 type "A" or "B".
3. Hoist the manhole bottom section with a suitable crane and lower it onto the manhole base. Seal the space between the installed sump and the manhole sump opening with mortar.
4. Install four shoulder eyebolts between vertical side knockouts. Delete shoulder eyebolts only when assured that no lateral ducts will be installed in the future. Unused eyebolt holes shall be grouted with mortar to seal the manhole walls.
5. Place plastic seal in groove of manhole bottom section, then lower manhole top section into place. Parge the inside joints between the two manhole sections with mortar.
6. Break out the knock-outs used for lateral ducts with sledge hammer.
7. Install pulling irons as shown on the detail on page 1 and page 3.
8. Install either one or two ground rods as shown, as required in the project specifications.
9. Refer to ES54 R3-01 for detailed grounding requirements.
10. Build manhole neck to a minimum height of 200mm using spacer rings. Use one layer of mortar between spacers and, between spacers and adjacent structures. Parge the inside of the neck and engrave the manhole number near the upper end of the neck as referred to in the project specifications.
11. Make duct entrances as shown on ES54 H3-01.
12. Back fill the excavation and compact the backfill material as required in the project specifications.
13. Restore the surface at finished grade as required in the project specifications.
14. Precast manholes are designed for BCL625 dynamic load allowance as per CSA standard CAN/CSA-S6.

BILL OF MATERIAL

Item	Quantity	Description	Stock No.	Supplied By	Installed By
1	1	Precast Manhole	400-0478	BCHydro	Contractor
2	as req'd	Concrete Rings	N/A	Contractor	Contractor
3	1	Manhole Frame	400-0401	BCHydro	Contractor
4	1	Manhole Cover	400-0411	BCHydro	Contractor
5	2	Pulling Iron-Galvanized	420-0916	BCHydro	Contractor
6	1(2)	Ground Rod	420-1093	BCHydro	Contractor
7	1	Sump Cover	400-0426	BCHydro	Contractor
8	3 Rolls	Manhole Joint Sealant	141-1346	BCHydro	Contractor
9	as req'd	Shoulder Eye Bolt c/w Nut Galv.	420-1184	BCHydro	Contractor
10	as req'd	Square Washer Galv.	420-1528	BCHydro	Contractor
11	as req'd	Rubber Washer Round	102-4230	BCHydro	Contractor

REFERENCE DRAWINGS

ES54 R3-01	Grounding in Manholes
ES54 H3-01	Window Openings in u/g Chambers
ES54 H2-01/02/03	Standard Cross Sections 3"/4"/5" Ducts
ES54 G2-01	Drainage systems
ES53 C10-02	Manhole Racking Details

DRAFTER: DC

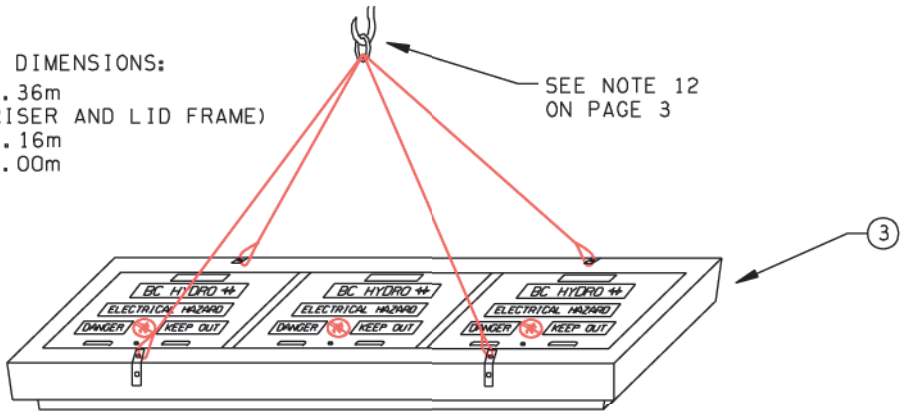
DESIGNER	RECOMMENDED	APPROVED
M. KELVIN	L. STEVANOVIC	F. DENNERT

ORIGINAL ISSUE DATE: MARCH 1980

PRECAST MANHOLE THROUGH TYPE INSTALLATION DETAILS

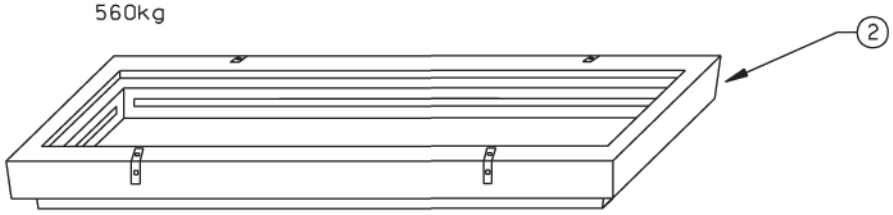
BCHydro DISTRIBUTION STANDARDS | PAGE 4 OF 4 | ES54 C1-01.04 | R. 5

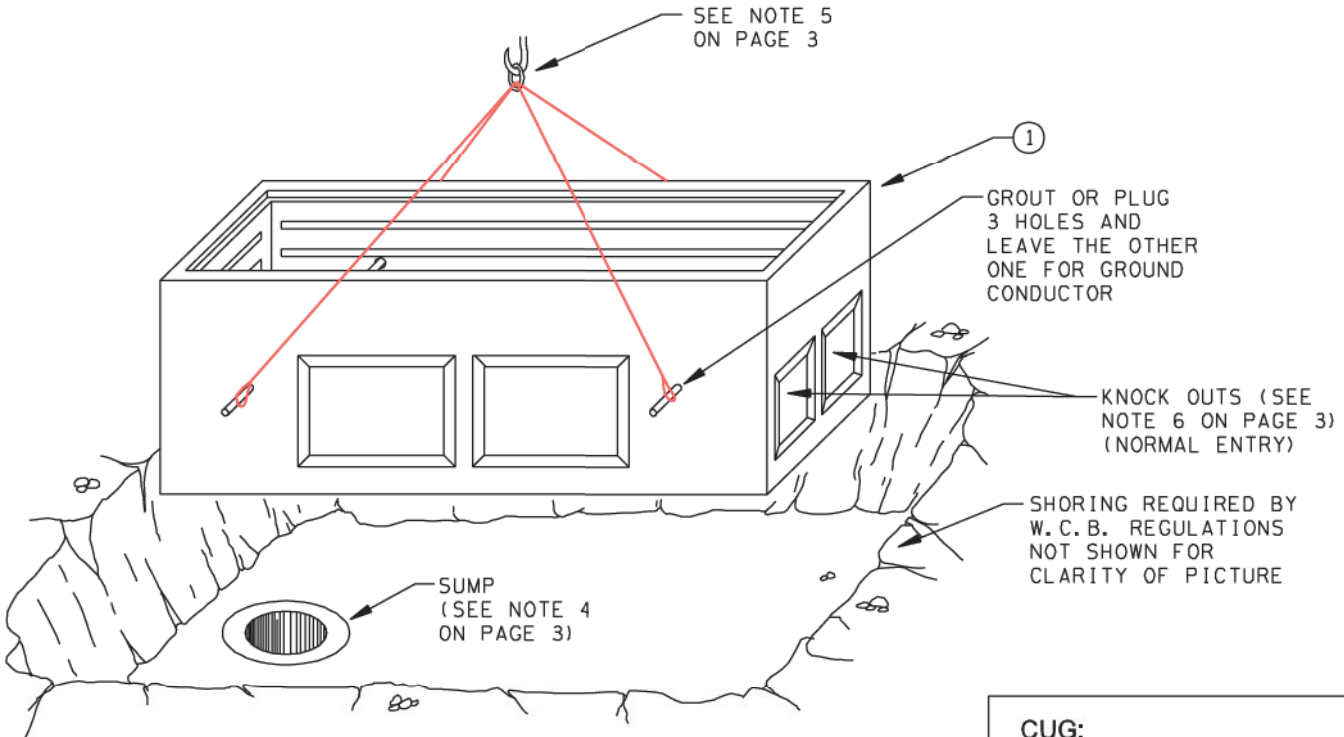
APPROX. BOX DIMENSIONS:
HEIGHT: 1.36m
(INCL. RISER AND LID FRAME)
WIDTH: 1.16m
LENGTH: 3.00m



APPROX. BOX WEIGHTS:

832 BOX	1950kg,
832 RISER	290kg,
832 COLLAR & LID	560kg





SITE PREPARATION FOR
BOX, RISER, AND LID
INSTALLATION

CUG:

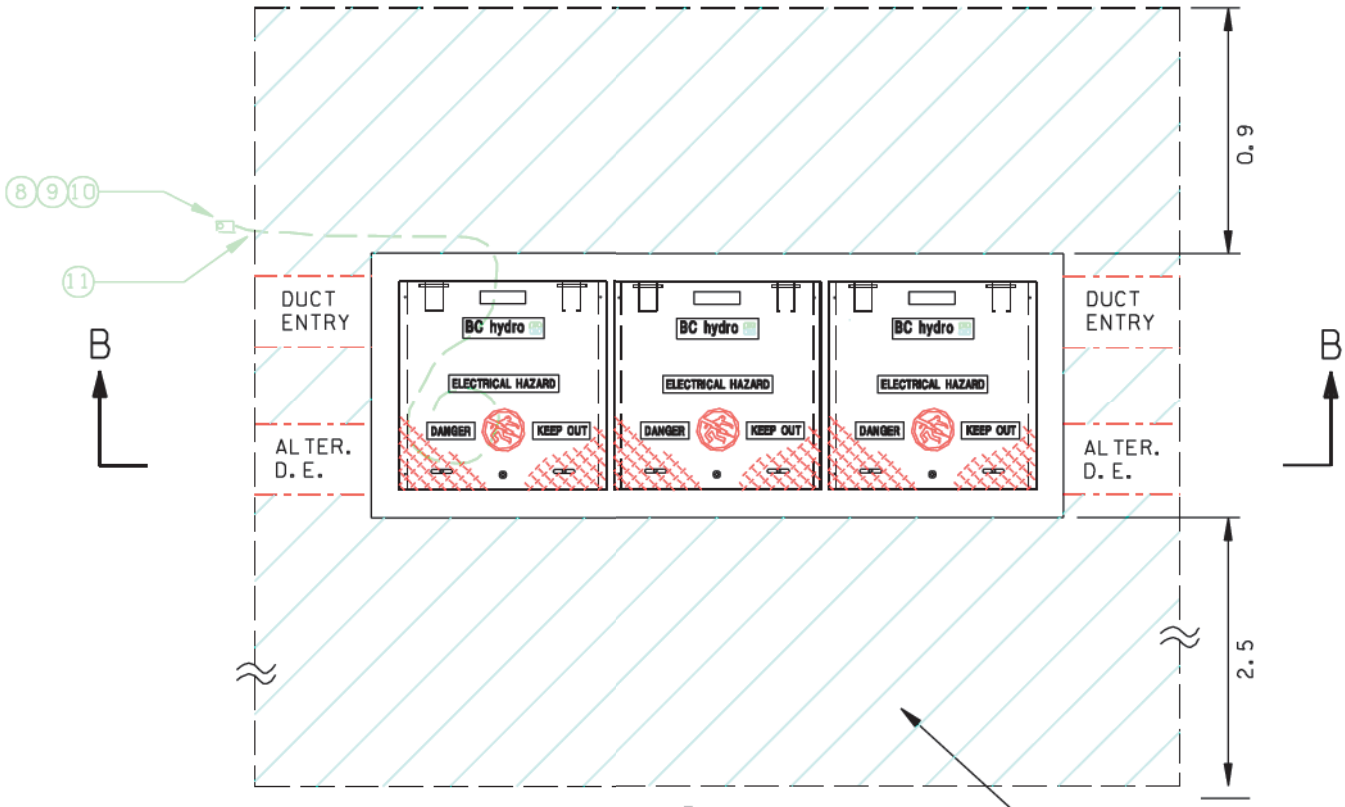
JB3Ø

DRAFTER	DESIGNER	APPROVED
JW	M. FISCHER	F. KAEMPFFER

ORIGINAL ISSUE DATE: NOVEMBER 1979

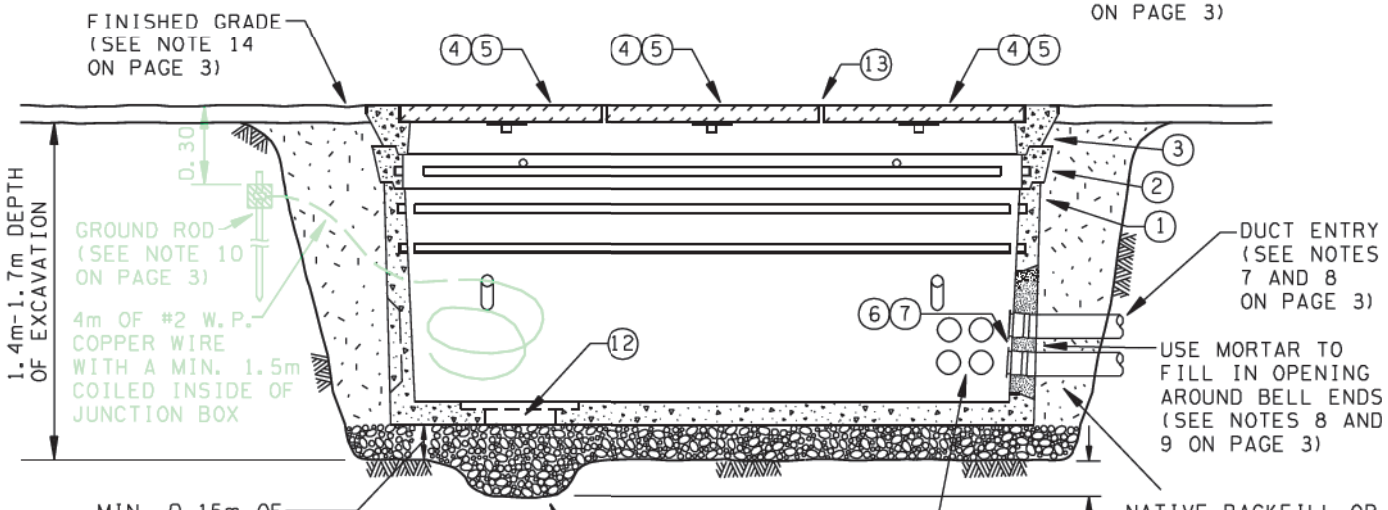
THREE Ø JUNCTION BOX 832 PRECAST CONCRETE INSTALLATION DETAILS

REVISED | R5-REDRAWN '98-12-08 MF



PLAN
COVER INSTALLATION

UNOBSTRUCTED AREA (4.5m X 3.6m) (SEE NOTE 15 ON PAGE 3)



SECTION B-B

LIGHTWEIGHT LID FOR SIDEWALKS AND BOULEVARDS

DRAFTER	DESIGNER	APPROVED	THREE Ø JUNCTION BOX 832 PRECAST CONCRETE INSTALLATION DETAILS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: NOVEMBER 1979			

REVISED

NOTES:

1. Level base such that tip of lid is flush to finished grade on all sides.
2. Allow minimum of 0.15m of drain gravel base under junction box.
3. Compaction density requirements are:
   (A) 85% of standard proctor density in boulevard areas.
   (B) 95% of standard proctor density in traffic areas.
4. Install sump and drain pipe as shown on ES54 G3-01 if required by BC Hydro designer.
5. Hoist the junction box with a suitable crane and lower it onto the base. Seal the space between the installed sump and the sump opening of the junction box with mortar.
6. Break out the knock-outs as required and install the ducts as shown.
7. Maintain 0.9m minimum cover over ducts.
8. Duct entry shall be in accordance with ES54 H1-06 and H2-01. Max. of 2 ducts in height are allowed.
9. BC Hydro designer shall specify the number and size of bell ends and plugs.
10. For grounding details see drawing ES54 R2-01.
11. BC Hydro designer is to specify orientation of the lids to allow for proper operating position for line crews.
12. Install riser and lid with crane as shown.
13. Backfill the excavation and compact the backfill material as required in the project specification.
14. Restore the surface at finished grade as required in the project specifications.
15. The dimensions of the unobstructed area are minimum clearances. Any vegetation on the perimeter of the unobstructed area must be of the type that can be trimmed annually to maintain clearances. The unobstructed area shall be at the same plane as the box surface. In order to accomplish this a retaining wall may be required.
16. For structures in the vicinity of ditches and roads. See ES54 U5-02.

BILL OF MATERIAL

Item	Quantity	Description	Stock No.	Supplied By	Install By
1	1	832 Junction Box	400-0990	BCHydro	Contractor
2	1	832 Junction Box Riser	400-0992	BCHydro	Contractor
3	1	832 Lid Collar Assembly	400-0993	BCHydro	Contractor
4	3	Lightweight Lid	400-0499	BCHydro	AE Concrete
5	3	Hardware for Lightweight Lid	412-0042	BCHydro	AE Concrete
6	(See Note 6)	3" Bell End	401-0183	Contractor	Contractor
7	(See Note 6)	3" Plug	401-0197	Contractor	Contractor
8	1	5/8" Ground Rod	420-1173	BCHydro	Contractor
9	1	Ground Connector			
10	as req'd	Mastic			
11	4m	#2 AWG WP Copper Conductor			
12	1	Sump Cover	400-0426	BCHydro	Contractor
13	2	Tamperproof Bar	400-0501	BCHydro	AE Concrete

REFERENCE DRAWINGS

ES54 H2-01/02/03	Standard Cross Sections 3"/4"/5" Ducts	ES53/54 Z2-01	Duct and Accessories
ES54 H1-06	Duct Entrance Details	ES53/54 Z1	Service Boxes
ES54 G3-01	Drainage	ES54 U5-02	Boxes Near Ditches
		ES54 R2-01	Grounding

DRAFTER	DESIGNER	APPROVED
JW/DM	M. FISCHER	F. KAEMPFFER

ORIGINAL ISSUE DATE: DECEMBER 1998

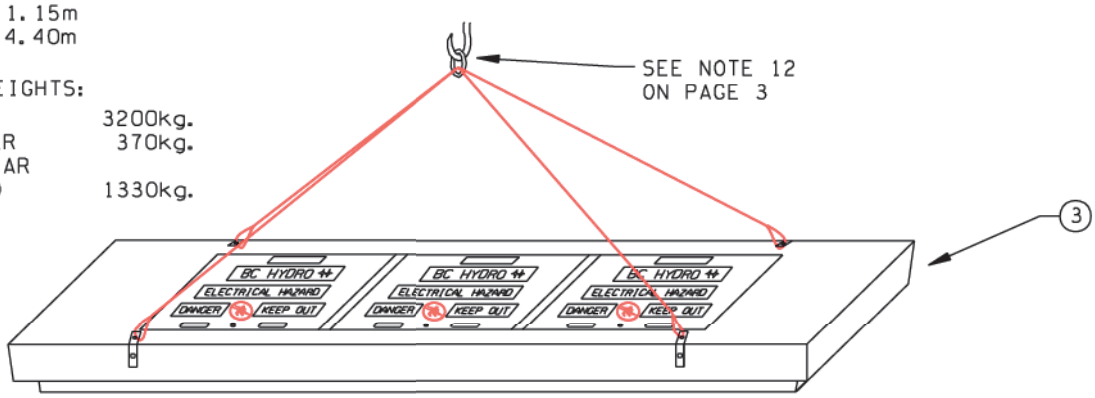
THREE Ø JUNCTION BOX 832 PRECAST CONCRETE INSTALLATION DETAILS

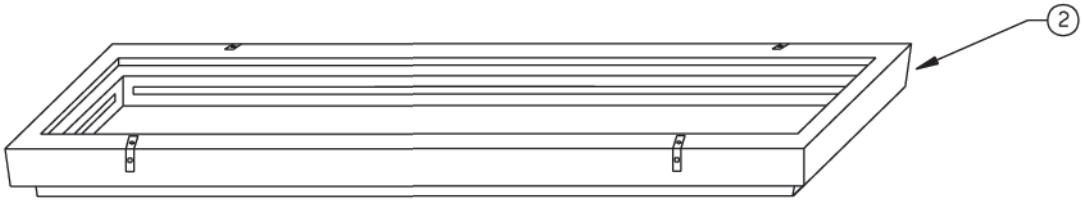
REVISED

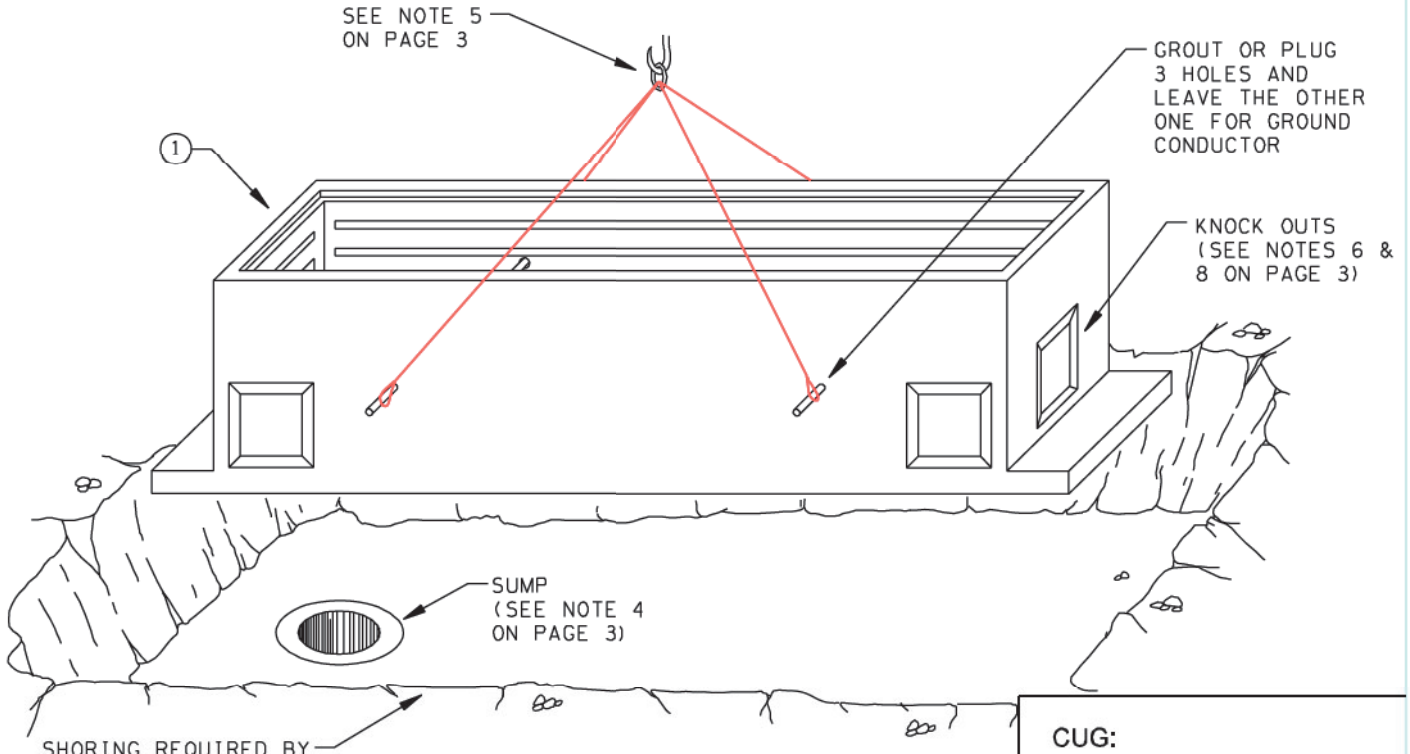
APPROX. BOX DIMENSIONS:
HEIGHT: 1.36m
(INCL. RISER AND LID FRAME)
WIDTH: 1.15m
LENGTH: 4.40m

APPROX. WEIGHTS:

1232 BOX	3200kg.
1232 RISER	370kg.
1232 COLLAR & LID	1330kg.







SITE PREPARATION FOR
BOX, RISER, AND LID
INSTALLATION

CUG:

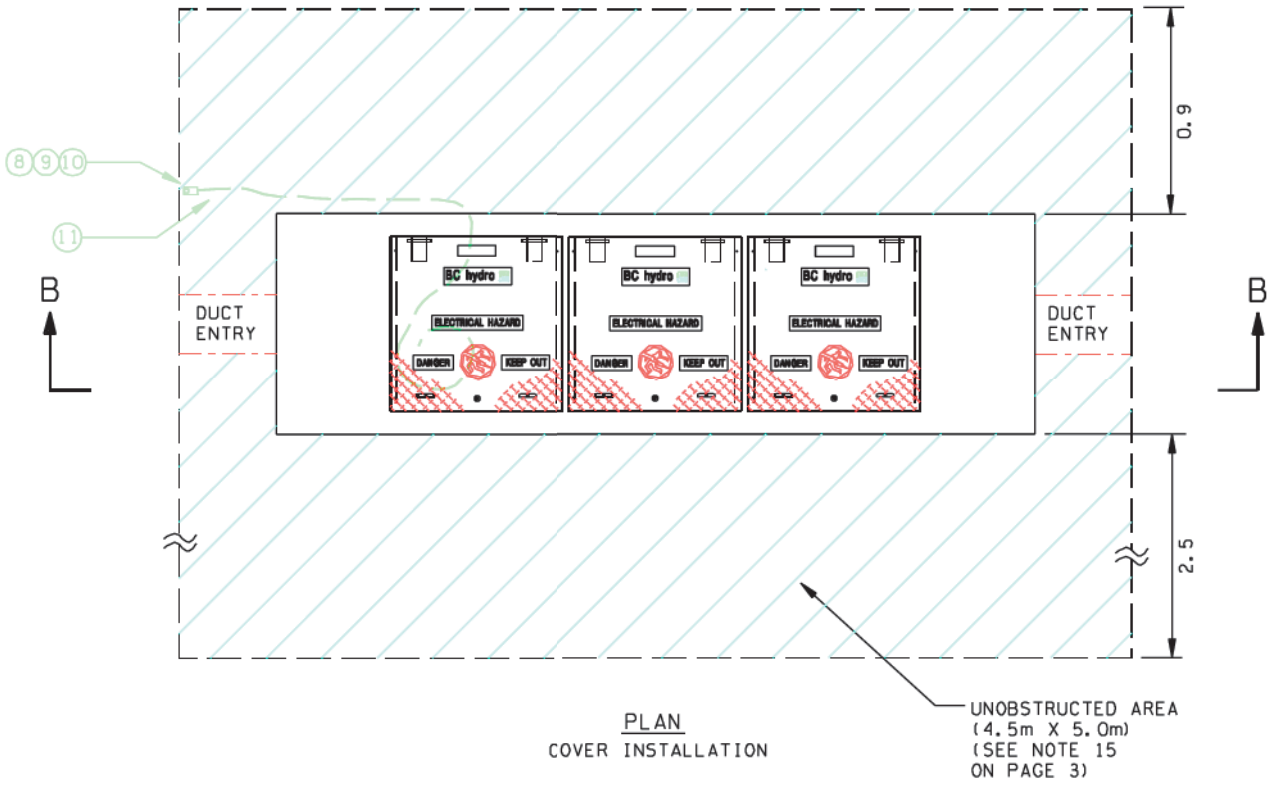
JB3ØF

DRAFTER	DESIGNER	APPROVED
JW	M. FISCHER	F. KAEMPFFER

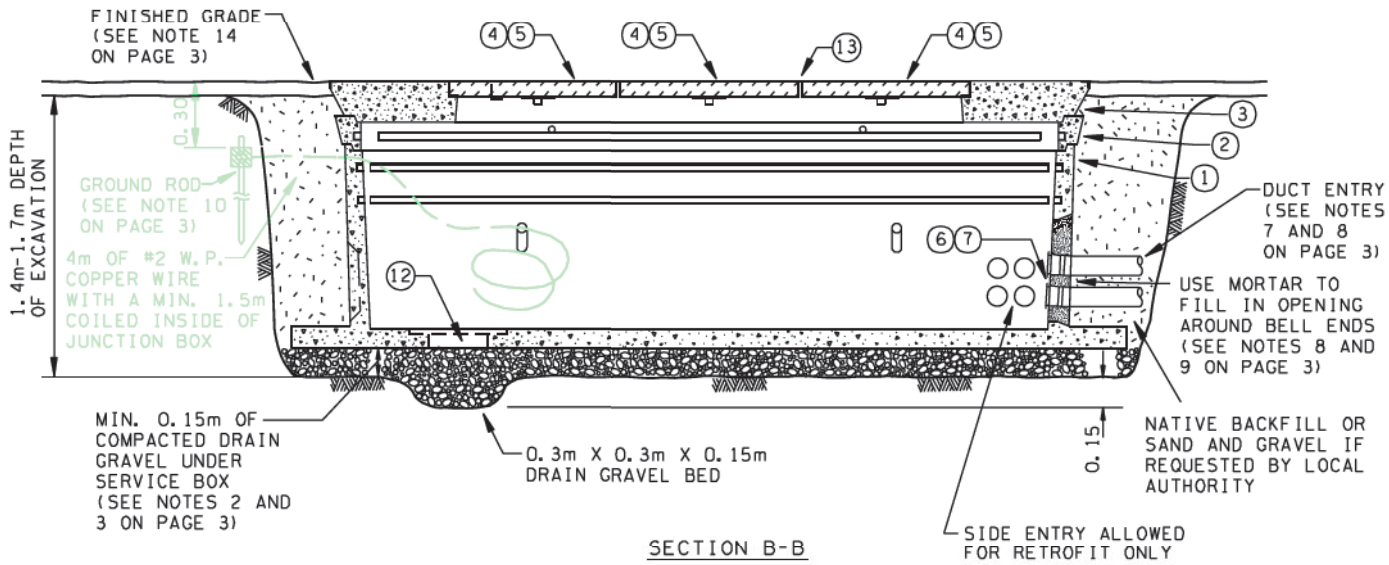
ORIGINAL ISSUE DATE: NOVEMBER 1982

THREE Ø FEEDER JUNCTION BOX 1232 PRECAST CONCRETE INSTALLATION DETAILS

REVISED | R4-REDRAWN '98-12-11 MF



PLAN
COVER INSTALLATION



SECTION B-B

LIGHTWEIGHT LID
FOR SIDEWALKS
AND BOULEVARDS

DRAFTER	DESIGNER	APPROVED	THREE Ø FEEDER JUNCTION BOX 1232 PRECAST CONCRETE INSTALLATION DETAILS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: NOVEMBER 1982			

REVISED

NOTES:

1. Level base such that tip of lid is flush to finished grade on all sides.
2. Allow minimum of 0.15m of drain gravel base under junction box.
3. Compaction density requirements are:
   (A) 85% of standard proctor density in boulevard areas.
   (B) 95% of standard proctor density in traffic areas.
4. Install sump and drain pipe as shown on ES54 G3-01 if required by BC Hydro designer.
5. Hoist the junction box with a suitable crane and lower it onto the base. Seal the space between the installed sump and the sump opening of the junction box with mortar.
6. Break out the knock-outs as required and install the ducts as shown.
7. Maintain 0.9m minimum cover over ducts.
8. Duct entry shall be in accordance with ES54 H1-06 and H2-01. Max. of 4-5" ducts per window are allowed in a 2 x 2 configuration.
9. BC Hydro designer shall specify the number and size of bell ends and plugs.
10. For grounding details see drawing ES54 R2-01.
11. BC Hydro designer is to specify orientation of the lids to allow for proper operating position for line crews.
12. Install riser and lid with crane as shown.
13. Backfill the excavation and compact the backfill material as required in the project specification.
14. Restore the surface at finished grade as required in the project specifications.
15. The dimensions of the unobstructed area are minimum clearances. Any vegetation on the perimeter of the unobstructed area must be of the type that can be trimmed annually to maintain clearances. The unobstructed area shall be at the same plane as the box surface. In order to accomplish this a retaining wall may be required.
16. For structures in the vicinity of ditches and roads. See ES54 U5-02.

BILL OF MATERIAL

Item	Quantity	Description	Stock No.	Supplied By	Install By
1	1	1232 Junction Box	400-0915	BCHydro	Contractor
2	1	1232 Junction Box Riser	400-0984	BCHydro	Contractor
3	1	1232 Lid Collar Assembly	400-0916	BCHydro	Contractor
4	3	Lightweight Lid	400-0499	BCHydro	AE Concrete
5	3	Hardware for Lightweight Lid	412-0042	BCHydro	AE Concrete
6	(See Note 6)	3" Bell End	401-0183	Contractor	Contractor
OR	(See Note 6)	5" Bell End	401-0185	BCHydro	Contractor
7	(See Note 6)	3" Plug	401-0197	Contractor	Contractor
OR	(See Note 6)	5" Plug	401-0199	BCHydro	Contractor
8	1	5/8" Ground Rod	420-1173	BCHydro	Contractor
9	1	Ground Connector			
10	as req'd	Mastic			
11	4m	#2 AWG WP Copper Conductor			
12	1	Sump Cover	400-0426	BCHydro	Contractor
13	2	Tamperproof Bar	400-0501	BCHydro	AE Concrete

REFERENCE DRAWINGS

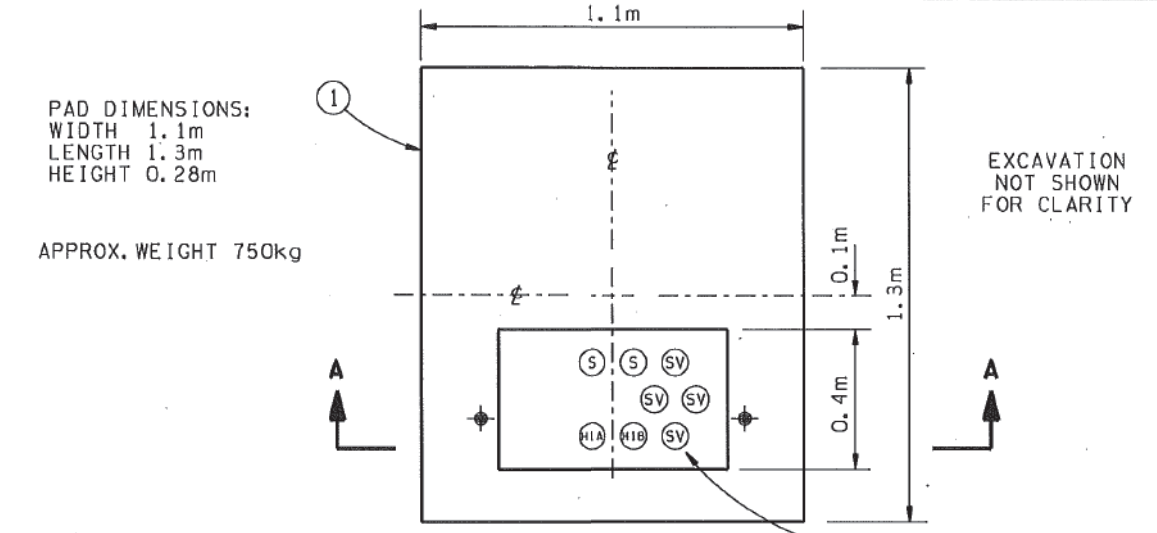
ES54 R2-01	Grounding		ES53/54 Z2-01	Duct and Accessories
ES54 H2-01/02/03	Standard Cross Sections 3"/4"/5" Ducts		ES53/54 Z1	Service Boxes
ES54 H1-06	Duct Entrance Details		ES54 U5-02	Boxes Near Ditches
ES54 G3-01	Drainage		ES54 R2-01	Grounding

DRAFTER	DESIGNER	APPROVED
JW	M. FISCHER	F. KAEMPFFER

ORIGINAL ISSUE DATE: NOVEMBER 1982

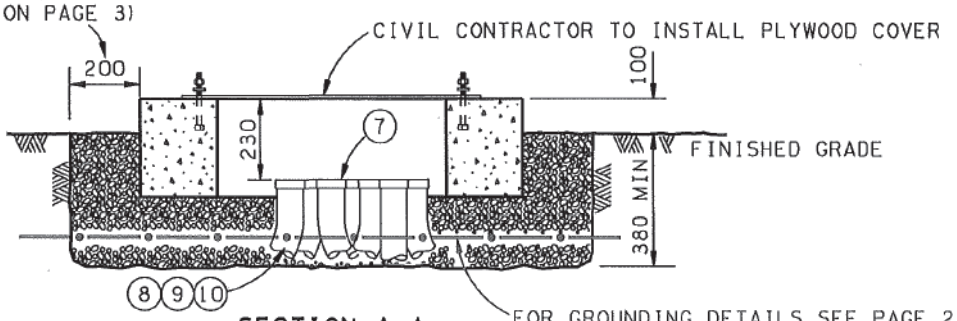
THREE Ø FEEDER JUNCTION BOX 1232 PRECAST CONCRETE INSTALLATION DETAILS

REVISED



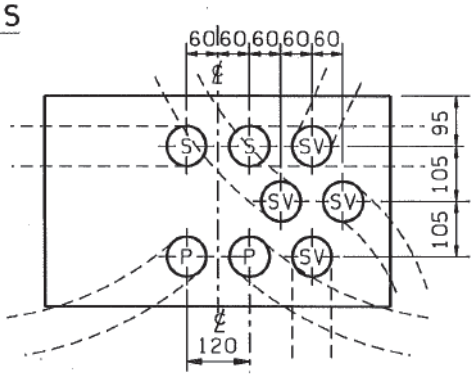
PLAN VIEW

40mm MINUS CRUSHED DRAIN ROCK
200mm MIN. AROUND PAD.
(SEE NOTES 1, 2, & 6 ON PAGE 3)



SECTION A-A

INSTALLATION DETAILS



DUCT PLACEMENT
DETAIL A

NOTES:

1. For general trenching details see ES54 H1-01.
2. For installation in unstable ground see ES54 U4.
3. There shall be no vegetation or pavement over the drain rock around the pad.
4. Drain rock is required for oil containment.
5. Designer is to specify orientation of pad to allow for safe operating position for crews.
6. The maximum number of service and/or secondary duct bends from the flat pad are six.

CUG: PCR"X"
"X" Number of bends
0, 2 to 8

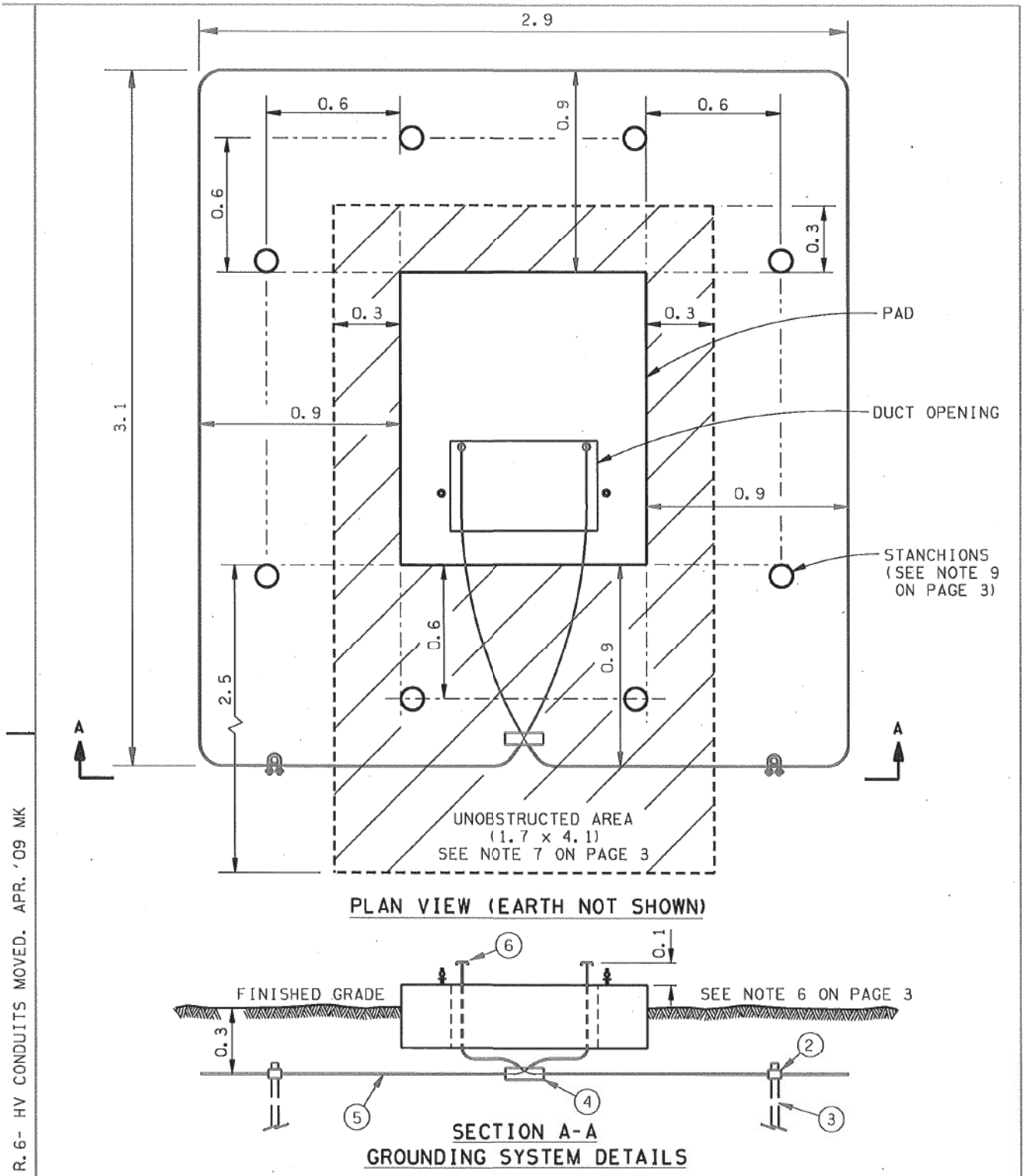
R. 4-REDONE JAN. '05 FK | R. 5- NO. OF DUCTS APR. '07 MK | R. 6- HV CONDUITS MOVED. APR. '09 MK

DRAFTER: DC

DESIGNER	RECOMMENDED	APPROVED
M. [illegible]	F. KAEMPFFER	F. DENNERT

ORIGINAL ISSUE DATE: MARCH 1999

SINGLE PHASE LOW PROFILE TRANSFORMER PRECAST CONCRETE PAD INSTALLATION DETAILS



PLAN VIEW (EARTH NOT SHOWN)

SECTION A-A

GROUNDING SYSTEM DETAILS

R. 6- HV CONDUITS MOVED. APR. '09 MK

DRAFTER: DM

DESIGNER	RECOMMENDED	APPROVED	SINGLE PHASE LOW PROFILE TRANSFORMER PRECAST CONCRETE PAD INSTALLATION DETAILS
M. KELVIN	F. KAEMPFFER	F. DENNERT	
ORIGINAL ISSUE DATE: MARCH 1999			

BC hydro DISTRIBUTION STANDARDS	PAGE 2 OF 3	ES54 F1-02.02	R. 6

NOTES:

1. Allow minimum of 0.20m of 40mm minus crushed drain rock base under and around LPT pad.
2. Compaction density requirements are 85% of standard proctor density in boulevard areas.
3. Maintain 0.9m minimum cover over ducts.
4. Duct entry shall be in accordance with ES54 H1-03.
5. For grounding details see drawings ES54 R1-01.
6. Restore surface at finished grade as required in the project specifications.
7. The dimensions of the unobstructed area are minimum clearances. Any vegetation on the perimeter of the unobstructed area must be of the type that can be trimmed annually to maintain clearances.
8. For structures in the vicinity of ditches and roads see ES54 U5-01.
9. Maximum number of stanchions shown. Designer to determine the number of stanchions required. Stanchions to be installed in accordance with ES54 U2-02. Stanchions are required when transformer is within a distance of less than 1.5m from a rectangular curb.

BILL OF MATERIAL

Item	Quantity	Description	Stock No.	Supplied By	Installed By
1	1	Pad - Precast Concrete	400-0852	BC Hydro	Contractor
2	2	Connector, Grounding			
3	2	Ground Rod, 5/8" x 8'			
4	1	Rope Clamp, 3/4"	420-1171	BC Hydro	Contractor
5	14m	Counterpoise			
6	2	Cap, Heat Shrink			
7	As Req'd	3" Duct Cap	401-0173	Contractor	Contractor
8	As Req'd	3" 90° Bend	400-4021	Contractor	Contractor
9	As Req'd	PVC Cement	141-1044	Contractor	Contractor
10	As Req'd	Twine #8 Polypropylene	106-0420	Contractor	Contractor

Reference Drawings

ES54 U5-01	Pads in vicinity of ditches & roads
ES54 U4	Installation in unstable ground
ES54 U2-02	Stanchions
ES54 R1-01	Grounding
ES54 H1-03	Duct Entry
ES53/54 Z2-01	Duct and Accessories
ES53/54 Z1-05	Transformer Pads

R. 6- HV CONDUITS MOVED. APR. '09 MK

DRAFTER: DM

DESIGNER	RECOMMENDED	APPROVED
M. KELVIN	F. KAEMPFFER	F. DENNERT

ORIGINAL ISSUE DATE: MARCH 1999

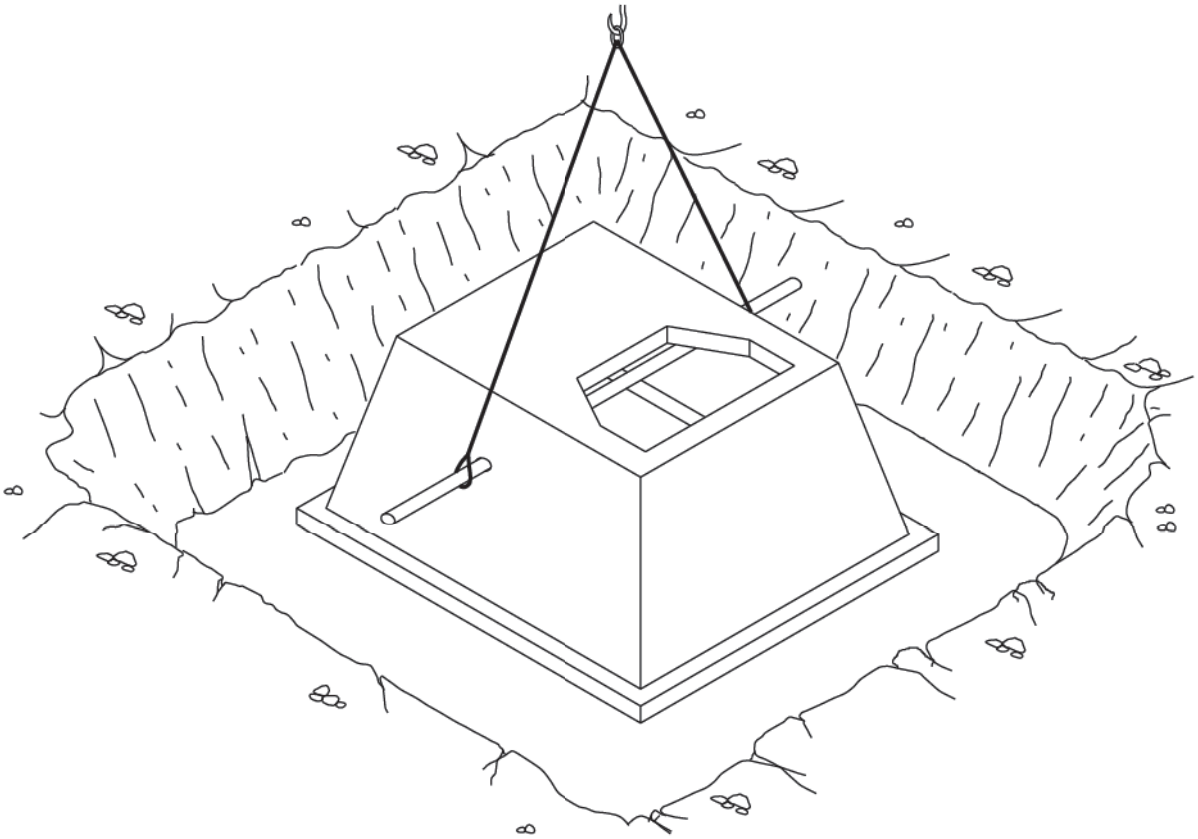
SINGLE PHASE LOW PROFILE TRANSFORMER PRECAST CONCRETE PAD INSTALLATION DETAILS

BC hydro DISTRIBUTION STANDARDS | PAGE 3 OF 3 | ES54 F1-02.03 | R. 6

APPROXIMATE PAD DIMENSIONS:

HEIGHT: 0.76m
WIDTH: 1.52m
LENGTH: 1.76m

APPROXIMATE WEIGHT OF PAD: 1050kg



PYRAMID
PAD INSTALLATION

NOTE:

THE MAXIMUM NUMBER OF SERVICE AND/OR SECONDARY DUCT BENDS FROM THE PYRAMID PAD ARE EIGHT.

CUG: PYR "X"

"X" NUMBER OF 90° BENDS
0; 2; 3; 4; 5; 6; 7; 8; 9; 10

DRAFTER	DESIGNER	APPROVED
JW	M. FISCHER	F. KAEMPFFER

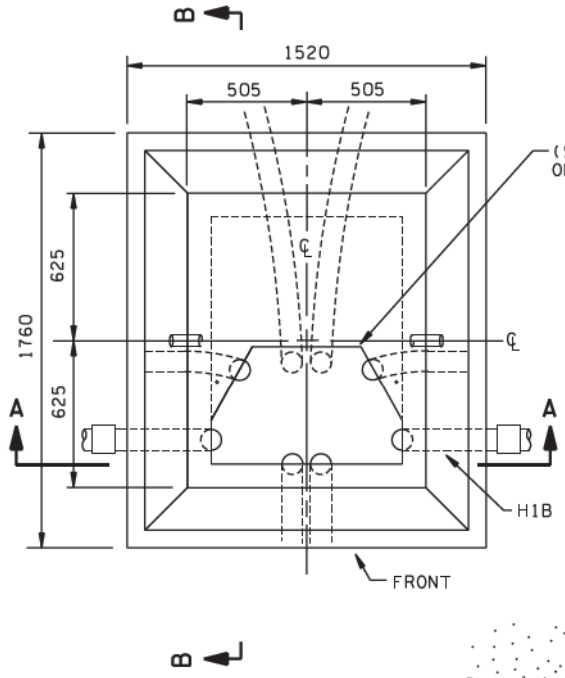
ORIGINAL ISSUE DATE: MARCH 1999

SINGLE PHASE
LOW PROFILE TRANSFORMER
PRECAST CONCRETE PYRAMID PAD
INSTALLATION DETAILS

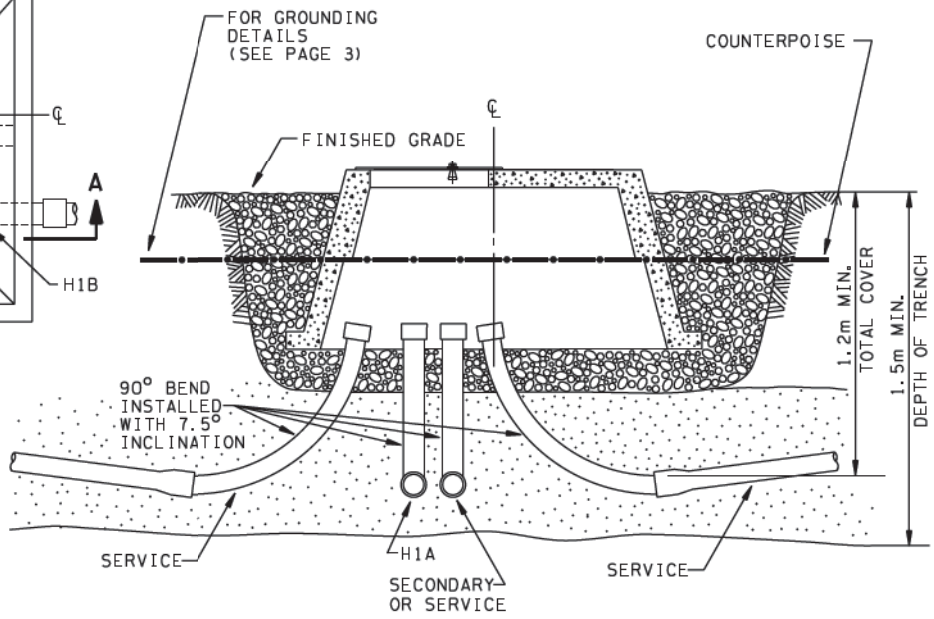
BC hydro DISTRIBUTION STANDARDS | PAGE 1 OF 4 | ES54 F1-03.01 | R. 5

REVISED R.4- REDRAWN & REVISED. MARCH '99 MF | R.5- NO. OF DUCTS APR. '07 MK

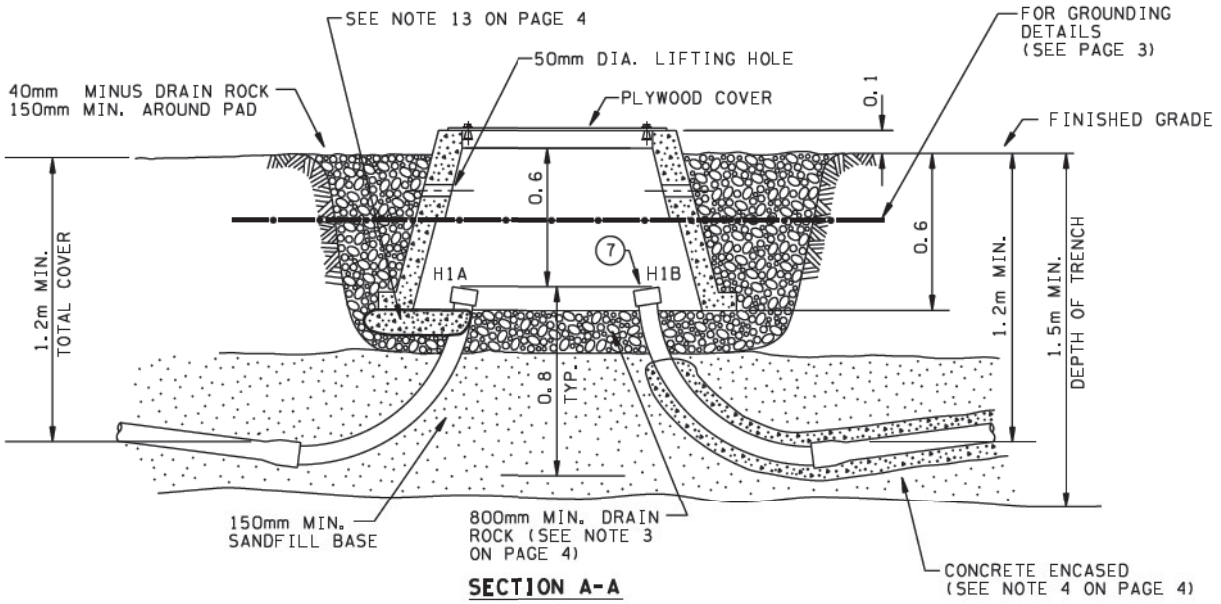
NOTE: MAXIMUM 8 LOW VOLTAGE DUCTS PERMITTED.



PLAN VIEW
8-3" DUCTS



SECTION B-B

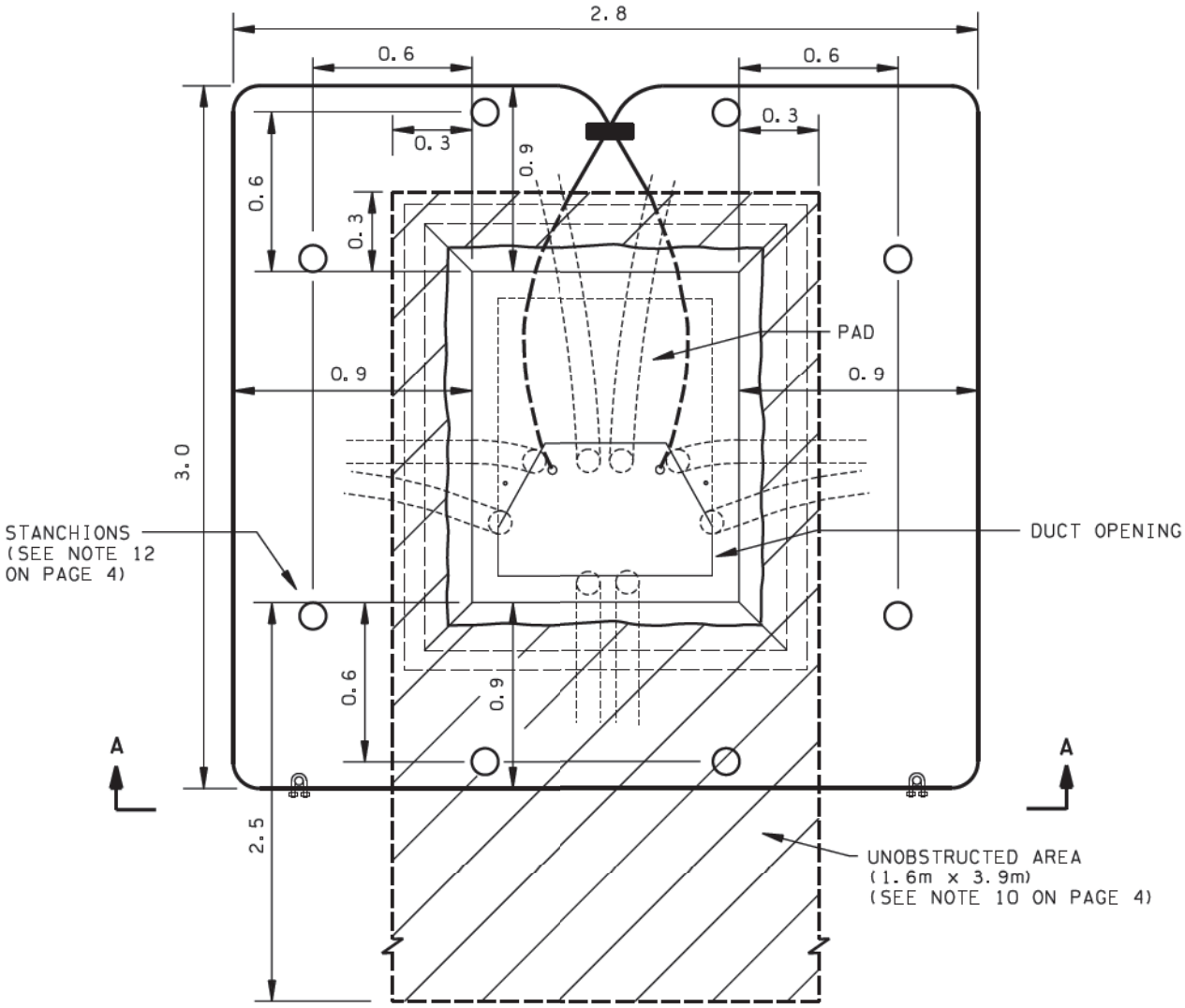


SECTION A-A

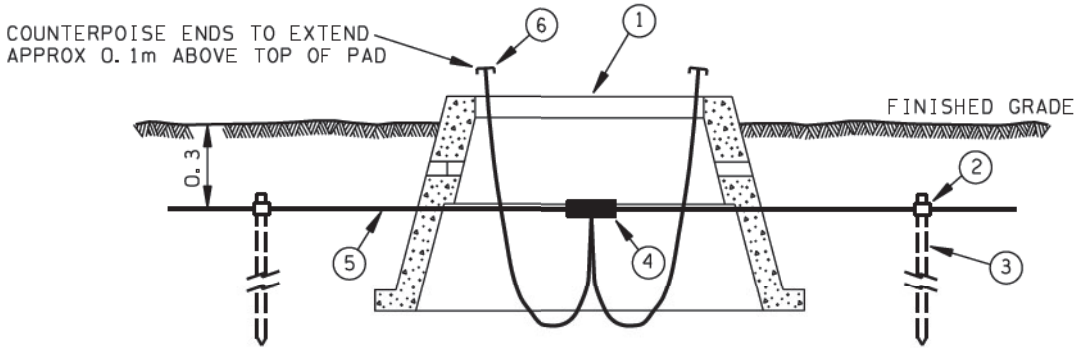
INSTALLATION DETAILS

DRAFTER	DESIGNER	APPROVED	SINGLE PHASE LOW PROFILE TRANSFORMER PRECAST CONCRETE PYRAMID PAD INSTALLATION DETAILS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: DECEMBER 1979			

REVISED



ORIENTATION, STANCHION LOCATIONS, AND CLEARANCES



SECTION A-A

FOR MORE DETAILS ON GROUNDING
SEE SECTION R.

GROUNDING SYSTEM DETAILS

DRAFTER	DESIGNER	APPROVED	SINGLE PHASE LOW PROFILE TRANSFORMER PRECAST CONCRETE PYRAMID PAD INSTALLATION DETAILS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: DECEMBER 1979			

REVISED

NOTES:

1. Level base such that minimum protrusion of pad is 0.1m above finish grade. Pad surface must be level.
2. Allow minimum of 0.15m of 40mm minus crushed drain rock base under pyramid pad.
3. Compaction density requirements are 85% of standard proctor density.
4. Concrete encasement of ducts, whenever specified by BC Hydro designer, is to extend within the perimeter of pyramid pad.
5. Maintain 1.2m minimum cover over ducts near the pad.
6. Duct entry shall be in accordance with ES54 H1-06.
7. For installation in unstable ground see ES54 U4.
8. There shall be no vegetation or pavement over the drain rock around the pad.
9. For grounding details see drawing ES54 R1.
10. The dimensions of the unobstructed area are minimum clearances. Any vegetation on the perimeter of the unobstructed area must be of the type that can be trimmed annually to maintain clearances.
11. For structures in the vicinity of ditches and roads see ES54 U5-01.
12. Maximum number of stanchions shown. Designer to determine the number of stanchions required. Stanchions to be installed in accordance with ES54 U2-02.
13. For cable pulls exceeding a pulling tension of 0.8kN see ES53 U1-04. Replace the gravel under the pad at the duct entrance with a 25kg bag of ready mix concrete.

BILL OF MATERIAL

Item	Quantity	Description	Stock No.	Supplied By	Install By
1	1	Precast Pyramide Pad	400-0851	BCHydro	Contractor
2	2	Connector, Grounding			
3	2	Ground Rod, 5/8" x 8'			
4	1	Rope Clamp, 3/4"	420-1170	BCHydro	Contractor
5	18m	Counterpoise			
6	2	Cap, Heat Shrink			
7	as req'd	3" Duct Cap	401-0173	Contractor	Contractor
8	as req'd	3" 90° Bend	400-4021	Contractor	Contractor
9	as req'd	Pvc Cement	141-1044	Contractor	Contractor
10	as req'd	Twine for #8 Polypropylene	106-0420	Contractor	Contractor

Reference Drawings

ES54 U5-01	Pads Located by Road or Ditch		
ES54 U4	Installation in Unstable Ground		
ES54 U2-02	Stanchions		
ES54 R1	Grounding	ES53 U1-04	Cable Pulling Parameters
ES54 H1-06	Duct Entry Details	ES53/54 Z2-01	Duct and Accessories

DRAFTER	DESIGNER	APPROVED
JW	M. FISCHER	F. KAEMPFFER

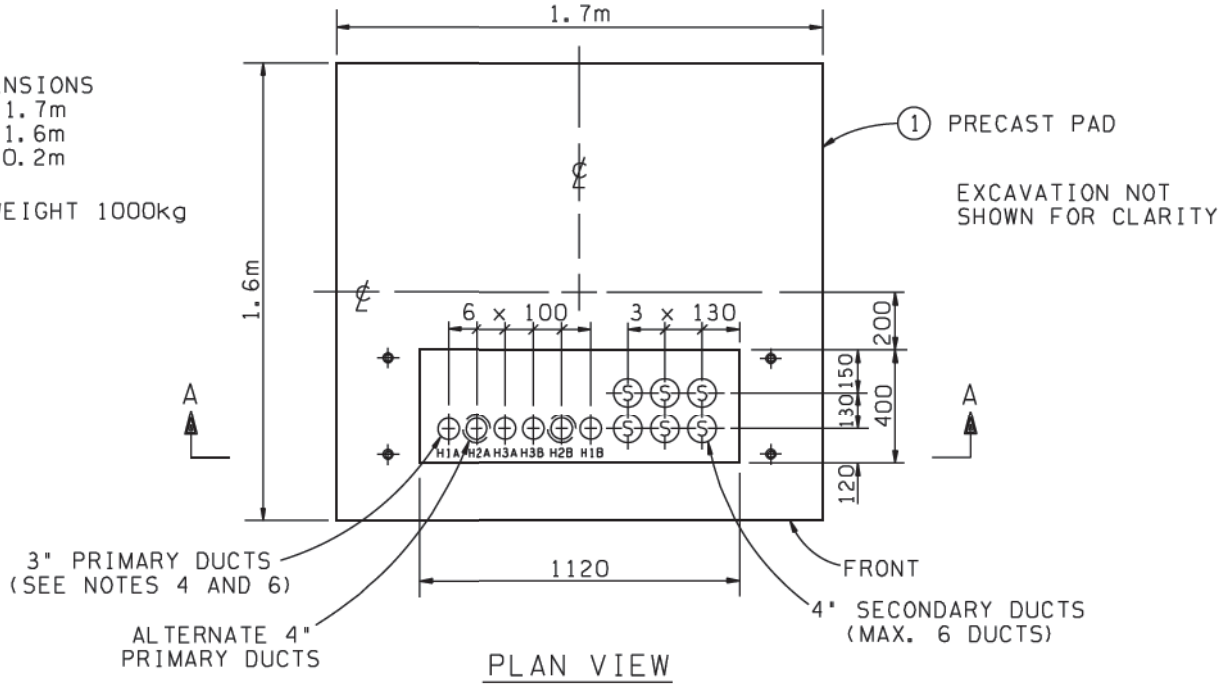
ORIGINAL ISSUE DATE: DECEMBER 1979

SINGLE PHASE LOW PROFILE TRANSFORMER PRECAST CONCRETE PYRAMID PAD INSTALLATION DETAILS

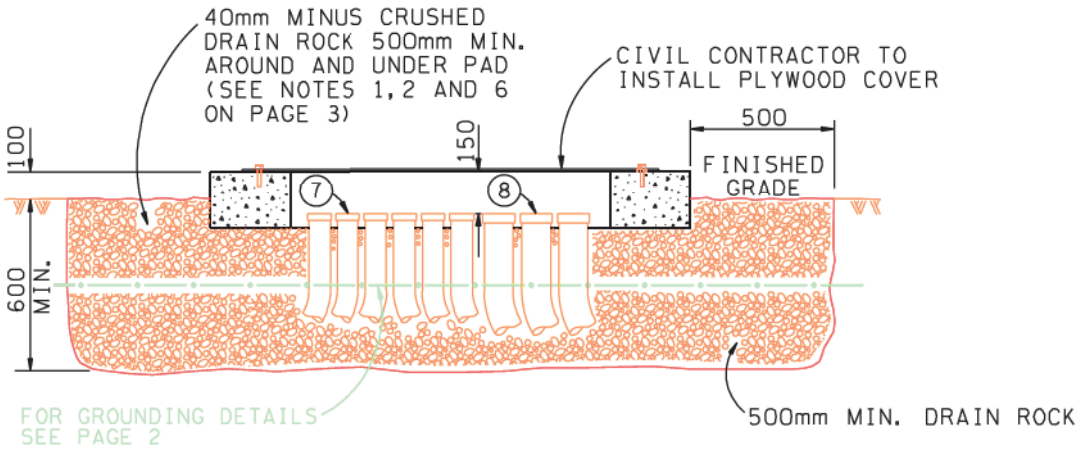
REVISED

PAD DIMENSIONS
WIDTH: 1.7m
LENGTH: 1.6m
HEIGHT: 0.2m

APPROX. WEIGHT 1000kg



PLAN VIEW



SECTION A-A

INSTALLATION DETAILS

NOTES:

1. For general trenching details see ES54 H1-01/02.
2. For installation in unstable ground see ES54 U4.
3. There shall be no vegetation or pavement over the drain rock around the pad.
4. For radial connected units, use only ducts located in H1A, H3A and H2B postion.
5. Designer is to specify orientation of pad to allow for safe operating position for crews.
6. H1A, H2A, H3A are incoming source side ducts.
   H1B, H2B, H3B are outgoing load side ducts.

CUG: PD "X" "Y"
"X" - Number of 3" bends
"Y" - Number of 4" bends

DRAFTER	DESIGNER	APPROVED	3 PHASE PMDF TRANSFORMER, 500kVA AND SMALLER PRECAST CONCRETE PAD INSTALLATION DETAILS
DM	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: JUNE 1999			

REVISED | R4-REDONE JAN. '05 FK

SECTION H - DUCT

REVISED | R. 2- REDONE. OCT. '02 MF

DRAFTER	DESIGNER	APPROVED
DM	M. FISCHER	F. KAEMPFFER

ORIGINAL ISSUE DATE: JUNE 1980

1. TYPES OF DUCT

Three types are presently being used:

i)	URD/UD	Rigid PVC, grey - CSA DB2 as per CSA C22.2 No. 211.1 M1984 - supplied by contractor / developer (for 3" and 4" non-feeder work) except for iii) below
ii)	FEEDER	Rigid PVC, grey - as per BC Hydro Spec.400-4000 - supplied by BC Hydro (for 4" and 5" feeder work)
iii)	BRIDGE CROSSINGS OR HIGH PULLING TENSION URD/UD BENDS (see clause 9)	Rigid fibreglass reinforced epoxy (FRE)

For standard ducts and duct accessories see ES53/54 Z2-01.

2. HANDLING OF DUCT AND FITTINGS

PVC duct and fittings are very ruggedly constructed and will not break or crack under normal use. However, when exposed to sunlight for long periods of time (generally greater than one year), they will become brittle. Therefore, any ducts or fittings stored outside must be used on a "first-in--first-out" basis. As well, when the outside temperature falls below -10°C, precautions should be taken to prevent sharp blows such as dropping the duct to the ground or backfilling immediately above the duct with large rocks.

3. PRIMARY DUCT IN PROXIMITY TO SECONDARY, TELUS AND SERVICE BOXES

Preferably, primary duct should be routed alongside secondary service boxes. If necessary, they may pass under secondary service boxes, provided a 50mm minimum vertical separation is maintained. Never, under any circumstances, take the primary duct through a secondary service box.

For separation between BC Hydro ducts and other utilities see ES54 H4.

4. DUCT FILL (PULL-THROUGH CAPABILITY)

Drawing ES53 U1-01 in the Underground Electrical Distribution Standards Book lists appropriate duct sizes for all standard cables. Do not over-size the duct – it may result in jamming.

5. WARNING TAPE (STOCK NO. 394-0680)

Warning tape is to be installed at a height of 0.4m - 0.6m above the duct. The following 3 points should be kept in mind:

a) A backhoe operator may hit the duct before seeing the tape, if he is reaching over the duct and pulling the shovel up and towards him.

b) The tape should not be used as a substitute for keeping up-to-date records of all duct locations.

c) The tape should not preclude the practice of contractors inquiring at the local BC Hydro office about possible duct installations in the vicinity of their excavation work.

6. CONCRETE ENCASEMENT OF DUCTS

Feeder cables are generally to be concrete encased in a formed duct bank. (See ES54 H2). Exceptions to the above, such as wild poured concrete or direct buried ducts installed with spacers may be allowed when so approved by the BC Hydro Engineer in charge of the project.

Concrete encasement is generally not required for UD, URD as well as for service ducts.

In installations where pulling tensions are higher than 5.5 kN and side-wall bearing pressure on midsection bends exceed 3.3 kN/m, concrete encasement is requried at the duct bend and the duct sections adjacent to the bend.

Concrete encasement or other means of locating the duct bend is also required at LPT pyramid pads and some other pads whenever the evaluated cable pulling tension exceeds a value of 0.8kN. (see ES54 F1-03)

Terminal pole pilasters must always be concrete encased.

Concrete encasement may also be required for crossings of roads, railroad tracks or other utilities.

Ducts installed on steep slopes or ditches, where standard back-fill might disappear due to erosion, will require reinforced concrete encasement.

Concrete encasement may also be required as specified by municipal authorities.

Special attention must be given to the transition between concrete encased and direct buried sections of duct to prevent excessive shear stress due to soil settlement force differentials (see ES54 U4 section).

7. PULLING TWINE

The contractor shall install pulling twine (BC Hydro Stock No. 106-0420) into all new ducts and secure it on both ends of the duct runs.

Pulling twine is generally blown through the ducts with a compressor and a parachute.

Care must be taken that the twine does not cut into the duct wall due to excessive friction.

Also, pulling twine must not be blown into energized BC Hydro equipment, such as transformer pads, junction kiosks and boxes, unless the procedure is approved and monitored by the BC Hydro Civil Inspector.

8. PVC DUCT CEMENT

All PVC ducts and duct accessories shall be glued with PVC adhesive (BC Hydro Stock No. 141-1044).

Make sure the engaging ends to be glued are wiped clean prior to applying the adhesive.

Once the adhesive has been brushed on to both surfaces the two parts must be pushed together firmly until the parts are fully engaged.

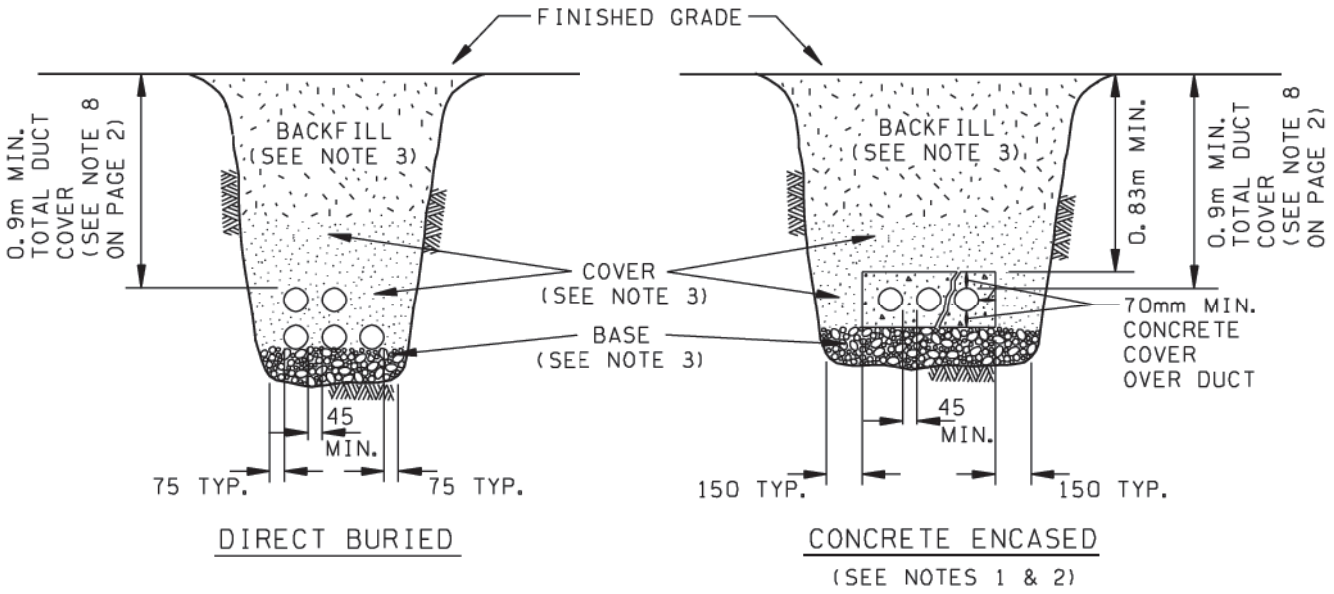
Make sure to use enough adhesive, but not so much such that it oozes out at the ends, and possibly affects the cable pull.

9. PVC TO FIBERGLASS REINFORCED EPOXY (FRE) DUCT

Whenever connections between PVC and FRE ducts or bends have to be made, special couplings need to be applied. For 75mm (3") ducts use "e-loc coupling EL-350" and for 100mm (4") use "e-loc coupling EL-400".

Also, whenever the pulling tension on the cable exceeds the value of 3.5kN/m, replace the PVC bend with a fibreglass reinforced epoxy bend c/w a PVC coupling.

The BC Hydro stock numbers for the bends are: 96001123 for 75mm (3") duct
96001124 for 100mm (4") duct.



NOTES:

1. Concrete encasement is not required unless specified by B.C. Hydro designer. For details on concrete see BC Hydro class of work specification no. 1321 or no. 1323 as applicable.
2. For standard concrete encasement cross sections see drawings ES54 H2-01 and H2-02.
3. For details on backfill cover and base materials, compaction and surface restorations see BC Hydro class of work specification.
4. All ducts in UD installations must be proven by drawing an approved mandrell through them at the time of construction. See BC Hydro class of work specification.
5. A pulling twine (stock no. 106-0420) shall be left in all ducts in both URD and UD installations. For URD the twine may be laid in during or blown in after installation. For UD installations the twine is generally pulled in behind the mandrell.
6. For installations located on a grade where water flow may carry away the base material, drain rock should be substituted for the sand. For details of the drain rock see BC Hydro class of work specification.
7. Any field cut PVC duct or bends must have their inside edges bevelled smooth by sanding to prevent damage to cables during pulling operations.

REVISED | R2-REDRAWN & REV. DEC. '00 MF

DRAFTER	DESIGNER	APPROVED	DUCT GENERAL TRENCHING DETAILS URD AND UD INSTALLATIONS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: JUNE 1980			

8. The total cover for secondary and service duct, when primary duct is not present, may be reduced to a minimum 0.6m for direct buried and 0.53m for concrete encased duct, except at locations subject to road traffic.
9. In areas where there is not a natural slope in the run, raise the midpoint of the run 0.15m above the two extremities for draining water from the duct.
10. For reinforcing details of concrete encased duct, see drawing ES54 H2-04.
11. For dimensions at window openings in underground chambers, see drawings ES54 H1-06 and ES54 H3-01.
12. For clearance to other utilities, see drawing ES54 H4-01.
13. For repair of pvc duct, see drawing ES54 H5-01.

REFERENCE DOCUMENTS

BC Hydro class of work specification no. 1323 "Builder installation of underground structures for electric distribution system".

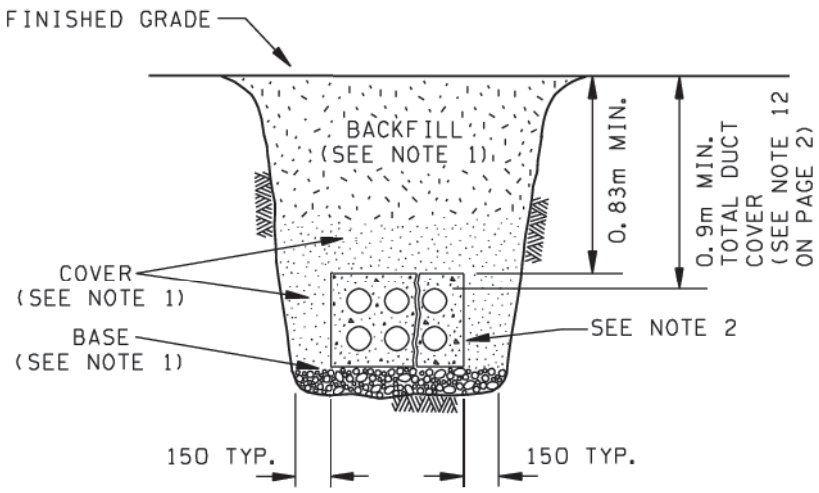
BC Hydro class of work specification no. 1321 "Construction of underground electric distribution structures and installation of electrical equipment by BC Hydro contractor".

REFERENCE DRAWINGS

ES54 H5-01	Pvc Duct Repair
ES54 H4-01	Clearances to other Utilities
ES54 H3-01	Window Opening in u/g Chambers
ES54 H2-04	Reinforcing
ES54 H2-03	125mm (5") Duct
ES54 H2-02	100mm (4") Duct
ES54 H2-01	75mm (3") Duct
ES54 H1-06	Duct Entry Details

DRAFTER	DESIGNER	APPROVED	DUCT GENERAL TRENCHING DETAILS URD AND UD INSTALLATIONS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: JUNE 1980			

REVISED



TYPICAL TRENCH CROSS SECTION

NOTES:

1. For details on backfill cover, base materials, compaction and surface restorations, see BC Hydro class of work specification.
2. For details on concrete and duct installation see BC Hydro class of work specification no. 1322. For standard cross sections, see drawings ES54 H2-02 and ES54 H2-03.
3. All ducts must be proven by drawing an approved mandrell through them at the time of construction. See BC Hydro class of work specification.
4. A pulling twine (stock no. 106-0420) shall be left in all ducts. The twine is generally pulled in behind the mandrell.
5. A disposable measuring duct tape such as Greenlee catalogue no. 435 shall be pulled into one of the ducts along with the twine. The actual length of the duct twine shall then be recorded on the civil drawing, so that the correct cable length may be pulled in. The tape may be left in the duct until cable is pulled in.
6. Any field cut pvc duct or bends must have their inside edges bevelled smooth by sanding to prevent damage to cables during pulling operations.

REVISED | R2-REDRAWN & REV. JAN. '01 MF

DRAFTER	DESIGNER	APPROVED	DUCT GENERAL TRENCHING DETAILS FEEDER DUCT BANK INSTALLATIONS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: JUNE 1980			

7. In terrain without a natural slope in the run, raise the midpoint of the run 0.15m above the two extremities for draining water from the duct.
8. For reinforcing details, see drawing ES54 H2-04.
9. For additions to existing duct banks, see drawing ES54 H2-05.
10. For dimensions at window openings in underground chambers, see drawings ES54 H1-06 and ES54 H3-01.
11. For clearance to other utilities, see drawing ES54 H4-01.
12. For future size addition to the duct bank (see drawing ES54 H2-05), allow for a minimum 0.83m total cover over the top of the duct bank addition.

REFERENCE DOCUMENTS

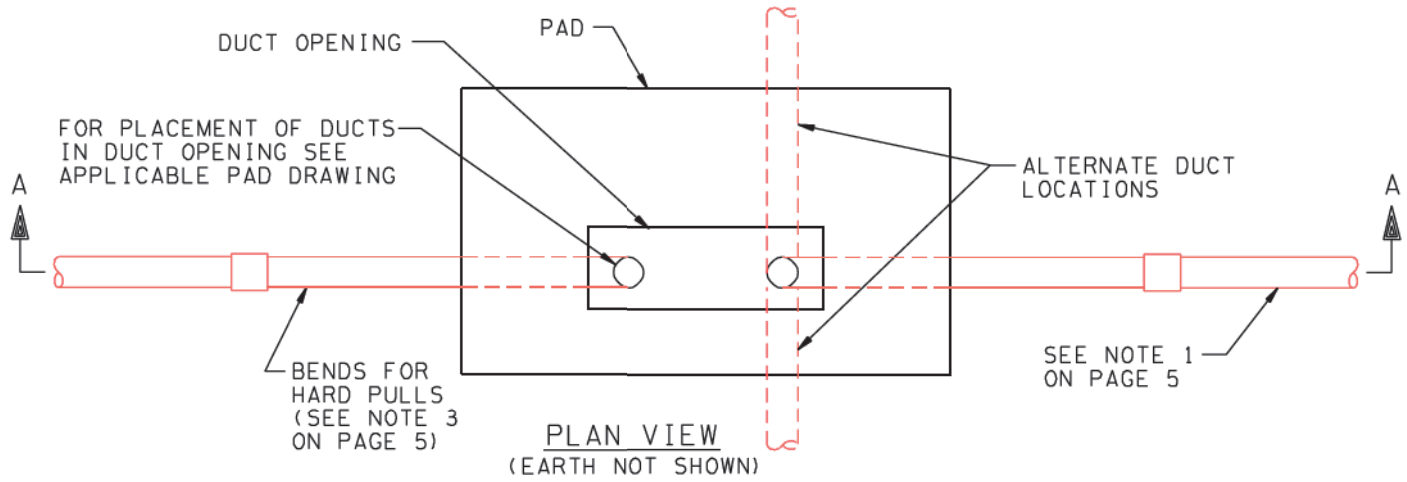
BC Hydro class of work specification no. 1322 "Construction of underground electric distribution structures by BC Hydro contractor".

REFERENCE DRAWINGS

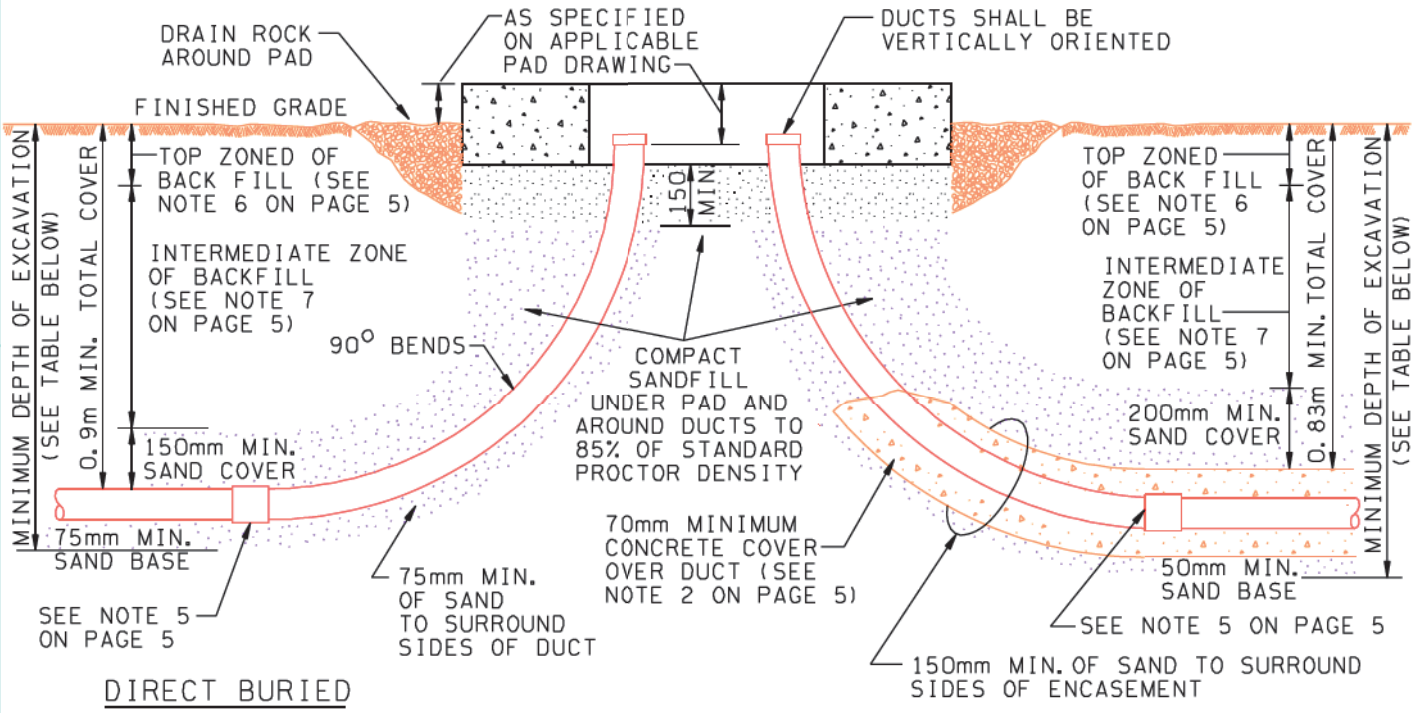
ES54 H4-01	Clearances to other Utilities
ES54 H3-01	Window Opening in u/g Chambers
ES54 H2-05	Additions to Existing Duct Banks
ES54 H2-04	Reinforcing
ES54 H2-03	125mm (5") Duct
ES54 H2-02	100mm (4") Duct
ES54 H1-06	Duct Entry Details

REVISED | R2-REDRAWN & REV. JAN. '01 MF

DRAFTER	DESIGNER	APPROVED	DUCT GENERAL TRENCHING DETAILS FEEDER DUCT BANK INSTALLATIONS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: JUNE 1980			



PLAN VIEW
(EARTH NOT SHOWN)



DIRECT BURIED

SECTION A-A

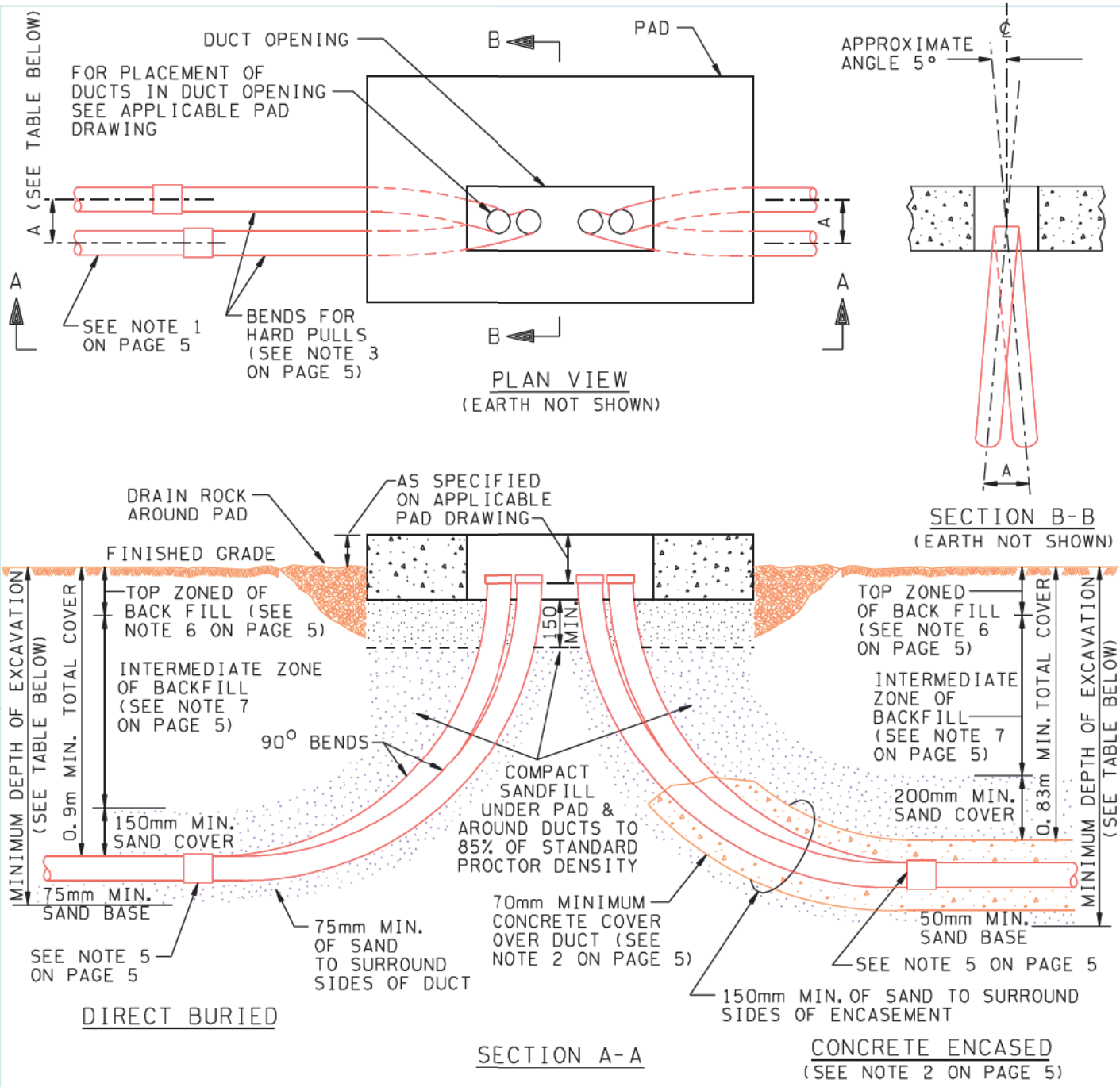
CONCRETE ENCASED

Duct Size	Minimum Depth of Trench		Minimum Width of Trench	
	Direct Buried	Concrete Encased	Direct Buried	Concrete Encased
3"	1.1m	1.1m	0.3m	0.6m
4"	1.1m	1.2m	0.3m	0.6m
5"	1.2m	1.2m	0.3m	0.6m

SINGLE DUCT OR 2 NON-ADJACENT DUCTS

REVISED | R.1- REDRAWN. DIMENSIONS & NOTES REV. JAN. '01 MF

DRAFTER	DESIGNER	APPROVED	DUCT ENTRIES AT PADS INSTALLATION AND TRENCHING DETAILS
DM	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: NOVEMBER 1981			

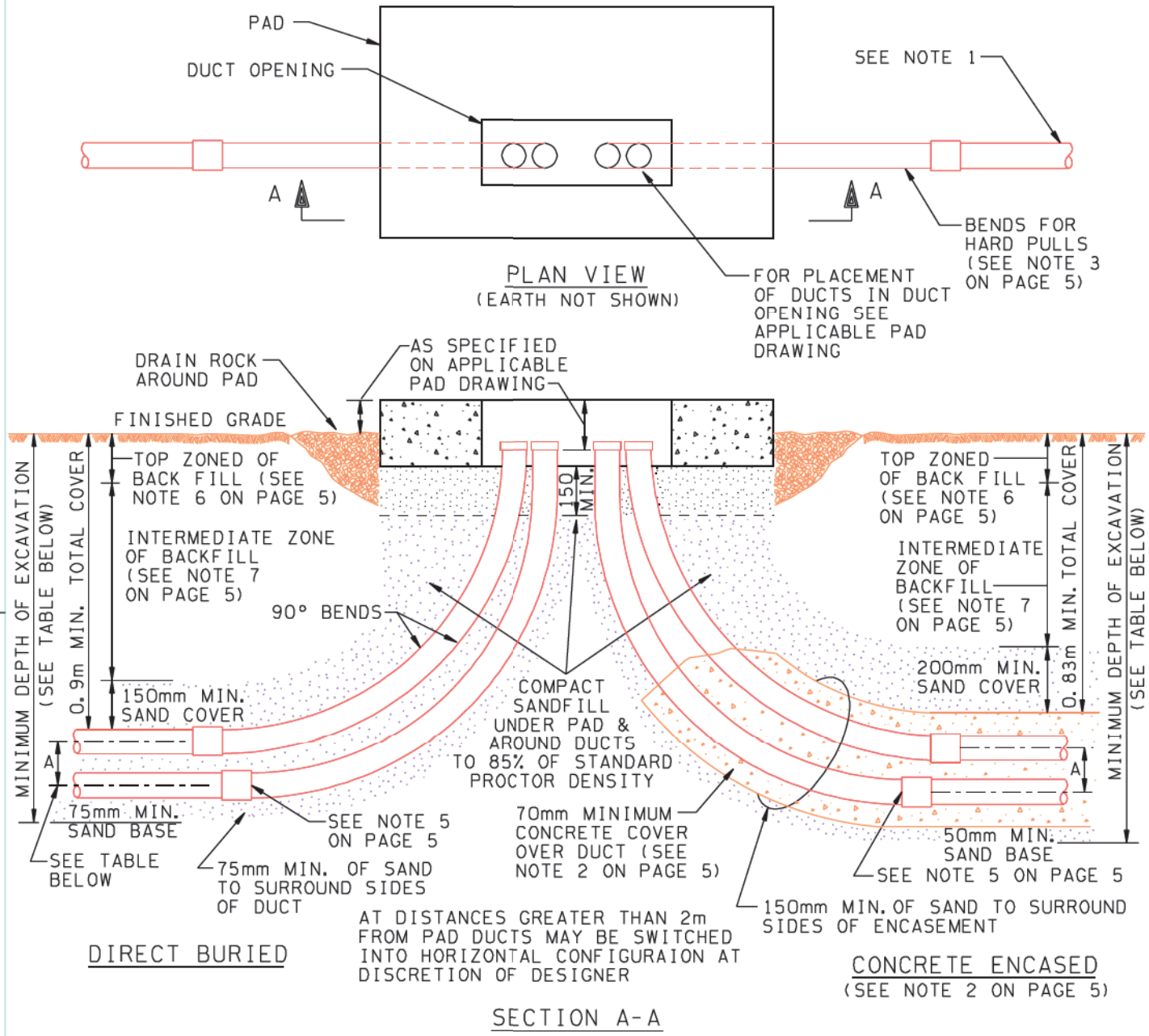


Duct Size	A	Minimum Depth of Trench		Minimum Width of Trench	
		Direct Buried	Concrete Encased	Direct Buried	Concrete Encased
3"	135	1.1m	1.1m	0.4m	0.6m
4"	160	1.1m	1.2m	0.4m	0.7m
5"	185	1.2m	1.2m	0.5m	0.8m

2 OR 2 x 2 ADJACENT DUCTS-HORIZONTAL CONFIGURATION

REVISED | R. 1- REDRAWN. DIMENSIONS & NOTES REV. JAN. '01 MF

DRAFTER	DESIGNER	APPROVED	DUCT ENTRIES AT PADS INSTALLATION AND TRENCHING DETAILS
DM	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: NOVEMBER 1981			



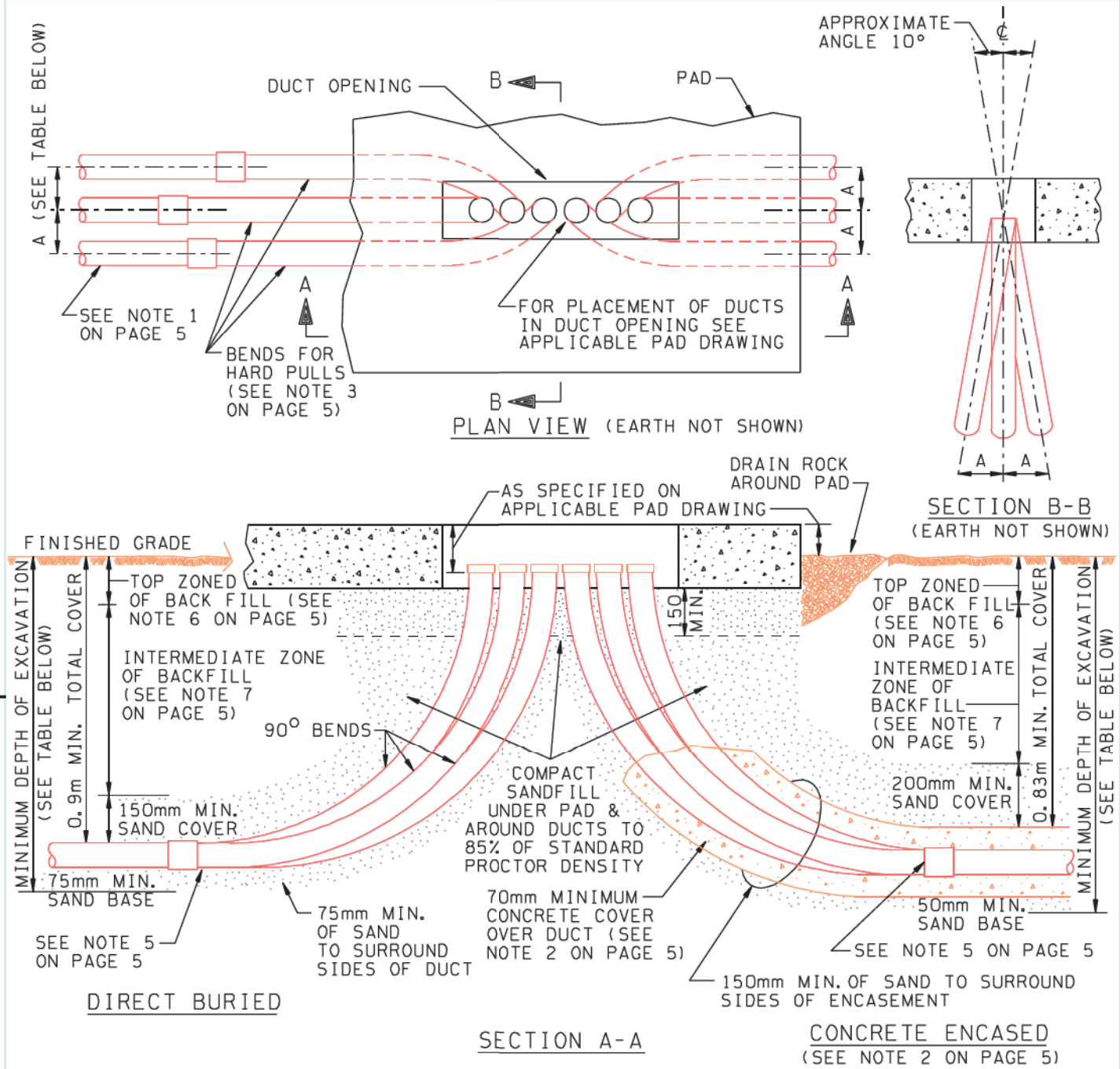
SECTION A-A

Duct Size	A	Minimum Depth of Trench		Minimum Width of Trench	
		Direct Buried	Concrete Encased	Direct Buried	Concrete Encased
3"	135	1.2m	1.3m	0.3m	0.6m
4"	160	1.3m	1.3m	0.3m	0.6m
5"	185	1.3m	1.4m	0.3m	0.6m

2 OR 2 x 2 ADJACENT DUCTS-VERTICAL CONFIGURATION

DRAFTER	DESIGNER	APPROVED	DUCT ENTRIES AT PADS INSTALLATION AND TRENCHING DETAILS
DM	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: NOVEMBER 1981			

REVISED | R. 1- REDRAWN. DIMENSIONS & NOTES REV. JAN. '01 MF



Duct Size	A	Minimum Depth of Trench		Minimum Width of Trench	
		Direct Buried	Concrete Encased	Direct Buried	Concrete Encased
3"	135	1.1m	1.1m	0.5m	0.8m
4"	160	1.1m	1.2m	0.6m	0.9m
5"	185	1.2m	1.2m	0.6m	0.9m

3 OR 2 x 3 ADJACENT DUCTS-HORIZONTAL CONFIGURATION

DRAFTER	DESIGNER	APPROVED	DUCT ENTRIES AT PADS INSTALLATION AND TRENCHING DETAILS
DM	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: NOVEMBER 1981			

REVISED | R. 1- REDRAWN. DIMENSIONS & NOTES REV. JAN. '01 MF

NOTES:

1. This drawing is only applicable for installation and trenching details within 2m of the pad. For trenching details at a distance greater than 2m from the pad see drawing ES54 H1-01.
2. For pulls exceeding a tension of 5.5kN, concrete encasement of ducts is required one meter outside the pad and extending within the perimeter of the pad.
3. In installations where duct sidewall bearing pressure exceeds 3.3kN/m, the following installation procedures should be followed:

(a) Install FRE bend c/w a PVC adaptor coupling.

(b) Concrete encase the PVC duct bend such that cutting of the soft PVC duct bend will not affect the cable pull.

4. Any field-cut duct or bends must have their inside edges bevelled smooth by sanding (to prevent damage to cables during pulling operations).
5. Extra caution must be taken at the coupling between the duct and the bend to ensure that the solvent cement completely covers the contact surfaces.
6. Top Zone of Backfill

Location	Minimum depth (mm)	Fill Material	Compaction (% of Standard Proctor Density)
Parking Lots	50	20mm minus combined crushed aggregate	95
Undeveloped Boulevards	50	20mm minus combined crushed aggregate	85
Developed Grass Boulevards	150	black loam	85

7. Intermediate Zone of Backfill

(a) All locations shall be backfilled with one or more of the following materials:

i) Sand free of organic materials, clay or silt. Not more than 5% by weight to pass a No. 200 mesh sieve.

ii) Combined crushed aggregate fill free of organic materials, clay or silt. The fraction retained on a 10mm sieve shall be at least 50% crushed. Not more than 5% by weight to pass a No. 200 mesh sieve.

iii) Select Backfill shall be essentially granular and shall not contain stones larger than 75mm. Not more than 5% by weight to pass a No. 200 mesh sieve.

iv) Native backfill containing rocks less than 75mm in diameter.

v) Crushed recycled glass (green or brown).

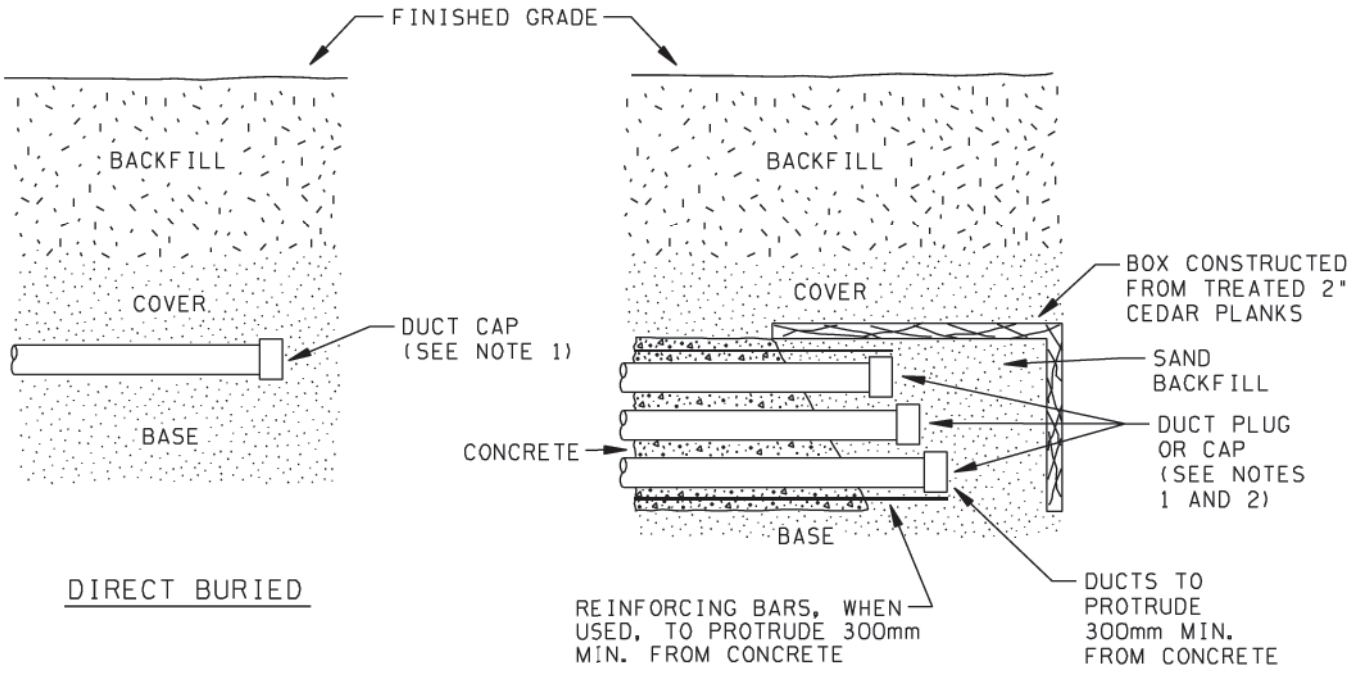
(b)

Compaction	Location	Compaction (% of Standard Proctor Density)
	Parking Lots	95, depth less than 1.2m
	Undeveloped Boulevards	85, depth 1.2m or more
	Developed Grass Boulevards	85

ES54 H1-01 URD & UD DUCTS-TRENCHING DETAILS
REFERENCE DRAWINGS

DRAFTER	DESIGNER	APPROVED	DUCT ENTRIES AT PADS INSTALLATION AND TRENCHING DETAILS
DM	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: APRIL 1982			

REVISED | R. 1- REDONE. NOTES ADDED. JAN. '01 MF



NOTES:

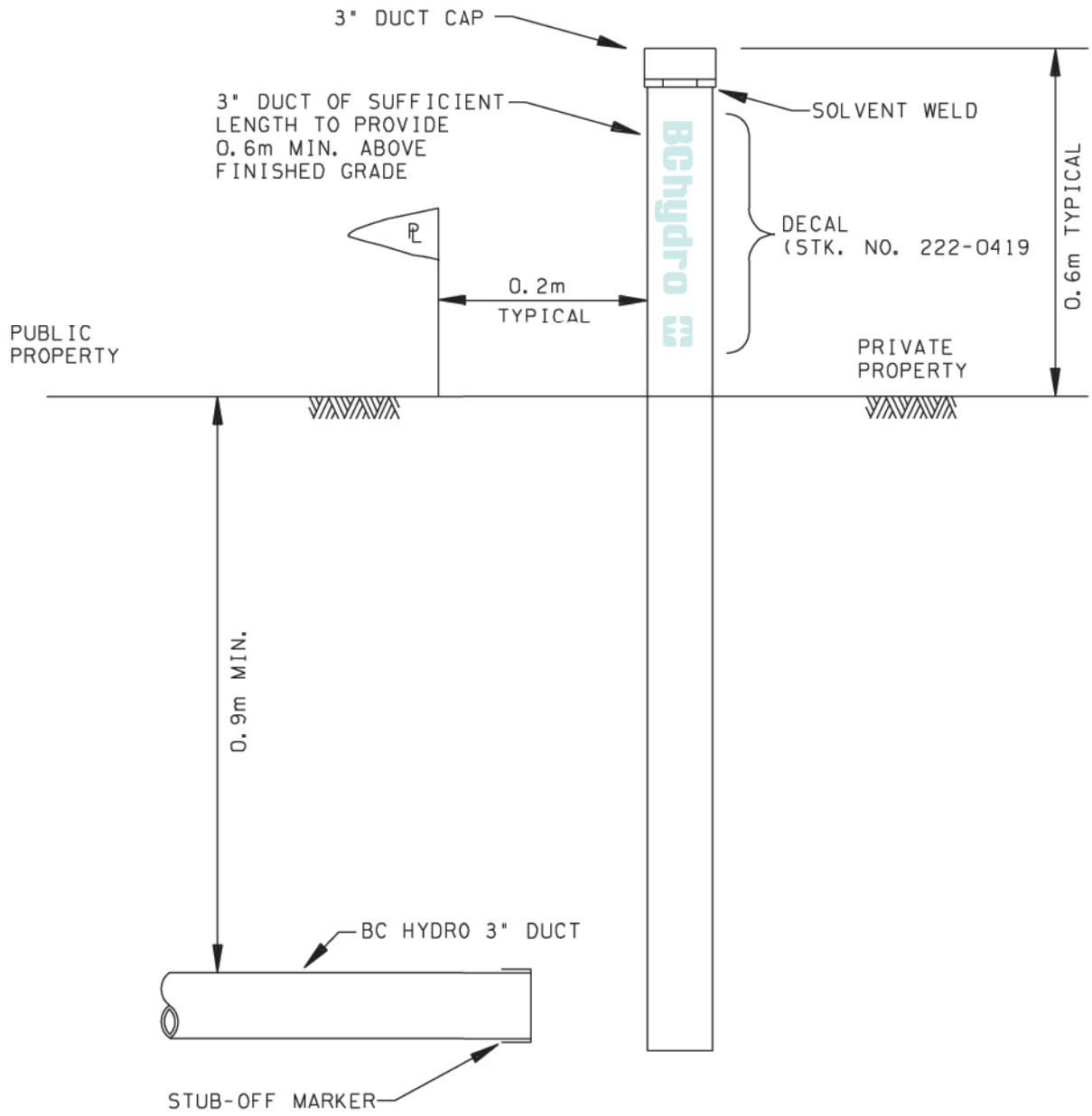
1. See drawing ES53/54 Z2-01 for stock numbers of plugs and caps.
2. Plugs can be used on both FRE and PVC duct. Caps only on PVC duct. Caps are recommended for PVC when stub-off time exceeds six months.

REVISED | R1-REDRAWN & REV. FEB. '01 MF

ES54 Z2-01 Duct and Accessories

REFERENCE DRAWINGS

DRAFTER	DESIGNER	APPROVED	DUCT STUB OFF DETAILS AT URD, UD AND FEEDER INSTALLATIONS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: APRIL 1982			

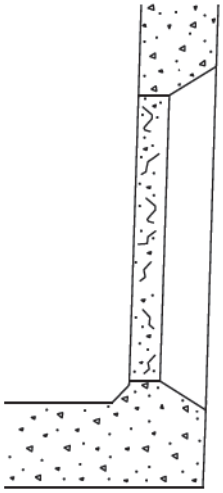


ELEVATION SECTION

MARKER DETAIL

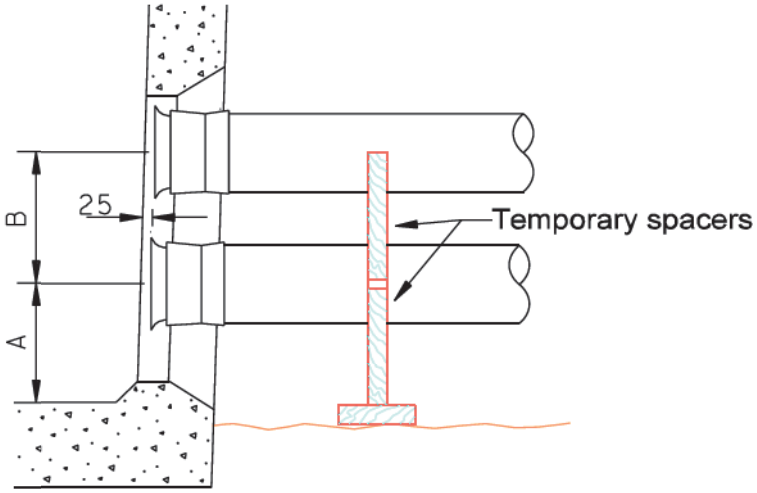
REVISED | R1-REDRAWN & REVISED MARCH '02 MF

DRAFTER	DESIGNER	APPROVED	SERVICE DUCT STUB-OFF MARKER INSTALLATION
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: OCTOBER 1987			



STEP 1

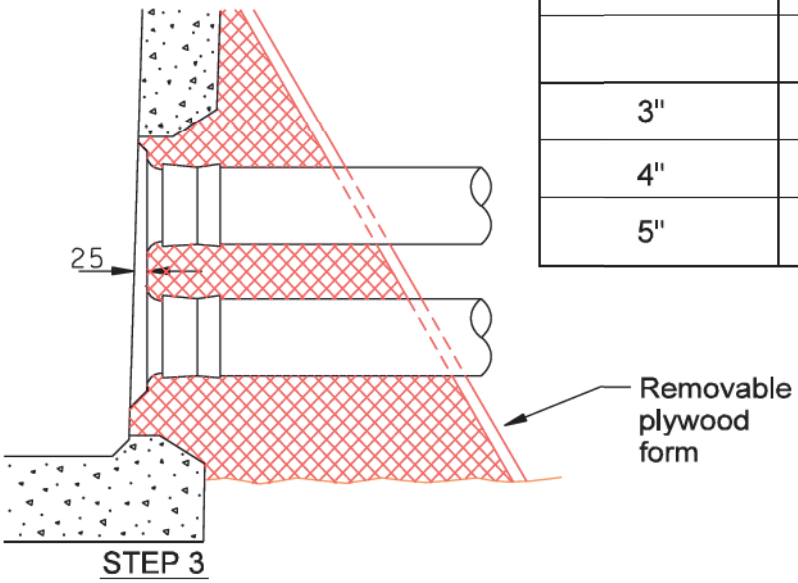
Break out knock-out as required with masonary hammer



STEP 2

Place ducts c/w bell-ends into opening maintaining proper spacing. The front of the bell end to be recessed 25mm from inside wall.

DUCT SIZES	A	B	B
		VERTICAL	HORTIZONTAL
3"	140	145	145
4"	155	170	170
5"	170	N/A	195



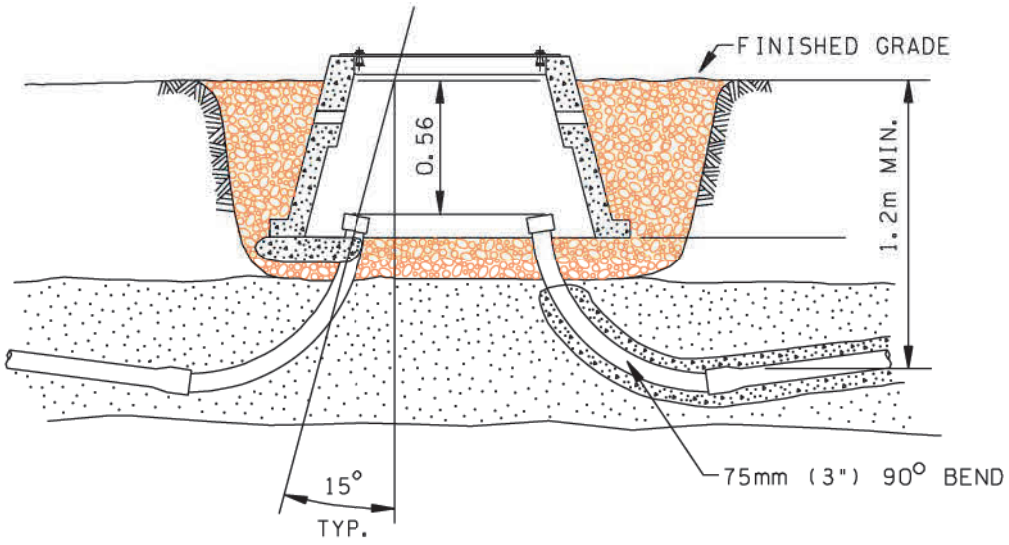
STEP 3

Seal opening with grouting mortar finishing the inside opening with a 45° recessed bevel with the inside wall.

DUCT ENTRY FOR PRECAST CONCRETE BOXES

DRAFTER	DESIGNER	APPROVED	DUCT ENTRY DETAILS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: APRIL 2003			

REVISED



STEP 1

Excavate site for pad and duct entry. Install duct bends at 15° vertical offset and terminate at 0.56m below the final grade.

STEP 2

Backfill trench with sand or concrete encase duct and bends. Prepare gravel base for transformer pad.

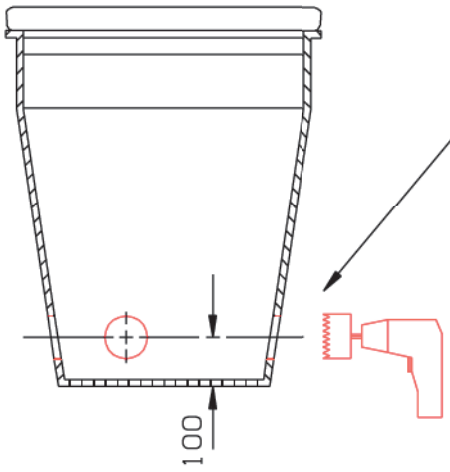
STEP 3

If calculated pulling tension exceeds 0.8kN, replace the gravel around the duct entrance and under the pad at the duct location with 25kg of ready mix concrete. For installations with a calculated duct sidewall bearing exceeding 3.3kN/m, replace the PVC duct bend with an FRE bend (see ES54 H1-03.05 note 3).

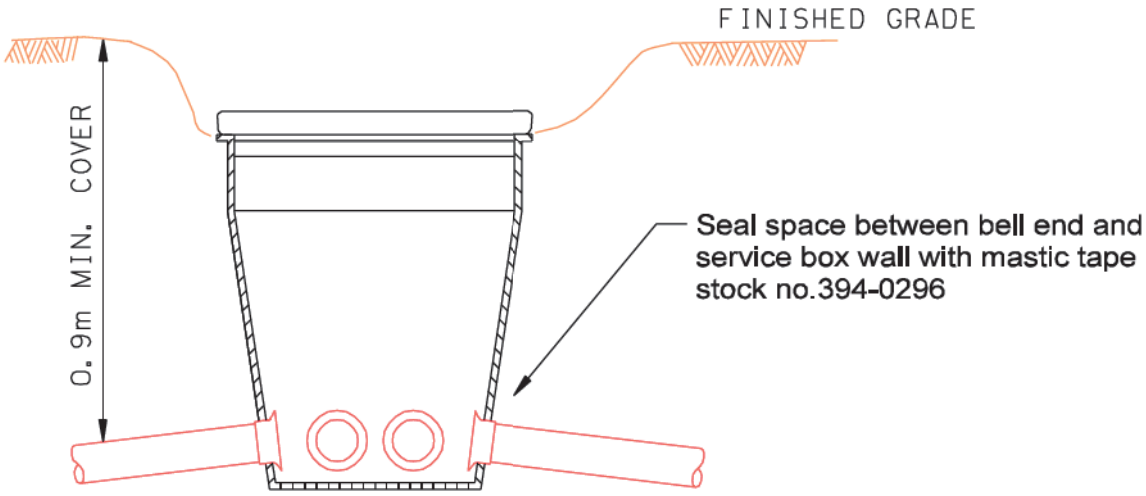
DUCT ENTRY FOR PYRAMID TRANSFORMER PADS

DRAFTER	DESIGNER	APPROVED	
JW	M. FISCHER	F. KAEMPFFER	DUCT ENTRY DETAILS
ORIGINAL ISSUE DATE: APRIL 2003			

REVISED



STEP 1



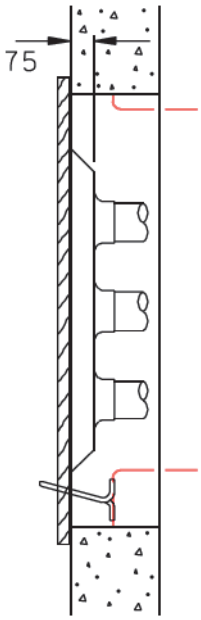
STEP 2

Lower box into ground and install ducts and bell ends

DUCT ENTRY FOR PLASTIC SERVICE BOXES

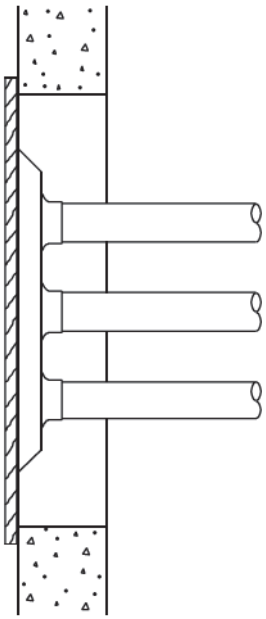
DRAFTER	DESIGNER	APPROVED	DUCT ENTRY DETAILS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: APRIL 2003			

REVISED



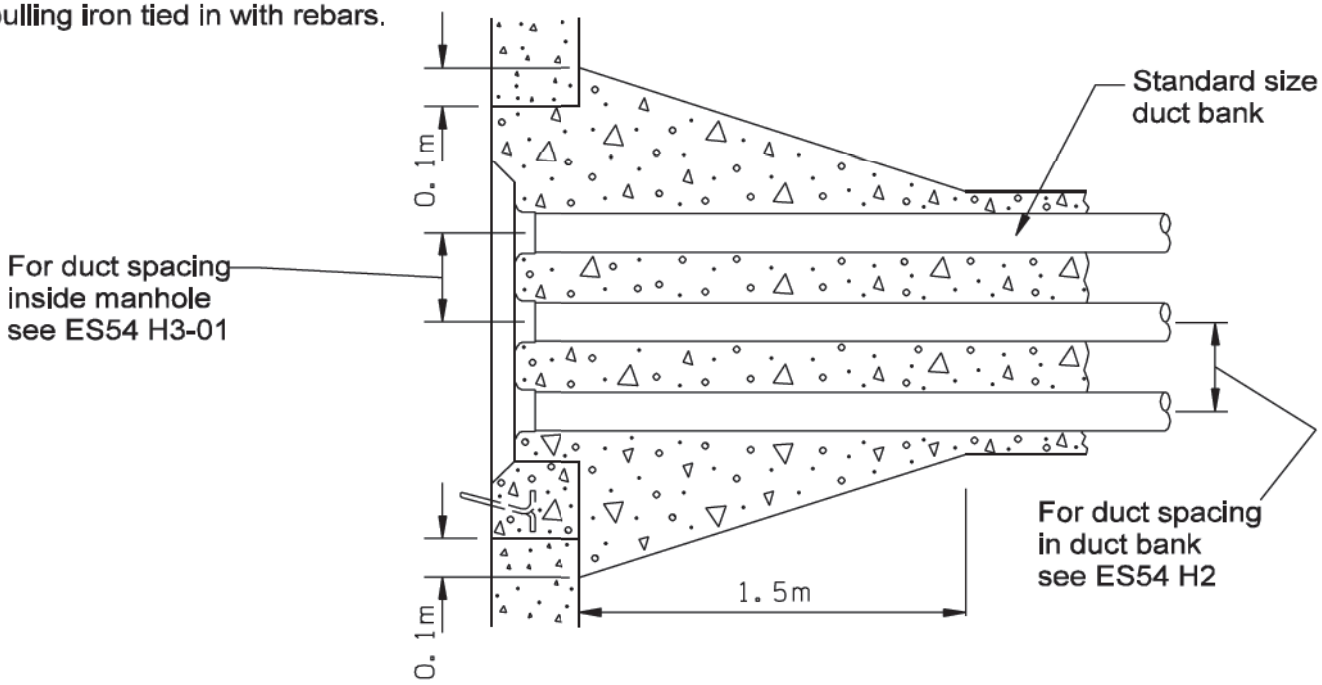
STEP 1

Cut window rebars and bend them outward. Install inside duct bank window form. Place pulling iron tied in with rebars.



STEP 2

Terminate duct bank with bell ends snug against forming.



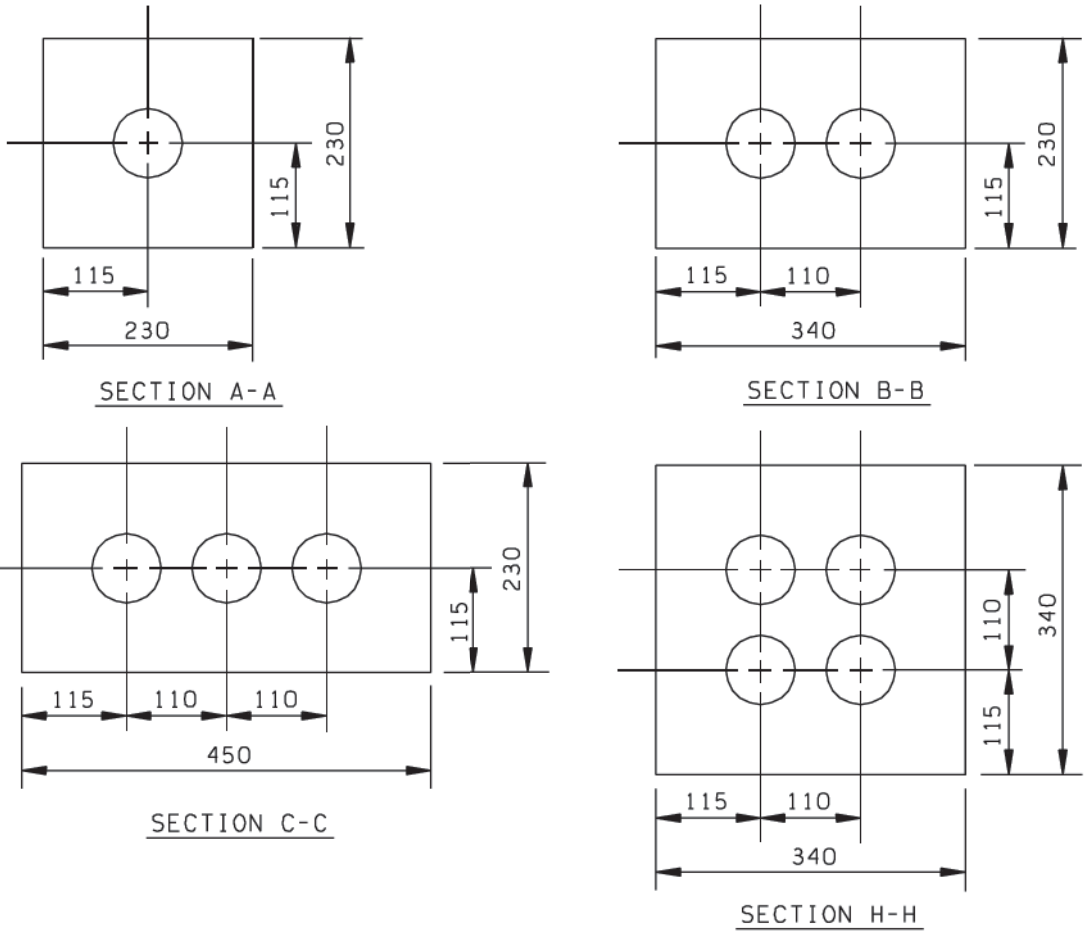
STEP 3

Form and pour duct bank window termination

DUCT ENTRY FOR VAULTS, U/G CHAMBERS AND MANHOLES WITH CONCRETE ENCASED DUCT BANKS

DRAFTER	DESIGNER	APPROVED	DUCT ENTRY DETAILS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: APRIL 2003			

REVISED



NOTES:

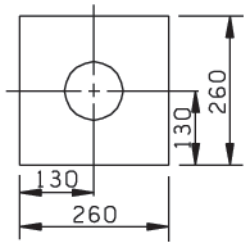
1. All cross sections shown are for 75mm (3") URD or UD PVC duct.
2. Each standard cross section is given a unique section number. It is intended that these section numbers be used on project drawings (eg. 2-75mm; section B-B) and thus eliminate the need to dimension standard duct bank cross sections.
3. For general trenching details at URD and UD installation, see drawing ES54 H1-01.
4. For reinforcing details of concrete encased duct, see drawing ES54 H2-04.
5. For additions to existing duct banks, see drawing ES54 H2-05.
6. For dimensions at window openings in underground chambers, see drawing ES54 H3-01.
7. For clearance to other utilities, see drawing ES54 H4-01.
8. Tolerances: Dimensions shown are typical only. Minimum concrete cover of 70mm and duct separation of 25mm, both vertically and horizontally, must be maintained.

REFERENCE DRAWINGS

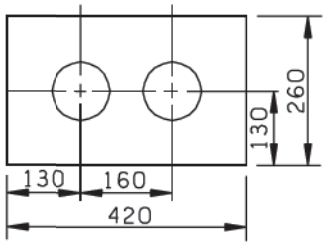
ES54 H2-05	Additions to Existing Duct Bank		ES54 H4-01	Clearances to other Utilities
ES54 H2-04	Reinforcing		ES54 H3-01	Window Opening in u/g Chambers
ES54 H1-01	General Trenching Details: URD and UD Installation			

DRAFTER	DESIGNER	APPROVED	75mm (3") DUCT CONCRETE ENCASEMENT STANDARD CROSS SECTIONS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: APRIL 1983			

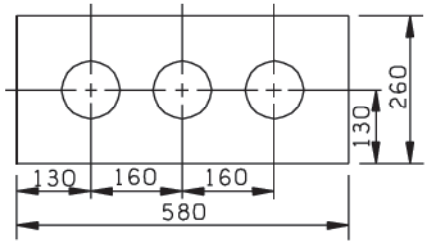
REVISED | R1-DUCT SEPARATION REDUCED 1995-05-03 MF



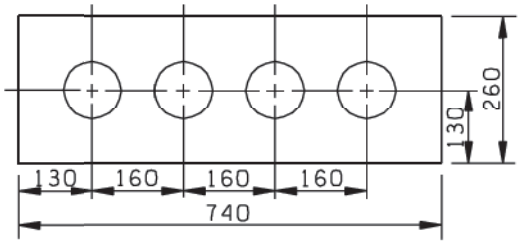
SECTION A-A



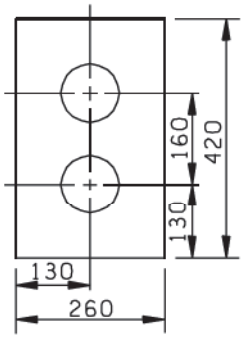
SECTION B-B



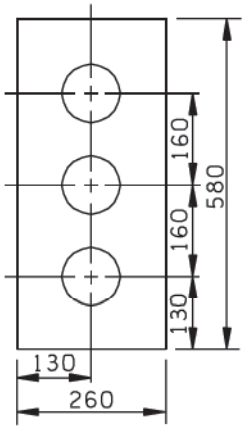
SECTION C-C



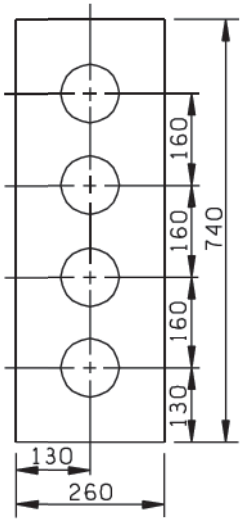
SECTION D-D



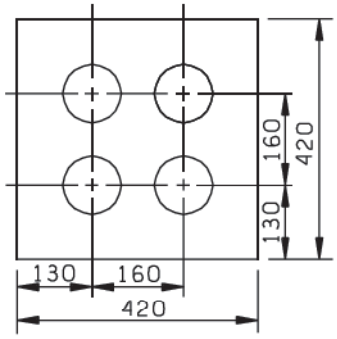
SECTION E-E



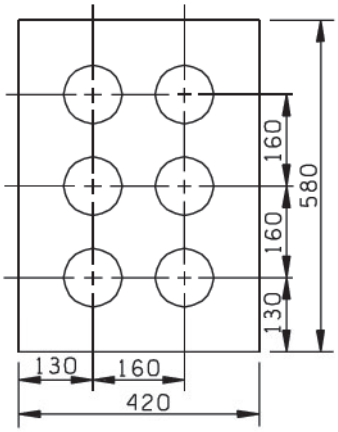
SECTION F-F



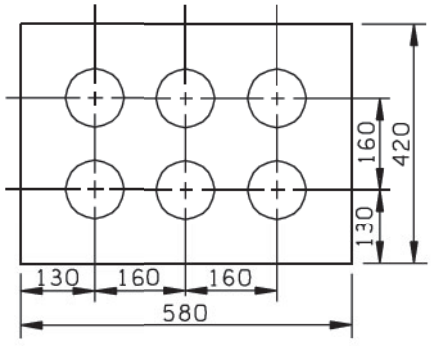
SECTION G-G



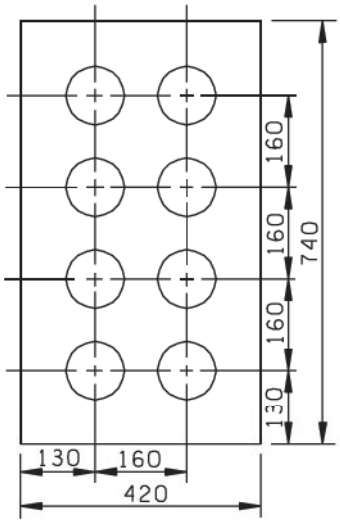
SECTION H-H



SECTION J-J



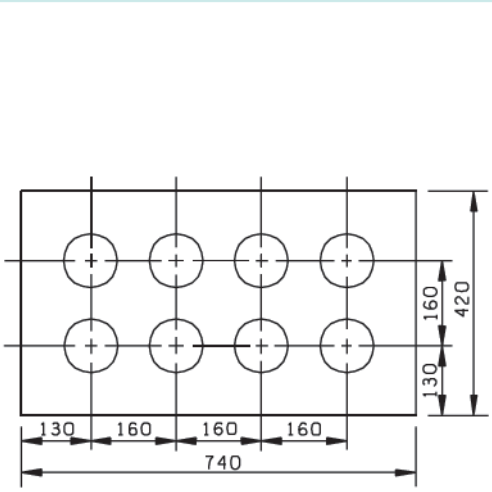
SECTION L-L



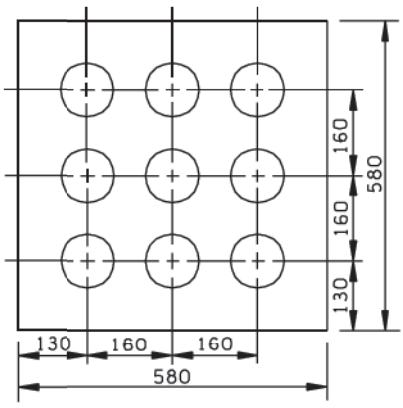
SECTION K-K

REVISED | R1-DUCT SEPARATION REDUCED 1995-05-03 MF

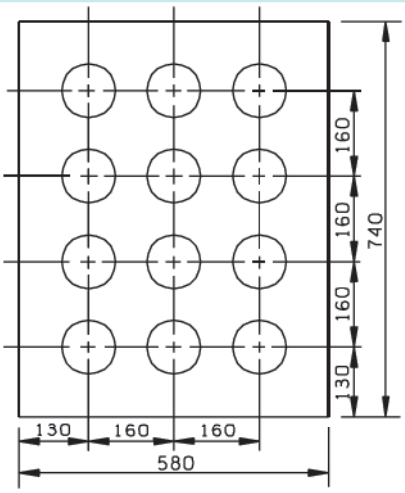
DRAFTER	DESIGNER	APPROVED	100mm (4") DUCT CONCRETE ENCASEMENT STANDARD CROSS SECTIONS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: APRIL 1983			



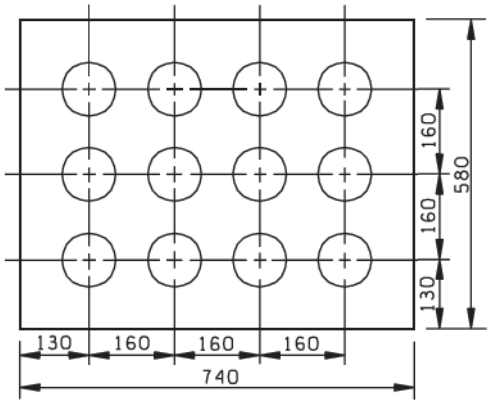
SECTION M-M



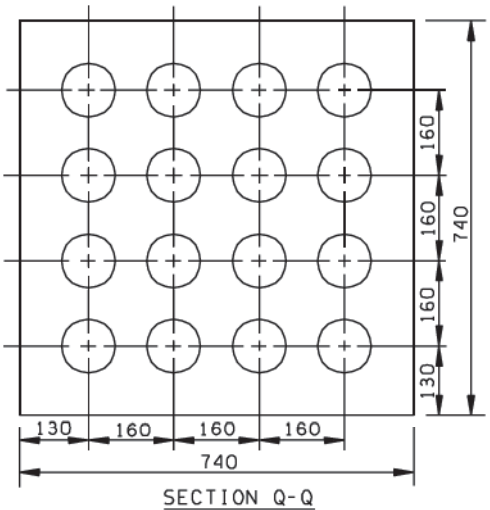
SECTION N-N



SECTION O-O



SECTION P-P



SECTION Q-Q

NOTES:

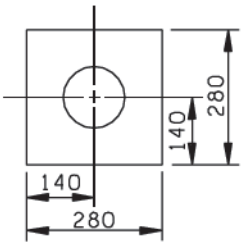
1. All cross sections shown are for 100mm (4") UD or feeder PVC duct or rigid FRE conduit.
2. Each standard cross section is given a unique section number. It is intended that these section numbers be used on project drawings (eg. 16-100mm; section Q-Q) and thus eliminate the need to dimension standard duct bank cross sections.
3. For general trenching details, see drawing ES54 H1-01 for URD and UD and ES54 H1-02 for feeder installations, respectively.
4. For reinforcing details of concrete encased duct, see drawing ES54 H2-04.
5. For additions to existing duct banks, see drawing ES54 H2-05.
6. For dimensions at window openings in underground chambers, see drawing ES54 H3-01.
7. For clearance to other utilities, see drawing ES54 H4-01.
8. Tolerances: dimensions shown are typical only. Minimum concrete cover of 70mm and duct separation of 25mm, both vertically and horizontally, must be maintained.

REFERENCE DRAWINGS

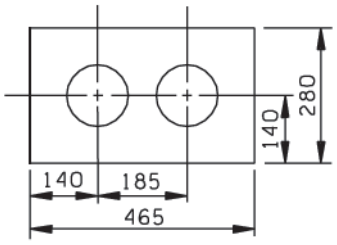
ES54 H2-04	Reinforcing		ES54 H4-01	Clearances to other Utilities
ES54 H1-02	General Trenching Details: feeders		ES54 H3-01	Window Opening in u/g Chambers
ES54 H1-01	General Trenching Details: URD and UD Installation		ES54 H2-05	Additions to Existing Duct Bank

DRAFTER	DESIGNER	APPROVED	100mm (4") DUCT CONCRETE ENCASEMENT STANDARD CROSS SECTIONS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: APRIL 1983			

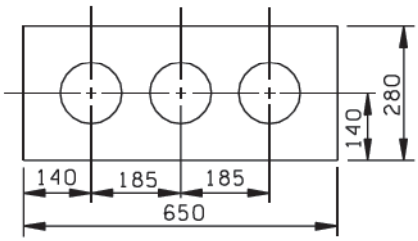
REVISED



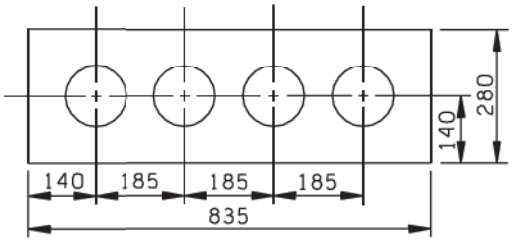
SECTION A-A



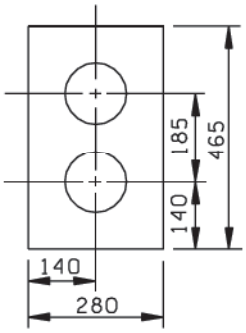
SECTION B-B



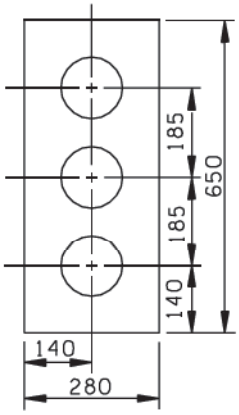
SECTION C-C



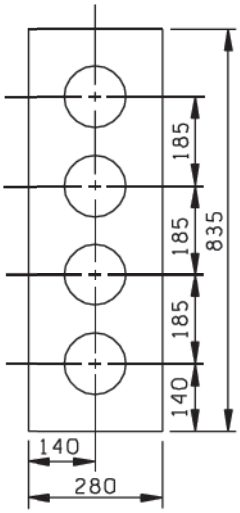
SECTION D-D



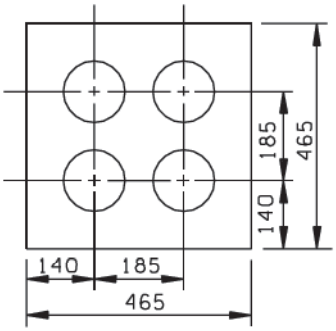
SECTION E-E



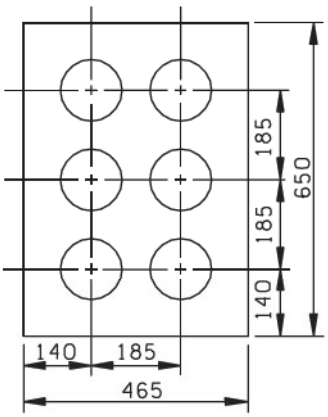
SECTION F-F



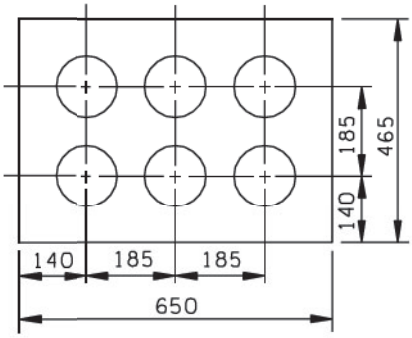
SECTION G-G



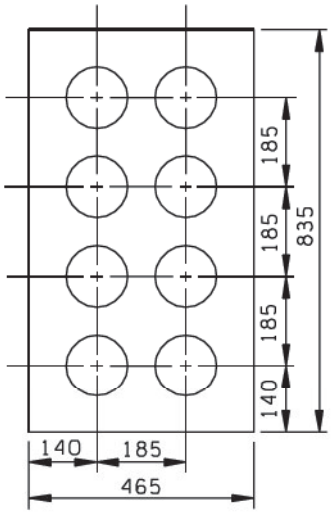
SECTION H-H



SECTION J-J



SECTION L-L



SECTION K-K

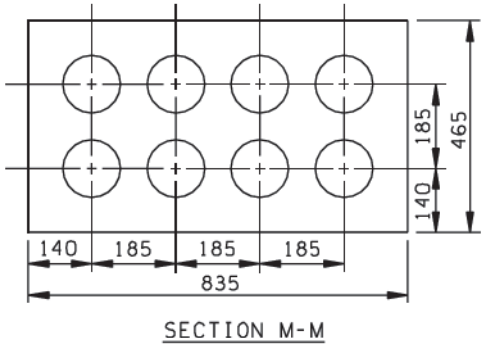
R1-DUCT SEPARATION REDUCED 1995-05-03 MF

REVISED

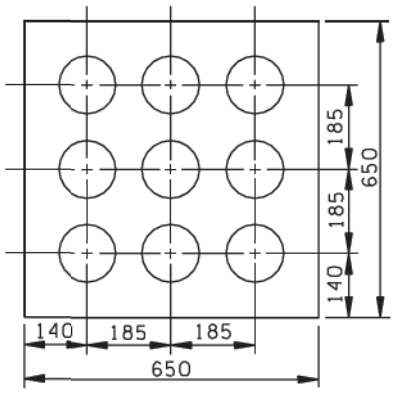
DRAFTER	DESIGNER	APPROVED
JW	M. FISCHER	F. KAEMPFFER
ORIGINAL ISSUE DATE: APRIL 1983		

125mm (5") DUCT CONCRETE ENCASEMENT STANDARD CROSS SECTIONS

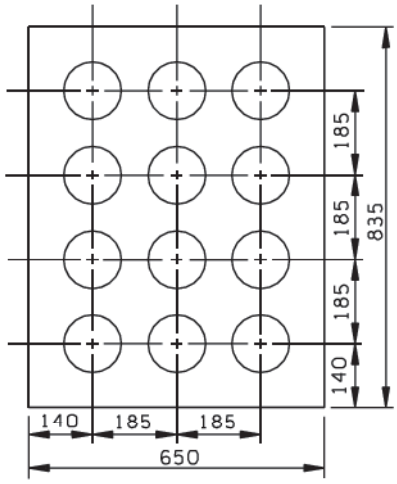
BCHydro DISTRIBUTION STANDARDS | PAGE 1 OF 2 | ES54 H2-03.01 | R. 1



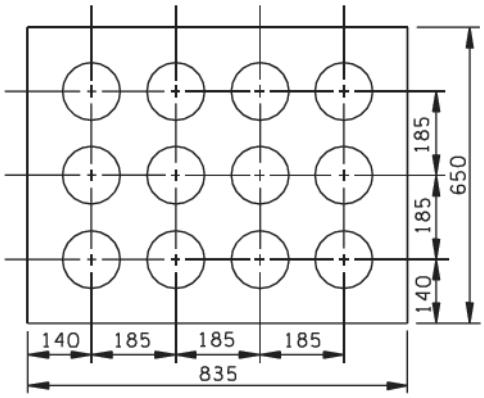
SECTION M-M



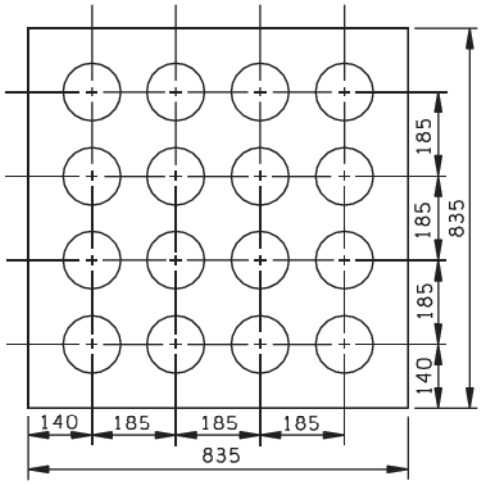
SECTION N-N



SECTION O-O



SECTION P-P



SECTION Q-Q

NOTES:

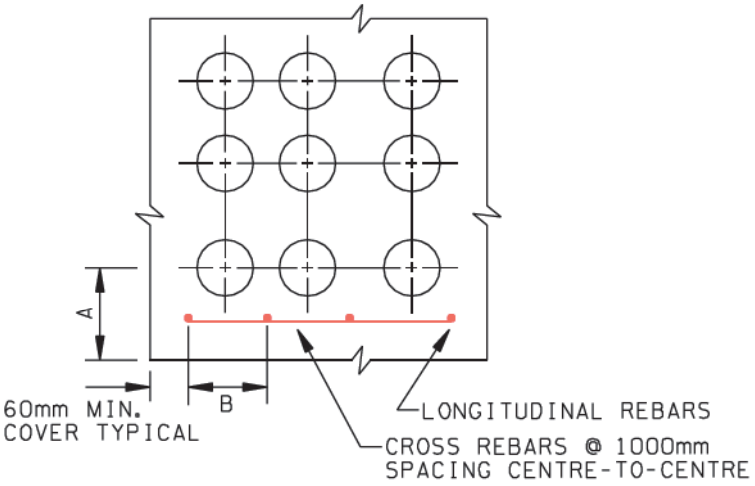
1. All cross sections shown are for 125mm (5") UD or feeder PVC duct or rigid FRE conduit.
2. Each standard cross section is given a unique section number. It is intended that these section numbers be used on project drawings (eg. 16-125mm ducts; section Q-Q) and thus eliminate the need to dimension standard duct bank cross sections.
3. For general trenching details, see drawing ES54 H1-01 for URD and UD and ES54 H1-02 for feeder installations, respectively.
4. For reinforcing details of concrete encased duct, see drawing ES54 H2-04.
5. For additions to existing duct banks, see drawing ES54 H2-05.
6. For dimensions at window openings in underground chambers, see drawing ES54 H3-01.
7. For clearance to other utilities, see drawing ES54 H4-01.
8. Tolerances: dimensions shown are typical only. Minimum concrete cover of 70mm and duct separation of 25mm, both vertically and horizontally, must be maintained.

REFERENCE DRAWINGS

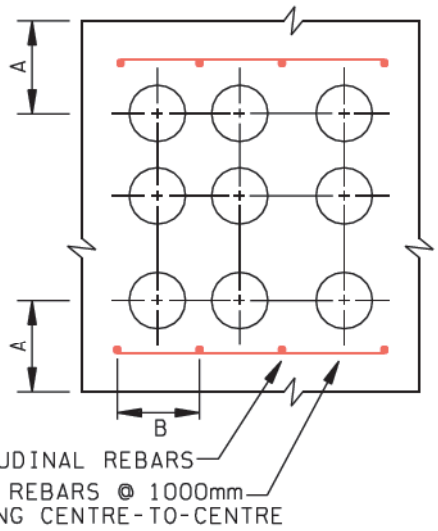
ES54 H2-04	Reinforcing	ES54 H4-01	Clearances to other Utilities
ES54 H1-02	General Trenching Details: feeders	ES54 H3-01	Window Opening in u/g Chambers
ES54 H1-01	General Trenching Details: URD and UD Installation	ES54 H2-05	Additions to Existing Duct Bank

DRAFTER	DESIGNER	APPROVED	125mm (5") DUCT CONCRETE ENCASEMENT STANDARD CROSS SECTIONS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: APRIL 1983			

REVISED | R1-DUCT SEPARATION REDUCED 1995-05-03 MF



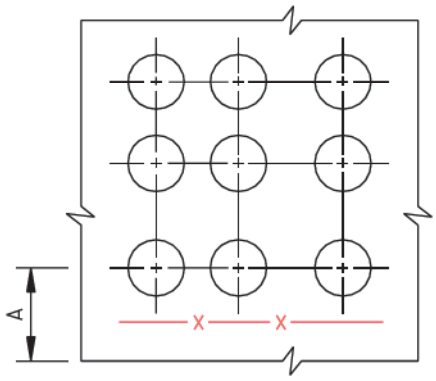
REINFORCING-BOTTOM ONLY



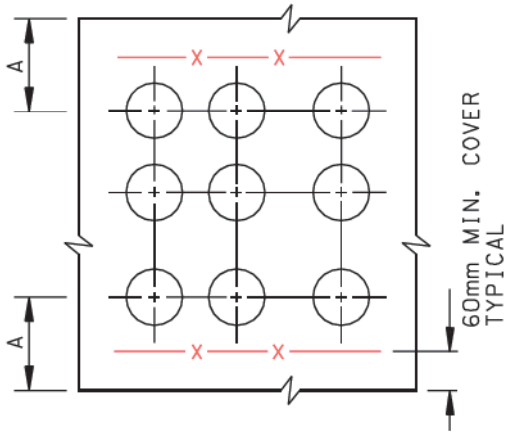
REINFORCING-TOP AND BOTTOM

REINFORCING BARS

(SEE NOTES 4 AND 5 ON PAGE 2)



REINFORCING-BOTTOM ONLY



REINFORCING-TOP AND BOTTOM

REINFORCING MESH

(SEE NOTES 4 AND 5 ON PAGE 2)

DIMENSION	DUCT SIZE		
	3"	4"	5"
A	155	170	180
B	135	160	185

REVISED | R2-REDRAWN JULY '02 MF

DRAFTER	DESIGNER	APPROVED
JW	M. FISCHER	F. KAEMPFFER

ORIGINAL ISSUE DATE: JUNE 1980

DUCT CONCRETE ENCASEMENT REINFORCING DETAILS

NOTES:

1. Dimensions between reinforcing bars are centre to centre.
2. Rebar shall be deformed, Grade 300, 10M to CSA Standard G30.12M.
3. Mesh shall be welded, 152 x 152 - MW 25.8 X MW 25.8 to CSA Standard G30.5.
4. SELECTION OF THE TYPE OF REINFORCING:
   - A) NONE - General Rule
   - B) MESH - Used wherever the base support is reasonably consistent and the loading is evenly distributed.
   - C) REBAR - Used wherever there is a point or concentrated support such as when entering a building, crossing over a storm sewer, or exiting a roadway onto a boulevard or field; or wherever there is a point or concentrated load such as under or near roadways and railways.
   - D) SPECIAL REINFORCING - (CONSULT DISTRIBUTION ENGINEERING) - Applies in areas which have an unstable base material such as peat or hog fuel, or where the number of ducts in the vertical direction exceed the number in the horizontal direction by 2 or more (e. g. Standard Cross-Sections 'F-F', 'G-G', etc. on drawings ES54 H2-03).
5. TOP AND BOTTOM REINFORCING

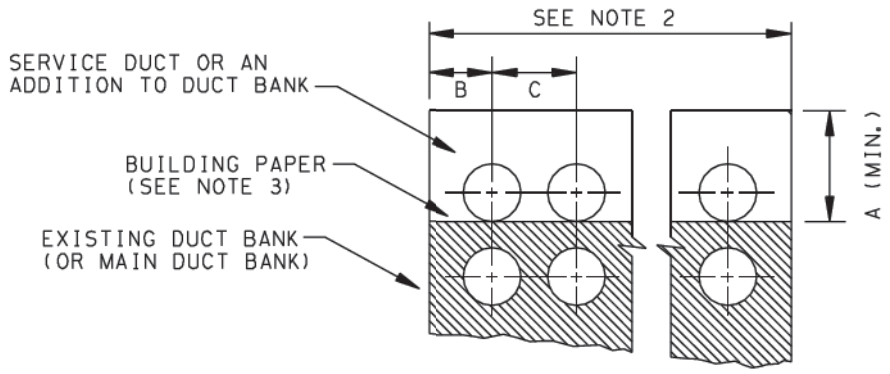
   Reinforcing top and bottom shall be used only in areas subject to severe frost heaving or where utilities are heavily conjested.
6. TOLERANCES

   Dimensions shown are typical only unless otherwise indicated. Minimum concrete cover to reinforcing of 60mm and duct separation of 45mm, both vertically and horizontally, must be maintained.
7. For dimensions between duct centres or from a duct centre to non-reinforced face see drawings ES54 H2-01, ES54 H2-02 and ES54 H3-03 for 3", 4" and 5" ducts, respectively.

ES54 H2-03 5" Duct Cross-Sections
ES54 H2-02 4" Duct Cross-Sections
ES54 H2-01 3" Duct Cross-Sections
REFERENCE DRAWINGS

DRAFTER	DESIGNER	APPROVED	DUCT CONCRETE ENCASEMENT REINFORCING DETAILS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: JUNE 1980			

REVISED



TYPICAL CROSS SECTION
(SEE NOTE 1)

DIMENSION	DUCT SIZE		
	3"	4"	5"
A (MIN.)	155	185	205
B	115	130	140
C	135	160	185

NOTES:

1. Typical cross section is shown. The addition or lateral may be added to any duct bank configuration.
2. For overall dimension of standard cross sections, see drawings ES54 H2-01, ES54 H2-02 and ES54 H2-03 for 3", 4" and 5" ducts, respectively.
3. Building paper is required both when service duct bank is constructed simultaneously with main duct bank, and when the possibility exists that the service duct banks will be broken into in future. The building paper is to be laid, and the service duct bank poured, after the main duct bank receives initial set.
4. TOLERANCES

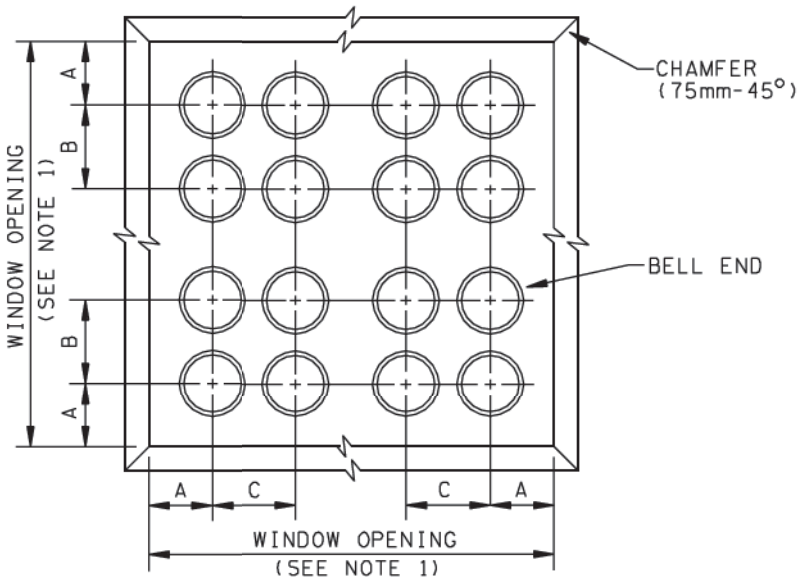
   Dimensions shown are typical only unless otherwise indicated. Minimum concrete cover of 70mm and duct separation of 45mm, both vertically and horizontally, must be maintained.
5. The minimum total cover over the duct bank (including the addition or lateral) as shown on the general trenching drawings ES54 H1-01 and ES54 H1-02 for URD and UD installations and feeder installations, respectively, must be maintained.

REFERENCE DRAWINGS

ES54 H2-03 5" Duct cross-sections
ES54 H2-02 4" Duct cross-sections
ES54 H2-01 3" Duct cross-sections
ES54 H1-02 General trenching details-feeders
ES54 H1-01 General trenching details-URD and UD

REVISED | R1-REDRAWN JULY '02 MF

DRAFTER	DESIGNER	APPROVED	DUCT-CONCRETE ENCASEMENT SERVICE DUCTS AND/OR ADDITIONS TO DUCT BANKS TYPICAL CROSS SECTIONS
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: JUNE 1980			



DIMENSION	DUCT SIZE		
	3"	4"	5"
A (MIN.)	115	180	205
B	205	230	255
C	145	170	195

NOTES:

1. The overall dimensions of duct window shall be governed by bank size.
2. The vertical separation between ducts shall be gradually reduced to the values shown on drawing ES54 H2-01/03 for 3", 4" and 5" duct respectively over the first 6m from the vault, chamber or manhole.
3. TOLERANCES

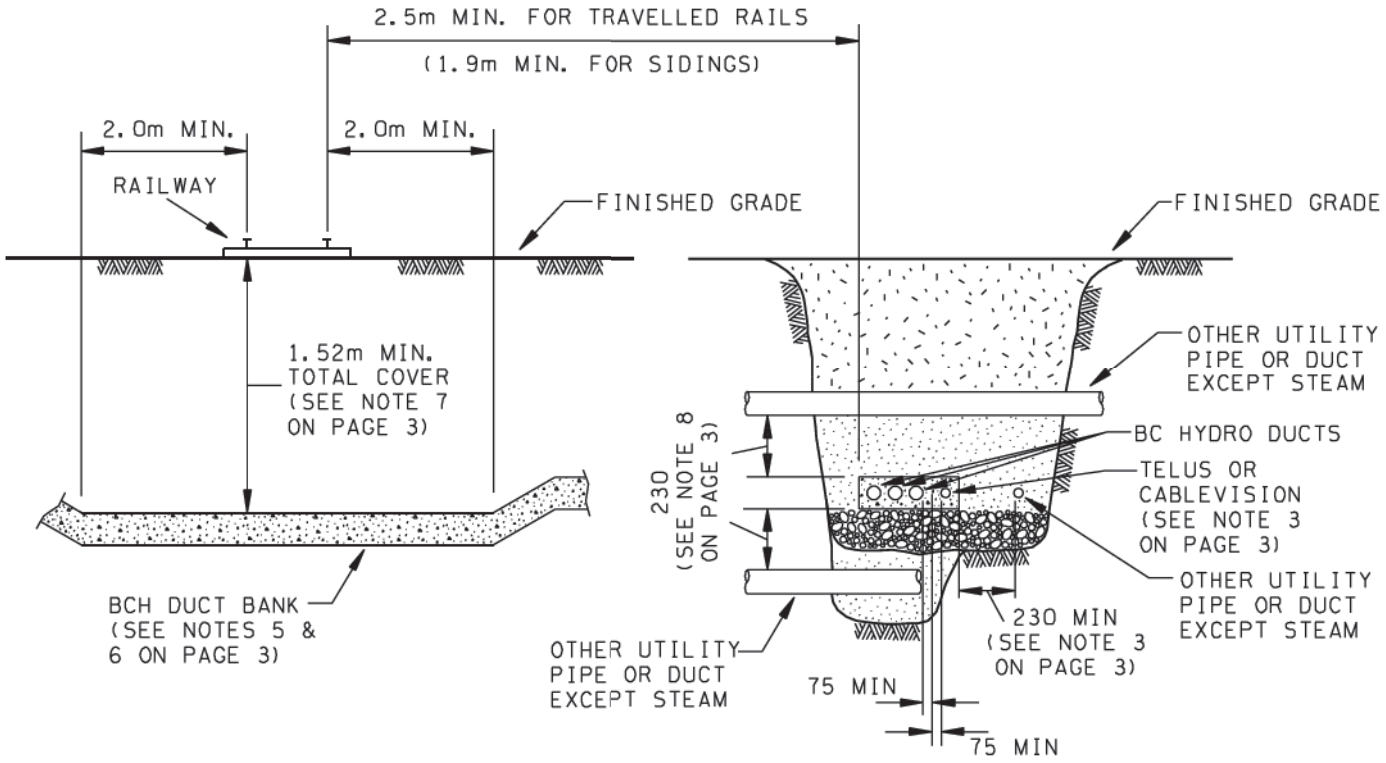
   Dimensions shown are typical only. A minimum concrete cover of 70mm and duct separation of 45mm, both vertically and horizontally, must be maintained.

ES54 H2-03 5" Duct cross-sections
ES54 H2-02 4" Duct cross-sections
ES54 H2-01 3" Duct cross-sections

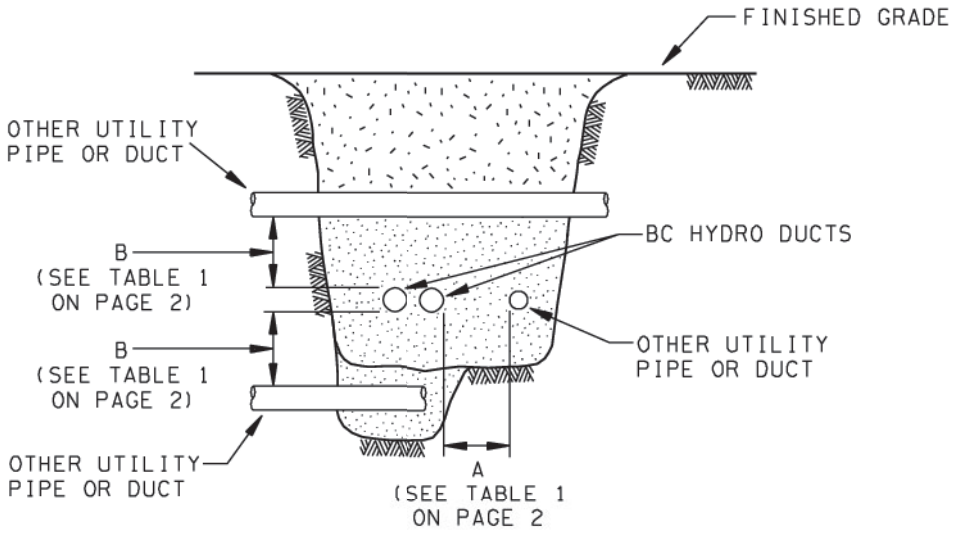
REFERENCE DRAWINGS

DRAFTER	DESIGNER	APPROVED	DUCT WINDOW OPENINGS IN UNDERGROUND VAULTS, CHAMBERS AND MANHOLES
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: JUNE 1980			

REVISED | R1-REDRAWN JULY '02 MF



CONCRETE ENCASED DUCT
(GENERAL)

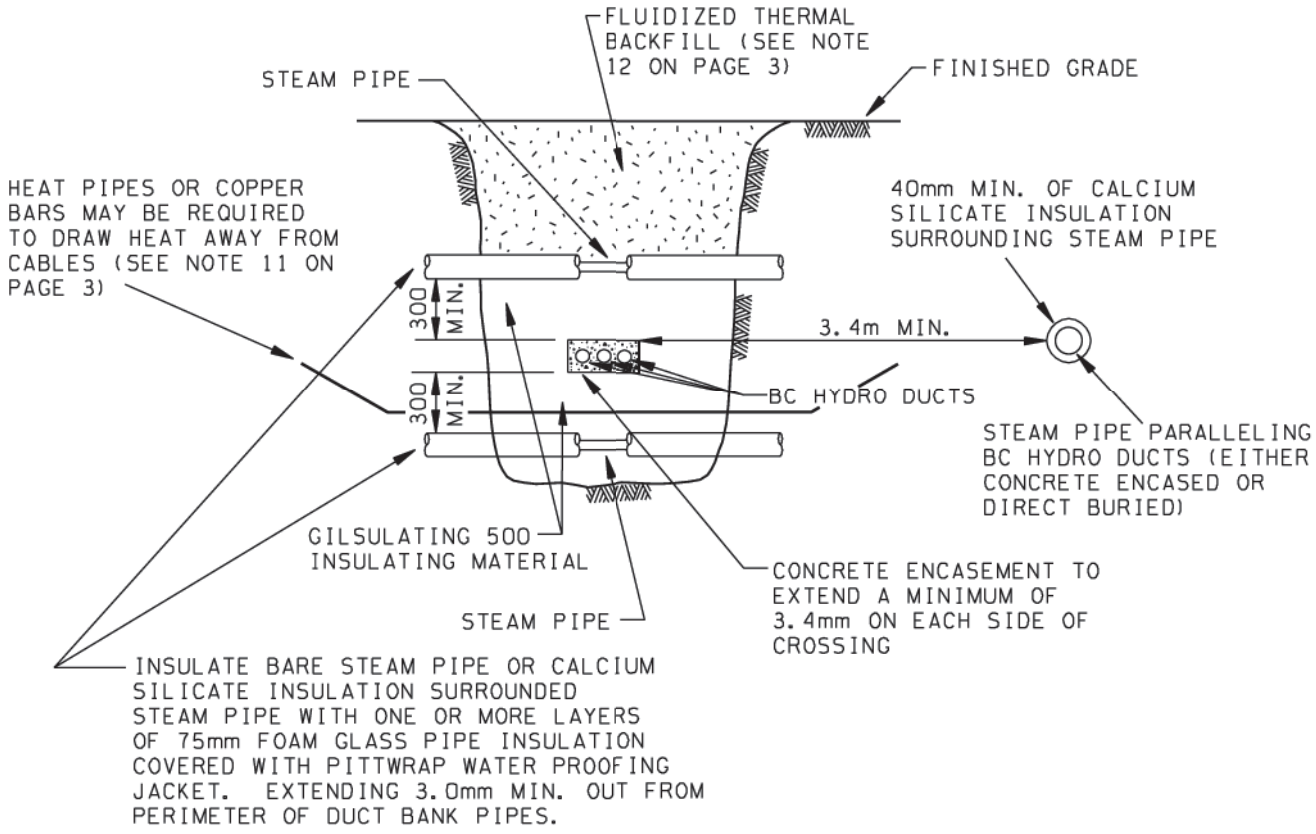


DIRECT BURIED DUCT
(GENERAL)

REFERENCE DRAWINGS

DRAFTER	DESIGNER	APPROVED	DUCT CLEARANCES TO OTHER UTILITIES
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: JUNE 1980			

REVISED | R2-REDRAWN & REV. JULY '02 MF



BC HYDRO DUCT NEAR STEAM PIPES

(SEE NOTES 10, 11 AND 12 ON PAGE 3)

TABLE 1 - CLEARANCES

TYPE OF PIPE OR DUCT	DIRECT BURIED RECOMMENDED CLEARANCES		BC HYDRO CONCRETE ENCASED RECOMMENDED CLEARANCES (SEE NOTE 1 ON PAGE 3)	
	A	B	A	B
Telephone, Cablevision or Street Lights	300	150	75	150
Gas Mains	300	150	300	150
Water Oil Pipelines Oil, Jet Fuel Lines Storm and Sanitary Sewers	900	300	300	300

DRAFTER	DESIGNER	APPROVED	DUCT CLEARANCES TO OTHER UTILITIES
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: JUNE 1980			

REVISED

NOTES:

1. The absolute minimum clearances may be used only when approved by BC Hydro designer.
2. For services on private property, see ES54 S1/S2.
3. TELUS and/or cablevision duct may occupy same concrete encasement when 4mm poly divider is installed between BC Hydro and communication ducts.
4. For general trenching details, see Drawings ES54 H1-01 and ES54 H1-02 for URD and UD installations and feeder installation, respectively.
5. At railway crossings, if the width of the duct bank exceeds 550mm, additional strengthening may be required as defined in CSA Standard C22.3 No. 7, Underground Systems.
6. At railway crossings, the minimum concrete cover over ducts shall be 75mm and the minimum concrete strength shall be 20 MPa at 28 days.
7. The depth of the duct bank below the bottom of the rail may be reduced if an impenetrable surface is encountered provided the railway allows the reduction. The minimum cover over BC Hydro ducts under railroads must not be less than 0.9m.
8. If insufficient installation depth is encountered, the vertical clearance between the concrete encasement and TELUS or cablevision ducts may be reduced to 80mm.
9. Horizontal clearances must be maintained regardless of vertical clearances. Horizontal clearances of other utility pipe or ducts to BC Hydro structures, such as service boxes, pull boxes, transformer pads and manholes shall be 150mm minimum.
10. The clearances shown are for steam pipes less than 225mm nominal diameter. For larger diameter pipes consult BC Hydro designer.
11. Heat Pipes or copper bars can be installed between the steam pipe and BC Hydro duct when the soil temperature exceeds the allowable conductor temperature of the cables. A specialized consultant such as Geotherm Inc. Newmarket, Ont. or other can custom design such heat sinks.
12. Fluidized thermal backfill shall have a thermal resistivity of 35° C cm/Watt or less in the moist condition and 100° C cm/Watt or less in the dry conditon.

REFERENCE DOCUMENT

CSA Standard C22.3 No. 7 "Underground Systems"

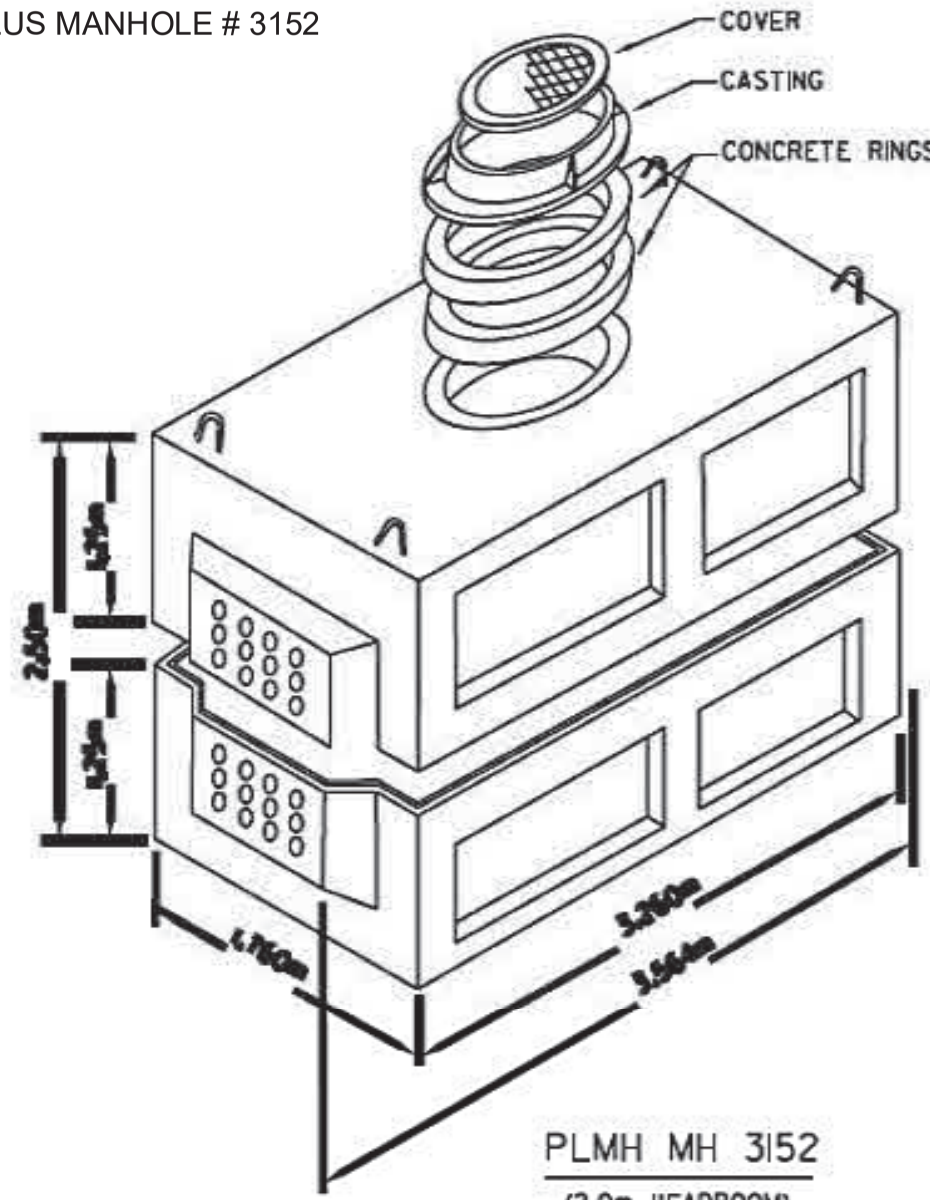
ES54 H1-02 General trenching details - Feeders
ES54 H1-02 General trenching details - URD and UD
REFERENCE DRAWINGS

DRAFTER	DESIGNER	APPROVED	DUCT CLEARANCES TO OTHER UTILITIES
JW	M. FISCHER	F. KAEMPFFER	
ORIGINAL ISSUE DATE: JUNE 1980			

REVISED

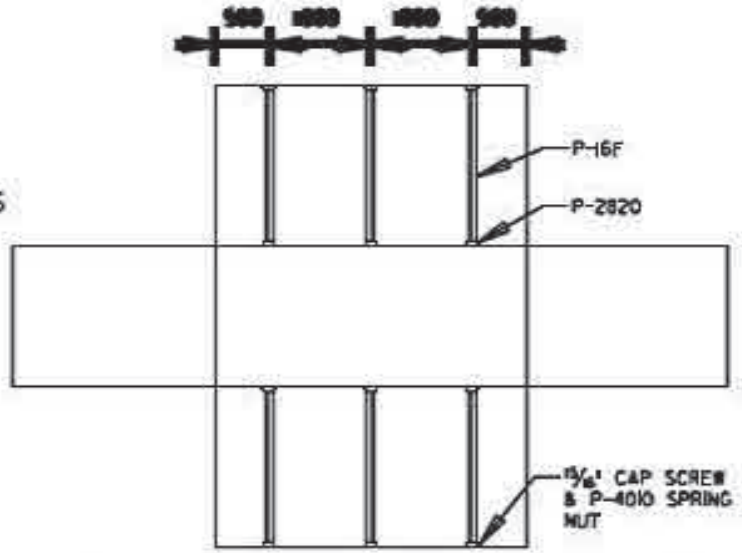
TELUS MANHOLE # 3152

AD 50



PLMH MH 3152

(2.0m HEADROOM)

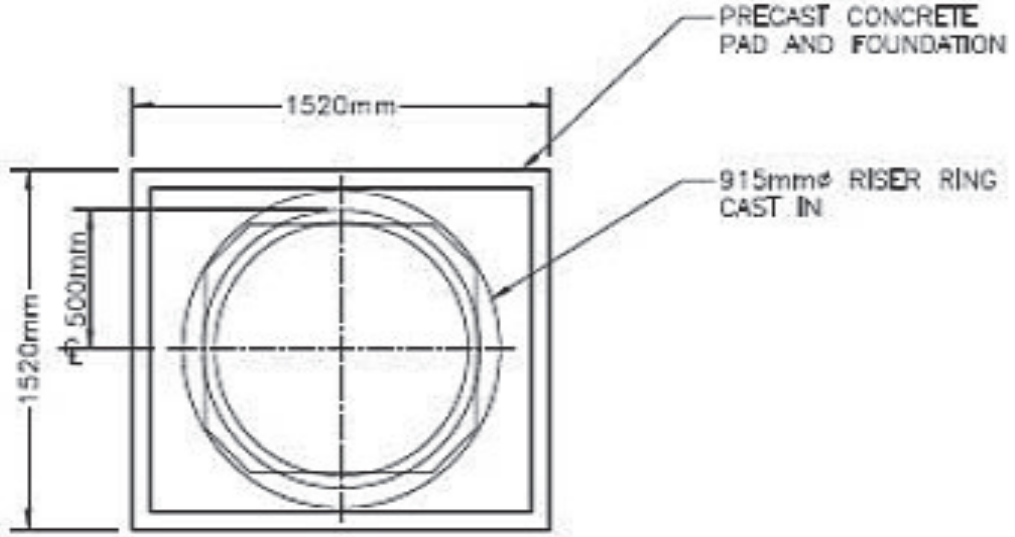


PLMH 3152 DESCRIPTION	MATERIAL HARDWARE DETAIL PART #	QUANTITY	ITEM	2.0m HEADROOM SIZE
VERTICAL TUBING	P-16F	8	EA	1930
VERTICAL TUBING	P-16F		EA	2745
BASE & CEILING SUPPORT	P-2820	12	EA	
SPRING NUT	P-4010	28	EA	1/2"
CAP SCREW		24	EA	1/2" x 1 15/16"
CAP SCREW		4	EA	1/2" x 2 3/4"
ANGLE BRACKET	P-1538B		EA	
FLAT PLATE WASHER				

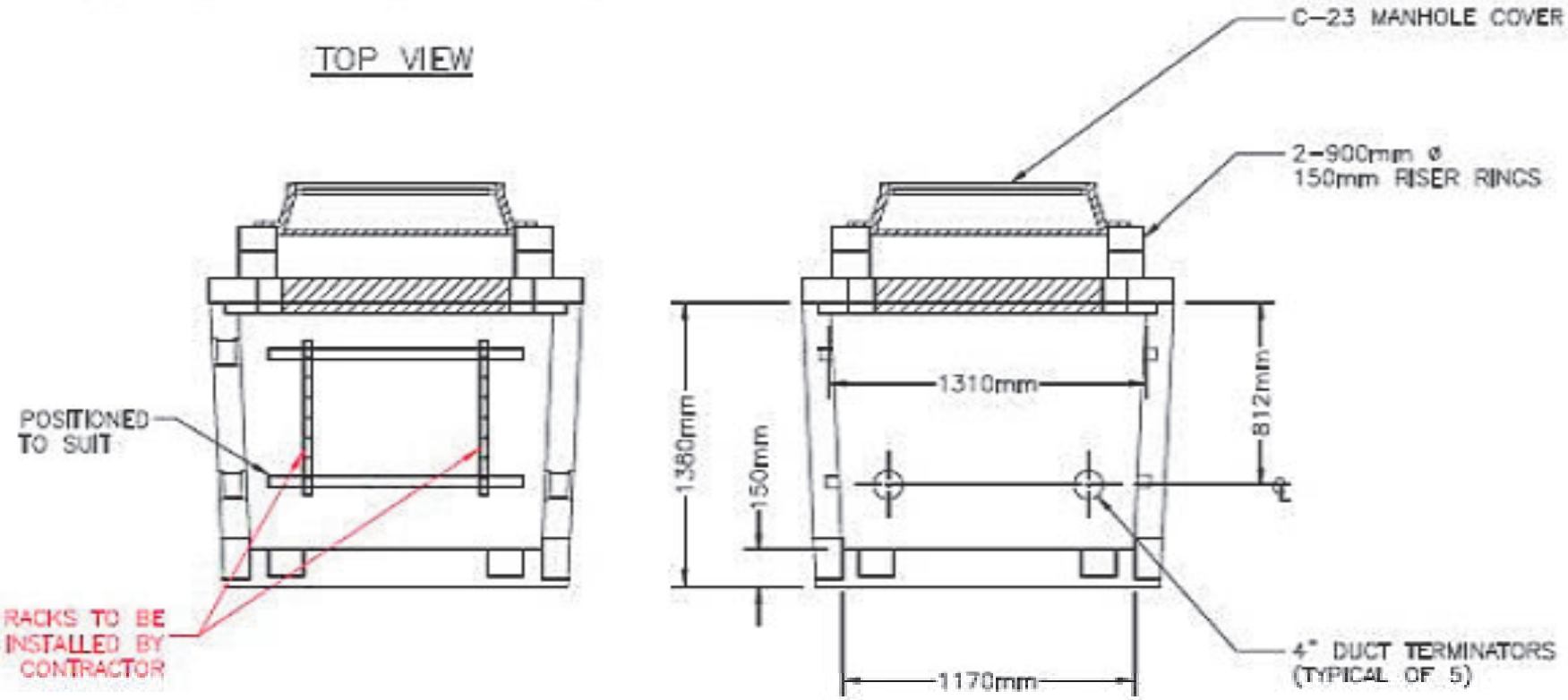
INSTALLATION NOTES:

1. MANHOLE TO BE SET ON 150mm OF -20mm MULCH OR 150mm OF DRAIN ROCK IN WET CONDITIONS.
2. MANHOLE TO BE SET WITH 450mm MIN COVER.
3. PLACE GROUT BETWEEN MANHOLE TOP & BOTTOM SECTIONS BEFORE JOINING.
4. PAINT INSIDE WALLS & CEILING USING ONE COAT E.M.CRETE OR WHITE ACRYLIC LATEX.
5. WEIGHT: BASE 5250kg. TOP 5150kg
6. ALL DIMENSIONS ARE EXPRESSED IN MILLIMETERS UNLESS OTHERWISE NOTED.
7. INSTALL UNISTRUT RACKING. SEE DETAIL.

MH3152



TOP VIEW



FRONT VIEW

SIDE VIEW

SHAW 1.5M SERVICE VAULT W/ROUND LID

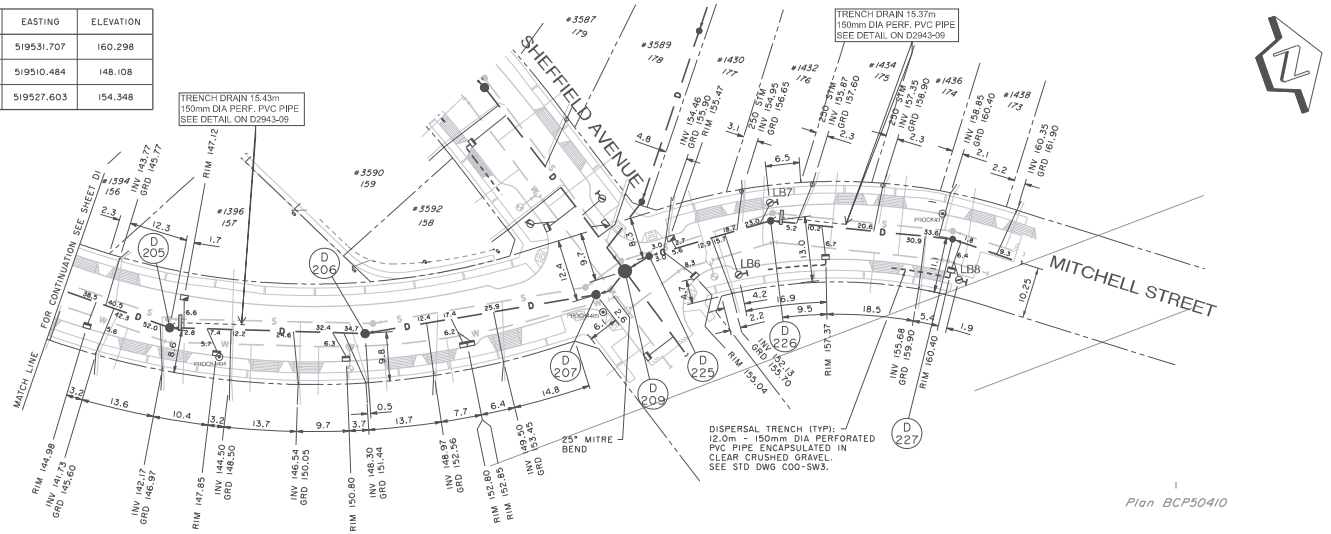
SCALE: N.T.S.

Appendix C -

Asbuilt Package

SURVEY MONUMENTS

POINT	NORTHING	EASTING	ELEVATION
PROCK431	5463004.556	519531.707	160.298
PROCK4404	5462859.372	519510.484	148.108
PROCK4405	5462934.338	519527.603	154.348



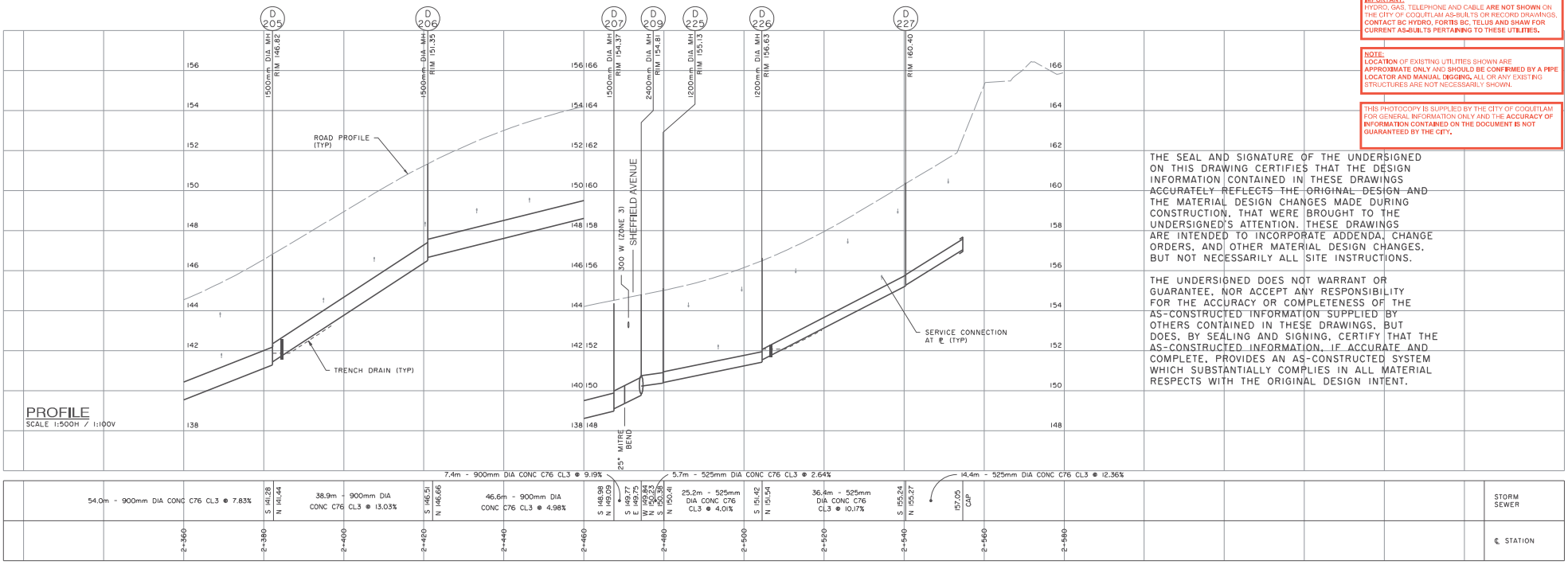
Plan BCP50410

PLAN
SCALE 1:500

NOTES:

1. UNLESS OTHERWISE INDICATED STORM SERVICE CONNECTIONS ARE 150mm DIA PVC.
2. ALL PVC PIPE MANUFACTURED BY ROYAL PIPE.
3. STORM MANHOLES ARE 1050mm DIA UNLESS OTHERWISE INDICATED.
4. ALL CONCRETE PIPE MANUFACTURED BY LANGLEY CONCRETE.
5. OFFSETS SHOWN ON DRAWING INDICATE DISTANCE ALONG THE PROPERTY LINE FROM THE NEAREST LOT CORNER.
6. THE 100 YR HGL IS WITHIN THE PIPE UNLESS OTHERWISE SHOWN.
7. ALL SINGLE CATCHBASIN LEADS ARE 150mm DIA UNLESS OTHERWISE SHOWN.
8. ALL DOUBLE CATCHBASIN LEADS ARE 200mm DIA UNLESS OTHERWISE SHOWN.
9. ALL COMBINED CB/LB LEADS ARE 200mm DIA UNLESS OTHERWISE SHOWN.
10. PIPE LENGTHS SHOWN ARE MEASURED HORIZONTALLY FROM CENTRE OF MANHOLES AND DO NOT NECESSARILY REPRESENT ACTUAL PIPE LENGTHS.

LB #	SIZE	MATERIAL	RIM ELEV.	SIZE (LEAD)	MATERIAL (LEAD)
6	600	CONC	155.74	150	PVC
7	600	CONC	156.69	150	PVC
8	600	CONC	160.56	150	PVC



PROFILE
SCALE 1:500H / 1:100V

COQ. AS BUILT
D2943-02

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.**

THE SEAL AND SIGNATURE OF THE UNDERSIGNED ON THIS DRAWING CERTIFIES THAT THE DESIGN INFORMATION CONTAINED IN THESE DRAWINGS ACCURATELY REFLECTS THE ORIGINAL DESIGN AND THE MATERIAL DESIGN CHANGES MADE DURING CONSTRUCTION, THAT WERE BROUGHT TO THE UNDERSIGNED'S ATTENTION. THESE DRAWINGS ARE INTENDED TO INCORPORATE ADDENDA, CHANGE ORDERS, AND OTHER MATERIAL DESIGN CHANGES, BUT NOT NECESSARILY ALL SITE INSTRUCTIONS.

THE UNDERSIGNED DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THESE DRAWINGS, BUT DOES, BY SEALING AND SIGNING, CERTIFY THAT THE AS-CONSTRUCTED INFORMATION, IF ACCURATE AND COMPLETE, PROVIDES AN AS-CONSTRUCTED SYSTEM WHICH SUBSTANTIALLY COMPLIES IN ALL MATERIAL RESPECTS WITH THE ORIGINAL DESIGN INTENT.

AC45-PC2C-202-D

Edge of Pavement, Watermain and Valve, Drainage Sewer, MH, Drainage Ditch, Sanitary Sewer, MH, Sanitary Forcemain, Gasmain and Valve, Hydro Duct, MH, Telephone Duct, MH, Hydrant, Water Air Valve, Water Blowoff, Water Service, Catch Basin, Top Inlet, Catch Basin, Side Inlet, Drainage Service, Drainage Cleanout, Sanitary Service, Sanitary Cleanout, Utility Pole (Joint Pole), Utility Pole with Light, Street Light, Davit, Street Light, Post Top, Comb Signal Pole, Traffic Signal Pole, Traffic Street Sign, Junction Box, Survey Traverse Hub, Survey Iron Pin, Survey Lead Plug, Survey Monument

NO.	DATE	REVISIONS	BY	APPROVED
B	16-03-28	Record Drawings	JJC	
A	16-07-15	Issued for Construction	JJC	

DESIGN BY J. Leung DATE 15-04-28
DRAWN BY G. Leung DATE 15-04-28
CHECKED BY DATE
APPROVED BY DATE

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Vancouver, BC V6H 1C5
Tel 604.739.7707 / Fax 604.739.7727

Coquitlam
Engineering & Public Works
3000 Guildford Way Coquitlam, BC V3B 7N2

SCALE HORIZ. 1:500 SCALE VERT. 1:100
SHEET D2 OF D9
ENG PROJECT NUMBER AC45-PC2C

PROJECT
Parcel PC-2 Phase C
DESCRIPTION
Storm Sewer - Mitchell Street
Sta. 2+360.0 to Sta. 2+553.2

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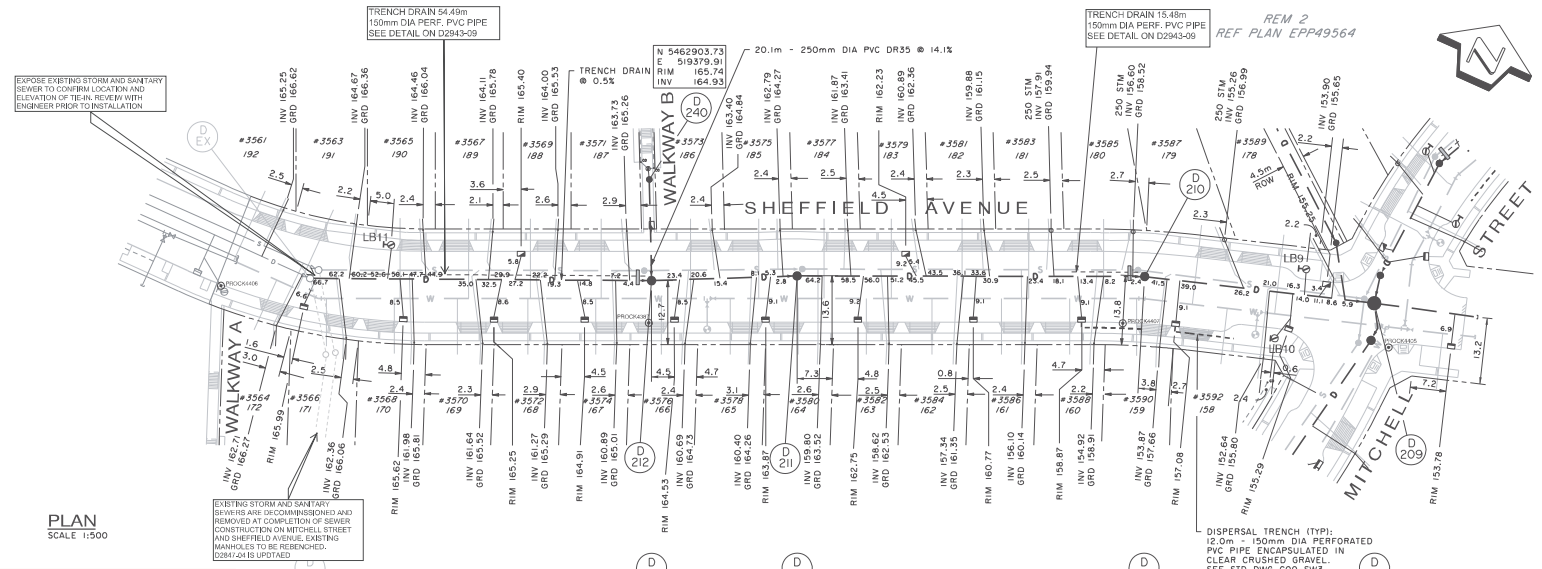


PLAN
SCALE 1:500

THE SEAL AND SIGNATURE OF THE UNDERSIGNED ON THIS DRAWING CERTIFIES THAT THE DESIGN INFORMATION CONTAINED IN THESE DRAWINGS ACCURATELY REFLECTS THE ORIGINAL DESIGN AND THE MATERIAL DESIGN CHANGES MADE DURING CONSTRUCTION, THAT WERE BROUGHT TO THE UNDERSIGNED'S ATTENTION. THESE DRAWINGS ARE INTENDED TO INCORPORATE ADDENDA, CHANGE ORDERS, AND OTHER MATERIAL DESIGN CHANGES, BUT NOT NECESSARILY ALL SITE INSTRUCTIONS.

THE UNDERSIGNED DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THESE DRAWINGS, BUT DOES, BY SEALING AND SIGNING, CERTIFY THAT THE AS-CONSTRUCTED INFORMATION, IF ACCURATE AND COMPLETE, PROVIDES AN AS-CONSTRUCTED SYSTEM WHICH SUBSTANTIALLY COMPLIES IN ALL MATERIAL RESPECTS WITH THE ORIGINAL DESIGN INTENT.

LB #	SIZE	MATERIAL	RIM ELEV.	SIZE (LEAD)	MATERIAL (LEAD)
9	600	CONC	155.46	150	PVC
10	600	CONC	155.21	150	PVC
11	600	CONC	165.93	150	PVC

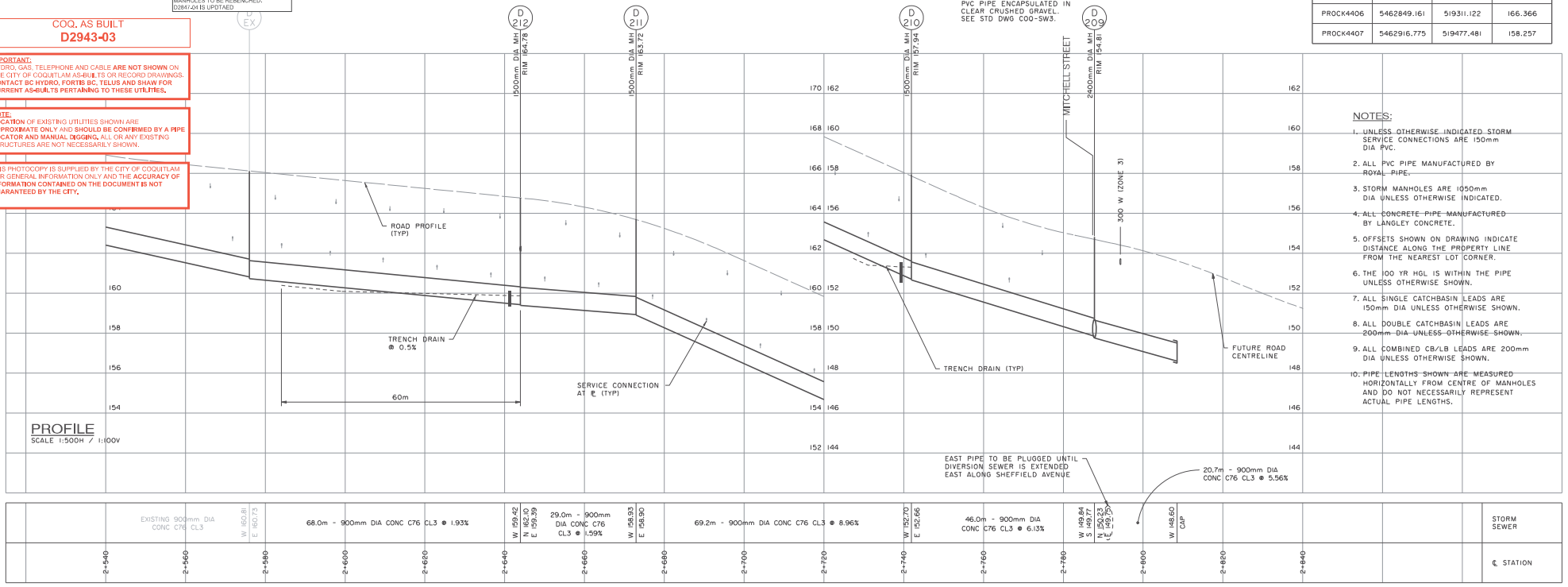
SURVEY MONUMENTS

POINT	NORTHING	EASTING	ELEVATION
PROCK4387	5462877.739	519391.632	164.664
PROCK4405	5462934.338	519527.603	154.348
PROCK4406	5462849.161	519311.122	166.366
PROCK4407	5462916.775	519477.481	158.257

COQ. AS BUILT
D2943-03

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.



PROFILE
SCALE 1:500H / 1:100V

NOTES:

1. UNLESS OTHERWISE INDICATED STORM SERVICE CONNECTIONS ARE 150mm DIA PVC.
2. ALL PVC PIPE MANUFACTURED BY ROYAL PIPE.
3. STORM MANHOLES ARE 1050mm DIA UNLESS OTHERWISE INDICATED.
4. ALL CONCRETE PIPE MANUFACTURED BY LANGLEY CONCRETE.
5. OFFSETS SHOWN ON DRAWING INDICATE DISTANCE ALONG THE PROPERTY LINE FROM THE NEAREST LOT CORNER.
6. THE 100 YR HGL IS WITHIN THE PIPE UNLESS OTHERWISE SHOWN.
7. ALL SINGLE CATCHBASIN LEADS ARE 150mm DIA UNLESS OTHERWISE SHOWN.
8. ALL DOUBLE CATCHBASIN LEADS ARE 200mm DIA UNLESS OTHERWISE SHOWN.
9. ALL COMBINED CB/LB LEADS ARE 200mm DIA UNLESS OTHERWISE SHOWN.
10. PIPE LENGTHS SHOWN ARE MEASURED HORIZONTALLY FROM CENTRE OF MANHOLES AND DO NOT NECESSARILY REPRESENT ACTUAL PIPE LENGTHS.

AC45-PC2C-203-D

Edge of Pavement; Watermain and Valve; Drainage Sewer, MH; Drainage Ditch; Sanitary Sewer, MH; Sanitary Forcemain; Gasmain and Valve; Hydro Duct, MH; Telephone Duct, MH; Hydrant; Water Air Valve; Water Blowoff; Water Service; Catch Basin, Top Inlet; Catch Basin, Side Inlet; Lawn Basin, Round; Drainage Service; Drainage Cleanout; Sanitary Service; Sanitary Cleanout; Utility Pole (Joint Pole); Utility Pole with Light; Street Light, Davit; Street Light, Post Top; Comb Signal Pole; Traffic Signal Pole; Traffic Street Sign; Junction Box; Survey Traverse Hub; Survey Iron Pin; Survey Lead Plug; Survey Monument

NO.	DATE	REVISIONS	BY	APPROVED
B	16-03-28	Record Drawings	JLC	
A	16-07-15	Issued for Construction	JLC	

DESIGN BY J. Cheung DATE 15-Feb-28
DRAWN BY G. Leung DATE 15-Feb-28
CHECKED BY DATE
APPROVED BY DATE

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Coquitlam
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3000 Guildford Way Coquitlam, BC V3B 7N2

SCALE HORIZ. 1:500 SCALE VERT. 1:100
SHEET D3 OF D9
ENG PROJECT NUMBER AC45-PC2C

PROJECT Parcel PC-2 Phase C
DESCRIPTION Storm Sewer - Sheffield Avenue Sta. 2+559.2 to Sta. 2+806.0

3/26/2018 11:43:01 AM I:\ac45\ustn\PC\AsBuilt\PC-2\Ph2\PC2C-203-D.dgn

NOTES:

1. UNLESS OTHERWISE INDICATED STORM SERVICE CONNECTIONS ARE 150mm DIA PVC.
2. ALL PVC PIPE MANUFACTURED BY IPEX.
3. STORM MANHOLES ARE 1050mm DIA UNLESS OTHERWISE INDICATED.
4. ALL CONCRETE PIPE MANUFACTURED BY LANGLEY CONCRETE.
5. OFFSETS SHOWN ON DRAWING INDICATE DISTANCE ALONG THE PROPERTY LINE FROM THE NEAREST LOT CORNER.
6. THE 100 YR HGL IS WITHIN THE PIPE UNLESS OTHERWISE SHOWN.
7. ALL SINGLE CATCHBASIN LEADS ARE 150mm DIA UNLESS OTHERWISE SHOWN.
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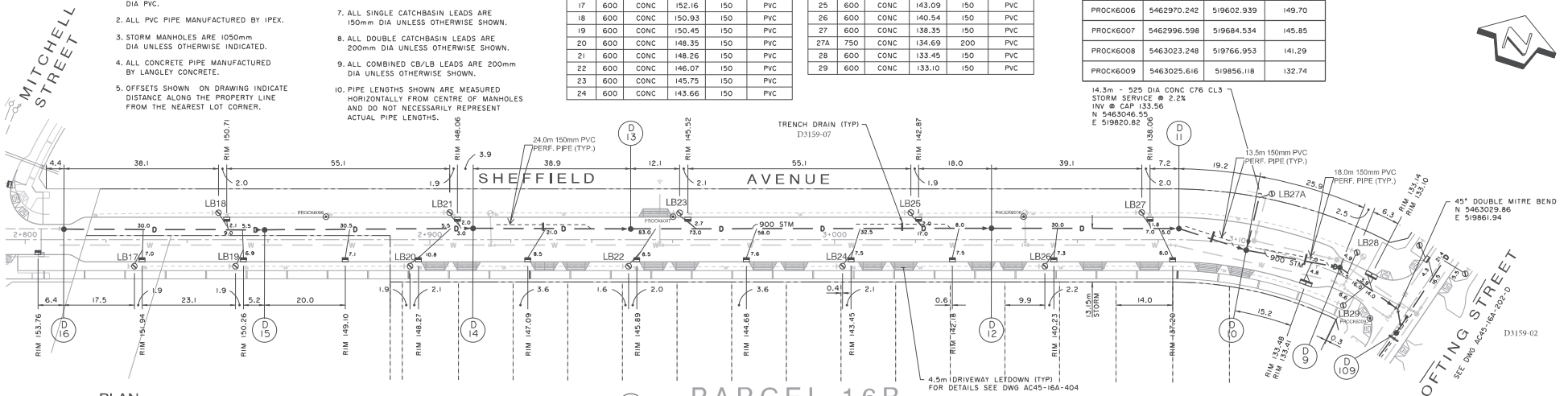
10. PIPE LENGTHS SHOWN ARE MEASURED HORIZONTALLY FROM CENTRE OF MANHOLES AND DO NOT NECESSARILY REPRESENT ACTUAL PIPE LENGTHS.

LB	SIZE	MATERIAL	RIM EL	SIZE (LEAD)	MATERIAL (LEAD)
17	600	CONC	152.16	150	PVC
18	600	CONC	150.93	150	PVC
19	600	CONC	150.45	150	PVC
20	600	CONC	148.35	150	PVC
21	600	CONC	148.26	150	PVC
22	600	CONC	146.07	150	PVC
23	600	CONC	145.75	150	PVC
24	600	CONC	143.66	150	PVC

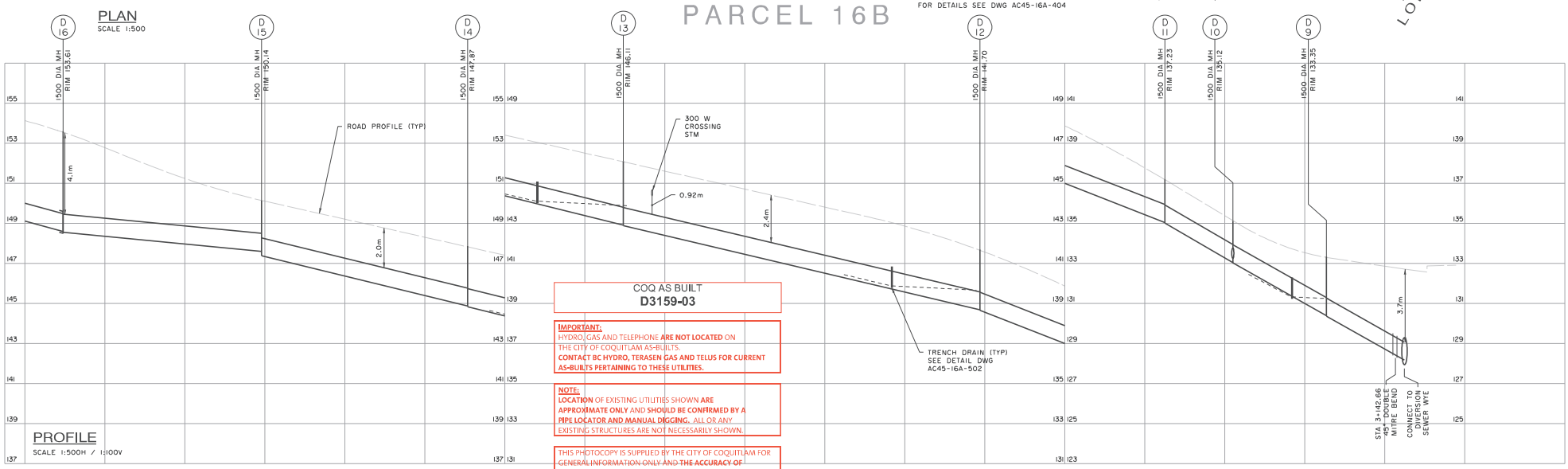
LB	SIZE	MATERIAL	RIM EL	SIZE (LEAD)	MATERIAL (LEAD)
25	600	CONC	143.09	150	PVC
26	600	CONC	140.54	150	PVC
27	600	CONC	138.35	150	PVC
27A	750	CONC	134.69	200	PVC
28	600	CONC	133.45	150	PVC
29	600	CONC	133.10	150	PVC

SURVEY MONUMENTS

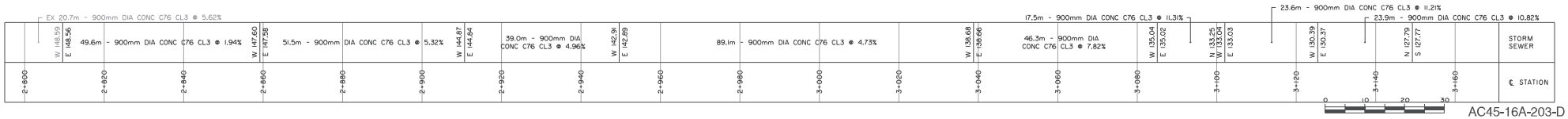
POINT	NORTHING	EASTING	ELEVATION
PROCK6006	5462970.242	519602.939	149.70
PROCK6007	5462996.598	519684.534	145.85
PROCK6008	5463023.248	519766.953	141.29
PROCK6009	5463025.616	519856.118	132.74



PLAN
SCALE 1:500



PROFILE
SCALE 1:500H / 1:100V



1:500

COQ AS BUILT
D3159-03

IMPORTANT:
HYDRO, GAS AND TELEPHONE **ARE NOT LOCATED** ON THE CITY OF COQUITLAM AS-BUILTS.
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.

AC45-16A-203-D

Edge of Pavement; Watermain and Valve; Drainage Sewer, MH; Drainage Ditch; Sanitary Sewer, MH; Sanitary Forcemain; Gasmain and Valve; Hydro Duct, MH; Telephone Duct, MH; Hydrant; Water Air Valve; Water Blowoff; Water Service; Catch Basin, Top Inlet; Catch Basin, Side Inlet; Lawn Basin, Round; Drainage Service; Drainage Cleanout; Sanitary Service; Sanitary Cleanout; Utility Pole (Joint Pole); Utility Pole with Light; Street Light, Davit; Street Light, Post Top; Comb Signal Pole; Traffic Signal Pole; Traffic Street Sign; Junction Box; Survey Traverse Hub; Survey Iron Pin; Survey Lead Plug; Survey Monument

NO.	DATE	REVISIONS	BY	APPROVED
7	21-08-31	Record Drawing	D.Y.	
6	20-07-23	Catchbasins Shifted for Parcel 16B Driveways	D.Y.	
5	20-06-22	Fourth Submission for City Approval / Issued for Construction	D.Y.	
4	20-04-07	Third Submission for City Approval	D.Y.	
3	20-03-12	Revised Note 5	D.Y.	
2	20-03-21	Second Submission for City Approval	D.Y.	

DESIGN BY J.Marden DATE 19-11-01
DRAWN BY L.Ellis DATE 19-11-07
CHECKED BY DATE
APPROVED BY DATE

InterCAD
CONSULTING ENGINEERS
1111 West 8th Avenue Vancouver, BC V6H 1C5
Tel 604.739.7707 / Fax 604.739.7727

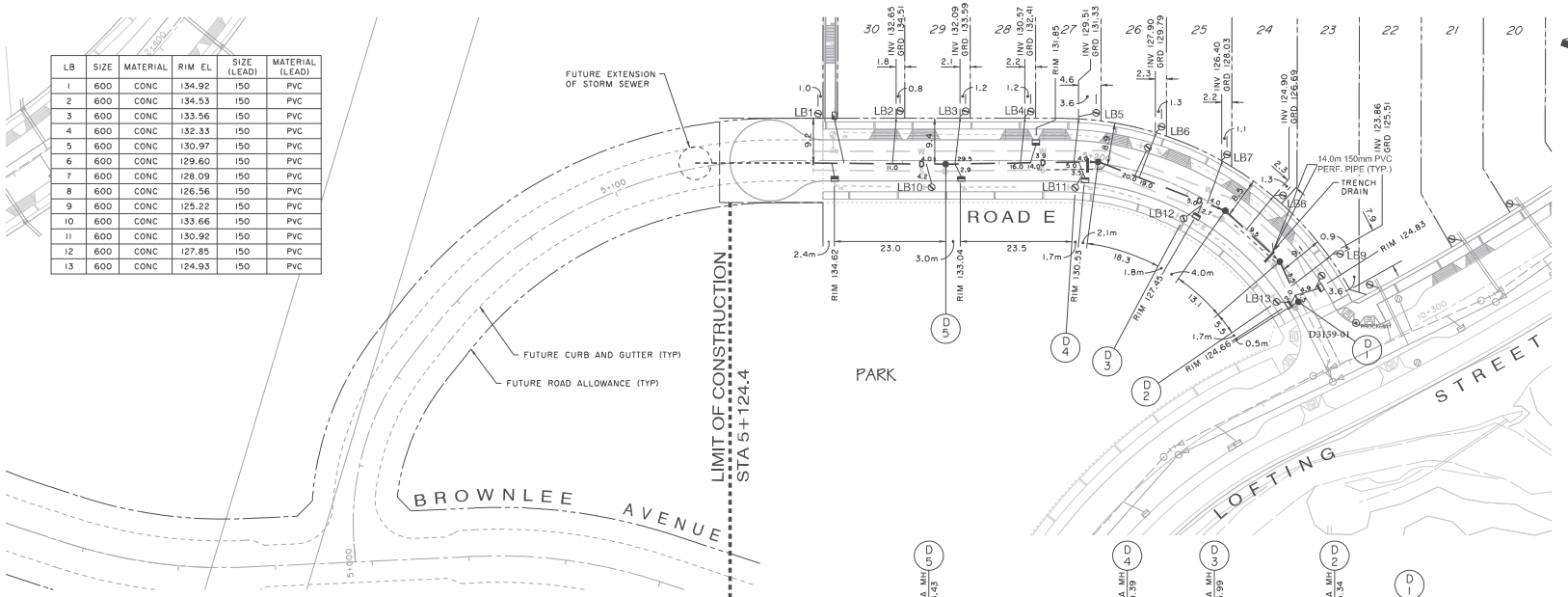
Coquitlam
Engineering & Public Works
3000 Guildford Way Coquitlam, BC V3B 7N2

SCALE HORIZ. 1:500 SCALE VERT. 1:100
SHEET D3 OF D13
ENG PROJECT NUMBER AC45-16A

PROJECT
Partington Creek
Parcel 16A
DESCRIPTION
Storm Sewer
Sheffield Avenue

22/02/02 4:31:17 PM I:\ac45\ustn\NW\Design\NW-16\As-Built\16A\16A-203-D.dgn

LB	SIZE	MATERIAL	RIM EL	SIZE (LEAD)	MATERIAL (LEAD)
1	600	CONC	134.92	150	PVC
2	600	CONC	134.53	150	PVC
3	600	CONC	133.56	150	PVC
4	600	CONC	132.33	150	PVC
5	600	CONC	130.97	150	PVC
6	600	CONC	129.60	150	PVC
7	600	CONC	128.09	150	PVC
8	600	CONC	126.56	150	PVC
9	600	CONC	125.22	150	PVC
10	600	CONC	133.66	150	PVC
11	600	CONC	130.92	150	PVC
12	600	CONC	127.85	150	PVC
13	600	CONC	124.93	150	PVC

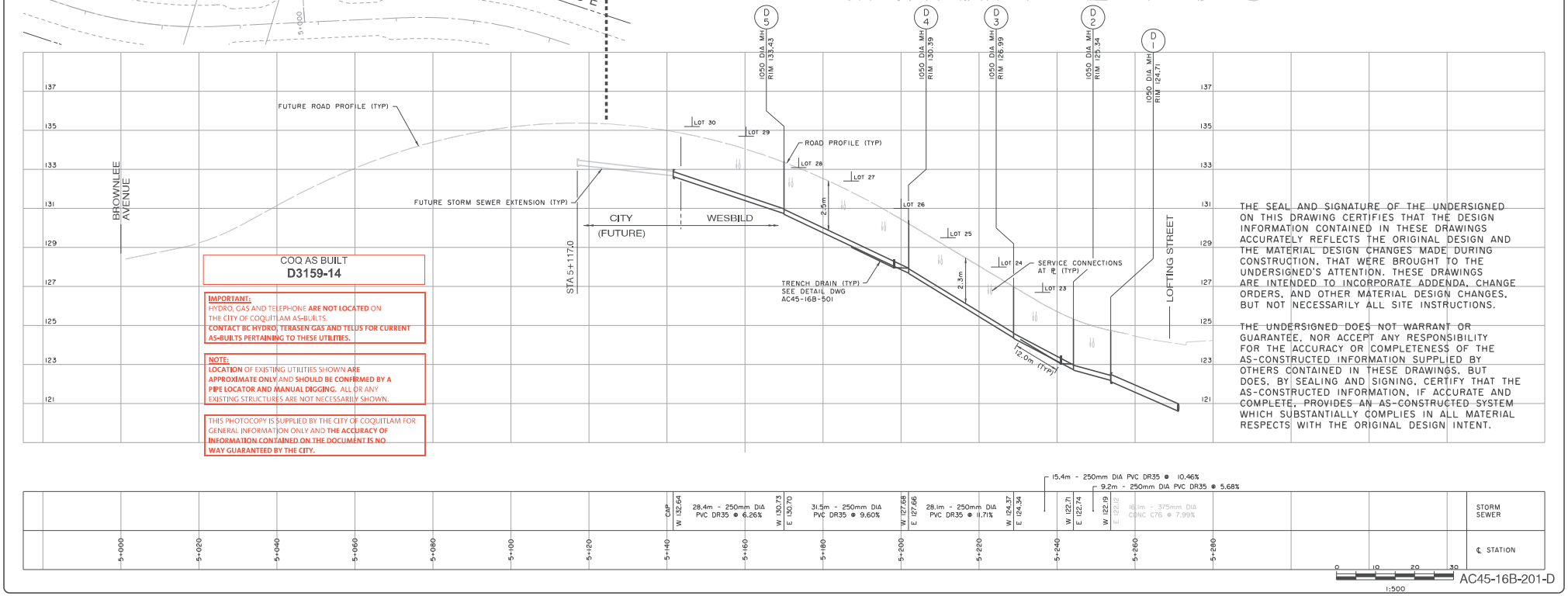


NOTES:

1. UNLESS OTHERWISE INDICATED STORM SERVICE CONNECTIONS ARE 150mm DIA PVC.
2. ALL PVC PIPE MANUFACTURED BY IPEX.
3. STORM MANHOLES ARE 1050mm DIA UNLESS OTHERWISE INDICATED.
4. ALL CONCRETE PIPE MANUFACTURED BY LANGLEY CONCRETE.
5. OFFSETS SHOWN ON DRAWING INDICATE DISTANCE ALONG THE PROPERTY LINE FROM THE NEAREST LOT CORNER.
6. THE 100 YR HGL IS WITHIN THE PIPE UNLESS OTHERWISE SHOWN.
7. ALL SINGLE CATCHBASIN LEADS ARE 150mm DIA UNLESS OTHERWISE SHOWN.
8. ALL COMBINED CB/LB LEADS ARE 200mm DIA UNLESS OTHERWISE SHOWN.
9. PIPE LENGTHS SHOWN ARE MEASURED HORIZONTALLY FROM CENTRE OF MANHOLES AND DO NOT NECESSARILY REPRESENT ACTUAL PIPE LENGTHS.

SURVEY MONUMENTS

POINT	NORTHING	EASTING	ELEVATION
PROCK6011	5462890.851	519760.915	124.78



COQ AS BUILT
D3159-14

IMPORTANT:
HYDRO, GAS AND TELEPHONE **ARE NOT LOCATED** ON THE CITY OF COQUITLAM AS-BUILTS.
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 NO WAY GUARANTEED BY THE CITY.**

THE SEAL AND SIGNATURE OF THE UNDERSIGNED ON THIS DRAWING CERTIFIES THAT THE DESIGN INFORMATION CONTAINED IN THESE DRAWINGS ACCURATELY REFLECTS THE ORIGINAL DESIGN AND THE MATERIAL DESIGN CHANGES MADE DURING CONSTRUCTION, THAT WERE BROUGHT TO THE UNDERSIGNED'S ATTENTION. THESE DRAWINGS ARE INTENDED TO INCORPORATE ADDENDA, CHANGE ORDERS, AND OTHER MATERIAL DESIGN CHANGES, BUT NOT NECESSARILY ALL SITE INSTRUCTIONS.

THE UNDERSIGNED DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THESE DRAWINGS, BUT DOES, BY SEALING AND SIGNING, CERTIFY THAT THE AS-CONSTRUCTED INFORMATION, IF ACCURATE AND COMPLETE, PROVIDES AN AS-CONSTRUCTED SYSTEM WHICH SUBSTANTIALLY COMPLIES IN ALL MATERIAL RESPECTS WITH THE ORIGINAL DESIGN INTENT.

AC45-16B-201-D

Edge of Pavement; Watermain and Valve; Drainage Sewer, MH; Drainage Ditch; Sanitary Sewer, MH; Sanitary Forcemain; Gasmain and Valve; Hydro Duct, MH; Telephone Duct, MH; Hydrant; Water Air Valve; Water Blowoff; Water Service; Catch Basin, Top Inlet; Catch Basin, Side Inlet; Lawn Basin, Round; Drainage Service; Drainage Cleanout; Sanitary Service; Sanitary Cleanout; Utility Pole (Joint Pole); Utility Pole with Light; Street Light, Davit; Street Light, Post Top; Comb Signal Pole; Traffic Signal Pole; Traffic Street Sign; Junction Box; Survey Traverse Hub; Survey Iron Pin; Survey Lead Plug; Survey Monument

NO.	DATE	REVISIONS	BY	APPROVED
4	21-12-10	Record Drawing	D.Y.	
3	21-06-25	Fourth Submission for City Approval	D.Y.	
2	21-04-28	Third Submission for City Approval Issued for Construction	D.Y.	
1	21-03-19	Second Submission for City Approval	D.Y.	
0	20-10-07	First Submission for City Approval	D.Y.	

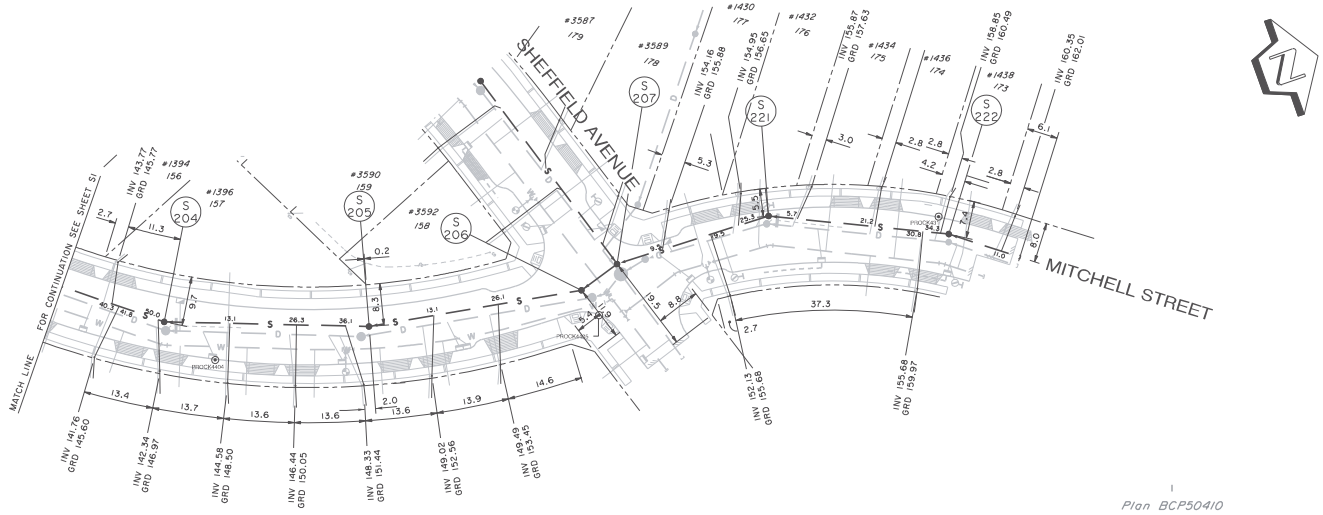
DESIGN BY: L.Ellis — DATE: 21-03-12
DRAWN BY: S.Jones — DATE: 21-03-12
CHECKED BY — DATE
APPROVED BY — DATE

InterCAD CONSULTING ENGINEERS
1111 West 8th Avenue Vancouver, BC V6H 1C5
Tel 604.739.7707 / Fax 604.739.7727

Coquitlam
Engineering & Public Works
3000 Guildford Way Coquitlam, BC V3B 7N2

SCALE HORIZ. 1:500 — SCALE VERT. 1:100
SHEET D1 OF D2
ENG PROJECT NUMBER AC45-16B

PROJECT: Partington Creek Parcel 16B
DESCRIPTION: Storm Sewer - Road E



PLAN
SCALE 1:500

Plan BCP50410

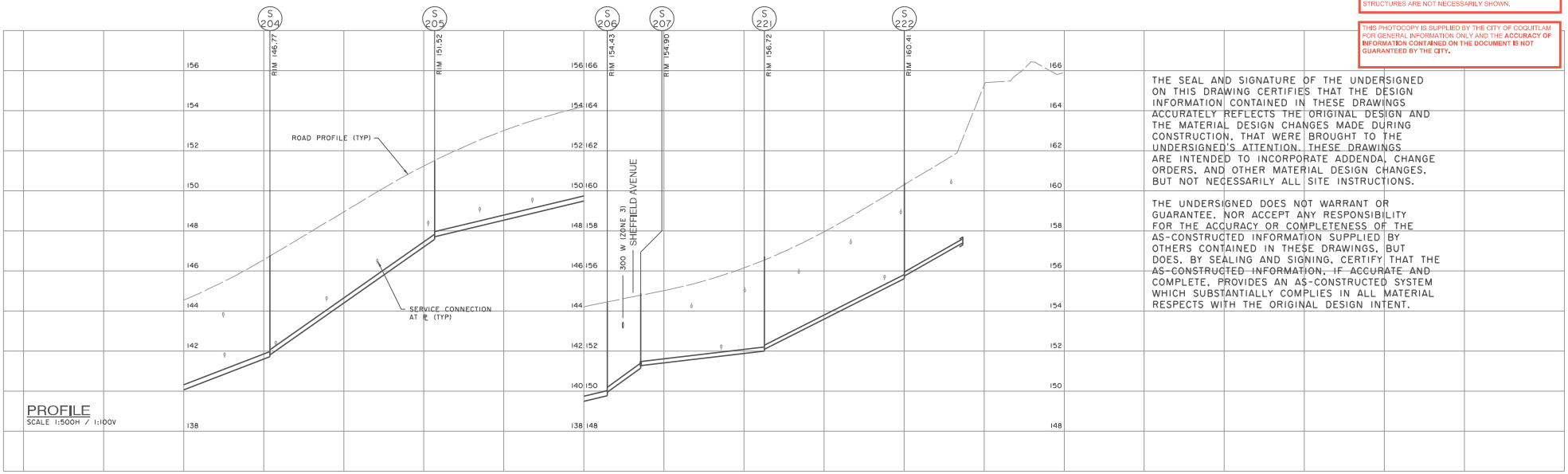
NOTES:

1. SANITARY SERVICE CONNECTIONS ARE 100mm DIA PVC.
2. ALL PVC PIPE MANUFACTURED BY ROYAL PIPE.
3. SANITARY MANHOLES ARE 1050mm DIA UNLESS OTHERWISE INDICATED.
4. OFFSETS SHOWN ON DRAWING INDICATE DISTANCE ALONG THE PROPERTY LINE FROM THE NEAREST LOT CORNER.
5. PIPE LENGTHS SHOWN ARE MEASURED HORIZONTALLY FROM CENTRE OF MANHOLES AND DO NOT NECESSARILY REPRESENT ACTUAL PIPE LENGTH.

SURVEY MONUMENTS

POINT	NORTHING	EASTING	ELEVATION
PROCK431	5463004.556	519531.707	160.298
PROCK4404	5462859.372	519510.484	148.108
PROCK4405	5462934.338	519527.603	154.348

COQ. AS BUILT
S2139-02



PROFILE
SCALE 1:500H / 1:100V

THE SEAL AND SIGNATURE OF THE UNDERSIGNED ON THIS DRAWING CERTIFIES THAT THE DESIGN INFORMATION CONTAINED IN THESE DRAWINGS ACCURATELY REFLECTS THE ORIGINAL DESIGN AND THE MATERIAL DESIGN CHANGES MADE DURING CONSTRUCTION, THAT WERE BROUGHT TO THE UNDERSIGNED'S ATTENTION. THESE DRAWINGS ARE INTENDED TO INCORPORATE ADDENDA, CHANGE ORDERS, AND OTHER MATERIAL DESIGN CHANGES, BUT NOT NECESSARILY ALL SITE INSTRUCTIONS.

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AC45-PC2C-202-S

Edge of Pavement, Watermain and Valve, Drainage Sewer, MH, Drainage Ditch, Sanitary Sewer, MH, Sanitary Forcemain, Gasmain and Valve, Hydro Duct, MH, Telephone Duct, MH
Hydrant, Water Air Valve, Water Blowoff, Water Service, Catch Basin, Top Inlet, Catch Basin, Side Inlet, Lawn Basin, Round, Drainage Service, Drainage Cleanout
Sanitary Service, Sanitary Cleanout, Utility Pole (Joint Pole), Utility Pole with Light, Street Light, Davit, Street Light, Post Top, Comb Signal Pole, Traffic Signal Pole, Traffic Street Sign
Junction Box, Survey Traverse Hub, Survey Iron Pin, Survey Lead Plug, Survey Monument

NO.	DATE	REVISIONS	BY	APPROVED
B	16-03-28	Record Drawings	JJC	
A	16-07-15	Issued for Construction	JJC	

DESIGN BY J. Leung DATE 15-04-28
DRAWN BY G. Leung DATE 15-04-28
CHECKED BY DATE
APPROVED BY DATE

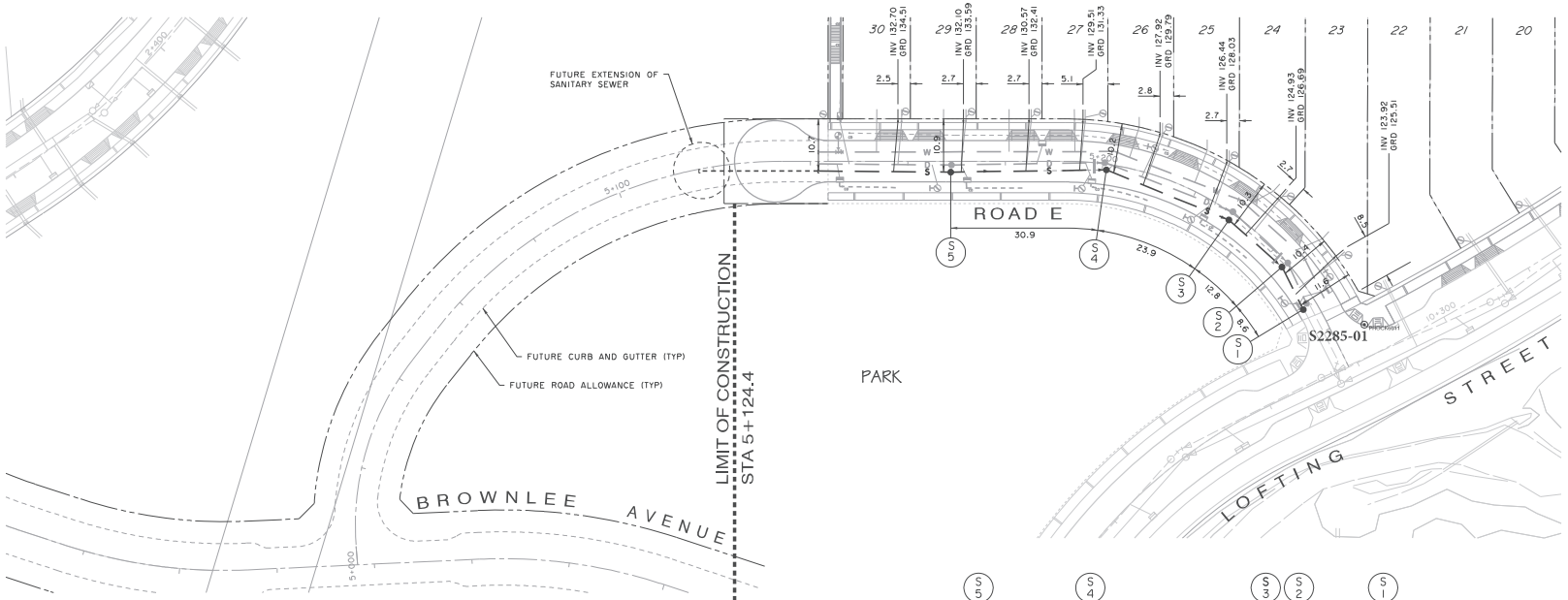
InterCAD
CONSULTING ENGINEERS
1111 West 8th Avenue
Vancouver, BC V6H 1C5
Tel 604.739.7707 / Fax 604.739.7727

Coquitlam
Engineering & Public Works
3000 Guildford Way Coquitlam, BC V3B 7N2

SCALE HORIZ. 1:500 SCALE VERT. 1:100
SHEET S2 OF S7
ENG PROJECT NUMBER AC45-PC2C

PROJECT
Parcel PC-2 Phase C
DESCRIPTION
Sanitary Sewer - Mitchell Street
Sta. 2+360.0 to Sta. 2+553.2

3/26/2018 11:58:46 AM I:\ac45\ustn\PC\AsBuilt\PC-2\Ph2\PC2C-202-S.dgn

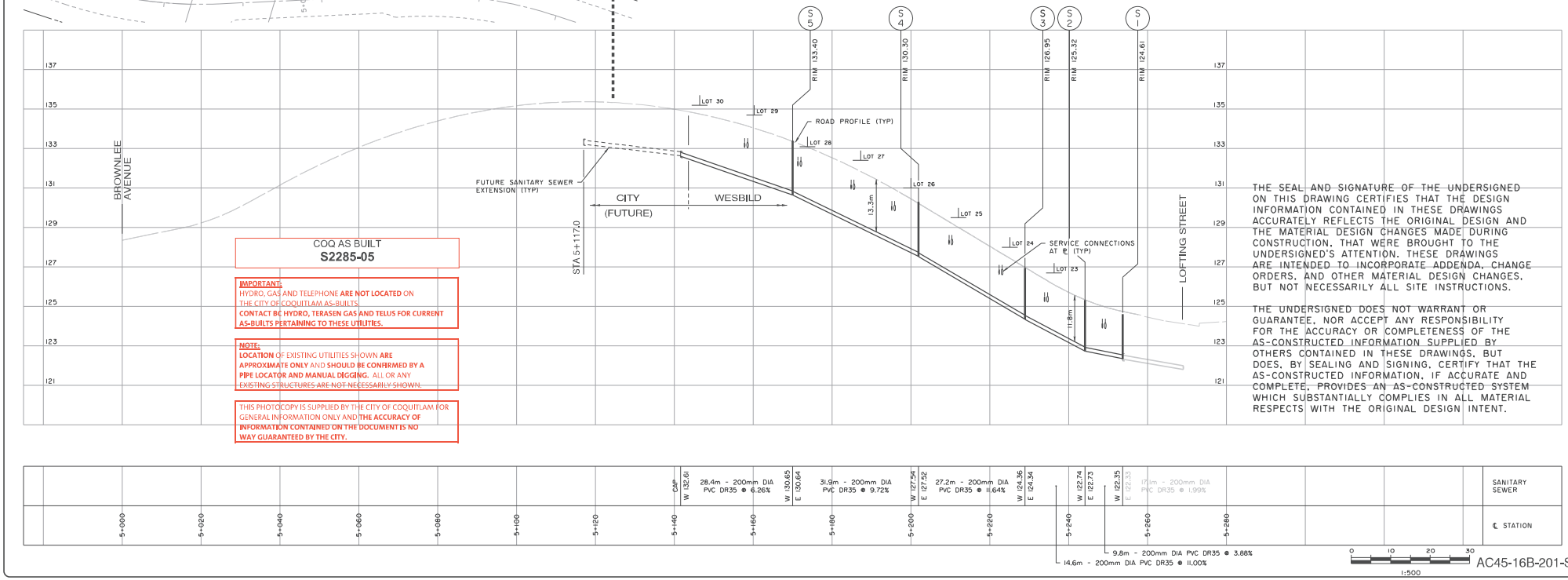


NOTES:

1. UNLESS OTHERWISE INDICATED SANITARY SERVICE CONNECTIONS ARE 100mm DIA PVC.
2. ALL PVC PIPE MANUFACTURED BY IPEX.
3. SANITARY MANHOLES ARE 1050mm DIA UNLESS OTHERWISE INDICATED.
4. SERVICE CONNECTION OFFSETS SHOWN ON DRAWING INDICATE DISTANCE ALONG THE PROPERTY LINE FROM NEAREST LOT CORNER.
5. PIPE LENGTHS SHOWN ARE MEASURED HORIZONTALLY FROM CENTRE OF MANHOLES AND DO NOT NECESSARILY REPRESENT ACTUAL PIPE LENGTHS.

SURVEY MONUMENTS

POINT	NORTHING	EASTING	ELEVATION
PROCK6011	5462890.851	519760.915	124.78



COQ AS BUILT
S2285-05

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

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AC45-16B-201-S

Edge of Pavement, Watermain and Valve, Drainage Sewer, MH, Drainage Ditch, Sanitary Sewer, MH, Sanitary Forcemain, Gasmain and Valve, Hydro Duct, MH, Telephone Duct, MH, Hydrant, Water Air Valve, Water Blowoff, Water Service, Catch Basin, Top Inlet, Catch Basin, Side Inlet, Lawn Basin, Round, Drainage Service, Drainage Cleanout, Sanitary Service, Sanitary Cleanout, Utility Pole (Joint Pole), Utility Pole with Light, Street Light, Davit, Street Light, Post Top, Comb Signal Pole, Traffic Signal Pole, Traffic Street Sign, Junction Box, Survey Traverse Hub, Survey Iron Pin, Survey Lead Plug, Survey Monument

NO.	DATE	REVISIONS	BY	APPROVED
3	21-10-15	Record Drawing	D.Y.	
2	21-04-28	Third Submission for City Approval/Issued for Construction	D.Y.	
1	21-03-19	Second Submission for City Approval	D.Y.	
0	20-12-07	First Submission for City Approval	D.Y.	

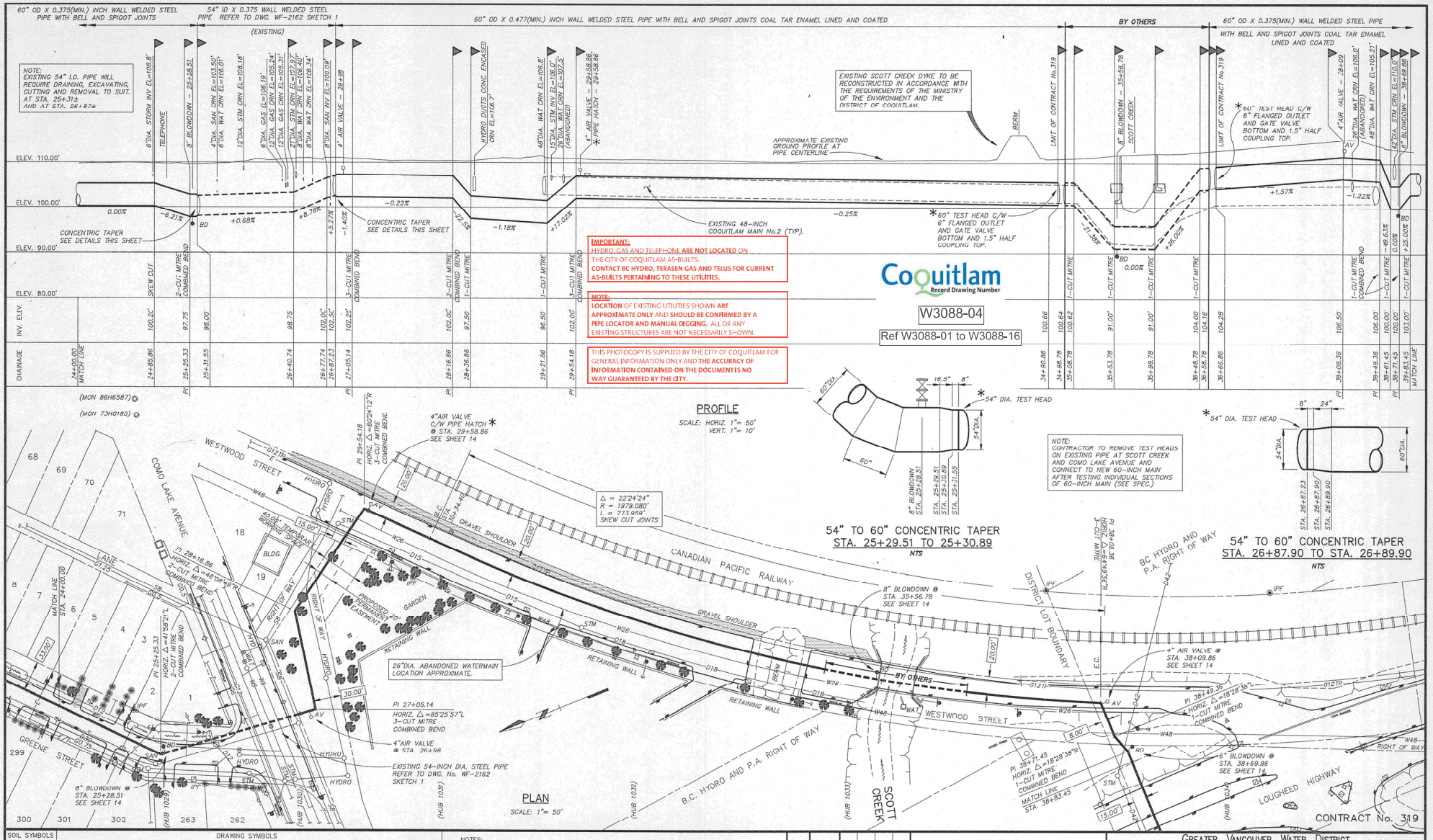
DESIGN BY L. Ellis DATE 21-03-12
DRAWN BY S. Jones DATE 21-03-12
CHECKED BY DATE
APPROVED BY DATE

InterCAD
CONSULTING ENGINEERS
1111 West 8th Avenue
Vancouver, BC V6H 1C5
Tel 604.739.7707 / Fax 604.739.7727

Coquitlam
Engineering & Public Works
3000 Guildford Way Coquitlam, BC V3B 7N2

SCALE HORIZ. 1:500 SCALE VERT. 1:100
SHEET S1 OF S2
ENG PROJECT NUMBER AC45-16B

PROJECT
Partington Creek
Parcel 16B
DESCRIPTION
Sanitary Sewer - Road E



SOIL SYMBOLS: ORGANIC, CLAY, SILT, SAND, GRAVEL

DRAWING SYMBOLS

PIPELINE	SEWER HOUSE CONNECTIONS	HOUSE NUMBER	PROPOSED PERMANENT EASEMENT
TRAVERSE HUB	FIRE HYDRANT	UG ELECT. CABLES	EXISTING PROPERTY LINE
MONUMENT	SEWER	LAMP STANDARD	TEMP. WORKING SPACE
IRON PIN FOUND	STORM DRAIN	DITCH	
QLD IRON PIN	CATCH BASIN	PAVEMENT	
LEAD PLUG FOUND	CULVERT	ROCKERIES	
MANHOLE	GAS MAIN	FENCE	
POWER POLE	STORM HOUSE CONNECTION	GRAVEL SURFACE	
TELEPHONE POLE	UNDERGROUND TEL. CABLES	ELECT. PULL BOX	
GUY/ANCHOR POLE	WATER MAIN	SIGN	
WATER VALVE BOX	WATER HOUSE CONNECTION	HEDGE, TREE	
GAS VALVE BOX	RAILWAY SIGNAL LIGHT	CAPPED SERVICE PIPE	

NOTES:
1. ALL ELEVATIONS ARE REFERRED TO G.V.W.D. DATUM AND ARE IN FEET. G.V.W.D. 91.37 = GEODETIC 0.00
2. SURVEY CONTROL POINTS IN BRACKETS REFER TO PRELIMINARY SURVEY LINE.
3. FIELD BOOK REF. W-729-28
4. DATE OF SURVEY: MAR. 1991
5. * DENOTES ITEMS SUPPLIED BY THE CORPORATION.
6. PIPE HATCHES TO BE SPACED AT APPROXIMATELY 1000 FT. INTERVALS. LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

Issue	Date	Desn	Dr'n	Chkd	Appd	Description
B	1/28/92	R.N.	K.T.			SCOTT CREEK DYKE NOTE ADDED
						GRADE REVISED SOUTH OF PI 29+54.18
						REVISION TO ALL CHAINAGES & ANGLES @ PI 25+25.33

Design KB. Des.chkd Drawn/Tr. MLB/ Dwg.chkd Submitted Engineer

GREATER VANCOUVER WATER DISTRICT

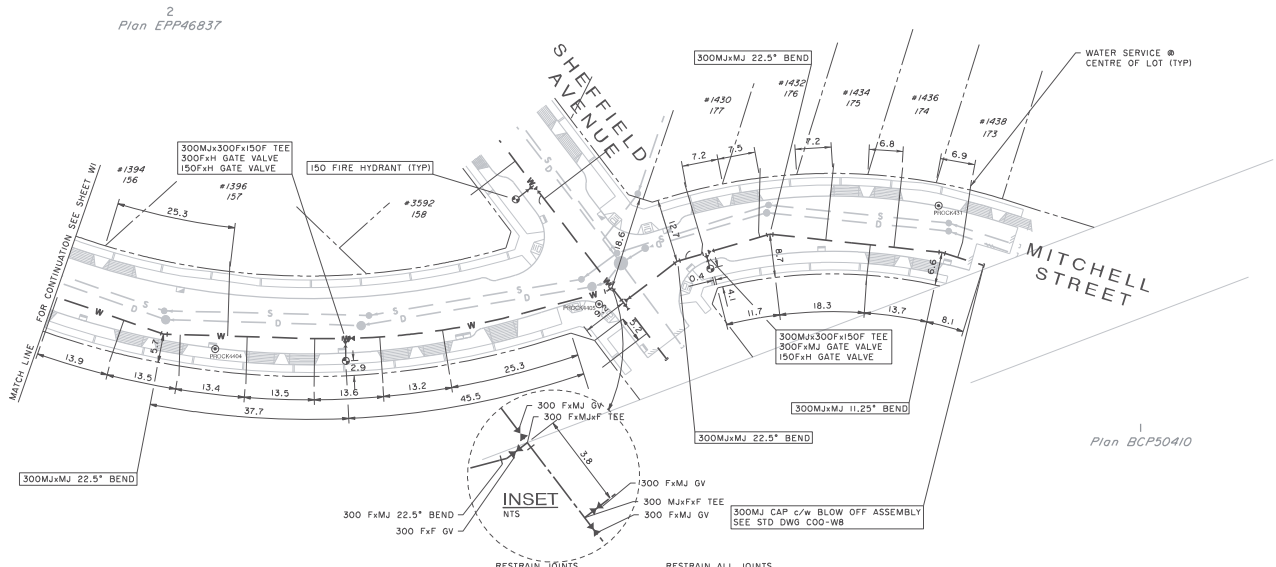
COQUITLAM MAIN No. 3 – STATE V

DEWDNEY TRUNK RD TO CAPE HORN P.S.

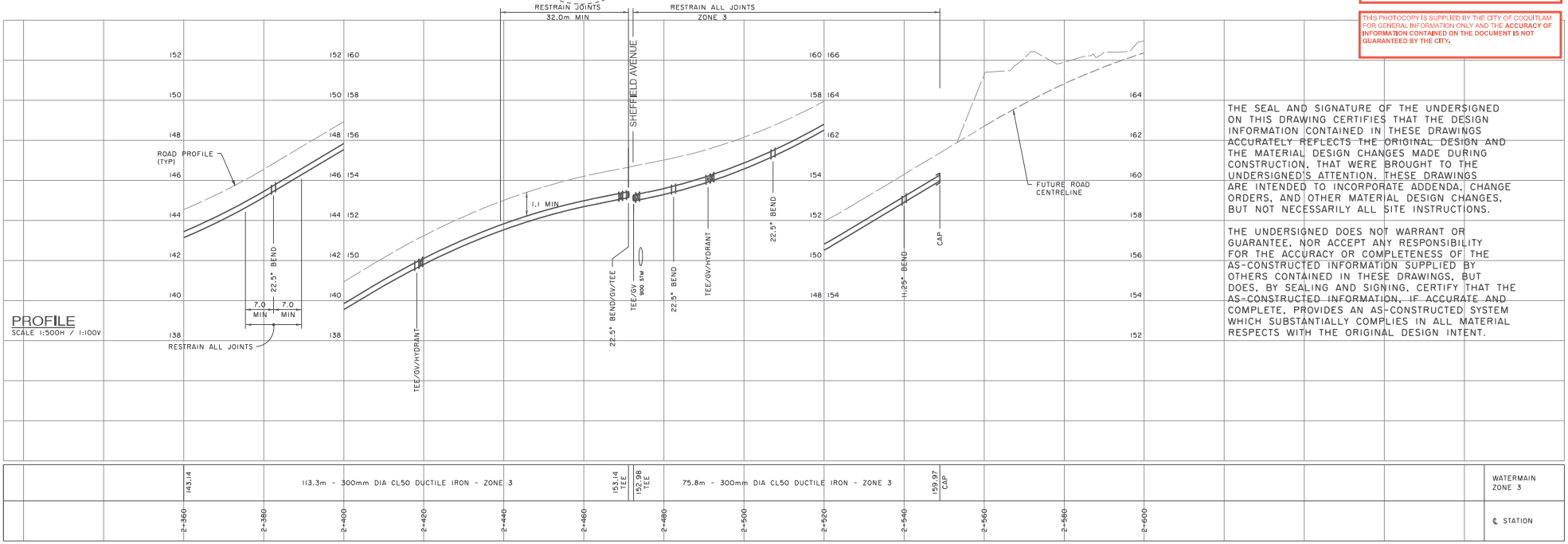
PLAN AND PROFILE

SCALE 1"=50'-0" | DATE JAN. 1992 | SHEET 4 | DRAWING NO. WF-2234

SUPERSEDES PRINTS OF THIS NUMBER WITH LETTERS PREVIOUS TO B



PLAN
SCALE 1:500



PROFILE
SCALE 1:500H / 1:100V

NOTES:

1. ALL DUCTILE IRON PIPE MANUFACTURED BY CANADA PIPE COMPANY LTD.
2. ALL WATER SERVICE CONNECTIONS ARE 20mm DIA COPPER, TYPE K.
3. ALL WATERMAIN GATE VALVES MANUFACTURED BY CLOW CANADA.
4. ALL FIRE HYDRANTS ARE TERMINAL CITY C-7IP MODEL WITH STORZ NOZZLE ON PUMP PORT.
5. CURB AND CORPORATION STOPS MANUFACTURED BY CAMBRIDGE BRASS.
6. OFFSETS SHOWN ON DRAWING INDICATE DISTANCE ALONG THE PROPERTY LINE FROM NEAREST LOT CORNER.

SURVEY MONUMENTS

POINT	NORTHING	EASTING	ELEVATION
PROCK431	5463004.556	519531.707	160.298
PROCK4404	5462859.372	519510.484	148.108
PROCK4405	5462934.338	519527.603	154.348

COQ. AS BUILT
W3341-02

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.

THE SEAL AND SIGNATURE OF THE UNDERSIGNED ON THIS DRAWING CERTIFIES THAT THE DESIGN INFORMATION CONTAINED IN THESE DRAWINGS ACCURATELY REFLECTS THE ORIGINAL DESIGN AND THE MATERIAL DESIGN CHANGES MADE DURING CONSTRUCTION, THAT WERE BROUGHT TO THE UNDERSIGNED'S ATTENTION. THESE DRAWINGS ARE INTENDED TO INCORPORATE ADDENDA, CHANGE ORDERS, AND OTHER MATERIAL DESIGN CHANGES, BUT NOT NECESSARILY ALL SITE INSTRUCTIONS.

THE UNDERSIGNED DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THESE DRAWINGS, BUT DOES, BY SEALING AND SIGNING, CERTIFY THAT THE AS-CONSTRUCTED INFORMATION, IF ACCURATE AND COMPLETE, PROVIDES AN AS-CONSTRUCTED SYSTEM WHICH SUBSTANTIALLY COMPLIES IN ALL MATERIAL RESPECTS WITH THE ORIGINAL DESIGN INTENT.

AC45-PC2C-102-W

Edge of Pavement, Watermain and Valve, Drainage Sewer, MH, Drainage Ditch, Sanitary Sewer, MH, Sanitary Forcemain, Gasmain and Valve, Hydro Duct, MH, Telephone Duct, MH, Hydrant, Water Air Valve, Water Blowoff, Water Service, Catch Basin, Top Inlet, Catch Basin, Side Inlet, Drainage Service, Drainage Cleanout, Sanitary Service, Sanitary Cleanout, Utility Pole (Joint Pole), Utility Pole with Light, Street Light, Davit, Street Light, Post Top, Comb Signal Pole, Traffic Signal Pole, Traffic Street Sign, Junction Box, Survey Traverse Hub, Survey Iron Pin, Survey Lead Plug, Survey Monument

NO.	DATE	REVISIONS	BY	APPROVED
B	16-03-28	Record Drawings	JJC	
A	16-07-15	Issued for Construction	JJC	

DESIGN BY J. Leung DATE 15-Oct-28
DRAWN BY G. Leung DATE 15-Oct-28
CHECKED BY DATE
APPROVED BY DATE

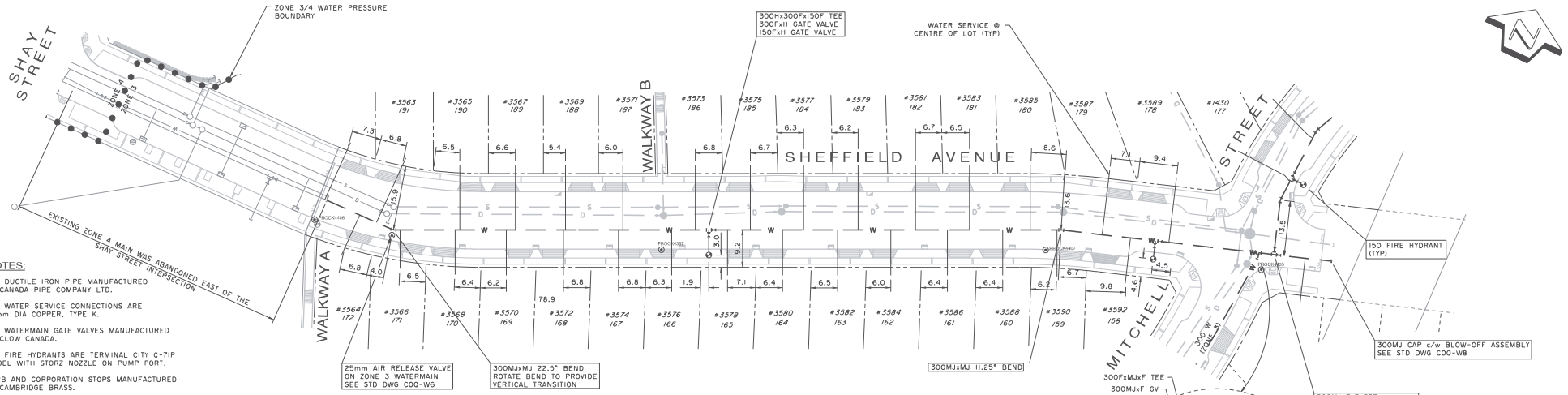
InterCAD
CONSULTING ENGINEERS
1111 West 8th Avenue Vancouver, BC V6H 1C5
Tel 604.739.7707 / Fax 604.739.7727

Coquitlam
Engineering & Public Works
3000 Guildford Way Coquitlam, BC V3B 7N2

SCALE HORIZ. 1:500 SCALE VERT. 1:100
SHEET W2 OF W7
ENG PROJECT NUMBER AC45-PC2C

PROJECT Parcel PC-2 Phase C
DESCRIPTION Watermain - Mitchell Street Sta. 2+360.0 to Sta. 2+553.2

3/26/2018 11:24:38 AM I:\ac45\ustn\PC\AsBuilt\PC-2\Ph2\PC2C-102-W.dga



NOTES:

1. ALL DUCTILE IRON PIPE MANUFACTURED BY CANADA PIPE COMPANY LTD.
2. ALL WATER SERVICE CONNECTIONS ARE 20mm DIA COPPER, TYPE K.
3. ALL WATERMAIN GATE VALVES MANUFACTURED BY CLOW CANADA.
4. ALL FIRE HYDRANTS ARE TERMINAL CITY C-7IP MODEL WITH STORZ NOZZLE ON PUMP PORT.
5. CURB AND CORPORATION STOPS MANUFACTURED BY CAMBRIDGE BRASS.
6. OFFSETS SHOWN ON DRAWING INDICATE DISTANCE ALONG THE PROPERTY LINE FROM NEAREST LOT CORNER.

THE SEAL AND SIGNATURE OF THE UNDERSIGNED ON THIS DRAWING CERTIFIES THAT THE DESIGN INFORMATION CONTAINED IN THESE DRAWINGS ACCURATELY REFLECTS THE ORIGINAL DESIGN AND THE MATERIAL DESIGN CHANGES MADE DURING CONSTRUCTION, THAT WERE BROUGHT TO THE UNDERSIGNED'S ATTENTION. THESE DRAWINGS ARE INTENDED TO INCORPORATE ADDENDA, CHANGE ORDERS AND OTHER MATERIAL DESIGN CHANGES, BUT NOT NECESSARILY ALL SITE INSTRUCTIONS.

THE UNDERSIGNED DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THESE DRAWINGS, BUT DOES, BY SEALING AND SIGNING, CERTIFY THAT THE AS-CONSTRUCTED INFORMATION, IF ACCURATE AND COMPLETE, PROVIDES AN AS-CONSTRUCTED SYSTEM WHICH SUBSTANTIALLY COMPLIES IN ALL MATERIAL RESPECTS WITH THE ORIGINAL DESIGN INTENT.

COQ. AS BUILT
W3341-03

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.

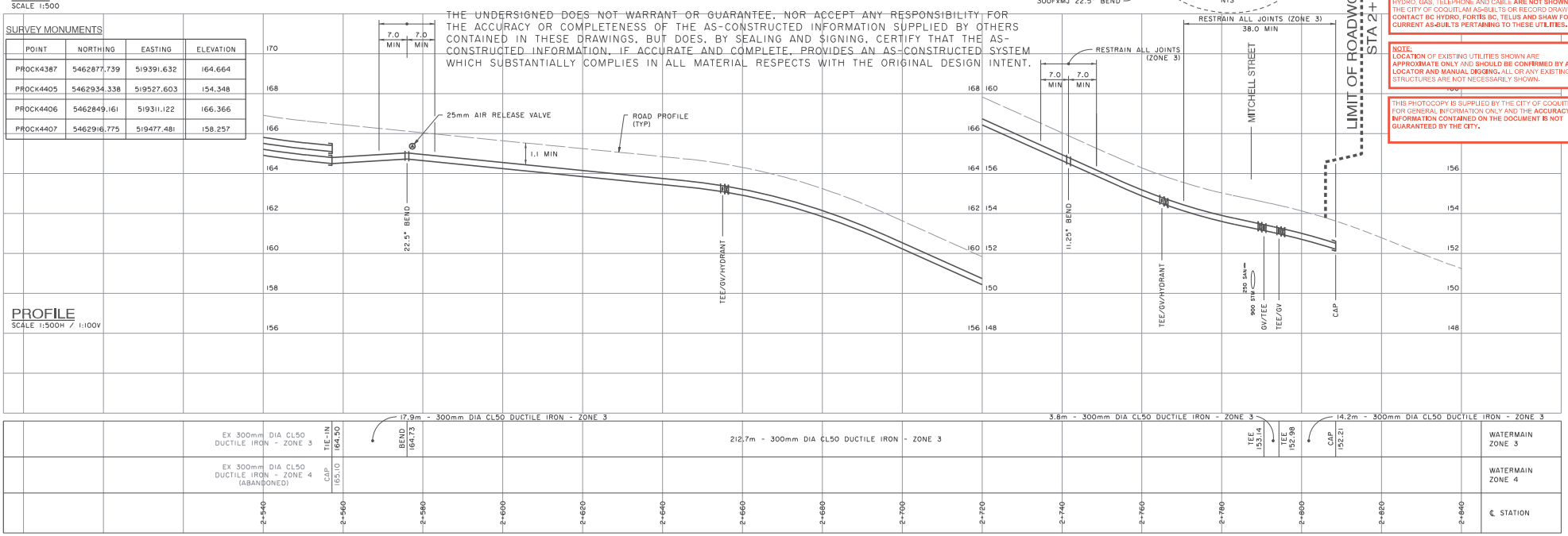
THIS PHOTOCOPY IS SUPPLIED BY THE CITY OF COQUITLAM FOR GENERAL INFORMATION ONLY AND THE **ACCURACY OF INFORMATION CONTAINED ON THE DOCUMENT IS NOT GUARANTEED BY THE CITY.**

PLAN
SCALE 1:500

SURVEY MONUMENTS

POINT	NORTHING	EASTING	ELEVATION
PROCK4387	5462877.739	519391.632	164.664
PROCK4405	5462934.338	519527.603	154.348
PROCK4406	5462849.161	519311.122	166.366
PROCK4407	5462916.775	519477.481	158.257

PROFILE
SCALE 1:500H / 1:100V



AC45-PC2C-103-W

Edge of Pavement · Watermain and Valve · Drainage Sewer, MH · Drainage Ditch · Sanitary Sewer, MH · Sanitary Forcemain · Gasmain and Valve · Hydro Duct, MH · Telephone Duct, MH · Hydrant · Water Air Valve · Water Blowoff · Water Service · Catch Basin, Top Inlet · Catch Basin, Side Inlet · Lawn Basin, Round · Drainage Service · Drainage Cleanout · Sanitary Service · Sanitary Cleanout · Utility Pole (Joint Pole) · Utility Pole with Light · Street Light, Davit · Street Light, Post Top · Comb Signal Pole · Traffic Signal Pole · Traffic Street Sign · Junction Box · Survey Traverse Hub · Survey Iron Pin · Survey Lead Plug · Survey Monument

NO.	DATE	REVISIONS	BY	APPROVED
B	16-03-28	Record Drawings	JJC	
A	16-07-15	Issued for Construction	JJC	

DESIGN BY J.Cheung DATE 15-Dec-28
DRAWN BY G.Leung DATE 15-Dec-28
CHECKED BY DATE
APPROVED BY DATE

InterCAD CONSULTING ENGINEERS
1111 West 8th Avenue Vancouver, BC V6H 1C5
Tel 604.739.7707 / Fax 604.739.7727

Coquitlam
Engineering & Public Works
3000 Guildford Way Coquitlam, BC V3B 7N2

SCALE HORIZ. 1:500 SCALE VERT. 1:100
SHEET W3 OF W7
ENG PROJECT NUMBER AC45-PC2C

PROJECT Parcel PC-2 Phase C
DESCRIPTION Watermain - Sheffield Avenue Sta. 2+559.2 to Sta. 2+806.0

3/26/2018 11:27:43 AM I:\ac45\ustn\PC\AsBuilt\PC-2\Ph2\PC2C-103-W.dgn

THE SEAL AND SIGNATURE OF THE UNDERSIGNED ON THIS DRAWING CERTIFIES THAT THE DESIGN INFORMATION CONTAINED IN THESE DRAWINGS ACCURATELY REFLECTS THE ORIGINAL DESIGN AND THE MATERIAL DESIGN CHANGES MADE DURING CONSTRUCTION, THAT WERE BROUGHT TO THE UNDERSIGNED'S ATTENTION. THESE DRAWINGS ARE INTENDED TO INCORPORATE ADDENDA, CHANGE ORDERS, AND OTHER MATERIAL DESIGN CHANGES, BUT NOT NECESSARILY ALL SITE INSTRUCTIONS.

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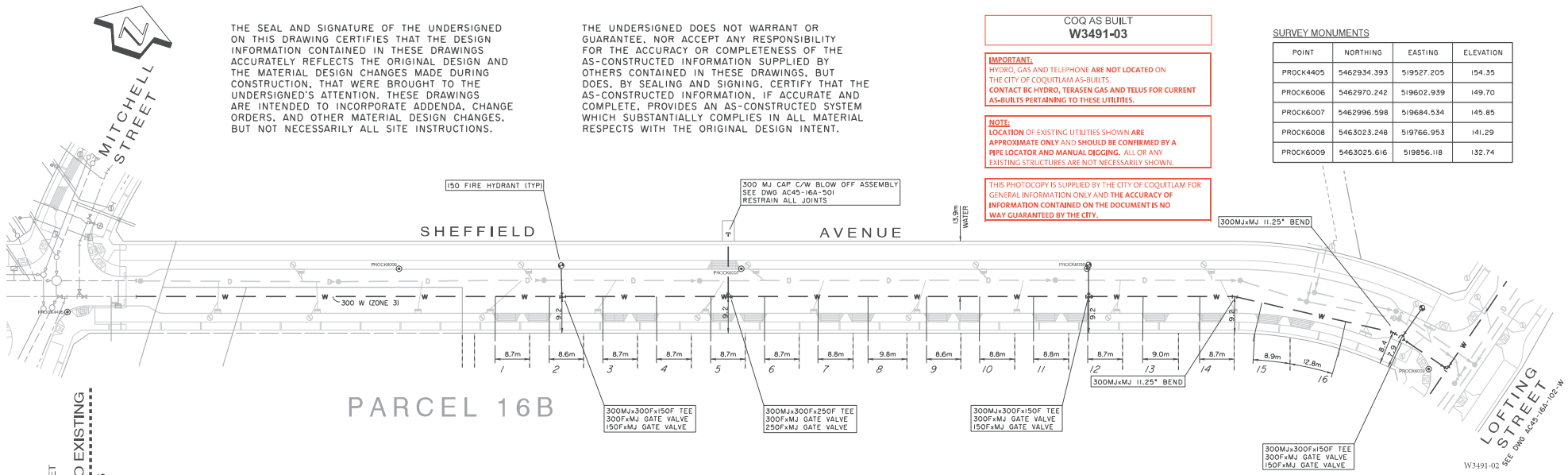
COQ AS BUILT
W3491-03

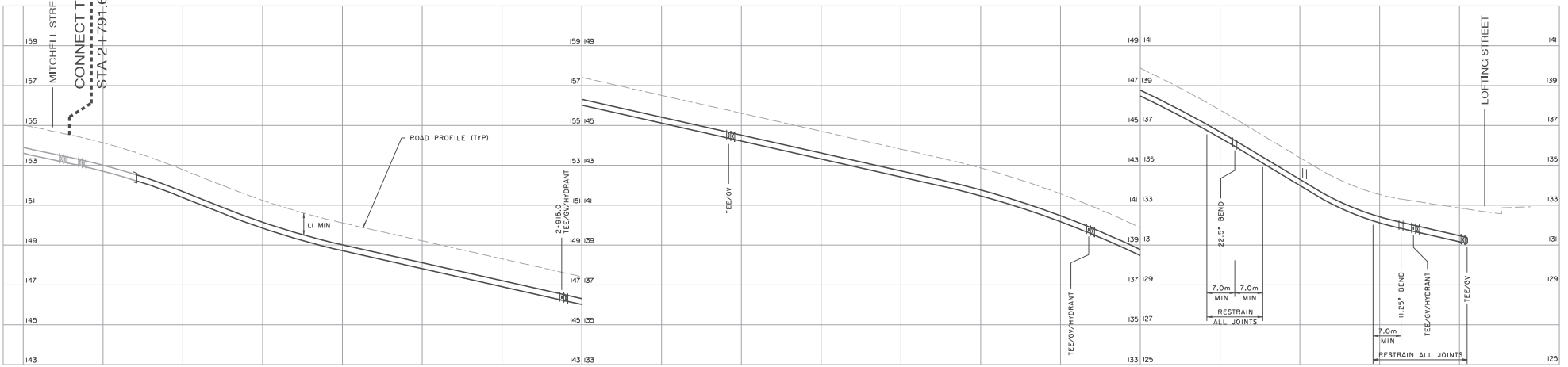
IMPORTANT:
HYDRO, GAS AND TELEPHONE **ARE NOT LOCATED** ON THE CITY OF COQUITLAM AS-BUILTS.
CONTACT BC HYDRO, TERASEN GAS AND TELUS FOR CURRENT AS-BUILTS PERTAINING TO THESE UTILITIES.

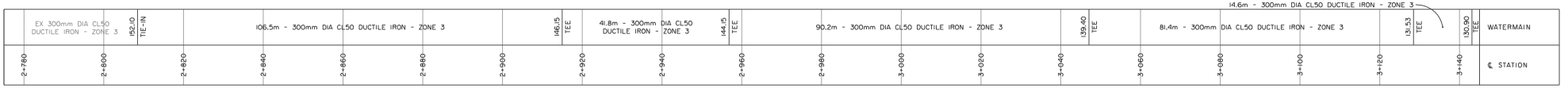
NOTE:
LOCATION OF EXISTING UTILITIES SHOWN **ARE APPROXIMATE ONLY** AND **SHOULD BE CONFIRMED BY A PIPE LOCATOR AND MANUAL DIGGING.** ALL OR ANY EXISTING STRUCTURES ARE NOT NECESSARILY SHOWN.

SURVEY MONUMENTS

POINT	NORTHING	EASTING	ELEVATION
PROCK4405	5462934.393	519527.205	154.35
PROCK6006	5462970.242	519602.939	149.70
PROCK6007	5462996.598	519684.534	145.85
PROCK6008	5463023.248	519766.953	141.29
PROCK6009	5463025.616	519856.118	132.74







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AC45-16A-103-W

Edge of Pavement — Watermain and Valve — Drainage Sewer, MH — Drainage Ditch — Sanitary Sewer, MH — Sanitary Forcemain — Gasmain and Valve — Hydro Duct, MH — Telephone Duct, MH
Hydrant — Water Air Valve — Water Blowoff — Water Service — Catch Basin, Top Inlet — Catch Basin, Side Inlet — Lawn Basin, Round — Drainage Service — Drainage Cleanout
Sanitary Service — Sanitary Cleanout — Utility Pole (Joint Pole) — Utility Pole with Light — Street Light, Davit — Street Light, Post Top — Comb Signal Pole — Traffic Signal Pole — Traffic Street Sign
Junction Box — Survey Traverse Hub — Survey Iron Pin — Survey Lead Plug — Survey Monument

NO.	DATE	REVISIONS	BY	APPROVED
6	22-02-02	Record Drawing	D.Y.	
5	20-08-14	Added Service Connections and Driveways for 16B Lots 1-16	D.Y.	
4	20-06-27	Fourth Submission for City Approval / Issued for Construction	D.Y.	
3	20-04-07	Third Submission for City Approval	D.Y.	
2	20-02-21	Second Submission for City Approval	D.Y.	
1	20-02-12	Issued for Tender	D.Y.	

DESIGN BY L.Dib — DATE 19-1-08
DRAWN BY L.Dib — DATE 19-1-08
CHECKED BY — DATE
APPROVED BY — DATE

InterCAD CONSULTING ENGINEERS
1111 West 8th Avenue Vancouver, BC V6H 1C5
Tel 604.739.7707 / Fax 604.739.7727

Coquitlam
Engineering & Public Works
3000 Guildford Way Coquitlam, BC V3B 7N2

SCALE HORIZ. 1:500 — SCALE VERT. 1:100
SHEET W3 — OF W4
ENG PROJECT NUMBER AC45-16A

PROJECT
Partington Creek
Parcel 16A
DESCRIPTION
Watermain
Sheffield Ave