City of Coquitlam

Contract Documents
78035A

Mariner Overpass Structural Rehab & Intersection Upgrade

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Contract No. 78035A

Mariner Overpass Structural Rehab & Intersection Upgrade

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: **November 19, 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 sḵəćiy̓aʔɬ təməxʷ (Katzie), and other Coast Salish Peoples.

Tender No. 78035A

Mariner Overpass Structural Rehab & Intersection Upgrade

The City of Coquitlam invites tenders for **Contract 78035A - Mariner Overpass Structural Rehab & Intersection Upgrade**, generally consisting of the following, but not limited to:

- Mariner Overpass Minor Structural Rehabilitation:
  - Concrete Deck and Cast-In-Place Concrete Spall Repairs,
  - Drainage Improvements,
  - Expansion Joint and Asphalt Replacements.
- Transit Ramp Intersection Upgrades:
  - Traffic Signal Works and structural pole base installation,
  - Median modifications and MMA Pavement Markings installation.
- Other miscellaneous and incidental works as contained 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
December 10, 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 78035A

Mariner Overpass Structural Rehab & Intersection Upgrade

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: **Mariner Overpass Structural Rehab & Intersection Upgrade**

Reference No. **78035A**

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:

- Mariner Overpass Minor Structural Rehabilitation:
  - Concrete Deck and Cast-In-Place Concrete Spall Repairs,
  - Drainage Improvements,
  - Expansion Joint and Asphalt Replacements.
- Transit Ramp Intersection Upgrades:
  - Traffic Signal Works and structural pole base installation,
  - Median modifications and MMA Pavement Markings installation.
- Other miscellaneous and incidental works as contained 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, **Friday, December 5, 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: **December 10, 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

The Hours of Work for this Contract is restricted to night time work. The Tenderer is required to review "Appendix A – Traffic Management Detail Specifications" for details related to this restriction.

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

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. 78035A

Mariner Overpass Structural Rehab & Intersection Upgrade

Summary

Name of ***Contractor***: _____

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

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

On or before 2:00 pm (local time)
Wednesday, December 10, 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.

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

December 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: **Mariner Overpass Structural Rehab & Intersection Upgrade**

Reference No.: **78035A**

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 17, 2026**; 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

Contract 78035A
Mariner Overpass Structural Rehab & Intersection Upgrade

SCHEDULE OF QUANTITIES AND PRICES

(see paragraph 5.3.1 of the Instruction to Tenderers)
(All Tender and Contract Prices shall NOT include GST. GST will apply upon payment)
(Should there be any discrepancy in the information provided, the City's original file copy shall prevail)

ITEM NO.	MMCD Ref. / (Supplementary Contract Specifications)	DESCRIPTION	UNIT	QTY	UNIT PRICE	EXTENDED AMOUNT
1.00	**01 55 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)	ESC supply & installation, maintenance and removal		Incidental to Contract		
3.00	**01 58 01S**	**PROJECT IDENTIFICATION**				
3.01	(1.3.1)	Construction Zone Information Signs	ea.	3		
3.02	(1.3.2)	Changeable Message Signs (CMS) (x4 Signs)	month	5		
BR230 MARINER WAY OVERPASS STRUCTURAL REHABILITATION (refer to Contract Drawings by Associated Engineering)						
4.00	**03 30 53S**	**CAST-IN-PLACE CONCRETE**				
4.01	(1.5.6)	Repair Concrete Spalling in Median (Provisional)	sq. m	1		
4.02	(1.5.7)	Barrier Demolition and Reinstatement	each	6		
4.03	(1.5.8)	Repair of Concrete Deck Along Longitudinal Hinge (Pier Y)	m	21		
5.00	**03 40 01**	**PRECAST CONCRETE BARRIERS**				
5.01	1.4.4	Supply and Install Concrete Roadside Barriers With Drainage Slot (MOTT Standard CRB-E type)	each	9		
5.02	1.4.5	Remove/Reinstate Concrete Roadside Barriers	each	20		
5.03	1.4.5	Disposal of Concrete Roadside Barriers	each	9		
6.00	**05 53 00S**	**METAL FABRICATIONS**				
6.01	(1.5.2)	Replace Bearing Keeper Plates (North Abutment)	each	5		
7.00	**07 91 00S**	**JOINTS**				
7.01	(1.4.1)	North Abutment Expansion Joint Replacement	L.S.	1		
7.02	(1.4.1)	South Abutment Expansion Joint Replacement	L.S.	1		
7.03	(1.4.1)	East Abutment Expansion Joint Replacement	L.S.	1		
7.04	(1.4.3)	Replace Joint Sealants in Sidewalk and Parapet	L.S.	1		
8.00	**31 24 13S**	**ROADWAY EXCAVATION, EMBANKMENT AND COMPACTION**				
8.01	(1.8.5)	Removal and Offsite Disposal of Existing Asphalt Sidewalk and Road to Complete Sidewalk Regrading and East Approach Crack Repair (as per Associated Engineering Civil Grading Plan; Contract Drawings Sheet 2 and 3) (Provisional)	cu. m	25		
9.00	**32 11 23S**	**GRANULAR BASE**				
9.01	(1.4.1)	Granular Base - 25mm Minus (Sidewalk Regrading and East Approach Crack Repair) (Provisional)	tonne	40		
10.00	**32 12 16S**	**HOT-MIX ASPHALT CONCRETE PAVING**				
10.01	(1.5.1)	Machine Laid Hot Mix Asphalt - 50mm Thick (MMCD Upper Course #1) c/w Tack Coat - East Approach Crack Repair & CB Lead and Manhole Installation (Provisional)	tonne	9		
10.02	(1.5.1)	Machine Laid Hot Mix Asphalt - 75mm Thick (MMCD Lower Course #1) - East Approach Crack Repair & CB Lead and Manhole Installation (Provisional)	tonne	13		
10.03	(1.5.3)	Machine Laid Hot Mix Asphalt - 50mm Thick (MMCD Upper Course #2) - Sidewalk Regrading (Provisional)	tonne	22		
11.00	**33 40 01S**	**STORM SEWERS**				
11.01	(1.6.5)	Supply and Install 150mm PVC DR28 Catch Basin Lead	m	8		
12.00	**33 44 01S**	**MANHOLES AND CATCHBASINS**				
12.01	(1.5.1.1)	Supply and Install 1050mm Diameter Storm Manhole as per MMCD DWG S1	each	1		
12.02	(1.5.2)	Supply and Install 600mm Diameter Top Inlet Catch Basin as per MMCD DWG S11	each	1		
MARINER TRANSIT RAMP IMPROVEMENTS (refer to Contract Drawings by Binnie, Entuitive, and DMD)						
13.00	**03 30 53S**	**CAST-IN-PLACE CONCRETE**				
13.01	(1.5.9)	Supply & Installation of Structural Concrete and Rebar (including removal of existing median and seal of concrete surface as shown on the Contract Drawings)	cu. m	3		
14.00	**32 17 23S**	**PAINTED PAVEMENT MARKINGS**				
14.01	(1.5.3)	Supply & Installation of MMA Pavement Markings including on Parapet (includes removal of existing pavement markings as shown on the Contract Drawings)	L.S.	1		
14.02	(1.5.4)	Supply & Installation of Traffic Signage - City to Supply all new sign tabs	ea	5		
15.00	**34 41 13S**	**TRAFFIC SIGNALS**				
15.01	(1.9.2)	Supply & Installation of Traffic Signal Works (Including any removal, adjustments, and disposal needed to complete the work as shown on the Contract Drawings)	L.S.	1		

Total Tendered Price (exclude GST): _____

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

Name of **Contractor:** _____

APPENDIX 2

FORM OF TENDER

Contract 78035A
Mariner Overpass Structural Rehab & Intersection Upgrade

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

INDICATE SCHEDULE WITH BAR CHART WITH CONSTRUCTION DURATIONS

CONSTRUCTION ACTIVITY	MARCH					APRIL				MAY				JUNE					JULY	
	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2

Substantial Completion Date: **July 17, 2026**

Proposed Disposal Site: _____

APPENDIX 3

FORM OF TENDER

Contract 78035A
Mariner Overpass Structural Rehab & Intersection Upgrade

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 78035A
Mariner Overpass Structural Rehab & Intersection Upgrade

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 78035A
Mariner Overpass Structural Rehab & Intersection Upgrade

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 78035A
Mariner Overpass Structural Rehab & Intersection Upgrade

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 78035A
Mariner Overpass Structural Rehab & Intersection Upgrade

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: **78035A**

Contract Name: **Mariner Overpass Structural Rehab & Intersection Upgrade**

Description of Work:

- Mariner Overpass Minor Structural Rehabilitation:
  - Concrete Deck and Cast-In-Place Concrete Spall Repairs,
  - Drainage Improvements,
  - Expansion Joint and Asphalt Replacements.
- Transit Ramp Intersection Upgrades:
  - Traffic Signal Works and structural pole base installation,
  - Median modifications and MMA Pavement Markings installation.
- Other miscellaneous and incidental works as contained in the Contract Documents.

Other miscellaneous and incidental work as contained 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 ____ 202__.

Contract: **Mariner Overpass Structural Rehab & Intersection Upgrade**

***Reference No*. 78035A**

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 17, 2026** 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)

Mariner Overpass Structural Rehab & Intersection Upgrade

Reference No: 78035A

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

Mariner Overpass Structural Rehab & Intersection Upgrade

Reference No: 78035A

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: As-Builts

Appendix C: Archaeological Chance Find Procedures

Bound Separately: Contract Drawings

TITLE	SHEET NO.	REVISION NO.	DATE
BR230 MARINER WAY OVERPASS STRUCTURAL REHABILITATION (Associated Engineering)			
COVER	1	-	-
CIVIL - GRADING PLAN	2	0	2025-05-28
CIVIL – CIVIL DETAILS	3	0	2025-05-28
STRUCTURAL – GENERAL NOTES	4	0	2025-05-28
STRUCTURAL – GENERAL ARRANGEMENT	5	0	2025-05-28
STRUCTURAL – SOUTH ABUTMENT – REPAIR DETAILS	6	0	2025-05-28
STRUCTURAL – NORTH ABUTMENT – REPAIR DETAILS	7	0	2025-05-28
STRUCTURAL – EAST ABUTMENT – REPAIR DETAILS	8	0	2025-05-28
STRUCTURAL – EXPANSION JOINT DETAILS	9	0	2025-05-28
STRUCTURAL – PARAPET AND NOISE BARRIER DETAILS	10	0	2025-05-28
STRUCTURAL – MISCELLANEOUS REPAIR DETAILS	11	0	2025-05-28
MARINER TRANSIT RAMP IMPROVEMENTS (Binnie, Entuitive, and DMD)			
COVER (BINNIE)	-	-	-
MARINER WAY TRANSIT RAMP – PAVEMENT MARKINGS AND SIGNS	1	4	2025-09-16
COVER (ENTUITIVE)	S000	0	10-01-2025
GENERAL NOTES	S100	0	10-01-2025
WORKING DRAWINGS	S101	0	10-01-2025
CONCRETE MEDIAN DETAILS	S102	0	10-01-2025
MARINER WAY OFF RAMP AT SKYTRAIN DRIVEWAY – TRAFFIC SIGNAL	1	3	2025-03-05
MARINER WAY OFF RAMP AT SKYTRAIN DRIVEWAY – TRAFFIC SIGNAL	2	3	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 Variations

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.

19.0 TAXES, DUTIES AND GST

19.4 Tariffs or Duties

19.4.1 Tariffs or Duties refer to taxes, levies, or charges imposed by any level of government (including foreign governments) on imported or domestic goods, materials, or equipment used in the performance of the Work. The Contract Price is based on the tariffs and duties in effect as of the date of the Tender Closing. If, after the Tender Closing Date, any new Tariffs or Duties are imposed, or existing rates are materially increased, and such changes directly and demonstrably affect the cost of materials or equipment required for the performance of the Work, the Contractor shall notify the Contract Administrator in writing within ten (10) Working Days of becoming aware of such change, providing supporting documentation, including but not limited to:

(1) Affected materials
(2) Quantity and cost impact
(3) Evidence of original and new tariff rates
(4) Reasonable efforts made to mitigate the cost impact (e.g., sourcing alternatives)

19.4.2 If the Contract Administrator is satisfied that the Contractor has incurred additional direct costs solely due to the change in Tariffs or Duties, the Owner will issue a Change Order to adjust the Contract Price accordingly. No adjustment shall be made for Tariffs or Duties that were publicly announced or reasonably foreseeable before the Tender Closing Date.

19.4.3 This clause does not apply to costs incurred due to delays caused by the Contractor's procurement or supply chain management. It also does not apply if the Contractor fails to take reasonable steps to mitigate the impact of the change.

19.4.4 If the imposition of new Tariffs or Duties causes unavoidable delays in material delivery, the Contractor may request an extension of the Contract Time under GC 13.3, subject to approval by the Contract Administrator.

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 #: **78035A**
Project / Workplace: **Mariner Overpass Structural Rehab & Intersection Upgrade** (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

MARINER OVERPASS STRUCTURAL REHAB & INTERSECTION UPGRADE

CONTRACT 78035A

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.

SUPPLEMENTARY CONTRACT

1.0 GENERAL

1.1	**Coordination of Work**	Add 1.1.1	The Contractor shall be responsible to consult with all affected businesses, residents and transportation companies regarding delays, detours, and any other works affecting any transit service in the area, and will be responsible to coordinate the works with City crews and other contractors working in the area. If working area is to become a multiple-employer workplace as defined by WorkSafe BC, the Contractor shall remain the Prime Contractor.
1.2	**Outside Agency Approval**	Add 1.2.1	In accordance with the Contract Documents, the Contractor is responsible to consult with and obtain any approval required to meet and comply with all the conditions required from outside agency such as, but not limited to, BC One Call, Metro Vancouver, BC Hydro, TELUS, Kinder Morgan, Coast Mountain Bus Company, and Fortis BC, in the area of the place of Work.
1.3	**Waste Collection Coordination**	Add 1.3.1	1. Contractor is responsible to accommodate all waste collection vehicles and cart pick up schedules throughout construction. Collection schedule can be found in https://www.coquitlam.ca/157/Collection-Calendar-Guidelines . 2. If waste collection will be impacted the Contractor is responsible to: a. Provide advanced notification to: i. The City's Solid Waste staff at 604-927-3500 or wastereduction@coquitlam.ca; and ii. The City's Contract Administrator. b. Provide access for collection trucks to closed streets due to road work; or c. Move waste carts for collection. The Contractor is required to ensure each cart is labelled with the property address and returned to the correct address after collection (each cart has its own individual cart identification code and is specifically assigned to each property). **Contractors will be responsible for the costs to replace missing carts.** 3. Contractor's Request for Change in Collection Time (e.g. PM to AM): a. The Contractor must provide residents with as much notice as possible – minimum 5 working days. b. The contractor must follow all conditions of Clause 1.04 and is responsible to deal with any missed collections. For example, taking garbage to the United Boulevard Recycling and Waste Centre or covering the cost associated for any missed collection to be rescheduled. Questions: wastereduction@coquitlam.ca
1.4	**Cooperation with Emergency and Maintenance Activities**	Add 1.4.1	The Contractor will be responsible to cooperate with regular maintenance or emergency vehicles and staff for access to the site when required including: • Fire, Police, and Ambulance • Collection (garbage/recycling pick-up) • City Utilities Maintenance (or representatives) • Other Contractors
1.5	**Site Safety**	Add 1.5.1	The Contractor is responsible to ensure the construction site is safe at all times for workers, pedestrians, and vehicle traffic. During non-working hours, the Contractor must ensure that the site has all potentially hazardous areas appropriately identified and protected, and also must provide appropriate signage, lighting, and markings for the direction of

			vehicle and pedestrian traffic, all to ensure the safety of the public. Supply and use of this equipment is considered incidental to the contract. Manhole lids, valve boxes and other appurtenances within the roadway that may present a traffic hazard during construction must be clearly marked for traffic. Manhole lids left raised in preparation for paving must have a rubberized protector ring painted with bright colour for traffic safety. Supply and use of this equipment is considered incidental to the contract.
1.6	**Lane Closure Restrictions**	Add 1.6.1	The Contractor shall refer to Contract Supplementary Specifications Section 01 55 00S and to Appendix A: Traffic Management Detail Specifications. The Contractor must take the above information into account in the preparation and submission of the Tender.
1.7	**Location of Existing Utilities**	Add 1.7.1	The Contractor is responsible to verify the depth and location of all utilities (watermains, storm mains, sanitary mains etc.), including outside agency utilities (i.e. Fortis BC Gas Mains etc.) and service connections (water, storm and sanitary services at the mains, and property lines) by hand digging or by Hydro-Vac in the presence of the Site Inspector. Pre-locates must be completed as soon as possible after award of the Contract so changes can be completed by the Engineer prior to site construction. Contact Metro Vancouver for location of their utilities and BC One for location of other outside agency utilities. The Contractor will not receive any compensation or allowance for delays if work is halted due to utility and service connections not located prior to commencing construction. City of Coquitlam does not guarantee water, storm or sanitary services connections are perpendicular to the mains or property lines, the Contractor will not receive any compensation for the time to locate these connections or for exposing hidden services at the property lines. Payment for this work will be treated as incidental to payment for work described in other Sections.
1.8	**Manholes and Valves**	Add 1.8.1	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 be paid by the Contractor.
1.9	**Verification of Dimensions and Quantities**	Add 1.9.1	Before proceeding with work, the Contractor shall visit the site and check and verify dimensions and quantities. Report variations between Contract Drawings and site conditions to the Contract Administrator before proceeding with work. Payment for this work will be treated as incidental to payment for work described in other Sections.
1.10	**Precautions**	Add 1.10.1	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.
1.11	**FORTIS BC Emergency Protocol**	Add 1.11.1	In an emergency, gas pipeline rupture or leak, Contact Fortis BC 24 Hour Emergency Line (1-800-663-9911) & Fire Department (911) immediately and then City of Coquitlam's Utility Control Centre (604-927-6287)

1.12	**Temporary Asphalt Pavement Restoration**	Add 1.12.1	The Contractor will be required to backfill all trenches (in paved areas) and place a temporary patch (50mm of hot mix asphalt), as per Coquitlam Standard Drawing COQ-G4, the same day excavation is made, unless otherwise approved by the Contract Administrator. Temporary asphalt patch on driveways is not required, but access must be maintained for property owners.
		Add 1.12.2	Payment for this work will be treated as incidental to payment for work described in other Sections.
2.0	**CONSTRUCTION ACTIVITY**		
2.1	**Construction Materials in Sewer Manholes and Pipe**	Add 2.1.1	The Contractor is responsible to ensure that construction activities do not deposit construction materials (e.g. gravels) into the storm sewer or sanitary sewer manholes or pipe. The City has a video record of the pipe before construction. Prior to Substantial Performance, the City may 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.
2.2	**Site Clean-up During Construction and End of Construction**	Add 2.2.1	**The Contractor will be responsible for the complete clean-up of the work site during construction, at the end of construction, and prior to the Substantial Performance review.** The work will include cleaning of all catch basins periodically or as directed by the Contract Administrator within the Work area, or nearby location as affected by the Work, to the same condition of the catch basins prior to starting the Work. All cleaning is to be performed by vacuum truck to the satisfaction of the Contract Administrator and will include off-site disposal of waste material.
		Add 2.2.2	Payment for this work will be treated as incidental to payment for work described in other Sections.
2.3	**Order of Construction**	Add 2.3.1	The Contractor will be required to conduct the work in the order listed below, unless otherwise approved by the Contract Administrator: 1. Mariner Way Overpass Structural Rehabilitation as shown in Contract Drawings by Associated Engineering, then 2. Mariner Transit Ramp Improvements as shown in Contract Drawings by R.F. Binnie, Entuitive, and DMD & Associates.
3.0	**MANDATORY MEETINGS, CONTRACTOR REPRESENTATIVES AND SUBCONTRACTORS**		
3.1	**Pre-Construction Meeting Requirements**	Add 3.1.1	After the Award of the Contract, the Contractor (Project Manager and Superintendent) will be required to attend a Pre-Construction Meeting with the Contract Administrator and provide all necessary information required by the Contract Administrator prior to provision of a Notice to Proceed. Items required to be provided at the meeting include: 1. A Detailed Construction Schedule showing the start date, completion date, and durations of major work components showing how all work will be completed within the Contract Duration. 2. Proof of Insurance 3. Performance Bond and Labour and Materials Payment Bond 4. WCB Clearance Letter and Copy of Notice of Project 5. City of Coquitlam Business License

6. A copy of portions of your Health and Safety Plan including the Title Page, Table of Contents, and portion showing latest revision date.

3.2 Contract Schedule, Contract Duration, and Charges

Add 3.2.1

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.

3.3 Contract Superintendent and Subcontractors

Add 3.3.1

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

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

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

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

3.4 Changes of Contractor Representatives & Subcontractors

Add 3.4.1

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

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

3.5 Mobilization and Demobilization

Payment for Mobilization and Demobilization shall be incidental. Payment shall be considered full compensation for all activities, resources, and incidental costs associated with mobilizing to, maintaining, and demobilizing from the site. This includes, but is not limited to:

- Provision of all labour, materials, equipment, and supervision required for mobilization and demobilization, including those of subcontractors.
- Establishment of temporary site facilities, including site offices, storage areas, workshops, and sanitary facilities.
- Provision, maintenance and removal of safe and secure access to and within the site, including haul roads and pedestrian routes.
- Provision, maintenance, and eventual removal of site security, including lighting, surveillance, and personnel.
- Maintenance and clean-up of laydown area.

END OF SECTION

1.0 GENERAL

1.3 Submission

Delete 1.3.2 and replace with the following

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

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

END OF SECTION

1.0	**GENERAL**	Add 1.0.6	The Supplementary Specifications contained herein must be read in conjunction with the Master Municipal Specifications contained in the Master Municipal Construction Documents, Volume II **(Platinum Edition 2009)** as identified in the Instructions to Tender.
		Add 1.0.7	The Supplementary Contract Specifications follow the same format and numbering system as the Master Municipal Specifications, but is differentiated from it by having the letter "S" placed after the section number.
2.0	**REFERENCED SPECIFICATIONS**		
2.13	**BCMOTT**	Add 2.13.5	The Provincial Ministry of Transportation and Infrastructure has produced a 2025 Standard Specifications for Highway Construction (Volume 1 & 2), which applies to heavy civil materials and bridge construction and will be referenced in this document as BC MoTT Standard Specifications Section Number. Description of the supply, shipping, installation and payment of the structural materials are described in this publication. This contract will refer to this provincial document as a reference and will be binding. To view or to obtain a digital copy of these specifications go to: Standard Specifications for Highway Construction - Province of British Columbia (gov.bc.ca)

END OF SECTION

1.0	**QUALITY**	Add 1.0.1	The Contractor shall provide a final product conforming to the Contract Documents and the intent of the work. The work is to be accurate to the dimensional and tolerance requirements of the contract. Payment will be subject to adjustments based on quality assurance tests performed by the Contract Administrator.
1.1	**Quality Control (QC) by Contractor**	Add 1.1.1	**The MMCD (2009) definition of "Quality Control" is the process by which the *Contractor* checks specific materials, products, and workmanship to ensure strict conformance with the Contract Documents.** The Contractor is fully responsible for quality control of the materials, production, and construction processes. Quality control tests shall be performed by the Contractor, at their own expense, to ensure that products meet the contract specifications. Failure by the Contractor to conduct adequate quality control testing during production and construction will negate the Contractor's ability to appeal the quality assurance tests used for acceptance/rejection of the work. Under no circumstances will QC test results produced after completion of the Quality Assurance (QA) results be considered for appeal purposes. Any changes in the Work with respect to the location, grade, or line shall be approved in advance by the Contract Administrator. Failure to notify the Contract Administrator of changes in writing may result in rejection of Work.
1.2	**Inspection of Work, Quality Assurance, and Material Testing, by the Owner**	Add 1.2.1	**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.
1.3	**Inspection**		Materials testing shall be as described in MMCD General Conditions, Section 4.12 with the following change: Delete Section 4.12.2(a) and insert the following: Where the MMCD specification clauses for Inspection and Testing indicate the Contract Administrator will arrange for all testing for work described in this section will be amended to read The Contractor will arrange for and pay for all testing for work described in this section. The testing shall take place at the following prescribed rates and as directed by the Contract Administrator. The Contract Administrator has the authority to call for testing, up to the rates and frequencies specified, at the Contractors cost. All testing covered under this item shall be performed by a CSA certified laboratory and technicians with copies of all test results to be sent directly

to the Contract Administrator. Re-testing resulting from failed first tests shall be at the Contractor's expense.

1.5 Testing Add 1.5.1

The Contractor shall carry out inspection and testing (QC) to ensure compliance with Contract Documents. The Contractor shall submit test results within one week of testing to the Contract Administrator and prior to the preparation of the payment certificate where required.

1.6 Contractors Responsibilities Add 1.6.1

Furnish labour and facilities to:

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

1.7 Access to Work Add 1.7.1

The Contractor shall allow inspection testing agencies access to Work.

1.8 Tests Add 1.8.1

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

1. Trench Backfilling and Compaction:
   a. Compaction: 1 test / 25 linear m / 300 mm lift
   b. Sieve: 1 test / placed material / 50 m^3
2. Granular Base:
   a. Compaction: 1 test / 500 m^2 / 100mm depth of granular base
   b. Sieve: 1 test / placed material / 250 tonnes
3. Granular Subbase:
   a. Compaction: 1 test/500 m^2 / 300mm depth of granular subbase
   b. Sieve: 1 test / placed material / 250 tonnes
4. Embankment (Subgrade):
   a. Compaction: 1 test/ 50 m^2 / 300 mm depth of fill
   b. Sieve: 1 test / placed material / 100 tonnes
5. Asphalt:
   a. Marshall test: Test per 250 tonnes placed, per specified mix, min. 1 / day
   b. ASTM D1559, D3203, C117, C136
   c. Superpave: Test per 250 tonnes placed, per mix specified, min. 1 / day
   d. CAI-SP2, ASTM D3203, C117, C136
   e. Cores: 1 per 500 m^2/lift
   f. Continuous asphalt density testing during paving.
6. Subgrade Preparation:
   a. Compaction & Moisture: 1 test / 500 m^2
7. Concrete Tests:
   a. Air, Slump & 1 Set Cylinders: 1 test / truck, min. 1 set / day
8. Cementitious Grout Tests:
   a. CSA A23.2-09

1.9 Measurement and Payment Add 1.9.1

Payment for all work performed under this section will be considered 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 ten (10) 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. The Contractor shall ensure safe passage of vehicles, cyclists and pedestrian through the work zone.
		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 their operations so as to cause the minimum obstruction and inconvenience to traffic and to places of business and residences adjacent to the Place of Work. No greater quantity of work shall be undertaken at any one time than can be properly conducted with due regard to the rights and interests of the public as may be determined by the Contract Administrator. The Contractor is to provide at all times safe and convenient means of approach and entrance to adjoining lanes, driveways, buildings and property both for vehicles and pedestrians to the satisfaction of the Contract Administrator. For this purpose, they shall construct and maintain suitable and safe platforms, approaches, structures, bridges, diversions or other works. 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 and Payment**	Delete 1.5.1 and replace with the following	Payment for all work performed under this section including submission of Traffic Management Plan (TMP), Traffic Control Persons (TCP), and all temporary traffic signs, devices as required for traffic and pedestrian safety; and all other items described in the Traffic Regulation Section, and all labor, material, equipment, and work described under ***Appendix A: Traffic Management Detail Specifications*** shall be treated as 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

1.2	**Temporary Erosion and Sediment Controls**	Delete 1.2.1.1 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 City of Coquitlam Stream and Drainage System Protection Bylaw No. 4403, 2013 during construction and until the Place of Work has been restored to the satisfaction of the Contract Administrator. 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 favourable 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.
		Add 1.2.6	Complete construction in a manner that will prevent the release of sediment or sediment laden waters to the watercourses, ditches, and swales draining to fish habitat.
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 off 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 refuelling

			or servicing shall be undertaken within a minimum of 15 metres of any water course or surface water drainage.
		Add 1.4.3.10	During all phases of the operation, take precautions to abate nuisance caused by mud or dust by clean up, sweeping, sprinkling with water or dust control, or other means as necessary to accomplish results satisfactory to the Contract Administrator.
1.6	**Measurement and Payment**	Delete 1.6.1 and replace with the following	Payment for all work, unless included in the Schedule of Quantities and Prices, performed under this section will be incidental to payment for work described in other Sections. All works for Erosion and Sediment Control (ESC) shall include silt fencing, interceptor channel/swale/ditch construction, interceptor drainpipe, check dams, catch basin, socks, and all materials to complete the work as shown on the Contract Drawings or as directed by the Contract Administrator
		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 stockpile materials or exposed road subgrades shall be treated as incidental work.
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. The Contractor must allow the Archaeological and Historical Resources group to perform duties around the site during construction. The Contract Administrator shall coordinate all other work being performed at the site with the Contractor
1.10	**Contractor's Hydrocarbon Wastes and Fuel Spill Mitigation Measures**	Add 1.10	The Contractor will prepare a Spill Response Plan prior to Construction. Costs of the preparation of the spill response plan are incidental to the Contract. The Contractor will develop and identify waste receptacles for the safe disposal of hydrocarbons and lubricant fouled waste material, and use those receptacles. There will be no machine refuelling within 30 m of a watercourse. The Contractor must keep emergency spill kit at each bridge repair site. The Environmental Monitor will inspect and confirm that a spill kit is on site prior to commencement of bridge repair work. Each spill kit will at a minimum have the following: • 2 - 5 m long absorbent spill booms • 50 - 16" x 20" Sorbent Pads (Oil, Gas & Diesel) • 6 - 48" x 3" Sorbent Socks (Oil, Gas & Diesel) • 4 -120" x 3" Sorbent Socks (Oil, Gas & Diesel) • 4 - 8" x 18"Sorbent Pillows (Oil, Gas & Diesel) • Nitrile Gloves • Hand Wipes • 2 - Disposable Respirators N958 HD • Hazmat Disposal Bags

Spills of any substance toxic to aquatic life of reportable quantities will be immediately reported to the Provincial Emergency Program 24-hour phone line at 1-800-663-3456.

Contractor shall immediately notify the Contract Administrator of any leaks or spills of prohibited materials that occur on the job site.

The Contractor is wholly responsible for costs associated with clean-up of spills originating from their equipment or work practices.

1.11 Non-Hazardous Waste Handling Requirements

Add 1.11

There will be no disposal of solid wastes into sumps, ditches, streams, culverts, road edges or private property.

The Contractor's will supply trash cans for the disposal of crew generated wastes.

Littering is prohibited and monitoring for this activity will be ongoing throughout the project.

1.12 Control of Cement and Cement Grouts

Add 1.12

The Contractor shall undertake all concrete/grouting work with caution and comply with, at a minimum, the following procedures:

1. The Work shall be isolated from watercourses through the use of berms, pits or tarpaulins.
2. There shall be no direct contact between work activity and any watercourse through spillage, hosing off surfaces, rain or cleaning of tools.
3. Complete isolation of all grouting from any watercourse for a minimum of 72 hours.
4. Exposed concrete will be covered if there are forecast rains.
5. No wash water shall be allowed to discharge to any watercourse.
6. The Contractor must follow BC Environmental Management Act – Spill reporting regulation procedures relating to emergency mitigation and clean up measures for managing the cleanup and recovery of concrete materials.
7. All wash water from concrete works shall be contained and removed from site.
8. If required, concrete wash water may be disposed in a temporary disposal location that has been reviewed and accepted by the Owner. This location may be a rock pit or grassy area, provided the wash water will be contained in an upland location at least 30m away from the high-water mark, and at least 30m away from the top of bank of watercourses and there is landowner approval.
9. All accepted temporary disposal area locations must be cleaned up and re-seeded prior to demobilization.
10. Concrete dust from saw cutting and drilling shall be prevented from entering any watercourse.

END OF SECTION

1.3	**Measurement and Payment**	Delete 1.3.1 and replace with the following	Payment for the installation of 1.2m x 1.2m static construction Information signs as shown in Appendix A – Traffic Management Detail Specifications includes supply, placement and removal, and will be incidental to payment for work described in other Sections, unless shown otherwise in the Schedule of Quantities and Prices.
		Add 1.3.2	Payment for changeable message signs (CMS) including supply, placement, communication management & removal as required for traffic & pedestrian safety and as shown in in Appendix A – Traffic Management Detail Specifications will be incidental to payment for work described in other Sections, unless shown otherwise in the Schedule of Quantities and Prices. When shown in the Schedule of Quantities and Prices, payment for CMS used for only a fraction of a month will be paid prorated.

END OF SECTION

1.0 GENERAL

1.1 References

Add 1.1.1 Canadian Standards Associated (CSA)

1. CSA-A23.1/A23.2, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete, 2019 Edition.
2. CSA O86S1, Supplement No. 1 to CAN/CSA-O86-01, Engineering Design in Wood.
3. CSA O121, Douglas Fir Plywood.
4. CSA O151, Canadian Softwood Plywood.
5. CSA O153, Poplar Plywood.
6. CAN/CSA-O325.0, Construction Sheathing.
7. CSA O437 Series, Standards for OSB and Waferboard, CSA S269.1, Falsework for Construction Purposes.
8. CSA S269.1, Falsework and Formwork.
9. CAN/CSA S269.3, Concrete Formwork, National Standard of Canada.

Add 1.1.2 Underwriters' Laboratories of Canada (ULC):

1. CAN/ULC-S701, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.

1.2 Delivery, Storage, and Handling

Add 1.2.1 Store and manage hazardous materials in accordance with manufacturer's written instructions and applicable federal and provincial laws, regulations, codes, and guidelines.

Add 1.2.2 Storage and Handling Requirements:

1. Store materials in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
2. Store and protect formwork from damage.
3. Replace defective or damaged materials with new.

Add 1.2.3 Waste Management and Disposal:

1. Separate waste materials for reuse and recycling.

1.3 Measurement and Payment

Add 1.3.1 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. No separate payment will be made for the supply, transport and installation of the formwork required as part of another Item.

2.0 PRODUCTS

2.1 Materials

Add 2.1.1 Formwork Materials:

1. For concrete without special architectural features, use wood and wood product formwork materials to CAN/CSA O86.
2. For concrete with special architectural features, use formwork materials to CSA A23.1/A23.2.

Add 2.1.2 Form Ties: Removable or snap-off metal ties, fixed or adjustable length, free of devices leaving holes minimum 25 mm diameter in concrete surface.

Add 2.1.3 Form Release Agent: Proprietary, non-volatile material not to stain concrete or impair subsequent application of finishes or coatings to

surface of concrete, derived from agricultural sources, non-petroleum containing, non-toxic, biodegradable, low VOC.

Add 2.1.4 Form stripping agent: Colourless mineral oil, non-toxic, biodegradable, low VOC, free of kerosene, with viscosity between 15 to 24 mm2/s at 40°C, flashpoint minimum 150°C, open cup.

Add 2.1.5 Falsework Materials: To CSA S269.1.

3.0 EXECUTION

3.1 Fabrication and Erection

Add 3.1.1 Verify lines, levels and centres before proceeding with formwork/falsework and ensure dimensions agree with drawings.

Add 3.1.2 Fabricate and erect falsework in accordance with CSA S269.1.Falsework shall not impeded traffic lane height beneath overpass.

Add 3.1.3 Do not place shores and mud sills on frozen ground.

Add 3.1.4 Provide site drainage to prevent washout of soil supporting mud sills and shores.

Add 3.1.5 Fabricate and erect formwork in accordance with CAN/CSA S269.3 to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CSA A23.1/A23.2.

Add 3.1.6 Align form joints and make watertight.

Add 3.1.7 Keep form joints to minimum.

Add 3.1.8 Chamfers and fillets:

1. Use 20 mm chamfer strips on external corners and / or 20 mm fillets at interior corners, joints, unless specified otherwise.
2. When casting new concrete against existing concrete surfaces, use chamfers and fillets to match existing concrete.

Add 3.1.9 Form chases, slots, openings, drips, recesses, expansion and control joints as indicated.

Add 3.1.10 Build in anchors, sleeves, and other inserts required to accommodate Work specified in other sections.

Add 3.1.11 Ensure that anchors and inserts will not protrude beyond surfaces designated to receive applied finishes, including painting.

Add 3.1.12 Clean formwork in accordance with CSA A23.1/A23.2, before placing concrete.

3.2 Removal and Reshoring

Add 3.2.1 Provide necessary re-shoring of members where early removal of formwork may be required or where members may be subjected to additional loads during construction as required.

Add 3.2.2 Re use formwork and falsework subject to requirements of CSA A23.1/A23.2.

END OF SECTION

1.0 GENERAL

1.1 References

Add 1.1.1 American Concrete Institute (ACI):

1. ACI 315R, Manual of Engineering and Placing Drawings for Reinforced Concrete Structure.
2. SP-66, ACI Detailing Manual 2004.

Add 1.1.2 American National Standards Institute/American Concrete Institute (ANSI/ACI):

1. ANSI/ACI 315, Details and Detailing of Concrete Reinforcement.

Add 1.1.3 American Society for Testing and Materials (ASTM)

1. ASTM A123, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
2. ASTM A143/A143M, Standard Practice for Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement.
3. ASTM A276, Standard Specification for Stainless Steel Bars and Shapes.
4. ASTM A995M, Standard Specification for Castings, Austenitic-Ferritic (Duplex) Stainless Steel, for Pressure-Containing Parts.

Add 1.1.4 Canadian Standards Associated (CSA)

1. CAN/CSA A23.1, Concrete Materials and Methods of Concrete Construction, 2019 Edition.
2. CAN3 A23.3, Design of Concrete Structures for Buildings.
3. CSA G30.3, Cold Drawn Steel Wire for Concrete Reinforcement.
4. CAN/CSA G30.18, Billet Steel Bars for Concrete Reinforcement.
5. CAN/CSA G40.21, Structural Quality Steels.

Add 1.1.5 Reinforcing Steel Institute of Canada (RSIC):

1. RSIC, Reinforcing Steel Manual of Standard Practice.

Add 1.1.6 Where there are differences between the Specifications and Drawings and the codes, standards, or acts, the most stringent shall govern.

1.2 Delivery, Storage, and Handling

Add 1.2.1 Delivery and Acceptance Requirements: Deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

Add 1.2.2 Storage and Handling Requirements:

1. Store materials in accordance with manufacturer's recommendations in clean, dry, well-ventilated areas.
2. Store reinforcing bars clear of the ground on timber or other suitable protective cribbing spaced to prevent sags in bundles. Stacks of bundles of straight bars shall have adequate blocking to prevent contact between the layers of bundles.
3. Store and handle stainless steel reinforcing bars with non-corrosive materials and keep contaminate free.
4. Store stainless steel reinforcing bars separate from uncoated bars.
5. Replace defective or damaged materials with new.

1.3 Measurement and Payment

Add 1.3.1 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.

2.0 PRODUCTS

2.1 Materials

Add 2.1.1 Substitute different size bars only if permitted in writing by Contract Administrator.

Add 2.1.2 Reinforcing steel: billet steel, grade 400W, deformed bars to CAN/CSA G30.18, unless indicated otherwise.

Add 2.1.3 Stainless reinforcing steel: Stainless steel, Grade 420, deformed bars to ASTM A276 and ASTM A995M, of type specified in the table below. Provide one-piece bars with required lengths and bends.

Permitted Types of Stainless Steel	
Type / ASTM Designation	UNS Designation
316 LN – A955	S31653
Duplex 2205 – A995	S31803
Duplex 2304*	S32034

*Chemical composition shall be within the ranges identified in Table 1 (Typical Composition %) of and in conformance to the requirements of ASTM A276. The dimensioning and mechanical properties shall be in conformance with ASTM A955M

Add 2.1.4 Stainless steel reinforcing bars shall be hot-rolled, de-scaled and pickled to the required mechanical properties and dimensions.

Add 2.1.5 Tie Wire: Smooth, equal or greater than 16 Ga (U.S. Steel Wire Gauge) to CSA G30.3. Tie wires to be made of non-metallic material or stainless steel.

Add 2.1.6 Galvanizing of Non-Prestressed Reinforcement: To ASTM A123, minimum zinc coating 610 g/m2.

Add 2.1.7 Chairs, Bolsters, Bar Supports, Spacers: To CAN/CSA A23.1, rust-proof, galvanized steel or approved equivalent.

Add 2.1.8 Mechanical Splices: Subject to approval of Contract Administrator.

Add 2.1.9 Plain Round Bars: To CAN/CSA G40.21.

2.2 Source Quality Control

Add 2.2.1 Provide Contract Administrator with certified copy of mill test report of reinforcing steel, showing physical and chemical analysis, minimum 4 weeks prior to commencing reinforcing work.

Add 2.2.2 Inform Contract Administrator of proposed source of material to be supplied.

3.0 EXECUTION

3.1 Fabrication

Add 3.1.1 Fabricate reinforcing steel in accordance with CAN/CSA A23.1, ANSI/ACI 315, and RSIC Reinforcing Steel Manual of Standard Practice unless indicated otherwise.

Add 3.1.2 Fabricate stainless-steel reinforcing bars such that the bar surfaces are not contaminated with deposits of iron and non-stainless steel and that the surfaces are not damaged due to straightening from coil.

		Add 3.1.3	Cold bend reinforcing bars. Do not straighten or re-bend bars.
3.2	**Construction**	Add 3.2.1	Welding of reinforcing bars and welded splices is not permitted.
		Add 3.2.2	Mechanical Coupler Splices: 1. Mechanical couplers shall be approved by the Contract Administrator. Such couplers shall develop tension or compression, as required, at least 120% of the specific yield strength of the bars, but not less than 110% of the mean yield strength, representative of the bars to be used, in the test of the mechanical connection. 2. Wedge couplers shall not be used in bars greater than 15 mm diameter. When Mechanical couplers are used the Contractor shall ensure that the minimum concrete cover as specified is maintained.
		Add 3.2.3	Obtain Contract Administrator's approval for locations of reinforcement splices other than those shown on placing drawings.
		Add 3.2.4	Ship bundles of bar reinforcement, clearly identified in accordance with bar bending details and lists.
		Add 3.2.5	Detail reinforcement in accordance with Contract Documents, CSA A23.1, and detailing standards in RSIC Manual of Standard Practice.
3.3	**Field Bending**	Add 3.3.1	Do not field bend or field weld reinforcement except when indicated or authorized by Contract Administrator.
		Add 3.3.2	Only bend stainless steel reinforcement using equipment specifically designed for that purpose.
		Add 3.3.3	When field bending is authorized, bend without heat, applying a slow and steady pressure.
		Add 3.3.4	Do not field bend bars partially embedded in concrete except as shown on the Drawings or where authorized by the Contract Administrator.
		Add 3.3.5	Replace bars which develop cracks or splits.
3.4	**Placing Reinforcement**	Add 3.4.1	Place reinforcing steel as indicated on accepted placing drawings and in accordance with CAN/CSA A23.1.
		Add 3.4.2	Perform fabrication and setting so completed work will be within tolerances set out in CSA A23.1 unless otherwise shown on the Drawings or determined by the Contract Administrator. These tolerances are acceptable with regard to structural requirements. Interfacing tolerances may not be compatible with the above. Review and coordinate interfacing tolerances so various elements come together properly.
		Add 3.4.3	Do not place concrete prior to having obtained Contract Administrator’s review of reinforcing material and placement and having completed any required changes or adjustments.
		Add 3.4.4	Ensure cover to reinforcement is maintained during concrete pour.
		Add 3.4.5	Protect stainless bars with covering during transportation and handling.
		Add 3.4.6	For dowel installation, see requirements in BC MoTT Standard Specification Section 03 30 00 – Structural Cast-in-Place Concrete.

END OF SECTION

1.0	**GENERAL**	Add 1.0.4	This section describes requirements for materials, proportioning, and placing of cast-in-place concrete.	
1.1	**Related Work**	Add 1.1.10	Concrete Forming and Accessories	Section 03 10 00S
		Add 1.1.11	Concrete Reinforcement	Section 03 20 01S
1.2	**References**	Add 1.2.1	Canadian Standards Associated (CSA) 1. CSA A23.1/CSA A23.2, Concrete Materials and Methods of Concrete Construction / Test Methods and Standard Practices for Concrete, 2019 Edition. 2. CSA S6, Canadian Highway Bridge Design Code 3. CSA A283, Qualification Code for Concrete Testing Laboratories. 4. CAN/CSA A3000, Cementitious Materials Compendium.	
		Add 1.2.2	American Society for Testing and Materials (ASTM) 1. ASTM C1017/C1017M, Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete. 2. ASTM C C1059/C1059M, Standard Specification for Latex Agents for Bonding Fresh To Hardened Concrete. 3. ASTM C260, Standard Specification for Air-Entraining Admixtures for Concrete 4. ASTM C309, Specification for Liquid Membrane Forming Compounds for Curing Concrete. 5. ASTM C494, Standard Specification for Chemical Admixtures for Concrete.	
		Add 1.2.3	Where there are differences between the Specifications and Drawings and the codes, standards, or acts, the most stringent shall govern.	
		Add 1.2.4	The 2019 Edition of CSA A23.1/A23.2 shall be used. No exceptions will be made.	
1.4.1	**Submittals**	Add 1.4.1.1	Submit a concrete mix design and mix design review letter for each type of concrete used on the project for review and acceptance by the Contract Administrator a minimum of two (2) weeks prior to commencement of placing concrete. Any change to the materials, admixtures, additives, or proportions of components of a mix design constitutes a new type of concrete and requires a separate mix design submission and review letter.	
		Add 1.4.1.2	Concrete mix design review letters shall document compliance with all specification requirements for the associated type of concrete including an evaluation and summary of all mix constituents, material test reports, mix proportion quantities, and if applicable, trial batch test results, mass concrete design considerations, and portable batch plant batching procedures, aggregate source, producers' names, gradations, specific gravities, compliance with CSA A23.1 Section 4.2.3, and evidence that this data is not more than 12 months old, except that expansion tests in accordance with CSA A23.2-14A may be up to 24 months old. The concrete mix design review letter shall confirm that the mix design satisfies the requirements of CSA A23.1 and these Specifications for strength, exposure class, durability, and performance requirements. The concrete mix design review letter shall be signed and sealed by a Professional	

			Engineer registered with Engineers and Geoscientists of British Columbia who has a minimum 5 years' experience in concrete mix design reviews.
		Add 1.4.1.3	Submit results of testing completed by an independent test agency showing compliance with the concrete mix design requirements specified in Clause 1.3.2.
		Add 1.4.1.4	When concrete suppliers request confidentiality of mix proportion quantities, the Professional Engineer providing the concrete mix design review letter, subject to a mutually agreeable confidentiality agreement with the concrete supplier, shall be granted full disclosure of mix proportion quantities and used materials such that a general mix proportioning discussion can be provided in the mix design review letter.
		Add 1.4.1.5	An interruption in production of a particular type of concrete shall not constitute the need for additional testing when the Contractor provides aggregate sieve analysis, organic impurities in sands for concrete, petrographic examination of aggregates, and letter of evaluation from the mix design review letter professional indicating that the material initially tested is still representative. Provide additional analyses when requested by the Contract Administrator to confirm that the mix constituents continue to meet specification requirements and provide sign-off by the Professional Engineer providing the concrete mix design review letter.
		Add 1.4.1.6	Where available, submit material safety data sheets (MSDS) for all constituent materials.
		Add 1.4.1.7	If the fine aggregate consists of a blend from more than one source, the fine aggregate sieve analysis shall show the gradation of the blended fine aggregates. Similarly in the case of blended coarse aggregates, the coarse aggregate sieve analysis shall indicate the gradation of the blended coarse aggregates.
		Add 1.4.1.8	Provide other information in accordance with CSA A23.1 if requested by the Contract Administrator.
		Add 1.4.1.9	Submit temporary works drawings and procedures required to facilitate the concrete works. Temporary works drawings shall be prepared and sealed by a Professional Engineer registered with Engineers and Geoscientists of British Columbia, experienced in the design of temporary works of the type required for this project at least two (2) weeks prior to starting construction of the temporary works. Temporary works or structures cannot impact height of travel lanes beneath the overpass.
1.4.2	**Delivery, Storage, and Handling**	Add 1.4.2.1	Concrete hauling time: Deliver to site of Work and discharged within ninety (90) minutes maximum after batching.
		Add 1.4.2.2	Modifying maximum time limit without receipt of prior written agreement from the Contract Administrator and concrete producer as described in CSA A23.1/A23.2. is prohibited.
		Add 1.4.2.3	Submit deviations for review by Contract Administrator.
1.4.3	**Site Conditions**	Add 1.4.3.1	Placing concrete during rain or weather events that could damage concrete is prohibited.

		Add 1.4.3.2	Protect newly placed concrete from rain, wind, or weather events in accordance with CSA A23.1/A23.2.
		Add 1.4.3.3	Cold weather protection: 1. Maintain protection equipment, in readiness, on Site. 2. Use such equipment when ambient temperature below +5°C, or when temperature may fall below +5°C before the concrete has finished the curing period in accordance with Clause 3.8. 3. Placing concrete upon or against surface at temperature below +5°C is prohibited. 4. If the project schedule requires concrete to be placed when the ambient temperature is less than +5°C, submit a written plan detailing protective measures that will be undertaken to protect freshly placed concrete from extreme temperatures. Concrete shall not be placed until the Contract Administrator has reviewed the Contractor's submittal and all of the Contract Administrator's comments have been addressed.
		Add 1.4.3.4	Hot weather protection: 1. Protect concrete from direct sunlight when ambient temperature above +27°C. 2. Prevent formwork from getting too hot before concrete placed. Apply accepted methods of cooling not to Adversely affect concrete. 3. If the project schedule requires concrete to be placed when the ambient temperature exceeds +30°C or is expected to exceed +30°C prior to the commencement of curing, submit a written plan detailing protective measures that will be undertaken to protect freshly placed concrete from extreme temperatures. Concrete shall not be placed until the Contract Administrator has reviewed the Contractor's submittal and all of the Contract Administrator's comments have been addressed.
		Add 1.4.3.5	Make note of special curing and protection requirements for concrete placed during periods of extreme temperatures.
		Add 1.4.3.6	Protect from drying during the minimum curing period specified in Clause 3.8.
1.4.4	**Waste Management and Disposal**	Add 1.4.4.1	Separate waste materials for reuse and recycling.
		Add 1. 4.4.2	Use trigger operated spray nozzles for water hoses.
		Add 1. 4.4.3	Designate a cleaning area for tools to limit water use and run-off.
		Add 1. 4.4.4	Ensure emptied containers are sealed and stored safely for disposal away from the public.
		Add 1. 4.4.5	Prevent plasticizers, water reducing agents, air entraining agents, and any fresh concrete or fresh concrete constituents from entering drinking water supplies or streams. Using appropriate safety precautions, collect liquid or solidify liquid with an inert, non-combustible material and remove for

			disposal. Dispose of all waste in accordance with applicable local, provincial, and national regulations
		Add 1. 4.4.6	Choose least harmful, appropriate cleaning method which will perform adequately.
1.5	**Measurement and Payment**	Add 1.5.6	Quantities indicated in the Schedule of Quantities and Prices in square meters shall be rounded to the nearest 0.1 m^2, and calculated as the product of the lineal length and width of the repair areas. No variations to the unit price per square metre will be authorized regardless of the depth of the work. Payment includes all applicable work described in 1.5.9.
		Add 1.5.7	Payment for Barrier Demolition and Reinstatement will be made at the unit price bid as indicated in the Schedule of Quantities and Prices. Payment will include all labour, materials, and equipment required to remove and dispose existing barriers, any required temporary barriers, construct new barriers, reinforcing steel, formwork, surface preparation, concrete, finishing, and curing. Payment includes all applicable work described in 1.5.9.
		Add 1.5.8	Payment for Repair of Concrete Deck Along Longitudinal Hinge (Pier Y) will be made at the unit price bid as indicated in the Schedule and Quantities and Prices. Payment will include saw cutting of repair boundaries, removal of unsound concrete within the repair area, surface preparation, supply of sealant, placement, finishing, and curing. Payment will include all equipment, labour, materials, offsite waste disposal, and all tasks to facilitate repairs and access to the locations required to complete the work as shown in the Contract Drawings. Payment includes all applicable work described in 1.5.9.
		Add 1.5.9	Payment for concrete will be made in accordance with BC MoTT Standard Specifications Section 211.21.02 at the applicable Unit Price of per cubic metre as listed in the Schedule of Quantities and Prices. No payment will be made under this item for concrete supplied as part of another Item. All concrete work shall be in accordance with BC MoTT Standard Specifications Sections 211 and 933, unless otherwise specified in these Special Provisions. Payment shall also include quality control, submissions, clearning and grubbing, protection of existing structures that are to remain, protection of roadway underneath, concrete reinforcement, concrete forming and accessories, any falsework and brace for the formwork, rebar, dowels, epoxy, removal of existing concrete median (cut flush with existing deck and sealed with Sikaflex or other Approved Equivalent), all equipment or temporary structures for accessing the side of the overpass, joint preparation, finishes, and all appurtenances as required to complete the work as shown in the Contract Drawings by R.F. Binnie and Entuitive.
2.0	**PRODUCTS**		
2.1	**Materials**	Delete 2.1 and replace with the following:	
		Add 2.1.1	Portland cement: To CAN/CSA A3000 and CSA A23.1

Add 2.1.2 Water: To CAN/CSA A23.1.

Add 2.1.3 Aggregates:

1. To CAN/CSA A23.1/2.
2. Coarse aggregates to be normal density.

Add 2.1.4 Air entraining admixture: To ASTM C260.

Add 2.1.5 Chemical admixtures:

1. To ASTM C494.
2. Accelerating or set retarding admixtures during cold and hot weather placing require acceptance by the Contract Administrator prior to use.
3. Do not use admixtures containing calcium chloride.

Add 2.1.6 Supplementary cementing materials: To CAN/CSA A3000.

Add 2.1.7 Mixing water shall be potable. If non-potable water is to be used for batching, water shall comply with the requirements of ASTM C1602/C1602M. Do not use wash water in concrete.

Add 2.1.8 Super-plasticizing admixtures: To ASTM C494.

Add 2.1.9 Concrete retarders:

1. To ASTM C494.
2. Do not allow moisture of any kind to come in contact with the retarder film.

Add 2.1.10 Grouts:

1. Epoxy grout shall be Sikadur 31 Hi – Mod, unless bedding thickness exceeds 35 mm where Sikadur 42 shall be used with minimum strength of 35 MPa at 28 days.
2. Cementitious grout shall be pre-bagged, non-shrink grout with minimum compressive strength of 45 MPa at 28 days.
3. Alternative products shall be equivalent and require acceptance by the Contract Administrator

Add 2.1.11 Test materials originating from outside Canada or the United States of America intended for use in the production of concrete to the required standard by a laboratory in Canada certified to CSA A283. Provide a verification letter by the certified laboratory and shall include references to the appropriate mill test report(s), material specification number(s), testing date(s), and statements indicating compliance of the material to the requirements of the Contract documents. Verification letters shall be signed and sealed by a Professional Engineer registered with the Engineers and Geoscientists of British Columbia, experienced with materials engineering.

Add 2.1.12 Any cement types, water, aggregates, admixtures, supplementary cementing materials, superplasticizers, additives, and other concrete constituents not explicitly mentioned in this section shall not be used without acceptance by the Contract Administrator and the City Engineer. If the Contractor proposes to use other materials/concrete constituents, it is the onus of the Contractor to demonstrate equivalent or better performance of the material component and the concrete mix proposed. This

may include material documentations, including but not limited to material properties/test results, material data sheets, signed and sealed mix design reviews deemed necessary by the Contract Administrator to carry out the review. No additional payment or delay claim will be entertained for changes to material /concrete constituents.

2.2 **Concrete Mixes**

Delete 2.2.1 and replace with the following:

Proportion normal density concrete in accordance with CAN/CSA-A23.1, Alternative 1 to give following properties for all concrete:

1. Cement Types, except where noted on the drawings:
   a. Type GU or GUL Portland cement.
   b. Minimum compressive strength at 28 days: 45 MPa,
   c. Exposure class C1, except as noted.
   d. Maximum water cement ratio: 0.38.
2. Cement aggregate ratio to be kept as low as possible while remaining consistent with strength and durability requirements.
3. Nominal maximum size of coarse aggregate: 14 mm or 20 mm, dependent on depth of component.
4. Supplementary cementitious materials:
   a. To CSA A3000 for fly ash, slag cement, and silica fume.
   b. Fly ash: Type F.
   c. Silica fume: Type SF.
5. Limitations on supplementary cementitious materials:
   a. Fly ash content shall not exceed 15% by mass of total cementing materials content unless accepted by the Contract Administrator. Concretes using Type GUL cement and with a moderate to severe degree of sulphate exposure may require a higher percentage of fly ash, which requires acceptance by the Contract Administrator
   b. Slag content shall not exceed 30% by mass of total cementing materials content unless accepted by the Contract Administrator.
   c. Silica fume content shall not exceed 11% by mass of total cementing materials content unless accepted by the Contract Administrator.
   d. Use of other supplementary cementing materials are subject to acceptance by the Contract Administrator.
6. Slump at time and point of discharge (prior to addition of superplasticizer):
   a. 75 mm ±20 mm.
7. Air Content: 5 to 8%.
8. Maximum shrinkage at 35 days: 0.07% (700 microstrain)
9. Chemical Admixtures: In accordance with ASTM C260 and ASTM C494.
10. Do not add calcium chloride or admixtures containing calcium chloride to concrete.
11. Do not use accelerating admixtures unless accepted by the Contract Administrator.
12. When Type GUL cement is used, the following conditions shall apply:
    a. Incorporate appropriate supplementary cementitious materials into mix design to obtain desired performance for specified exposure class.
    b. Assume low sulphate exposure for site.

c. Provide sulphate exposure as defined by CSA A23.1 for aggregates, new materials placed, mixing water and any other components that may impact the sulphate exposure where concrete is placed. Propose sulphate exposure class for acceptance by Contract Administrator prior to submitting mix designs.
d. Include a minimum of 15% Type F fly ash by mass of cementing materials where late exposure (more than 35 days after placement of concrete) of the concrete to chlorides is expected.
e. Include a minimum of 8% of silica fume and 12% Type F fly ash by mass of cementing materials where early exposure (between 14 and 28 days after casting concrete) of the concrete to chlorides is expected.

13. Super-plasticizer: may only be added on site.
14. Do not change concrete mix designs or mix design requirements beyond CSA A23.1 tolerances without prior acceptance by the Contract Administrator. If an alternate mix design is considered, a new mix design submission in accordance with Clause 1.3 is required. No additional payment or delay claim will be entertained for changes to mix designs and required additional mix design submissions and review process.

2.4 **Cast-In-Place Concrete Patch Repairs**

Add 2.4.1 Use a proprietary pre-bagged concrete or a concrete supplied by a ready-mix plant, minimum strength 35MPa at 28 days. Regardless of proprietary pre-bagged concrete or supplied ready-mix, concrete shall be in accordance with Clause 2.2, except that the requirements for proprietary pre-bagged concrete shall be modified as noted in this clause.

1. Proprietary pre-bagged concrete shall be flowable, shrinkage-compensated, and high-quality concrete with maximum aggregate size of 10 mm applied by pumping or pouring in repair areas provided with formwork with letter box / bird-mouth arrangement or confined formwork for patch repairs to girder side faces and girder soffits.
2. Proprietary pre-bagged concrete shall be designed for low early age heat release.
3. Mix and place proprietary pre-bagged concrete in accordance with the manufacturer's recommendations and in accordance with these specifications.

2.5 **Concrete Trowel Patch Repairs**

Add 2.5.1 Use a proprietary cementitious pre-bagged mortar mix, one-component, shrinkage-compensated mortar applied by trowel for patch repairs.

Add 2.5.2 Use SikaTop 123 Plus or Target SC100W, or other equivalent product accepted by the Contract Administrator.

Add 2.5.3 Use product in accordance with the manufacturer's recommendations.

3.0 **EXECUTION**

3.1 **General**

Add 3.1.1 Do cast-in-place concrete work in accordance with CSA A23.1.

3.3	**Workmanship**	Delete 3.3 and replace with the following:	
		Add 3.2.1	Do not place concrete prior to the Contract Administrator's review and prior to having resolved any comments made by the Contract Administrator and having completed required adjustments. Provide a minimum 48 hours notice prior to placing of concrete to allow for inspection of reinforcement and formwork.
		Add 3.2.2	Prior to concrete placement, remove all sawdust chips and other construction debris from the interior of the formwork.
		Add 3.2.3	Clean reinforcement of debris and other deleterious materials by means acceptable to the Contract Administrator prior to placement. Refer to Section 03 20 01S - Concrete Reinforcement.
		Add 3.2.4	Pumping of concrete is permitted only after acceptance of equipment and mix.
		Add 3.2.5	Ensure reinforcement and inserts are not disturbed during concrete placement.
		Add 3.2.6	Prior to placing of concrete, obtain Contract Administrator's acceptance of proposed method for protection of concrete during placing and curing in adverse weather.
		Add 3.2.7	Maintain accurate records of poured concrete items to indicate date, location of pour, quality, air temperature and test samples taken.
		Add 3.2.8	Concrete tolerance shall be in accordance with CSA A23.1 straight edge method.
		Add 3.2.9	Proprietary products shall be Installed in accordance with manufacturer's instructions. Grouts shall not be disturbed until a minimum compressive strength of 25 MPa is reached.
3.5	**Installing Dowels**	Add 3.5.1	Meet the following requirements for dowel installation personnel: 1. All personnel installing dowels into existing concrete shall be trained by the dowel adhesive manufacturer for the installation of dowels in the orientations shown on the Drawings within the past twelve (12) months or be an ACI certified adhesive anchor installer with a valid certificate. 2. The installers of dowels in horizontal, upwardly inclined, or overhead orientations shall have been trained specifically to install dowels in these orientations and for use of the required installation accessories by the manufacturer within the past twelve (12) months. 3. Provide proof of training of all dowel installers to the Contract Administrator at least seven (7) days prior to starting the installation of dowels. Alternatively, the dowel adhesive manufacturer shall provide training and certify all dowel installers on site at the beginning of the dowel installation for each type of dowel.

		Add 3.5.2	Fill all dowelled and abandoned holes with Hilti Hit HY-200 or an equivalent product as accepted by the Contract Administrator.
		Add 3.5.3	Temporarily support overhead or upwardly inclined dowels after bonding, as necessary, to prevent their movement during curing period. The dowels shall remain undisturbed, and no load shall be placed on the dowels until curing is achieved.
3.6	**Placing Concrete**	Add 3.6.1	Handle and place concrete so as to avoid segregation of materials and the displacement of reinforcement. Deposit concrete as closely as practical to its final position.
		Add 3.6.2	When placing involves dropping concrete more than 1.5 m, deposit concrete through an elephant trunk. Alternate methods require demonstration by the Contractor of equivalent or better performance and require acceptance by the Contract Administrator.
		Add 3.6.3	Consolidate concrete thoroughly and uniformly. Perform the consolidation by mechanical vibration. Vibrators shall be equipped with non-metallic or rubber heads.
		Add 3.6.4	Supply a sufficient number of vibrators to properly consolidate concrete at the rate it is being placed. Have standby vibrators and AC generator available at all times.
		Add 3.6.5	Manipulate vibrators so as to thoroughly work the concrete around the reinforcement and embedded fixtures and into corners and angles of formwork.
		Add 3.6.6	Apply vibration at the point of deposit and in areas of freshly deposited concrete.
		Add 3.6.7	Insert vibrators vertically and withdraw slowly from the concrete. The vibration shall be of a sufficient duration and intensity to thoroughly impact the concrete but shall not be continued as to cause segregation.
		Add 3.6.8	Place concrete in horizontal layers not exceeding 300 mm thickness. Consolidate each layer so as to avoid a construction joint with the layer below.
		Add 3.6.9	Do not use concrete which does not reach its final position within 90 minutes after batching.
3.7	**Finishing**	Add 3.7.1	Patch and finish formed surfaces to CAN/CSA A23.1 except as noted.
		Add 3.7.2	Finish: 1. Class 2 – Common Finish. 2. Finish all formed concrete exposed to view. 3. Common finish to consist of smooth form finish to CAN/CSA A23.1
		Add 3.7.3	Repair honeycombed and defective concrete with method accepted by Contract Administrator. This may include removal and recasting, if required.
		Add 3.7.4	Rub exposed sharp edges of concrete with carborundum to produce 3 mm radius edges unless otherwise indicated.

3.8	**Construction Joints and Casting to Existing Concrete**	Add 3.8.1	Prepare construction joints and surfaces to existing concrete to CAN/CSA A23.1 and roughen existing surface to a nominal amplitude of 6 mm.
		Add 3.8.2	Dampen receiving surface and allow to dry to a saturated surface-dry (SSD) condition just prior to concrete application.
		Add 3.8.3	The location of construction joints not shown on the drawings require approval by the Contract Administrator prior to placing concrete.
3.9	**Curing**	Add 3.9.1	Cure concrete to CAN/CSA-A23.1 except where specified otherwise. Do not use curing compounds without approval of the Contract Administrator.
		Add 3.9.2	For concrete placed when ambient air temperature is below +5°C comply with the cold weather requirements of CAN/CSA-A23.1. Do not place concrete when the ambient temperature exceeds +25°C.
		Add 3.9.3	Unformed Surfaces: 1. Cure with burlap and water for a minimum of seven (7) days. 2. Carefully place two (2) layers of damp burlap on the surface of the concrete as soon as practicable following placement. 3. Overlap each strip by at least 75 mm and secure against displacement by wind. 4. Maintain burlap in place and keep thoroughly and continuously wet for seven (7) days after day of placing. 5. Provide misting as described in CAN/CSA A23.1 when water evaporation from the concrete surface is predicted to exceed 1.5 kg/m^2/hr and according to CAN/CSA A23.1 Appendix D.
		Add 3.9.4	Formed Surfaces: 1. If formwork is left in place for seven (7) days or more, no additional curing will be required. 2. If formwork is removed in less than seven (7) days, cure in manner specified for unformed surfaces for remainder of seven (7) day period.
		Add 3.9.5	During curing period uncover only such areas as are immediately needed for finish treatment. Recover and continue curing.
		Add 3.9.6	Continuously maintain the in-place concrete at a minimum temperature of +10°C for a minimum of 7 consecutive days or for the time necessary to attain 70% of the specified compressive or flexural strength, whichever period is shorter. This may require the erection of hoarding around the placed concrete and the provision of external heat. If required, do not vent heat to the enclosure directly at the in-place concrete.
3.10	**Field Quality Control**	Add 3.10.1	Retain certified Independent Testing Laboratory in accordance with CSA A283 to carry out field quality testing.
		Add 3.10.2	Inspection and testing of concrete and concrete materials shall be carried out in accordance with CAN/CSA A23.1, except as follows:

A strength test shall consist of 3 standard cylinders, tested at 3, 7 and 28 days.

1. Frequency of testing may be increased at Contract Administrator's discretion.
2. Contractor shall pay for costs of tests.
3. Contract Administrator may take additional test cylinders during cold weather concreting. Cure cylinders on job site under same conditions as concrete which they represent.
4. Non-destructive Methods for Testing Concrete shall be in accordance with CAN/CSA A23.2.
5. Inspection or testing by Contract Administrator will not augment or replace Contractor quality control nor relieve the Contractor of their contractual responsibility.
6. Concrete failing to meet the requirements shall be retested, strengthened, or rejected in accordance with CAN/CSA A23.2. All additional testing, strengthening, and/or replacement shall be at the Contractor's expense, and no delay claims will be entertained.
7. In the event that air content is outside the specified tolerance range as determined by testing, the Contract Administrator may accept adjustments to the mix as an alternate to rejection, provided adjustment are made within the maximum time allowed.
8. Do not add additional water to adjust slump.

Add 3.10.3 Acceptance Testing for Dowels:

1. Carry out all acceptance testing on selected dowels. Testing shall be performed by an independent testing agency acceptable to the Contract Administrator. All required repairs and retesting shall be at the Contractor’s expense, and no delay claims will be entertained.
2. Carry out testing intermittently as installation proceeds. The Contract Administrator will randomly select up to 10% of the installed dowels or a minimum of three dowels whichever is larger, in each work zone for tensile (pull-out) testing. The Contract Administrator will review the installation and testing program with the Contractor prior to the start of dowel installation.
3. Reinstate hooks cut off to facilitate testing using lap splices, couplers, or other means accepted by the Contract Administrator.
4. Re-install and retest any dowel that fails the test at no expense to the Contract Administrator.
5. Pull-out tests shall conform to ASTM E488 “Test Methods for Strength of Anchors in Concrete and Masonry Elements”. Tension dowels to 80% of the specified minimum yield strength of the dowel. Dowel must hold the load for 5 min. without measurable movement of the dowel.
6. Testing will be increased to up to 10% of all dowels or an additional 3 dowels whichever is larger, following a dowel failure or following the change of any installer contributing to the successful installation of previous dowels.
7. If test results indicate that more than 5% of the total dowels fail the tensile test, the Contract Administrator may require the Contractor to carry out tensile testing of all dowels. No additional payment will be made.

END OF SECTION

1.0 GENERAL

1.1 References

1.1.1 American Society for Testing and Materials (ASTM):

1. ASTM A53/A53M, Standard Specification for Pipe, Steel, Black and Hot Dipped, Zinc Coated Welded and Seamless.
2. ASTM A123/A123M, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
3. ASTM A153/A153M, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
4. ASTM A193 / A193M, Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High-Pressure Service and other Special Purpose Applications.
5. ASTM A269, Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
6. ASTM A307, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
7. ASTM A385, Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip)
8. ASTM A563/ A563M, Standard Specification for Carbon and Alloy Steel Nuts
9. ASTM B695, Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel
10. .ASTM F436/F436M, Standard Specification for Hardened Steel Washers Inch and Metric Dimensions
11. .ASTM F3125/F3125M, Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 830 MPa and 1040 MPa Minimum Tensile Strength, Inch and Metric Dimensions.
12. ASTM Practice A 143, Standard Practice for Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement

1.1.2 American Welding Society (AWS):

1. AWS A5.4/A5.4M, Specification for Stainless Steel Electrodes for Shielded Metal Arc Welding
2. AWS D1.6/D1.6M, Structural Welding Code -Stainless Steel

1.1.3 Canadian Standards Association (CSA):

1. CSA G40.20/G40.21, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
2. CSA S16, Design of Steel Structures.
3. CSA S6, Canadian Highway Bridge Design Code.
4. CSA W47.1, Certification of companies for fusion welding of steel
5. CSA W48, Filler Metals and Allied Materials for Metal Arc Welding (developed in cooperation with the Canadian Welding Bureau).
6. CSA W59, Welded Steel Construction (Metal Arc Welding).
7. CSA W178.2, Certification of welding inspectors.
8. CSA G279, Steel for Prestressed Concrete Tendons.

1.1.4 Health Canada / Workplace Hazardous Materials Information System (WHMIS):

1. Material Safety Data Sheets (MSDS).

1.2 Submittals

1.2.1 Submit in accordance with the General Conditions and Section 01 33 01S – Project Record Documents.

1.2.2 Product Data:

1. Submit manufacturer's instructions, printed product literature and data sheets for sections, plates, couplers, anchors, and joints. Include product characteristics, performance criteria, physical size, finish and limitations.
2. Submit load-strain curves certifying physical properties for each mill heat of bar steel and/or wire steel. Physical properties and chemical composition to conform to minimum specification requirements indicated for bar steel and/or wire steel.

1.2.2 Shop Drawings:

1. Submit drawings to Contract Administrator for review two weeks prior to fabrication.
2. Shop drawings shall be supplied for all steel and joint components including, but not limited to, plates, built up sections and proprietary joint hardware.
3. Indicate on all shop drawings materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, adjustable level devices for deck joints and accessories.

1.2.3 Welding procedures:

1. Submit welding procedures, including welding procedure datasheets, for each type of weld proposed. The welding procedures shall bear the approval of the CWB and be reviewed and accepted by the Contract Administrator a minimum of one week prior to shop welding and three weeks prior to the commencement of field welding.

1.2.4 Mill Certificate Reports:

1. The contractor shall provide certified mill test results for all reinforcing steel and any other structural and miscellaneous steel components required for the construction of the works, specifying the minimum ultimate strength, yield strength, elongation and chemical composition upon delivery to the site.
2. Mill test reports that originate from a mill outside Canada, or the United States of America shall be verified and certified by a laboratory in Canada by testing the material to the specified material standards, including boron content.
3. The testing laboratory shall be certified to ISO/IEC 17025 by an organization accredited by the Standards Council of Canada for the tests required. Samples for testing shall be collected by personnel employed by the certified laboratory.
4. A verification letter shall be provided by the certified laboratory that includes at a minimum, the applicable mill test reports, testing standards, date of verification testing, and declaration of material compliance with Contract requirements. The verification letter shall be signed by an authorized officer of the certified laboratory.

1.3 Quality Control

1.3.1 Submit certified test reports showing compliance with specified performance characteristics and physical properties.

1.3.2 Submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.3.3 Notify and submit a fabrication schedule to the Contract Administrator at least fourteen (14) days before fabrication commences. Allow the Contract Administrator access to all parts of the Work and supply such information and assistance as is required.

1.3.4 Provide samples of any materials when requested by the Contract Administrator.

1.3.5 Inspection by the Contract Administrator shall not relieve the Contractor from obligation to perform the work in accordance with the Contract.

1.3.6 Retain and pay for an independent qualified inspection company to complete in-plant fabrication inspection. The inspection company will:

1. Verify that the correct materials are incorporated into the structure.
2. Complete all non-destructive weld testing.

1.3.7 Upon completion of the fabrication, the inspection company shall provide a report summarizing the work completed including summaries of all inspection work completed.

1.3.8 Welding inspectors shall be qualified by the CWB to the requirements of CSA W178.2. Any welding work found to be unacceptable shall be corrected in accordance with CSA W59, Section 5.10.

1.3.9 Perform, as a minimum, the following non-destructive testing of all welds:

1. Visual inspection of all welds.
2. Magnetic particle inspection of fillet welds, as follows:
   - Submerged-arc welds: 25%.
   - Semi-automatic welds: 50%.
   - Manual welds: 25%.

1.3.10 The Contract Administrator, at their discretion, may complete independent quality assurance inspection(s). Provide suitable access to allow these inspection(s) to be completed including moving and supporting components as required. The Contract Administrator will attempt to schedule non-destructive testing so as not to interfere with the progress of the work. Cost of re-inspection after defects are repaired shall be borne by the Contractor. The Contract Administrator's quality assurance inspection(s) will not absolve the Contractor of its responsibility for the quality control of the Work nor for completing the Work in accordance with the requirements of the Contract.

1.3.11 Correct any welding work found to be unacceptable in accordance with CSA W59.

1.3.12 In the fabricator's plant, the specification and grade of steel used for main components shall be identified by use of suitable markings or recognized colour coding. Cut pieces that are identified by piece mark and contract number need not continue to carry specification identification markings when it has been established that such pieces conform to the required material specifications.

1.4 Delivery, Storage, And Handling

1.4.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

1.4.2 Delivery and Acceptance Requirements: Deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

1.4.3 Storage and Handling Requirements:

1. Store materials off ground, in dry location, and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area. Keep free from dirt and other foreign matter and protect as far as practicable from corrosion. Support long members on skids placed near enough together to prevent injury from deflection.
2. Replace defective or damaged materials with new.

1.5 Measurement and Payment

Add 1.5.1 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.

Add 1.5.2 Payment for Replacing Bearing Keeper Plates (North Abutment) shown in the Schedule of Quantities and Prices shall be at the unit price bid as indicated. The amount provided shall be considered full compensation for supply, installation, and all work required to complete installation as shown on the Contract Drawings and as described in this Section.

2.0 PRODUCTS

2.1 Materials

2.1.1 Miscellaneous metal, angles, channels, sections and plates: to CSA G40.20/G40.21, Grade 300W, unless indicated on the drawings.

2.1.2 Anchor rods: to ASTM A193, Grade B7 (Fy = 725 MPa, Fu = 860 MPa)

2.1.3 Maximum steel boron content not to exceed 0.0008%.

2.1.4 Welding materials: to CSA W59 and certified by Canadian Welding Bureau.

2.1.5 Welding electrodes except for stainless steel: to CSA W48 Series and certified by Canadian Welding Bureau.

2.2 Finishes

2.2.1 Galvanizing:

1. Hot dipped galvanizing to ASTM A123/A123M, ASTM A153/A153M and ASTM A385 to a minimum coating of 610 g/m².
2. Safeguard against embrittlement as required in ASTM A143.
3. Upon request by Contract Administrator, provide tests for embrittlement outlined in ASTM A143.
4. Chemical composition of steel being galvanized shall be as follows:
   - Carbon less than 0.25%
   - Phosphorus less than 0.04%
   - Manganese less than 1.3%
   - Silicon less than 0.04% or between 0.15% and 0.22%
5. For steel not meeting these chemical composition requirements, develop special galvanizing techniques to ensure that the specified coating thickness and adherence is achieved. A detailed description of the special techniques shall be submitted to the Contract Administrator for review 2 weeks prior to galvanizing.

2.2.2 Zinc Rich Primer Coating:

1. Zinc rich primer shall be in accordance with CAN/CGSB 1.181 or MPI EXT 5.2C.
2. Application rate of zinc rich primer shall be heavy.
3. Use primer unadulterated, as prepared by the manufacturer. Paint on dry surfaces, free from rust, scale, and grease. Paint when temperature is minimum 7ºC.

		2.2.3	Isolate aluminum from the following components, by means of bituminous paint: 1. Dissimilar metals. 2. Concrete, mortar, and masonry
3.0	**EXECUTION**		
3.1	**Erection**	3.1.1	Erect metalwork and temporary supports square, plumb, straight, and true, accurately fitted, with tight joints and intersections.
		3.1.2	Provide suitable means of anchorage acceptable to Contract Administrator such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.
		3.1.3	Exposed fastening devices to match finish and be compatible with material through which they pass.
		3.1.4	Supply components for work by other trades in accordance with shop drawings and schedule.
		3.1.5	Make field connections as shown on shop drawings.
		3.1.6	Deliver items over for casting into concrete together with setting templates to appropriate location and construction personnel.
		3.1.7	All field welds and other damage in galvanized coatings shall be thoroughly cleaned and painted with two coats of organic and zinc-rich paint.
		3.1.8	Couplers and anchorages shall not be welded.
		3.1.9	Couplers shall be manufactured by the coupler manufacturer and shall be capable of developing full tensile strength of the reinforcement. Couplers shall be stop-put and furnished with counter nuts, unless otherwise acceptable to the Contract Administrator.
3.2	**Fabrication**	3.2.1	Fabricate work square, true, straight, and accurate to required size, with joints closely fitted and properly secured.
		3.2.2	Where possible, fit and shop assemble work, ready for erection.
		3.2.3	Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.
3.3	**Welding**	3.3.1	Welding shall be undertaken by a company approved by the CWB to the requirements of CSA W47.1, Division 3 or better.
		3.3.2	All welding shall be done in accordance with procedures approved by the Canadian Welding Bureau (CWB) and CSA W59
		3.3.3	Provide evidence that all welders and welding operators to be employed on the work are currently qualified by CWB in the processes in which they are to be employed.
		3.3.4	Welding of stainless steel in accordance with AWS D1.6/AWS D1.6M.
		3.3.5	Use low hydrogen filler, fluxes and low hydrogen welding practices throughout.
		3.3.7	Field welding:

1. When the ambient air temperature is below 10°C, all material to be welded shall be preheated and sheltered from wind. When the ambient air temperature is below 0 °C, welding will not be permitted unless hoarding and heating acceptable to the Contract Administrator is provided.
2. Welding completed near or adjacent to existing strip seals or other rubber components shall be protected. All existing components damaged during field welding shall be repaired, as determined by the Contract Administrator, at Contractor's expense.
3. Field welding will only be permitted as shown on shop drawings accepted by the Contract Administrator. Field welding to be completed by a company certified to CSA W471. Division

3.4 Clean Up

3.4.1 Leave Work area clean at end of each day.

3.4.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment to the satisfaction of the Contract Administrator.

3.4.3 Waste Management: separate waste materials for reuse and recycling.

3.4.4 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.5 Protection

3.5.1 Protect installed products and components from damage during construction.

3.5.2 Repair damage to adjacent materials caused by metal fabrications installation.

END OF SECTION

1.0 GENERAL

1.1 Description

Add 1.1.1 This section covers all Work associated with Joints including poured joint sealant, strip seals and compression seals.

1.2 Submittals

Add 1.2.1 Submit in accordance with the General Conditions and Section 01 33 01S – Project Record Documents.

Add 1.2.2 Submit manufacturer's product data, printed product literature and PDS sheets for joint materials. Include product characteristics, performance criteria, installation instructions, physical size, finish and limitations.

1.3 Delivery, Storage and Handling

Add 1.3.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

Add 1.3.2 Deliver materials to Site in original factory packaging, labelled with manufacturer's name and address.

Add 1.3.3 Storage and handling requirements:

1. Store materials in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
2. Store and protect joint sealants from nicks, scratches, and blemishes.
3. Replace defective or damaged materials with new

1.4 Measurement and Payment

Add 1.4.1 Payment for Expansion Joint Replacement will be at the lump sum amount indicated, unless shown otherwise, in the Schedule of Quantities and Prices. The amount provided shall be considered full compensation for all work required to complete the installation as shown on the Contract Drawings. Work includes, but is not limited to, all submittals, removal of existing joint seal, armouring, and surrounding concrete, local asphalt demolition, concrete milling, cleaning and surface preparation, supply and installation of new joint seal including armouring and concrete, supply and reinstatement of asphalt upper & lower course and tack coat, reinstatement of end fill 19mm crushed base and 25mm minus granular base, local concrete and median demolition and reinstatement, reinstate permanent thermoplastic pavement marking on asphalt surfaces, temporary removal, protection, and reinstatement of existing noise barriers, supply and installation of new reinforcing steel, curing, access, and temporary road plating if required. Payment will include all equipment, labour, materials, waste disposal, and everything supplied and done in connection therewith.

Contractor to provide any required road and sidewalk plating to be secured into the travelled surface with asphalt ramps for a smooth transition when traffic lanes and sidewalks re-opened after every work shift. Contractor responsible to provide road plate warning and speed control signage. Payment for temporary road plating installation and removal is considered incidental to the work as describe above.

Add 1.4.2 Payment will be at the unit rate indicated, unless shown otherwise, in the Schedule of Quantities and Prices. The amount provided shall be considered full compensation for all work required to complete the installation as shown on the Contract Drawings and as described in the Contract Documents.

Add 1.4.3 Payment for Joint Sealants will be at the unit rate indicated, unless shown otherwise, in the Schedule of Quantities and Prices. The amount provided shall be considered full compensation for all work required to complete the installation as shown on the Contract Drawings and as described in

the Contract Documents. Work includes, but is not limited to, all submittals, removal of existing joint sealants, cleaning and surface preparation, supply and installation of the joint sealants. Payment will include all equipment, labour, materials, waste disposal, and everything supplied and done in connection therewith.

Payment for this item includes all applicable materials, specifications, and work described in 1.4.1.

2.0 PRODUCTS

2.1 Materials

Add 2.1.1 Grout materials for joints shall be in accordance with Section 03 30 53S – Structural Cast-in-Place Concrete

Add 2.1.2 Steel for joints shall be in accordance with Section 05 53 00S – Metal Fabrications.

Add 2.1.3 Compression seals shall be as shown on the Contract Drawings and shall be installed in accordance with the manufacturer's specification. The use of alternate equivalent compression seals requires acceptance by the Contract Administrator based on documentation provided by the Contractor.

Add 2.1.4 Materials for joint sealant shall be as follows:

1. Vertical Joint Seams: Sealant shall be Sikaflex 1A or approved equivalent.
2. Horizontal Joint Seams: Sealant shall be Wabo Silicone Seal or approved equivalent.

Add 2.1.5 All certified material test reports for the joints shall be submitted to, and accepted by, the Contract Administrator prior to installation.

3.0 EXECUTION

3.1 Site Conditions

Add 3.1.1 Proceed with installation of pourable joint sealants only when:

1. Ambient and substrate temperature conditions are within limits permitted by joint sealant manufacturer or are above 4.4 degrees C.
2. Joint substrates are dry.
3. Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use

Add 3.1.2 Proceed with installation of joints only where joint widths are more than those allowed by joint manufacturer for applications indicated

3.2 Installation

Add 3.2.1 The Contractor shall form or excavate for each deck joint as shown in the Contract Drawings.

Add 3.2.2 Each joint seal shall be supplied in a single length, without splices. Vulcanized locations for rubber seals shall be submitted to the Contractor Administrator for review prior to installation.

Add 3.2.3 Following the removal of the existing seal, the surfaces of the concrete or steel to receive the new seal shall be cleaned of any residual that may be present by blast cleaning or other approved mechanical means. Ensure joint surfaces are dry and frost free. Following the cleaning, the joint should be blown free of debris using compressed air in accordance with the manufacturer's instructions.

Add 3.2.4 The seal shall be installed in accordance with the manufacturer's recommendations, including requirements for lubricant adhesive.

Add 3.2.5 After installation, deck joints shall be water tested by the Contractor in accordance with the Contract Drawings and to the approval of the Contract Administrator who shall be present for the tests. Contractor shall ensure joints are watertight. If joints are not watertight, joint seal shall be removed, reinstated, and retested.

Add 3.2.6 Flood Test

Deck joints to be flooded by the Contractor will have the Contract Administrator present and be checked for leaks to ensure they are watertight. The requirements for flood testing the joints are as follows:

1. The air, concrete, and deck joint assembly temperature shall be 2 °C or higher at time of testing.

2. After the epoxy has set and prior to acceptance, the joint shall be water tested over its entire length when there are no upturns. When there are upturns, the joint shall be tested between the gutter lines.

3. The water shall be continuously ponded for a minimum of one hour, maintaining a minimum depth of 25 mm along the tested length and a minimum depth of 100 mm above the deck joint assembly at the gutter lines. For superelevated decks, only the lower gutter line requires the testing at a depth of 100 mm.

4. The width shall extend 50 mm beyond the concrete dams on both sides of the deck joint assembly.

5. When the staging of traffic is required, the joint shall be tested in overlapping sections. The Contract Administrator shall be present for the entirety of the test.

Leakage of water through the deck joint assembly during this test, including the interface between the preformed seal and the seal retainers, concrete to steel interfaces, and the concrete construction joints, shall constitute failure of the deck joint assembly.

If such failure occurs, the deck joint assembly shall be repaired or replaced and the water test repeated. The method of repair shall be submitted in writing to the Contract Administrator for review prior to commencement of repair work.

The water test and any related corrective work shall be completed prior to any seasonal shutdowns. When this is not feasible, a proposal detailing an alternative solution shall be submitted to the Contractor Administrator for approval.

Pour test

Sidewalk joints to be water tested by the Contractor will have the Contract Administrator present and be checked for leaks to ensure they are watertight. The requirements for water testing the joints are as follows:

1. Contractor shall pour water over each completed joint and note any water leaks below the joint.
2. A minimum of 5 litres of water shall be used in joint testing.

3. Water shall be poured over the entire length of the joint.
4. A passing test will only be given if no water is observed passing through the joint from the underside of the bridge. If water ingress is observed, the contractor shall reset the joint seal.

3.3 Surface Preparation

Add 3.3.1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.

Add 3.3.3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.

3.4 Priming

Add 3.4.1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.

Add 3.4.2 Prime sides of joints in accordance with joint manufacturer's instructions immediately prior to installation.

Add 3.4.1 Apply bond breaker tape where required to manufacturer's instructions.

Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.5 Application

Add 3.5.1 Sealant:

1. Apply sealant in continuous beads.
2. Apply sealant using gun with proper size nozzle.
3. Use sufficient pressure to fill voids and joints solid.
4. Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
5. Tool exposed surfaces before skinning begins to give slightly concave shape.
6. Remove excess compound promptly as work progresses and upon completion

Add 3.5.2 Curing

1. Cure sealants in accordance with sealant manufacturer’s instructions.
2. Do not cover up sealants until proper curing has taken place.

3.6 Protection

Add 3.6.1 Protect installed products and components from damage during construction.

Add 3.6.2 Repair damage to adjacent materials caused by joint sealant installation.

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 contamination 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 and replace with the following

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

Recycled aggregates may be used with approval from the Contract Administrator and the City, provided they meet all specification requirements and do not compromise construction quality. Only clean aggregates, crushed concrete, or asphalt free of impurities are permitted.

END OF SECTION

1.4	**Measurement and Payment**	Delete 1.4.1 and replace with the following	Payment for all work performed under this section, unless listed in the Schedule of Quantities and Prices, will be incidental to payment for Work described in other Sections. Clearing and grubbing includes removal and offsite disposal of all branches, stumps, trees, debris, hedges, timbers, logs and vegetation to access and complete the Work and as shown on the Contract Drawings or as directed by the Contract Administrator. Works include cutting branches affected by Work to create the necessary clearance to accommodate the construction and intended function of the Work, and as shown on Contract Drawing. Payment includes trimming of small branches from trees or hedges as required to provide minimum 2.5m vertical and 0.5m horizontal clearance from edge of new road or rail. Branch cutting/pruning to have a clean-cut flush to branch collar and use of an approved tree paint to repair damage to surviving vegetation where branches have been removed.

END OF SECTION

1.0	**GENERAL**		
1.8	**Limitations of Open Trench**	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. Temporary road plates may be installed with the approval of the Contract Administrator. Contractors are to refer Appendix A – Traffic Management Detail Specifications for installation requirements.
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

1.8 Measurement and Payment

Delete 1.8.4 and replace with the following

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

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

Delete 1.8.5 and replace with the following

Payment for Common Excavation includes:

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

Truck Type	Material Type	Volume (m^3)
Tandem	ordinary material	7
Tandem	asphalt/concrete/pipe	4
Triaxle	ordinary material	8
Triaxle	asphalt/concrete/pipe	5
Tandem and Pony	ordinary material	11
Tandem and Pony	asphalt/concrete/pipe	7.5
Triaxle and Pony	ordinary material	13
Triaxle and Pony	asphalt/concrete/pipe	9
Tandem and Transfer	ordinary material	19
Tandem and Transfer	asphalt/concrete/pipe	13

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

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

Delete 1.8.10 and replace with the following

Payment for replacement of areas of unsuitable granular base, granular subbase or sub-grade revealed during proof rolling will include excavation with off-site disposal, installation & compaction of granular base material (19 mm minus), and all remedial work required to achieve a suitable base. Payment with be based on the cubic meter volume removed.

2.0 PRODUCTS

2.2 Specified Materials

Delete 2.2.1.3

Delete 2.2.1.4

Delete 2.2.2

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, road reshaping, 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 base will be made under Section 31 24 13S – 1.8.10.
2.0	**PRODUCTS**		
2.1	**Granular Base**	Add 2.1.1.3	25 mm minus crushed gravel conforming to the gradation specifications under Section 31 05 17S – 2.10.2.
3.0	**EXECUTION**		
3.5	**Proof Rolling**	Delete 3.5.1 and replace with the following	For proof rolling, use fully loaded single axle, to 80 kN (18, 000 lb.) minimum, dump truck.
		Add 3.5.7	Prior to asphalt concrete paving, the base surface shall be checked by the Contract Administrator and the City, for deflections utilizing a Benkelman Beam, in order to ensure that the final rebound requirements can be obtained with the asphalt pavement. In the event that such deflection is in excess of those required to produce the final standards, then the base shall be adequately strengthened by additional gravel or asphalt concrete to ensure that final deflections as follows are not exceeded. The Benkelman spring rebound value of the completed pavement surface shall not at any point exceed 0.75 mm for arterial industrial roads and lanes, 1.15 mm for collector roads, and 1.5 mm for local roads and lanes as determined in the procedures outlined in the Transportation Association of Canada publication “Pavement Management Guide.”

END OF SECTION

1.4	**Measurement and Payment**	Delete 1.5.1 and replace with the following	Payment for asphalt tack coat will be incidental for 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	Payment for pavement surface cleaning, as per section 32 01 11, and all other work is incidental to the application of 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 for East Approach Crack Repair & CB Lead and Manhole Installation (as shown in Contract Drawings by Associated Engineering) includes all construction joint preparation, asphaltic surface milling to tie into existing asphalt, saw cutting, supply and placing of the asphaltic concrete, tack coat, compaction and cleaning frames, covers and lids of castings affected, protection of existing curb and gutter, and taped temporary pavement markings. Measurement for asphaltic concrete paving for the specified design mixes will be made at the respective unit prices bid in the Schedule of Quantities and Prices and incorporated into Work will be asphalt concrete actually based on weigh tickets provided to the Contract Administrator as loads are delivered. The contractor will not receive any additional compensation above the respective unit prices bid in the Schedule of Quantities and Prices for Hand Work, Special Equipment & Machinery to complete the Hot Mix Asphaltic Paving Work as shown on the Contract Drawings or as directed by the Contract Administrator. For measurement and payment purposes, Contract Administrator may calculate payment on actual area paved to the thickness specified in the Schedule of Quantities and Prices and as shown on the Contract Drawings. Asphalt density of 2.45 tonne/m^3 shall be used for tonnage calculated from actual area paved.
		Delete 1.5.3 and replace with the following	Payment for asphaltic concrete sidewalks for Sidewalk Regrading (as shown in Contract Drawings by Associated Engineering) includes all construction joint preparation, saw cutting, supply and placing of the asphaltic concrete, compaction and cleaning frames, covers and lids of castings affected, adjusting existing catch basins to accommodate proposed grades, and temporary removal, protection, and reinstallation of existing noise barriers as required to complete the work as shown in the Contract Drawings. 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. For measurement and payment purposes, Contract Administrator may calculate payment on actual area paved to the thickness specified in the Schedule of Quantities and Prices and as shown on the Contract Drawings. Payment for this item includes all applicable materials and work described in 1.5.1.
		Add 1.5.9	The Contractor or the Owner may request adjustment of the unit prices submitted for Asphalt Pavement if the Composite Rack Posting (CRP) varies by more than 5.0% from Tender Closing Date to the time the asphalt paving is actually performed.

			The CRP is a composite of the available Rack Postings for PG 64-22 FOB Langley BC. Requests for asphalt pavement unit price adjustment must be made prior to commencing asphalt paving. The Contractor must provide the supporting documents as required by the Contract Administrator. Payment for asphalt paving performed prior to a request for price adjustment will be made at the unit price submitted. Unit prices will be increased or decreased as applicable using the following formula: **Adjustment = (CRP_{work} - CRP_{tender}) x AC_{volume}** *Adjustment* amount in dollars per tonne the unit price is modified CRP work is the CRP at the time paving is performed CRP tender is the CRP at the Tender Closing Date AC volume is the mixture design percent asphalt content, by volume.
1.6	**Inspection and Testing**	Add 1.6.3	Test cores will be taken by the *Contract Administrator* in the areas of new paving and will include cores along construction joints to ensure compliance with the required design and compaction.
2.0	**PRODUCTS**		
2.1	**Materials**	Add 2.1.2.1	Usage of recycled asphalt shingles will not be permitted.
		Add 2.1.2.2	Usage of softening agents, rejuvenators, or recycling agents will not be permitted.
2.2	**Mix Design**	Delete 2.2.2 and replace with the following	Mix may contain up to a maximum of 15 % by mass of RAP for Upper Course Asphalt and 20 % by mass of RAP for Lower Course Asphalt without a special mix design. The 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 and replace with the following	Marshall Stability at 60oC 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, existing catch basins, junction boxes, and valve boxes, belonging to Coquitlam and/or other agencies that are affected by the road works and sidewalk regrading work. 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 within 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 markings including pedestrian crosswalk, merge and diverge markings, stop lines, solid and broken line road lane markings including edge lines of merge and diverge markings, bike symbols, etc. to be provided as shown on the Contract Drawing.
1.5	**Measurement and Payment**	Delete 1.5.2 and replace with the following	All permanent markings shall be marked with extruded thermoplastic road markings as specified under Section 32 17 23S, 2.1 Materials, unless shown otherwise in the Schedule of Quantities and Prices.
		Delete 1.5.3 and replace with the following	Payment for Permanent MMA Pavement Markings including on Parapet will be made at the lump sum amount indicated, unless shown otherwise, in the Schedule of Quantities and Prices. The amount provided shall be considered full compensation for all work required to complete line paint reinstatement for concrete approaches removed as part of expansion joint and joint sealant replacements, removal of stop bars and paint lines via hydro removal, and all other pavement marking installation as shown on the Contract Drawings by R.F. Binnie. Payment for permanent thermoplastic pavement markings will not be made until all temporary pavement markings and reflective devices have been removed.
		Delete 1.5.4 and replace with the following	Payment for signage includes all sign poles, bases, sleeves, sign relocations and sign installations (complete). The City will supply signs to supplement existing signs as required. Payment includes all labor, materials and incidentals to complete the work. 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. 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. The unit price payment is for each city supplied aluminum sign installed on a sign pole including 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. Installation of each aluminum sign on a lamp standard pole or sign pole includes sign mount clamps and all costs to supply all materials, labour and equipment and incidentals necessary to install each sign as directed by the Contract Administrator.
		Add 1.5.5	Payment for the supply and installation of the specified delineator will include all labour, equipment, and materials required to complete the work as per manufacturer's specifications.

2.0 PRODUCTS

2.1 Materials

Delete 2.1.1 and replace with the following

All permanent paint markings shall be marked with thermoplastics manufactured by LAFRENTZ Road Markings.

Delete 2.1.7 and replace with the following

Thermoplastic material

.1 Material composition shall be at the discretion of the manufacturer subject to the approval of the Contract Administrator and the City. Each formulation shall be identified by a code number.

.2 No retained water when tested by ASTM D-570.

.3 Specific gravity of the supplied product shall be within 3 % of that specified for the selected formulation.

.4 Material shall not deteriorate upon contact with deicing chemicals, gasoline, diesel fuel or grease dropped by traffic.

.5 Material shall not break down, deteriorate, scorch or discolour, if held within the application temperature range specified by the manufacturer for a period of four hours and it must be able to be reheated from room temperature to the application temperature four (4) times without showing any of these detrimental effects.

.6 When applied at the temperature recommended by the manufacturer and at a film thickness of 2 to 4 mm, the material shall set solid and show no tracking under traffic after elapsed times as follows:

.1 Two (2) minutes at an air temperature of 10° C, relative humidity less than 75 %, and road surface temperature from 10° C to 20° C.

.2 Five (5) minutes at an air temperature of 32° C, relative humidity less than 75 %, and road surface temperature from 35° C to 50° C.

.3 The drying time under conditions intermediate between the two air temperatures shall be interpolated using a straight-line model.

.7 The quantity, type, and gradation of the component reflecting glass spheres premixed in the thermoplastic material shall be at the discretion of the manufacturer but shall provide retroreflection levels specified below.

Add 2.1.10

Pavement Markings on All Concrete Surfaces Including Parapets:

.1 Material approved shall be MMA (Methyl Methacrylate).

.2 The MMA Skid Resistant Material shall meet the following requirements:

.1 Be Ultra-Violet Stable

.2 Be ISO Certified Durable Road Marking Material

.3 Utilize 0.5mm – 1mm aggregate within the MMA to create skid resistance of 49 BPN.

.4 Red and Yellow Color (Pantone #) to be approved prior to application.

.3 Product details and specification to be submitted to Contract Administrator for final approval.

3.0 EXECUTION

3.3 Application

Add to 3.3.1.3

Temporary raised pavement markings (TRPMs) are to be provided on all 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**		
1.6	**Measurement and Payment**	Delete 1.6.1 and replace with the following	Payment for Storm Sewer Drainpipes will be at the lump sum amount indicated, unless shown otherwise, in the Schedule of Quantities and Prices. The amount provided shall be considered full compensation for all work required to complete installation as shown on the Contract Drawings. Measurement for storm sewers will be made horizontally from manhole centreline to manhole centreline after surface work has been completed or on the total lineal metres of installed pipe, from inlet to outlet, along the centreline.
		Delete 1.6.2 and replace with the following	Payment for storm sewers includes location and exposure of existing utilities, saw cutting pavement, trench excavation, dewatering, bypass pumping, disposal of all surplus excavated material, bedding, import backfill, road subbase and base, disposal of existing storm pipe, support of adjacent piping, supply and installation of all pipe, fittings and related materials, tie-ins to new/existing storm pipe, inserta tee, sanded stub, manhole rebenching as required, ramping, existing catchbasin or lawnbasin lead tie-ins to new storm, construction joints, temporary asphalt patching, temporary surface restorations, 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.
		Add to 1.6.3	Payment for storm service connection includes all applicable materials and work described in 1.6.2 and 150mm SDR28 PVC pipe, shear band couplers, bends, sanded stubs, inserta tee, increaser, stubs and all related fittings and components specified and/or shown on Standard Detail Drawings.
		Delete 1.6.5 and replace with the following	Payment for catchbasin leads include all applicable materials and work described in 1.6.2. Measurement for catchbasin leads, lawn basin or communication box will be made horizontally from tie-in point to centreline of catchbasin or lawn basin for each pipe size installed with no regards to depth range.
		Add to 1.6.6	Payment for solid or perforated pipe includes all applicable materials and work described in 1.6.2. Measurement for solid or perforated pipe will be made horizontally from start of new solid or perforated pipe to tie-in point installed with no regards to depth range.
2.0	**PRODUCTS**		
2.2	**PVC Pipe, Mainline Smooth Wall**	Delete 2.2.1 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 connections to be PVC DR 28 152 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 pipes 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	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 mainlines greater than 300 mm, use of insertable tee is permitted.
3.10	**Service Connection Installation**	Delete 3.10.3 and 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 manhole includes supply and installation of base, lid, slab, concrete riser, concrete barrel, donut ring, concrete frame, metal frame, cover, ladder rung and all components to complete the manhole from specified invert to finishing level. Payment includes pre-locating/daylighting existing storm sewer inverts prior to construction and coordinating with the Contract Administrator and Engineer to determine invert elevations, temporary asphalt patching, base preparation, all in-situ concrete work, bedding, import backfill, subbase and base, manhole preparation to accommodate new sewer installation, all labor, material, equipment and necessary work for installing the manhole as shown on Contract Drawing and as described on Standard Detail Drawing S1 and S2. Payment includes all labor, material and equipment required for benching of manhole.	
		Delete 1.5.2 and replace with the following	Payment includes supply and installation of new catchbasin/lawnbasin as described in Schedule of Quantities and Prices including catch basin base, concrete barrel, concrete riser, PVC sanded stub, donut ring, off-set sump, H20 rated concrete frame/lid, metal frame, top inlet and grate, aluminum trapping hood and all labor, material and equipment required to complete the work from specified invert to finishing level and as per Standard Detail Drawing as described in Schedule of Quantities and Prices. Payment includes excavation, disposal of surplus excavated material, base preparation, bedding, import backfill, catchbasin/lawnbasin preparation to accommodate catchbasin/lawnbasin connection, installation of all in-situ concrete work, all labor, material, equipment and necessary work for installing the catchbasin/lawnbasin. Payment for Catchbasin/lawnbasin lead work will be made under Section 33 40 01S	
2.0	**PRODUCTs**			
2.1	**Materials**	Add 2.1.7.3	Any frame and cover assembly creating a point load on the concrete riser rings will not be permitted.	
		Delete 2.1.12 and replace with the following	Catchbasin lids manufactured to ASTM C478M	
		Delete 2.1.16.2		
		Delete 2.1.17		
3.0	**EXECUTION**			
3.1	**Excavation and Backfill**	Add 3.1.2	For manholes, when base gravels are complete, excavate for grade rings and manhole frame assembly. Do not disturb the compacted road base beyond the excavation requirement.	
3.3	**Manhole Installation**	Delete 3.3.12.2 and replace with the following	Allowable products are precast concrete risers and cast-in-place form system. Individual riser heights shall be 50mm, 75mm, or 100mm.	

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

END OF SECTION

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

			The *installation* also includes pickup, delivery and installation of all materials supplied by the City, from the City' works yard, at 500 Mariner Way.
2.0	**PRODUCTS**		
2.1	**General**	Delete 2.1.2 and replace with the following	All products supplied to be new, in accordance with *Contract Documents*. All products are to meet Canadian Electrical Code requirements and be certified by either CSA, UL©, or Intertek Testing Systems (Warnock Hersey) and be supplied with the certifier's label.
		Delete 2.1.3 and replace with the following	All products shall be in accordance with the City of Coquitlam's List of Approved Materials and Products List. Any products not listed with in the Approved List shall default to the current BCMOTI specification.
		Delete 2.1.5 and replace with the following	Equipment models listed within the City of Coquitlam's List of Approved Materials and Products shall be confirmed with the City immediately prior to their order to ensure that they are current. Cut-sheets, equipment make, model and serial number list to be provided to the City by the *Contractor* for each traffic signal location. Material supplied by City of Coquitlam and installed by *Contractor*, shall be shown in the *Contract Documents*.
2.2	**Conduit**	Add 2.2.1.3	All exposed metallic surfaces to be hot dip galvanized.
2.3	**Trench marker Tape**	Add 2.3.2	Detectable (manetic) market tape shall be used in all trenches containing interconnecton (communications) conduit.
2.5	**Concrete Junction Boxes**	Delete 2.5 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products. For Concrete Vaults: Refer to Coquitlam Standard Detail Drawing SS-E2.5.
2.8	**Conductor Tags**	Delete 2.8 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.10	**Fuse and Fuse Holders**	Delete 2.10 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.11	**Service Panels**	Add 2.11.5	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.16	**Traffic and Pedestrian Signals**	Delete 2.16.1 and replace with the following	Traffic signal heads to be yellow polycarbonate with 300 mm round signal indications, and conform to Section 601 Signal and Pedestrian Heads BCMOTI E&SMS V1. All primary and secondary signal heads shall have yellow aluminum backboards with 75 mm border of yellow prismatic retro-reflective sheeting (3M™ Scotchlite™ Diamond Grade™ VIP Reflective Sheeting Series 3990 or approved alternate).
		Delete 2.16.2 and replace with the following	Fire signal head assembly as per Coquitlam Standard Detail Drawing SS-E5.19.
		Add 2.16.3	Signal head backboards with plumbizer gaps or knock out sections will not be accepted for adjustable bracket signal head mounting method.
2.17	**LED Signal Modules**	Delete 2.17 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products.

2.19	**Signal Mounting Hardware**	Add 2.19.8	Primary signal head safety cable to be 3/32" galvanized steel aircraft cable.
		Add 2.19.9	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.20	**Audible Signals**	Delete 2.20 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.21	**Pedestrian /Cyclist Pushbuttons**	Delete 2.21 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products.
		Add 2.21.1	Pedestrian (PYRO) and bicycle (ZELT) eco-counters are to be manufactured together, to form a pedestrian and bicycle eco-counter (MULTI).
2.22	**Luminaires**	Add 2.22.6	Refer to the City of Coquitlam's List of Approved Materials and Products.
2.29	**Illuminated Crosswalk Signs**	Delete 2.29 and replace with the following	Refer to the City of Coquitlam's List of Approved Materials and Products. Illuminated sign safety cable to be 3/32" galvanized steel aircraft cable.
3.0	**EXECUTION**		
3.1	**General**	Add 3.1.5	During the installation of the traffic signal system, maintain the existing traffic signal and/or signs as noted on the *Contract Drawing*. If temporary or permanent relocations of related traffic signal equipment or signs are required, such equipment shall be reinstated as required under the *Contract Documents* or as directed by the *Contract Administrator*.
3.3	**Concrete Bases**	Add 3.3.7	Concrete service bases detailed on Standard Detail Drawings CE1.3 and CE1.4, Type C1 and C3 service bases shall have five (5) conduits. See Coquitlam Standard Detail Drawing SS-E7.3.
		Add 3.3.8	Lifting cables on concrete controller bases shall be removed after base installation.
		Add 3.3.9	All concrete bases shall be pre-cast concrete only, unless noted on *Contract Drawing* or directed by the *Contract Administrator*.
3.4	**Junction Boxes and Vaults**	Delete 3.4.1 and replace with the following	Install junction boxes as shown on Standard Detail Drawings E2.2 to E2.4. Install vaults as shown on Coquitlam Standard Detail Drawing SS-E2.5.
		Add 3.4.5	Bell end fittings shall be installed in all conduits entering junction boxes or vaults.
		Add 3.4.6	Junction boxes requiring 3 or more sections must be approved by the City of Coquitlam's Traffic Operations staff.
		Add 3.4.7	All junction boxes shall be provided with RPVC bars to support electrical connections and fuse holders. The RPVC bars shall be attached into the junction box side walls with the electrical connections/fuse holders tie-wrapped in place and installed in the up-right position.
3.5	**Underground Conduit**	Delete 3.5.2 and replace with the following	Minimum cover over conduits to be 600 mm in boulevard areas and 900 mm in roadway areas.

		Delete 3.5.3 and replace with the following	Place trench marker tape 300 mm above installed conduit in trench. Trench marker tape not required for conduits installed via trenchless technology.
		Delete 3.5.5 and replace with the following	Empty conduits shall have a No. 8 HB Yellow/Green Mk pull string and capped at both ends.
		Add 3.5.6	Conduit run shall contain no more than the equivalent of 4 – 90 degree bends.
		Add 3.5.7	Conduits shall be blown out with compressed air, from both ends if necessary, then swabbed out to remove stones, dirt, water and other material which may have entered during installation.
		Add 3.5.8	All conduits entering poles and cabinets shall be sealed with "Duct Seal".
		Add 3.5.9	Conduit depth of bury to be recorded when a trenchless technology method is used.
		Add 3.5.10	Traffic signal communications conduit shall enter and leave junction boxes through bell end fittings in the horizontal position (no bends) and shall run straight through the junction box unless a change in alignment occurs, or as otherwise specified on the *Contract Drawing*.
		Add 3.5.11	Conduit shall not be bent in the field. Only factory bends will be accepted.
3.7	**Traffic Signal and Pedestrian Head Mounting**	Delete 3.7.1 and replace with the following	Install traffic signal and pedestrian signal heads as shown and Standard Detail Drawings E5.2 and E5.9 only. Banding straps shall be used for primary signal heads.
		Add 3.7.5	Primary traffic signal heads shall be safety cabled to the traffic signal pole arm using 3/32" galvanized steel aircraft cable looped through the traffic signal backboard and fastened with a rope clip.
3.8	**Audible Signals**	Delete 3.8.1 and replace with the following	Install audible signal in accordance with Coquitlam Standard Detail Drawing SS-E5.12.
3.10	**Luminaires and Photocells**	Add 3.10.4	NEMA wattage label shall be visible at the bottom of the luminaire on all fixtures.
3.13	**Electrical Service Panels**	Delete 3.13.1 and replace with the following	Mount electrical service panels in service base or on poles as shown on Standard Detail Drawings E7.2, E7.6 to E7.9, as well as Coquitlam Standard Detail Drawings SS-E7.3 to SS-E7.5.
3.14	**Wiring**	Delete 3.14.3 and replace with the following	With the exception of conductor spliced of detector loop wires to shield cables, make conductor splice in pole handholes. Make splices of detector loop wires to shielded cable in junction boxes.
		Delete 3.14.13 and replace with the following	Bond all signal heads and luminaires with No. 12 RW90 green conductor, and steel junction box lids with No. 8 RW90 green conductor.
		Add 3.14.14	Detector loop cable splices shall be soldered with rosin core solder (no acid core or acid flux) then cap with waterproof gel filled wire nut and tape with vinyl di-electric tape. Suspend and ty-wrap splices at top of junction box with open end of wire nut pointing down.

			Loop shield drain conductor shall cut and be isolated from the system ground. See Coquitlam Standard Detail Drawing SS-E8.4.
3.16	**Traffic Controller**	Add 3.16.8	Silicone sealant shall be applied to both sides of the rubber gasket, which is placed between the traffic signal cabinet and the concrete base to ensure a weather tight seal.
		Add 3.16.9	Traffic cabinet interior shall be kept dry during inclement weather.
3.17	**Detector Loops**	Delete 3.17.1 and replace with the following	Detector loops are to be round type or as specified on the *Contract Drawing* and approved by the City of Coquitlam's Traffic Operations staff. Install in accordance with Standard Detail Drawings E8.1, E8.3 and Coquitlam Standard Detail Drawings SS-E8.2 and SS-E8.4.
		Add 3.17.3	Loops in adjacent lanes shall be wound in opposite directions, i.e.; clockwise, counter clockwise, clockwise, etc.
		Add 3.17.4	Detector loops should be installed in the base lift of asphalt, unless otherwise specified by the Contract Administrator.
3.19	**Advance Warning Signs**	Add 3.19.2	Contrary to Standard Detail Drawing E10.3, Item A shall be a 300 mm signal head section with LED display.
		Add 3.19.3	Advance warning signs shall have yellow prismatic retro-reflective sheeting (3M™ Scotchlite™ Diamond Grade™ VIP Reflective Sheeting Series 3990 or approved alternate).
3.20	**Grounding & Bonding**	Add 3.20.5	Ground plates and grounding conductors are to have a minimum of 5 meters clearance between them and other utility grounding.
		Add 3.20.6	Grounding rod or plate electrodes shall not be installed inside the traffic signal cabinet base.
		Add 3.20.7	Remove all paint around bonding studs on inside of pole to expose the galvanized or metal surface prior to bonding equipment.
3.22	**Pole Finish Application**	Delete 3.22 and replace with the following	.1 Prior to producing a powder finish product the supplier must provide a Certificate of Compliance indicating that they have met or exceeded the following specifications. The supplier will name their independent testing agency and this information will be submitted to the City for their files. .2 The application process will be as follows: .1 The pole or product will be hot dip galvanized. .2 Powder will only be applied after the product is completely fabricated. No welding or bending will take place after the powder is applied. .3 The pole or product will be thoroughly cleaned by brush blasting in accordance with SSPC-SP7. The brush blast will maintain a minimum profile of 0.5 mils. If brush blasting is done off site then the product will be covered and shielded from any dirt or moisture during its return to the powder applicators facility. Where poles or products are not kept clean and dry or have any signs of flash rust they will be returned for further brush blasting. .4 Once at the applicators facility the pole or product will be thoroughly cleaned and dried with an air gun. All hand marks or grease spots will be cleaned with a mild solvent. .5 After brush blasting the entire pole or product will be pre-baked in an oven at 220 degrees C for at least 30 minutes to 1 hour, depending on steel thickness. The pre-baking

must be done to prevent out-gassing during the curing cycle.

.6 The base powder coat will then be applied electrostatically while the pole or product is cooling from the 220 degrees C pre-bake period to allow the powder to melt and fuse to the surface. The base coat will be a minimum of 3 mils in thickness.

.7 After base coat is applied and set the topcoat will be applied to a thickness of 3 to 5 mils. The pole or product will be returned to the oven and heated to 190 to 220 degrees C (temperature will not exceed pre-bake) for a minimum of 25 minutes, depending on steel thickness. Thicker product material may require longer bake cycles to fully cure. Upon removal of the pole or product from the oven it will be left to rest until the pole or product is cool enough to the touch.

.8 Once the topcoat has cured and the poles or product cooled, they will then be individually wrapped (min 4" overlapping method) with 1/8" foam wrap over the entire pole or product. The poles or product will be bundled together and separated with suitable wood dunnage to avoid contact between the poles, product or other bundles. All bundles themselves will be fully wrapped with foam and with stretch-wrap as noted above. The poles or products will be handled and shipped with great care to prevent damage; damaged product will be cause for rejection of the item(s).

.3 Testing process will be as follows:

.1 Each run of product in an oven will have at least one sample tested for:

.2 Adhesion – The finished powder surface will have minimum pull-off strength exceeding 1000 PSI as tested in accordance with ASTM D4541.

.3 Quality – The finished powder surface will be free from any holidays (skips or misses) as tested in accordance with ASTM D4541. The product will also be free from wrinkles, orange peel, cracking, pinholes, fish eyes, blisters, etc by visual inspection.

.4 Color – The color will be verified to be within 3 DE of specialized color.

.5 An independent firm such as CanSpec Testing who are qualified to test powder finish will do the testing at the supplier's expense. The result of tests must accompany the Certificate of Compliance and will be made available to the City or their representative upon request. A supplier who fails to test product as noted above will have their product rejected until the testing is completed and the product deemed acceptable by the testing agency.

.6 Where the tested product fails on a given production run then a minimum of 30 % of the entire production run will be tested. If no other failures are found then the individual failed product will be stripped, reapplied and re-tested until it passes. If any of the 30% of product tested fails then the entire order will be stripped, reapplied and retested until it passes.

.4 Field repairs will be undertaken as required to fix any scratches or imperfections in the final finish. Field repairs will be done as follows:

.1 Feather the damaged area with sandpaper.

.2 Clean area with solvent.

.3 Let dry.

.4 Neatly brush on an application of Aliphatic Urethane Acrylic Semi-Gloss High Build applied at 2-4 mils DFT over the entire sanded and damaged area. The ambient conditions will be dry and over 10 degrees C when the paint is applied.

.5 The pole supplier will warranty the integrity of the surface for a minimum of 1 year from the date of installation. The warranty will include all labour and materials required to provide replacement product if required. The powder finish will be the responsibility of the pole supplier. The warranty will apply to fading, blistering, cracking or chipping of the surface.

3.26	**Uninterruptable Power Supply**	Add 3.26.2	Uninterruptable power supply/cabinet to be installed on the side of the traffic controller cabinet as detailed on the *Contract Drawing* and Coquitlam Standard Detail Drawing SS-E7.24.
3.28	**Illuminated Street Name Signs**	Add 3.28.1	Install illuminated street name signs as detailed on the *Contract Drawing* and Coquitlam Standard Detail Drawing SS-E5.18
		Add 3.28.2	Illuminated street name signs shall be safety cabled to the traffic signal pole arm using 3/32" galvanized steel aircraft cable.
3.29	**Emergency Vehicle Pre-emption**	Add 3.29.1	Emergency vehicle pre-emption system to be installed as detailed on the *Contract Drawing* and Coquitlam Standard Detail Drawing SS-E5.16.
		Add 3.29.2	Cable shall be continuous with a minimum of 2m of cable slack to be provided at each end, with no splices. Cabinet termination to be completed by City.
3.30	**PTZ/CCTV Cameras**	Add 3.30.1	PTZ/CCTV cameras to be installed as detailed on the *Contract Drawing*. Contact the City of Coquitlam's Traffic Operations staff prior to installation.
		Add 3.30.2	Cable shall be continuous with a minimum of 2m of cable slack to be provided at each end, with no splices. Cabinet termination to be completed by City.
3.31	**Radio Communications Equipment**	Add 3.31.1	Radio communications equipment to be installed as detailed on the *Contract Drawing*. Contact the City of Coquitlam's Traffic Operations staff prior to installation.
		Add 3.31.2	Cable shall be continuous with a minimum of 2m of cable slack to be provided at each end, and with no splices. Cabinet termination to be completed by City.
3.32	**Owner Supplied Materials**	Add 3.32.1	Those retained to complete the work must notify the City in writing (seven) 7 days prior to the time materials are required.
		Add 3.32.2	Unless otherwise noted, those retained to complete the work will make all necessary arrangements and pay all costs for the collection of the materials and for delivery to the *Place of Work*. They will assume responsibility for materials at the time they are picked up.

Add 3.32.3

Owner supplied materials generally consist of the following:

.1 Traffic controller equipment and cabinet.
.2 Uninterruptable power supply equipment and cabinet.
.3 Emergency pre-emption equipment.

The exact list of materials supplied by the Owner to be confirmed with the City of Coquitlam Traffic Operations staff and *Contract Administrator*. In the case of private development projects requiring City supplied materials, the cost for supply and installation of these materials will be borne by the Developer.

3.33 Fibre Optic Cable Add 3.33

.1 Fibre optic cables will be terminated to a twelve (12) port LC coupler panel.

.2 When installing Fibre Optic Communications Conduit, Fibre optic warning tape (150 mm wide orange plastic tape labelled "WARNING FIBRE OPTIC COMMUNICATIONS CABLE") and Detectable (Magnetic) marker tape is to be placed over all conduits containing fibre optic cable.

.3 During installation of new boxes or with all existing boxes ensure that they have been cleared of any soil, sand or gravel and other materials that have accumulated in the base of the junction box. Ensure that all empty conduits have a proper RPVC coupling and cap inserted (friction fit - DO NOT GLUE) into each duct. Once the conduit is populated, replace cap with bell coupling and glue in place.

.4 All communication conduits will be flushed with water and dried with compressed air. This process will be followed by pulling through a suitable size Blowing Mouse, a clean soft cloth and new No. 8 HB Yellow/Green Mk pull string

.5 Perform a visual inspection of the proposed cable route and be aware of any potential problem areas. Locations in which cables will be terminated must be inspected and plans made for hardware and cable slack storage. Space and access for termination of the cable should be considered prior to starting the job. Develop a cable placement plan based upon the cable route survey and your available equipment and personnel resources. Submit a plan to the City for acceptance prior to starting work.

.6 Be aware that any damage due to excessive pulling, bending, or crushing, may alter the cable's transmission characteristics to the extent that the cable section will have to be replaced at the Project’s expense.

.7 Fibre optic cables will be installed in continuous runs in conduit between the traffic signal controller cabinets (no splices are allowed).

.8 DO NOT EXCEED THE MINIMUM BEND RADIUS OF THE FIBRE. During installation do not exceed the minimum bend radius as specified by the manufacture.

.9 DO NOT IMPROPERLY PULL OR EXCEED THE CABLE'S RATED PULLING TENSION as specified by the cable manufacturer. Excess pulling may not actually break the fibre, but it can cause the fibre attenuation to increase so that the installed system may not operate within the specified requirements.

.10 DO NOT EXCEED THE VERTICAL RISE SPECIFICATION as specified by the cable manufacturer unless intermediate tension relief is used. Secure the cable to new or existing supports wherever possible.

.11 Take precautions to protect reeled and unreeled cable from any source of damage, whether attended or unattended. Be particularly careful with pre-connected sections of cable produced to meet specific length requirements as any damage to the cable may require replacement of the entire section.

.12 If the cable must be unreeled during installation, the "figure--eight" configuration should be used to prevent kinking or twisting. Do not coil the cable in a continuous direction except for lengths of 30 meters or less. The preferred size of the "figure-eight" is about 4.5 meters in length, with each loop about 1.5 meters to 2.4 meters in diameter.

.13 If a cable puller is used, ensure that the recommended pulling tension of the cable is not exceeded. Do not pull through junction boxes, especially 90-degree conduit fittings, unless precautions are taken to maintain the minimum bend radius.

.14 When installing cable in conduits, ensure the conduit does not exceed the minimum bend radius. Avoid pull boxes unless the maximum bend radius can be maintained. In controller cabinets, fibre optic cables will be tied together with ty-wraps. Each cable will be labelled within 10 cm of the terminated ends with a tag and text stating the street intersection of the opposite cable end. Cables will be tagged in the controller cabinet and all other access points with "CAUTION, FIBRE OPTIC CABLE" tags. Leave enough cable slack at termination points to allow the cable to be routed through the termination hardware to a polishing/splicing table, plus a minimum of 3 meters additional slack. Cable slack will be coiled and secured with Velcro ties for breakaway protection. Cable to termination panel will be secured to cabinet with ty-wraps

.15 If cable lubricants are necessary, ensure that they are compatible with the cable's outer sheath. Refer to the lubricant specification sheet to ensure compatibility. In all cases avoid the use of detergent-based lubricants, as these types of lubricants promote stress cracks.

.16 Excess cable inside pull boxes will be coiled and mechanically secured in place with Velcro straps such that the minimum bend radius is not exceeded and the cable is suspended above the pull box. The Velcro straps are to provide `breakaway' protection in the event of an accidental dig-up between pull boxes.

.17 Adhesive warning labels 3M – 5016 – FO type or accepted alternate will be affixed to each fibre optic cable in each access point. Access points include pull boxes and traffic signal controller cabinets. Decal strip holders, 3M – 5012 or accepted alternate, will be used and will be secured in place using cable ties. Warning labels will be oriented so they are visible and are not blocked by other cables or equipment.

.18 After installation, each segment of each fibre will be tested using an Optical Time Domain Reflectometer (OTDR) and power meter equipment. Testing will be done in each direction on each fibre and at both 1310nm and 1550nm wavelengths. Launch cable will

be used as per the OTDR manufacturer's specifications. Those retained to complete the work will provide a report detailing the results of each test including OTDR test results in graphical format, cable length, any fibre breaks or anomalies, attenuation of fibre's, connectors and fibre uniformity.

.19 Final testing and inspection of the cable installation will be conducted with the City on-site.

END OF SECTION

Appendix A -
Traffic Management Detail Specifications

1.0 GENERAL

.1 This Traffic Management detail specification refers to the Contractor's specific plans to identify project traffic risks affecting the *Work*, provide Traffic Control Plans, and to implement the traffic control for the safe passage of vehicles and pedestrian through the work zone.

1.1 Related Works

.1 Traffic Control, Vehicle Access and Parking MMCD Section 01 55 00S.

1.2 References

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

.2 B.C. Ministry of Transportation and Transit (MOTT) Traffic Management Manual for Work on Roadways.

1.3 Project Requirements

.1 A Road and Sidewalk Closure Permit is required by Coquitlam for all work affecting traffic flow related to construction. A permit is required for each specific construction interference with traffic flow. The Road and Sidewalk Closure Permit Request form is attached as **Appendix 1** to this document. A digital copy of the Road and Sidewalk Closure Permit form can be obtained for use during the contract from the City's website at

A Road and Sidewalk Closure Permit form application must be submitted to City's Traffic Operation Division 10 working days prior to start of work.

1.4 Measurement and Payment

.1 For this Contract, all work associated with Traffic Management Plan (TMP) and Traffic Control will be as shown in the Schedule of Quantities and Prices.

2.0 PRODUCTS

2.1 Traffic Management Plan (TMP)

.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 Category identification through risks and project category assessment as per MOTI Traffic Management Manual for Work on Roadways;
- .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;
- .4 Category 3 TMP must be signed and sealed by a qualified Professional Engineer.

.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, 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.

.7 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.

.8 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.

.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 and Road and Sidewalk Closure Permit 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 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.

3.3 Signage

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

Traffic control signs and devices must be positioned and used as specified in the Traffic Control Plan and signs and devices must be located so as to allow traffic to move by or through the work area in a controlled manner and, if necessary, to come to a controlled stop with due regard for the prevailing weather and road conditions.

Signs shall be checked daily for legibility, damage, suitability and location. Signs and delineators shall be cleaned as frequently as necessary to ensure full legibility and reflectance.

3.4 Detours

Any proposed detours must be approved by the Contract Administrator and conducted in accordance with the approved Traffic Plan and the Traffic Control Manual for Work on Roadways.

3.5	Abrupt Changes in Surface Elevations	The Contractor shall minimize any abrupt changes in roadway elevation left exposed to traffic during both working and non-working hours. 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 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. The Contractor is responsible for repairing any pavement damage related to the plate installation
3.6	Cyclist and Pedestrian Access	The Contractor shall make provision for pedestrians, wheel chairs and bicycles to have safe access across the work zone at all times. If this cannot be readily accommodated then acceptable detours and appropriate signs shall be provided.
3.7	Temporary Pavement Markings	The Contractor shall be responsible for the application and removal of all temporary pavement markings and reflective devices. All temporary markings must be removed after installation of permanent markings.

4.0 TRAFFIC RESTRICTIONS

4.1	Road and Sidewalk Closure Permits	.1 A Road and Sidewalk Closure Permit is required for each instance of closure and will be valid for a maximum period of one (1) week and, if still necessary, re-submittal of a Road and Sidewalk Closure Request is required. The permit fee is waived on this project. A copy of the approved Road and Sidewalk Closure Permit must be held on site by both the Site Superintendent and the person/company responsible for the traffic control implementation. .2 Contractor to refer to Clause 5.2 Road Specific Considerations below. .3 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), <u>including side street intersections,</u> to safely guide traffic through the work site.
4.3	Hours of Work	.1 **Refer to Clause 5.2** .2 Some allowances may be made for paving operations, depending on a proposal acceptable to the Contract Administrator.

4.4 LIQUIDATED DAMAGES FOR NON-COMPLIANCE TO TIME OF DAY RESTRICTIONS

All lanes of traffic must be opened to traffic on or before the designated restricted hours and schedule. An amount of **$1,500.00** per 15-minute delay beyond the restricted hours and schedule specified in Clause 5.2, unless otherwise approved in writing by the Contract Administrator, shall be deducted by the Owner from any monies owing to the Contractor for the work.

5.0 CONSTRUCTION OPERATIONS

5.1 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 https://www.coquitlam.ca/171/Trucks-Goods.

5.2 Road Specific Considerations

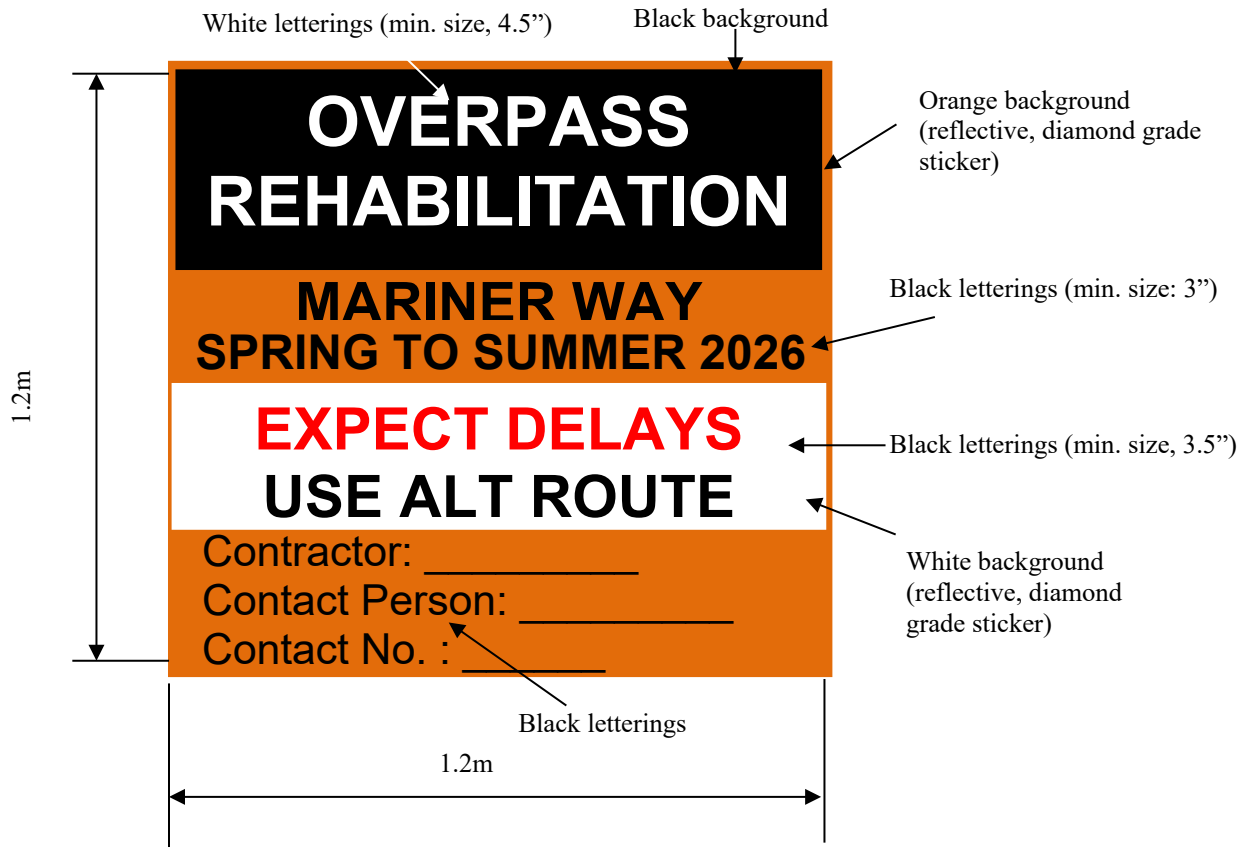
.1 Ensure that Traffic Management Plan accommodates businesses and residences during construction activities.

. 2 The Work is to be completed overnight only. The Contractor is responsible for coordinating with the Contract Administrator and City Traffic Operations immediately after Notice to Proceed to discuss the Traffic Management Plan. Road closures for Mariner Way and the bus depot transit ramp are restricted to the following hours.

LOCATION	**ALLOWABLE TIME** (includes set-up and take down)	**COMMENTS**
Mariner Way Overpass	Monday to Saturday 9:00PM to 6:00AM	Minimum 1-lane traffic in each direction must be maintained. Pedestrian traffic must be re-routed to use controlled road crossings. All sidewalks and traffic lanes must be re-opened during the day in safe conditions. Steel road plates can be installed over trenches, where permitted by the Contract Admnistrator, and the Contractor must provide asphalt ramps to plates (per Clause 3.5) and speed control/uneven surface warning signage.
Transit Ramp	Monday to Saturday 8:00PM to 5:00AM	Full ramp closure permitted. Contractor must inform CMBC, immediately after Notice to Proceed, and provide detour signage for inbound/outbound traffic to utilize accesses on Barnet Hwy and Lougheed Hwy.
Park-And-Ride Access Road (Off Mariner Way, adjacent to Rona)	Monday to Saturday 9:00PM to 6:00AM Or Day Shift 7:00AM to 7:00PM As needed	Access to Park-And-Ride Lots and Rona Business must be maintained at all times. Day shift hours may be approved at the sole discretion of the Contract Administrator. No-post barriers at driveway accesses may be temporarily relocated, reinstated in exact location, and edge of road protected, at Contractor's expense.

5.3	Work stoppage due to traffic	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.
5.4	Construction Activity and Signage	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.
5.5	Changeable Message Sign (CMS) Board	The following locations will require Changeable Message Signs (CMS) for the duration of the project: 1. Eastbound on Mariner Way at Dewdney Trunk Rd 2. Southbound on Johnson St at Conley Cres 3. Eastbound on Barnet Hwy at Aberdeen Ave 4. Westbound on Barnet Hwy, East of Johnson St Exact locations to be discussed at the pre-construction meeting. These signs are required to be in service at least five **normal work days prior to construction start** to provide advance warning to motorists. CMS must be able to handle minimum of three lines per page/screen.
5.6	Construction Zone Information Signs	The Contractor is required to provide, one week prior to start of work, stationary signs to inform traffic of existing and anticipated conditions. Ensure that signs and locations are addressed in the Traffic Management Plan. Signs are to be located at least 3m away from any travelled roadway edge and 0.6m away from sidewalk or travelled shoulder edge with minimum head clearance of 2m. All signs are to be removed at the end of the construction period on each location. Exact locations to be determined on site by Contract Administrator. • Southbound, Northwest corner of Mariner Way and Dewdney Trunk Rd • Northbound, Southeast corner of Dewdney Trunk Rd and Dacre Ave • Westbound, bottom of Transit Ramp

Construction Zone Information Signs to follow specifications below. Draft must be submitted to Contract Administrator prior to sending to production:



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): **78035A**

- 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 -

As-builts

STRUCTURAL AS-BUILT

PROVINCE OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION AND HIGHWAYS

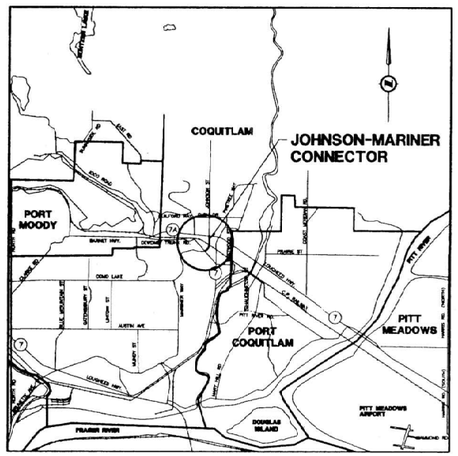
PROJECT No. 05854

MARINER WAY

JOHNSON – MARINER CONNECTOR

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.



LOCATION MAP
0 1:125000 5 Km

DRAWING LIST

DWG. No.	DESCRIPTION	REV.	DATE
2927–100	KEY MAP AND DRAWING LIST	A	SEPT. 96
2927–101	SITE PLAN	A	SEPT. 96
2927–102	PROFILE	A	SEPT. 96
2927–103	MAIN BRIDGE GENERAL ARRANGEMENT	D	SEPT. 96
2927–104	EAST RAMP GENERAL ARRANGEMENT	C	SEPT. 96
2927–105	SOUTH ABUTMENT	M	SEPT. 96
2927–106	SOUTH ABUTMENT REINFORCING DETAILS	G	SEPT. 96
2927–107	SOUTH ABUTMENT APPROACH SLAB	C	SEPT. 96
2927–108	SOUTH ABUTMENT END FILL AND PAVING	F	SEPT. 96
2927–109	NORTH ABUTMENT SHT. 1	D	SEPT. 96
2927–110	NORTH ABUTMENT SHT. 2	D	SEPT. 96
2927–111	NORTH ABUTMENT REINFORCING DETAILS	D	SEPT. 96
2927–112	NORTH ABUTMENT APPROACH SLAB	D	SEPT. 96
2927–113	NORTH ABUTMENT WINGWALL DETAILS	D	SEPT. 96
2927–114	EAST ABUTMENT DETAILS SHT. 1	H	SEPT. 96
2927–115	EAST ABUTMENT DETAILS SHT. 2	D	SEPT. 96
2927–116	EAST ABUTMENT REINFORCEMENT DETAILS	E	SEPT. 96
2927–117	PLAN AND PILING LAYOUT	E	SEPT. 96
2927–118	PILING SCHEDULE No. 1	F	SEPT. 96
2927–119	PILING SCHEDULE No. 2	E	SEPT. 96
2927–120	INTERMEDIATE SUPPORT DETAILS	F	SEPT. 96
2927–121	RAIL SPAN	E	SEPT. 96
2927–122	SOUTH END DECK DETAILS SHT. 1	F	SEPT. 96
2927–123	SOUTH END DECK DETAILS SHT. 2	G	SEPT. 96
2927–124	PIER REINFORCING DETAILS SHT. 1	G	SEPT. 96
2927–125	PIER REINFORCING DETAILS SHT. 2	D	SEPT. 96
2927–126	NORTH END DECK DETAILS SHT. 1	J	SEPT. 96
2927–127	NORTH END DECK DETAILS SHT. 2	E	SEPT. 96
2927–128	NORTH END DECK DETAILS SHT. 3	E	SEPT. 96
2927–129	EAST RAMP DECK DETAILS SHT. 1	D	SEPT. 96
2927–130	EAST RAMP DECK DETAILS SHT. 2	D	SEPT. 96
2927–131	EAST RAMP DECK DETAILS SHT. 3	C	SEPT. 96
2927–132	EXPANSION JOINT DETAILS	D	SEPT. 96
2927–133	SUPERSTRUCTURE PRECAMBER	C	SEPT. 96

DRAWING LIST

DWG. No.	DESCRIPTION	REV.	DATE
2927–134	MISCELLANEOUS DETAILS SHT. 1	H	SEPT. 96
2927–135	MISCELLANEOUS DETAILS SHT. 2	D	SEPT. 96
2927–136	MISCELLANEOUS DETAILS SHT. 3	E	SEPT. 96
2927–137	MISCELLANEOUS DETAILS SHT. 4	E	SEPT. 96
2927–138	MISCELLANEOUS DETAILS SHT. 5	B	SEPT. 96
2927–139	DECK CONSTRUCTION SEQUENCE SHT. 1	A	SEPT. 96
2927–140	DECK CONSTRUCTION SEQUENCE SHT. 2	A	SEPT. 96

STANDARD MINISTRY DRAWINGS

DWG. No.	DESCRIPTION	REV.	DATE
2784–1	STANDARD BRIDGE PARAPET	N	
2784–2	TRANSITION	G	
2785–2	COUGARAIL	A	

PROFESSIONAL ENGINEER
D. B. HARVEY
PROVINCE OF BRITISH COLUMBIA
AUG 07 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED
DESIGNED D.J.H. DATE DEC. 95
CHECKED D.J.H. DATE DEC. 95
DRAWN B.F. DATE DEC. 95

Rev	Date	Description	Init
A	SEPT.96	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
KEY MAP AND DRAWING LIST

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No.	REG. DRAWING No. 2927–100 A

CANCEL PRINTS BEARING PREVIOUS LETTER

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.

NOTES:
1. SURVEY BY : M.O.T.H.
2. DATE : 1987 – 1991
3. DATUM : GEODETIC

H0013-01

AUG. 07, 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.H.H. DATE JAN. 96
CHECKED D.H.H. DATE JAN. 96
DRAWN C.C. DATE JAN. 96

Rev	Date	Description	Init
A	SEPT.96	AS CONSTRUCTED	

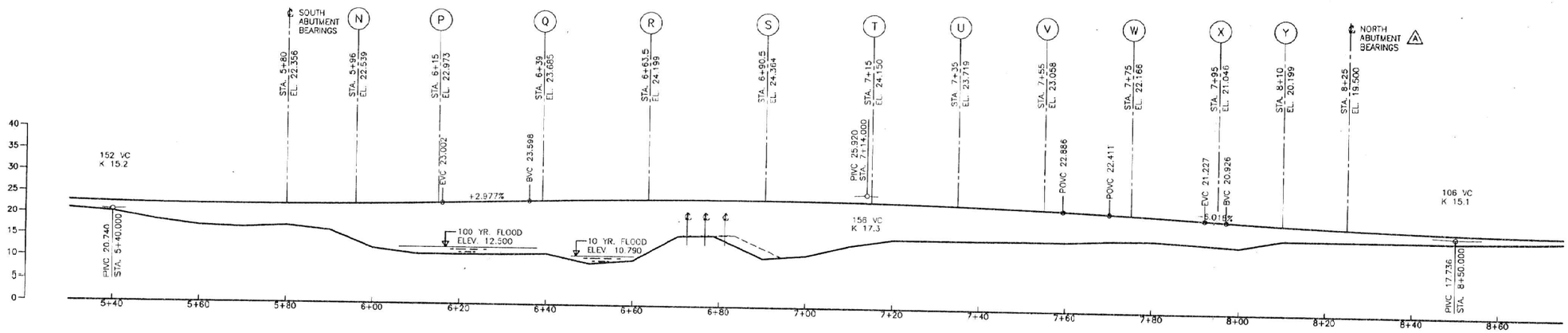
REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

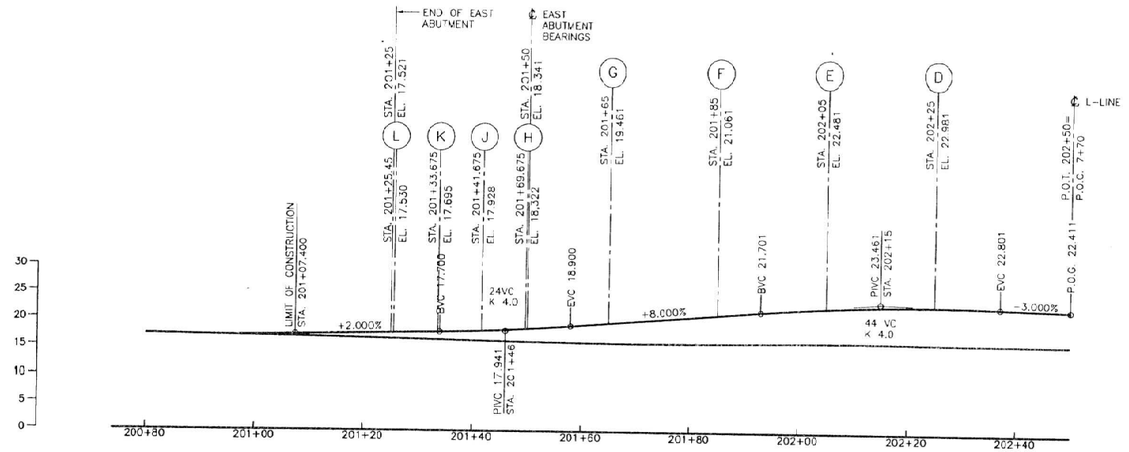
SOUTH COAST REGION
MARINER WAY OVERHEAD
JOHNSON MARINER CONNECTOR NO. 2927
SITE PLAN

PREPARED BY | RECOMMENDED | ACCEPTED FOR CONSTRUCTION
DIRECTOR OF BRIDGE ENGINEERING | DISTRICT MANAGER
DATE | FILE No. | NEGATIVE No. | REG. | DRAWING No. 2927-101 A

CANCEL PRINTS BEARING PREVIOUS LETTER



PROFILE OF L-LINE – MARINER WAY
SCALE 1:500



PROFILE OF L-200 – B.C. TRANSIT EXIT RAMP
SCALE 1:500

IMPORTANT:
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H0013-02

ASSOCIATED ENGINEERING

SCALE AS NOTED
DESIGNED D.L.H. DATE JAN. 96
CHECKED D.L.H. DATE JAN. 96
DRAWN C.C. DATE JAN. 96

Rev	Date	Description	Init
A	JUL 97	AS CONSTRUCTED	

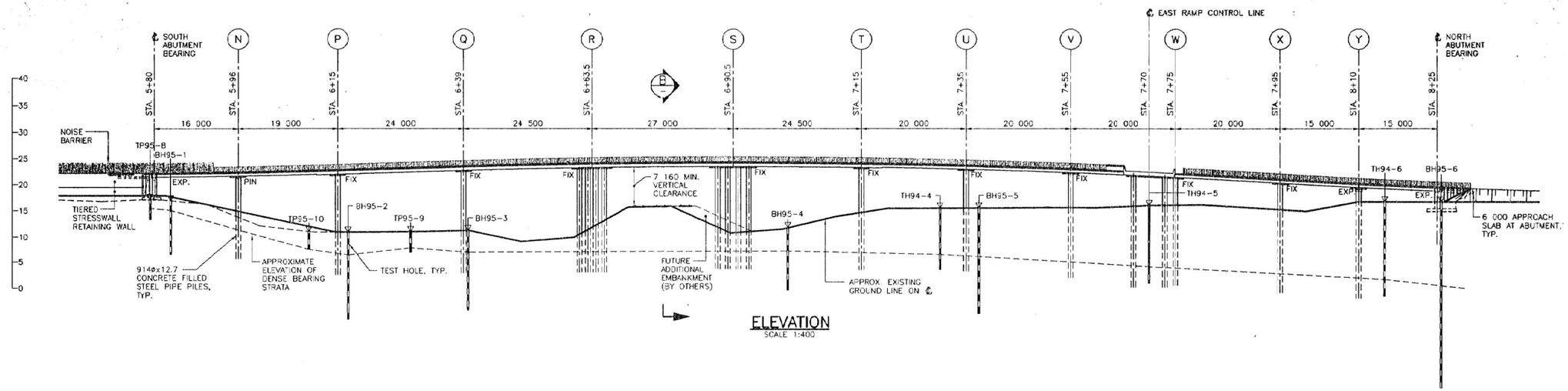
REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

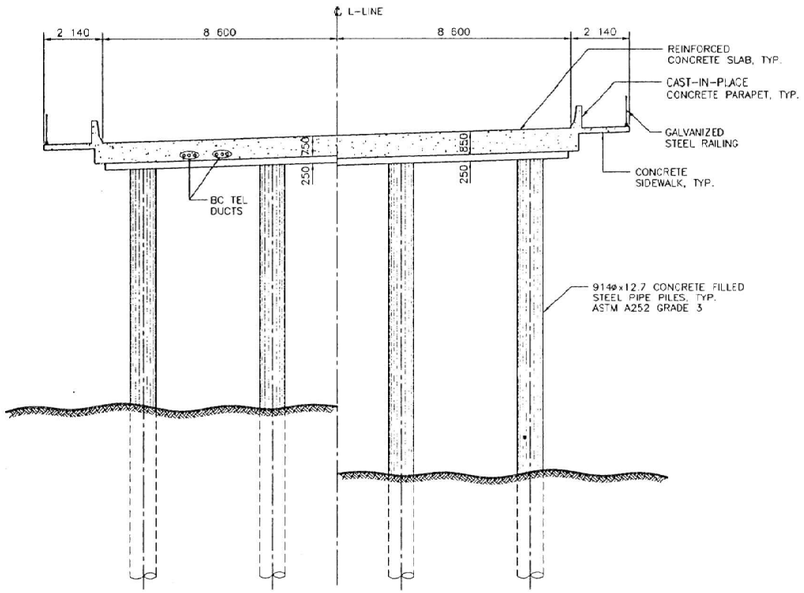
SOUTH COAST REGION
MARINER WAY OVERHEAD
JOHNSON MARINER CONNECTOR NO. 2927
PROFILE

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No. REG.	DRAWING No. 2927-102 A

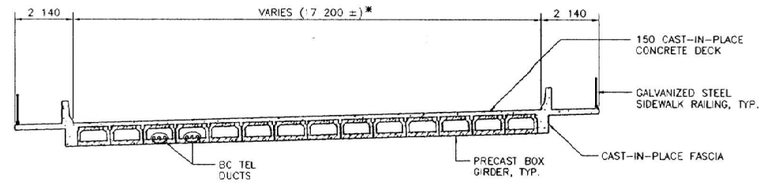
CANCEL PRINTS BEARING PREVIOUS LETTER



ELEVATION
SCALE 1:400



SECTION A
SCALE 1:100 (117)



SECTION B
SCALE 1:100

* — WIDTH VARIES STA. 6+61.067 TO STA. 6+90.5
17 200mm TO 17 234mm

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NOTES:

1. DESIGN: CAN/CSA-S6-88
   SEISMIC DESIGN: AASHTO STANDARD SPECIFICATIONS a = 0.21g
2. LOADS: LIVE LOADS: CS 600
   DEAD LOAD: PROVISION FOR UTILITY DUCTS AND 50mm ASPHALT/CONCRETE OVERLAY
3. DESIGN SPEED: 60 km/h
4. CLIMATIC DESIGN INFORMATION:

MINIMUM TEMPERATURE		-13°C
MAXIMUM TEMPERATURE		34°C
15 MINUTE RAIN		9 mm
ONE DAY RAIN		74 mm
GROUND SNOW LOAD	Ss	1.9 KPa
	Sr	0.3 KPa
HOURLY WIND	1/10	0.49 KPa

FOR DETAILS OF STRUCTURE PLAN SEE DWG. 2927-117
FOR DETAILS OF SOUTH ABUTMENT SEE DWG. 2927-105
FOR DETAILS OF NORTH ABUTMENT SEE DWG. 2927-109

H0013-03

ASSOCIATED ENGINEERING

SCALE AS NOTED
DESIGNED D.J.H. DATE AUG. 95
CHECKED DATE
DRAWN C.C. DATE AUG. 95

Rev	Date	Description	Init	
A	SEPT. 95	ISSUED FOR CONSTRUCTION		
B	SEPT. 95	PIER N RELOCATED		
C	SEPT. 95	DECK HAUNCH REVISED		
D	SEPT.96	AS CONSTRUCTED		

REVISIONS

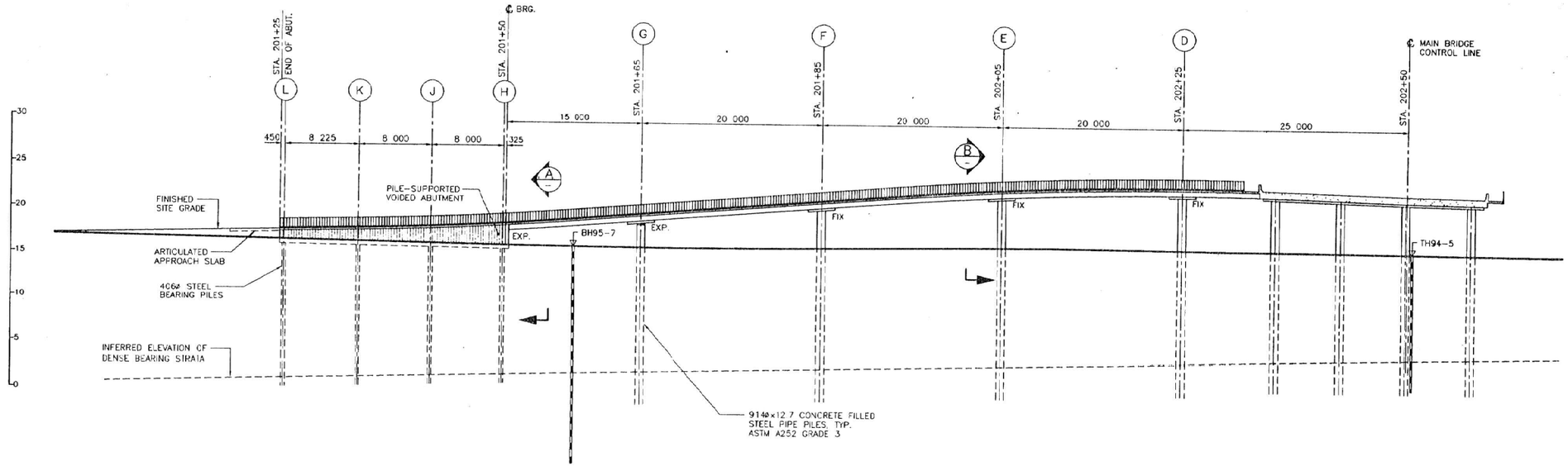
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
MAIN BRIDGE GENERAL ARRANGEMENT

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No. REG.	DRAWING No. 2927-103 D

CANCEL PRINTS BEARING PREVIOUS LETTER



EAST RAMP ELEVATION
SCALE 1:250

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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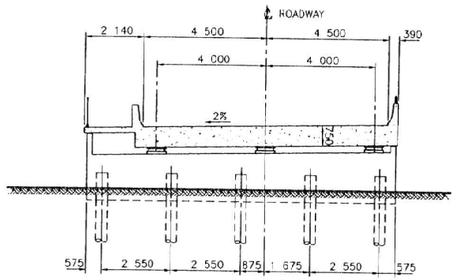
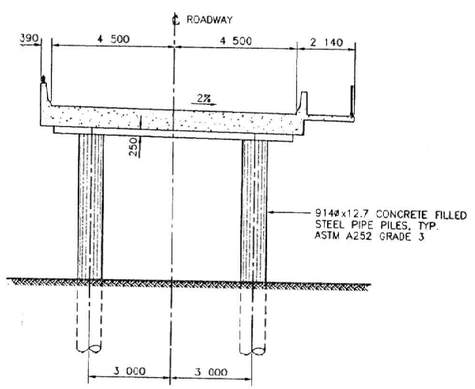


SECTION A
SCALE 1:100



SECTION B
SCALE 1:100

H0013-04

AUG 07 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.I.H. DATE AUG. 95
CHECKED DATE
DRAWN C.C. DATE AUG. 95

Rev	Date	Description	Init
A	SEPT. 95	ISSUED FOR CONSTRUCTION	
B	SEPT. 95	DECK HAUNCH REVISED	
C	SEPT. 96	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
EAST RAMP GENERAL ARRANGEMENT

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No. REG.	DRAWING No. 2927-104 C

CANCEL PRINTS BEARING PREVIOUS LETTER

IMPORTANT:
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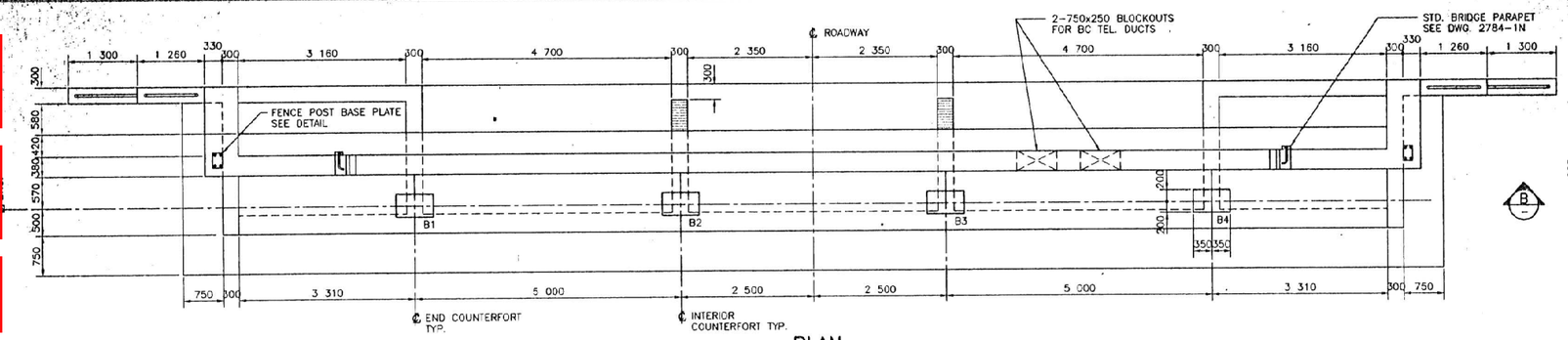
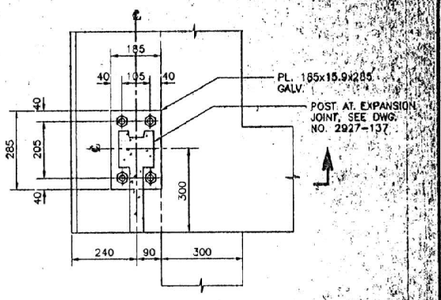
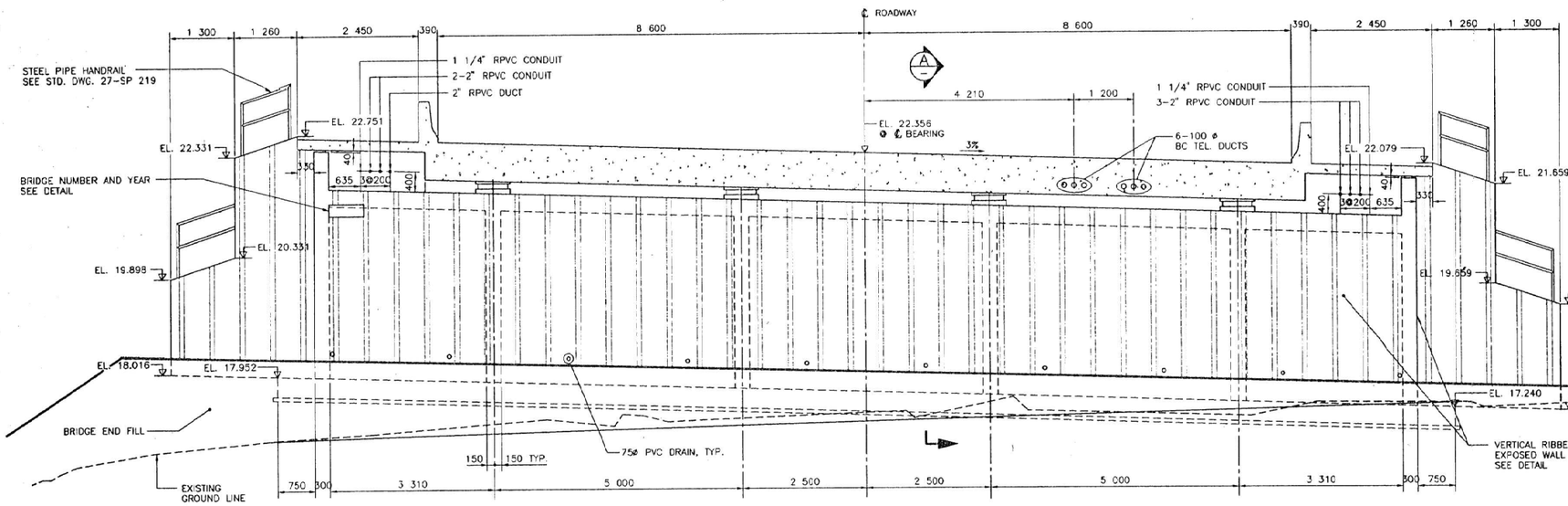


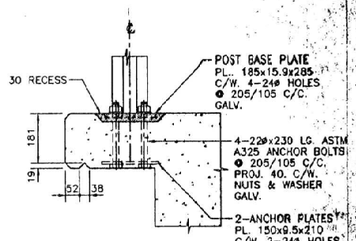
PLAN
SCALE 1:50



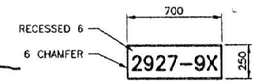
PLAN ON FENCE POST BASE PLATE
SCALE 1:10



ELEVATION
SCALE 1:50



SECTION (B)
SCALE 1:10



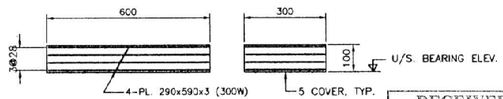
BRIDGE NUMBER AND YEAR OF CONSTRUCTION CAST IN 125 HIGH NUMERALS AS SHOWN. NUMERAL FORMS LOANED BY THE B.C.T.F.A.

BRIDGE NUMBER DETAIL
SCALE: 1:20

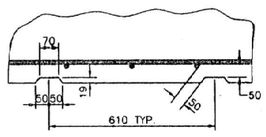
BEARING	U/S. BEARING ELEV.
B1	21.681
B2	21.531
B3	21.381
B4	21.231

BEARING REPLACEMENT PROCEDURE

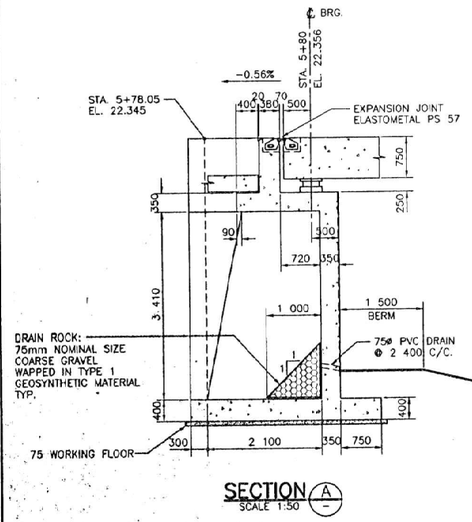
1. PLACE 8 HYDRAULICALLY – LINKED JACKS E/S. OF BEARINGS, APPROX. 200mm FROM FRONT FACE OF ABUTMENT.
2. RAISE DECK APPROX. 10mm ACROSS FULL WIDTH.
3. REMOVE & REPLACE BEARINGS.
4. CALCULATED JACKING LOAD PER JACK = 350 kN.



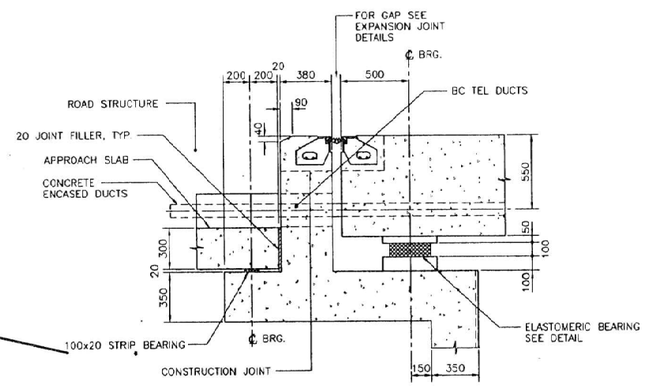
BEARING DETAIL
SCALE 1:10 (4 REQ'D)



VERTICAL RIBBED FINISH DETAIL
SCALE 1:10
NOTE: PANEL JOINTS AND THROUGH TIES TO COINCIDE WITH VERTICAL GROOVES



SECTION (A)
SCALE 1:50



ABUTMENT DETAILS
SCALE 1:20

RECEIVED
DEC 09 1996
CITY OF COQUITLAM
PLANNING AND DEVELOPMENT DEPT

AUG 07 1997

H0013-05

ASSOCIATED ENGINEERING

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SCALE AS NOTED

DESIGNED D.T. DATE AUG. 95
CHECKED D.I.H. DATE AUG. 95
DRAWN C.C. DATE AUG. 95

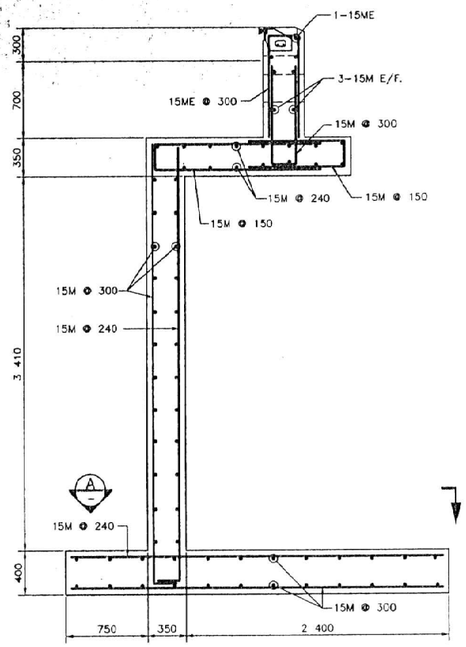
Rev	Date	Description	Init
G	12.04.95	SCREEN WALL, END SLOPE, DUCTS, CONTROL JT. REVISED	
H	12.15.95	WINGWALL UPSTAND, DUCTS REVISED	
J	12.20.95	BEARING ELEVATIONS & JACKING INSTRUCTIONS REVISED	
K	01.11.96	HANDRAIL REVISED	
L	01.31.96	SIDEWALK WIDENED	
M	SEPT.96	AS CONSTRUCTED	

REVISIONS

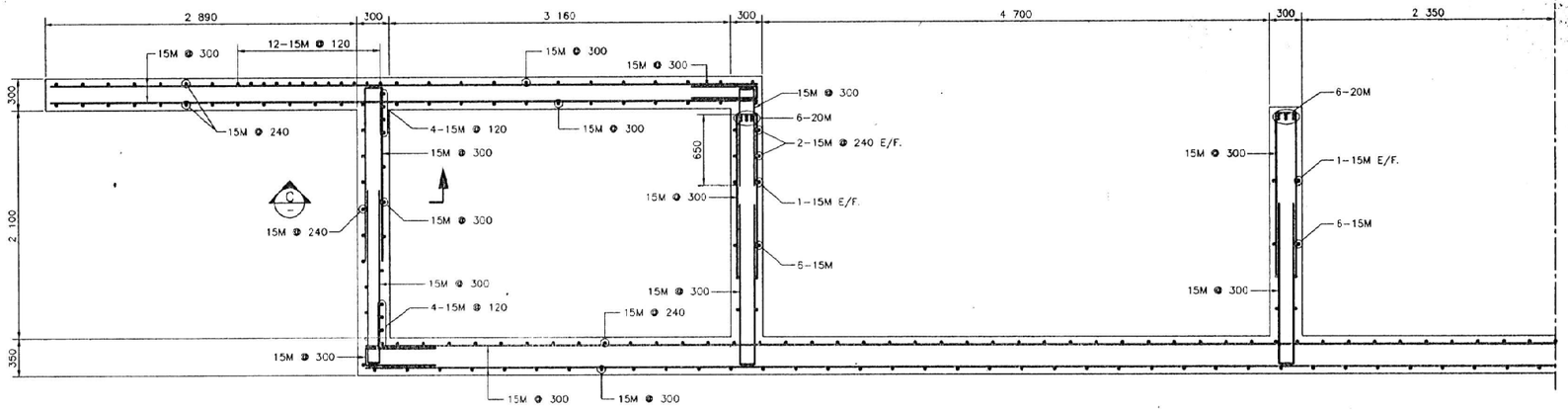
SOUTH COAST REGION
MARINER WAY OVERHEAD
JOHNSON MARINER CONNECTOR NO. 2927
SOUTH ABUTMENT

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
	DIRECTOR OF BRIDGE ENGINEERING	CHIEF HIGHWAY ENGINEER
DATE	DATE	DATE
FILE No.	NEGATIVE No.	REG. DRAWING No. 2927–105 M

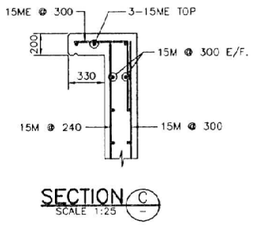
CANCEL PRINTS BEARING PREVIOUS LETTER



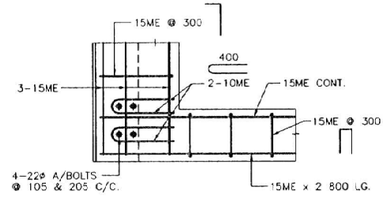
TYPICAL SECTION
SCALE 1:25



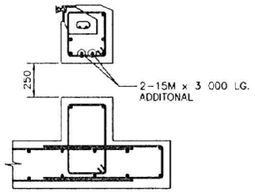
SECTION (A)
SCALE 1:25



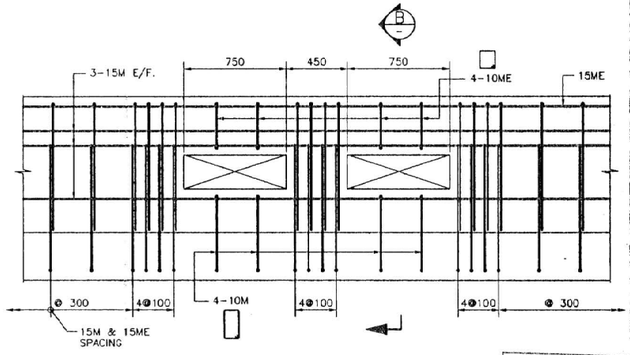
SECTION (C)
SCALE 1:25



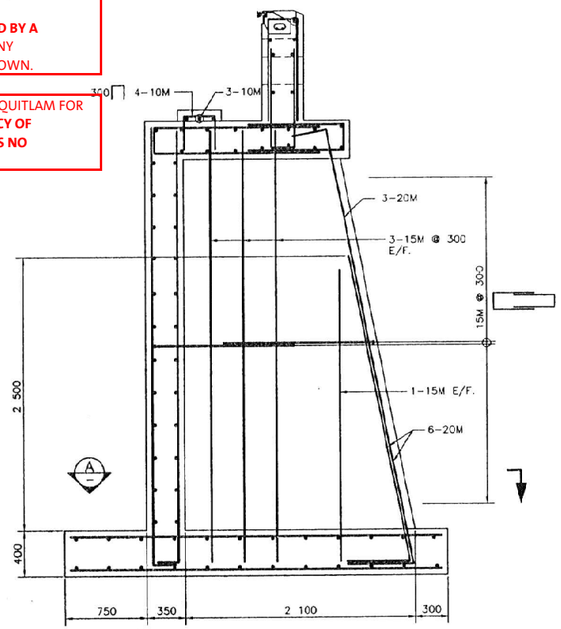
FENCE POST BASE PLATE DETAIL
SCALE 1:20



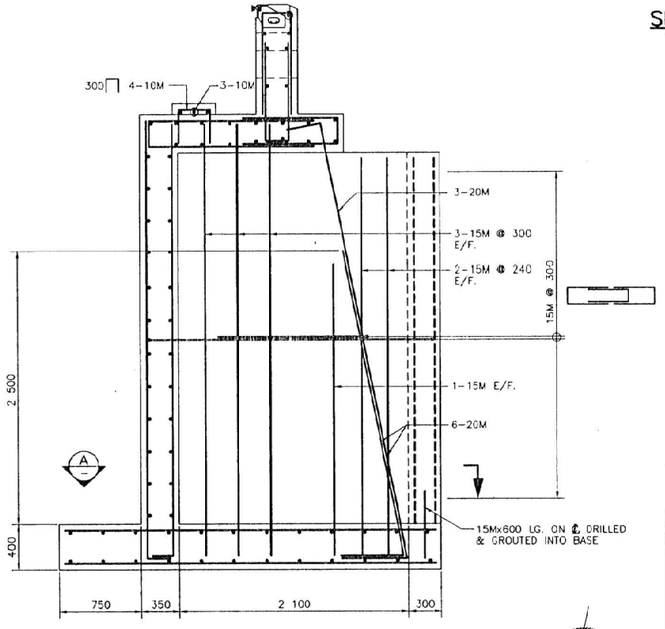
SECTION (B)
SCALE 1:20



DETAILS AT BC TEL BLOCKOUTS
SCALE 1:20



INTERIOR COUNTERFORT REINF. DETAIL
SCALE 1:25



END COUNTERFORT REINF. DETAIL
SCALE 1:25

LEGEND:
U/N. – UNLESS NOTED
E/F. – EACH FACE
E/W. – EACH WAY
F/F. – FAR FACE
N/F. – NEAR FACE
N/S. – NEAR SIDE
F/S. – FAR SIDE
T/B. – TOP AND BOTTOM
C/C. – CENTRE TO CENTRE

NOTES:
1. MINIMUM REQUIRED COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS TO BE AS FOLLOWS:
   35 MPa FOR DECK SLAB, SIDEWALK AND PARAPETS
   30 MPa FOR ABUTMENTS AND PILE INFILL
   20 MPa FOR WORKING FLOORS
2. ALL EXPOSED EDGES OF CONCRETE TO BE CHAMFERED 20mm UNLESS OTHERWISE NOTED.
3. CONCRETE FINISHES SHALL BE AS SHOWN ON DRAWINGS AND AS SPECIFIED IN THE SPECIFICATIONS. EXPOSED CONCRETE SHALL HAVE A CLASS 2 FINISH UNLESS NOTED OTHERWISE.
4. UNLESS NOTED OTHERWISE ALL REINFORCING STEEL TO BE DEFORMED BARS CONFORMING TO CSA STANDARD G30.18-M, GRADE 400, WELDING OF THIS REINFORCEMENT IS NOT PERMITTED UNLESS NOTED
5. REINFORCING STEEL IDENTIFIED AS WELDABLE SHALL BE DEFORMED BARS CONFORMING TO CSA STANDARD G30.16-M, GRADE 400W. WELDING OF THESE BARS SHALL BE IN ACCORDANCE WITH CSA STANDARD W186-M.
6. UNLESS NOTED OTHERWISE CONCRETE COVER TO REINFORCEMENT SHALL BE AS FOLLOWS:

UPPER SURFACE OF ROADWAY DECK	70mm
PRINCIPAL REINFORCEMENT	50mm
STIRRUPS, TIES AND SPIRALS	40mm
UNDERSIDE OF DECKS	40mm
SUBMERGED OR EXPOSED TO EARTH	60mm

7. REINFORCING BAR SPLICING TO BE AS SHOWN IN TABLE 212-E OF M.O.T.H. STANDARD SPECIFICATIONS EXCEPT AS NOTED
8. FOOTINGS SHALL BE CARRIED DOWN TO THE ELEVATIONS SHOWN ON THE DRAWINGS, OR DIRECTED BY THE ENGINEER. ALL PREPARED FOUNDATIONS SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER.
9. ALL REINFORCING MARKED "ME" IS EPOXY COATED
10. USE 75mm THICK WORKING FLOORS BENEATH ALL CONCRETE CAST ON GRADE
11. REFER TO ELECTRICAL DRAWINGS FOR DETAILS OF EMBEDDED ELECTRICAL COMPONENTS

H0013-06

RECEIVED
DEC 09 1999
CITY OF COQUITLAM
PLANNING AND DEVELOPMENT DEPT.

AUG 07 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.T. DATE AUG. 95
CHECKED D.H. DATE AUG. 95
DRAWN C.C. DATE AUG. 95

Rev	Date	Description	Init
B	OCT. 95	REBAR SPACING REVISED	
C	11.13.95	CELL ADDED & END COUNTERFORT REVISED	
D	11.15.95	REINFORCEMENT REVISED	
E	11.24.95	NOTE ADDED	
F	02.01.96	SECTION 'C' & FENCE POST BASE PL. DETAIL ADDED	
G	SEPT.96	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
SOUTH ABUTMENT REINFORCING DETAILS

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE

FILE No. | NEGATIVE No. | REG. | DRAWING No. 2927-106 | G

CANCEL PRINTS BEARING PREVIOUS LETTER

AUG 14 1997

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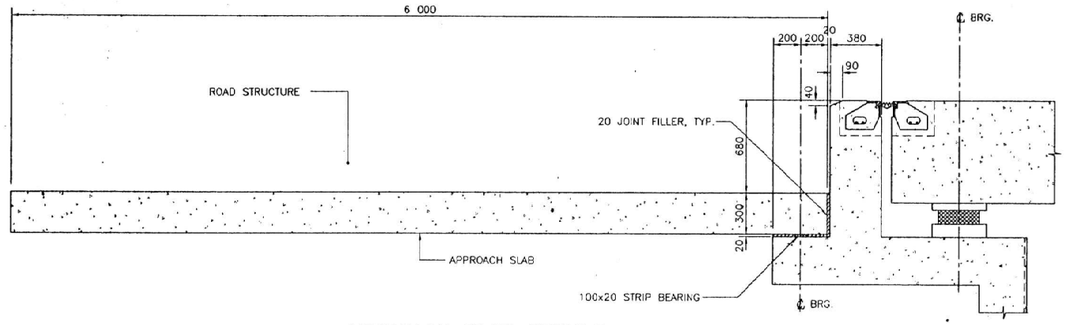
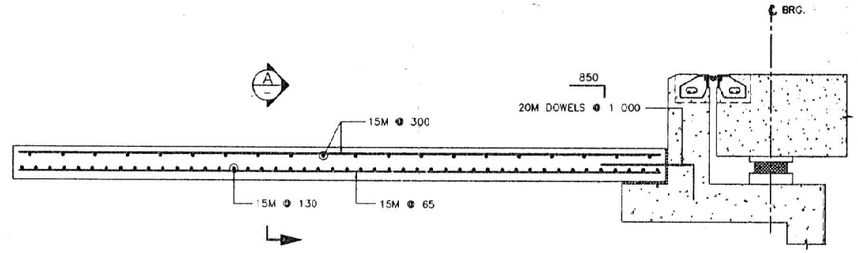
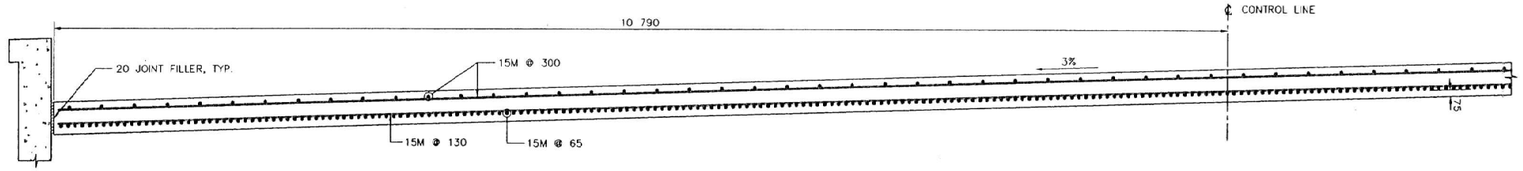


APPROACH SLAB DETAILS
SCALE 1:20



APPROACH SLAB REINFORCING DETAIL
SCALE 1:25



SECTION A
SCALE 1:25

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NOTE: FOR GENERAL NOTES SEE DWG. 2927-106

H0013-07

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.T. DATE SEP. 95
CHECKED D.H. DATE SEP. 95
DRAWN C.C. DATE SEP. 95

Rev.	Date	Description	init	
A	OCT. 95	ISSUED FOR CONSTRUCTION		
B	01.10.96	REBAR COVER REVISED		
C	SEPT.96	AS CONSTRUCTED		

REVISIONS

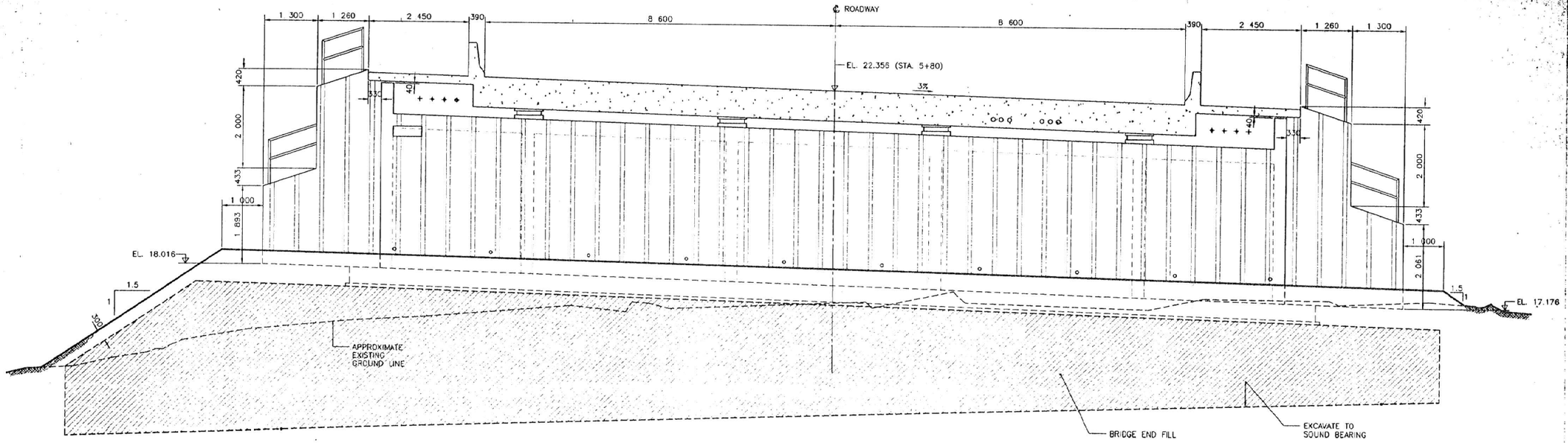
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

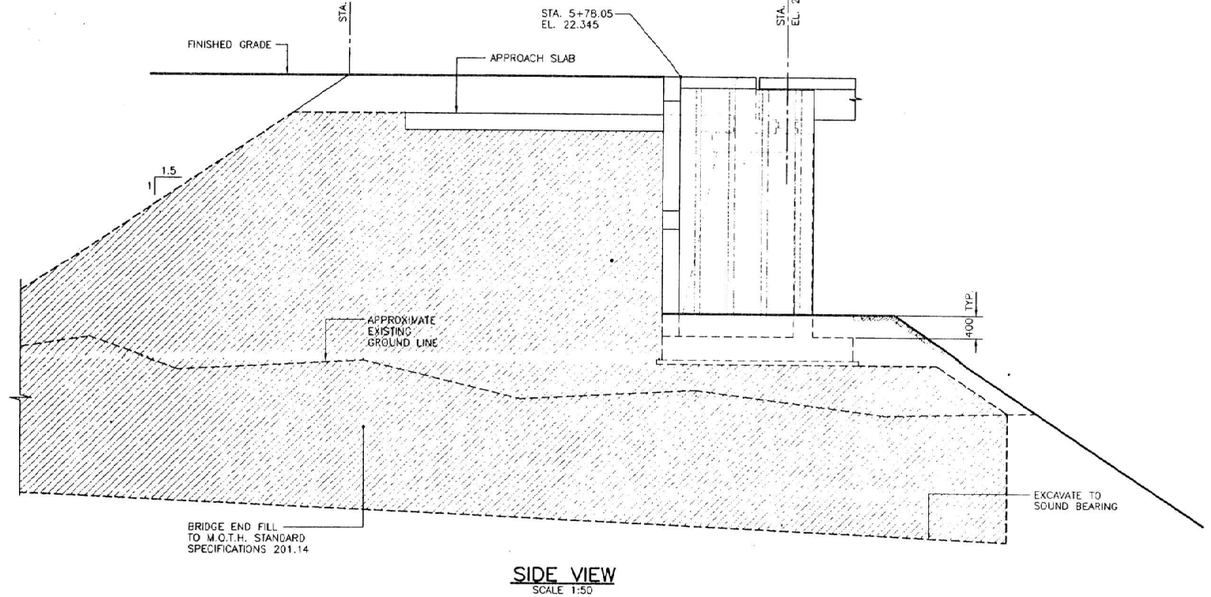
JOHNSON MARINER CONNECTOR NO. 2927
SOUTH ABUTMENT APPROACH SLAB

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No. / REG.	DRAWING No. 2927-107 C

CANCEL PRINTS BEARING PREVIOUS LETTER



ELEVATION
SCALE 1:50



SIDE VIEW
SCALE 1:50

IMPORTANT:
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H0013-08

AUG 0 7 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.T. DATE SEP. 95
CHECKED D.J.H. DATE SEP. 95
DRAWN C.C. DATE SEP. 95

Rev	Date	Description	Init
A	OCT. 95	ISSUED FOR CONSTRUCTION	
B	OCT. 95	FOOTING ELEVATIONS REVISED	
C	OCT. 95	FOOTING ELEVATIONS REVISED	
D	12.07.95	SCREEN WALL ELEVATION REVISED	
E	01.31.96	SIDEWALK WIDENED	
F	SEPT.96	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

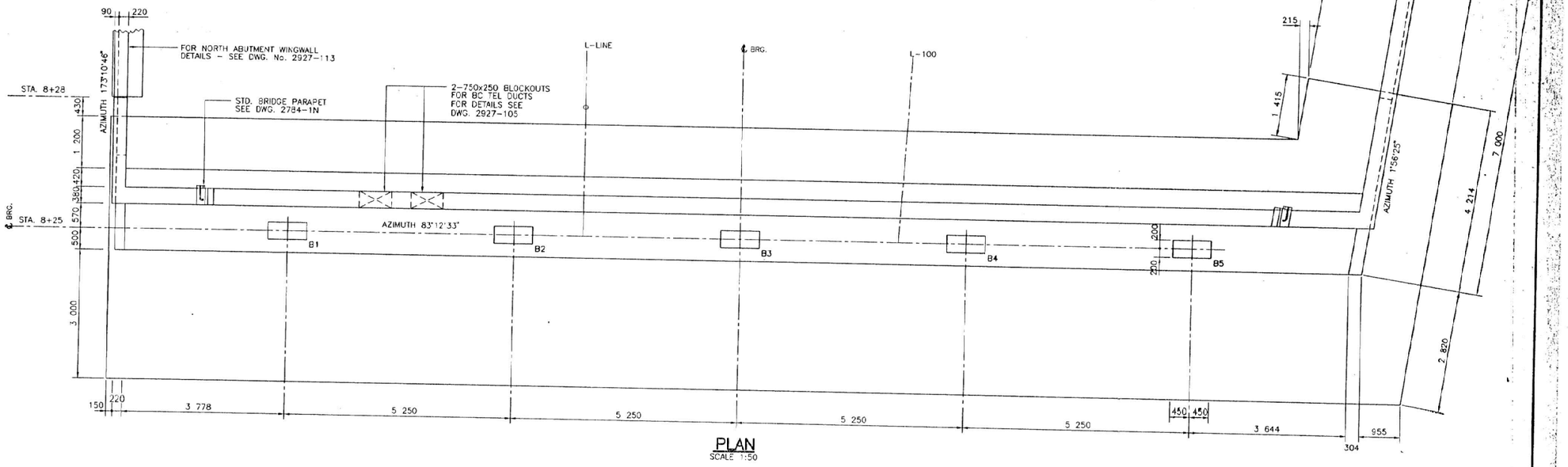
SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
SOUTH ABUTMENT END FILL AND PAVING

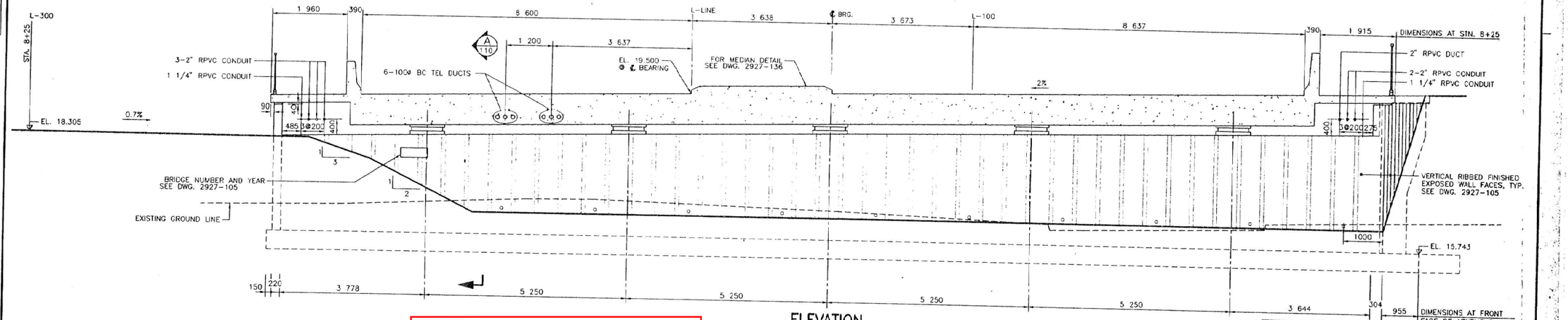
PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
	DIRECTOR OF BRIDGE ENGINEERING	CHIEF HIGHWAY ENGINEER
DATE	DATE	DATE
FILE No.	NEGATIVE No.	REV.

DRAWING No. 2927-108 F

CANCEL PRINTS BEARING PREVIOUS LETTER



PLAN
SCALE 1:50



ELEVATION
SCALE 1:50

NOTE:
PREPARED SUBGRADE TO BE INSPECTED BY GEOTECHNICAL ENGINEER TO CONFIRM THAT SUBGRADE SOILS ARE ADEQUATE TO SUPPORT ABUTMENT FOUNDATION. WHERE SUBGRADE SOILS ARE UNSUITABLE, THESE SOILS TO BE SUBEXCAVATED AND REPLACED WITH WELL–COMPACTED STRUCTURAL FILL AS DIRECTED BY ENGINEER.

IMPORTANT:
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CONTACT BC HYDRO, TERASEN GAS AND TELUS FOR CURRENT AS-BUILTS PERTAINING TO THESE UTILITIES.

NOTE:
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L. J. MARVEY — PROFESSIONAL ENGINEER
AUG 07 1997

H0013-09

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.T. DATE NOV. '95
CHECKED D.H. DATE NOV. '95
DRAWN B.F. DATE NOV. '95

Rev	Date	Description	Init
A	12.21.95	100% SUBMISSION	
B	01.05.96	ISSUED FOR CONSTRUCTION	
C	02.16.96	FOOTING REVISED	
D	SEPT.98	AS CONSTRUCTED	

REVISIONS

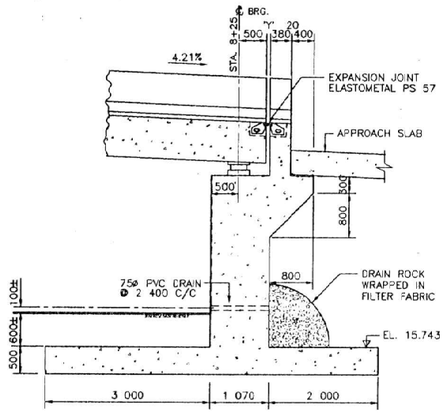
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

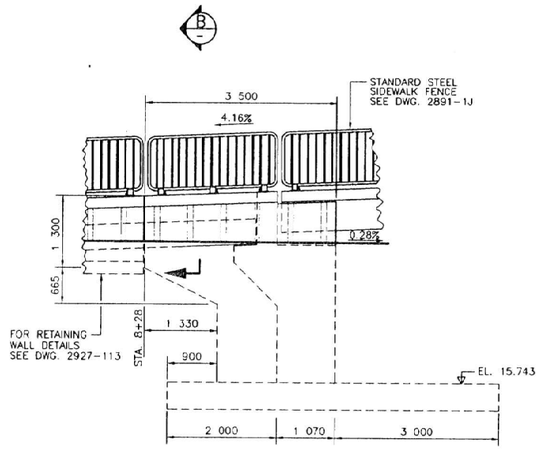
JOHNSON MARINER CONNECTOR NO. 2927
NORTH ABUTMENT SHT. 1

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
	DIRECTOR OF BRIDGE ENGINEERING	CHIEF HIGHWAY ENGINEER
DATE	DATE	DATE
FILE No.	NEGATIVE No. REG.	DRAWING No. 2927–109 D

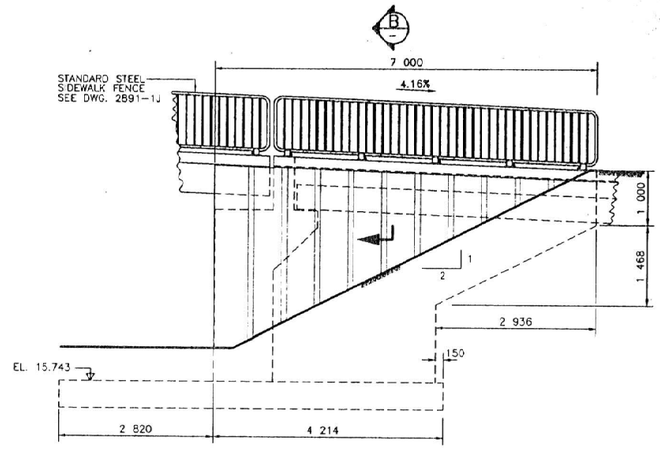
CANCEL PRINTS BEARING PREVIOUS LETTER



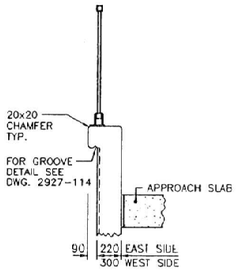
SECTION (A) 109
SCALE 1:50



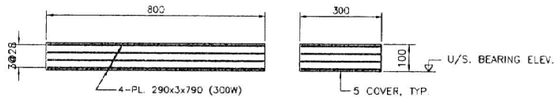
WEST WINGWALL ELEVATION
SCALE 1:50



EAST WINGWALL ELEVATION
SCALE 1:50



SECTION (B)
SCALE 1:25



BEARING DETAIL
SCALE 1:10 (5 REQ'D)

BEARING	U/S. BEARING ELEV.
B1	18.463
B2	18.568
B3	18.673
B4	18.778
B5	18.883

BEARING REPLACEMENT PROCEDURE

1. PLACE 10 HYDRAULICALLY - LINKED JACKS E/S. OF BEARINGS, APPROX. 350mm FROM FRONT FACE OF ABUTMENT.
2. RAISE DECK APPROX. 10mm ACROSS FULL WIDTH.
3. REMOVE & REPLACE BEARINGS.
4. CALCULATED JACKING LOAD PER JACK = 450 kN.

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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H0013-10

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.T. DATE NOV. 95
CHECKED D.H.H. DATE NOV. 95
DRAWN B.F. DATE NOV. 95

Rev	Date	Description	Init
A	12.21.95	100% SUBMISSION	
B	01.05.96	ISSUED FOR CONSTRUCTION	
C	02.16.96	FOOTING REVISED	
D	JUL. 97	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

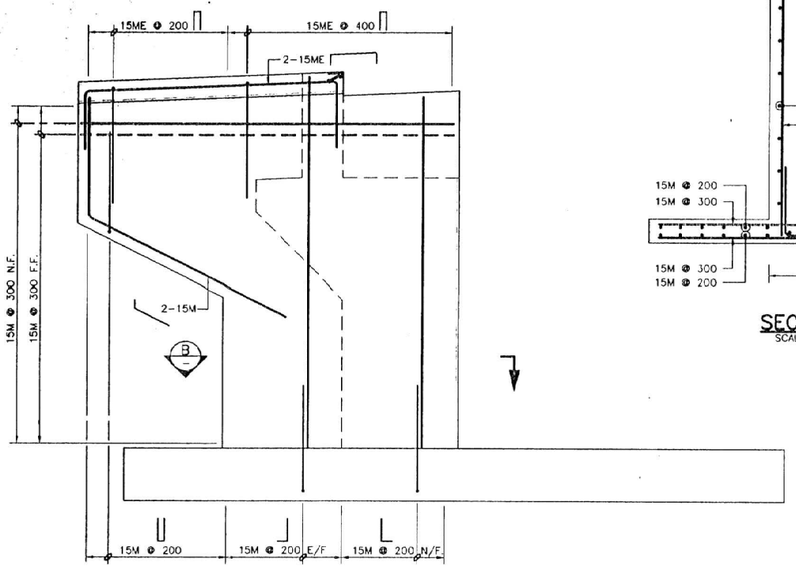
SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
NORTH ABUTMENT SHT. 2

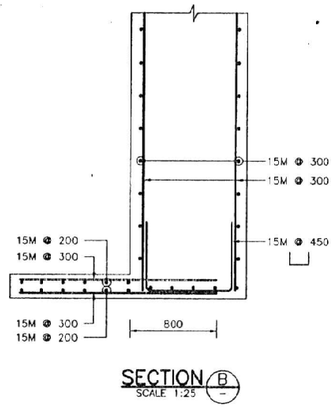
PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE

FILE No. | NEGATIVE No. | REG. | DRAWING No. 2927-110 ID

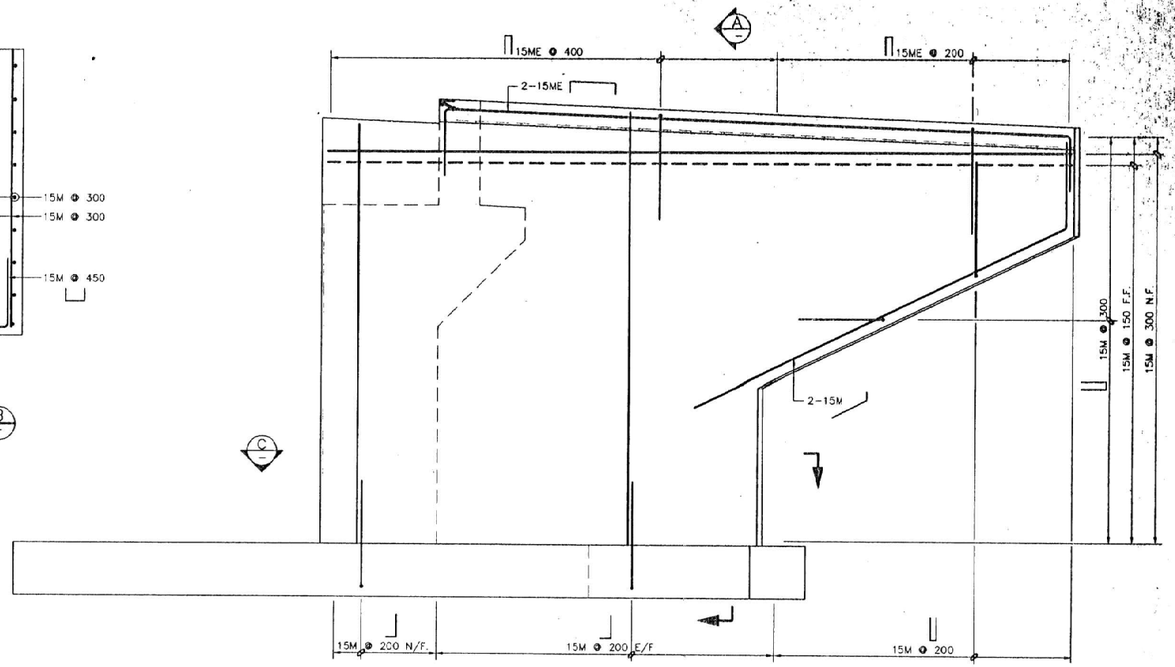
CANCEL PRINTS BEARING PREVIOUS LETTER



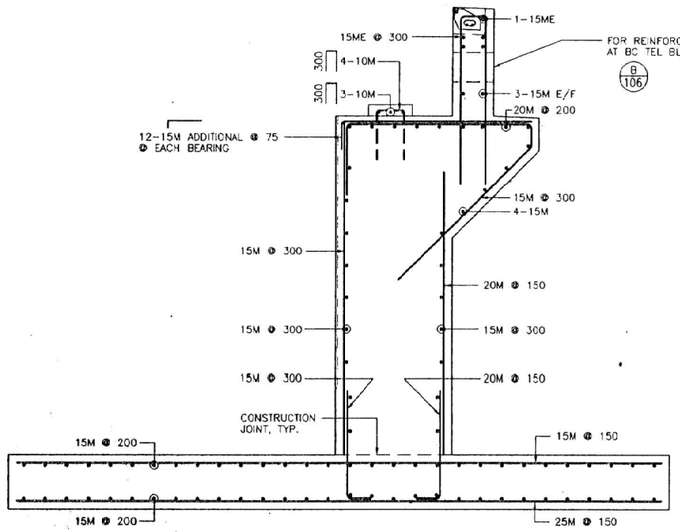
WEST WINGWALL REINFORCMENT DETAIL
SCALE 1:25



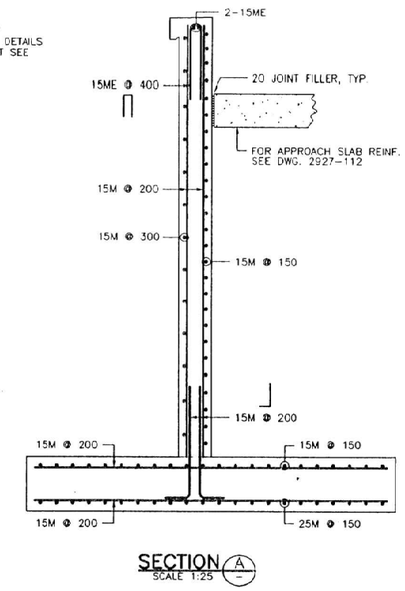
SECTION B
SCALE 1:25



EAST WINGWALL REINFORCEMENT DETAIL
SCALE 1:25

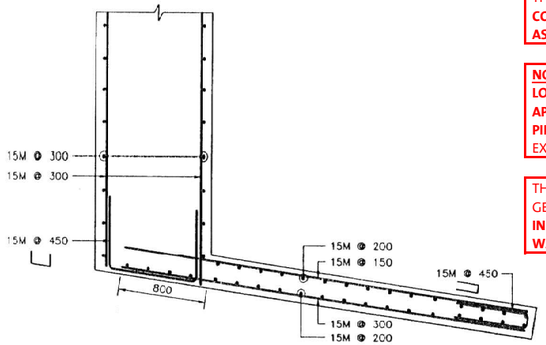


TYPICAL SECTION
SCALE 1:25



SECTION A
SCALE 1:25

NOTE:
FOR LEGEND & GENERAL NOTES, SEE DWG. 2927-106.
FOR DETAILS AT BC TEL BOLCKOUTS, SEE DWG. 2927-106.



SECTION C
SCALE 1:25

IMPORTANT:
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NOTE:
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H0013-11

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED	D.F.	DATE NOV. 95
CHECKED	D.I.H.	DATE NOV. 95
DRAWN	J.E.N.	DATE NOV. 95

Rev	Date	Description	Init.
A	12.21.95	100% SUBMISSION	
B	01.05.96	ISSUED FOR CONSTRUCTION	
C	02.16.96	FOOTING & REINF. REVISED	
D	SEPT.96	AS CONSTRUCTED	

REVISIONS

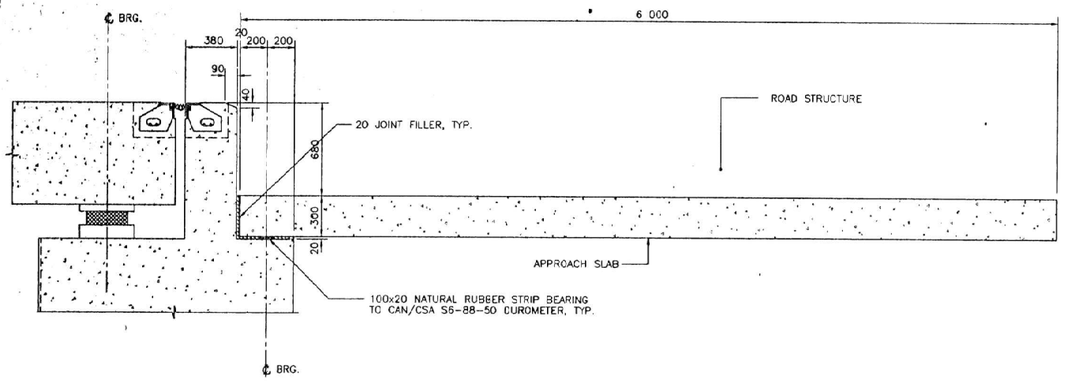
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

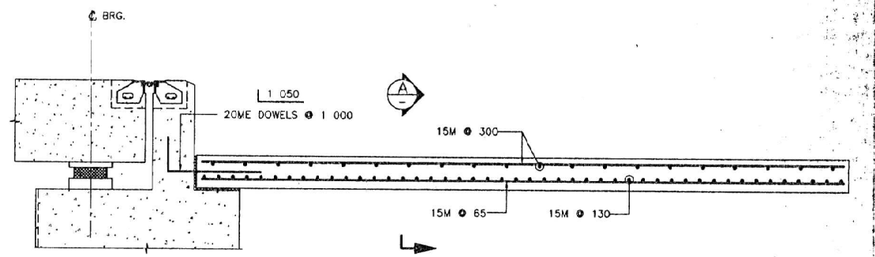
JOHNSON MARINER CONNECTOR NO. 2927
NORTH ABUTMENT REINFORCING DETAILS

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No. REG.	DRAWING No. 2927-111 D

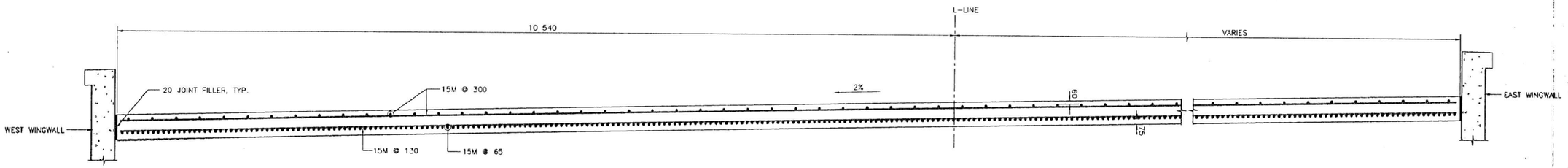
CANCEL PRINTS BEARING PREVIOUS LETTER



APPROACH SLAB DETAILS
SCALE 1:20



APPROACH SLAB REINFORCING DETAIL
SCALE 1:25



SECTION A
SCALE 1:25

IMPORTANT:
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NOTE: FOR GENERAL NOTES SEE DWG. 2927-106

H0013-12

AUG 07 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.T. DATE DEC. 95
CHECKED D.J.H. DATE DEC. 95
DRAWN B.F. DATE DEC. 95

Rev	Date	Description	init
A	12.21.95	100% SUBMISSION	
B	01.05.96	ISSUED FOR CONSTRUCTION	
C	02.16.96	DOWELS REVISED	
D	SEPT.96	AS CONSTRUCTED	

REVISIONS

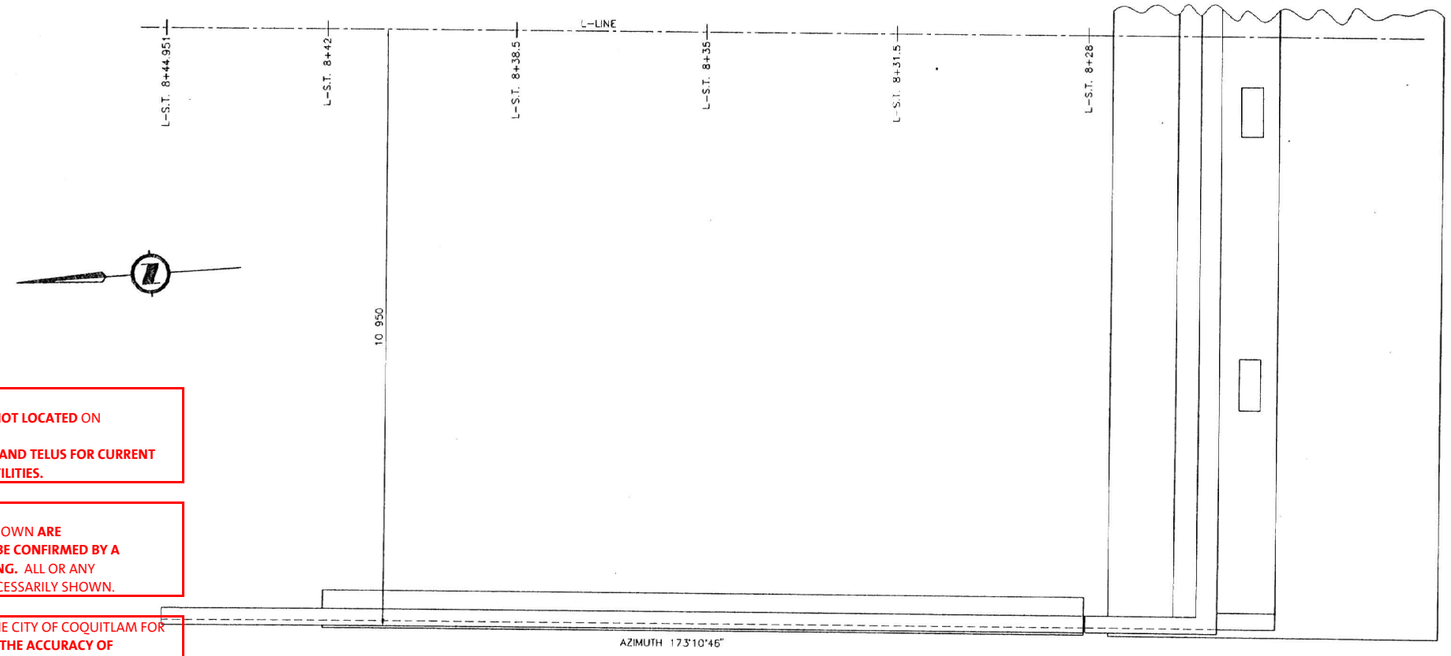
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

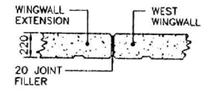
JOHNSON MARINER CONNECTOR NO. 2927
NORTH ABUTMENT APPROACH SLAB

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No.	REG. DRAWING No.: 2927-112 D

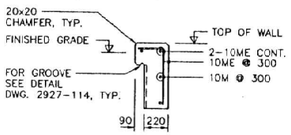
CANCEL PRINTS BEARING PREVIOUS LETTER



WEST WINGWALL EXTENSION – PLAN
SCALE 1:50



JOINT DETAIL
SCALE 1:25



SECTION B
SCALE 1:25

IMPORTANT:
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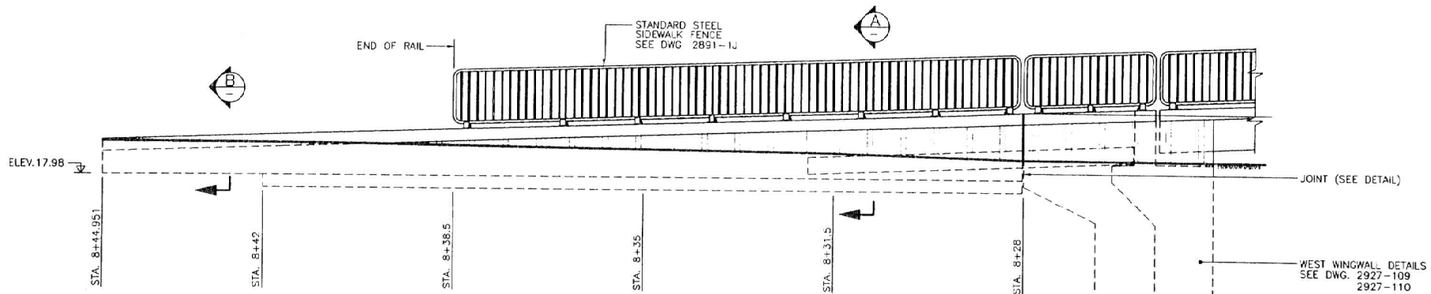
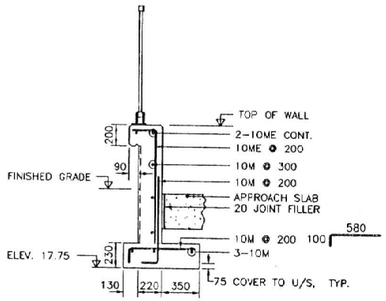


WEST WINGWALL EXTENSION – ELEVATION
SCALE 1:50



SECTION A
SCALE 1:25

STATION (L-LINE)	8+44.951	8+42	8+38.5	8+35	8+31.5	8+28
TOP OF WALL	18.588	18.675	18.791	18.904	19.029	19.172

H0013-13

AUG 0 7 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED
DESIGNED D.T. DATE NOV. 95
CHECKED D.H.H. DATE NOV. 95
DRAWN B.F. DATE NOV. 95

Rev	Date	Description	Init
A	12.21.95	100% SUBMISSION	
B	01.05.96	ISSUED FOR CONSTRUCTION	
C	02.16.96	ABUTMENT & RAILING REVISED	
D	JUL.97	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

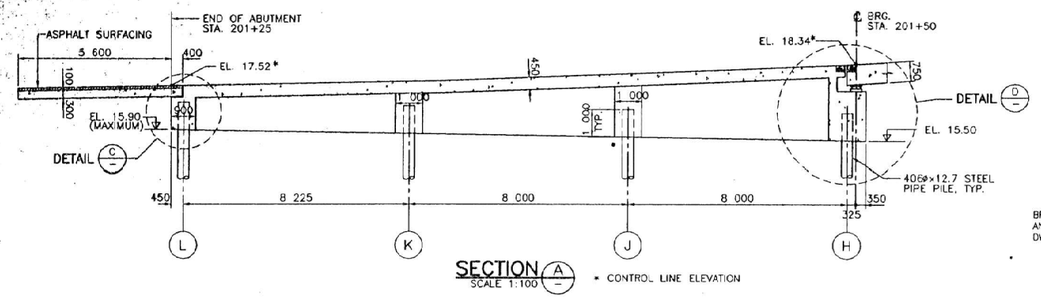
SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
NORTH ABUTMENT WINGWALL DETAILS

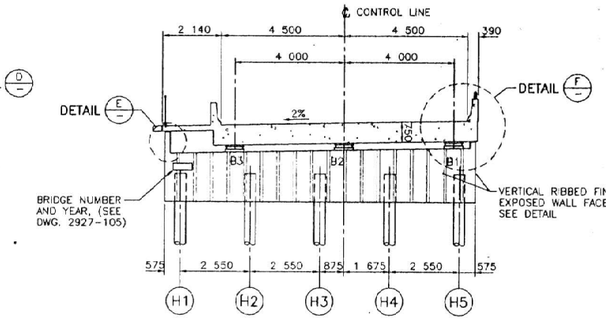
PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
	DIRECTOR OF BRIDGE ENGINEERING	CHIEF HIGHWAY ENGINEER
DATE	DATE	DATE
FILE No.	NEGATIVE No.	REG.

DRAWING No. 2927-113 D

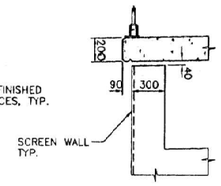
CANCEL PRINTS BEARING PREVIOUS LETTER



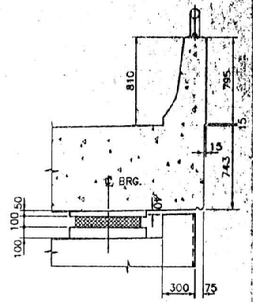
SECTION A
SCALE 1:100
* CONTROL LINE ELEVATION



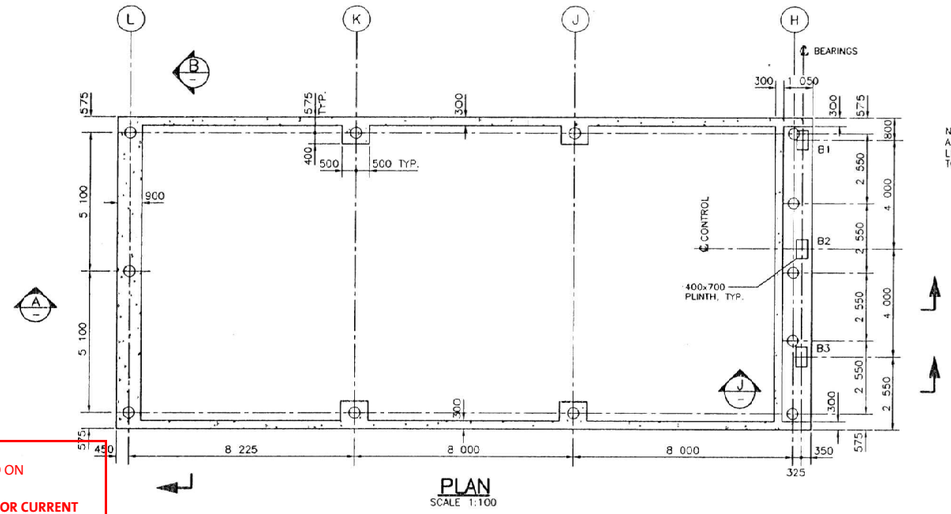
ELEVATION
SCALE 1:100



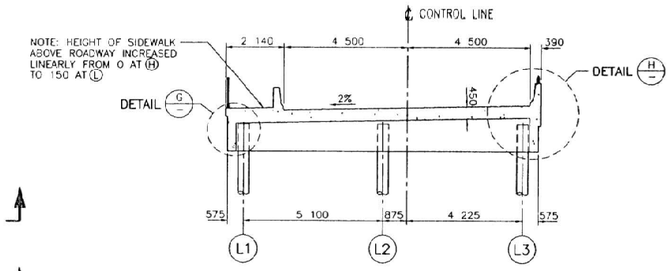
DETAIL E
SCALE 1:25



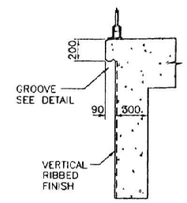
DETAIL F
SCALE 1:25



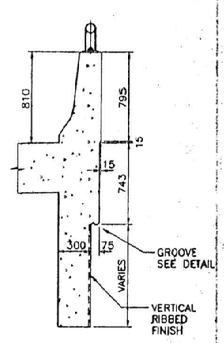
PLAN
SCALE 1:100



SECTION B
SCALE 1:100



DETAIL G
SCALE 1:25



DETAIL H
SCALE 1:25

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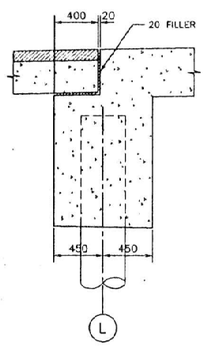
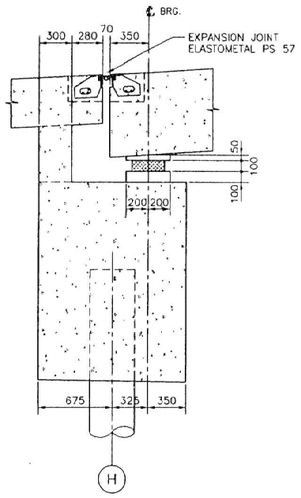
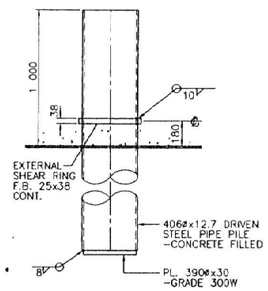


DETAIL C
SCALE 1:25

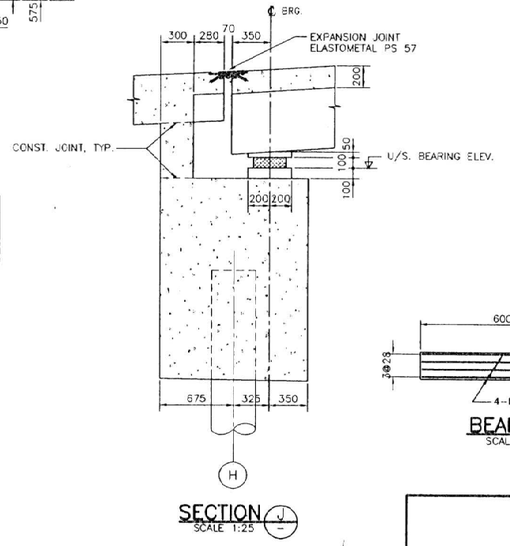


DETAIL D
SCALE 1:25

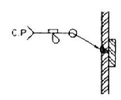
BEARING	U/S. BEARING ELEV.
B1	17.52
B2	17.44
B3	17.36



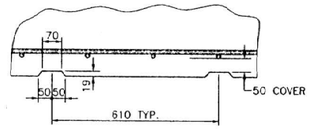
PILE DETAIL
SCALE 1:20



SECTION J
SCALE 1:25

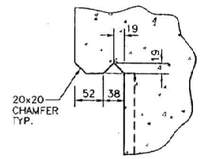


PILE SPLICE DETAIL
SCALE 1:5

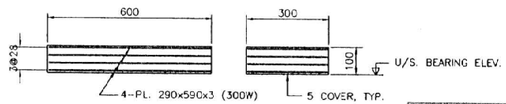


VERTICAL RIBBED FINISH DETAIL
SCALE 1:10

NOTE:
PANEL JOINTS AND THROUGH TIES TO COINCIDE WITH VERTICAL GROOVES



GROOVE DETAIL
SCALE 1:5



BEARING DETAIL
SCALE 1:10 (3 REQ'D)

H0013-14

BEARING REPLACEMENT PROCEDURE

1. PLACE 4 HYDRAULICALLY - LINKED JACKS AT APPROX. 2300mm CENTRES APPROX. 350mm FROM FRONT FACE OF ABUTMENT.
2. RAISE DECK APPROX. 10mm ACROSS FULL WIDTH.
3. REMOVE & REPLACE BEARINGS.
4. CALCULATED JACKING LOAD PER JACK = 350 kN.

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.T. DATE AUG. 95
CHECKED D.H. DATE AUG. 95
DRAWN C.C. DATE AUG. 95

Rev	Date	Description	Init
C	12.07.95	DETAIL E & F GROOVE REVISED	
D	12.15.95	SCREEN WALL REVISED	
E	12.20.95	BEARING ELEVATIONS & JACKING INSTRUCTIONS REVISED	
F	01.04.96	BRIDGE NUMBER & YEAR ADDED	
G	02.16.96	SIDEWALK REVISED	
H	SEPT.96	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

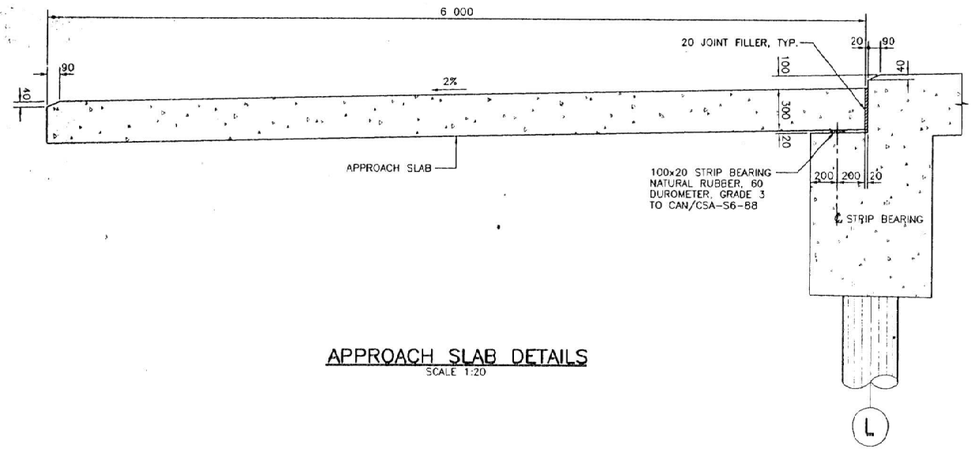
SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
EAST ABUTMENT DETAILS SHT. 1

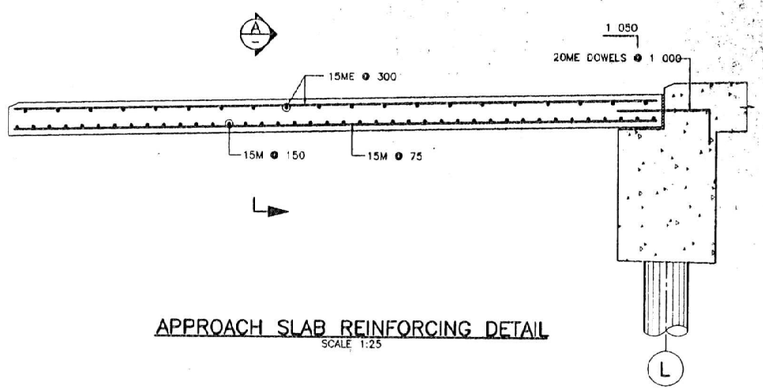
PREPARED BY
DATE
RECOMMENDED
DIRECTOR OF BRIDGE ENGINEERING
DATE
ACCEPTED FOR CONSTRUCTION
CHIEF HIGHWAY ENGINEER
DATE

FILE No.
NEGATIVE No.
REG.
DRAWING No. 2927-114 H

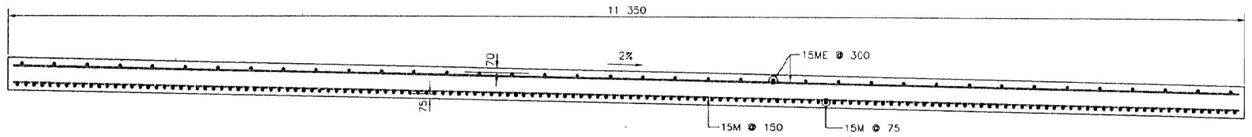
CANCEL PRINTS BEARING PREVIOUS LETTER



APPROACH SLAB DETAILS
SCALE 1:20



APPROACH SLAB REINFORCING DETAIL
SCALE 1:25



SECTION (A)
SCALE 1:25

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:
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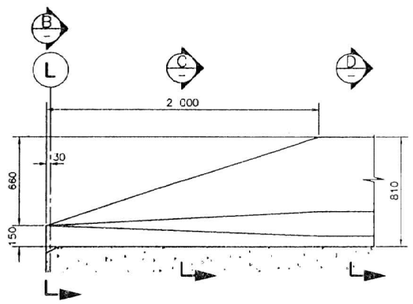
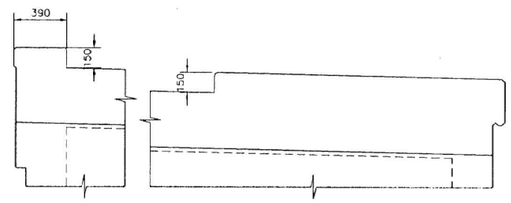
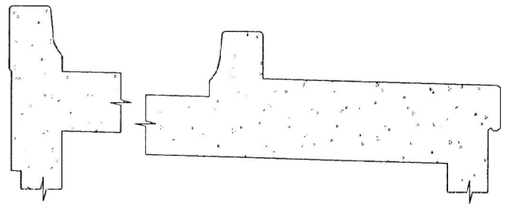


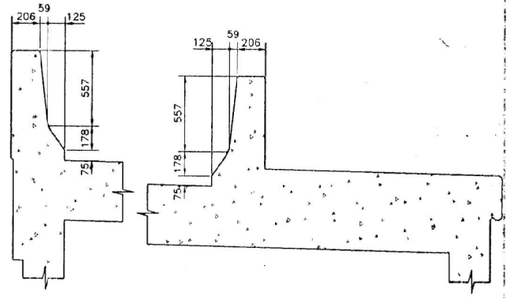
BARRIER TRANSITION
SCALE 1:20



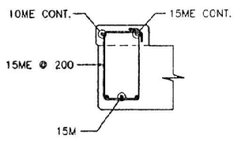
SECTION (B)
SCALE 1:20



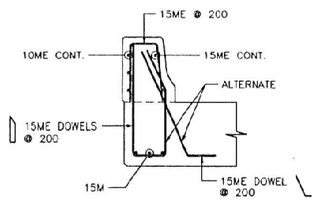
SECTION (C)
SCALE 1:20



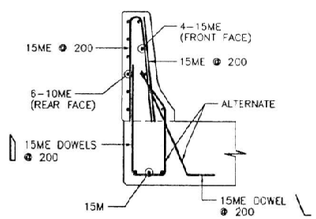
SECTION (D)
SCALE 1:20



SECTION (B)
SCALE 1:20



SECTION (C)
SCALE 1:20



SECTION (D)
SCALE 1:20

RECEIVED
DEC 0 9 1999
CITY OF COQUITLAM
PLANNING AND DEVELOPMENT DEPT.

H0013-15

AUG 07 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.T. DATE AUG. 95
CHECKED D.I.H. DATE AUG. 95
DRAWN C.C. DATE AUG. 95

Rev	Date	Description	Init
A	OCT. 95	ISSUED FOR CONSTRUCTION	
B	12.19.95	COVER REVISED	
C	02.19.96	DOWEL & SECTIONS REVISED	
D	SEPT.96	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

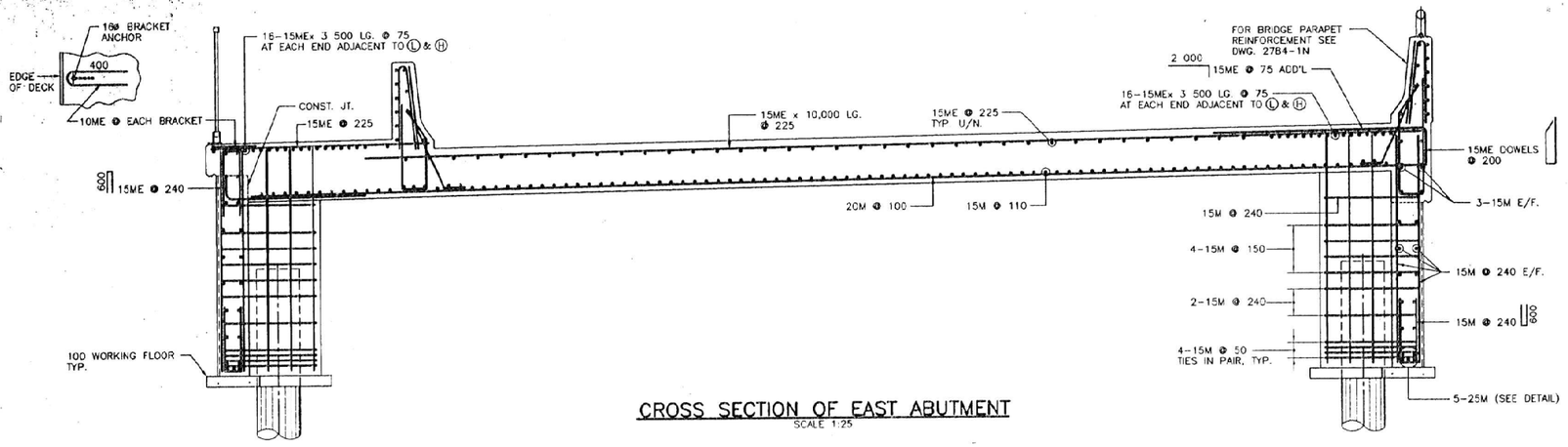
JOHNSON MARINER CONNECTOR NO. 2927
EAST ABUTMENT DETAILS SHT. 2

PREPARED BY
DATE
FILE No.

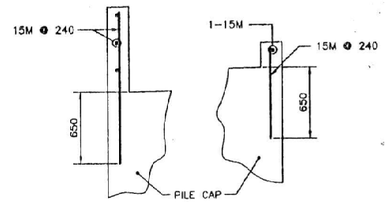
RECOMMENDED
DIRECTOR OF BRIDGE ENGINEERING
DATE
NEGATIVE No.
REG.

ACCEPTED FOR CONSTRUCTION
CHIEF HIGHWAY ENGINEER
DATE
DRAWING No. 2927-115 D

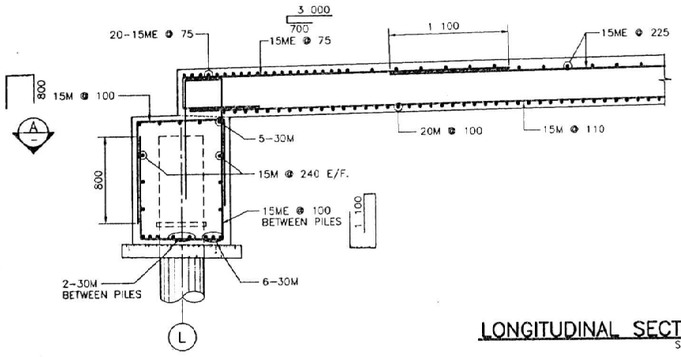
CANCEL PRINTS BEARING PREVIOUS LETTER



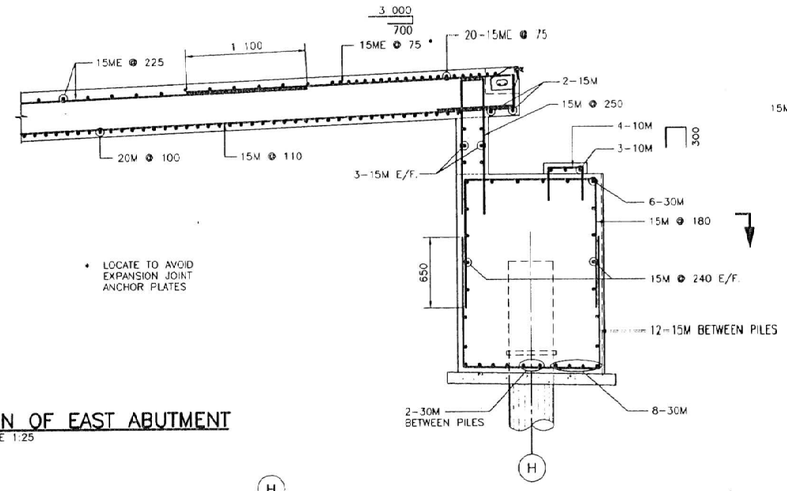
CROSS SECTION OF EAST ABUTMENT
SCALE 1:25



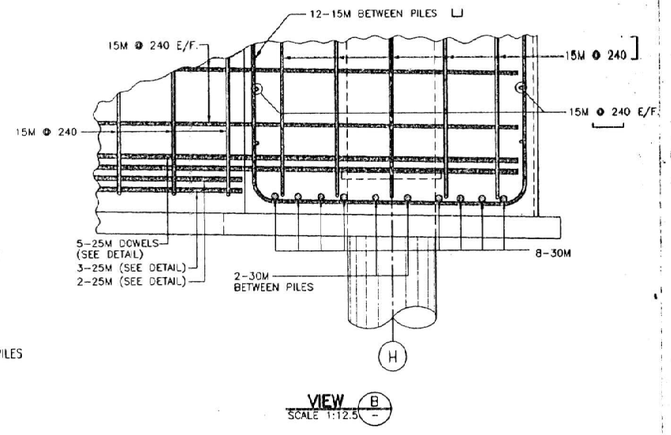
SCREEN WALL REINF. DETAILS AT Ⓗ
SCALE 1:25



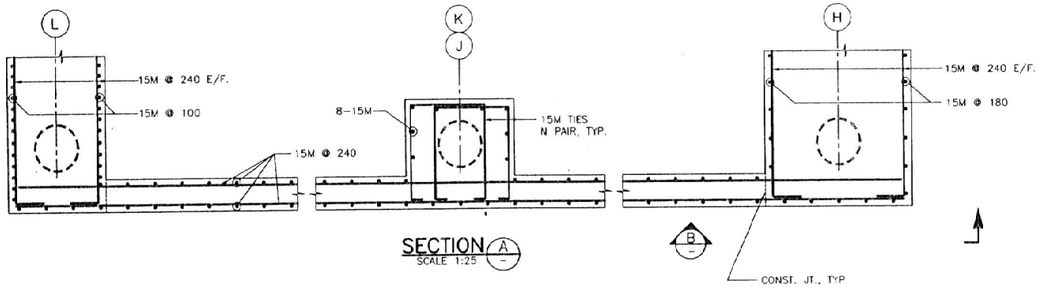
LONGITUDINAL SECTION OF EAST ABUTMENT
SCALE 1:25

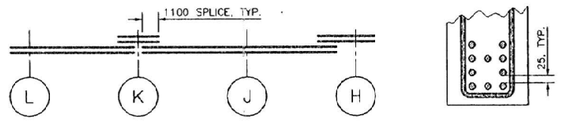


* LOCATE TO AVOID EXPANSION JOINT ANCHOR PLATES

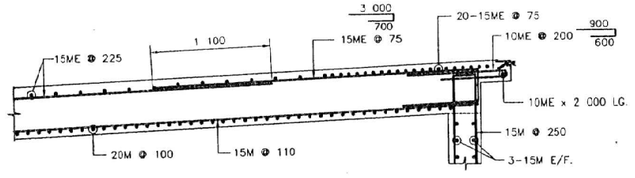


VIEW Ⓑ
SCALE 1:12.5





25M DETAILS



DETAIL AT SIDEWALK
SCALE 1:25

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NOTE: WORKING FLOORS MAY BE DELETED IF SUBGRADE IS CLEAN AND FIRM.
MINIMUM BOTTOM COVER TO REINFORCING WHERE CONCRETE IS CAST ON GRADE = 75mm.

H0013-16

AUG 07 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.T. DATE AUG. 95
CHECKED D.I.H. DATE AUG. 95
DRAWN C.C. DATE AUG. 95

Rev	Date	Description	Init	
A	OCT. 95	ISSUED FOR CONSTRUCTION		
B	12.07.95	REINF. REVISED & NOTE & CONST. JT. ADDED		
C	12.19.95	REINFORCING REVISED		
D	02.13.96	REINFORCING REVISED		
E	SEPT.96	AS CONSTRUCTED		

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

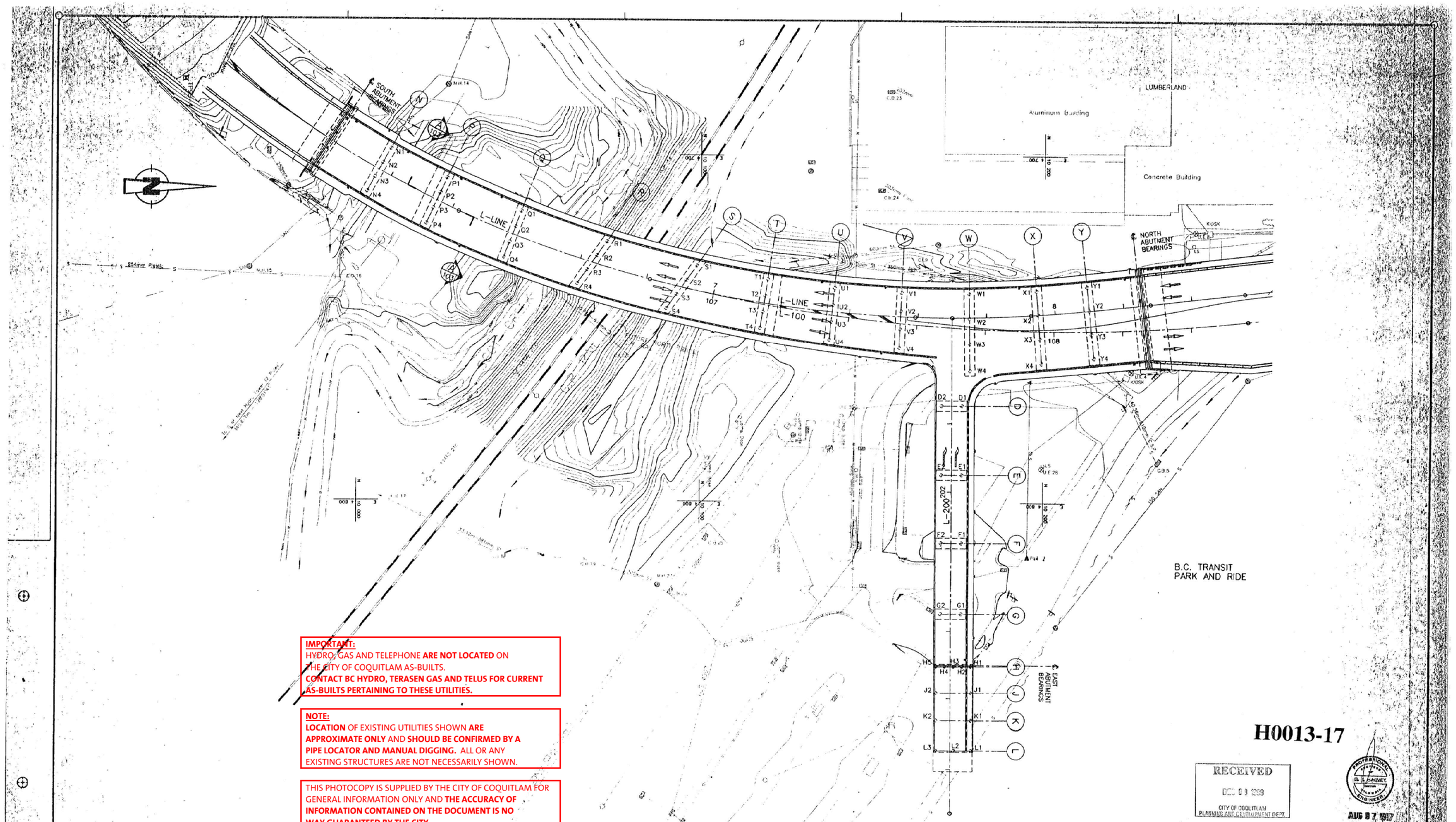
SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
EAST ABUTMENT REINFORCEMENT DETAILS

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
	DIRECTOR OF BRIDGE ENGINEERING	CHIEF HIGHWAY ENGINEER
DATE	DATE	DATE

FILE No. | NEGATIVE No. | REG. | DRAWING No. 2927-116 | E

CANCEL PRINTS BEARING PREVIOUS LETTER



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H0013-17

RECEIVED
DEC 09 1999
CITY OF COQUITLAM
PLANNING AND DEVELOPMENT DEPT.

AUG 07 1997

ASSOCIATED ENGINEERING

SCALE 1:500

DESIGNED D.I.H. DATE AUG. 95
CHECKED DATE
DRAWN C.C. DATE AUG. 95

Rev	Date	Description	Init	
A	SEPT. 95	ISSUED FOR CONSTRUCTION		
B	SEPT. 95	PIER N RELOCATED		
C	SEPT. 95	DECK HAUNCH REVISED		
D	01.09.96	DWG. UPDATED		
E	SEPT.96	AS CONSTRUCTED		

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
PLAN & PILING LAYOUT

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING / DATE	CHIEF HIGHWAY ENGINEER / DATE
FILE No.	NEGATIVE No.	REG. DRAWING No. 2927-117-E

CANCEL PRINTS BEARING PREVIOUS LETTER

PILING SCHEDULE No. 1

MAIN SPAN

	PILE No.	PILE SIZE (mm)	NORTH	EAST	MAXIMUM WORKING LOAD (kN)	MINIMUM ULTIMATE CAPACITY (kN)	FINISHED DECK ELEVATION (m)	PILE CUT-OFF ELEVATION (m)	TILL EMBEDMENT (m)	PILE TIP ELEVATION (m)	TILL PLUG (m)
BENT "N"	N1	914ø x 12.7	10009.669	4698.559	2800	7500	22.326	21.116	6.00	6.66	1.45
	N2	914ø x 12.7	10007.455	4702.563	2800	7500	22.468	21.258	6.25	4.81	1.35
	N3	914ø x 12.7	10005.153	4706.654	2800	7500	22.610	21.400	6.25	3.25	1.50
	N4	914ø x 12.7	10002.809	4710.828	2800	7500	22.752	21.542	5.80	2.76	1.20
BENT "P"	P1	914ø x 12.7	10026.100	4707.056	3350	9000	22.760	21.935	4.30	1.38	1.60
	P2	914ø x 12.7	10024.162	4711.239	3350	9000	22.902	22.077	5.50	0.20	1.65
	P3	914ø x 12.7	10022.126	4715.589	3350	9000	23.044	22.219	4.00	1.70	1.00
	P4	914ø x 12.7	10020.150	4719.798	3350	9000	23.186	22.361	5.00	-1.00	1.55
BENT "Q"	Q1	914ø x 12.7	10047.745	4716.236	4000	10200	23.472	22.647	5.00	2.25	1.90
	Q2	914ø x 12.7	10046.096	4720.667	4000	10200	23.614	22.789	5.75	1.39	1.60
	Q3	914ø x 12.7	10044.314	4725.059	4000	10200	23.756	22.931	5.10	2.28	1.73
	Q4	914ø x 12.7	10042.630	4729.494	4000	10200	23.898	23.073	6.50	3.68	2.30
BENT "R"	R1	914ø x 12.7	10072.553	4724.652	3600	9800	24.017	23.192	5.90	1.42	1.52
	R2	914ø x 12.7	10069.577	4728.858	3600	9800	24.138	23.313	5.00	1.96	1.5
	R3	914ø x 12.7	10066.276	4733.590	3600	9800	24.282	23.457	5.25	2.83	1.5
	R4	914ø x 12.7	10064.066	4736.982	3600	9800	24.378	23.553	5.00	1.97	1.85
BENT "S"	S1	914ø x 12.7	10098.851	4731.713	3800	10300	24.143	23.318	3.75	2.38	1.70
	S2	914ø x 12.7	10095.863	4735.820	3800	10300	24.291	23.466	3.60	2.31	2.40
	S3	914ø x 12.7	10092.769	4740.298	3800	10300	24.444	23.619	3.50	1.73	1.85
	S4	914ø x 12.7	10089.916	4744.198	3800	10300	24.579	23.754	3.25	2.21	2.35
BENT "T"	T1	914ø x 12.7	10119.609	4735.529	3800	10000	23.937	23.112	5.15	-1.25	1.79
	T2	914ø x 12.7	10118.813	4740.333	3800	10000	24.083	23.258	3.70	0.82	1.75
	T3	914ø x 12.7	10118.045	4745.138	3800	10000	24.230	23.405	4.05	2.64	1.98
	T4	914ø x 12.7	10117.250	4749.953	3800	10000	24.376	23.551	3.60	3.18	2.25
BENT "U"	U1	914ø x 12.7	10138.987	4737.934	3150	8100	23.507	22.782	2.50	4.15	1.50
	U2	914ø x 12.7	10138.456	4742.968	3150	8100	23.660	22.935	4.50	1.73	1.80
	U3	914ø x 12.7	10137.906	4748.050	3150	8100	23.813	23.088	3.65	2.86	1.58
	U4	914ø x 12.7	10137.401	4753.035	3150	8100	23.966	23.241	3.60	3.02	1.80
BENT "V"	V1	914ø x 12.7	10158.331	4739.267	3200	8500	22.845	22.120	2.65	3.08	2.10
	V2	914ø x 12.7	10158.174	4744.789	3200	8500	23.008	22.283	3.40	2.50	1.43
	V3	914ø x 12.7	10158.123	4750.071	3200	8500	23.170	22.445	4.50	1.53	3.77
	V4	914ø x 12.7	10157.912	4755.535	3200	8500	23.333	22.608	3.75	2.15	3.03

IMPORTANT:
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H0013-18

AUG 1 4 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.I.H. DATE AUG. 95
CHECKED DATE
DRAWN J.E.N. DATE AUG. 95

Rev	Date	Description	Init
A	SEPT. 95	ISSUED FOR CONSTRUCTION	
B	SEPT. 95	PIER N RELOCATED	
C	SEPT. 95	PILE DETAILS REVISED	
D	OCT. 95	CUT-OFFS, R3 REVISED	
E	11.23.95	S3 PILE RELOCATED & ELEVATIONS REVISED	
F	SEPT.96	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
PILING SCHEDULE No. 1

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No. REG.	DRAWING No. 2927-118 F

CANCEL PRINTS BEARING PREVIOUS LETTER

PILING SCHEDULE No. 2

		PILE No.	PILE SIZE (mm)	NORTH	EAST	MAXIMUM WORKING LOAD (kN)	MINIMUM ULTIMATE CAPACITY (kN)	FINISHED DECK ELEVATION (m)	PILE CUT-OFF ELEVATION (m)	TILL EMBEDMENT (m)	PILE TIP ELEVATION (m)	TILL PLUG (m)
MAIN SPAN	BENT "W"	W1	914ø x 12.7	10178.106	4739.507	3900	9900	21.953	21.228	3.60	−0.39	1.26
		W2	914ø x 12.7	10178.247	4746.865	3900	9900	22.175	21.450	3.30	−0.43	1.65
		W3	914ø x 12.7	10178.352	4754.268	3900	9900	22.396	21.671	3.75	−0.12	1.70
		W4	914ø x 12.7	10178.460	4761.669	3900	9900	22.618	21.893	3.75	−0.66	1.35
	BENT "X"	X1	914ø x 12.7	10197.625	4738.611	3500	8900	20.847	20.122	3.70	−2.14	1.70
		X2	914ø x 12.7	10198.154	4745.647	3500	8900	21.043	20.318	4.45	−2.30	1.60
		X3	914ø x 12.7	10198.652	4752.632	3500	8900	21.243	20.518	3.75	−2.13	0.90
		X4	914ø x 12.7	10199.219	4759.668	3500	8900	21.442	20.717	4.00	−2.27	1.83
	BENT "Y"	Y1	914ø x 12.7	10212.406	4737.178	2500	6700	20.058	18.808	4.60	−3.27	0.46
		Y2	914ø x 12.7	10213.144	4744.222	2500	6700	20.198	18.948	4.70	−3.44	0.60
		Y3	914ø x 12.7	10213.868	4751.204	2500	6700	20.338	19.088	4.88	−3.83	2.02
		Y4	914ø x 12.7	10214.665	4758.176	2500	6700	20.479	19.229	3.80	−2.55	1.80
EAST RAMP	BENT "D"	D1	914ø x 12.7	10176.297	4771.643	3050	7900	22.921	22.196	4.00	−1.12	1.65
		D2	914ø x 12.7	10170.300	4771.660	3050	7900	23.041	22.316	4.60	−0.87	1.70
	BENT "E"	E1	914ø x 12.7	10176.389	4791.615	3200	8700	22.421	21.696	4.00	−2.28	2.00
		E2	914ø x 12.7	10170.397	4791.624	3200	8700	22.541	21.816	3.00	−0.03	2.15
	BENT "F"	F1	914ø x 12.7	10176.403	4811.615	3200	8700	21.001	20.276	3.60	−2.58	1.90
		F2	914ø x 12.7	10170.422	4811.656	3200	8700	21.121	20.396	3.60	−1.58	1.50
	BENT "G"	G1	914ø x 12.7	10176.425	4831.917	3050	8100	19.379	18.209	4.50	−2.97	1.50
		G2	914ø x 12.7	10170.501	4831.631	3050	8100	19.521	18.351	3.60	−2.02	2.00
EAST ABUTMENT	BENT "H"	H1	406ø x 12.7	10179.535	4846.949	930	2450		16.500	2.40	−0.72	
		H2	406ø x 12.7	10176.985	4846.958	930	2450		16.500	2.00	−0.28	
		H3	406ø x 12.7	10174.435	4846.966	930	2450		16.500	1.25	0.32	
		H4	406ø x 12.7	10171.885	4846.975	930	2450		16.500	1.95	−0.31	
		H5	406ø x 12.7	10169.335	4846.984	930	2450		16.500	2.00	−0.34	
	BENT "J"	J1	406ø x 12.7	10179.563	4854.949	760	2050		16.630	1.75	−0.09	
		J2	406ø x 12.7	10169.363	4854.984	760	2050		16.630	2.00	−0.64	
	BENT "K"	K1	406ø x 12.7	10179.590	4862.949	810	2150		16.760	2.20	−0.50	
		K2	406ø x 12.7	10169.390	4862.984	810	2150		16.760	1.95	−0.99	
	BENT "L"	L1	406ø x 12.7	10179.618	4871.174	820	2250		16.890	1.75	−1.06	
		L2	406ø x 12.7	10174.518	4871.191	820	2250		16.890	1.20	−0.81	
		L3	406ø x 12.7	10169.418	4871.209	820	2250		16.890	2.00	−1.24	

IMPORTANT:
HYDRO, GAS AND TELEPHONE **ARE NOT LOCATED** ON THE CITY OF COQUITLAM AS-BUILTS.
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NOTE:
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H0013-19

PROFESSIONAL ENGINEER — D. L. HARVEY

AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.I.H. DATE AUG. 95
CHECKED DATE
DRAWN J.E.N. DATE AUG. 95

Rev	Date	Description	Init
A	SEPT. 95	ISSUED FOR CONSTRUCTION	
B	SEPT. 95	PILE DETAILS REVISED	
C	OCT. 95	CUT-OFFS REVISED	
D	11,20,95	G1 PILE RELOCATED & ELEVATIONS REVISED	
E	SEPT.96	AS CONSTRUCTED	

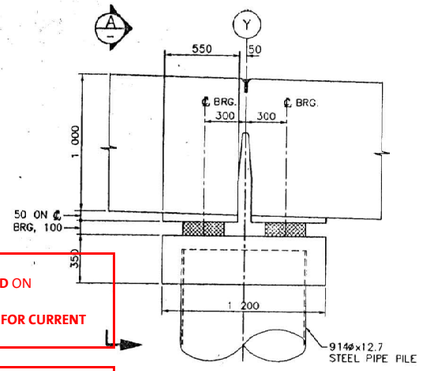
REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

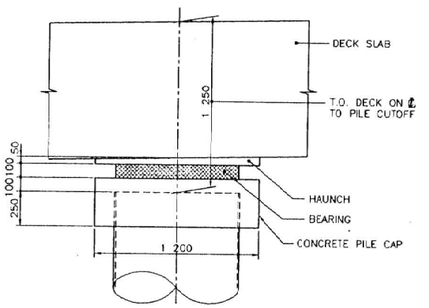
SOUTH COAST REGION
MARINER WAY OVERHEAD
JOHNSON MARINER CONNECTOR NO. 2927
PILING SCHEDULE No. 2

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No.	REG. DRAWING No. 2927-119-1E

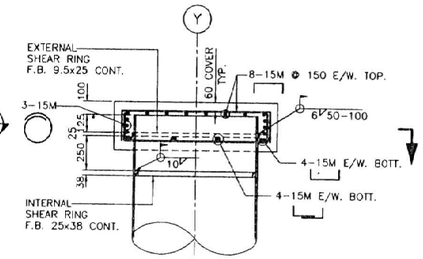
CANCEL PRINTS BEARING PREVIOUS LETTER



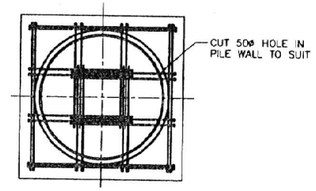
SUPPORT DETAILS AT PIER 'Y'
SCALE 1:20



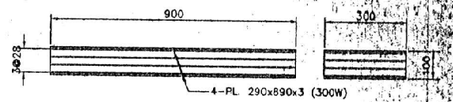
SECTION A
SCALE 1:20



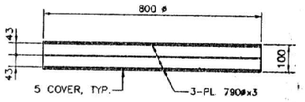
PILE CAP REBAR DETAILS
SCALE 1:20



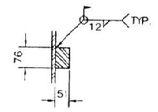
SECTION B
SCALE 1:20



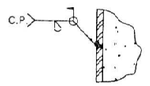
BEARING DETAIL AT 'Y'
SCALE 1:10 (8 REQ'D)



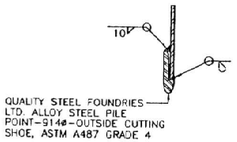
BEARING DETAIL AT 'G'
SCALE 1:10 (2 REQ'D)



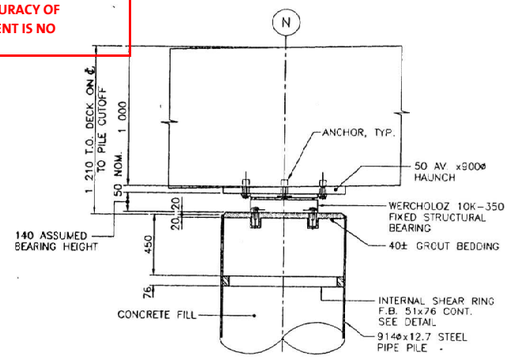
INTERNAL SHEAR RING @ G & N
SCALE 1:10



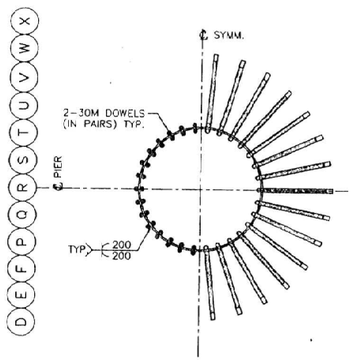
PILE SPLICE DETAIL
SCALE 1:5



PILE TIP DETAIL
SCALE 1:10

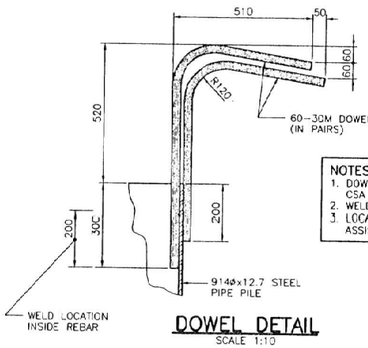


SUPPORT DETAILS AT PIER 'N'
SCALE 1:20



1/2 SECTION
SCALE 1:20

1/2 PLAN
SCALE 1:20



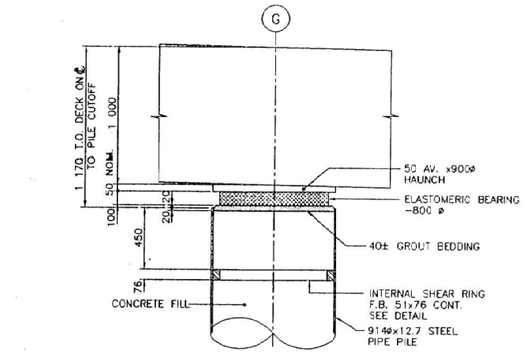
DOWEL DETAIL
SCALE 1:10

NOTES:
1. DOWELS TO BE WELDABLE REINFORCEMENT TO CSA G30.18M GRADE 400W
2. WELDING TO BE IN ACCORDANCE WITH CSA W186M
3. LOCATE DOWELS CAREFULLY TO ASSIST PLACEMENT OF DECK REINFORCEMENT

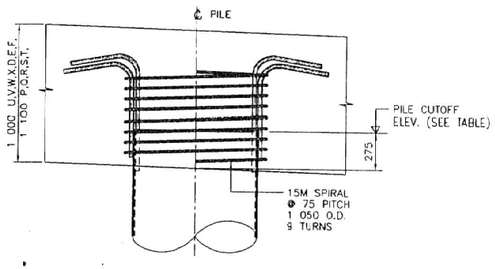
BEARING SEAT ELEVATIONS

PILE REF.	ELEVATION
Y1	18.908
Y2	19.047
Y3	19.187
Y4	19.326
G1	
G2	
N1	21.134
N2	21.276
N3	21.418
N4	21.560

RECEIVED
DEC 09 1999
CITY OF COQUITLAM
PLANNING AND DEVELOPMENT DEPT.



SUPPORT DETAILS AT PIER 'G'
SCALE 1:20



SPIRAL DETAIL
SCALE 1:20

BEARING REPLACEMENT PROCEDURE

1. AT G, N & Y WELD JACKING BRACKETS TO SIDES OF PILES.
2. JACK ON BEARINGS AT 600 - 750 E/S. OF PILES.
3. RAISE SLAB 10mm ± USING HYDRAULICALLY LINKED JACKS, MINIMUM TWO x 150 TON CAPACITY PER PILE
   ● G & N: FOUR x 100 TON ● Y.
4. REMOVE AND REPLACE BEARINGS.
5. LOWER SUPERSTRUCTURE ONTO NEW BEARINGS.
6. REMOVE TEMPORARY WORKS.
7. CALCULATED JACKING LOADS (DEAD LOADS ONLY)
   G: 4 ● 1 050 KN
   N: 8 ● 1 000 KN
   Y: 16 ● 450 KN

NOTES:
1. STEEL PIPE: ASTM A252 GRADE 3
2. STEEL: CSA G40.21M GRADE 300W
3. WELDING: CSA W59
4. PILE TIPS: REINFORCE WITH APPROVED CAST ALLOY DRIVING SHOES. (SEE PILE TIP DETAIL)
5. BEARING SEATS: GRIND FLAT TO ELEVATION SHOWN OR PLACE BEARING ON GROUT BEDDING
6. INSTALL PILE IN ACCORDANCE WITH APPROVED PILING PROCEDURE
7. ELASTOMERIC BEARINGS TO BE OZONE-RESISTING NATURAL RUBBER GRADE 3, 60 DUROMETER TO CAN/CSA S6-88

H0013-20

PROFESSIONAL ENGINEER L. J. HARVEY
AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED
DESIGNED D.I.H. DATE AUG. 95
CHECKED DATE
DRAWN C.C. DATE AUG. 95

	Date	Description	init
A	SEPT. 95	ISSUED FOR CONSTRUCTION	
B	SEPT. 95	DECK & PILE HEAD DETAILS REVISED	
C	OCT. 95	DOWEL LENGTH REVISED	
D	OCT. 95	DOWEL LENGTH REVISED	
E	OCT. 95	BEARINGS REVISED	
F	SEPT.98	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
INTERMEDIATE SUPPORT DETAILS

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No.	REG. DRAWING No. 2927-120 F

CANCEL PRINTS BEARING PREVIOUS LETTER

IMPORTANT:
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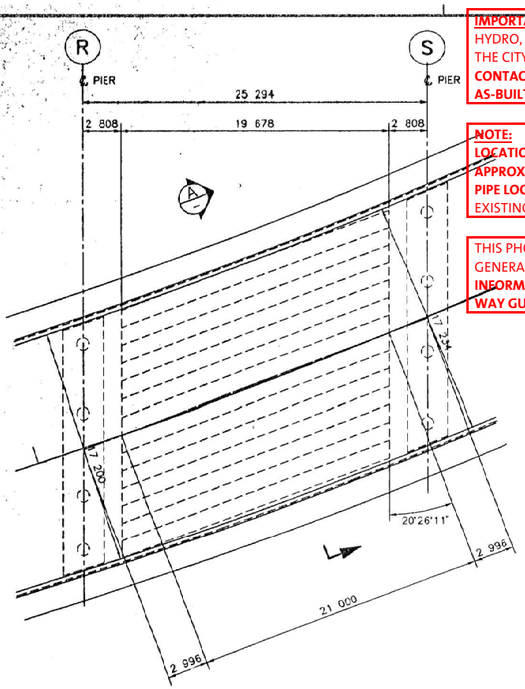
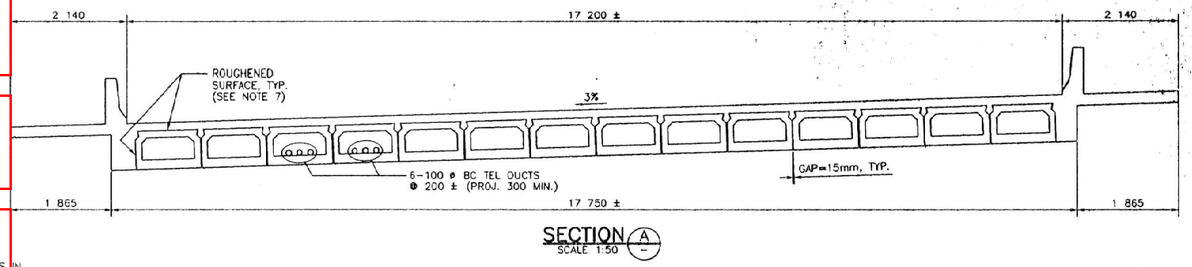
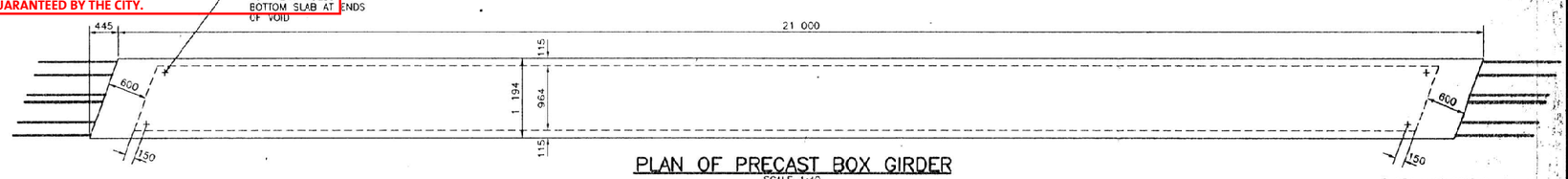


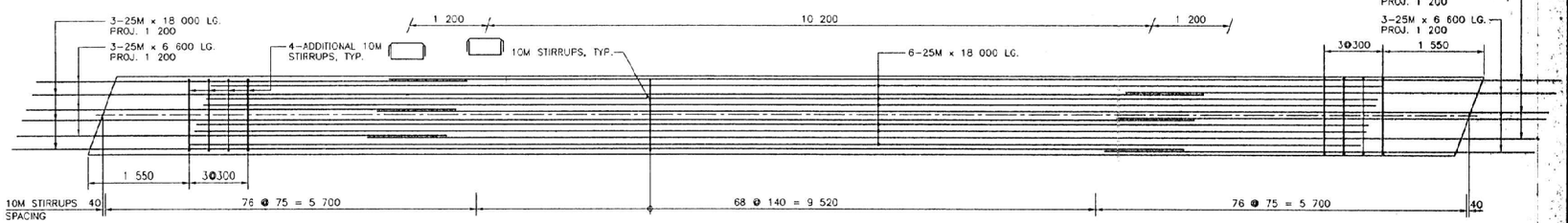
PLAN OF RAIL SPAN
SCALE 1:200



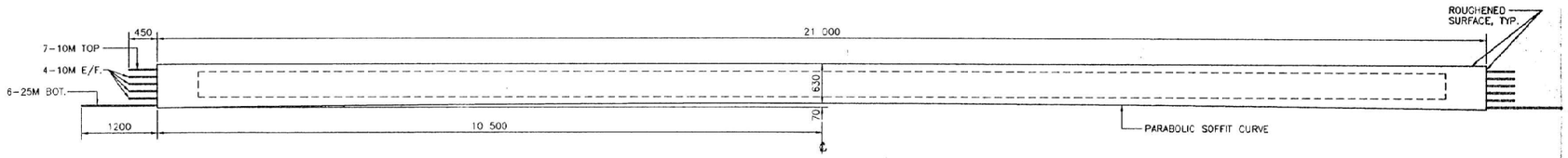
SECTION A
SCALE 1:50



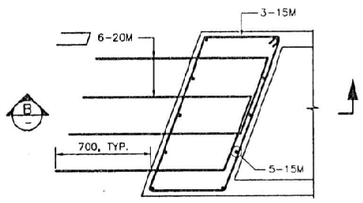
PLAN OF PRECAST BOX GIRDER
SCALE 1:40



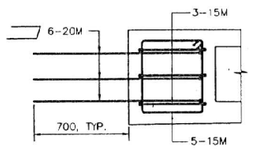
BOTTOM FLANGE REINFORCING
SCALE 1:40



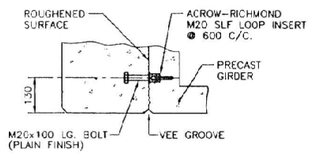
ELEVATION OF PRECAST BOX GIRDER
SCALE 1:40



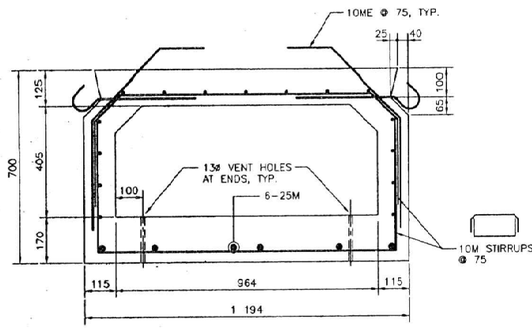
END DIAPHRAGM REINFORCING
SCALE 1:20



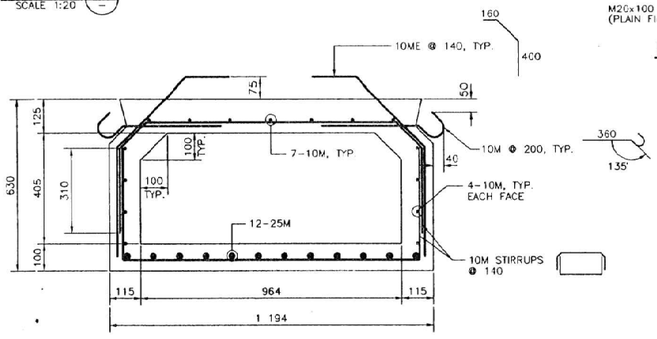
SECTION B
SCALE 1:20



FASCIA DETAIL
SCALE 1:10



GIRDER SECTION AT END
SCALE 1:10



GIRDER SECTION AT MID-SPAN
SCALE 1:10

RECEIVED
DEC 09 1999
CITY OF COQUITLAM
PLANNING AND DEVELOPMENT DEPT.

AUG 14 1997

NOTES:

1. STRINGERS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE M.O.T.H. SPECIFICATION: MANUFACTURE OF PRESTRESSED CONCRETE BOX STRINGER.
2. CONCRETE: MINIMUM COMPRESSIVE STRENGTH OF CONCRETE f'_c=35MPa AT 28 DAYS.
3. REINFORCING STEEL SHALL CONFORM TO C.S.A. G30.18M GRADE 400
4. REINFORCING STEEL SHALL HAVE 35mm MINIMUM COVER UNLESS OTHERWISE NOTED.
5. ALL REINFORCING MARKED 'ME' IS EPOXY COATED.
6. LAP OF BARS FOR SPLICE TO BE AS FOLLOWS UNLESS NOTED OTHERWISE:
   10M BARS – 450.
   SPLICES TO BE STAGGERED.
7. THE FOLLOWING GIRDER SURFACES SHALL BE CONTINUOUSLY ROUGHENED TO AN AMPLITUDE OF ± 6mm:
   - TOP OF TOP FLANGES
   - ENDS OF GORDERS
   - OUTSIDE FACES OF EXTERIOR GIRDERS

H0013-21

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED N.C. DATE SEP. 95
CHECKED D.I.H. DATE SEP. 95
DRAWN C.C. DATE SEP. 95

Rev	Date	Description	Init.
A	OCT. 95	ISSUED FOR CONSTRUCTION	
B	OCT. 95	BC TEL DUCTS REVISED, VENT HOLES ADDED	
C	11.09.95	DIMENSIONS REVISED	
D	01.05.96	DOWELS REVISED	
E	SEPT.96	AS CONSTRUCTED	

REVISIONS

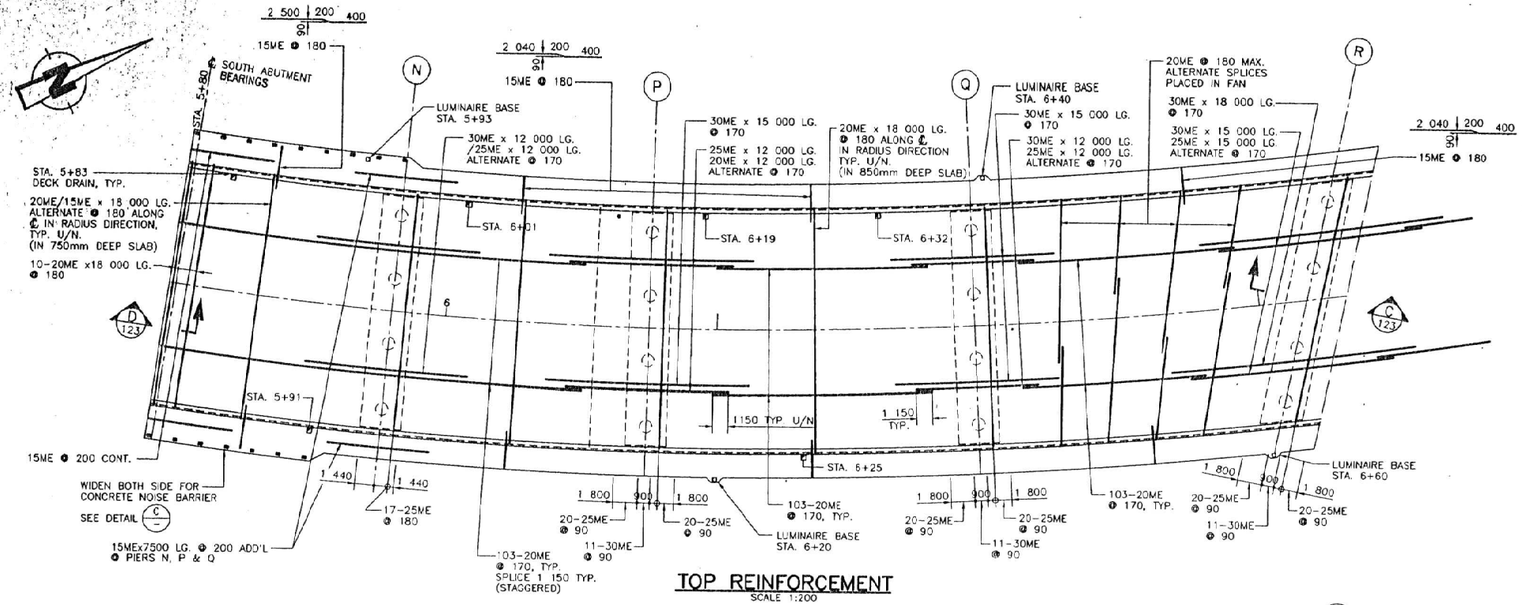
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

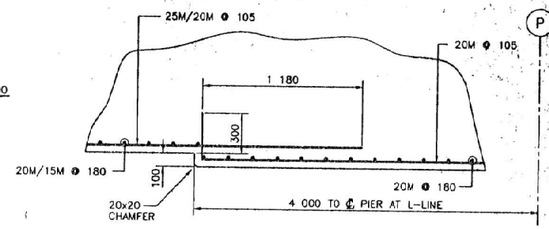
JOHNSON MARINER CONNECTOR NO. 2927 RAIL SPAN

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
	DIRECTOR OF BRIDGE ENGINEERING	CHIEF HIGHWAY ENGINEER
DATE	DATE	DATE
FILE No.	NEGATIVE No.	REG. DRAWING No. 2927-121 E

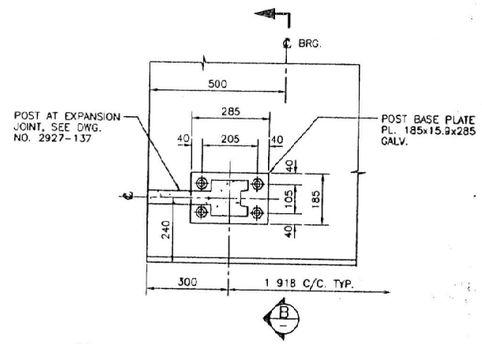
CANCEL PRINTS BEARING PREVIOUS LETTER



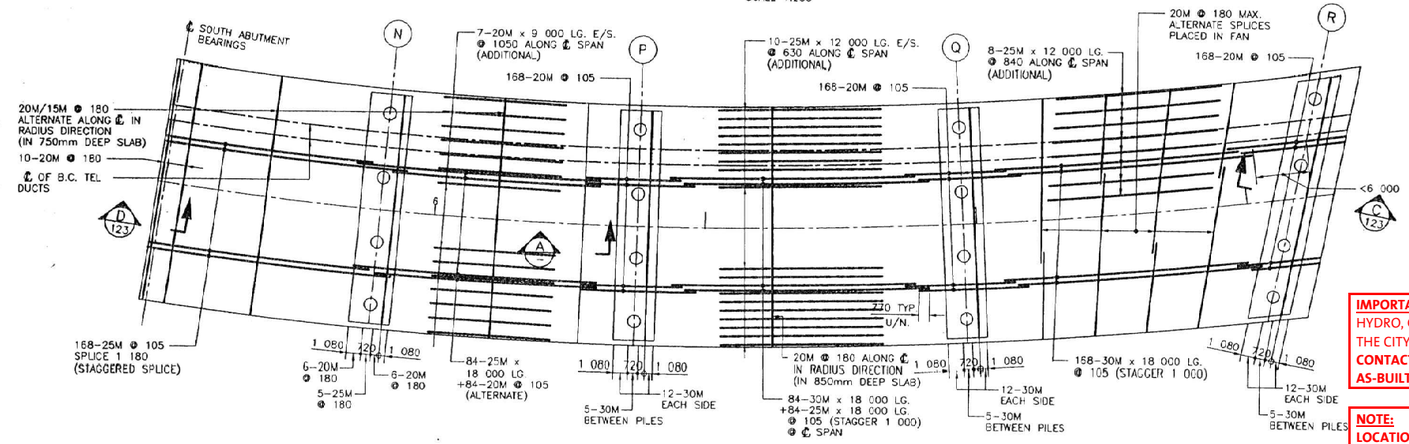
TOP REINFORCEMENT
SCALE 1:200



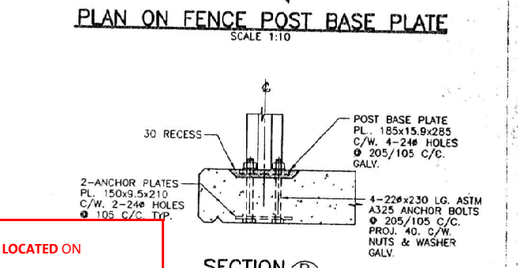
SECTION A
SCALE 1:20



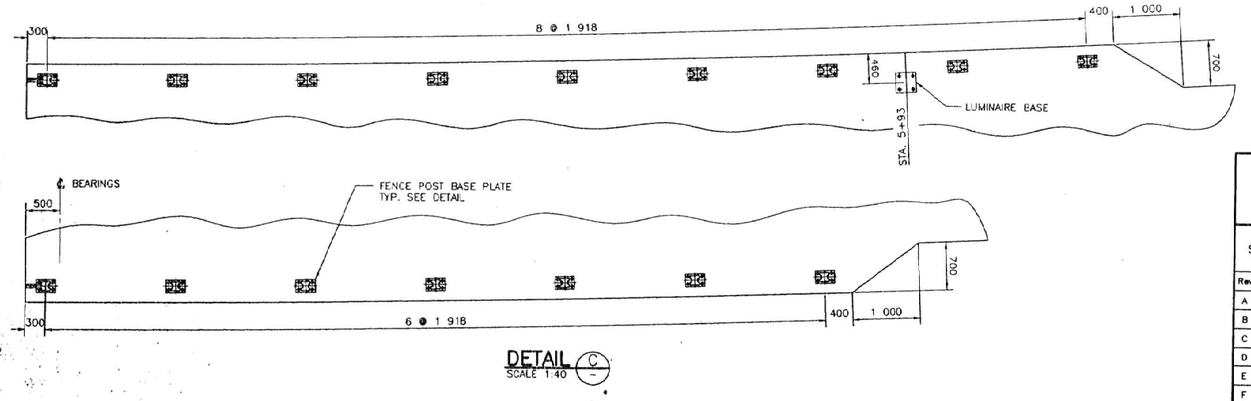
PLAN ON FENCE POST BASE PLATE
SCALE 1:10



BOTTOM REINFORCEMENT
SCALE 1:200



SECTION B
SCALE 1:10



DETAIL C
SCALE 1:40

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NOTE: FOR LUMINAIRE BASE REINFORCEMENT SEE DWG. 2927-134
FOR SIDEWALK & PIER N REINFORCEMENT DETAILS SEE DWG. 2927-123
FOR PIERS P, Q & R REINFORCEMENT DETAILS SEE DWG. 2927-124

H0013-22

AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED N.C. DATE OCT. 95
CHECKED D.H. DATE OCT. 95
DRAWN C.C. DATE OCT. 95

Rev	Date	Description	Init
A	11.14.95	70% SUBMISSION	
B	11.20.95	100% SUBMISSION	
C	12.19.95	REINFORCING & B.C. TEL DUCTS REVISED	
D	01.04.96	ISSUED FOR CONSTRUCTION	
E	01.31.96	DECK FLARE MODIFIED	
F	SEPT.96	AS CONSTRUCTED	

REVISIONS

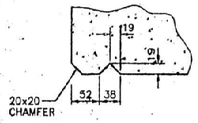
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

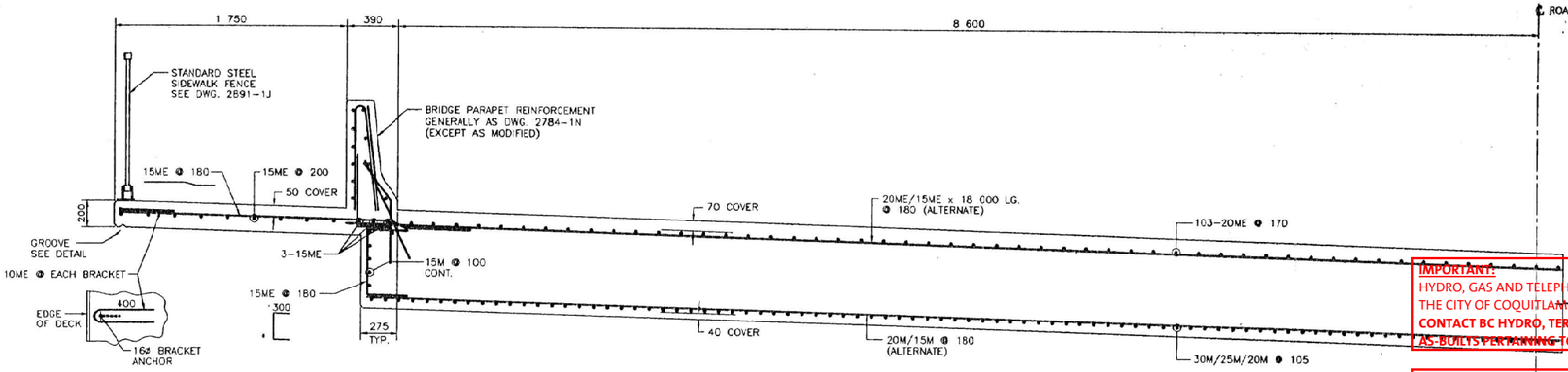
JOHNSON MARINER CONNECTOR NO. 2927
SOUTH END DECK DETAILS SHT. 1

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No. REG.	DRAWING No. 2927-122 F

CANCEL PRINTS BEARING PREVIOUS LETTER



GROOVE DETAIL
SCALE 1:5



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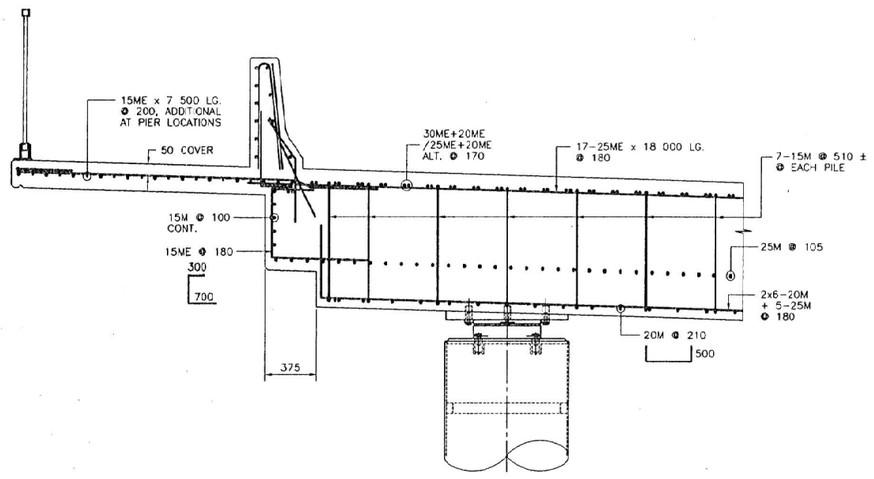
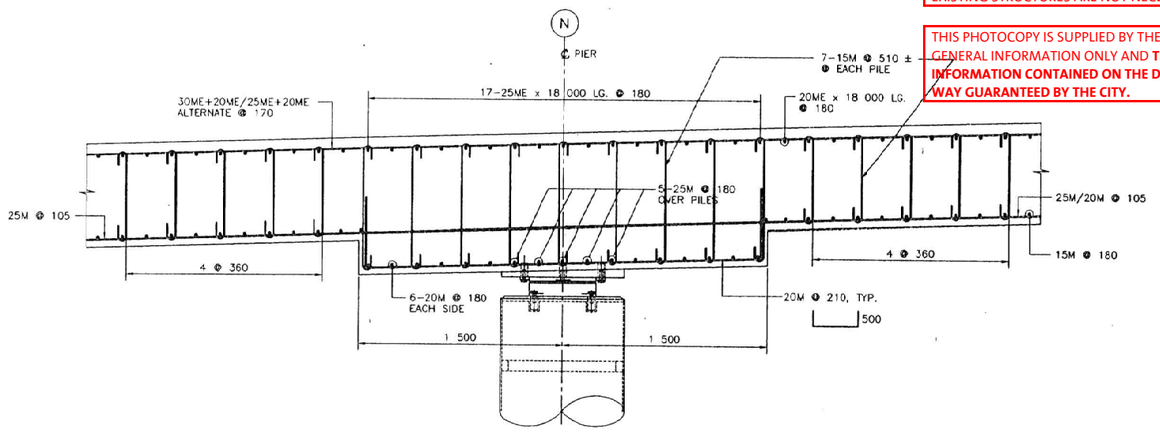
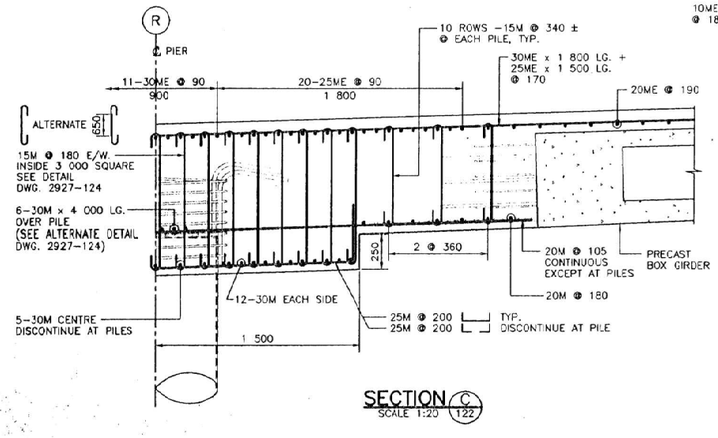
THIS PHOTOCOPY IS SUPPLIED BY THE CITY OF COQUITLAM FOR GENERAL INFORMATION ONLY AND **THE ACCURACY OF INFORMATION CONTAINED ON THE DOCUMENT IS NO WAY GUARANTEED BY THE CITY.**

PART SECTION AT MID-SPAN
SCALE 1:20

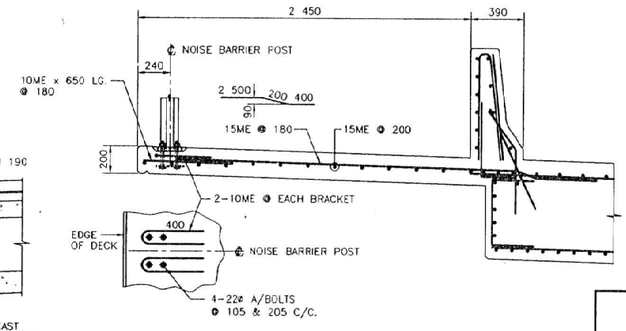




TRANSVERSE SECTION AT EXTERIOR PILE OF PIER 'N'
SCALE 1:20

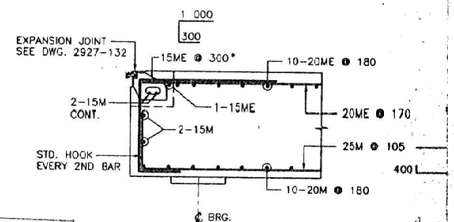


SECTION C
SCALE 1:20 (122)



SIDEWALK SECTION NEAR SOUTH ABUTMENT
SCALE 1:20

LONGITUDINAL SECTION AT PIER 'N'
SCALE 1:20



* NOTE: POSITION TO AVOID ANCHOR PLATES

SECTION D
SCALE 1:20 (122)

RECEIVED
DEC 0 9 1909
CITY OF COQUITLAM
PLANNING AND DEVELOPMENT DEPT.

NOTE: HAUNCHES MAY BE FORMED PERPENDICULAR TO GRADE OF DECK

H0013-23

AUG 1 4 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED N.C. DATE OCT. 95
CHECKED D.I.H. DATE OCT. 95
DRAWN C.C. DATE OCT. 95

Rev.	Date	Description	Init
B	11.20.95	100% SUBMISSION	
C	12.07.95	ISSUED FOR CONSTRUCTION	
D	12.19.95	REINFORCING REVISED	
E	01.15.96	REINFORCING REVISED	
F	02.01.96	REINFORCING REVISED	
G	SEPT.96	AS CONSTRUCTED	

REVISIONS

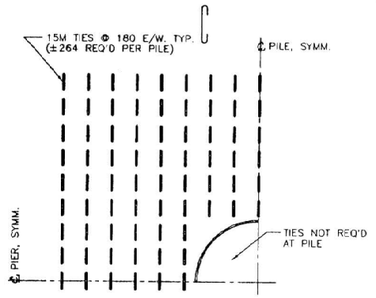
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

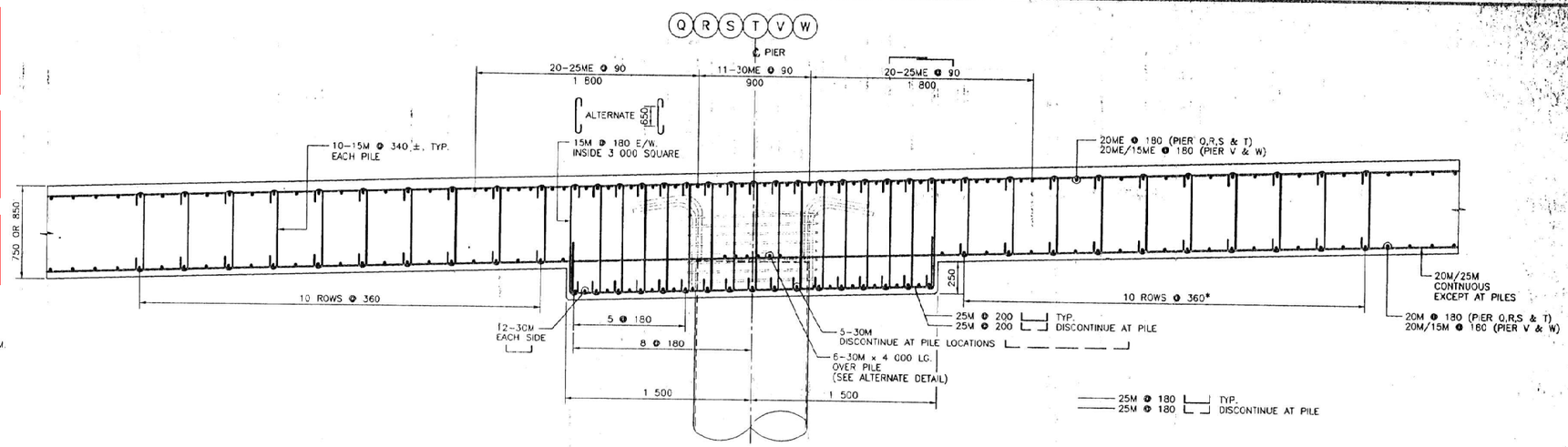
JOHNSON MARINER CONNECTOR NO. 2927
SOUTH END DECK DETAILS SHT. 2

PREPARED BY
RECOMMENDED
DIRECTOR OF BRIDGE ENGINEERING
DATE
ACCEPTED FOR CONSTRUCTION
CHIEF HIGHWAY ENGINEER
DATE
FILE No.
NEGATIVE No.
REG.
DRAWING No. 2927-123 (G)

CANCEL PRINTS BEARING PREVIOUS LETTER

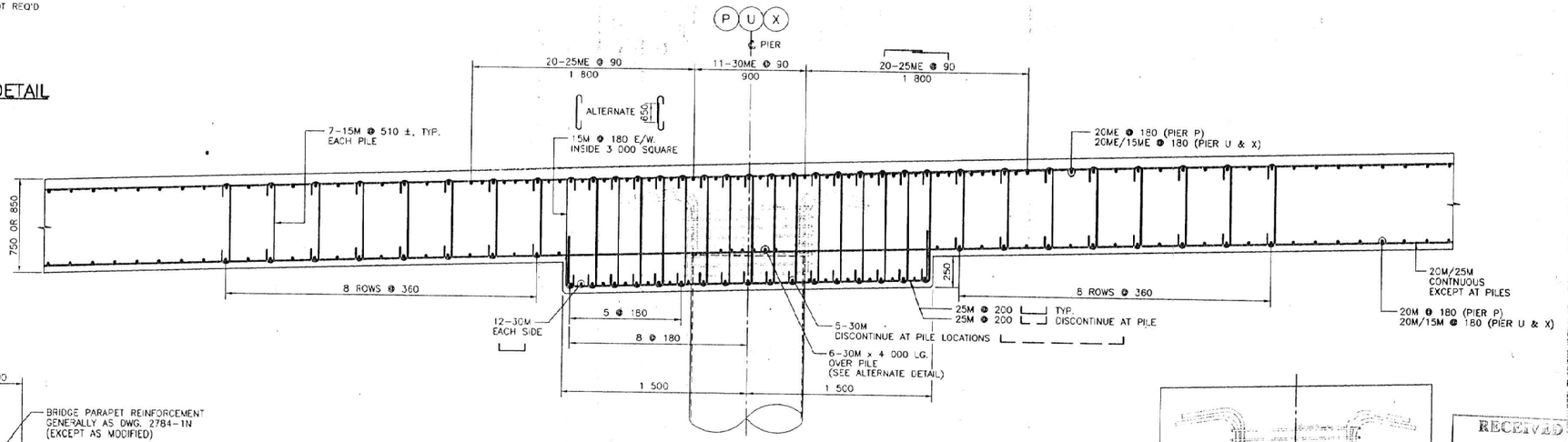


PLAN OF TYPICAL 15M TIE LAYOUT DETAIL
SCALE 1:20

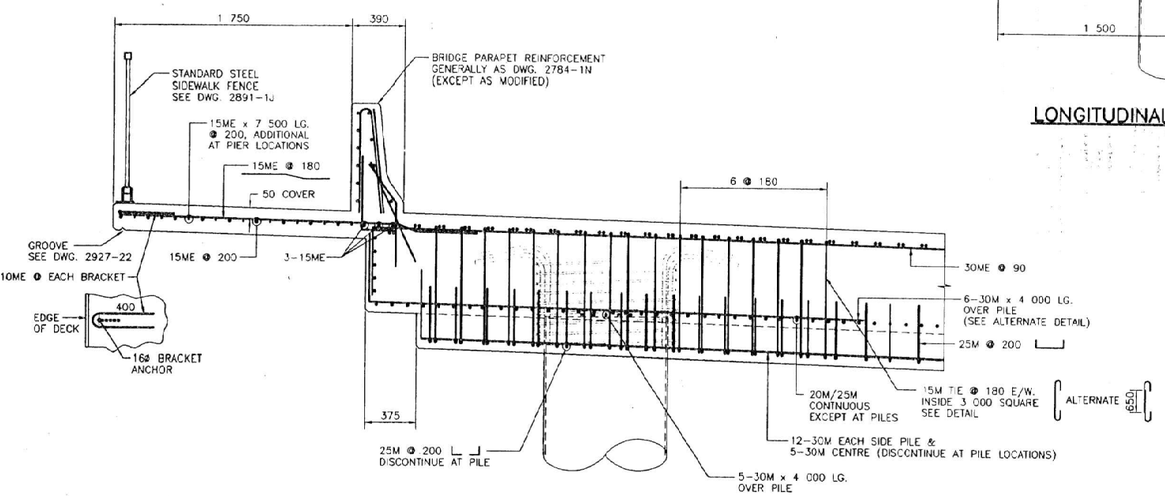


LONGITUDINAL SECTION AT PIER
SCALE 1:20

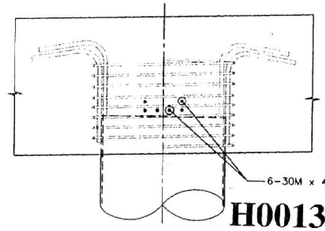
* NOTE: FOR STIRRUP DETAILS IN RAIL SPAN ℄ R & S SEE DWG. 2927-123



LONGITUDINAL SECTION AT PIER
SCALE 1:20



TRANSVERSE SECTION AT EXTERIOR PILE
SCALE 1:20



ALTERNATE DETAIL
SCALE 1:20

NOTE: HAUNCHES MAY BE FORMED PERPENDICUALR TO GRADE OF DECK.

RECEIVED
DEC 08 1995
CITY OF COQUITLAM
PLANNING AND DEVELOPMENT DEPT.

H0013-24

AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED
DESIGNED N.C. DATE OCT. 95
CHECKED D.H.H. DATE OCT. 95
DRAWN C.C. DATE OCT. 95

Rev	Date	Description	Init	
B	11.20.95	100% SUBMISSION		
C	12.07.95	ISSUED FOR CONSTRUCTION		
D	12.19.95	REINFORCING REVISED		
E	01.15.96	REINFORCING REVISED		
F	02.01.96	REINFORCING REVISED		
G	SEPT.96	AS CONSTRUCTED		

REVISIONS

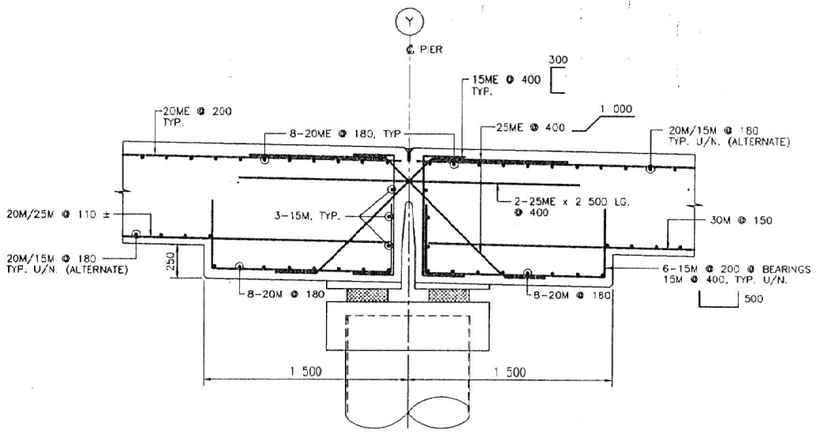
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
PIER REINFORCING DETAILS SHT. 1

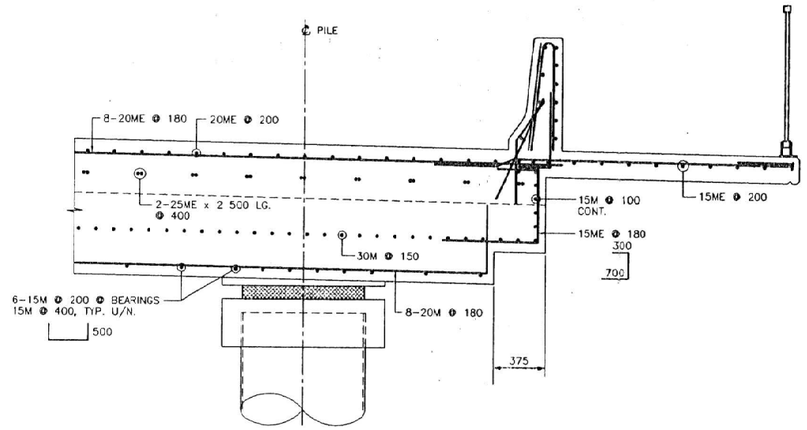
PREPARED BY
RECOMMENDED
DIRECTOR OF BRIDGE ENGINEERING
DATE
ACCEPTED FOR CONSTRUCTION
CHIEF HIGHWAY ENGINEER
DATE
FILE No.
NEGATIVE No.
REG.
DRAWING No. 2927-124 G

CANCEL PRINTS BEARING PREVIOUS LETTER

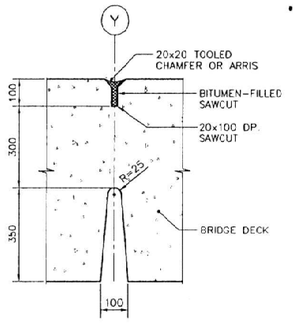


LONGITUDINAL SECTION AT PIER 'Y'
SCALE 1:20

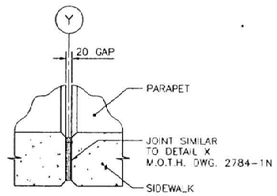
NOTE: HAUNCHES MAY BE FORMED PERPENDICULAR TO GRADE.



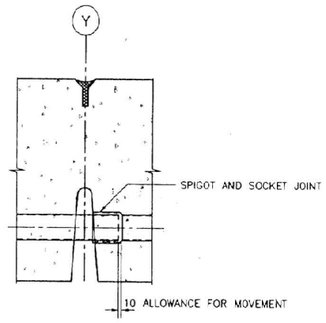
TRANSVERSE SECTION AT EXTERIOR PILE OF PIER 'Y'
SCALE 1:20



HINGE DETAILS
SCALE 1:10



SIDWALK DETAIL AT Y
SCALE 1:10



BC TEL DUCT DETAIL AT HINGE
SCALE 1:10

IMPORTANT:
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CONTACT BC HYDRO, TERASEN GAS AND TELUS FOR CURRENT AS-BUILTS PERTAINING TO THESE UTILITIES.

NOTE:
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H0013-25

AUG 1 4 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED N.C. DATE OCT. 95
CHECKED D.H. DATE OCT. 95
DRAWN C.C. DATE OCT. 95

Rev	Date	Description	Init	
A	11.20.95	100% SUBMISSION		
B	12.07.95	ISSUED FOR CONSTRUCTION		
C	12.22.95	REINFORCING REVISED		
D	SEPT.96	AS CONSTRUCTED		

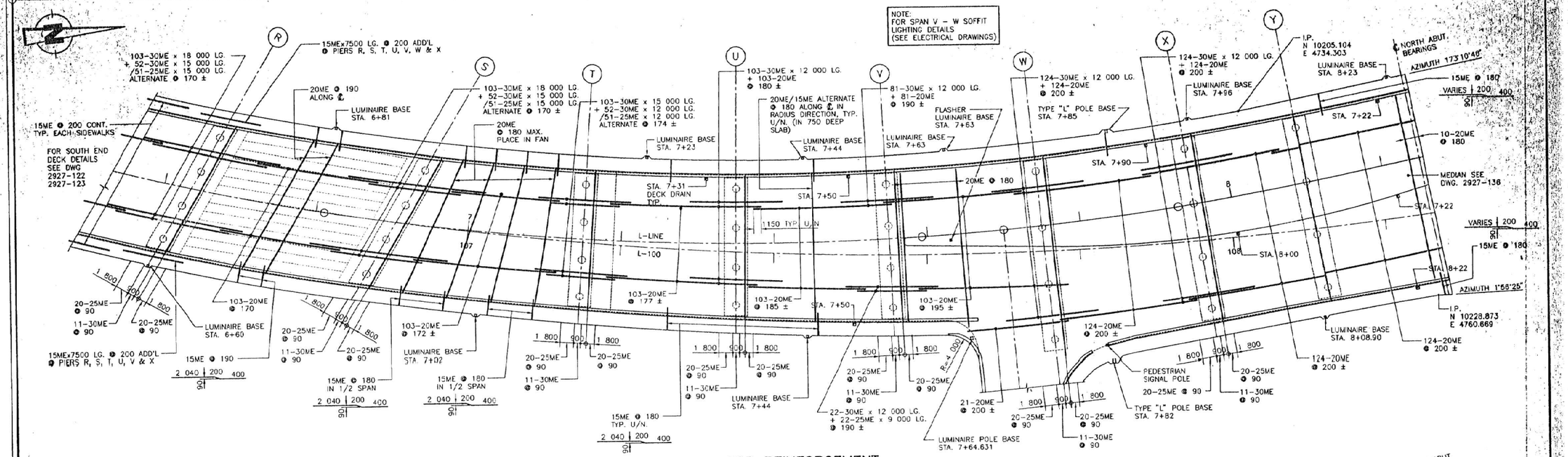
REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

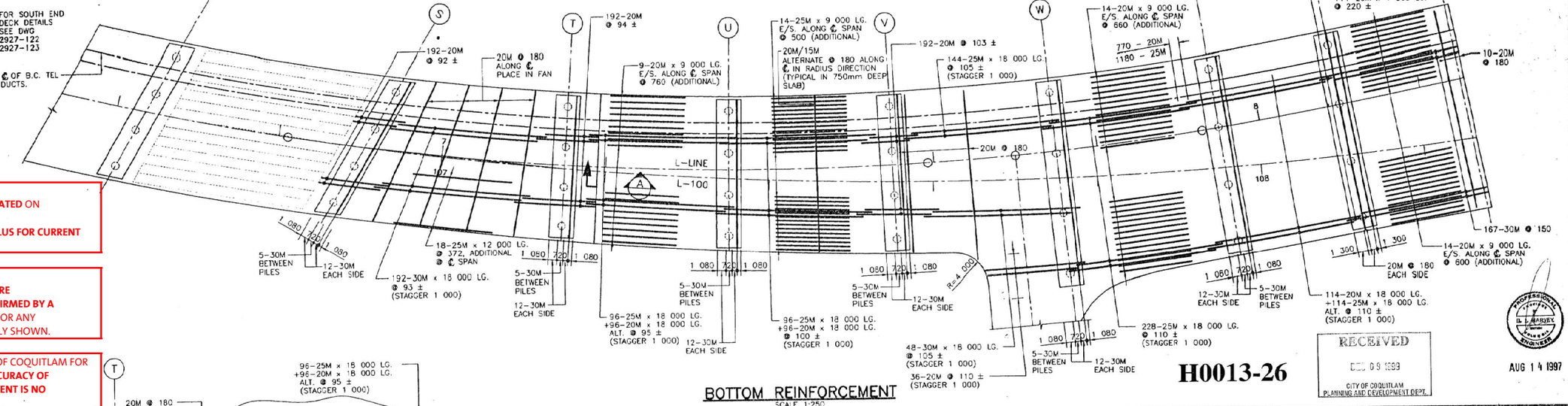
SOUTH COAST REGION
MARINER WAY OVERHEAD
JOHNSON MARINER CONNECTOR NO. 2927
PIER REINFORCING DETAILS SHT. 2

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No. REG.	DRAWING No. 2927-125 D

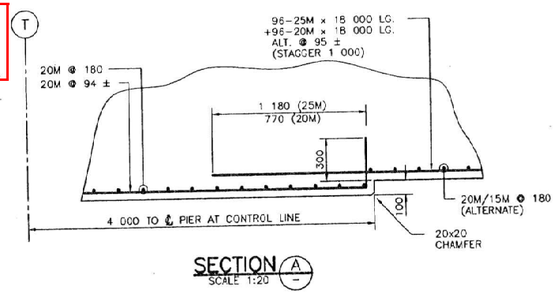
CANCEL PRINTS BEARING PREVIOUS LETTER



TOP REINFORCEMENT
SCALE 1:250



BOTTOM REINFORCEMENT
SCALE 1:250



SECTION A
SCALE 1:20

NOTE: FOR LUMINAIRE BASE REINFORCEMENT SEE DWG. 2927–134
FOR SIDEWALK & PIER P, Q, R, S, T, U, V, W, X & Y
REINFORCEMENT DETAILS SEE DWG. 2927–23 & 2927–125

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:
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ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED N.C. DATE OCT. 95
CHECKED D.H.H. DATE OCT. 95
DRAWN C.C. DATE OCT. 95

Rev	Date	Description	Init
D	12.20.95	REINFORCING & B.C. TEL DUCTS REVISED	
E	02.01.96	REINFORCING REVISED	
F	02.15.96	POLE BASES REVISED	
G	03.05.96	FLASHER LUMINAIRE BASE ADDED	
H	03.29.96	ADVANCE WARNING SIGN DELETED & REINF. REVISED	
J	SEPT.96	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD
JOHNSON MARINER CONNECTOR NO. 2927
NORTH END DECK DETAILS SHT. 1

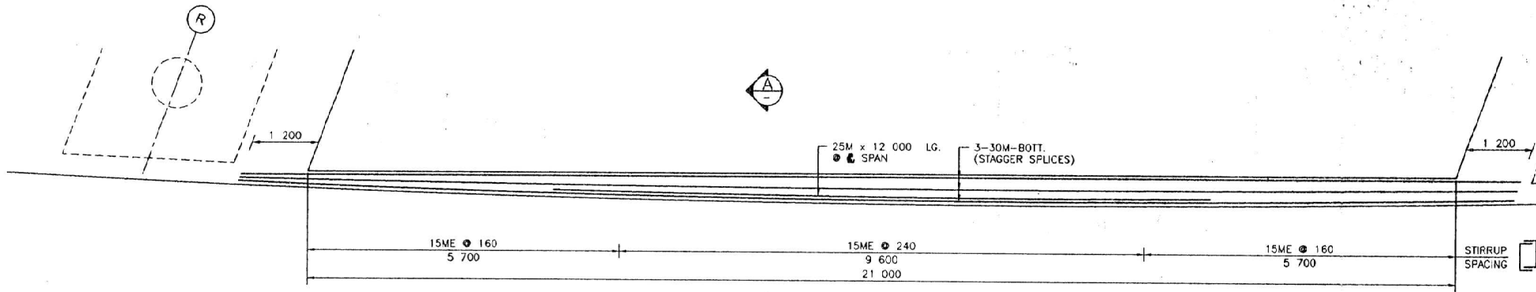
PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
	DIRECTOR OF BRIDGE ENGINEERING	CHIEF HIGHWAY ENGINEER
DATE	DATE	DATE
FILE No.	NEGATIVE No.	REG. DRAWING No. 2927–126 J

CANCEL PRINTS BEARING PREVIOUS LETTER

H0013-26

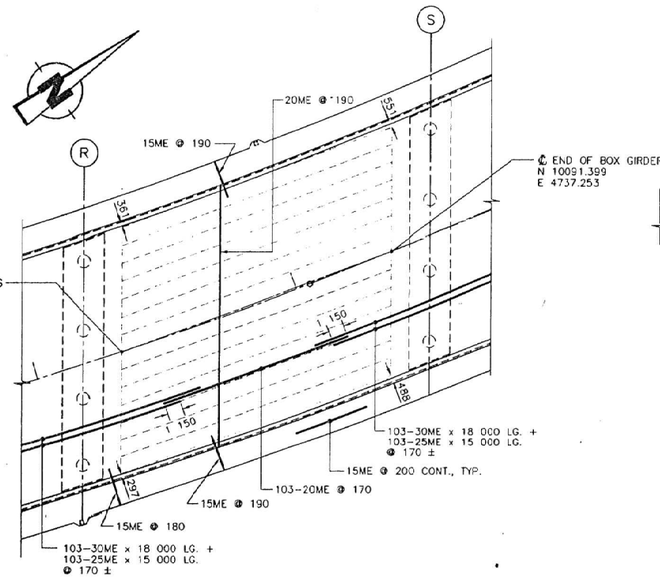
RECEIVED
DEC 09 1999
CITY OF COQUITLAM
PLANNING AND DEVELOPMENT DEPT.

AUG 14 1997

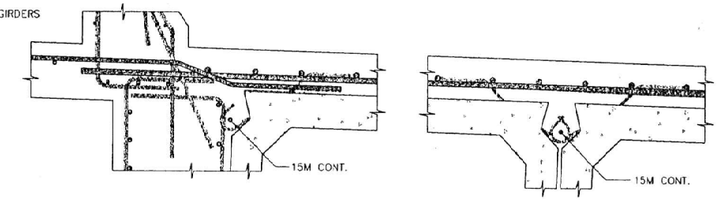


PLAN ON BOTTOM REINFORCEMENT
SCALE 1:50

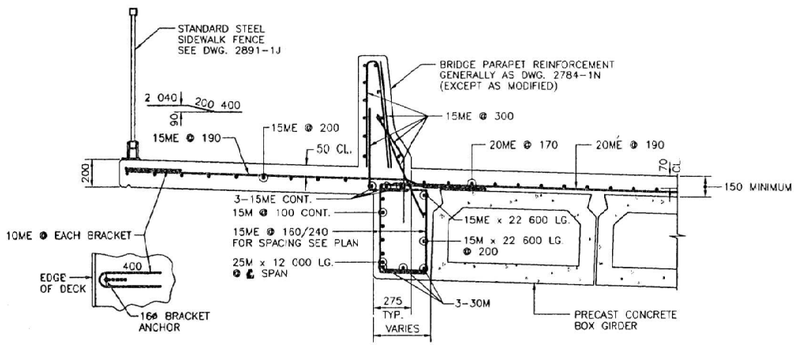
EAST SIDE CAST–IN–PLACE FASCIA SHOWN
WEST SIDE SIMILAR



PLAN OF RAIL SPAN
SCALE 1:200



DECK REINF. DETAILS
SCALE 1:10



SECTION A
SCALE 1:20

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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CITY OF COQUITLAM

H0013-27

D. L. HARVEY ENGINEER

AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED N.C. DATE OCT. 95
CHECKED D.I.H. DATE OCT. 95
DRAWN C.C. DATE OCT. 95

Rev	Date	Description	Init
A	11.28.95	100% SUBMISSION	
B	12.07.95	ISSUED FOR CONSTRUCTION	
C	12.22.95	REINFORCING REVISED	
D	01.04.96	ISSUED FOR CONSTRUCTION	
E	SEPT.96	AS CONSTRUCTED	

REVISIONS

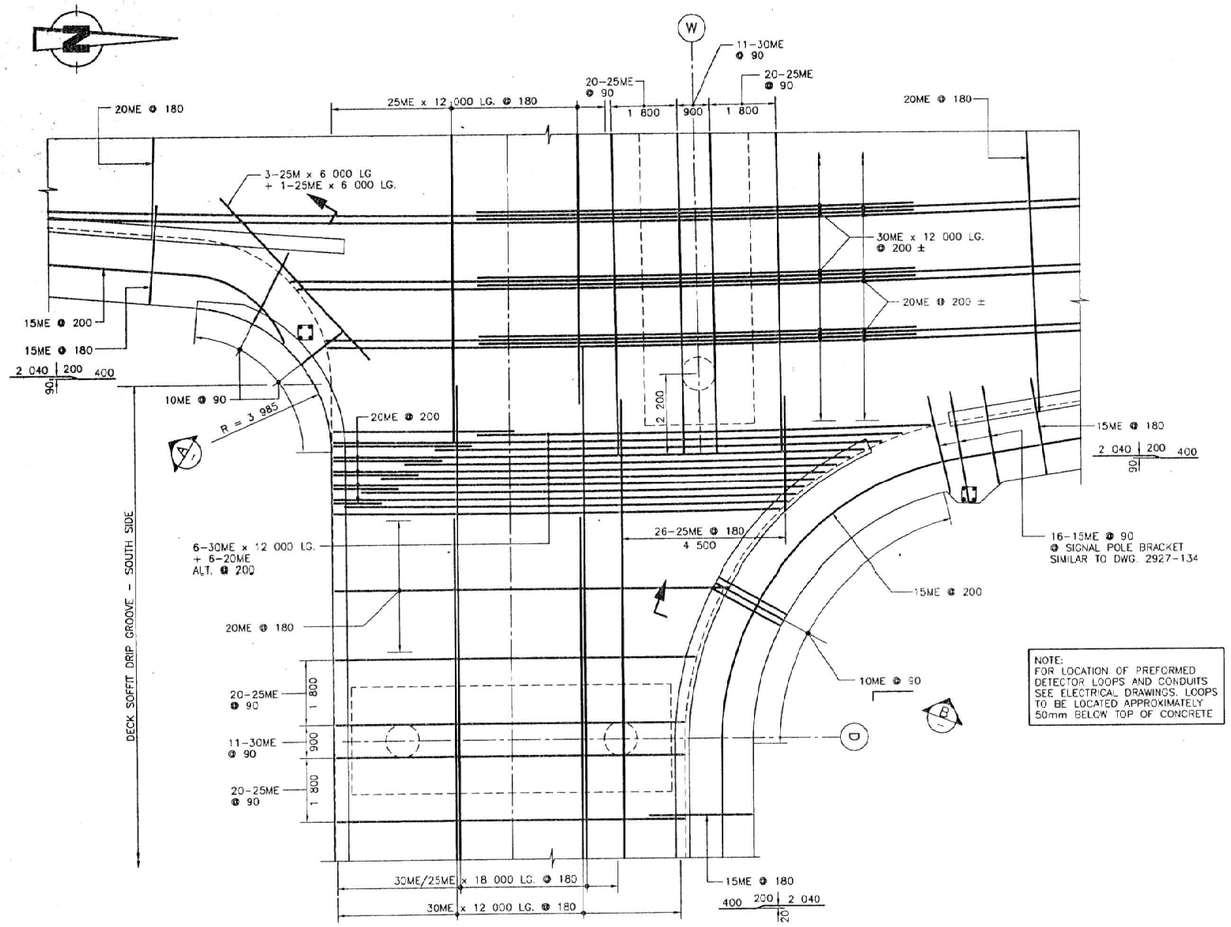
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
NORTH END DECK DETAILS SHT. 2

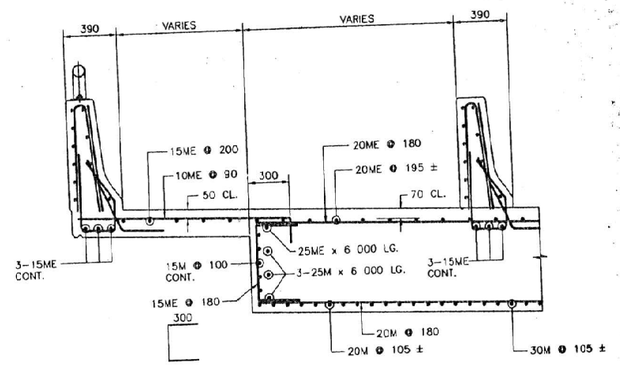
PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No.	REG. DRAWING No. 2927–127 E

CANCEL PRINTS BEARING PREVIOUS LETTER

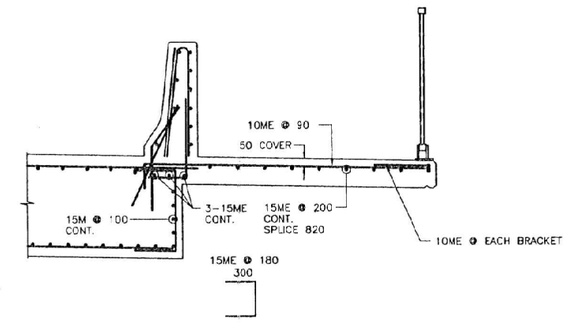


NOTE:
FOR LOCATION OF PREFORMED DETECTOR LOOPS AND CONDUITS SEE ELECTRICAL DRAWINGS. LOOPS TO BE LOCATED APPROXIMATELY 50mm BELOW TOP OF CONCRETE

PART PLAN OF TOP REINFORCEMENT
SCALE 1:75



SECTION A
SCALE 1:20



SECTION B
SCALE 1:20

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.

H0013-28

AUG 1 4 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED
DESIGNED N.C. DATE NOV. 95
CHECKED D.H.H. DATE NOV. 95
DRAWN D.C. DATE NOV. 95

Rev	Date	Description	Init
A	11,28,95	100% SUBMISSION	
B	12,07,95	ISSUED FOR CONSTRUCTION	
C	12,19,95	LOOP NOTE ADDED	
D	01,04,96	REBAR SIZE REVISED	
E	SEPT.96	AS CONSTRUCTED	

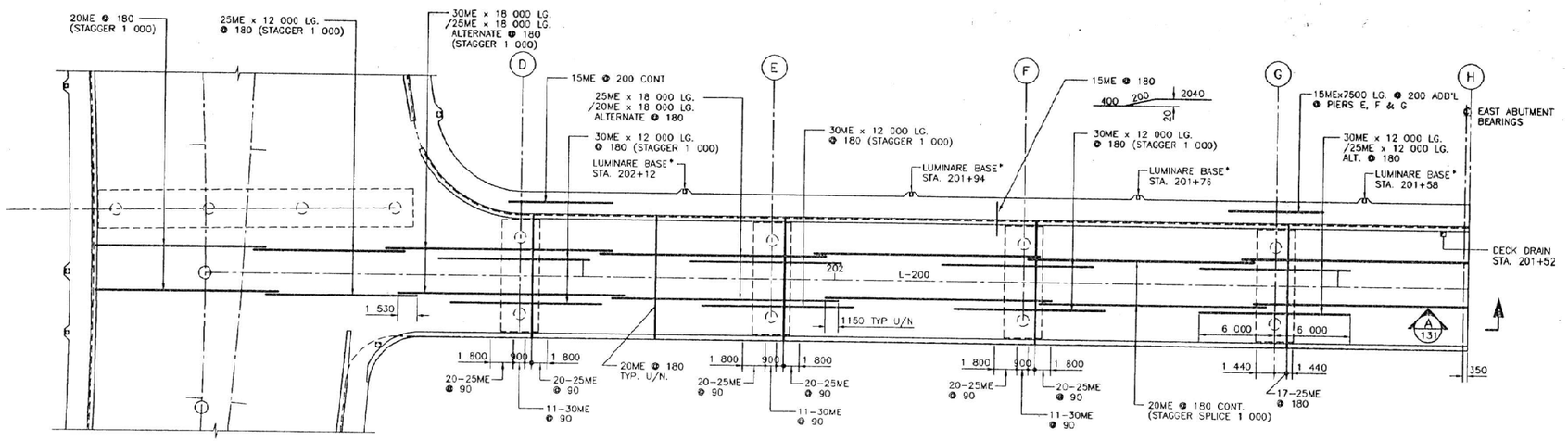
REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD
JOHNSON MARINER CONNECTOR NO. 2927
NORTH END DECK DETAILS SHT. 3

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING / DATE	CHIEF HIGHWAY ENGINEER / DATE
FILE No.	NEGATIVE No. / REG.	DRAWING No. 2927-128 E

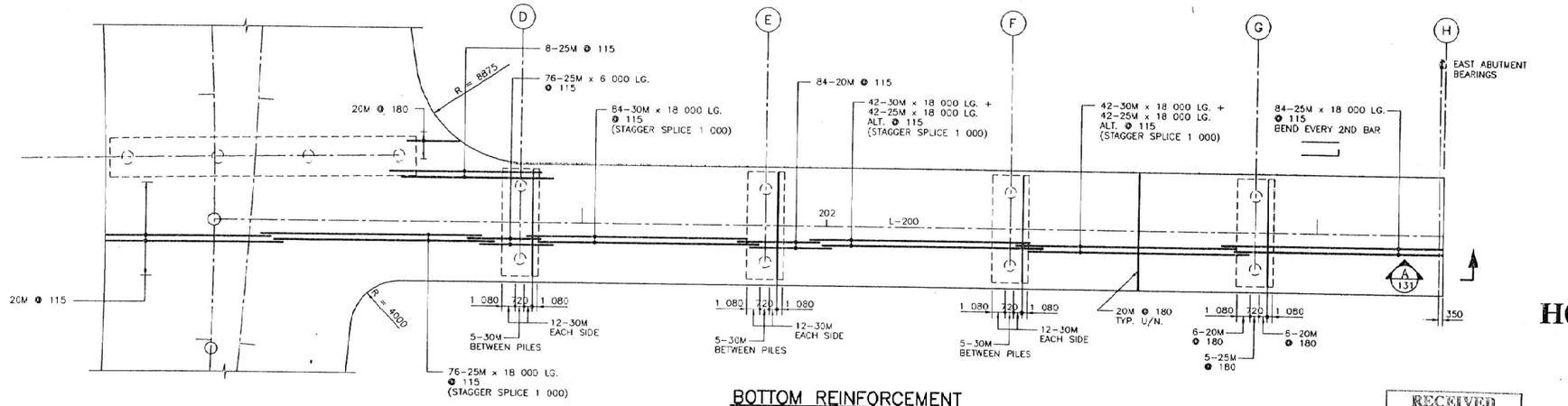
CANCEL PRINTS BEARING PREVIOUS LETTER



• NOTE: LUMINAIRE BASES FOR FUTURE USE. SEE ELECTRICAL DWGS FOR ALLOWABLE TYPE AND SIZE OF LUMINAIRE.

TOP REINFORCEMENT
SCALE 1:200

NOTE: FOR INTERSECTION REINFORCING DETAIL SEE DWG. 2927-128.



BOTTOM REINFORCEMENT
SCALE 1:200

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:
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H0013-29

AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED M.C. DATE NOV. 95
CHECKED D.J.H. DATE NOV. 95
DRAWN C.C. DATE NOV. 95

Rev	Date	Description	Init
A	11.28.95	100% SUBMISSION	
B	12.07.95	ISSUED FOR CONSTRUCTION	
C	01.04.96	SPLICE NOTE REMOVED	
D	SEPT.96	AS CONSTRUCTED	

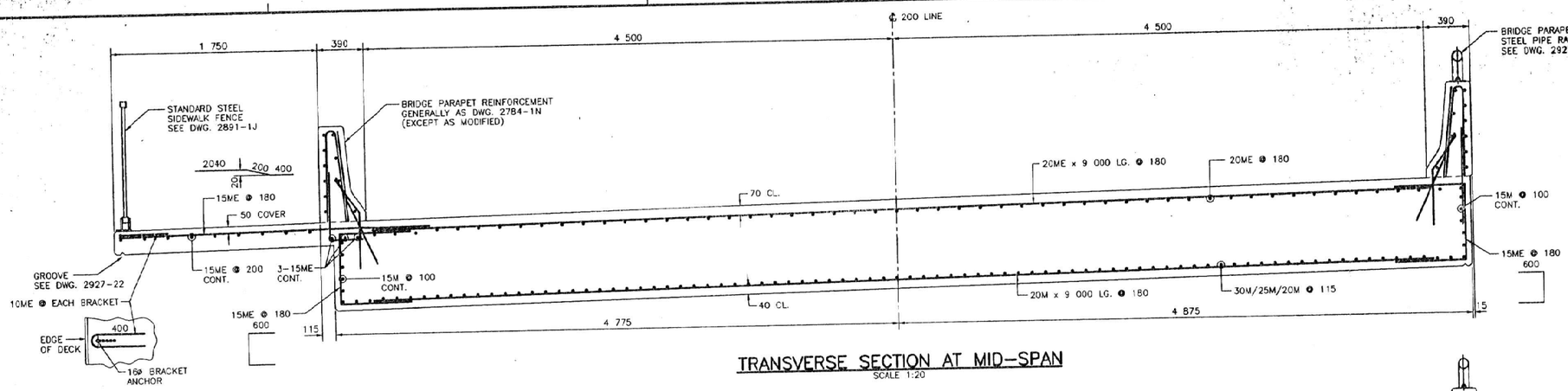
REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

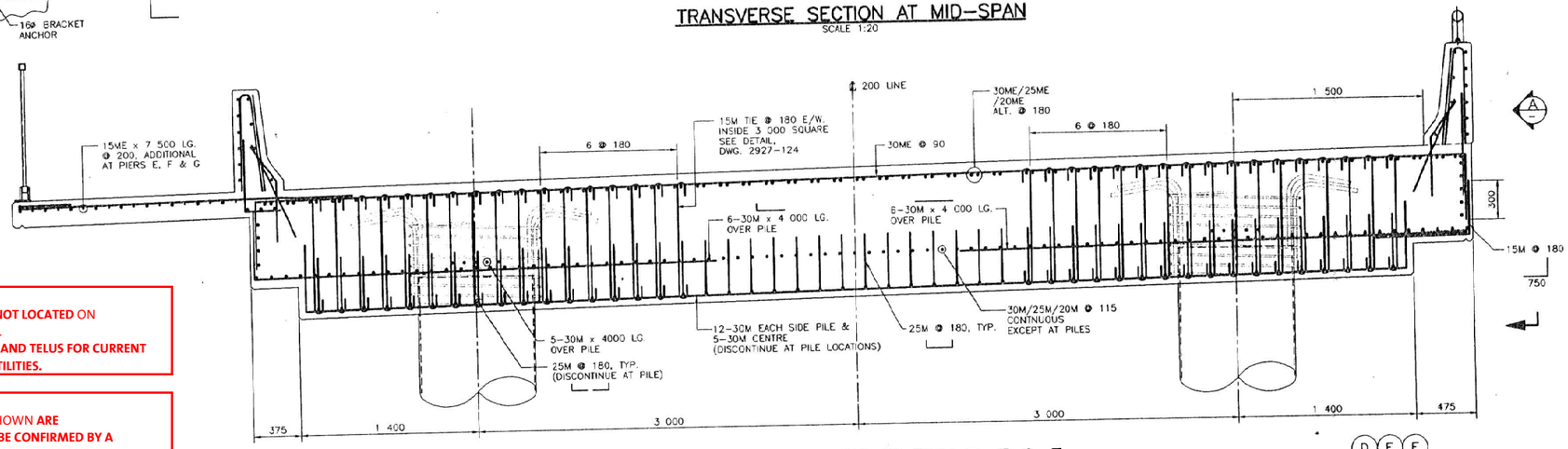
SOUTH COAST REGION
MARINER WAY OVERHEAD
JOHNSON MARINER CONNECTOR NO. 2927
EAST RAMP DECK DETAILS SHT. 1

PREPARED BY
RECOMMENDED
DIRECTOR OF BRIDGE ENGINEERING
DATE
ACCEPTED FOR CONSTRUCTION
CHIEF HIGHWAY ENGINEER
DATE
FILE No.
NEGATIVE No.
REV.
DRAWING No. 2927-129 D

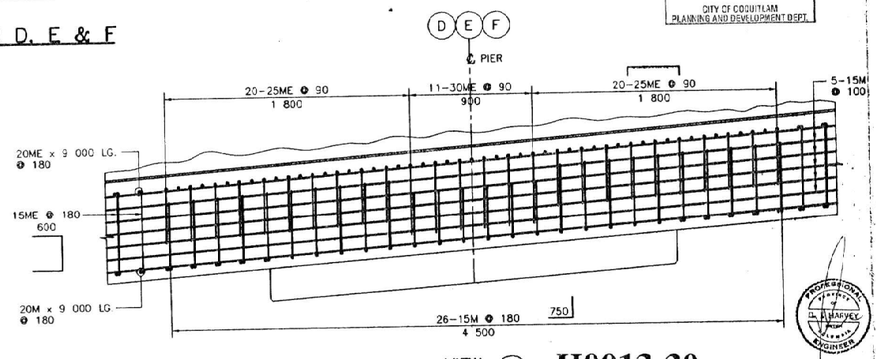
CANCEL PRINTS BEARING PREVIOUS LETTER



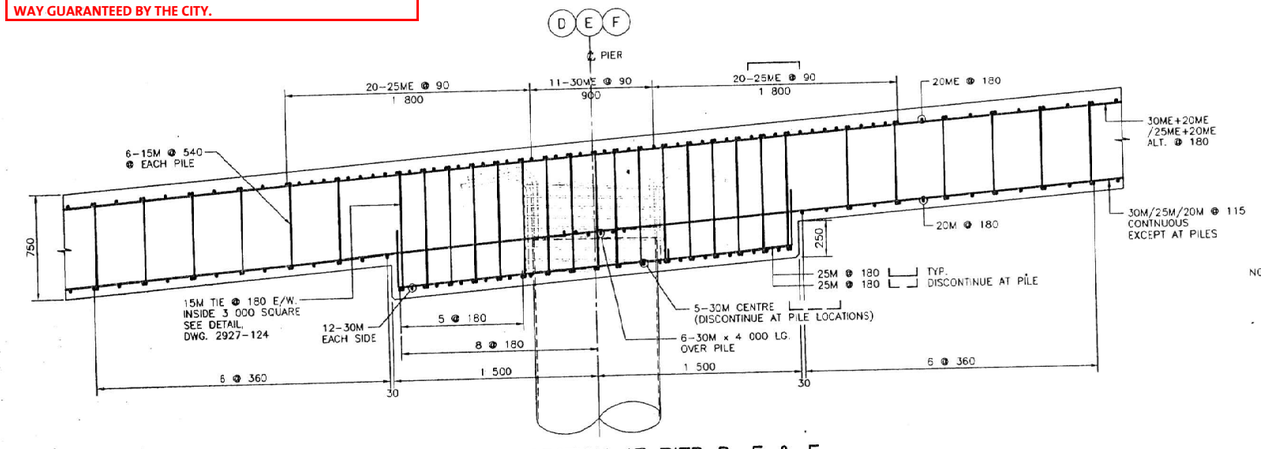
TRANSVERSE SECTION AT MID-SPAN
SCALE 1:20



TRANSVERSE SECTION AT PIER D, E & F
SCALE 1:20



VIEW A
SCALE 1:20



LONGITUDINAL SECTION AT PIER D, E & F
SCALE 1:20

NOTE: HAUNCHES MAY BE FORMED PERPENDICULAR TO GRADE OF DECK.

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:
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ASSOCIATED ENGINEERING

SCALE AS NOTED
DESIGNED N.C. DATE NOV. 95
CHECKED D.J.H. DATE NOV. 95
DRAWN C.C. DATE NOV. 95

Rev	Date	Description	Init
A	11.29.95	100% SUBMISSION	
B	12.07.95	ISSUED FOR CONSTRUCTION	
C	01.15.96	REINF. REVISED	
D	SEPT.96	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

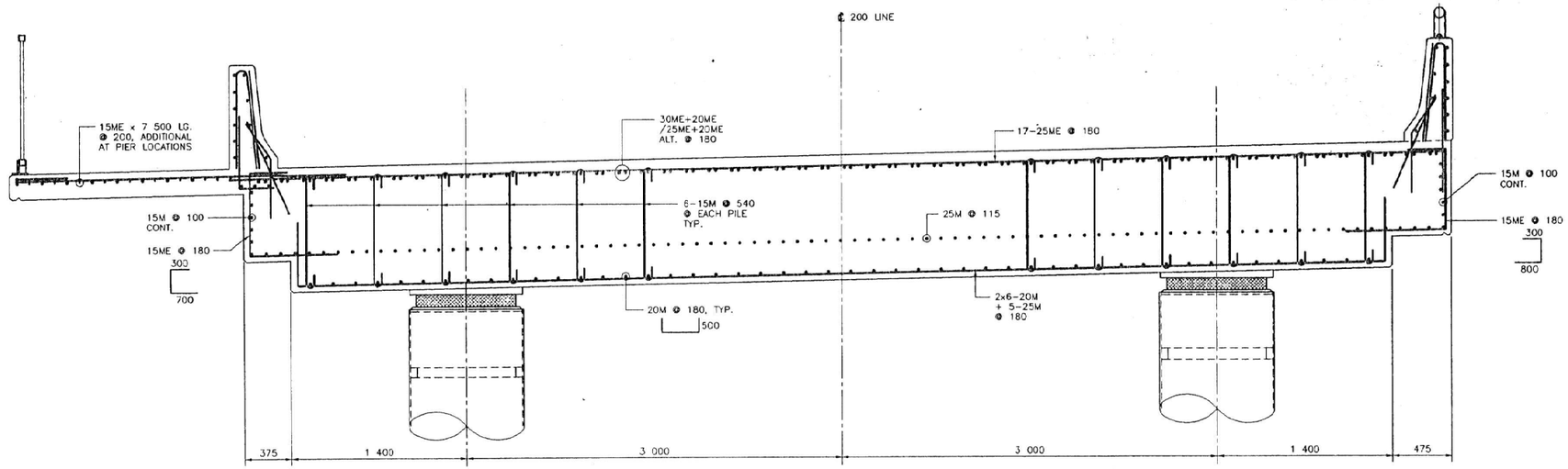
JOHNSON MARINER CONNECTOR NO. 2927
EAST RAMP DECK DETAILS SHT. 2

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No.	REG. DRAWING No. 2927-130 D

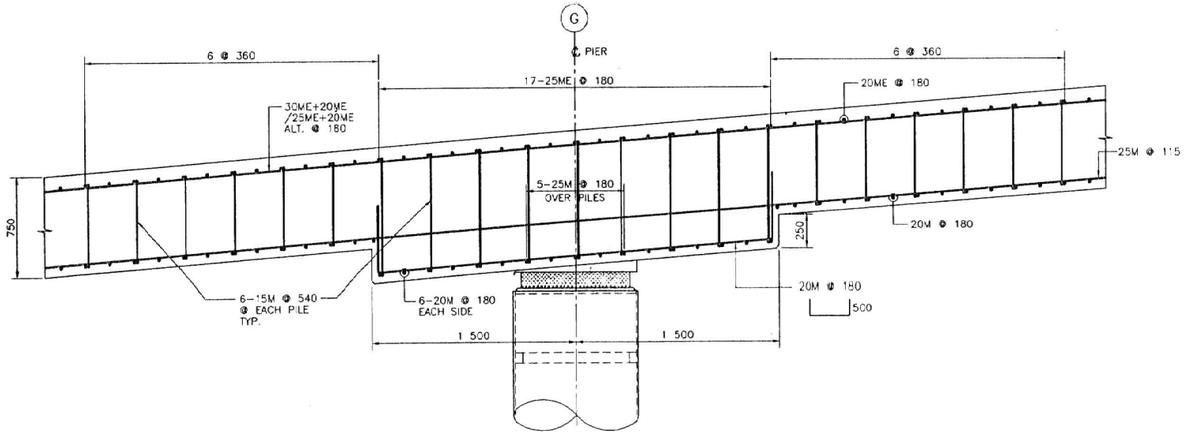
CANCEL PRINTS BEARING PREVIOUS LETTER

H0013-30

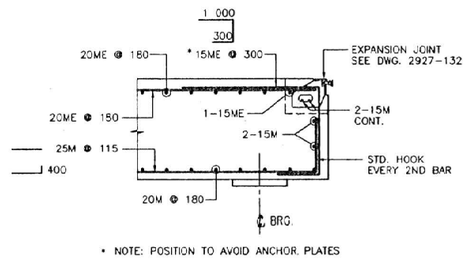
AUG 14 1997



TRANSVERSE SECTION AT PIER G
SCALE 1:20



LONGITUDINAL SECTION AT PIER G
SCALE 1:20



* NOTE: POSITION TO AVOID ANCHOR PLATES

SECTION A (129)
SCALE 1:20

IMPORTANT:
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NOTE: HAUNCHES MAY BE FORMED PERPENDICULAR TO GRADE.

H0013-31

AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED
DESIGNED N.C. DATE NOV. 95
CHECKED D.I.H. DATE NOV. 95
DRAWN C.C. DATE NOV. 95

Rev	Date	Description	Init
A	11,29,95	100% SUBMISSION	
B	12,07,95	ISSUED FOR CONSTRUCTION	
C	SEPT.96	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
EAST RAMP DECK DETAILS SHT. 3

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No.	REG. DRAWING No. 2927-131 C

CANCEL PRINTS BEARING PREVIOUS LETTER

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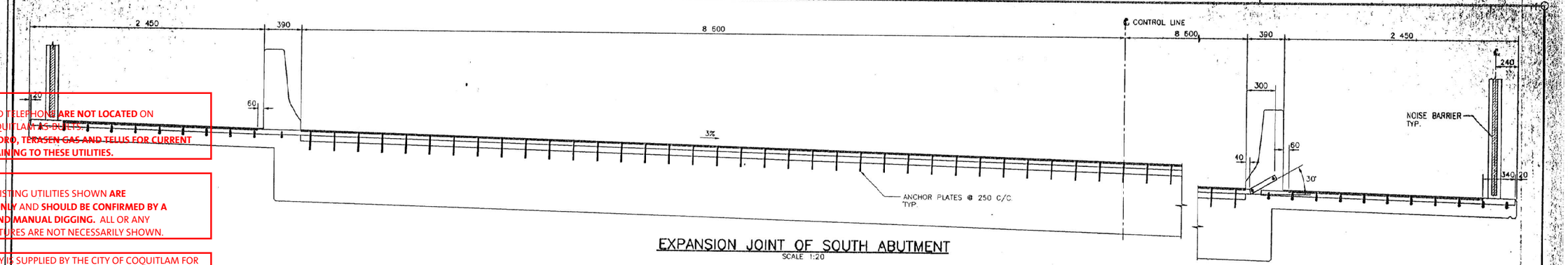
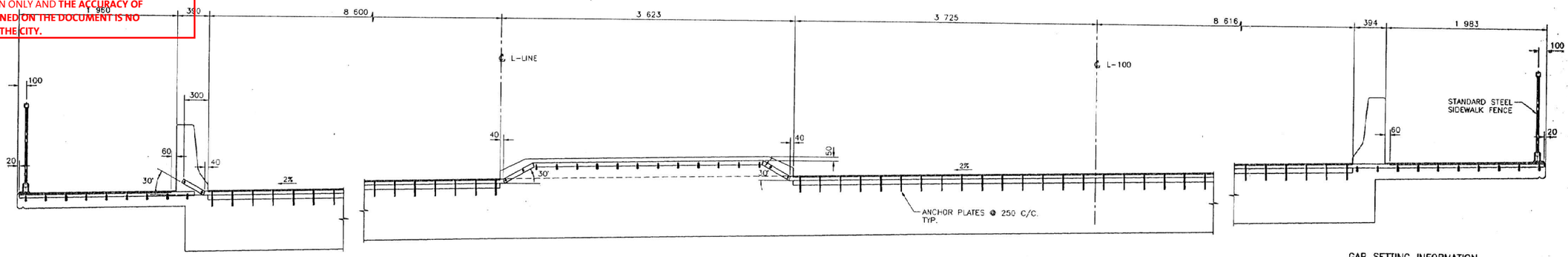
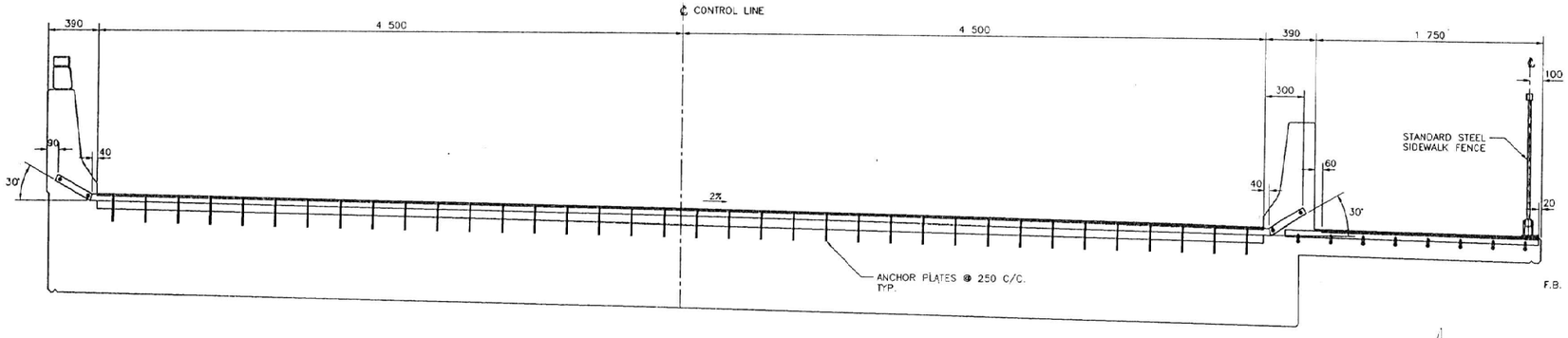


EXPANSION JOINT OF SOUTH ABUTMENT
SCALE 1:20



EXPANSION JOINT OF NORTH ABUTMENT
SCALE 1:25



EXPANSION JOINT OF EAST ABUTMENT
SCALE 1:20

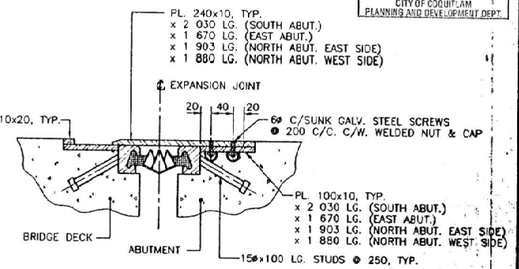
GAP SETTING INFORMATION

SETTING TEMP. °C	DIMENSION "Y"
−10	86
0	74
+10	63
+20	51
+30	40*

* BELOW MANUFACTURER'S RECOMMENDED INSTALLATION WIDTH

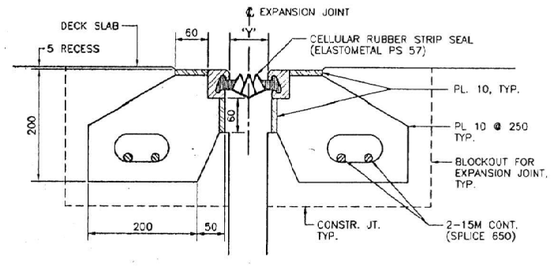
H0013-32

RECEIVED
DEC 09 1999
CITY OF COQUITLAM
PLANNING AND DEVELOPMENT DEPT.

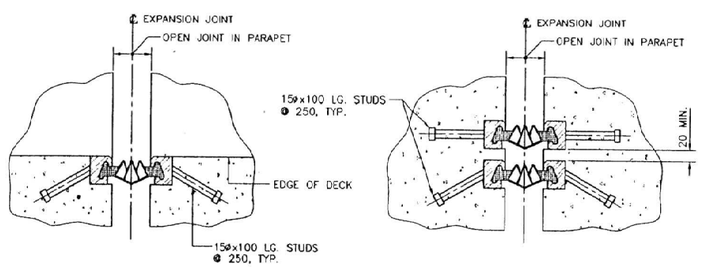


SIDEWALK EXPANSION JOINT
1:5

AUG 14 1997



ROADWAY EXPANSION JOINT
1:5



PARAPET EXPANSION JOINT
1:5

AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.T. DATE SEP. 95
CHECKED D.H.H. DATE SEP. 95
DRAWN C.C. DATE SEP. 95

Rev.	Date	Description	Init
A	OCT. 95	ISSUED FOR CONSTRUCTION	
B	DEC. 95	N ABUT. ADDED, JOINT IN PARAPET COVER PL. REVISED	
C	01.31.96	SOUTH ABUT. SIDEWALK REVISED	
D	SEPT.96	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

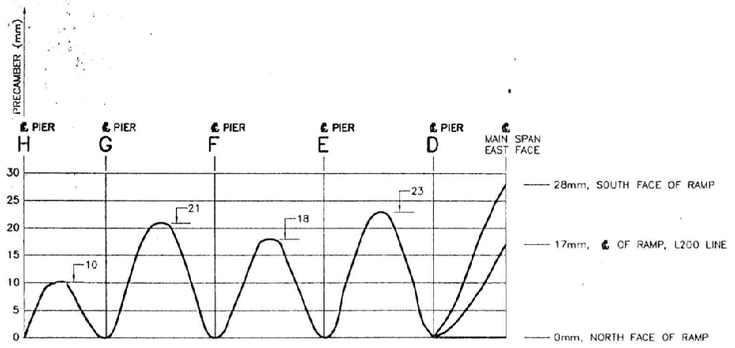
SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
EXPANSION JOINT DETAILS

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
	DIRECTOR OF BRIDGE ENGINEERING	CHIEF HIGHWAY ENGINEER
DATE	DATE	DATE
FILE No.	NEGATIVE No.	REG.

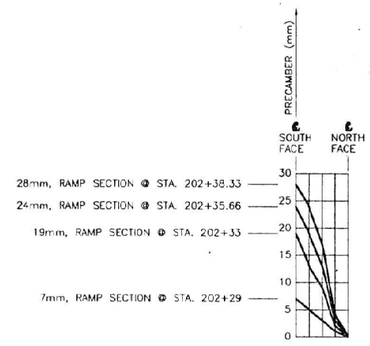
DRAWING No. 2927-132 D

CANCEL PRINTS BEARING PREVIOUS LETTER



EAST RAMP PRECAMBER

HORIZONTAL SCALE = 1:500
VERTICAL SCALE = 1:0.5



INTERSECTION DETAIL

HORIZONTAL SCALE = 1:500
VERTICAL SCALE = 1:0.5

IMPORTANT:
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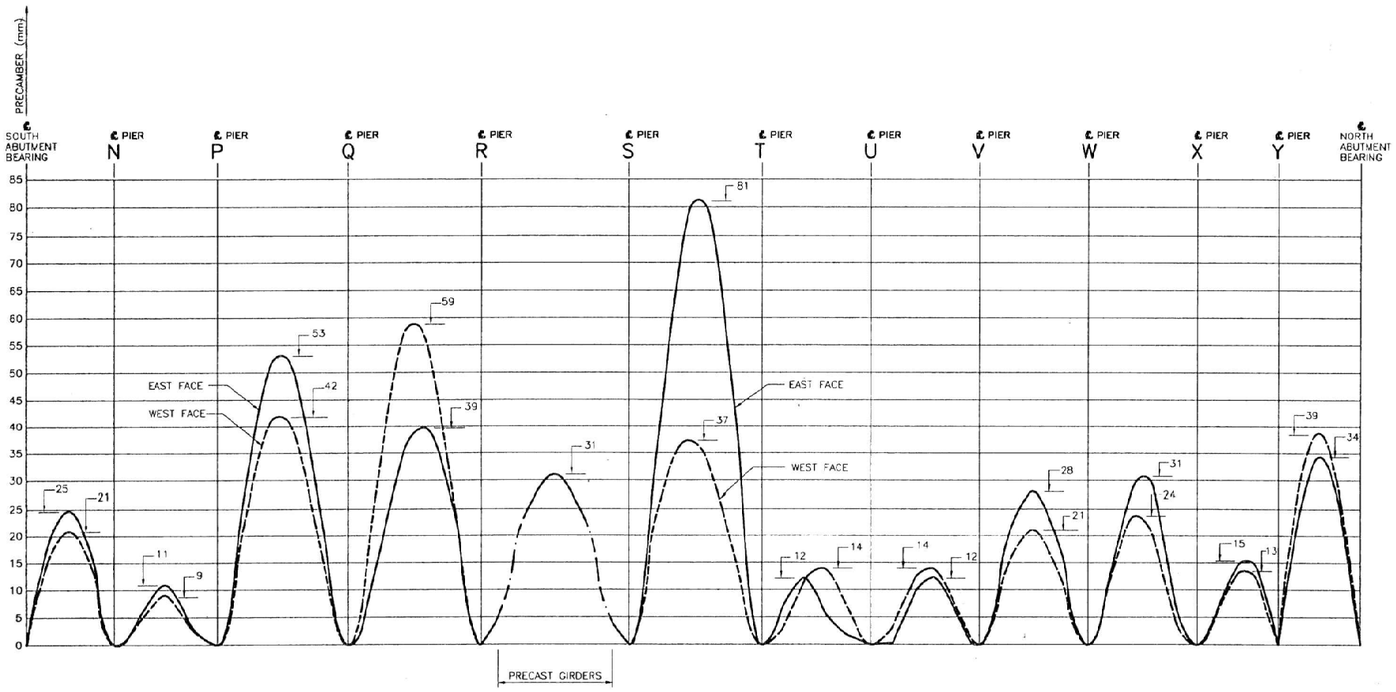
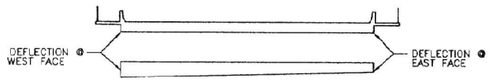


MAIN BRIDGE PRECAMBER

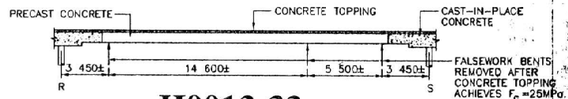
HORIZONTAL SCALE = 1:500
VERTICAL SCALE = 1:0.5

NOTES:

- EAST/WEST FACE REFERRING TO FAR EAST/WEST POINT ON THE BOTTOM OF THE BRIDGE DECK.
- DEFLECTION ARE CONSTANT IN ANY CROSS SECTION IN RAMP EXCEPT IN SECTION BETWEEN PIER D TO INTERSECTION, SEE INTERSECTION DETAIL.
- IN ANY CROSS SECTION ON THE MAIN SPAN DEFLECTION IS LINEAR BETWEEN EAST AND WEST FACE.



- DEFLECTION COMPUTED FOR SPAN R - S IS BASED ON THE FOLLOWING FALSEWORK DETAILS.



H0013-33

AUG 14 1997

PROFESSIONAL ENGINEER
D. J. HARVEY
BRITISH COLUMBIA
AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED N.C. DATE DEC. 95
CHECKED D.J.H. DATE DEC. 95
DRAWN B.F. DATE DEC. 95

Rev	Date	Description	Init
A	12.22.95	100% SUBMISSION	
B	01.05.96	ISSUED FOR CONSTRUCTION	
C	SEPT.96	AS CONSTRUCTED	

REVISIONS

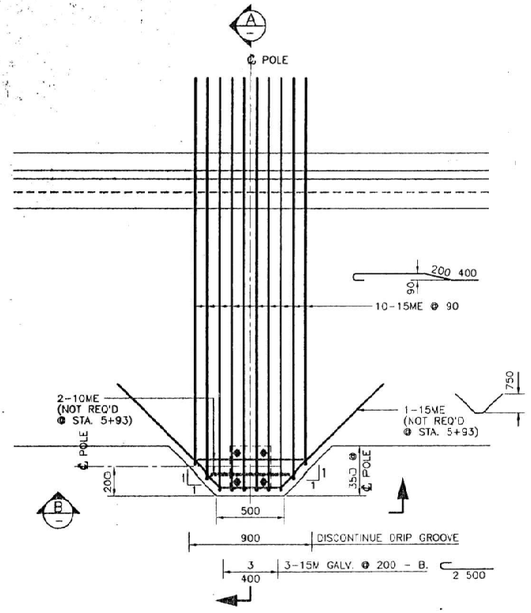
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
SUPERSTRUCTURE PRECAMBER

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No. REG.	DRAWING No. 2927-133 C

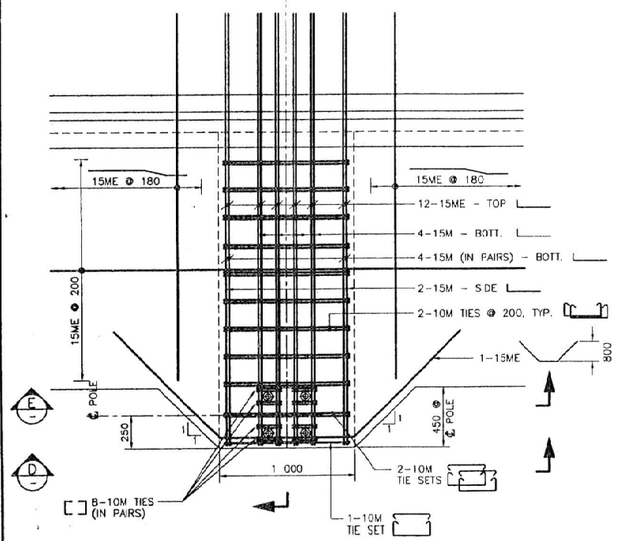
CANCEL PRINTS BEARING PREVIOUS LETTER



LUMINAIRE POLE BASE REINFORCEMENT PLAN
SCALE 1:20

(STA. 5+93, 6+20, 6+40, 6+60, 6+81, 7+02, 7+23, 7+44, 7+63, 7+64.631 7+96, 8+08.90, 8+23 201+58, 201+76, 201+94, 202+12)

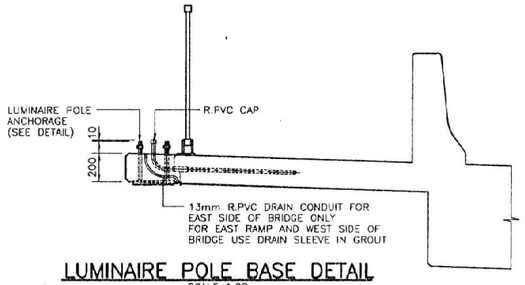
NOTE: FOR POLE BASE DETAILS AT STA. 5+93, SEE DWG. 2927-122



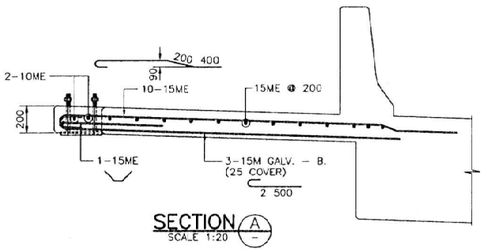
TYPE L SIGNAL/SIGN POLE BASE REINFORCEMENT PLAN
SCALE 1:20

(STA. 7+82, 7+85)

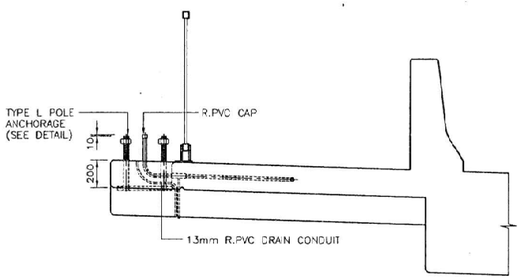
NOTE: FOR POST ORIENTATION AT STA. 7+82 SEE DWG. 2927-128



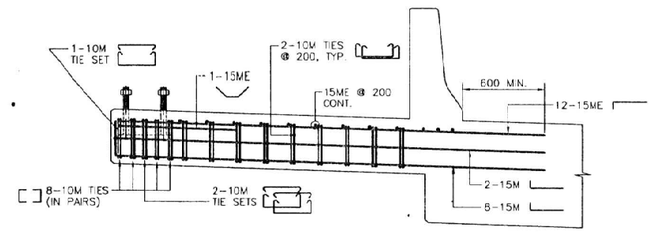
LUMINAIRE POLE BASE DETAIL
SCALE 1:20



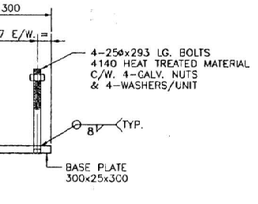
SECTION A
SCALE 1:20



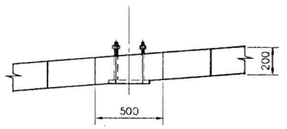
TYPE L SIGNAL/SIGN BASE DETAIL
SCALE 1:20



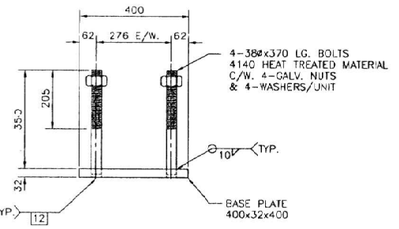
SECTION C
SCALE 1:20



LUMINAIRE POLE ANCHORAGE
SCALE 1:10



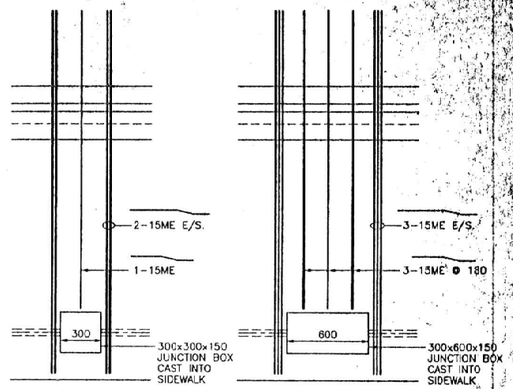
SECTION B
SCALE 1:20



TYPE L POLE ANCHORAGE
SCALE 1:10

ALL ANCHORAGES MUST BE SANDBLASTED AND PROTECTED FROM OXIDATION BEFORE GALVANIZING

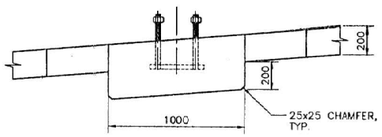
NOTE: TYPE L SIGNAL POLE ANCHORAGE DESIGNED FOR LOADING IMPOSED BY ORIGINALLY INSTALLED SIGNALS AND SIGNS ONLY. ADDITIONAL EQUIPMENT SHOULD NOT BE ADDED WITHOUT INVESTIGATION OF ADEQUACY OF ANCHORAGE.



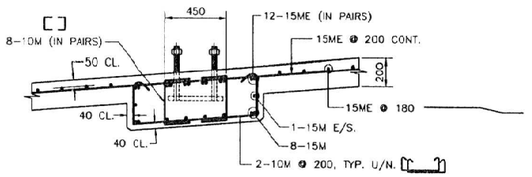
NOTE: DEFLECT LONGITUDINAL BARS AROUND JUNCTION BOX.

JUNCTION BOX REINFORCEMENT DETAILS
SCALE 1:20

(FOR LOCATION SEE ELECTRICAL DRAWINGS)



SECTION D
SCALE 1:20 (40)



SECTION E
SCALE 1:20

NOTE: VERTICAL SURFACES MAY BE FORMED PERPENDICULAR TO GRADE

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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.**

RECEIVED
DEC 09 1999
CITY OF COQUITLAM
PLANNING AND DEVELOPMENT DEPT.

H0013-34

PROFESSIONAL ENGINEER
L. HARVEY
AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.L.H. DATE OCT. 95
CHECKED DATE
DRAWN C.C. DATE OCT. 95

Rev	Date	Description	Init	
C	01.05.96	ISSUED FOR CONSTRUCTION		
D	01.10.96	POLE BASE REINF. TYPE L POLE REF. REVISED		
E	02.01.96	POLE BASE AT STA. 5+93 REVISED		
F	02.13.96	POLE BASE & ANCHORAGES REVISED		
G	03.29.96	ADVANCE WARNING SIGN DELETED		
H	SEPT.96	AS CONSTRUCTED		

REVISIONS

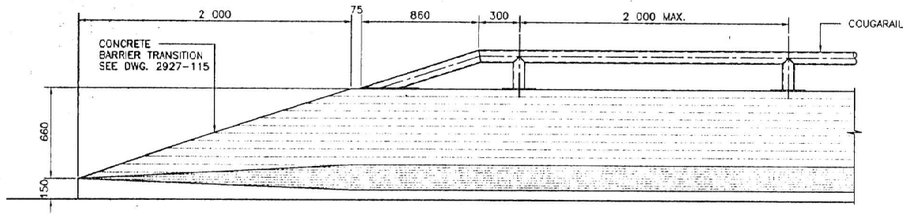
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

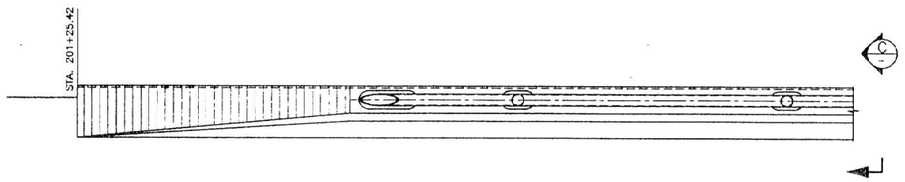
JOHNSON MARINER CONNECTOR NO. 2927
MISCELLANEOUS DETAILS SHT. 1

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No.	REG. DRAWING No. 2927-134 H

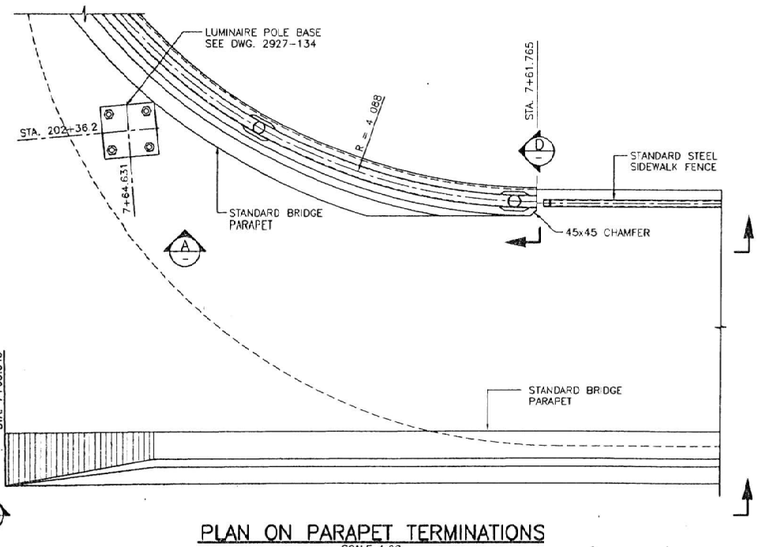
CANCEL PRINTS BEARING PREVIOUS LETTER



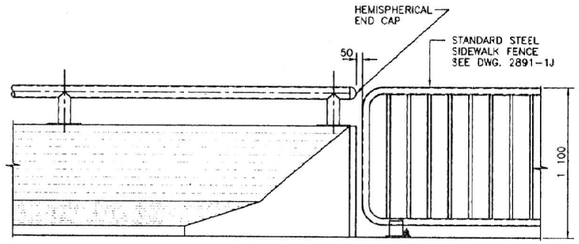
ELEVATION OF RAIL EAST TERMINATION ON RAMP SOUTH PARAPET
SCALE 1:20



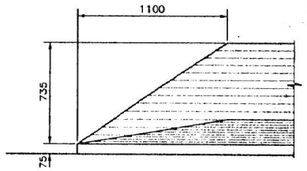
PLAN OF RAIL EAST TERMINATION ON RAMP SOUTH PARAPET
SCALE 1:20



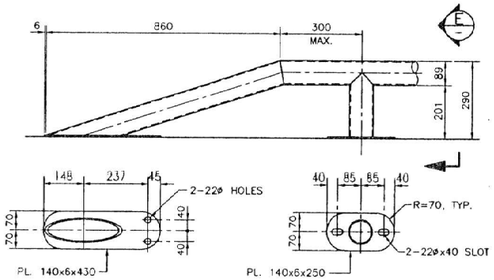
PLAN ON PARAPET TERMINATIONS
SCALE 1:20



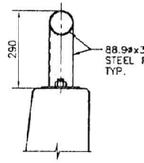
SECTION A
SCALE 1:20



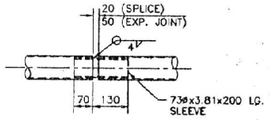
SECTION B
SCALE 1:20



RAILING END UNIT
SCALE 1:10



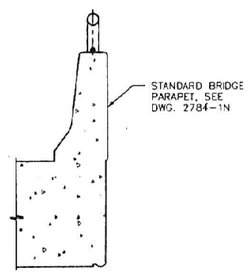
SECTION E
SCALE 1:20



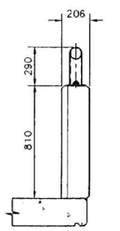
RAILING SPLICE
SCALE 1:10

PLAN ON PARAPET TERMINATIONS
SCALE 1:20

PEDESTRIAN SIGNAL POST
SCALE 1:20



SECTION C
SCALE 1:20



SECTION D
SCALE 1:20

IMPORTANT:
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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.**

H0013-35

AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED ____ DATE ____
CHECKED D.I.H. DATE NOV. 95
DRAWN C.C. DATE NOV. 95

Rev	Date	Description	Init
A	11,29,95	100% SUBMISSION	
B	12,19,95	PEDESTRIAN POST REVISED	
C	01,05,96	ISSUED FOR CONSTRUCTION	
D	SEPT.96	AS CONSTRUCTED	

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

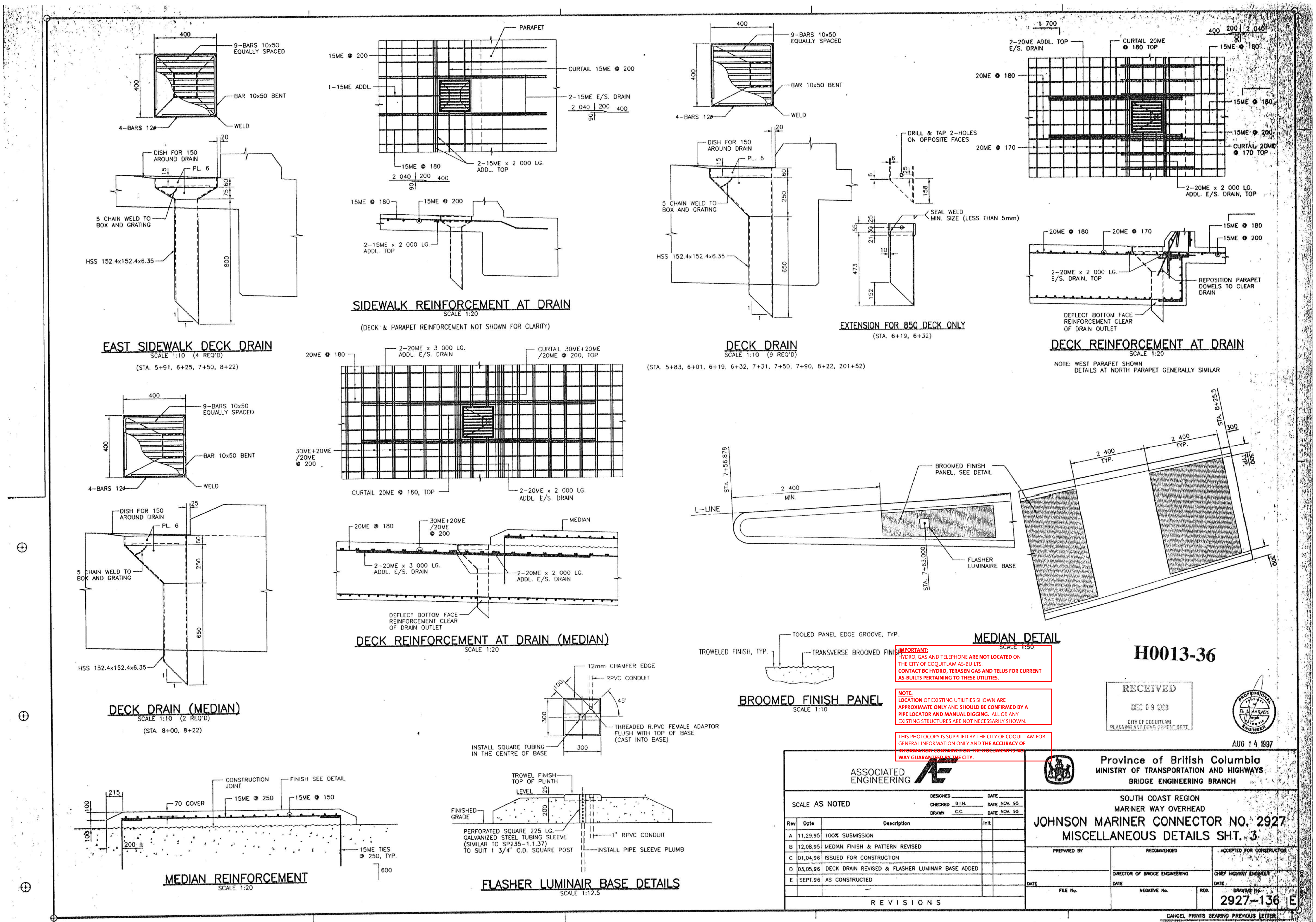
SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927 MISCELLANEOUS DETAILS SHT. 2

PREPARED BY
RECOMMENDED
DIRECTOR OF BRIDGE ENGINEERING
DATE
ACCEPTED FOR CONSTRUCTION
CHIEF HIGHWAY ENGINEER
DATE

FILE No.
NEGATIVE No.
REG.
DRAWING No. 2927-135 D

CANCEL PRINTS BEARING PREVIOUS LETTER



EAST SIDEWALK DECK DRAIN
SCALE 1:10 (4 REQ'D)
(STA. 5+91, 6+25, 7+50, 8+22)
9-BARS 10x50 EQUALLY SPACED
BAR 10x50 BENT
4-BARS 12ø
WELD
DISH FOR 150 AROUND DRAIN
PL. 6
5 CHAIN WELD TO BOX AND GRATING
HSS 152.4x152.4x6.35
SIDEWALK REINFORCEMENT AT DRAIN
SCALE 1:20
(DECK & PARAPET REINFORCEMENT NOT SHOWN FOR CLARITY)
PARAPET
15ME @ 200
1-15ME ADDL.
CURTAIL 15ME @ 200
2-15ME E/S. DRAIN
15ME @ 180
2-15ME x 2 000 LG. ADDL. TOP
DECK DRAIN
SCALE 1:10 (9 REQ'D)
(STA. 5+83, 6+01, 6+19, 6+32, 7+31, 7+50, 7+90, 8+22, 201+52)
DRILL & TAP 2-HOLES ON OPPOSITE FACES
SEAL WELD MIN. SIZE (LESS THAN 5mm)
EXTENSION FOR 850 DECK ONLY
(STA. 6+19, 6+32)
DECK REINFORCEMENT AT DRAIN
SCALE 1:20
NOTE: WEST PARAPET SHOWN DETAILS AT NORTH PARAPET GENERALLY SIMILAR
2-20ME ADDL. TOP E/S. DRAIN
CURTAIL 20ME @ 180 TOP
CURTAIL 20ME @ 170 TOP
2-20ME x 2 000 LG. ADDL. E/S. DRAIN, TOP
REPOSITION PARAPET DOWELS TO CLEAR DRAIN
DEFLECT BOTTOM FACE REINFORCEMENT CLEAR OF DRAIN OUTLET
DECK REINFORCEMENT AT DRAIN (MEDIAN)
SCALE 1:20
2-20ME x 3 000 LG. ADDL. E/S. DRAIN
CURTAIL 30ME+20ME /20ME @ 200, TOP
CURTAIL 20ME @ 180, TOP
2-20ME x 2 000 LG. ADDL. E/S. DRAIN
MEDIAN
DECK DRAIN (MEDIAN)
SCALE 1:10 (2 REQ'D)
(STA. 8+00, 8+22)
MEDIAN DETAIL
SCALE 1:50
BROOMED FINISH PANEL, SEE DETAIL
FLASHER LUMINAIRE BASE
L-LINE
STA. 7+56.878
STA. 7+63.000
STA. 8+25.5
BROOMED FINISH PANEL
SCALE 1:10
TOOLED PANEL EDGE GROOVE, TYP.
TROWELED FINISH, TYP.
TRANSVERSE BROOMED FINISH
MEDIAN REINFORCEMENT
SCALE 1:20
CONSTRUCTION JOINT
FINISH SEE DETAIL
70 COVER
15ME @ 250
15ME @ 150
15ME TIES @ 250, TYP.
FLASHER LUMINAIR BASE DETAILS
SCALE 1:12.5
12mm CHAMFER EDGE
RPVC CONDUIT
THREADED R.PVC FEMALE ADAPTOR FLUSH WITH TOP OF BASE (CAST INTO BASE)
INSTALL SQUARE TUBING IN THE CENTRE OF BASE
TROWEL FINISH TOP OF PLINTH LEVEL
FINISHED GRADE
PERFORATED SQUARE 225 LG. GALVANIZED STEEL TUBING SLEEVE (SIMILAR TO SP235-1.1.37) TO SUIT 1 3/4" O.D. SQUARE POST
1" RPVC CONDUIT
INSTALL PIPE SLEEVE PLUMB
H0013-36
RECEIVED
CITY OF COQUITLAM PLANNING AND DEVELOPMENT DEPT.
AUG 14 1997
ASSOCIATED ENGINEERING
SCALE AS NOTED
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH
SOUTH COAST REGION
MARINER WAY OVERHEAD
JOHNSON MARINER CONNECTOR NO. 2927
MISCELLANEOUS DETAILS SHT. 3
A 11,29,95 100% SUBMISSION
B 12,08,95 MEDIAN FINISH & PATTERN REVISED
C 01,04,96 ISSUED FOR CONSTRUCTION
D 03,05,96 DECK DRAIN REVISED & FLASHER LUMINAIR BASE ADDED
E SEPT.96 AS CONSTRUCTED
REVISIONS
2927-136 E
CANCEL PRINTS BEARING PREVIOUS LETTER

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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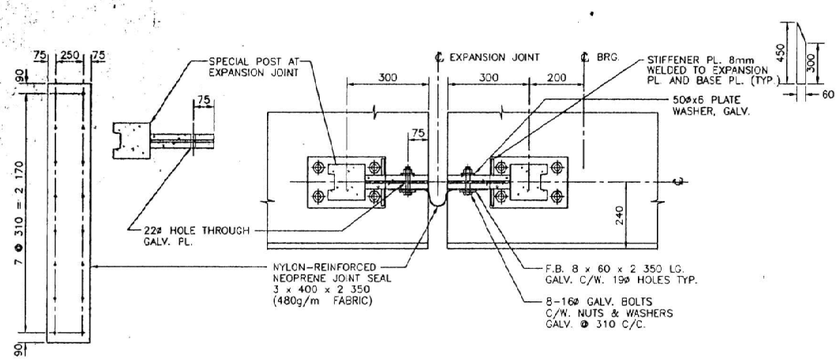
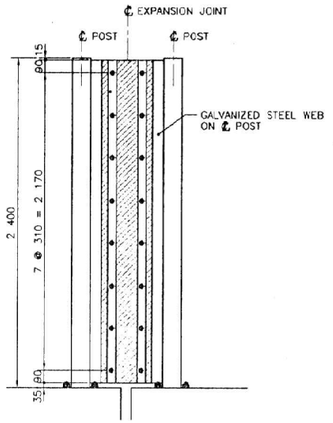
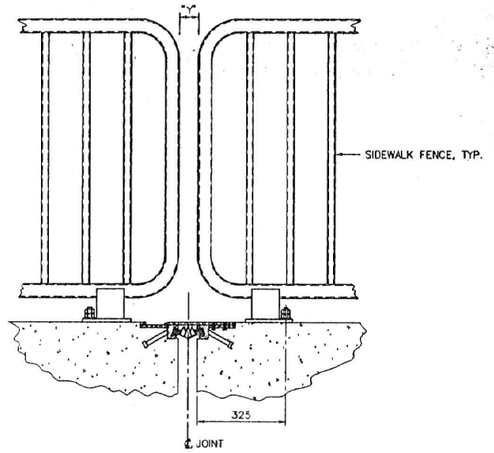


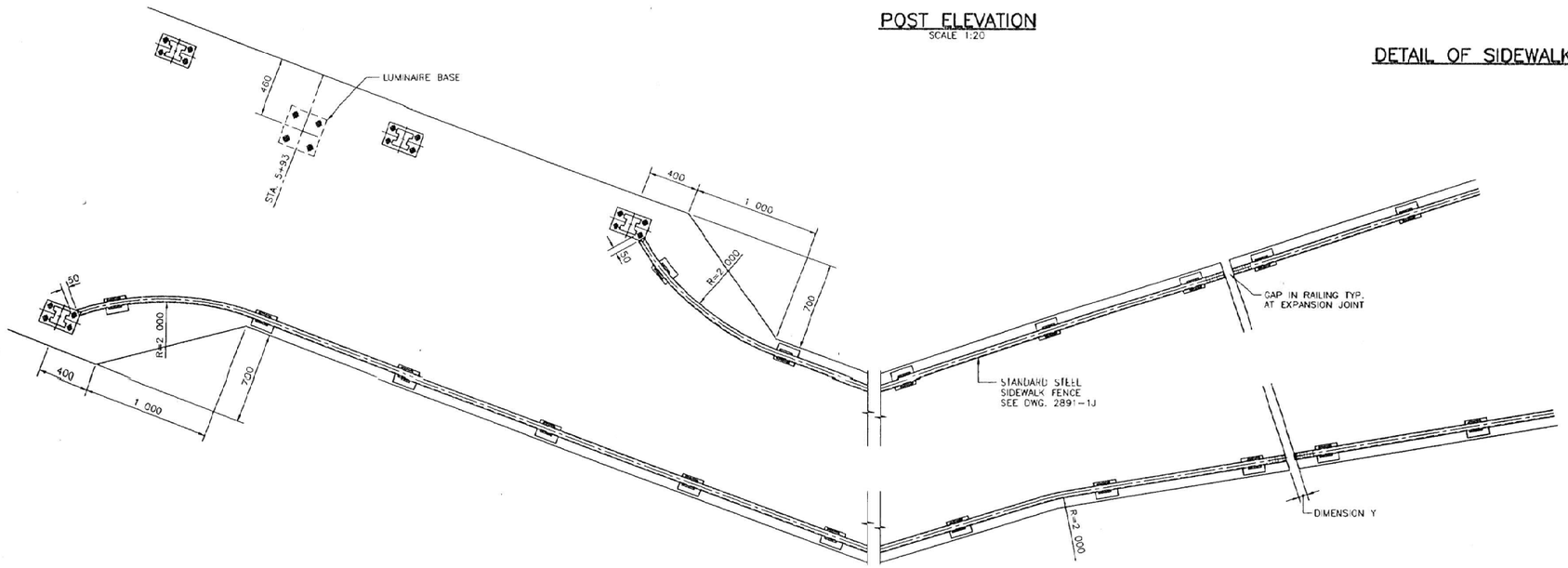
NOISE BARRIER EXPANSION JOINT AT SOUTH ABUTMENT
SCALE 1:10



POST ELEVATION
SCALE 1:20



DETAIL OF SIDEWALK FENCE @ EXPANSION JOINT
SCALE 1:10



SIDEWALK FENCE TERMINATION DETAILS
SCALE 1:20

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H0013-37

AUG 14 1997

NOTES:
FOR DIMENSION "Y" DETAILS SEE DWG. No. 2927-132
FOR SIDEWALK FENCE DETAILS SEE DWG. No. 2891-1J

ASSOCIATED ENGINEERING

SCALE AS NOTED
DESIGNED ____ DATE ____
CHECKED D.J.H. DATE NOV. 95
DRAWN D.C. DATE NOV. 95

Rev	Date	Description	Init	
A	11.29.95	100% SUBMISSION		
B	12.22.95	JOINT DETAIL REVISED		
C	01.05.96	ISSUED FOR CONSTRUCTION		
D	01.31.96	NOISE BARRIER SIDEWALK FENCE MODIFIED		
E	SEPT.96	AS CONSTRUCTED		

REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

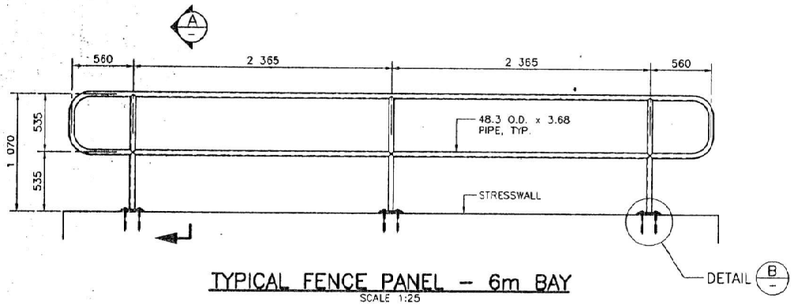
SOUTH COAST REGION
MARINER WAY OVERHEAD

JOHNSON MARINER CONNECTOR NO. 2927
MISCELLANEOUS DETAILS SHT. 4

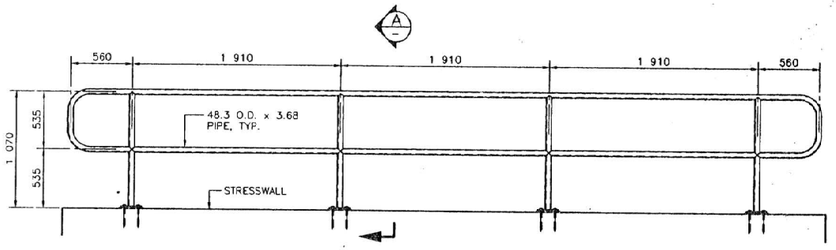
PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE

FILE No. | NEGATIVE No. | REG. | DRAWING No. 2927-137 | E

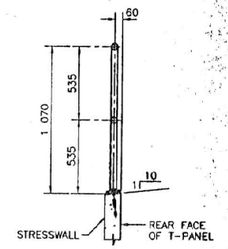
CANCEL PRINTS BEARING PREVIOUS LETTER



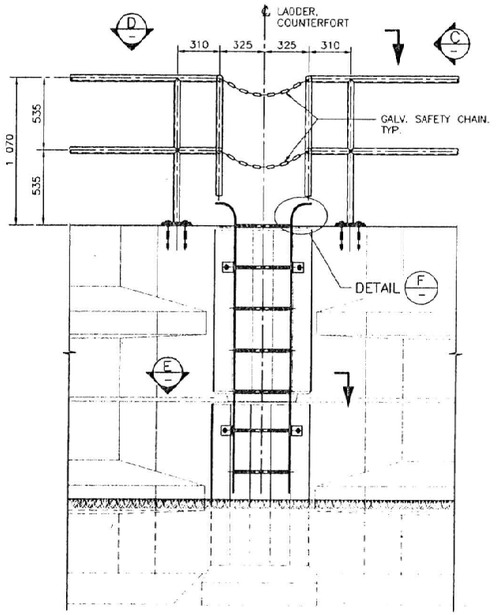
TYPICAL FENCE PANEL – 6m BAY
SCALE 1:25



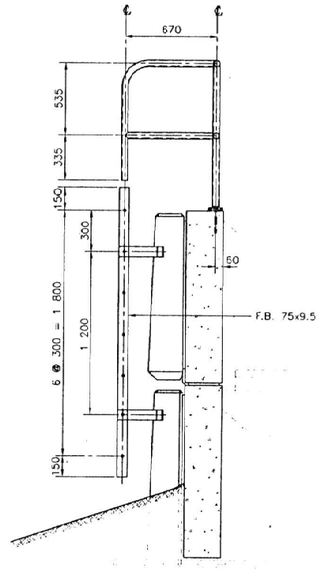
TYPICAL FENCE PANEL – 7m BAY
SCALE 1:25



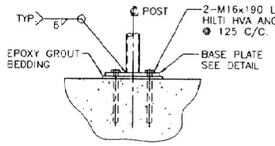
SECTION A
SCALE 1:20



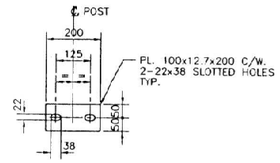
ELEVATION OF LADDER
SCALE 1:20



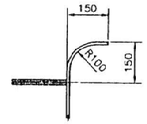
SECTION C
SCALE 1:20



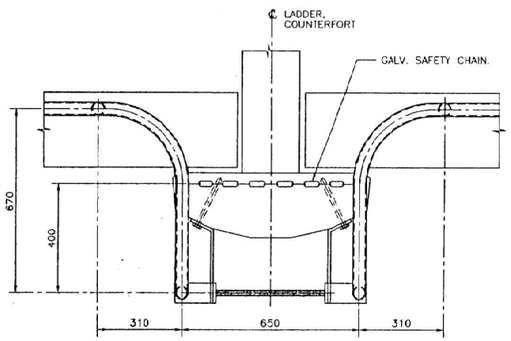
DETAIL B
SCALE 1:10



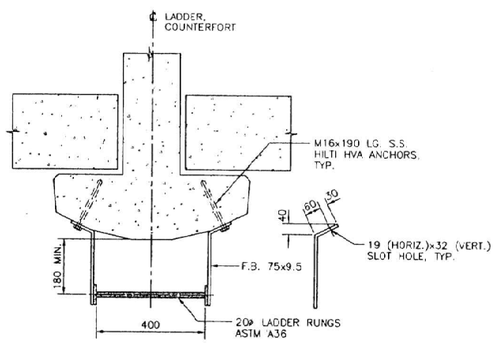
BASE PLATE DETAIL
SCALE 1:10



DETAIL F
SCALE 1:10



SECTION D
SCALE 1:10



SECTION E
SCALE 1:10

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H0013-38

AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED
DESIGNED ____ DATE ____
CHECKED D.I.H. DATE FEB. 96
DRAWN C.C. DATE FEB. 96

Rev	Date	Description	Init	
A	02.02.96	100% SUBMISSION		
B	SEPT.96	AS CONSTRUCTED		

REVISIONS

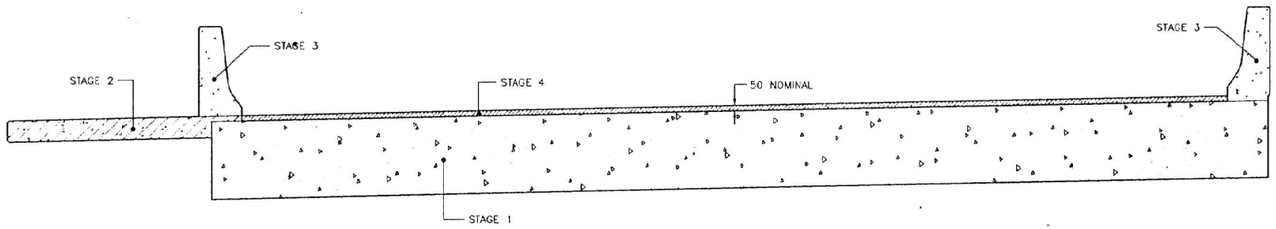
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD

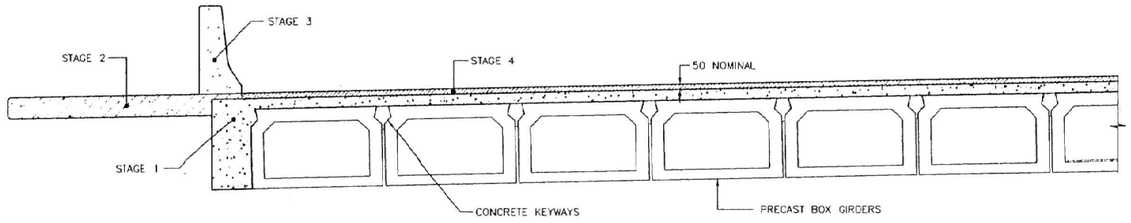
JOHNSON MARINER CONNECTOR NO. 2927
MISCELLANEOUS DETAILS SHT. 5

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING / DATE	CHIEF HIGHWAY ENGINEER / DATE
FILE No.	NEGATIVE No.	REG. DRAWING No. 2927-138 B

CANCEL PRINTS BEARING PREVIOUS LETTER



TYPICAL SECTION



RAIL SPAN

STAGES OF CONCRETE PLACEMENT
1:25

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NOTES:
1. STAGE 2 MUST FOLLOW STAGE 1 BY AT LEAST 24 HOURS.
2. STAGES 3 AND 4 MAY BE PLACED WHEN FALSEWORK IS RELEASED ON AFFECTED SPAN AND ADJACENT SPANS

H0013-39

AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED

DESIGNED D.J.H. DATE JAN. 98
CHECKED DATE
DRAWN C.C. DATE JAN. 98

Rev	Date	Description	Init	
G	SEPT.98	AS CONSTRUCTED		

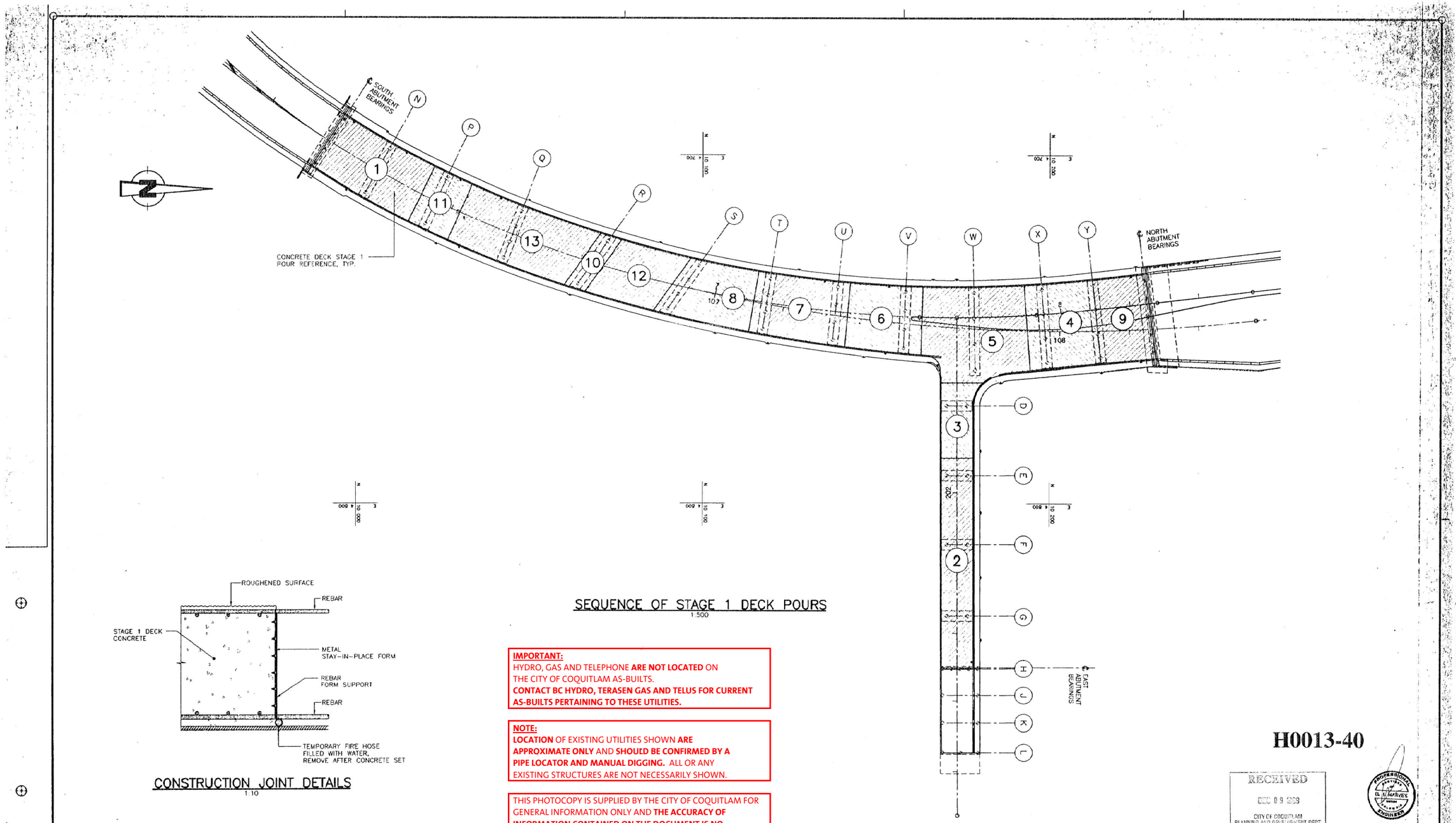
REVISIONS

Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD
JOHNSON MARINER CONNECTOR NO. 2927
DECK CONSTRUCTION SEQUENCE SHT. 1

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No.	REG. DRAWING No. 2927-139 A

CANCEL PRINTS BEARING PREVIOUS LETTER



CONSTRUCTION JOINT DETAILS
1:10

SEQUENCE OF STAGE 1 DECK POURS
1:500

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NOTES:
1. CONCRETE TO ACHIEVE f'c=25MPa IN SUPPORTED SPAN AND ADJACENT SPLANS PRIOR TO RELEASE OF FALSEWORK
2. CONSTRUCTION JOINTS TO BE LOCATED APPROXIMATELY 25% OF SPAN LENGTH AWAY FROM INTERMEDIATE SUPPORTS
3. SPAN ADJACENT TO CANTILEVERED END TO BE SUPPORTED BY FALSEWORK
4. SEQUENCE OF POURS MAY BE VARIES AS REQUIRED EXCEPT THAT POUR 8 AND POUR 10 MUST PRECEED POUR 12
5. POUR 12 MUST ACHIEVE f'c=25MPa PRIOR TO RELEASE OF FALSEWORK Q TO T
6. SETTING OF FALSEWORK STAGES MAY BE SUBDIVIDED AS REQUIRED

H0013-40

AUG 14 1997

ASSOCIATED ENGINEERING

SCALE AS NOTED
DESIGNED D.I.H. DATE JAN. 96
CHECKED DATE
DRAWN C.C. DATE JAN. 96

Rev	Date	Description	Init
A	SEPT.96	AS CONSTRUCTED	

REVISIONS

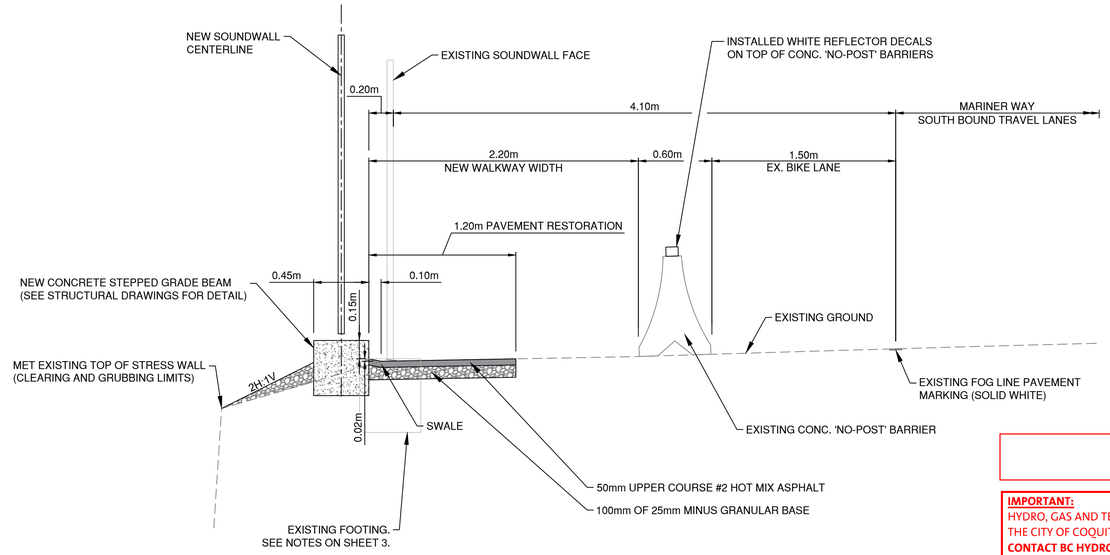
Province of British Columbia
MINISTRY OF TRANSPORTATION AND HIGHWAYS
BRIDGE ENGINEERING BRANCH

SOUTH COAST REGION
MARINER WAY OVERHEAD
JOHNSON MARINER CONNECTOR NO. 2927
DECK CONSTRUCTION SEQUENCE SHT. 2

PREPARED BY	RECOMMENDED	ACCEPTED FOR CONSTRUCTION
DATE	DIRECTOR OF BRIDGE ENGINEERING DATE	CHIEF HIGHWAY ENGINEER DATE
FILE No.	NEGATIVE No.	REQ. DRAWING No. 2927-140 A

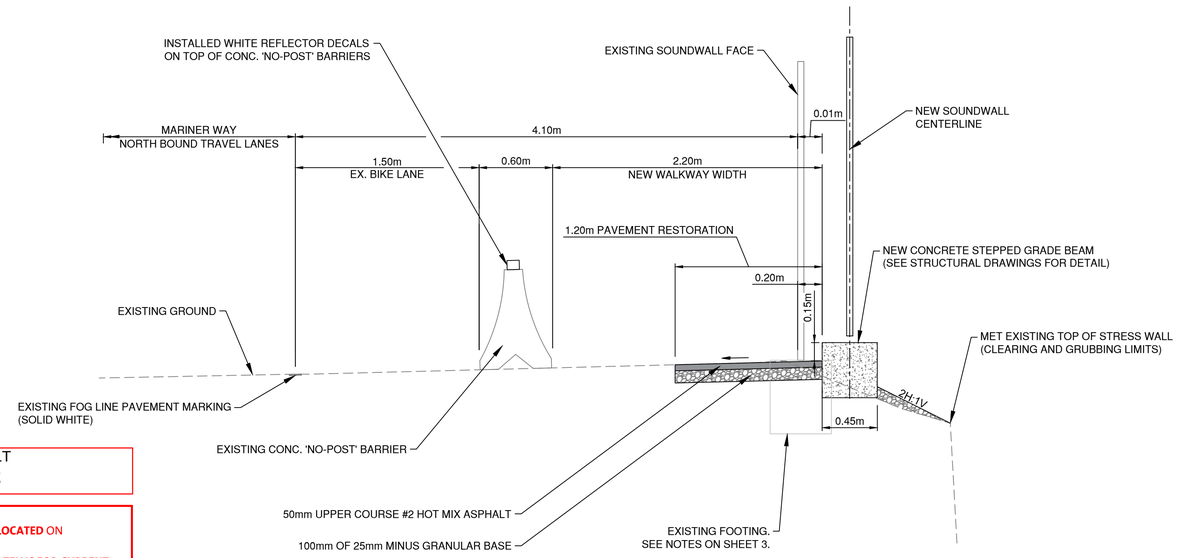
CANCEL PRINTS BEARING PREVIOUS LETTER

SIDEWALK PAVEMENT AS-BUILT



TYPICAL SECTION - NORTH SIDE

SCALE 1:25



TYPICAL SECTION - SOUTH SIDE

SCALE 1:25

COQ AS BUILT
R0535-02

IMPORTANT:
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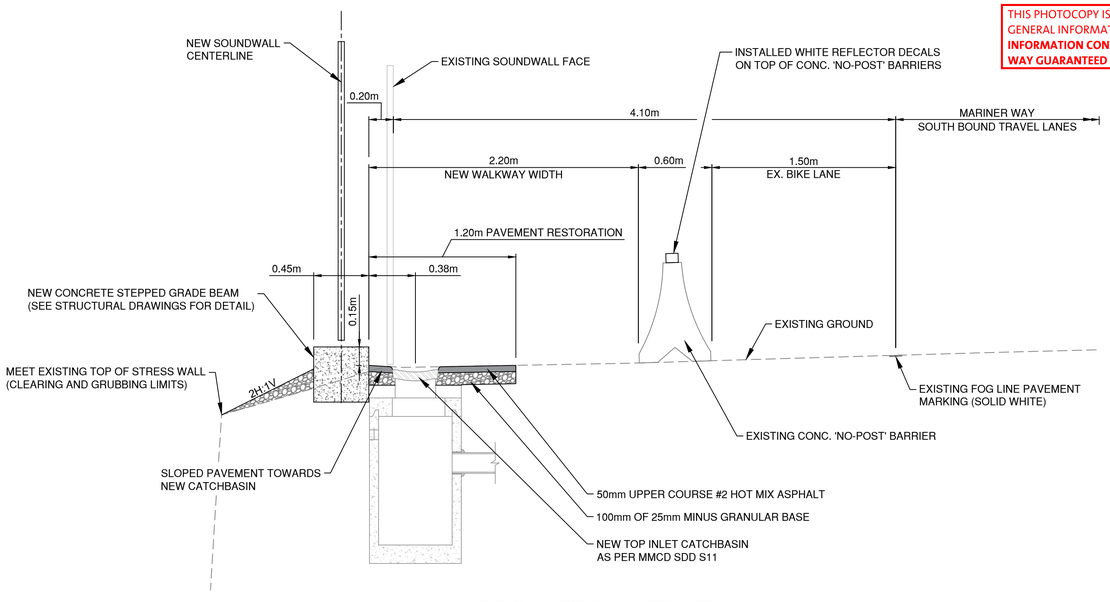
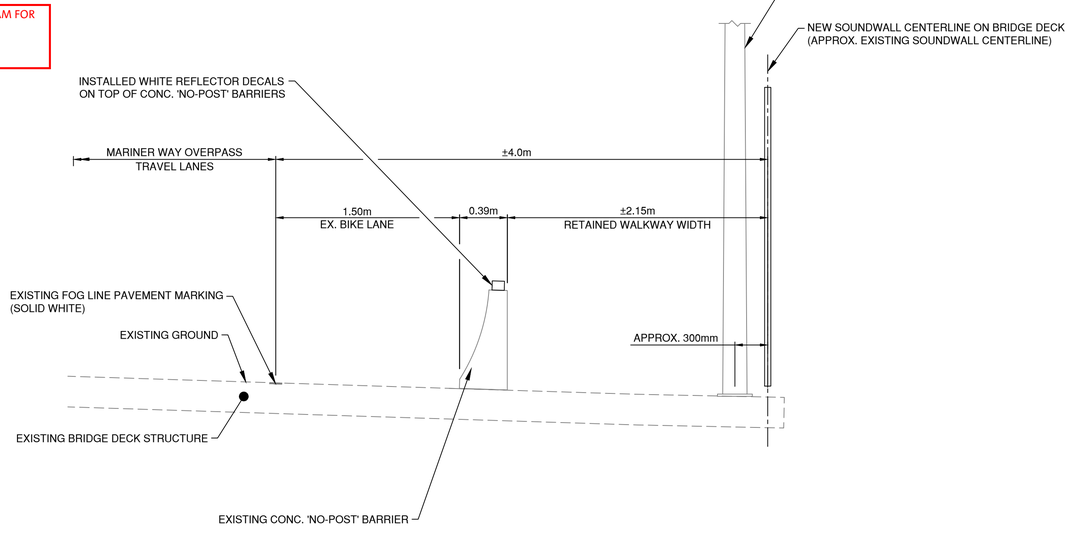


TYPICAL SECTION - NORTH SIDE
CATCHBASIN INSTALLATION

SCALE 1:25



TYPICAL SECTION - BRIDGE DECK

SCALE 1:25

RECORD DRAWING DESIGN NO. **32536**

PLOT DATE: December 23, 2021

REV NO	REVISIONS	DATE	DRAWN	APPR'D
A	ISSUED FOR CONSTRUCTION	21/03/09	GA	KPT
B	RECORD DRAWING	21/12/24	GA	KPT

Coquitlam
Engineering & Public Works
3000 Guildford Way, Coquitlam, B.C. V3B 7N2

ROAD WORKS

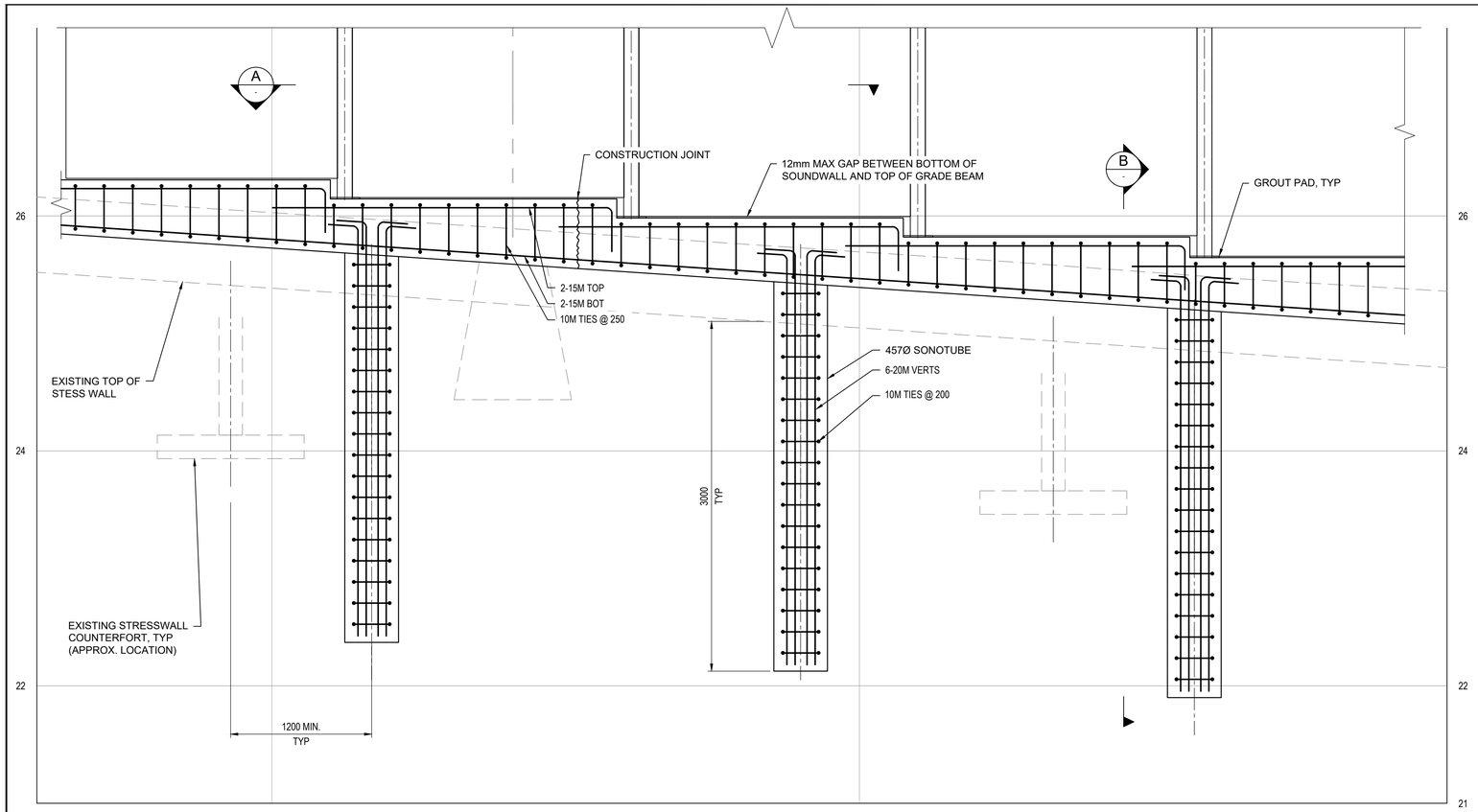
TYPICAL SECTIONS
MARINER WAY SOUNDWALLS

ISL Engineering and Land Services
#503, 4190 Lougheed Hwy, Burnaby, B.C. V5C 6A8
T: (604)629-2696 F: (604)629-2698

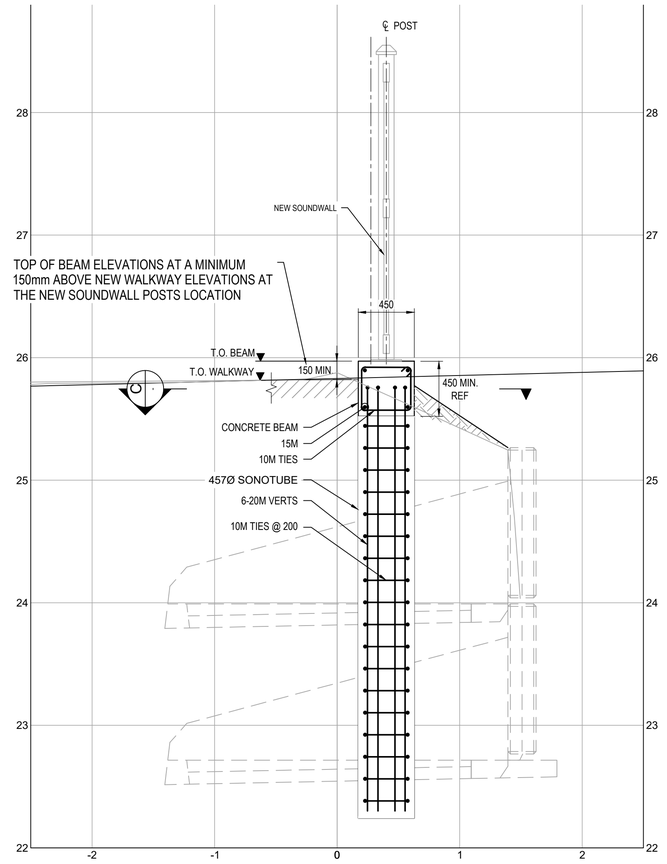
SCALE	AS NOTED	DATE	FEB, 2020
DRAWN BY	GA	DESIGN BY	KPT
CHECKED BY	CJB	APPROVED BY	KPT

DWG. NO. 02 OF 05
REV. B

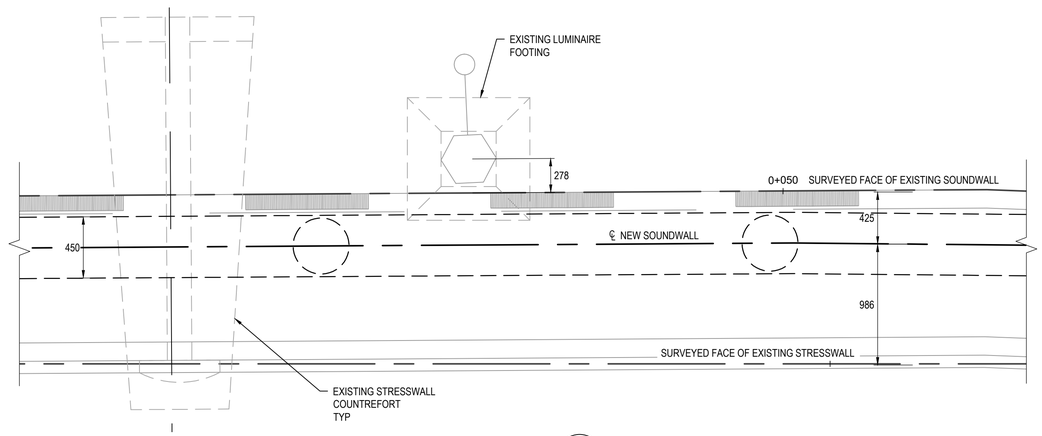
File: g:\Projects\32000\32500\32536_coq_mariner_way_sound_walls\02_CADD\20_drafting\202_sheets\32536_SH_Soundwall_Municipal.dwg



DETAIL 1 / 1:25 / 04



SECTION B / 1:25 / -



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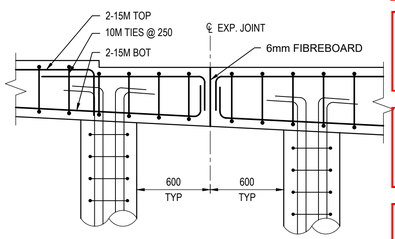

EXPANSION JOINT DETAIL 2 / 1:25 / 04

COQ AS BUILT
R0535-05

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.

NOTE:
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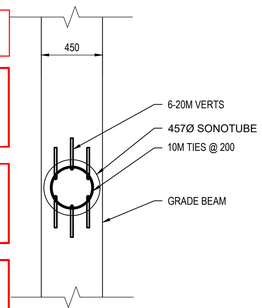


DETAIL C / 1:25 / -

NOTES:
1. FOR GENERAL NOTES SEE DWG 03.
2. FOR SOUNDWALL LOCATIONS SEE CIVIL DWGS.

PLOT DATE: December 23, 2021

RECORD DRAWING DESIGN NO. **32536**

REV NO	REVISIONS	DATE	DRAWN	APPR'D
A	ISSUED FOR CONSTRUCTION	21/03/09	GA	JCT
B	ADDED GRADE BEAM INFORMATION	21/03/12	GA	JCT
C	RECORD DRAWING	21/12/24	GA	JCT

Coquitlam
Engineering & Public Works
3000 Guildford Way, Coquitlam, B.C. V3B 7N2

WALL DETAILS
MARINER WAY SOUNDWALL

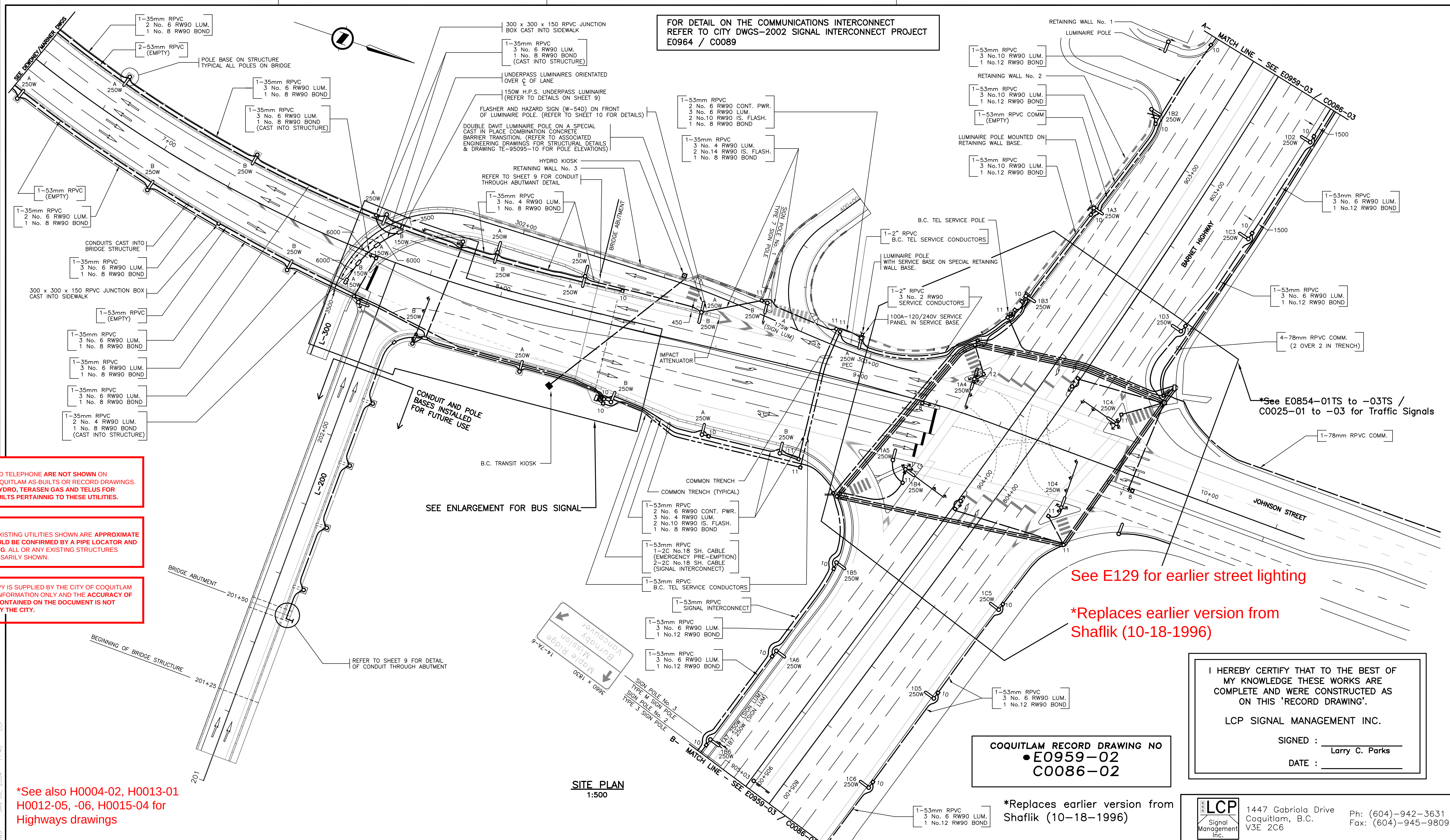
ISL Engineering and Land Services
#201, 3999 Henning Dr, Burnaby, B.C. V5C 6P9
T: (604)629-2696 F: (604)629-2698

SCALE	AS NOTED	DATE	SEP. 12, 2019
DRAWN BY	CP	DESIGN BY	JCT
CHECKED BY	JCT	APPROVED BY	JCT

DWG. NO. 05 OF 05
REV. C

File: G:\Projects\32000\32500\32536_COQ_Mariner_Way_Sound_Walls\02_CADD\20_Drafting\202_Sheets\32536_SH_SoundWall_Structural.dwg

ELECTRICAL AS-BUILT



IMPORTANT:
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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.**

*See also H0004-02, H0013-01 H0012-05, -06, H0015-04 for Highways drawings

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THESE WORKS ARE COMPLETE AND WERE CONSTRUCTED AS ON THIS 'RECORD DRAWING'.

LCP SIGNAL MANAGEMENT INC.

SIGNED : Larry C. Parks

DATE :

COQUITLAM RECORD DRAWING NO
E0959-02
C0086-02

*Replaces earlier version from Shaflik (10-18-1996)

LCP Signal Management Inc.
1447 Gabriola Drive
Coquitlam, B.C.
V3E 2C6
Ph: (604)-942-3631
Fax: (604)-945-9809

LEGEND

	STREETLIGHT POLE	10	LARGE ROUND JUNCTION BOX C/W (No. DENOTES TYPE)		TRAFFIC CONTROLLER C/W CONCRETE PAD
	COMBINATION TRAFFIC SIGNAL POLE	5686	COMMUNICATION CONCRETE JUNCTION BOX		SERVICE PANEL
	TRAFFIC SIGNAL POST	ø2	SIGNAL HEAD VEHICLE PHASE		1.8m ROUND LOOP
	CONCRETE JUNCTION BOX C/W GALVANIZED STEEL LID	P4	SIGNAL HEAD PEDESTRIAN PHASE		COMMUNICATION CONDUIT
		R	LUMINAIRE ON RED PHASE CONDUCTORS		CONDUIT
		B	LUMINAIRE ON BLACK PHASE CONDUCTOR		3 No. 6 RW90 ST. LTG. & 1 No. 8 RW90 BOND IN 30mm RPVC

REV. No.	DATE	REVISION
6		
5		
4		
3		
2		
1	JAN 06/04	RECORD DRAWING

Destroy All Prints Bearing Rev. No. less than one indicated above

CITY OF COQUITLAM — Operations

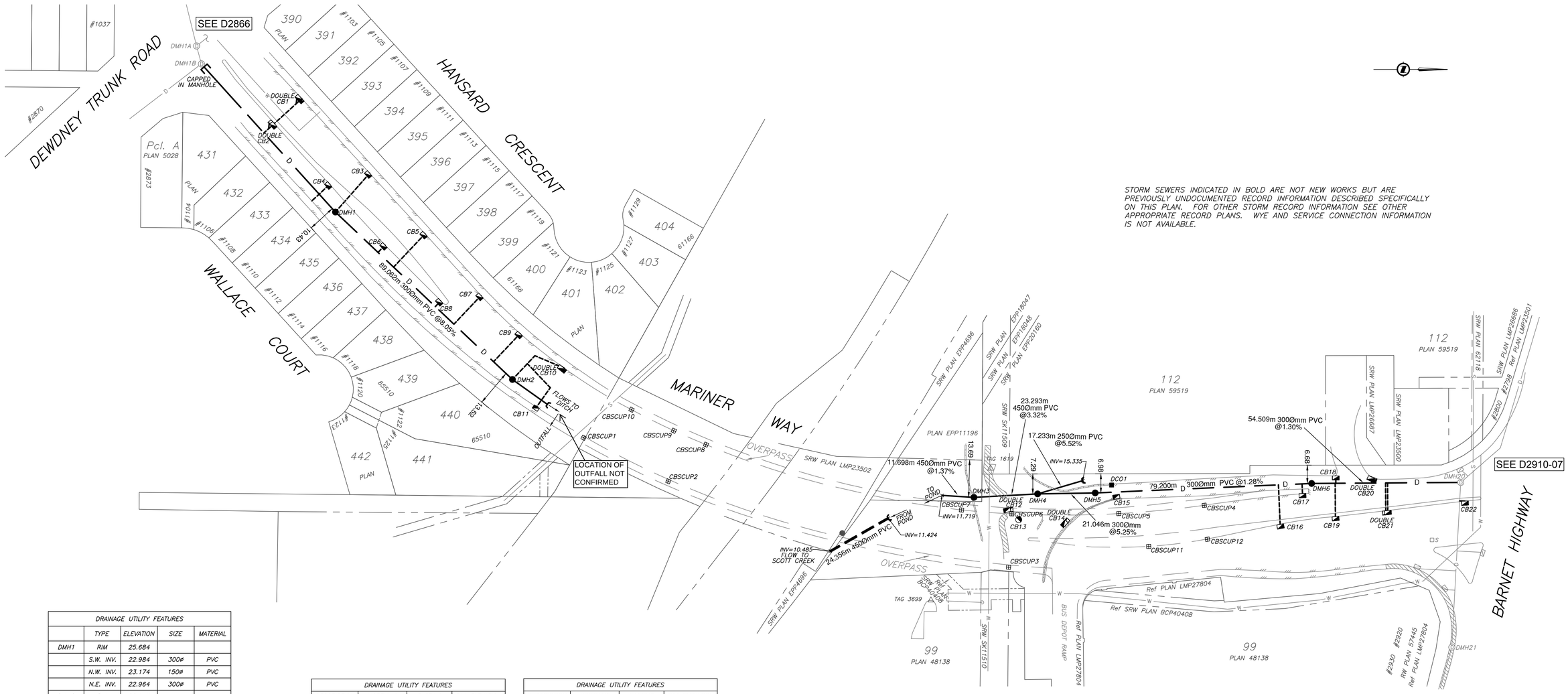
DESIGNED – ??
DRAWN – ??
METRIC SCALE – 1:250
CHECKED – LCP
DATE – MAY 2003

BARNET HWY @ JOHNSON/MARINER OVERPASS PLAN VIEW

DWG FILE: ??
SHEET 1 OF 4
REVISION NO. 1

ACAD Barn-John-1 RECORD 2003.DWG JAN 06, 2004 11:40 LCP

DRAINAGE AS-BUILT



STORM SEWERS INDICATED IN BOLD ARE NOT NEW WORKS BUT ARE PREVIOUSLY UNDOCUMENTED RECORD INFORMATION DESCRIBED SPECIFICALLY ON THIS PLAN. FOR OTHER STORM RECORD INFORMATION SEE OTHER APPROPRIATE RECORD PLANS. WYE AND SERVICE CONNECTION INFORMATION IS NOT AVAILABLE.

DRAINAGE UTILITY FEATURES				
	TYPE	ELEVATION	SIZE	MATERIAL
DMH1	RIM	25.684		
	S.W. INV.	22.984	300ø	PVC
	N.W. INV.	23.174	150ø	PVC
	N.E. INV.	22.964	300ø	PVC
DMH2	RIM	22.416		
	S.W. INV.	15.796	300ø	PVC
	W. INV.	19.646	200ø	PVC
	N.W. INV.	15.866	150ø	PVC
	N.E. INV.	15.736	300ø	PVC
DMH3	RIM	15.849		
	W. INV.	13.369	250ø	PVC
	N. INV.	11.889	450ø	PVC
	S. INV.	11.879	450ø	PVC
DMH4	RIM	15.873		
	W. INV.	12.663	450ø	UNKNOWN
	N.W. INV.	14.383	250ø	PVC
	N. INV.	12.693	300ø	UNKNOWN
	E. INV.	12.853	300ø	PVC
	S. INV.	12.663	450ø	PVC
DMH5	RIM	15.968		
	N. INV.	13.808	300ø	PVC
	E. INV.	13.808	250ø	UNKNOWN
	S. INV.	13.798	300ø	UNKNOWN
DMH6	RIM	17.871		
	N. INV.	14.841	300ø	PVC
	S. INV.	14.821	300ø	PVC
DMH20	RIM	18.022		
	N.W. INV.	15.622	300ø	PVC
	E. INV.	15.582	250ø	PVC
	S. INV.	15.552	300ø	PVC
DCO1	RIM	18.109		

DRAINAGE UTILITY FEATURES			
DESCRIPTION	NORTHING	EASTING	RIM ELEVATION
CB 1	5460087.404	514489.459	28.083
CB 2	5460077.554	514498.775	28.297
CB 3	5460112.211	514516.713	25.458
CB 4	5460097.634	514520.749	26.134
CB 5	5460132.458	514538.858	23.687
CB 6	5460117.802	514542.967	24.307
CB 7	5460152.913	514561.413	22.465
CB 8	5460138.176	514563.382	23.027
CB 9	5460167.206	514575.325	22.043
CB 10	5460183.284	514587.891	21.950
CB 11	5460172.934	514602.553	22.473
CB 12	5460346.193	514640.412	15.672
CB 13	5460349.452	514643.339	15.457
CB 14	5460367.318	514644.573	15.506
CB 15	5460385.274	514635.718	16.182
CB 16	5460445.052	514645.077	18.343
CB 17	5460453.209	514633.810	17.944
CB 18	5460465.389	514627.338	17.681
CB 19	5460465.252	514642.199	17.965
CB 20	5460478.512	514627.724	17.669
CB 21	5460483.660	514640.078	17.855
CB 22	5460512.574	514636.543	18.148

DRAINAGE UTILITY FEATURES			
DESCRIPTION	NORTHING	EASTING	RIM ELEVATION
DMH 1	5460099.683	514530.909	25.684
DMH 2	5460164.393	514592.103	22.416
DMH 3	5460333.121	514635.190	15.849
DMH 4	5460356.378	514633.904	15.873
DMH 5	5460377.421	514633.552	15.968
DMH 6	5460456.545	514630.093	17.871
DMH 20	5460511.053	514629.711	18.022
DMH 21	5460507.810	514689.939	18.679

DRAINAGE UTILITY FEATURES			
DESCRIPTION	NORTHING	EASTING	RIM ELEVATION
CB SCUP 1	5460190.420	514613.383	22.607
CB SCUP 2	5460221.384	514629.308	23.396
CB SCUP 3	5460345.763	514660.689	23.409
CB SCUP 4	5460417.332	514638.071	19.142
CB SCUP 5	5460386.052	514641.103	20.941
CB SCUP 6	5460346.975	514641.205	22.860
CB SCUP 7	5460328.566	514639.774	23.396
CB SCUP 8	5460235.175	514615.894	23.089
CB SCUP 9	5460223.401	514610.805	22.746
CB SCUP 10	5460207.936	514603.125	22.249
CB SCUP 11	5460396.992	514653.111	20.665
CB SCUP 12	5460418.471	514650.490	19.436

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.**

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SUPPLEMENTARY LEGEND

⊞ *Catch basin, scup*

NOTES:

1. *ELEVATIONS ARE DERIVED FROM G.P.S. OBSERVATIONS. DATUM IS [CGVD28 (GVRD 2005)]*
2. *THIS PLAN SHOWS HORIZONTAL GROUND LEVEL MEASURED DISTANCES. PRIOR TO COMPUTATION OF NAD83 U.T.M. COORDINATES MULTIPLY BY THE COMBINED FACTOR 0.9995887. DATE OF SURVEY COMPLETION IS OCT 05, 2017.*
3. *THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE INDICATED IN THE PUBLIC ROAD ALLOWANCE ONLY AND ARE SHOWN APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. BC ONE-CALL PROVIDES UNDERGROUND UTILITY LOCATIONS (1-800-474-6886).*
4. *BASEMAP WAS IMPORTED FROM CITY OF COQUITLAM G.I.S. COORDINATE GEOMETRY. ACCURACY IS ESTIMATED AT ±0.15m.*

COQ. ASBUILT No.
D2621-11

FIELD WORK DONE BY RANDY COLOMBO

1:750 0 15 45m

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
Catch basin, round
Drainage service
Drainage cleanout
Sanitary service
Sanitary cleanout
Utility pole(joint pole)
Utility pole with light
Streetlight, davit
Streetlight, post top
Comb signal pole
Traffic signal pole
Junction box
Hydro Guy Wire
Hydro Kiosk
Vegetation Conifer
Vegetation Deciduous
Vegetation Shrub
Survey Traverse Hub
Survey Iron Pin
Survey Lead Plug
Survey Monument

No.	Date	By	Revisions

Design by Date
Drawn by L.P. Date 30-NOV-2017
Checked by Date
Approved by Date

Coquitlam
Engineering & Public Works
3000 Guildford Way, Coquitlam, B.C. V3B 7N2

Scale horiz. 1:750 Scale vert.
Sheet of 1 1
Eng. Project No.

Project MARINER WAY - DEWDNEY TRUNK ROAD TO BARNET HWY
Description Storm Sewer
File: 17Mariner07212130A0

Plot Date: December 13, 2017

Appendix C -

Archaeological Chance Find Procedures

Archaeological Chance Find Procedures

City of Coquitlam

DRAFT 2

November 2021 (version 2)

BROWN & OAKES
ARCHAEOLOGY

Table of Contents

Introduction

This document is presented as an accompaniment to Kwikwetlem Cultural Heritage and Archaeology Chance Find Procedures training provided by Brown & Oakes Archaeology to City of Coquitlam (or the “City”) staff and contractors.

The Chance Find Procedure (CFP) is intended to provide City planners and onsite project personnel guidelines for the appropriate response to an unanticipated discovery of known or suspected archaeological or cultural heritage materials during City operations. A CFP is NOT a substitute for professional archaeological assessment of project areas considered to hold archaeological potential. Thorough archaeological assessment will always reduce project risk of harms to protected archaeological sites and minimize the potential for encountering unanticipated material. This CFP training is intended to promote the preservation and proper management of heritage resources that are unexpectedly encountered during City activities.

The document presents a summary of archaeology site protection legislation, steps to follow in the case of suspected or observed archaeological materials, a list of appropriate authorities to contact in the case of archaeological site encounters, and a guide to archaeological site and materials recognition. Information on Kwikwetlem culture history and connections to traditional lands is not presented in this document and this information is best shared via virtual or in-person presentations.

Purpose

The purpose of CFP documentation is to aid in the protection and proper management of archaeological materials encountered during City of Coquitlam activities. Many land-altering activities have the potential to expose and/or negatively impact undocumented archaeological materials.

The purpose of this document is to:

- Ensure project personnel are aware that undocumented archaeological sites are likely to be present in the City of Coquitlam.
- Promote awareness of activities that may lead to the exposure of archaeological materials, including excavations, vegetation clearing, field survey and inspections, and more.
- Provide personnel the appropriate steps to follow if suspected or observed archaeological resources are encountered during work or personal activities.
- Provide education and resources to assist recognition of archaeological site types and materials in the lower Fraser River region.

Archaeological Sites in British Columbia

Archaeological sites are places that exhibit physical evidence of past human activity. Archaeological sites in British Columbia are automatically protected under the *Heritage Conservation Act* (HCA) when located on provincial, crown, municipal, or private land[1]. The vast majority of archaeological sites in BC include places and belongings of Indigenous peoples. Some post-1846 sites related to newcomer history may also be registered and protected under the HCA if of significance to a place, industry, or region, for example. HCA protection is extended to ship and plane wrecks more than 2 years old.

Many First Nations consider the widely accepted definition of an archaeological site as a place featuring only the material remains of human activity too restrictive and instead advocate for the recognition and protection of a wider range of "cultural heritage" site types, including places of spiritual significance, named locales, known travel routes, and other places of cultural value.

The majority of the City of Coquitlam has not been surveyed for archaeological sites and it is reasonable to expect that many archaeological sites are buried and/or undetected. These sites are collectively referred to as undocumented archaeological sites.

HCA Legislation and Policies

Archaeological sites are automatically protected under the terms of the *Heritage Conservation Act* whether known or undocumented. Sites are protected whether previously disturbed by historic activities or intact. The HCA prohibits the alteration or disturbance of archaeological sites in whole or in part, on provincial public and private lands, whether impacts are intentional or inadvertent, and irrespective of previous land disturbance.

The HCA provides substantial penalties for the destruction or unauthorized disturbance of archaeological sites including imprisonment for up to two years and fines of up to $1,000,000.

Alterations to archaeological sites may proceed under appropriate HCA permits held by professional archaeologists following provincial assessment guidelines[2]. Work plans and methodologies related to archaeological site investigations must meet provincial regulatory standards and are expected to conform to participating First Nation cultural heritage policies and best-practice standards.

Archaeological materials on federally managed lands may be protected by other legislation and policies. Many federal agencies will adhere to the requirements outlined in the *HCA* when managing archaeological sites.

[1] http://www.for.gov.bc.ca/archaeology/index.htm.

[2] The HCA is administered by the Archaeology Branch, Ministry of Forests, Lands, Natural Resources and Rural Development.

First Nation Cultural Heritage Management

Many BC First Nations maintain cultural heritage policies and/or heritage permitting systems to assert oversight over Indigenous cultural heritage management and to ensure a high standard of archaeological practice. Contact should be made with locally affected Nations prior to any heritage study or project work with the potential to encounter cultural heritage materials to ensure adherence to Nation-preferred heritage protections, permits, and policy.

Potential to Encounter Archaeological Sites

Any project involving ground alterations has the potential to expose undocumented archaeological sites. Common forms of ground disturbances that have led to site discoveries include land grading, vegetation clearing/grubbing, excavation, asphalt/concrete removal, geotechnical drilling, access road or trail building, foundation demolition, heavy equipment movement, habitat planting, stream and pond channeling or dredging.

Other kinds of work activities where teams may encounter undocumented archaeological sites include field teams working in proximity to natural, undeveloped or minimally disturbed terrain. Teams involved in field surveys, field inspections, or inventories of natural ground and waterways, riparian areas, municipal parks and trails, forested areas, cut bank or erosion area, and so on may encounter exposed archaeological materials.

City workers or contractors engaged in any activity that may result in archaeological materials identification should be made aware of HCA site protection legislation and field supervisors properly versed CFP procedures.

Types of Archaeological Sites

The following site types are well-known across the lower Fraser River region and may be encountered in the City of Coquitlam. The following site types may contain a range of artifact types and sediment signatures.

- **Stone tool sites** containing isolated artifacts or accumulations of stone tool working debris.
- **Habitation sites** show accumulations of food remains, tools, and evidence such as hearths indicating short term and seasonal camps and settlements used for travel and resource procurement as well as large and permanent villages.
- **Surface features** such as cultural depressions created by former habitations, earthen fortifications, burial mounds, and rock cairns.
- **Wet sites** contain preserved organic materials like woven basketry or wood tools in addition to other cultural material; these sites form under special preservation conditions typically anaerobic water saturated sediments along waterways and floodplains.
- **Culturally Modified Trees (CMTs)** include bark stripped trees, planks, and territory markers.
- **Rock art** including pictographs (painted rock images) and petroglyphs (images carved or pecked into rockfaces or boulders).

Archaeological Chance Find Procedure

In the event of found or suspected archaeological material, follow the procedures outlined below.

STEP 1: WATCH for potential archaeological materials

- ⇨ Know that undocumented archaeological sites are expected throughout Coquitlam.
- ⇨ Know that archaeological materials are protected by law and must be reported.
- ⇨ If you believe you may have encountered archaeological materials (either intact or disturbed) follow the steps outlined below.

STEP 2: STOP work in proximity to the material

- ⇨ If known or suspected archaeological materials are encountered, STOP work in the immediate vicinity.
- ⇨ Do not disturb, move, relocate, or collect the material.

STEP 3: REPORT observed materials

- ⇨ Alert the site supervisor that suspected archaeological materials have been observed.
- ⇨ The site supervisor will ensure appropriate contact is made with City managers who will in turn reach out to archaeological professionals.

STEP 4: CONTACT archaeological professionals

- ⇨ Seek immediate advice from an archaeological professional.
- ⇨ Teams may be advised to protect the area with flagging or cones until the area can be assessed by the appropriate representative.
- ⇨ Teams may be requested to provide locational details or photographs of the material.

STEP 5: AWAIT advisement

- ⇨ Wait for instructions from the appropriate representative; do not begin ground disturbing work until cleared to do so.
- ⇨ Prepare and submit an incident report to ensure compliance with appropriate regulators and interest groups.

Archaeological Chance Find Procedure - Suspected Ancestral (Human) Remains

In the event of found or suspected human remains, follow the procedures outlined below*.

STEP 1: STOP all activity at the job site immediately, including the removal of backfill. Do not rebury the remains.

STEP 2: REPORT to the City Project Manager. The Project Manager will contact an archaeological professional and determine the appropriate course of action. In most cases, the archaeology professional will visit the site to determine if the materials are reasonably expected to be human and archaeological. If warranted, the consultant will notify the Archaeology Branch and the RCMP, the Office of the Coroner, and affected First Nations. The Coroner will affirm whether the remains are archaeological and not of forensic concern. The archaeologist will inform the Archaeology Branch and First Nations will be consulted to determine culturally appropriate handling protocols and subsequent project management options.

STEP 3: PROTECT the affected location with flagging or cones to prevent additional disturbance and for privacy. Do not photograph the material.

STEP 4: TREAT the remains with dignity and respect. Do not allow bystanders to take photographs or video.

STEP 5: AWAIT advisement.

* If it is reasonable to think the human remains are not archaeological but forensic in nature, an immediate call to the RCMP is required.

Management Options

If determined that an archaeological or cultural heritage site (intact or disturbed) is present, an archaeologist will coordinate communications with the City, local affected First Nations, and the Archaeology Branch to evaluate management options. Archaeology Branch and First Nations approval and additional permitting may be required prior to the implementation of management options.

Examples of potential management options are provided below. Options will vary based on site characteristics, proponent needs, and Archaeology Branch and First Nation requirements.

Option A: Site avoidance through project redesign or relocation. Site avoidance is always preferred. Avoidance minimizes impacts to irreplaceable archaeological sites and reduces cost and schedule impacts.

Option B: Systematic data recovery through controlled archaeological excavation or other method. Data recovery is destructive to archaeological sites and will entail consideration of costs and schedule coordination.

Option C: Monitoring of construction activities by a professional archaeological team. Monitoring is appropriate where project impacts cannot be evaluated before construction (due to impenetrable surfaces or underground facilities, for example) or where potential to encounter archaeological materials is present following impact assessment or systematic data recovery.

Best Practices for CFP Implementation

- A Chance Find Procedure is best applied as an outcome stemming from archaeological assessment – as a last step verification that archaeological materials have not been overlooked in project area assessments, or where there is a professional assessment that documents a low expectation for encountering archaeological materials in a work area.
- A Chance Find Procedure is not an acceptable replacement for a professional archaeological overview (AOA) or archaeological impact assessment (AIA) or a well-designed and implemented archaeological construction monitoring plan for many areas. Engagement with professional archaeological teams, affected First Nations, or the Archaeology Branch will assist in appropriate heritage study approaches.
- Chance Find Procedure training must be delivered by professional archaeologists and local area First Nations who wish to contribute to CFP presentations.
- Chance Find Procedures should be summarized regularly as part of job or project requirements, and CFP training repeated by the archaeological and First Nation team for new employees, project teams, and subcontractors.
- Chance Find Procedures do not supersede any requirements or policies pertaining to cultural heritage management by First Nations with interests in the area. Proponents are encouraged to seek input from interested First Nations on area-specific CFPs as part of any project engagement process.

Contact List

Archaeology Branch

Paula Thorogood	Planning and Assessment Manager	250-953-3300	Paula.Thorogood@gov.bc.ca
Nathan Friesen	Planning and Assessment Supervisor	250-953-3306	Nathan.P.Friesen@gov.bc.ca

City of Coquitlam

Main Reception		604-927-3000

Police and Coroner

RCMP (Non-emergency)	Coquitlam	604-945-1550
BC Coroners Service	Lower Mainland Region	604-660-7708

Area First Nations

Kwikwetlem First Nation	604-540-0680
Katzie First Nation	604-465-8961
Kwantlen Nation	604-888-2488
Musqueam Indian Band	604-263-3261
Stó:lō Nation	604-824-2420
Tsleil Waututh Nation	604-929-3454

Archaeological Site and Materials Identification

The following archaeological sites and artifacts are common to the lower Fraser River region. This guide is to assist in the recognition and protection of archaeological materials found by chance. If you identify any archaeological material, stop work immediately and contact a professional archaeologist.

Artifacts

Artifacts are objects made or modified by humans and may be formed of stone, bone, antler or wood. Bone, antler and wood tools were produced in abundance, but stone artifacts are the most common artifacts found in the lower Fraser region because of the preservation durability of stone. Bone and antler were fashioned into a variety of items, including needles, knives, points, jewelry, awls and scrapers. Wood was used to make implements like spoons and bowls, handles, ceremonial objects, canoes, houses, and much more.

Photo Credit: RBCM, Archaeology Collection. Antler and wood tools (https://learning.royalbcmuseam.bc.ca)

Stone tools common to this region include projectile points, knives, adzes (axes), scrapers, mauls (hammers), net weights, beads, and more. Archaeologists distinguish chipped stone from ground stone artifacts, each distinguished by the mode of manufacture, either flaking scars or grinding and polishing marks. Stone flakes or ‘debitage’ is produced during the process of making stone tools. These flakes were sometimes used as tools themselves or were left behind at the stone tool working site. Culturally produced debitage shows features distinctive from naturally broken rock, gravel or crush, but these signatures can be difficult to identify to an untrained eye. Stone artifacts were produced from dacite, quartzite, slate and nephrite as well as obsidian, chert, and other materials. Stone was acquired locally or transported or traded over long distances; high-quality materials like obsidian has been traced to locations from Prince Rupert to Oregon and beyond.

Artifacts may be found as isolated finds or in association with other cultural materials.

Photo Credit: B&OA, Chipped stone artifacts from Coquitlam Lake.

Photo Credit (left): B&OA, Nephrite ground stone adze from Port Coquitlam. Photo Credit (right): RBCM, Archaeology Collection. Ground stone hand mauls (https://learning.royalbcmuseam.bc.ca)

Photo Credit: B&OA, Stone tool debitage from BC Interior.

Beads

Beads were made from a variety of materials including stone, shell, bone and glass (in more recent times). Shell and stone disc beads were used in jewelry, regalia and in mortuary practices across the Northwest Coast. On the Lower Fraser it is most common to find stone beads at archaeological sites fashioned from mud or silt stone, slate, or other softer stone. At some burial sites, individuals of rank were laid to rest with thousands of stone and shell beads.

Photo Credit: B&OA, Ground stone beads from near Agassiz.

Indigenous Historical Artifacts

Indigenous use of European materials in the years following contact are often found in early historic sites. Ceramics, glass, and metal were valued for their strength, durability, ease of access, or aesthetic properties. Glass was worked using traditional stone tool techniques in the same way as obsidian (a natural volcanic glass). Clay pipes were adopted by Indigenous peoples who several centuries earlier had introduced the practice of tobacco smoking to European traders. Glass beads were used by European fur traders to trade with Indigenous peoples; trade beads were initially valued for their vibrant colour and the expectation of beads as a wealth item.

Photo Credit (left): B&OA, Worked glass and clay stone pipe, Coquitlam.

Photo Credit (middle): https://www.canadashistory.ca/explore/fur-trade/tobacco-pipes. Photo Credit: Oregon Museum of Natural and Cultural History, Glass trade beads (https://mnch.uoregon.edu/index.php/collections-galleries).

Hearths

Hearths are the remnants of fires identifiable by dense black charcoal, ash and heat oxidized sediments. While natural forest fires may also leave traces of burning, hearths tend to be more defined and frequently show concave bases, evidence of repeated use, and contain or are in proximity to burned bone, fire-altered rock, and artifacts.

Fire-Altered Rock

Fire-altered rock (FAR) is rock modified by repeated heating and cooling. Heating small, rounded river cobbles and immersing the hot stones in water filled baskets or boxes was a frequently used cooking technique called ‘stone boiling’. Heated stones were also used to warm clothing and bedding. The repeated heating and cooling of FAR created distinctive fracture and colour patterns that are easily distinguished from naturally broken rock. FAR shows irregular breakage patterns, is frequently deeply pitted, is often deep rust or black in colour, and may be found mixed in charcoal and ash laden sediments. As FAR is often found in abundance around settlement areas or near cooking features and hearths, it is a frequent first indicator of the presence of archaeological sites. Often mixed in FAR deposits are boiling stones—small, rounded pebbles that have not yet been fractured by thermal processes

Photo Credit: B&OA, Fire altered rock, Coquitlam.

Shell and Non-Shell Midden

Midden deposits are generally indicative of camp or village sites. Middens accumulate through the repeated, ongoing use of an area where food remnants or the debris of daily living build up in layers at a site over time. In coastal areas, shellfish provided an abundant food source and, middens contain abundant fragmented or whole shell typically embedded in dark, greasy, sediments rich in charcoal, ash, fire cracked rock, burnt materials, and artifacts. Because shell neutralizes the acidity in soil, shell middens enhance preservation of organic food remains and tools, and fish and mammal bone, wood, antler, and botanical remains are often well-preserved in shell midden sites.

Non-shell middens are accumulations of living materials formed at camps and settlements away from marine waterways. Non-shell midden shows layered deposits of dark sediments, ash, and sometimes sand and clay in sediments with little to no shell. These deposits rarely contain bone, antler, or wood remains due to poorer preservation environments.

In Coquitlam, non-shell middens are the more common site type but there are a few examples of inland shell midden sites associated with camps or settlements where shellfish was transported to locations by travel or trade.

Photo Credit (left): B&OA, Non-shell stratified midden Port Coquitlam. Photo Credit (right): Shell midden, Vancouver Island (*https://learning.royalbcmuseum.bc.ca/pathways/can-)*

Surface Features

Surface features are non-portable cultural formations visible on the landscape. Features may include pits or depressions, earthen mounds or rock cairns, petroforms (rock arrangements) or trails. Cultural depressions may indicate the location of semi-subterranean winter dwellings, plank houses where midden accumulated around the outside of structures, cache pits used for tool or food storage, or pits and trenches used for food cooking or processing. Cultural depressions are identifiable by their uniform shape (usually round or rectangular), a berm may be present around the edge of features, the presence of associated artifacts, or concentrations of charcoal, ash, and fire altered rock.

Cultural mounds or rock cairns are other familiar surface features. Earthen burial mounds and rock cairns are part of a mortuary tradition found throughout the lower Fraser region over the past 1,500 years. Cultural mounds and cairns range in size from around a meter in diameter to more than 12 meters across. Individual occurrences or clusters of well-formed oval or circular mounds of earth and rock should trigger archaeological assessment.

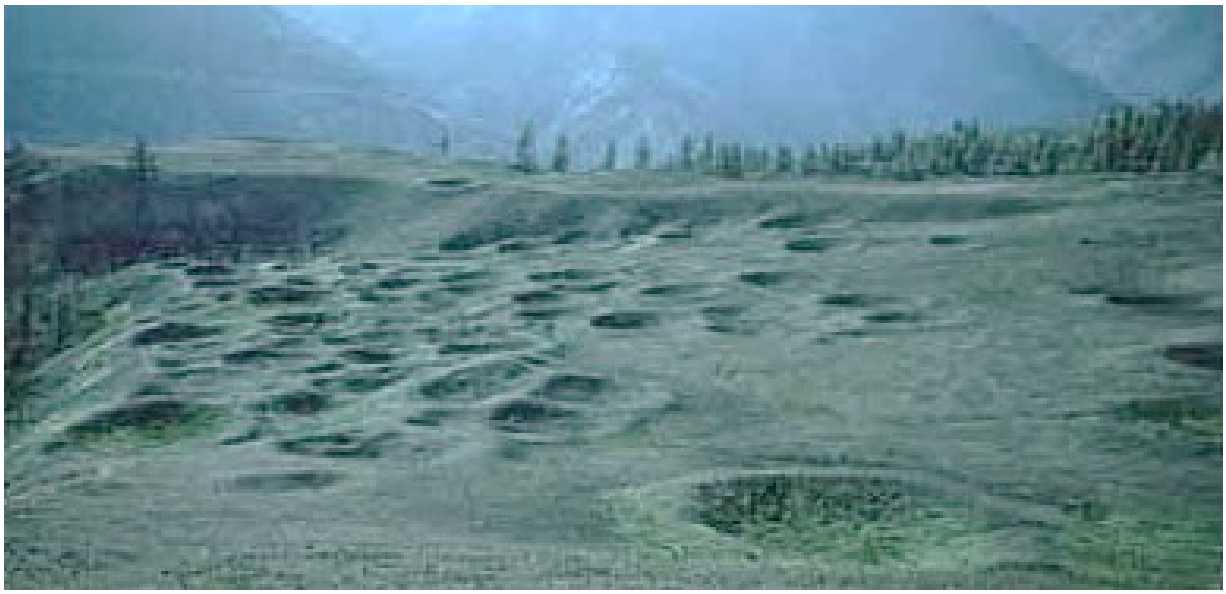

Photo Credit: SFU Museum, Winter pit house village, Lilloeet.

Rock Shelters and Caves

Rock shelters were used, among other purposes, as camps, spiritual or burial locations, and storage caches. Shelters can be found associated with overhangs of large boulders, indentations in rock bluffs or in caves. Shelters often associate with artifacts, rock art, and hearth features.

Ancestral (Human) Remains

Human remains are especially sensitive and significant finds. Any potential human bone requires immediate implementation of the CFP. Ancestral remains are frequently present at archaeological locations and may be found articulated in a burial context or as scattered fragments.

Petroglyphs and Pictographs (Rock Art)

Northwest Coast rock art includes images depicted on boulders, rock overhangs, rock faces, or other exposed rock surfaces. Pictographs are drawings or designs painted on rock using pigments like ochre or charcoal mixed with grease. Petroglyphs are images incised or pecked into stone. Designs vary widely and often depict animals, humans, or an extensive variety of geometric shapes.

Photo Credit: B&OA, Portion of petroglyph panel at Petroglyph Provincial Park, Nanaimo.

Photo Credit: B&OA, Portion of pictograph panel at Pitt Lake.

Fish Weirs and Traps

Fish weirs are structures constructed to funnel and trap fish for harvesting. Traps were built in intertidal areas along marine and river shorelines and near stream mouths. Weirs vary in form and structure depending on water and shoreline conditions, fish species targeted for harvest, intended volume of harvest, and community preferences. Fish weir sites are identifiable by linear or patterned arrangements of wooden stakes protruding from beach or bank edges or boulder alignments along waterways.

Photo Credit: Washington State Archives, Yelm Jim Fish Trap 1885 (http://www.digitalarchives.wa.gov/Record/View/DAA73FC7A57E989D65B6DBEA419FC89E)

Wet Sites

Wet sites are special preservation environments that form in low oxygen water saturated environments along waterways, in bogs and on floodplains. These locations permit enhanced preservation of organic artifacts like wood, bark, and botanicals. Artifacts found in wet sites have included basketry, twine and rope, wooden tools and weapons, architectural structures, and ceremonial implements made of wood and bone.

Photo Credit (left): Mike Blake. Ground slate knife with wooden handle, Agassiz. Photo Credit (right): Katherine Bernick, Waterlogged and preserved basket, Coquitlam.

Culturally Modified Trees (CMTs)

Culturally Modified Trees are trees that have been utilized by Indigenous Peoples for a broad range of cultural uses. Wood was used to build houses, canoes, tools, and weapons. Branches, boughs, and leaves were used to fashion tools, for medicine and in cultural ceremony. Harvesting cedar bark and roots was undertaken regularly to make clothing, cordage, basketry, and sleeping mats, ceremonial regalia, and much more.

Triangular bark stripped cedars are the most common form of CMT; a long, linear triangular bark scar will show where bark was removed from the trunk of a living tree. The exposed scar will heal over time creating a seam on the outer tree bark. This form of sustainable harvesting allowed the same tree to be used multiple times for bark harvesting. CMTs can also show evidence of wood removal where wedges were used to pry rectangular planks of wood from standing, living trees.

Logging and clearing throughout much of Coquitlam municipality reduces the chance that archaeological CMTs remain in most forested areas today, but more recent CMTs where bark or wood was harvested from second-growth forest by Kwikwetlem for cultural uses may be present.

Photo Credit: B&OA, Bark stripped cedars, Coquitlam.

Additional Resources

Learning Portal, Royal BC Museum - https://learning.royalbcmuseum.bc.ca

SFU Museum of Archaeology & Ethnology - https://www.sfu.ca/archaeology/museum.html

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