



INVITATION TO TENDER NO. PS20180020 (the "ITT")

CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE

Tenders are to be addressed to the Supply Chain Management office, 4th Floor, City of Vancouver, 453 West 12th Avenue, Vancouver, British Columbia, Canada, V5Y 1V4, and must be received in the drop box at the Supply Chain Management office prior to 3:00pm, Vancouver Time (as defined in Note 3 below), on February 20, 2018 (the "Closing Time"). Tenders will not be publicly opened. Tender results can be found at the following website within 48 hours of the Closing Time:

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

NOTES:

1. Tenders may be delivered by couriers or otherwise in person at the address specified above, prior to the Closing Time.
2. Tenders must be in sealed envelopes or packages marked with the Tenderer's name and the ITT title and number. Tenderers should submit one copy of the Tender and one copy of each other document required by the Tender Documents, including the bid bond described in Part B of this ITT.
3. "Vancouver Time" will be conclusively deemed to be the time shown on the clock above the Supply Chain Management drop box on the 4th Floor of Vancouver City Hall.
4. The City of Vancouver is open on business days from 8:30 a.m. to 4:30 p.m., Vancouver Time, and is closed Saturdays, Sundays, and holidays.
5. DO NOT SUBMIT TENDERS BY FAX OR E-MAIL.
6. All queries related to this ITT should be submitted in writing to the attention of:

Jessica Li, Buyer

Fax: 604-873-7057

Email: jessica.li@vancouver.ca

(the "Contact Person")

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
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Form of Agreement

Pages AGT1 to AGT80

Definitions and General Conditions of Stipulated Price Contract
(CCDC2 - 2008 - not attached, but incorporated by reference - see
<http://www.ccdc.org/downloads/index.html>)

Schedule 1 - Supplementary General Conditions
Schedule 2 - List of Specifications and Drawings
Schedule 3 - Schedule of Prices
Schedule 4 - Subcontractors and Suppliers
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Schedule 6 - Performance and Labour and Material Payments Bonds
Schedule 7 - Insurance Certificates
Schedule 8 - City Pre-Contract Hazard Assessment Form
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Schedule 10 - Force Account Labour and Equipment Rates
Schedule 11 - Prime Contractor Agreement Form

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
PART A - INTRODUCTION

1.0 OVERVIEW OF PROJECT

- 1.1 The City of Vancouver (the "City") invites Tenders for the roof and skylight replacement work at Champlain Heights Community Centre.
- 1.2 The Work generally includes, but is not limited to:
- The removal of the existing sloped cedar shake roofing system and skylights and the installation of a new sloped roof, skylights, and related cladding replacement at the Champlain Heights Community Centre
 - Further information is contained in Appendix 3 - Specifications and Drawings
- 1.3 The Site is located at 3350 Maquinna Drive, Vancouver, British Columbia. The Site is further described in the Tender Documents, including the Site Plan attached as Appendix 3.
- 1.4 The purpose of this ITT is to select a Tenderer with the capability and experience to efficiently and cost-effectively perform and complete the Work.
- 1.5 IF A POTENTIAL TENDERER BELIEVES THAT THE CITY MAY BE UNABLE TO SELECT IT DUE TO A CONFLICT OF INTEREST, BUT IS UNCERTAIN ABOUT THIS, THE POTENTIAL TENDERER IS URGED TO CONTACT THE CONTACT PERSON AS SOON AS POSSIBLE WITH THE RELEVANT INFORMATION SO THAT THE CITY MAY ADVISE THE POTENTIAL TENDERER REGARDING THE MATTER. SEE SCHEDULE "L" FOR AN INDICATION OF THE TYPES OF CONFLICTS OF INTEREST THAT OFTEN ARISE.

2.0 SUSTAINABILITY

- 2.1 The City's Procurement Policy, Ethical Purchasing Policy and related Supplier Code of Conduct found at <http://vancouver.ca/doing-business/selling-to-and-buying-from-the-city.aspx> align the City's approach to procurement with its corporate social, environmental and economic sustainability values and goals. They evidence the City's commitment to maximize benefits to the environment through product and service selection, and to ensure safe and healthy workplaces, where human and civil rights are respected. Each Tenderer is expected to adhere to the supplier performance standards set forth in the Supplier Code of Conduct.
- 2.2 A Contractor is to provide environmentally sensitive products or services wherever possible. Where there is a requirement that a Contractor supply materials, and where such materials may cause adverse environmental effects, each Tenderer should indicate the nature of the hazard(s) in its Tender. Furthermore, each Tenderer should advise the City of any known alternatives or substitutes for such materials that would mitigate such adverse effects.

3.0 TENDER DOCUMENTS

- 3.1 The Tender Documents are:
- (a) Part A - Introduction, and its appendices:
 - (i) Appendix 1 - Information Meeting Attendance Form;

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CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
PART A - INTRODUCTION

- (ii) Appendix 2 - Response Notification Form; and
- (iii) Appendix 3 - Specifications and Drawings;
- (b) Part B - Terms and Conditions of ITT Process;
- (c) Part C - Form of Tender (including all schedules),
- (d) Part D - Form of Agreement (including all schedules);
- (e) the Specifications (provided separately and to be incorporated into the Contract when finalized);
- (f) the Drawings (provided separately and to be incorporated into the Contract when finalized);
- (g) all addenda or amendments to the ITT, and all questions and answers in connection with the ITT, issued in writing by the City prior to the Closing Time, as well as any addenda, amendments or questions and answers issued in writing by the City after the Closing Time and accepted in writing by the Tenderers.

4.0 INFORMATION MEETING

- 4.1 Tenderers are invited to attend an information meeting (the "Information Meeting") on **February 1, 2018** commencing at **10:00am**.
- 4.2 The location of the Information Meeting will be: **Champlain Heights Community Centre, 3350 Maquinna Drive, Vancouver, British Columbia.**
- 4.3 Tenderers are asked to pre-register for the Information Meeting by submitting the Information Meeting Attendance Form (Appendix 1) to the Contact Person by fax or email prior to **3:00 pm January 31, 2018**.

5.0 ADMINISTRATIVE REQUIREMENTS

- 5.1 Tenderers are asked to indicate their intentions to submit Tenders by submitting the Response Notification Form (Appendix 2) to the Contact Person by fax or email on or before **February 13, 2018**.
- 5.2 It is the sole responsibility of each Tenderer to check the City's website at <http://vancouver.ca/doing-business/open-bids.aspx> regularly for addenda, amendments and questions and answers related to this ITT, which the City may issue at any time during the process, and for any reason, at its discretion.

6.0 CONDUCT OF ITT - INQUIRES AND CLARIFICATIONS

- 6.1 The City will have conduct of this ITT, and all communications are to be directed only to the Contact Person named on the cover page.
- 6.2 It is the responsibility of each Tenderer to thoroughly examine the Tender Documents and satisfy itself as to the full requirements of this ITT and their acceptability to the Tenderer.

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
PART A - INTRODUCTION

- 6.3 The City welcomes inquiries, requests for clarification or comments from registered Tenderers. All inquiries or comments to the City must be in written form only. All inquiries, requests for clarification and comments must be faxed to 604-873-7057 or e-mailed to jessica.li@vancouver.ca prior to February 13, 2018, and must in each case be addressed to the attention of the Contact Person. In response to inquiries, requests for clarification or comments, the City, in its sole discretion, may make amendments to this ITT or may issue questions and answers to all Tenderers who have submitted a Response Notification Form and post them on the City's website.

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
APPENDIX 1 - INFORMATION MEETING ATTENDANCE FORM



CITY OF VANCOUVER
Purchasing Services

Invitation to Tender No. PS20180020

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

Jessica Li
City of Vancouver
Fax: 604-873-7057
Email: jessica.li@vancouver.ca

Your details:

Tenderer's Name:

"Tenderer"

Address:

Telephone:

_____ Fax: _____

Key Contact Person:

E-mail:

We will attend the Information Meeting for: ITT No. PS20180020, "Contractor for Roof and Skylight Replacement at Champlain Heights Community Centre".

Signature

Name of Authorized Signatory (Please print)

E-mail Address (Please print)

Date

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
APPENDIX 2 - RESPONSE NOTIFICATION FORM



CITY OF VANCOUVER
Purchasing Services

Invitation to Tender No. PS20180020

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

Jessica Li
City of Vancouver
Fax: 604-873-7057
Email: jessica.li@vancouver.ca

Your details:

Tenderer's Legal

Name:

"Tenderer"

Address:

Telephone:

_____ Fax: _____

Key Contact Person:

E-mail:

We WILL / WILL NOT submit a Tender in response to ITT No. PS20180020, "Contractor for Roof and Skylight Replacement at Champlain Heights Community Centre" on or before the Closing Time.

Signature

Name of Authorized Signatory (Please print)

E-mail Address (Please print)

Date

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
APPENDIX 3 - SPECIFICATIONS AND DRAWINGS

SPECIFICATIONS AND DRAWINGS
(See attached)

DRAWINGS:

PLANS AND ELEVATIONS:

- BE-0.01 - DRAWING LIST
- BE-0.02 - ROOF SCHEDULE
- BE-1.00 - SITE PLAN
- BE-1.01 - EXISTING ARCHITECTURAL ROOF PLAN
- BE-1.01A - ROOF PLAN
- BE-1.02 - ROOF PLAN - SOUTH & EAST ELEVATIONS
- BE-1.03 - ROOF PLAN - NORTH & WEST ELEVATIONS

ROOF DETAILS:

- BE-5.00A - ROOF RIDGE/HIP - ASPHALT SHINGLE
- BE-5.00B - ROOF RIDGE/HIP - CEDAR SHAKE
- BE-5.00C - ROOF RIDGE/HIP - METAL ROOF
- BE-5.01A - ROOF EAVE - ASPHALT SHINGLE
- BE-5.01B - ROOF EAVE - CEDAR SHAKE
- BE-5.01C - ROOF EAVE - METAL ROOF
- BE-5.02A - ROOF @ BASE OF WALL - ASPHALT SHINGLE
- BE-5.02B - ROOF @ BASE OF WALL - CEDAR SHAKE
- BE-5.02C - ROOF @ BASE OF WALL - METAL ROOF
- BE-5.03A - ROOF VALLEY - ASPHALT SHINGLE
- BE-5.03B - ROOF VALLEY - CEDAR SHAKE
- BE-5.03C - ROOF VALLEY - METAL ROOF
- BE-5.04A - ROOF @ BASE OF WALL - ASPHALT SHINGLE
- BE-5.04B - ROOF @ BASE OF WALL - CEDAR SHAKE
- BE-5.04C - ROOF @ BASE OF WALL - METAL ROOF
- BE-5.05A - ROOF RAKE - ASPHALT SHINGLE
- BE-5.05B - ROOF RAKE - CEDAR SHAKE
- BE-5.05C - ROOF RAKE - METAL ROOF
- BE-5.06 - FIXED SKYLIGHT @ WALL
- BE-5.07A - ROOF @ FIXED SKYLIGHT BASE/SIDE - ASPHALT SHINGLE
- BE-5.07B - ROOF @ FIXED SKYLIGHT BASE/SIDE - CEDAR SHAKE
- BE-5.07C - ROOF @ FIXED SKYLIGHT BASE/SIDE - METAL ROOF
- BE-5.08A - ROOF @ VERTICAL WALL CLADDING - ASPHALT SHINGLE
- BE-5.08B - ROOF @ VERTICAL WALL CLADDING - CEDAR SHAKE
- BE-5.08C - ROOF @ VERTICAL WALL CLADDING - METAL ROOF

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
APPENDIX 3 - SPECIFICATIONS AND DRAWINGS

Specifications:

00 01 01	Project Title Page
01 01 10	Table of Contents
01 01 15	List of Drawing Sheets
00 43 23	Alternate Prices
01 10 00	Summary of Work
01 31 00	Project Management & Coordination
01 40 00	Quality Requirements
01 50 00	Temporary Facilities & Controls
01 54 23	Temporary Scaffolding and Platforms
01 73 29	Cutting and Patching
01 77 00	Closeout Procedures
01 78 36	Warranties
02 41 00	Demolition
06 05 73	Wood Treatment
06 10 00	Rough Carpentry
07 13 26	Self-Adhering Bituminous Membrane
07 21 13	Rigid Insulation
07 31 13	Asphalt Shingle Pitched Roofing
07 31 29	Cedar Shakes
07 46 23	Wood Siding
07 53 23	Fully Adhered EPDM
07 60 00	Flashing & Sheet Metal
07 61 13	Standing Seam Sheet Metal Roofing
07 92 00	Sealant
08 63 00.16	Pressure-Plate Metal-Framed Skylights
09 91 00	Painting

PROJECT DOCUMENTS

ROOF REMEDIATION

CHAMPLAIN HEIGHTS COMMUNITY CENTRE

3350 MAQUINNA DRIVE
VANCOUVER, BC

ISSUE FOR RE-TENDER

JANUARY 8, 2018



PROJECT: VR15104C

DRAWING LIST:

DWG# DRAWING TITLE

BE-0.01 DRAWING LIST
 BE-0.02 ROOF SCHEDULE

PLANS

BE-1.00 SITE PLAN
 BE-1.01 EXISTING ARCHITECTURAL ROOF PLAN
 BE-1.01A ROOF PLAN

BE-1.02 SOUTH & EAST ELEVATIONS
 BE-1.03 NORTH & WEST ELEVATIONS

ROOF DETAILS

BE-5.00A ROOF RIDGE / HIP - ASPHALT SHINGLE
 BE-5.00B ROOF RIDGE / HIP - CEDAR SHAKE
 BE-5.00C ROOF RIDGE / HIP - METAL ROOF

BE-5.01A ROOF EAVE - ASPHALT SHINGLE
 BE-5.01B ROOF EAVE - CEDAR SHAKE
 BE-5.01C ROOF EAVE - METAL ROOF

BE-5.02A ROOF @ BASE OF WALL - ASPHALT SHINGLE
 BE-5.02B ROOF @ BASE OF WALL - CEDAR SHAKE
 BE-5.02C ROOF @ BASE OF WALL - METAL ROOF

BE-5.03A ROOF VALLEY - ASPHALT SHINGLE
 BE-5.03B ROOF VALLEY - CEDAR SHAKE
 BE-5.03C ROOF VALLEY - METAL ROOF

BE-5.04A ROOF @ BASE OF WALL - ASPHALT SHINGLE
 BE-5.04B ROOF @ BASE OF WALL - CEDAR SHAKE
 BE-5.04C ROOF @ BASE OF WALL - METAL ROOF

BE-5.05A ROOF RAKE - ASPHALT SHINGLE
 BE-5.05B ROOF RAKE - CEDAR SHAKE
 BE-5.05C ROOF RAKE - METAL ROOF

BE-5.06 FIXED SKYLIGHT @ WALL

BE-5.07A ROOF @ FIXED SKYLIGHT BASE - ASPHALT SHINGLE
 ROOF @ FIXED SKYLIGHT SIDE - ASPHALT SHINGLE
 BE-5.07B ROOF @ FIXED SKYLIGHT BASE - CEDAR SHAKE
 ROOF @ FIXED SKYLIGHT SIDE - CEDAR SHAKE
 BE-5.07C ROOF @ FIXED SKYLIGHT BASE - METAL ROOF
 ROOF @ FIXED SKYLIGHT SIDE - METAL ROOF

BE-5.08A ROOF @ VERTICAL WALL CLADDING - ASPHALT SHINGLE
 BE-5.08B ROOF @ VERTICAL WALL CLADDING - CEDAR SHAKE
 BE-5.08C ROOF @ VERTICAL WALL CLADDING - METAL ROOF

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



300 - 4595 CANADA WAY, BURNABY, BC
 604.320.1999 JRSENGINEERING.COM



5	ISSUE FOR RE-TENDER	01/08/18
4	RE-TENDER REVIEW	09/26/17
3	BUILDING PERMIT	04/25/17
2	TENDER	03/15/17
1	REVIEW	02/10/17
No.	ISSUE / REVISION	MM/DD/YY

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**CHAMPLAIN HEIGHTS
 COMMUNITY CENTRE**
 3350 MAGUNNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

DRAWING LIST

DATE:	FEB 2017	DRAWING No:	BE-0.01
SCALE:	AS NOTED		
DESIGNED:	JJ	PROJECT No:	VR15104C
DRAWN:	JM		
REVIEWED:	SC/JJ		

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ROOF SCHEDULE:

LEGEND

SCOPE OF WORK



5	ISSUE FOR RE-TENDER	01/08/18
4	RE-TENDER REVIEW	09/26/17
3	BUILDING PERMIT	04/25/17
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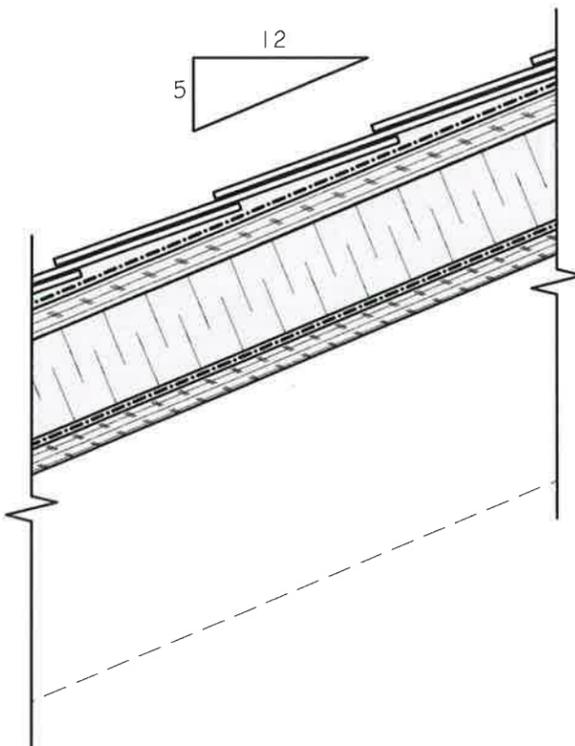
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**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAQUINNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

ROOF SCHEDULE

DATE:	FEB 2017	DRAWING No:	
SCALE:	AS NOTED		BE-0.02
DESIGNED:	JJ	PROJECT No:	
DRAWN:	JM		VR15104C
REVIEWED:	SC / JJ		



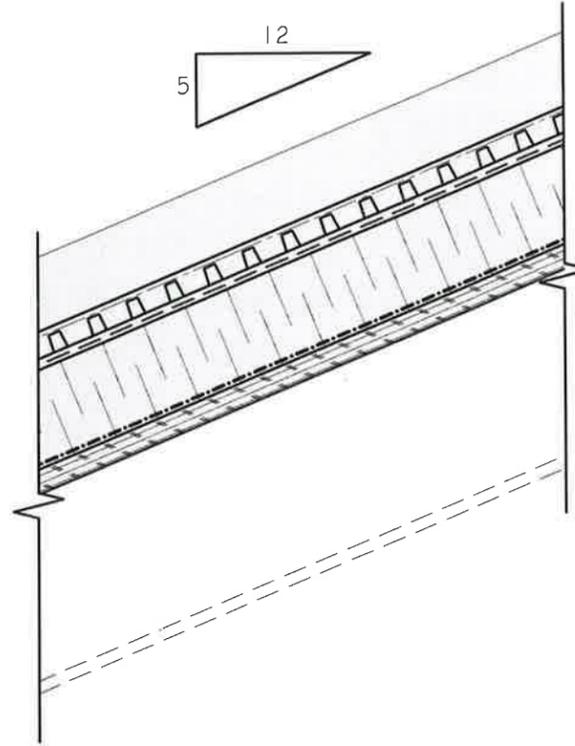
R1

PITCHED ROOF - ASPHALT SHINGLES

SCALE: 3"=1'-0"

- NEW ASPHALT SHINGLES
- NEW VAPOUR PERMEABLE SA MEMBRANE UNDERLAYMENT
- NEW 5/8" PLYWOOD
- NEW 4" (R20) POLYISO INSULATION
- NEW SA MEMBRANE UNDERLAYMENT
- NEW 5/8" PLYWOOD

EXISTING WOOD STRUCTURE



R3

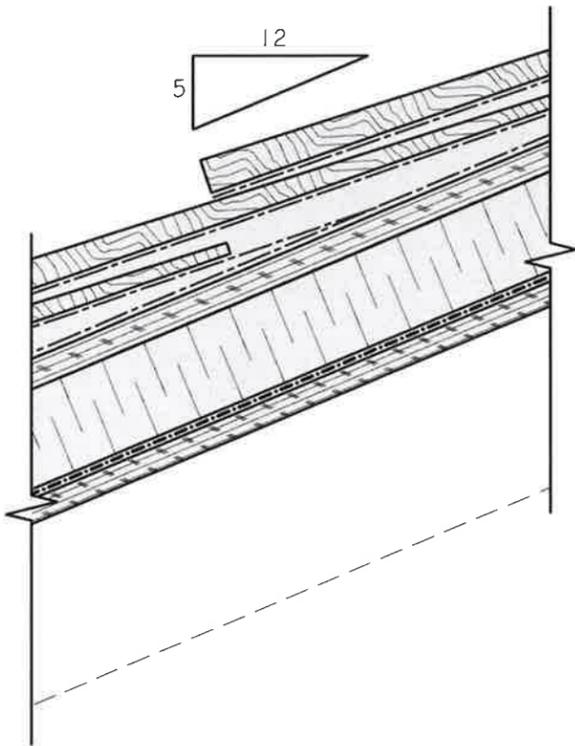
PITCHED ROOF - METAL ROOF

SCALE: 3"=1'-0"

- NEW SNAP LOCK METAL ROOF SYSTEM
- NEW WOVEN DRAINAGE MAT
- NEW SYNTHETIC ROOFING UNDERLAYMENT
- NEW 4" (R20) POLYISO INSULATION
- NEW SA MEMBRANE UNDERLAYMENT
- NEW 5/8" PLYWOOD SHEATHING

EXISTING WOOD STRUCTURE

NOTE: METAL ROOF TO BE CHARCOAL COLOUR (TYP.)



R2

PITCHED ROOF - CEDAR SHAKES

SCALE: 3"=1'-0"

- NEW 24" - 7/8" CCA TREATED CEDAR SHAKES
- NEW ROOFING UNDERLAYMENT, INTERWOVEN BETWEEN SHAKES
- NEW 5/8" PLYWOOD
- NEW 4" (R20) POLYISO INSULATION
- NEW SA MEMBRANE UNDERLAYMENT
- NEW 5/8" PLYWOOD

EXISTING WOOD STRUCTURE

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.

\\VANCOUVER\Projects\VANCOUVER\2015\VR15104C Champlain Community Centre - Review Set - 2017-09-26.dwg - 2018-01-09 10:56:23 AM, Bluebeam PDF

SCOPE OF WORK

-  ROOF ASSEMBLY
-  NEW FIXED SKYLIGHT



5	ISSUE FOR RE-TENDER	01/08/18
4	RE-TENDER REVIEW	09/26/17
3	BUILDING PERMIT	04/25/17
2	TENDER	03/15/17
1	REVIEW	02/10/17
No.	ISSUE / REVISION	MMDDYY

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**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAQUINNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

SITE PLAN

DATE:	FEB 2017	DRAWING No:	BE-1.00
SCALE:	AS NOTED		
DESIGNED:	JJ	PROJECT No:	VR15104C
DRAWN:	JM		
REVIEWED:	SC / JJ		



1 SITE PLAN
SCALE: NTS



NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.

SCOPE OF WORK

-  ROOF ASSEMBLY
-  NEW FIXED SKYLIGHT



5	ISSUE FOR RE-TENDER	01/08/18
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3	BUILDING PERMIT	04/25/17
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No.	ISSUE / REVISION	MM/DD/YY

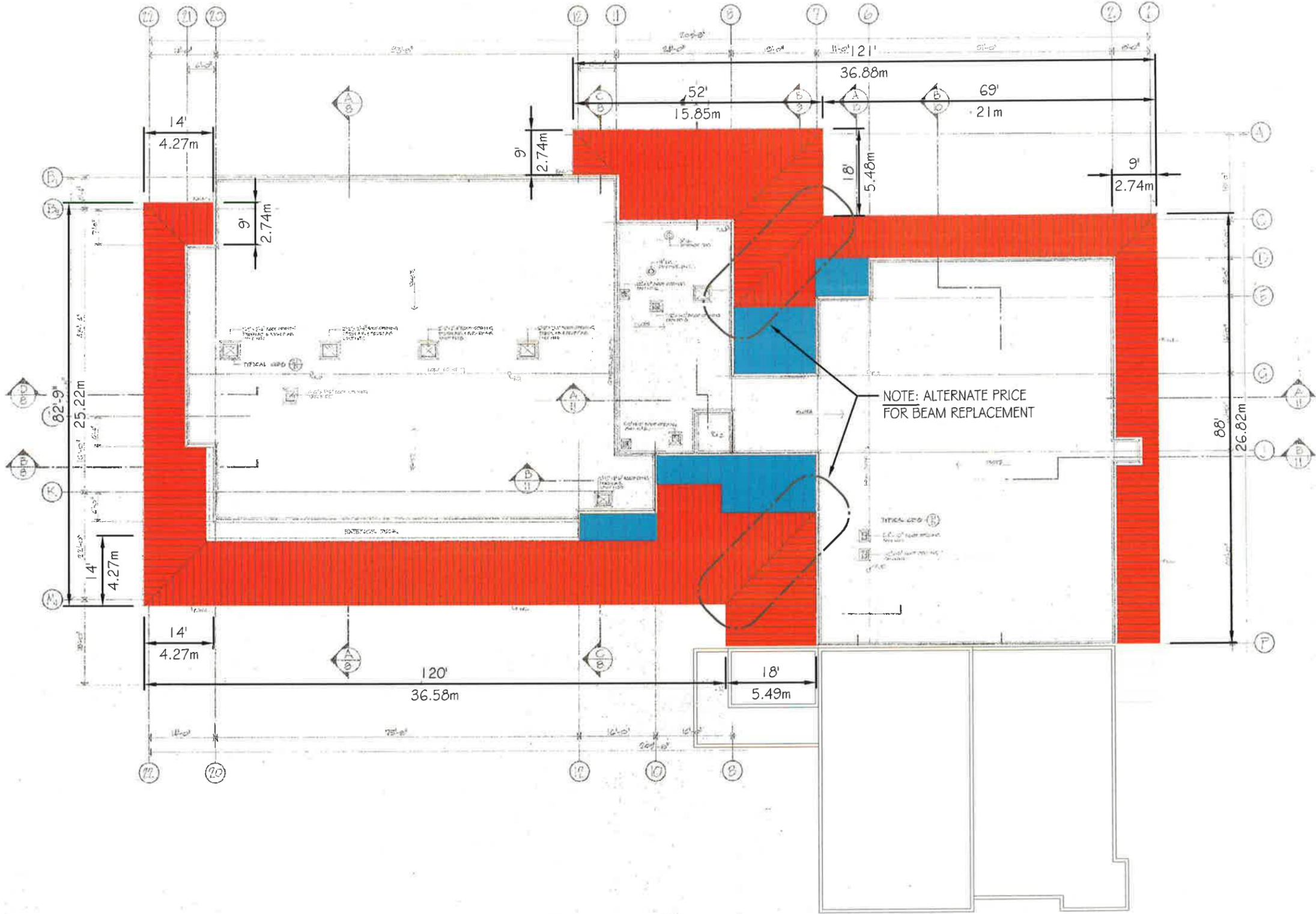
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**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAQUINNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

**EXISTING ARCHITECTURAL
ROOF PLAN**

DATE:	FEB 2017	DRAWING No:	BE-1.01
SCALE:	AS NOTED		
DESIGNED:	JJ	PROJECT No:	VR15104C
DRAWN:	JM		
REVIEWED:	SC / JJ		



1 ROOF PLAN
SCALE: NT5



NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.

\\VancouverProjects\Projects\VANCOUVER\2015\VR15104C Champlain Community Centre - Review Set - 2017-09-26.dwg - 2018-01-08 9:24:22 PM Bluebeam PDF

SCOPE OF WORK

- ROOF ASSEMBLY
- REPLACE WALL CLADDING

NOTE: REFER TO SUFFIX A, B OR C AFTER PAGE NUMBER FOR ROOF TYPES



5	ISSUE FOR RE-TENDER	01/08/18
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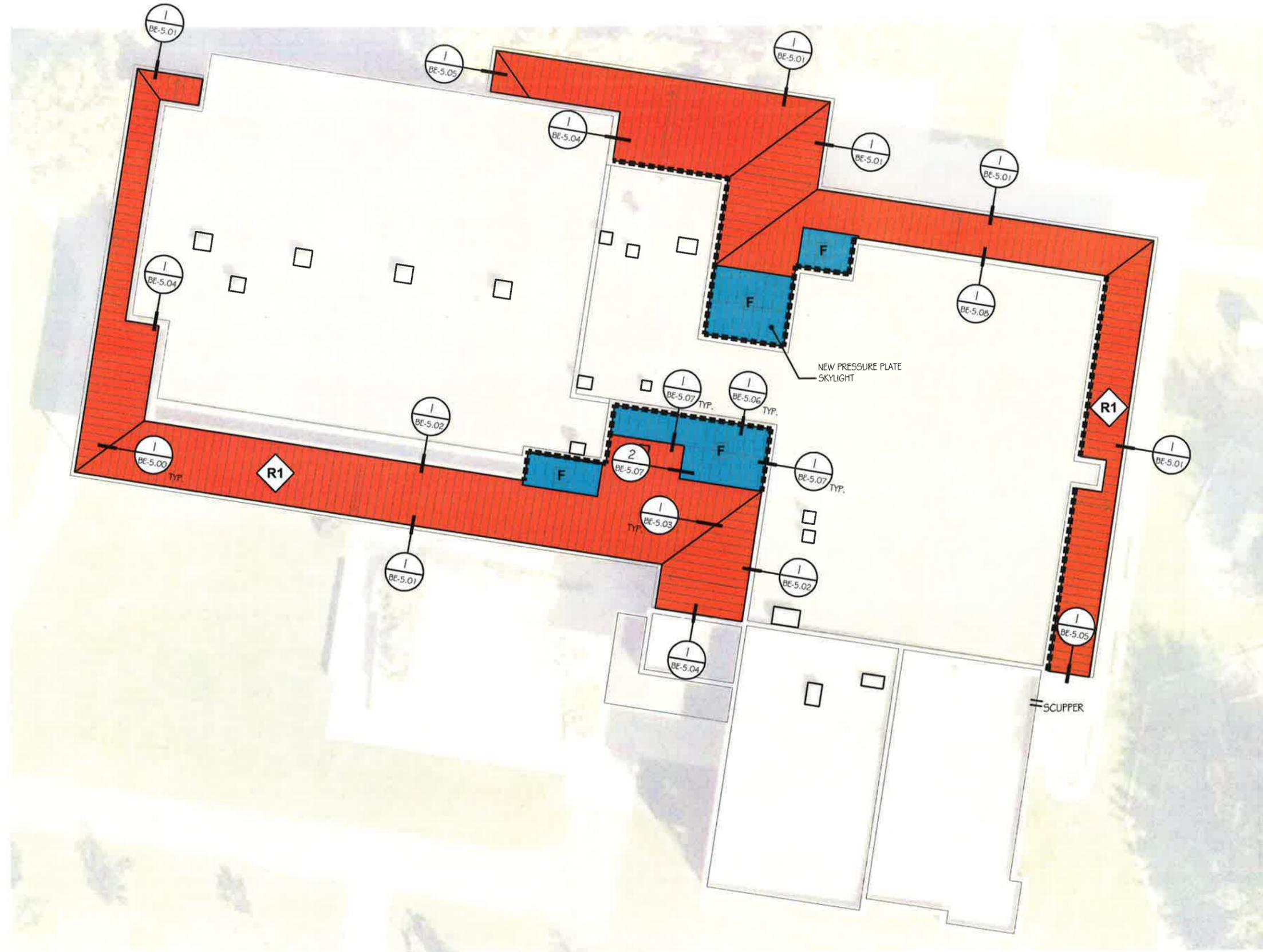
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**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAQUINNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

ROOF PLAN

DATE:	FEB 2017	DRAWING No:	BE-1.01A
SCALE:	AS NOTED		
DESIGNED:	JJ	PROJECT No:	VR15104C
DRAWN:	JM		
REVIEWED:	SC / JJ		



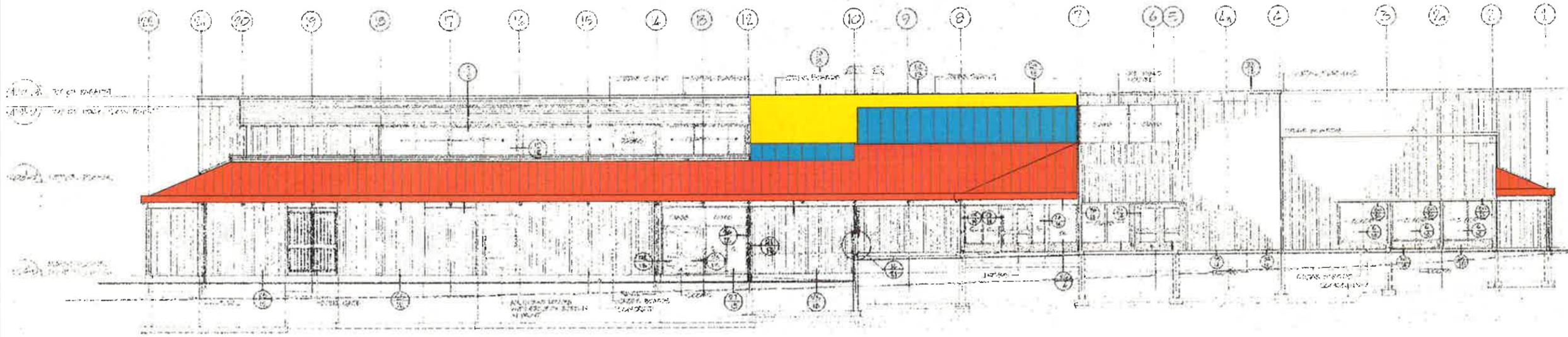
ROOF PLAN
SCALE: NTS



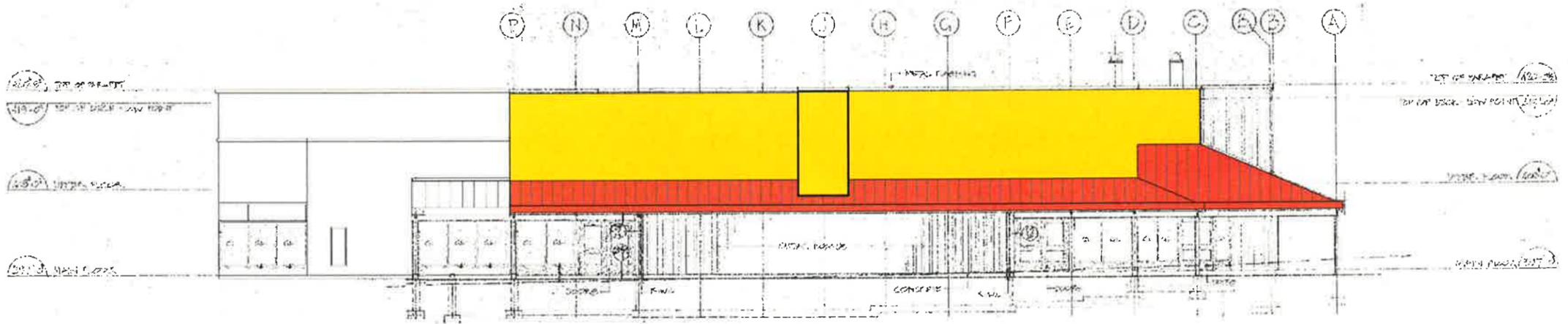
NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.

SCOPE OF WORK

- ROOF ASSEMBLY
- NEW FIXED SKYLIGHT
- WOOD CLADDING TO BE REPLACED



SOUTH ELEVATION
SCALE: NTS



EAST ELEVATION
SCALE: NTS

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**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAQUANNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

ROOF PLAN

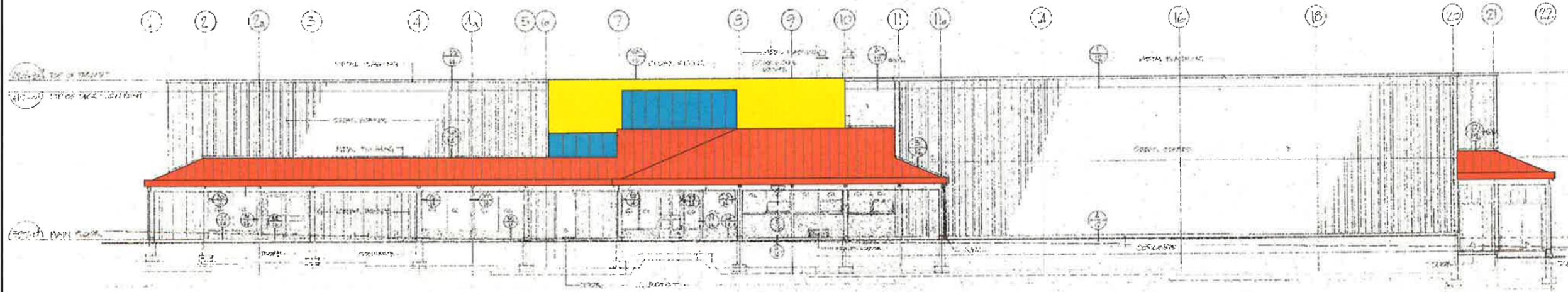
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SCALE:	AS NOTED		BE-1.02
DESIGNED:	JJ	PROJECT No:	
DRAWN:	JM		VR15104C
REVIEWED:	SC / JJ		

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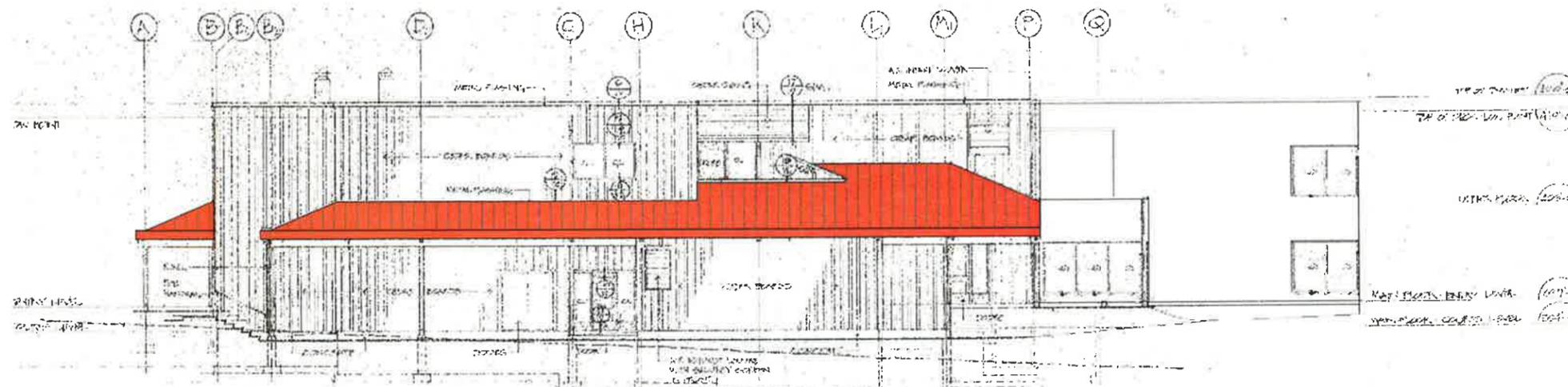
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SCOPE OF WORK

- ROOF ASSEMBLY
- NEW FIXED SKYLIGHT
- WOOD CLADDING TO BE REPLACED



I NORTH ELEVATION
SCALE: NTS



I WEST ELEVATION
SCALE: NTS



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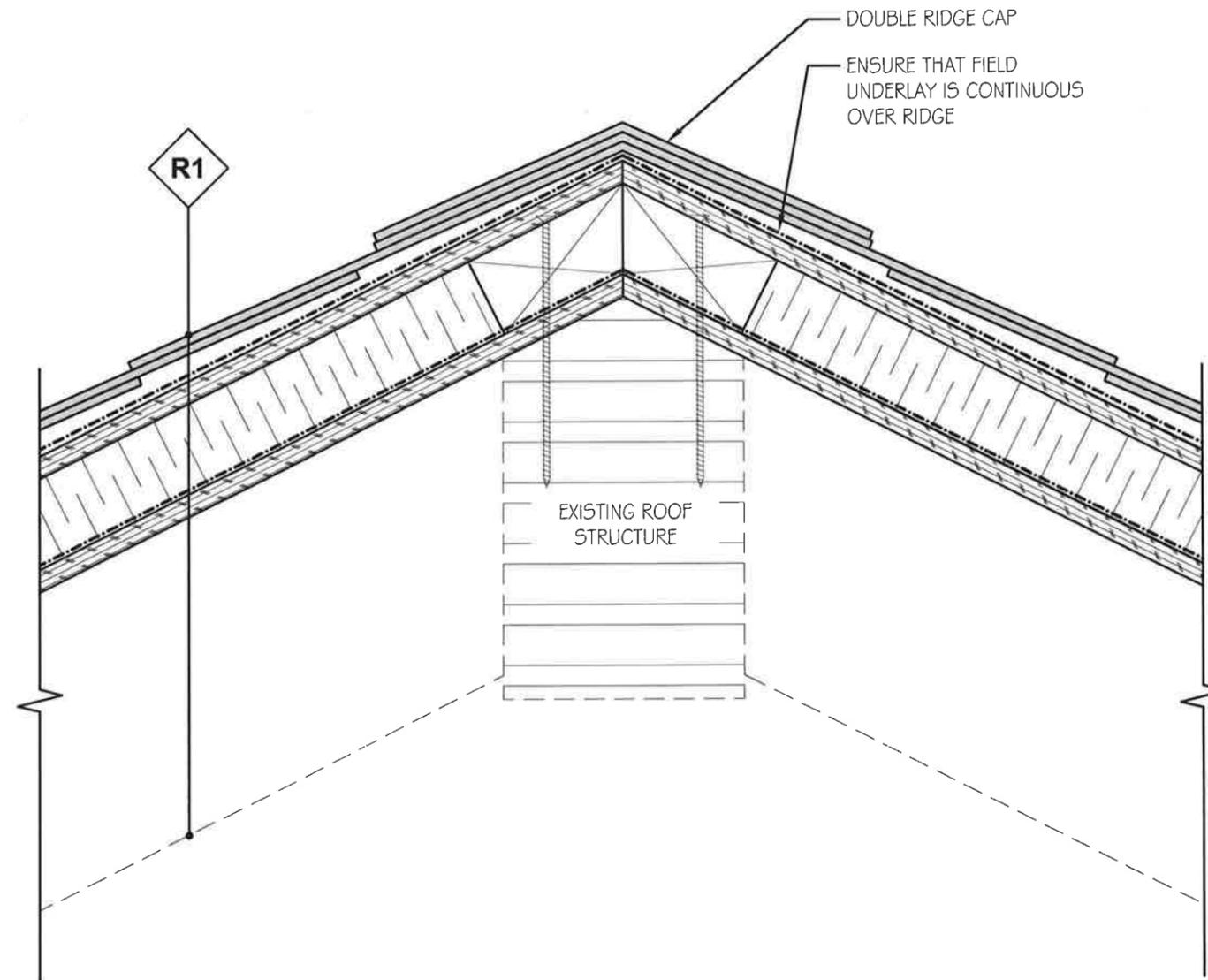
**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAQUINNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

ROOF PLAN

DATE:	FEB 2017	DRAWING No:	
SCALE:	AS NOTED		BE-1.03
DESIGNED:	JJ		
DRAWN:	JM	PROJECT No:	VR15104C
REVIEWED:	SC/JJ		

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



1 ROOF RIDGE / HIP - ASPHALT SHINGLE
SCALE: 3" = 1'-0"

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



5	ISSUE FOR RE-TENDER	01/08/18
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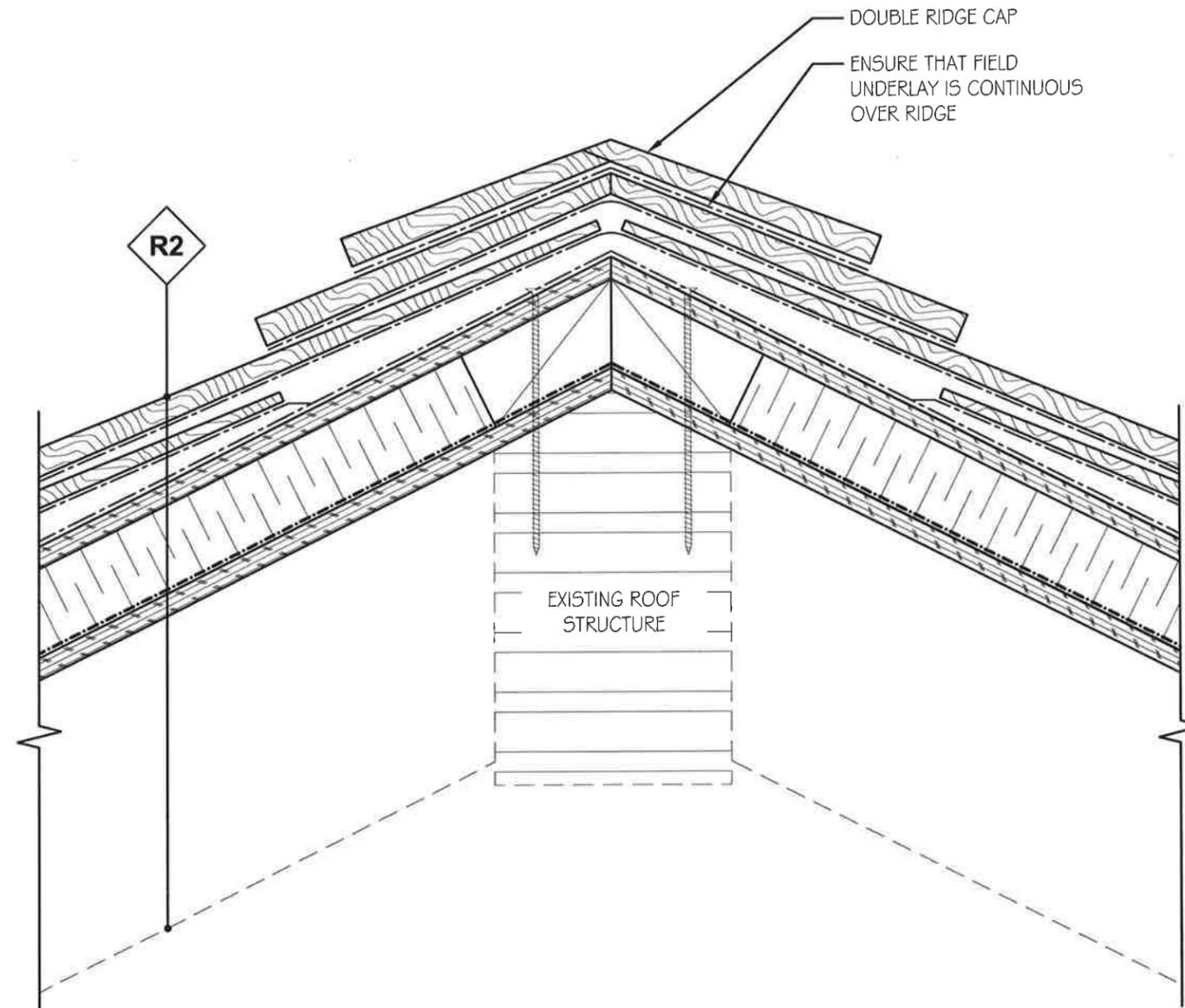
**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAQUINNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

ROOF DETAILS

DATE:	FEB 2017	DRAWING No:	BE-5.00A
SCALE:	AS NOTED		
DESIGNED:	JJ	PROJECT No:	VR15104C
DRAWN:	JM		
REVIEWED:	SC / JJ		

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1 ROOF RIDGE / HIP - CEDAR SHAKE
SCALE: 3"=1'-0"

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



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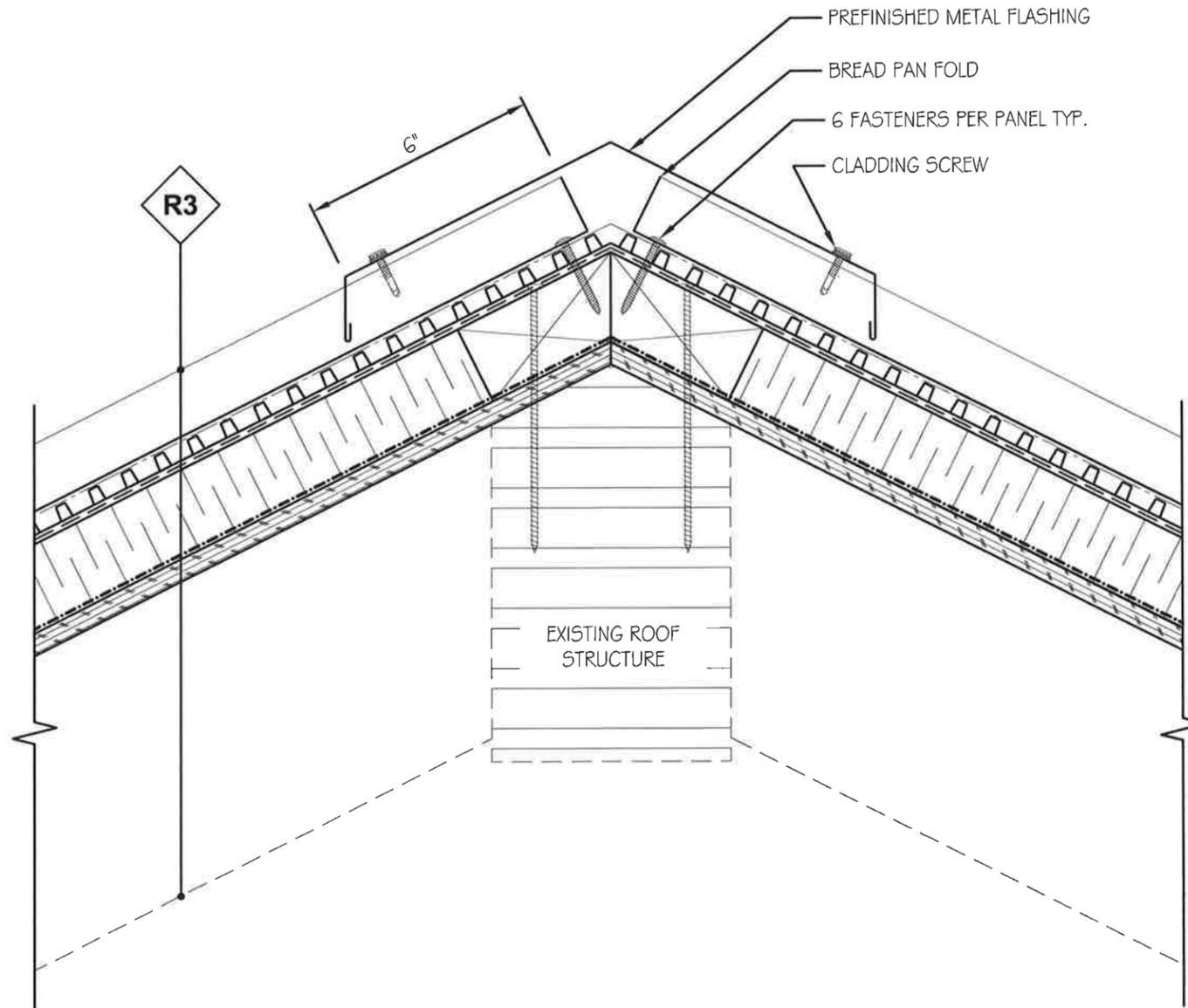
**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAQUINNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

ROOF DETAILS

DATE:	FEB 2017	DRAWING No:	
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DESIGNED:	JJ		
DRAWN:	JM	PROJECT No:	VR15104C
REVIEWED:	SC / JJ		

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1 ROOF RIDGE / HIP - METAL ROOF
SCALE: 3" = 1'-0"

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



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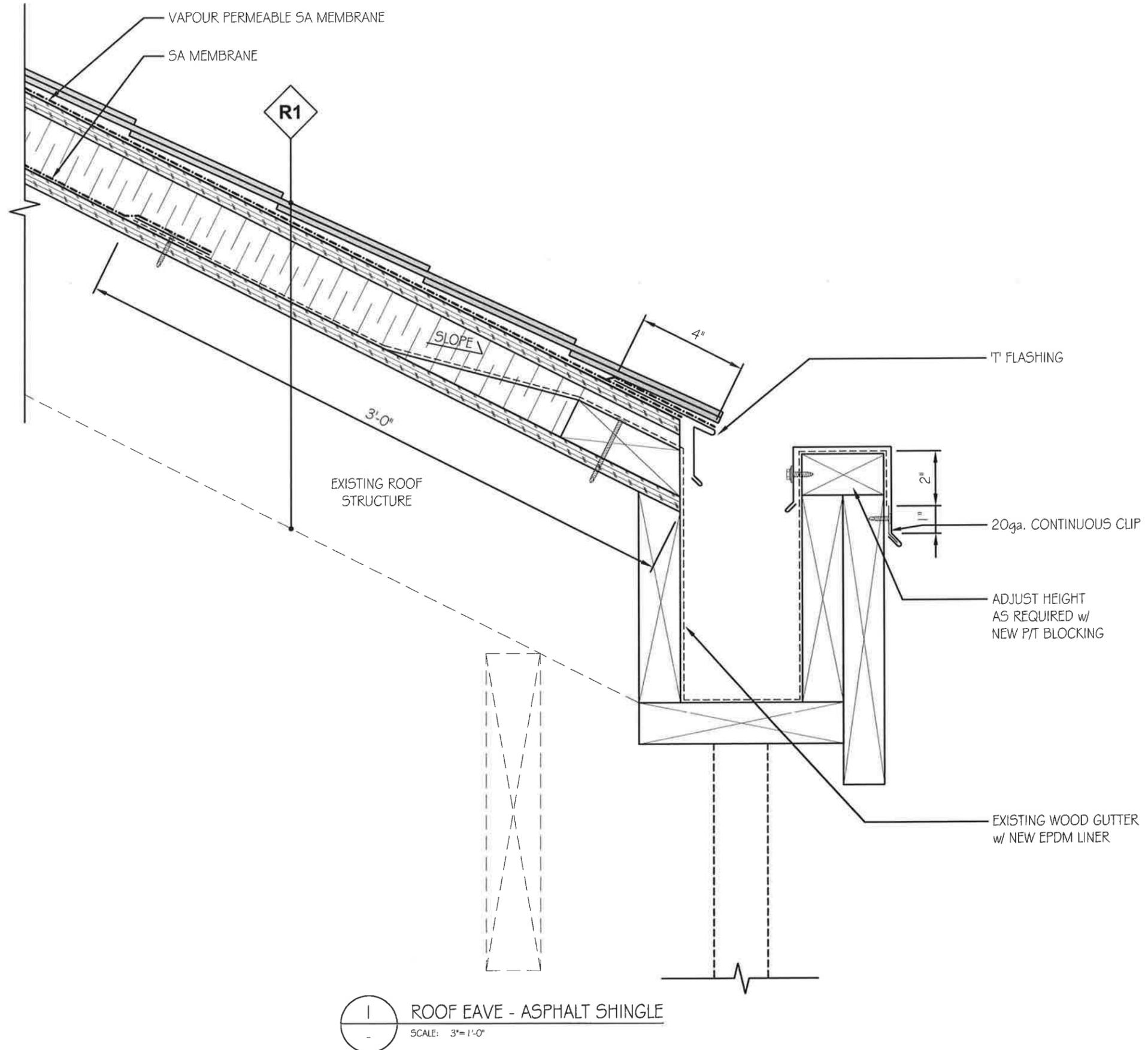
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**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAGUNNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

ROOF DETAILS

DATE:	FEB 2017	DRAWING No:	BE-5.00C
SCALE:	AS NOTED		
DESIGNED:	JJ	PROJECT No:	VR15104C
DRAWN:	JM		
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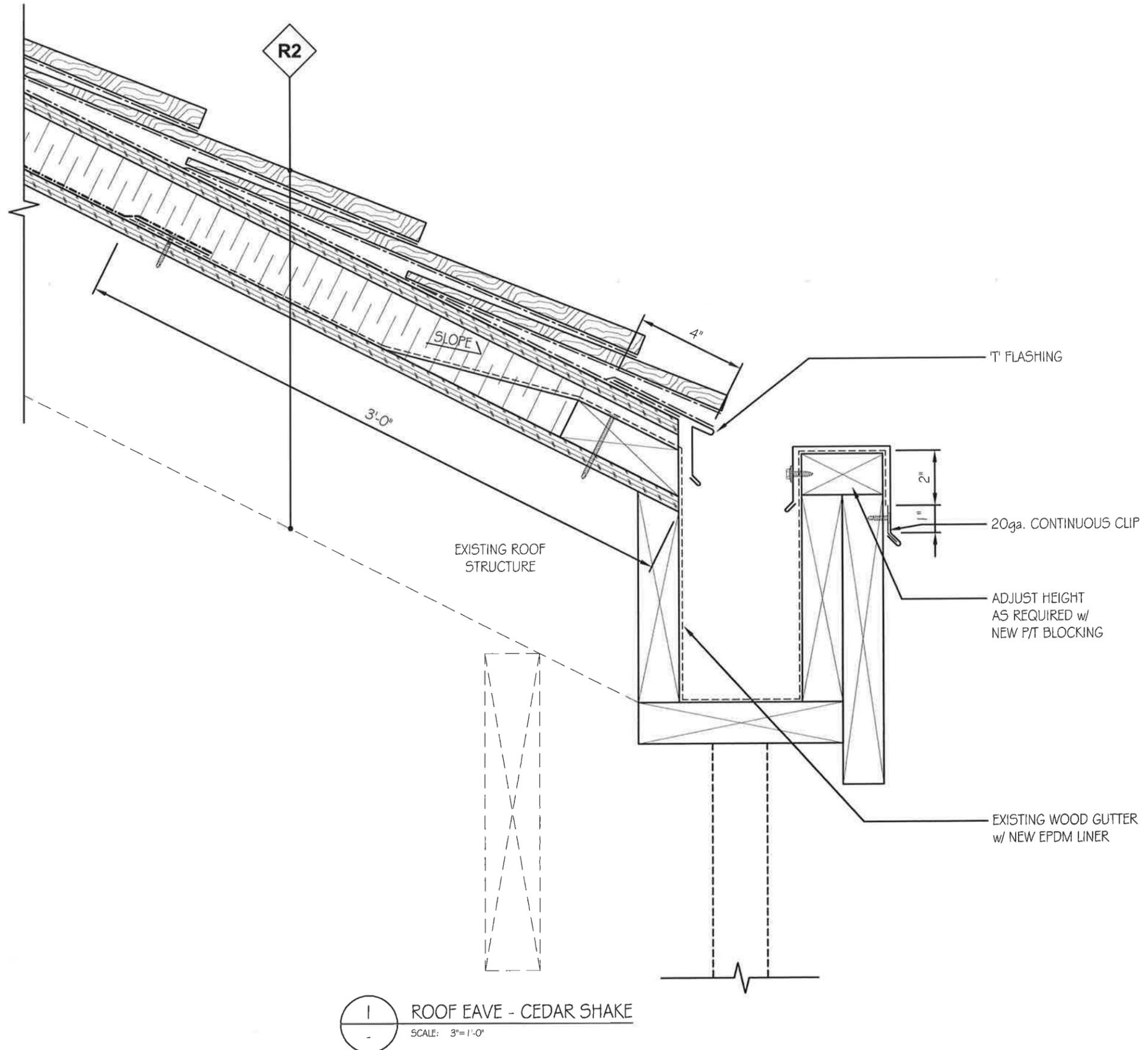
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**CHAMPLAIN HEIGHTS
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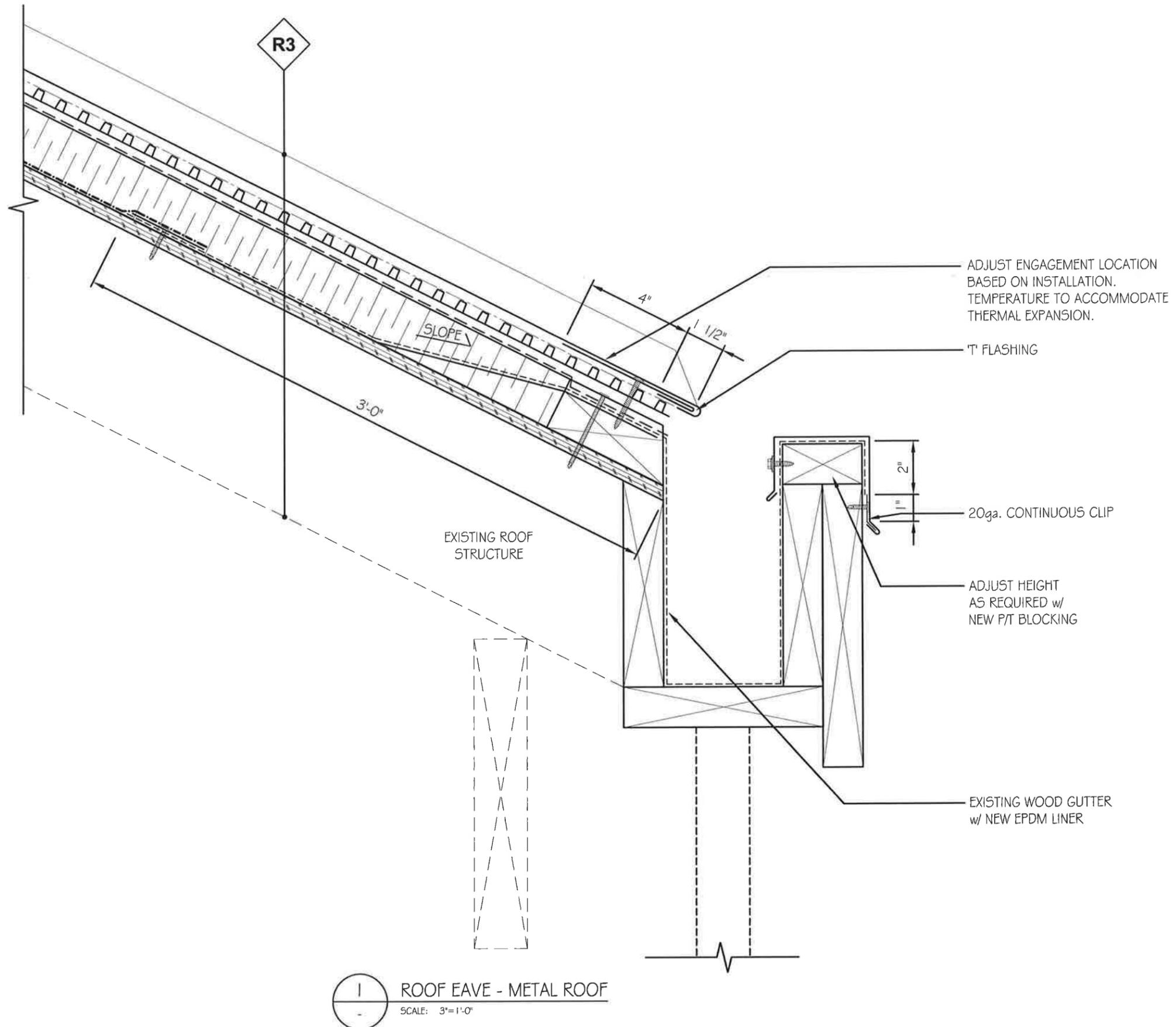
ROOF REMEDIATION

ROOF DETAILS

DATE:	FEB 2017	DRAWING No:	
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1 ROOF EAVE - METAL ROOF
SCALE: 3"=1'-0"

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



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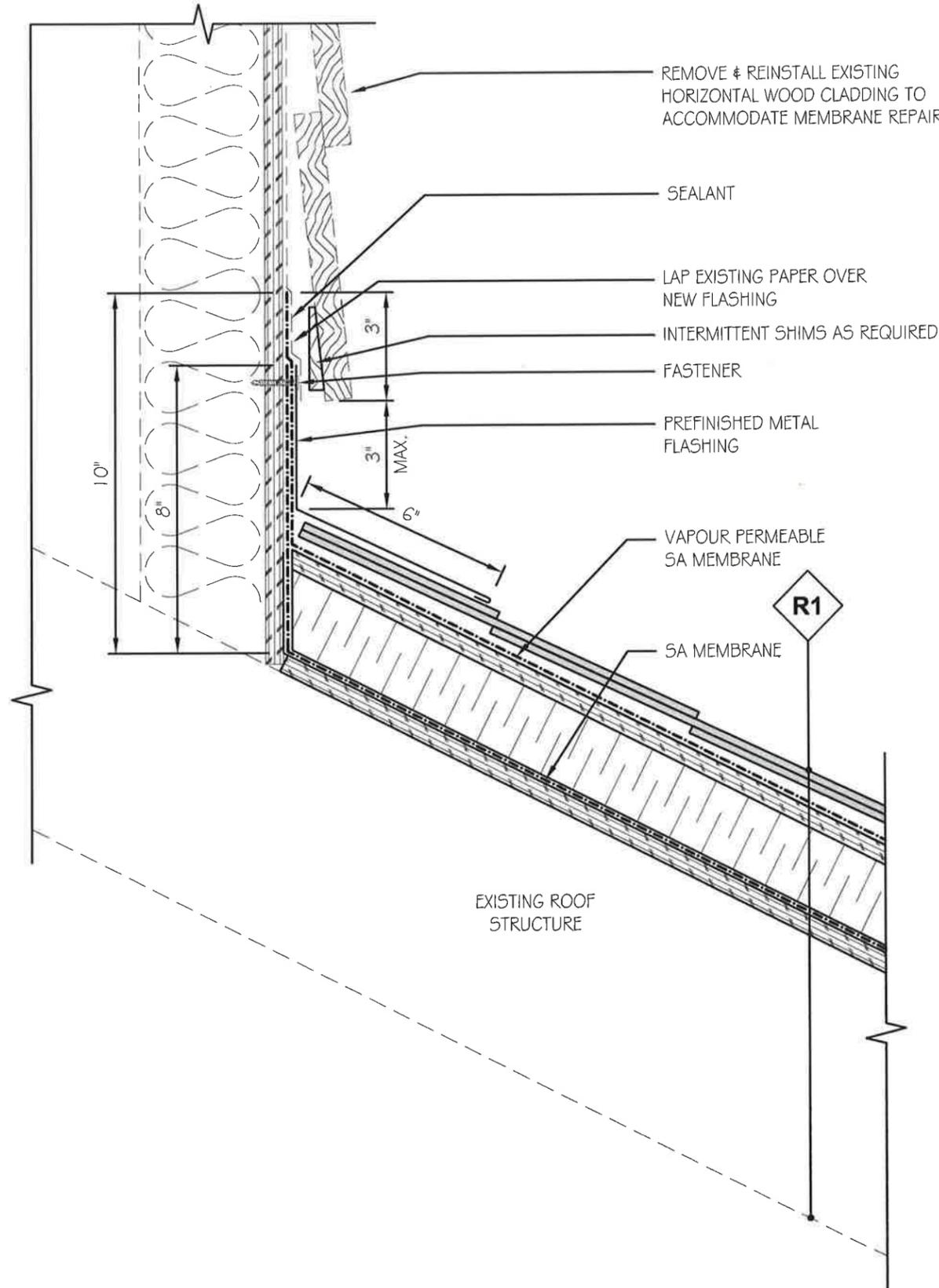
**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAGUNNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

ROOF DETAILS

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NOTE:
REMOVE AND REPLACE
WOOD CLADDING @ AREAS
INDICATED ON BE-1.01

1 ROOF @ BASE OF WALL - ASPHALT SHINGLE
SCALE: 3"=1'-0"

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



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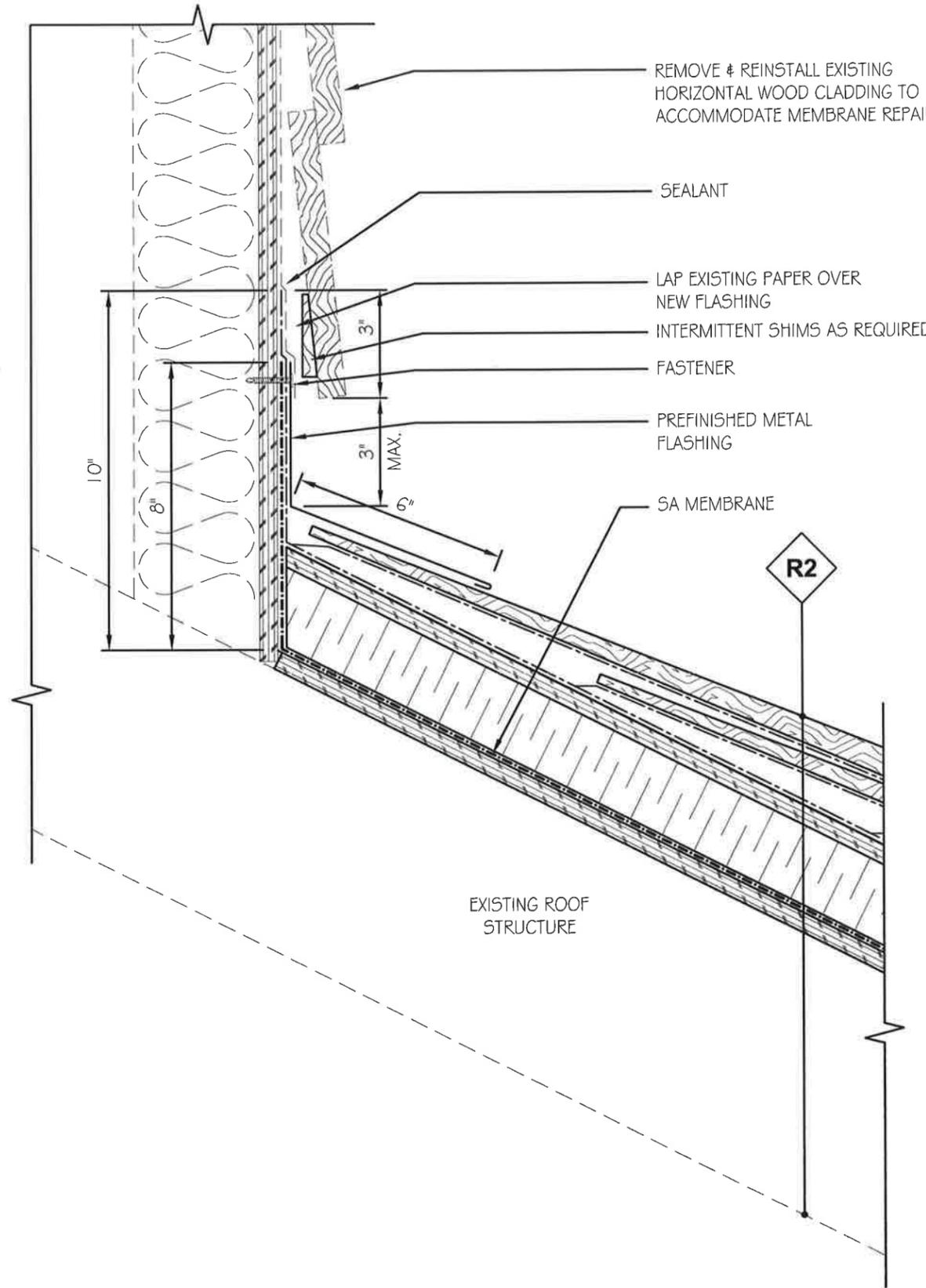
**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAQUINNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

ROOF DETAILS

DATE:	FEB 2017	DRAWING No:	
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DESIGNED:	JJ		
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REVIEWED:	SC / JJ		

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NOTE:
REMOVE AND REPLACE
WOOD CLADDING @ AREAS
INDICATED ON BE-1.01

1 ROOF @ BASE OF WALL - CEDAR SHAKE
SCALE: 3" = 1'-0"

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



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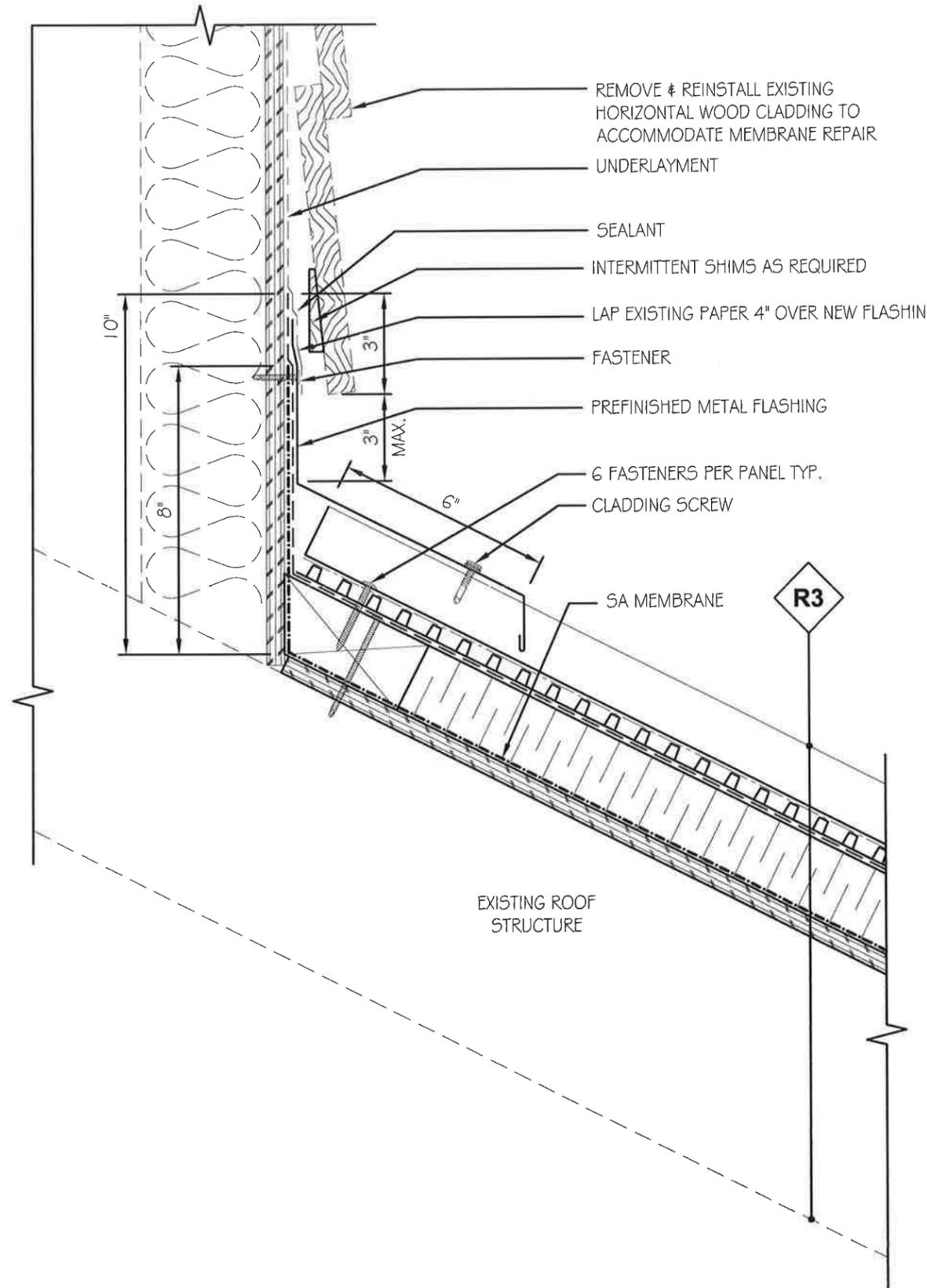
**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAQUINNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

ROOF DETAILS

DATE:	FEB 2017	DRAWING No:	BE-5.02B
SCALE:	AS NOTED		
DESIGNED:	JJ	PROJECT No:	VR15104C
DRAWN:	JM		
REVIEWED:	SC / JJ		

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NOTE:
FOR VERTICAL CLADDING, CUT
BASE OF WALL AND DETAIL BOARD
TRIM & METAL FLASHING PER
BE-5.08.

NOTE:
REMOVE AND REPLACE
WOOD CLADDING @ AREAS
INDICATED ON BE-1.01

1 ROOF @ BASE OF WALL - METAL ROOF
SCALE: 3" = 1'-0"

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



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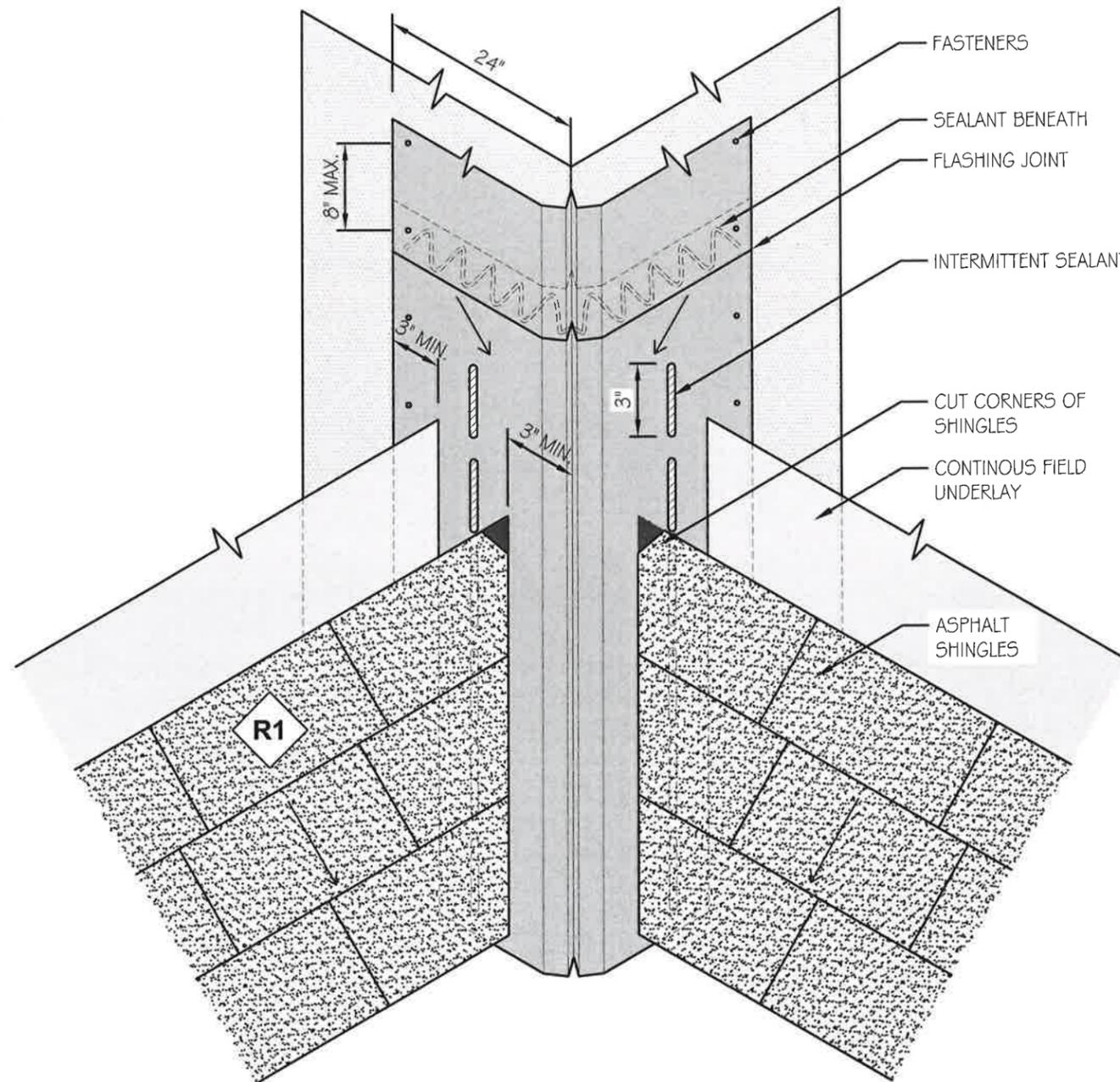
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**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
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ROOF REMEDIATION

ROOF DETAILS

DATE:	FEB 2017	DRAWING No:	
SCALE:	AS NOTED		BE-5.02C
DESIGNED:	JJ		
DRAWN:	JM	PROJECT No:	
REVIEWED:	SC / JJ		VR15104C



1 ROOF VALLEY - ASPHALT SHINGLE
SCALE: NTS

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



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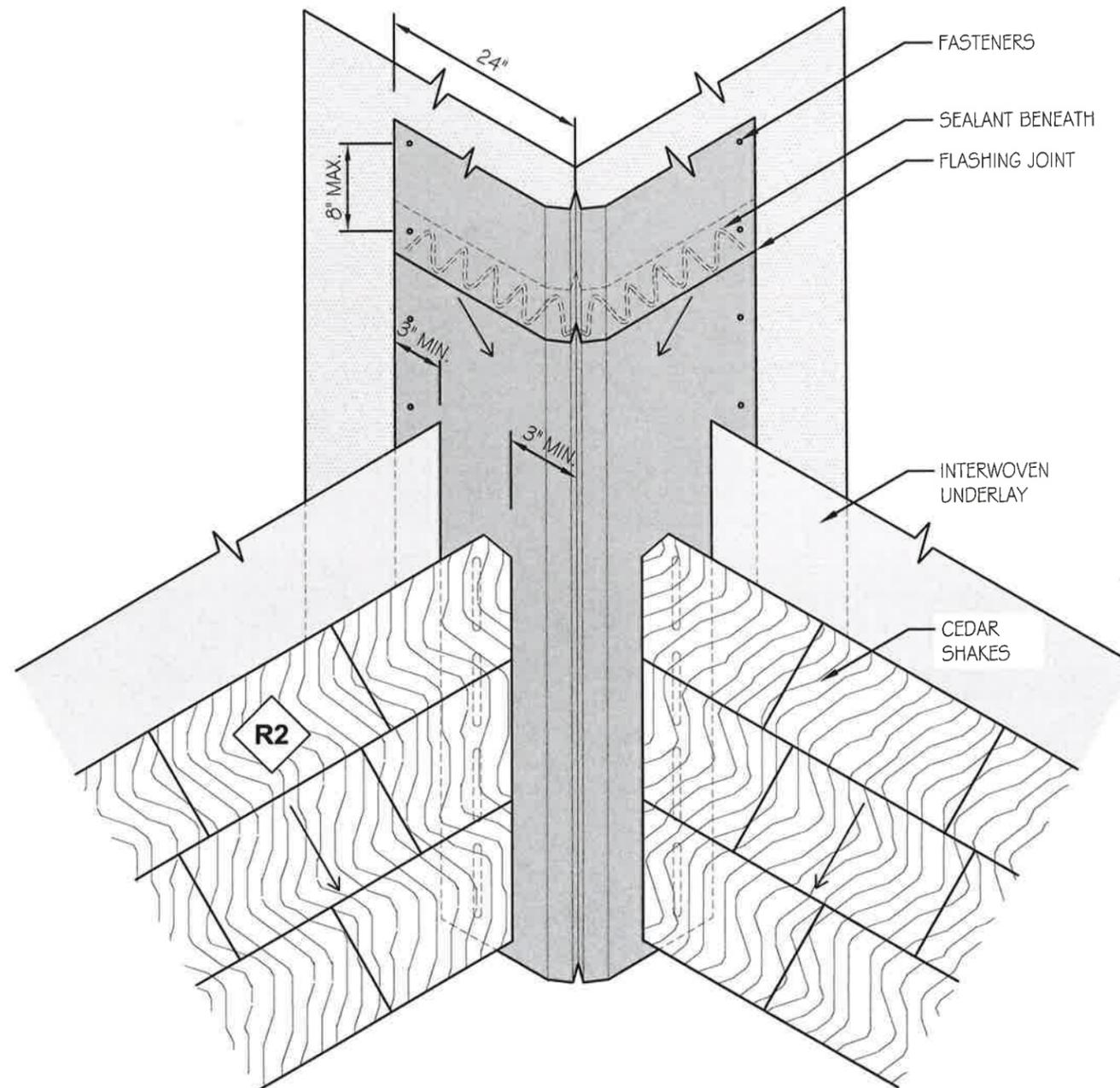
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**CHAMPLAIN HEIGHTS
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ROOF REMEDIATION

ROOF DETAILS

DATE:	FEB 2017	DRAWING No:	
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DESIGNED:	JJ		
DRAWN:	JM	PROJECT No:	VR15104C
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1 ROOF VALLEY - CEDAR SHAKE
SCALE: NTS

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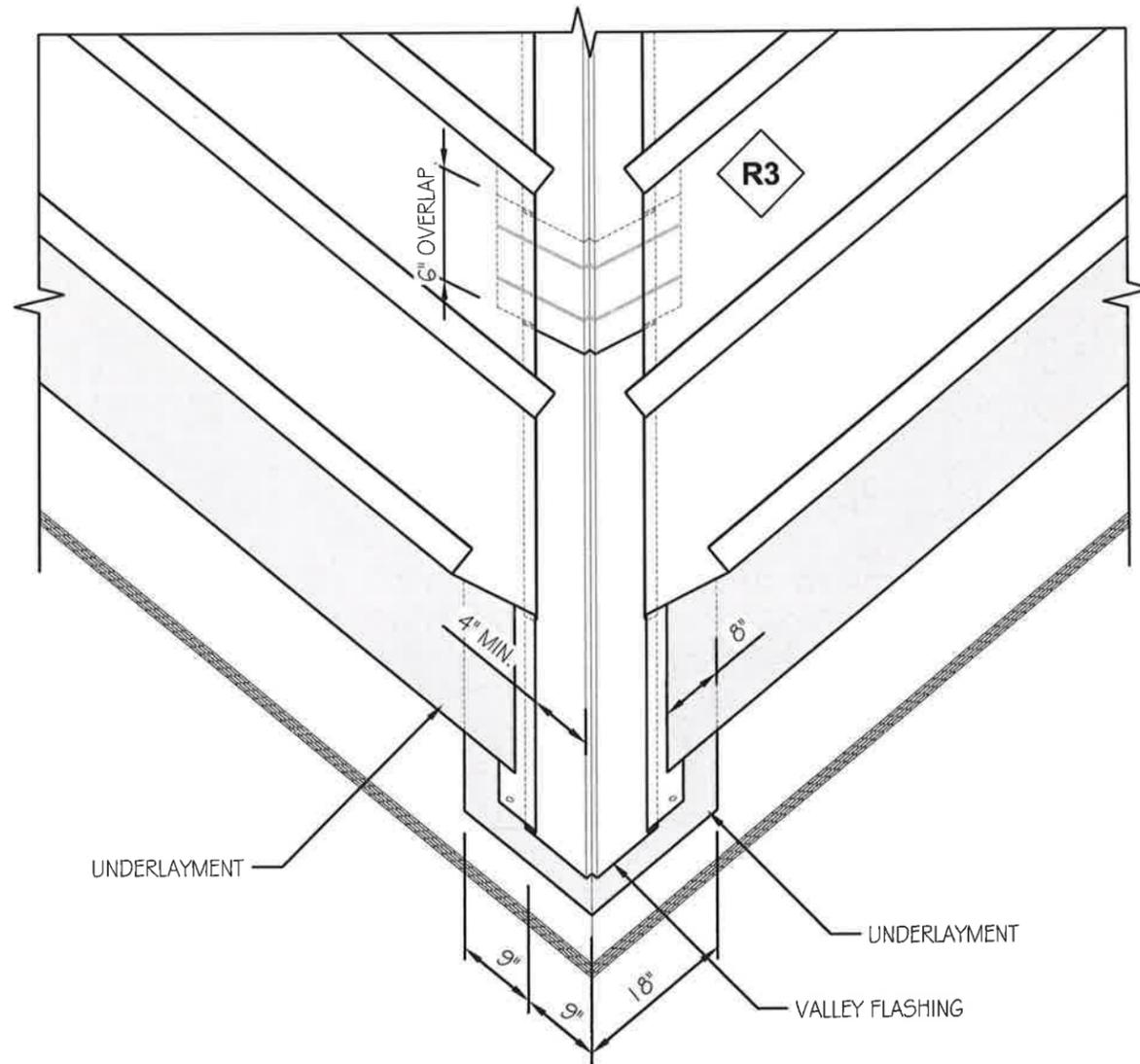
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**CHAMPLAIN HEIGHTS
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ROOF REMEDIATION

ROOF DETAILS

DATE:	FEB 2017	DRAWING No:	
SCALE:	AS NOTED		BE-5.03B
DESIGNED:	JJ		
DRAWN:	JM	PROJECT No:	VR15104C
REVIEWED:	SC / JJ		



1 ROOF VALLEY - METAL ROOF
SCALE: NTS

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



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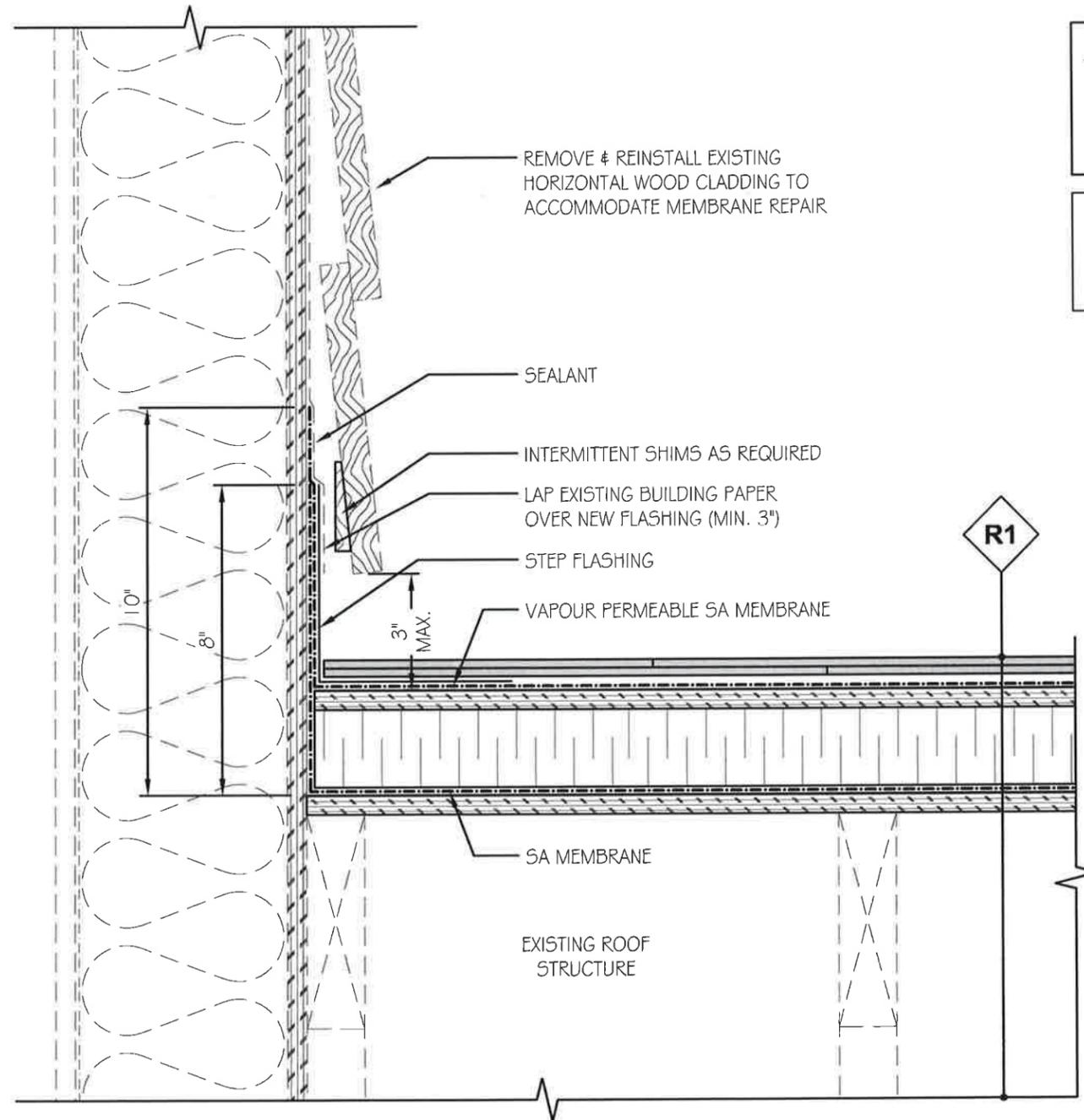
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ROOF REMEDIATION

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NOTE:
FOR VERTICAL CLADDING, CUT
BASE OF WALL AND DETAIL BOARD
TRIM & METAL FLASHING PER
BE-5.08a.

NOTE:
REMOVE AND REPLACE
WOOD CLADDING @ AREAS
INDICATED ON BE-1.01

1 ROOF @ BASE OF WALL - ASPHALT SHINGLE
SCALE: 3" = 1'-0"

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



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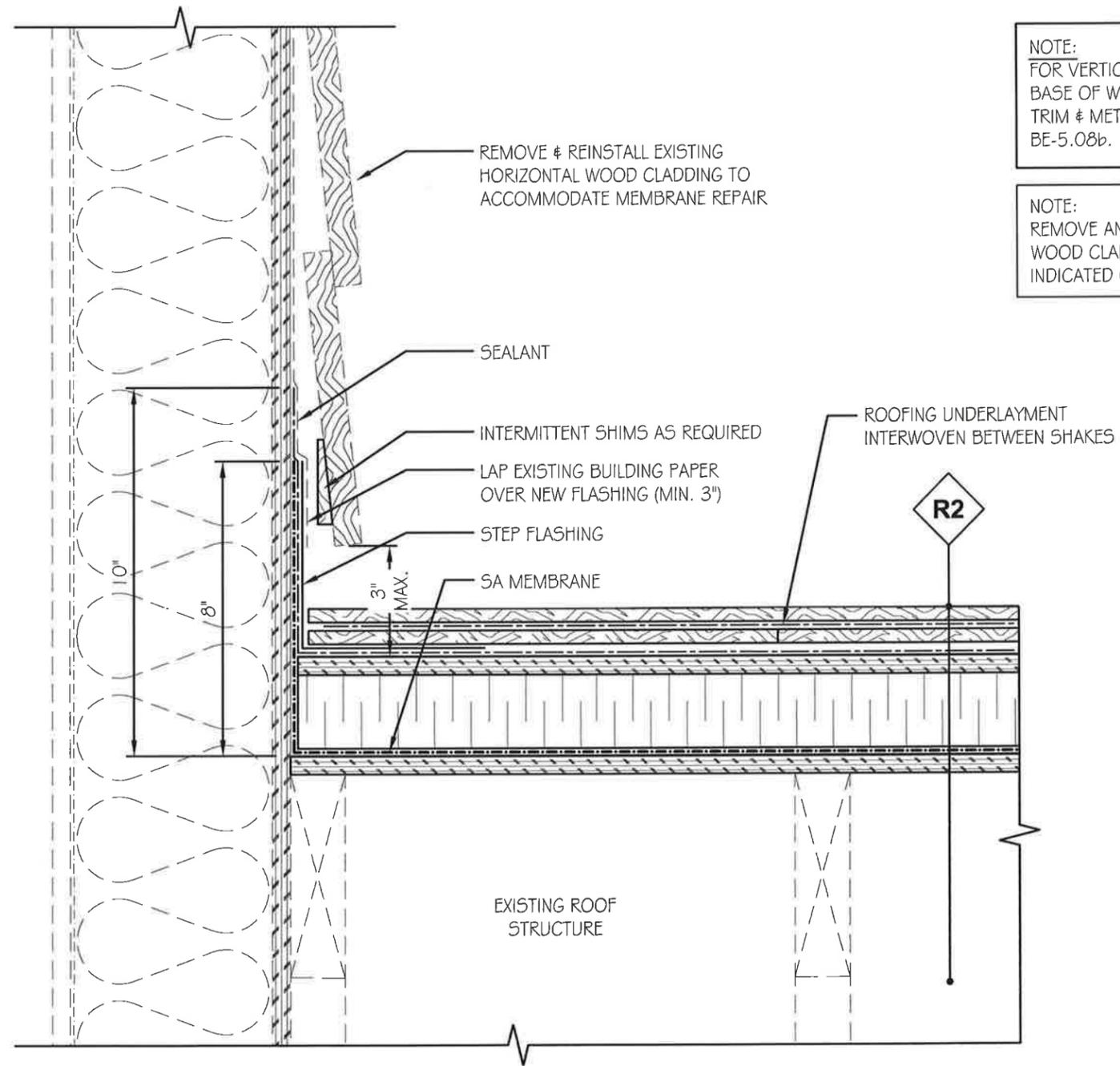
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**CHAMPLAIN HEIGHTS
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ROOF REMEDIATION

ROOF DETAILS	
DATE: FEB 2017	DRAWING No: BE-5.04A
SCALE: AS NOTED	
DESIGNED: JJ	
DRAWN: JM	PROJECT No: VR15104C
REVIEWED: SC / JJ	

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NOTE:
FOR VERTICAL CLADDING, CUT
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BE-5.08b.

NOTE:
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1 ROOF @ BASE OF WALL - CEDAR SHAKE
SCALE: 3"=1'-0"

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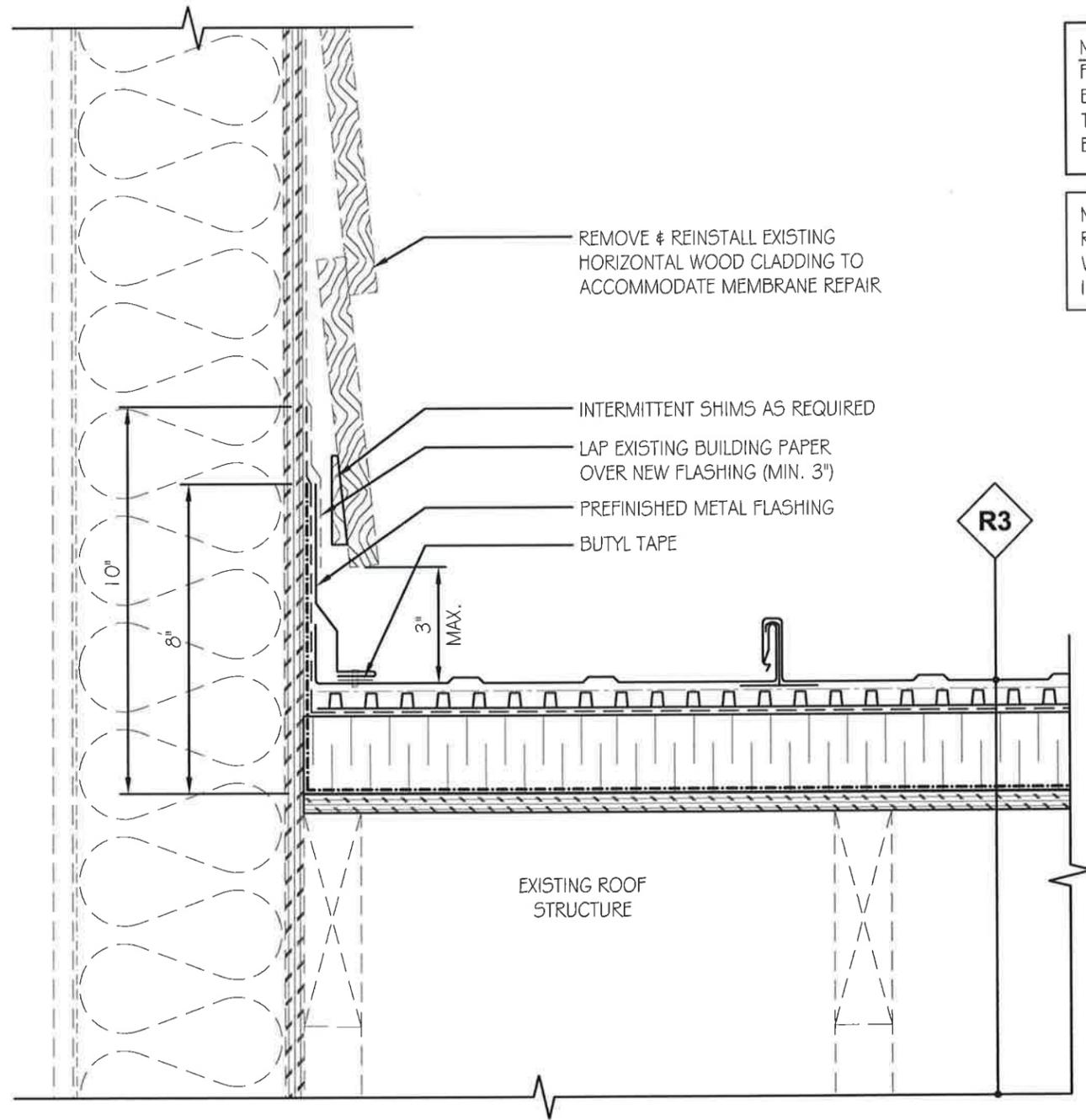
**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAGUNNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

ROOF DETAILS

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SCALE:	A5 NOTED		BE-5.04B
DESIGNED:	JJ		
DRAWN:	JM	PROJECT No:	VR15104C
REVIEWED:	SC / JJ		

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NOTE:
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BE-5.08c.

NOTE:
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ROOF REMEDIATION

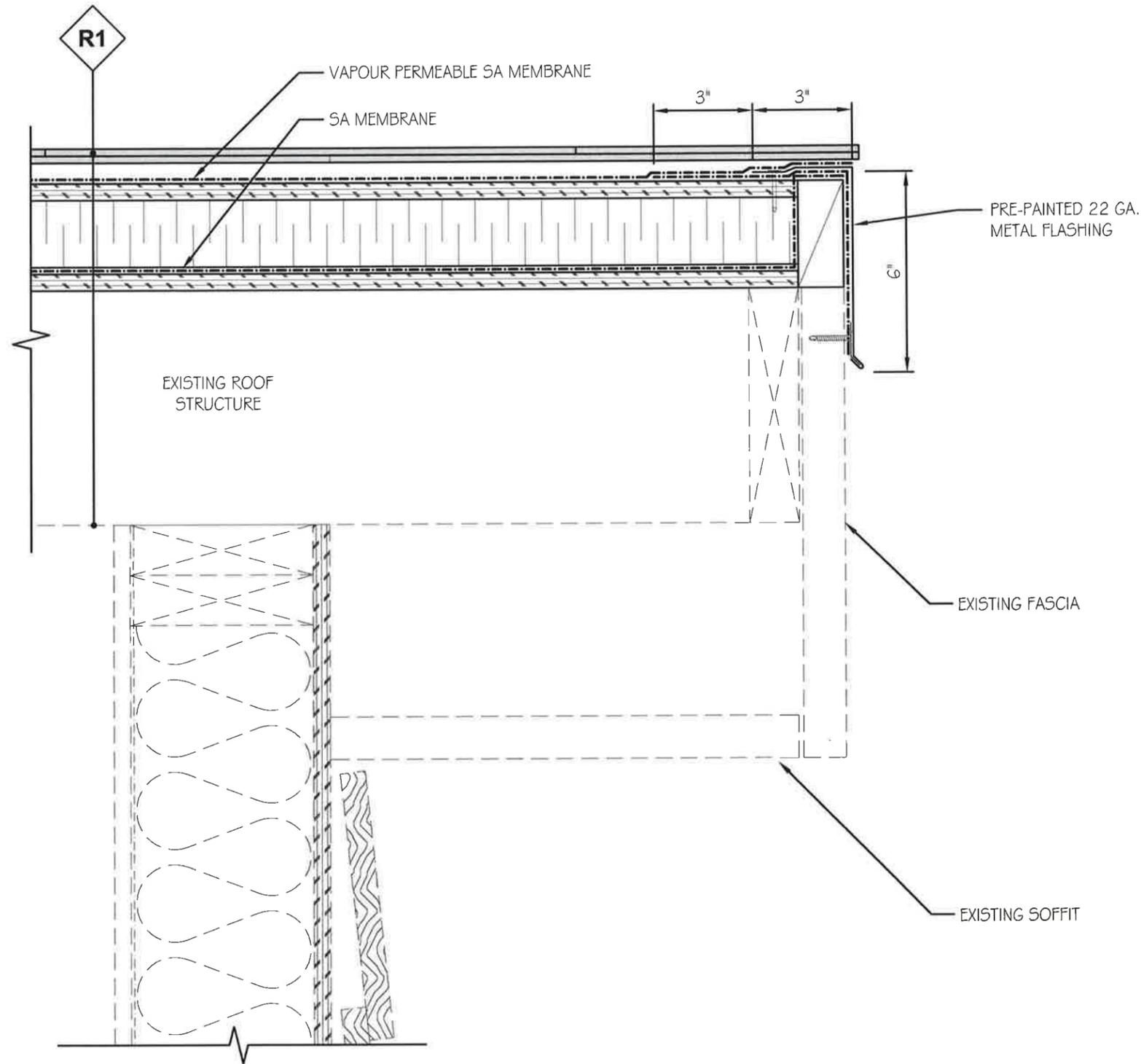
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DRAWN:	JM	PROJECT No:	VR15104C
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1 ROOF @ BASE OF WALL - METAL ROOF
SCALE: 3"=1'-0"

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.

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1 ROOF RAKE - ASPHALT SHINGLE
SCALE: 3" = 1'-0"

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



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1	REVIEW	02/10/17
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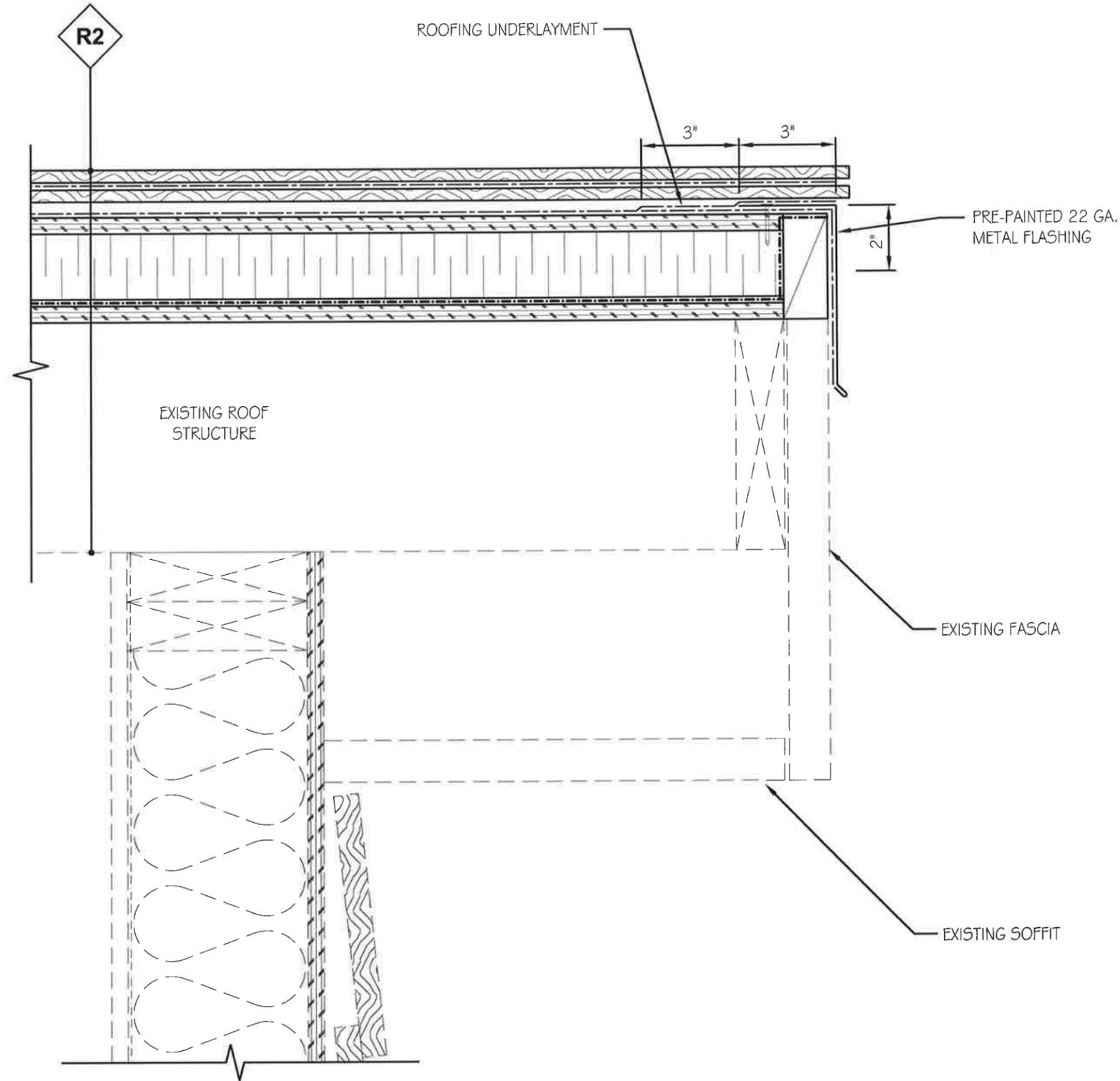
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**CHAMPLAIN HEIGHTS
COMMUNITY CENTRE**
3350 MAGUNNA DRIVE, VANCOUVER, BC

ROOF REMEDIATION

ROOF DETAILS

DATE:	FEB 2017	DRAWING No:	
SCALE:	AS NOTED		BE-5.05A
DESIGNED:	JJ		
DRAWN:	JM	PROJECT No:	VR15104C
REVIEWED:	SC / JJ		



1 ROOF RAKE - CEDAR SHAKE
SCALE: 3" = 1'-0"

NOTE: DO NOT SCALE FROM DRAWING. ALL DIMENSIONS TO BE OBTAINED AND VERIFIED ON SITE.



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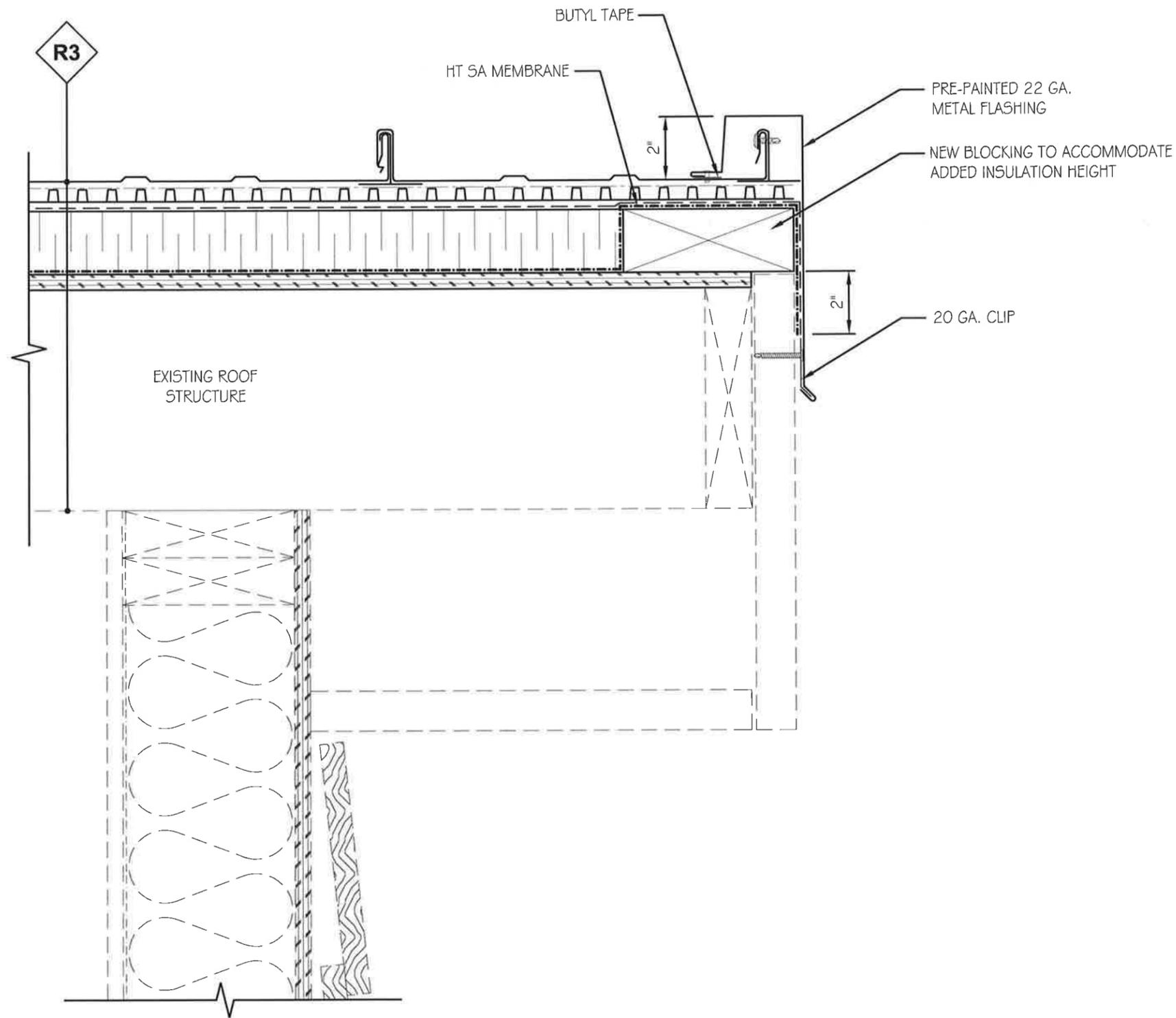
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ROOF RAKE - METAL ROOF
SCALE: 3" = 1'-0"

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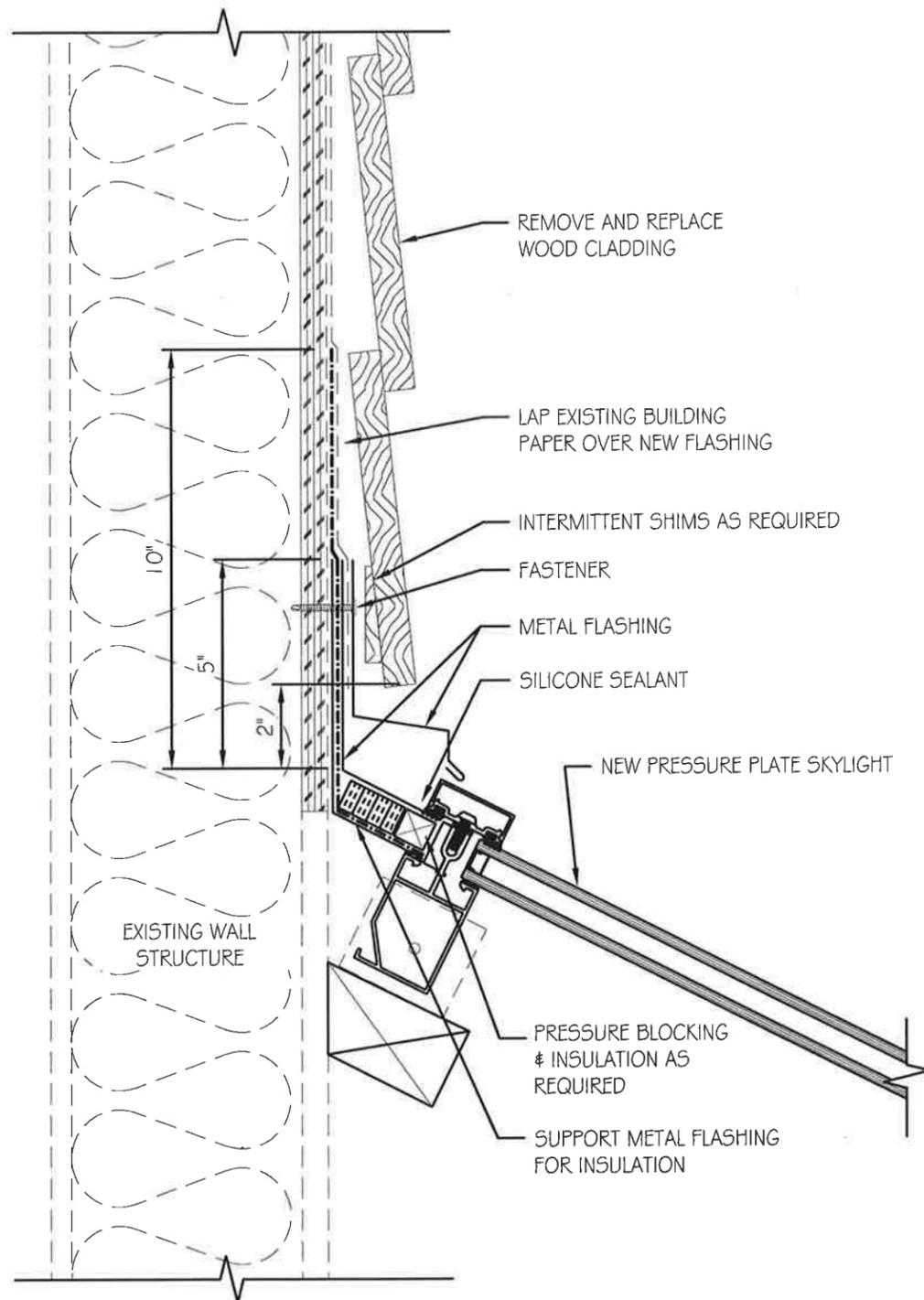
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1 FIXED SKYLIGHT @ WALL
SCALE: 3"=1'-0"

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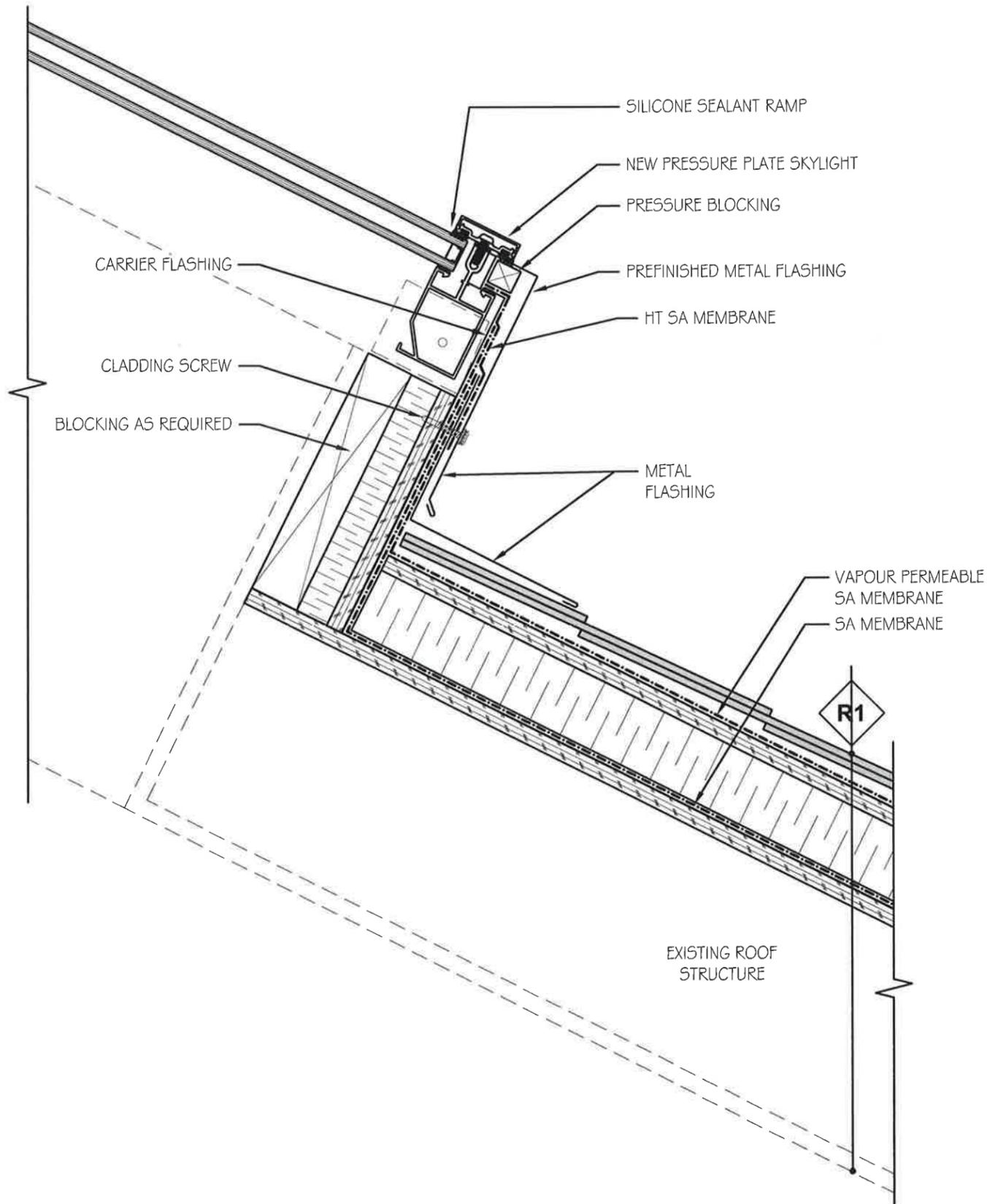
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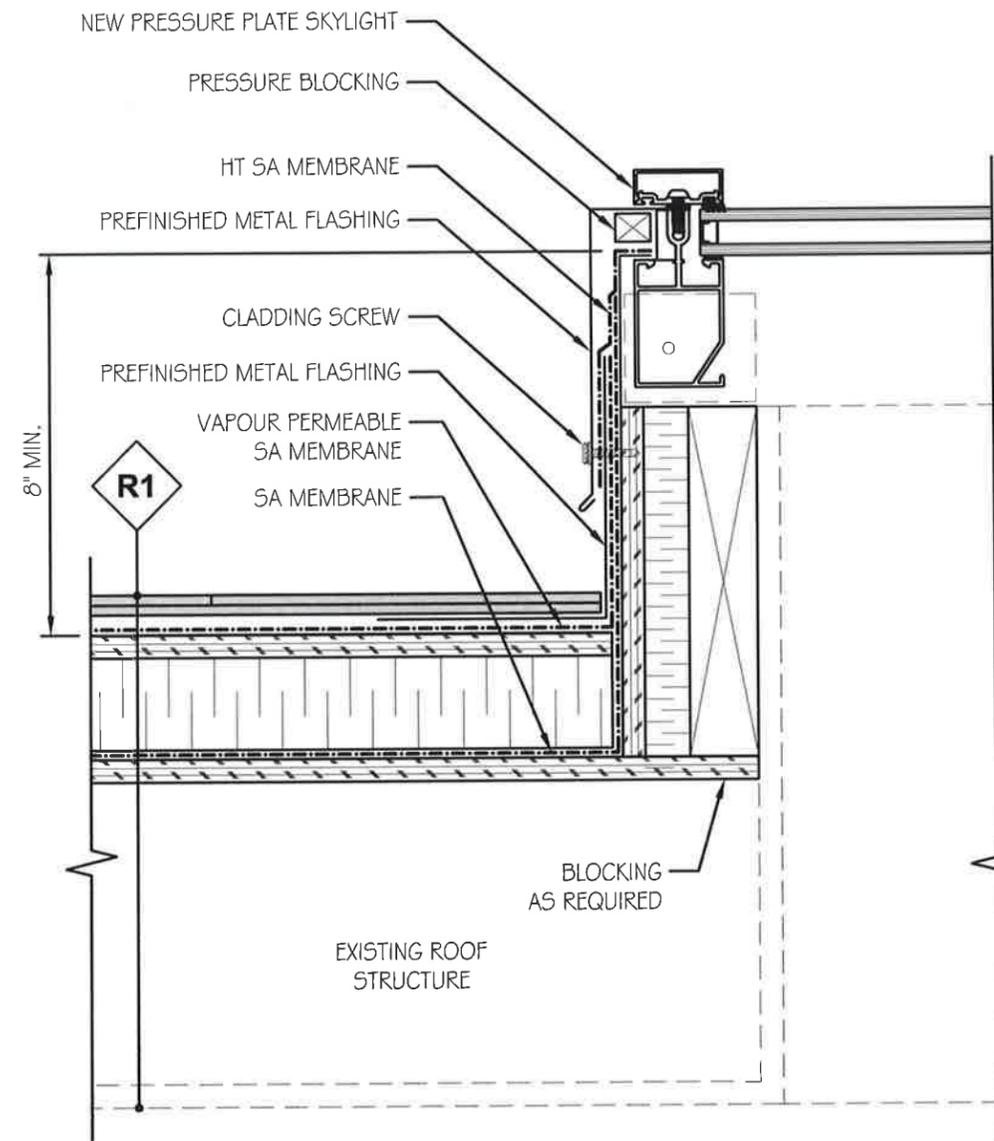
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1 ROOF @ FIXED SKYLIGHT BASE - ASPHALT SHINGLE
SCALE: 3"=1'-0"



2 ROOF @ FIXED SKYLIGHT SIDE - ASPHALT SHINGLE
SCALE: 3"=1'-0"

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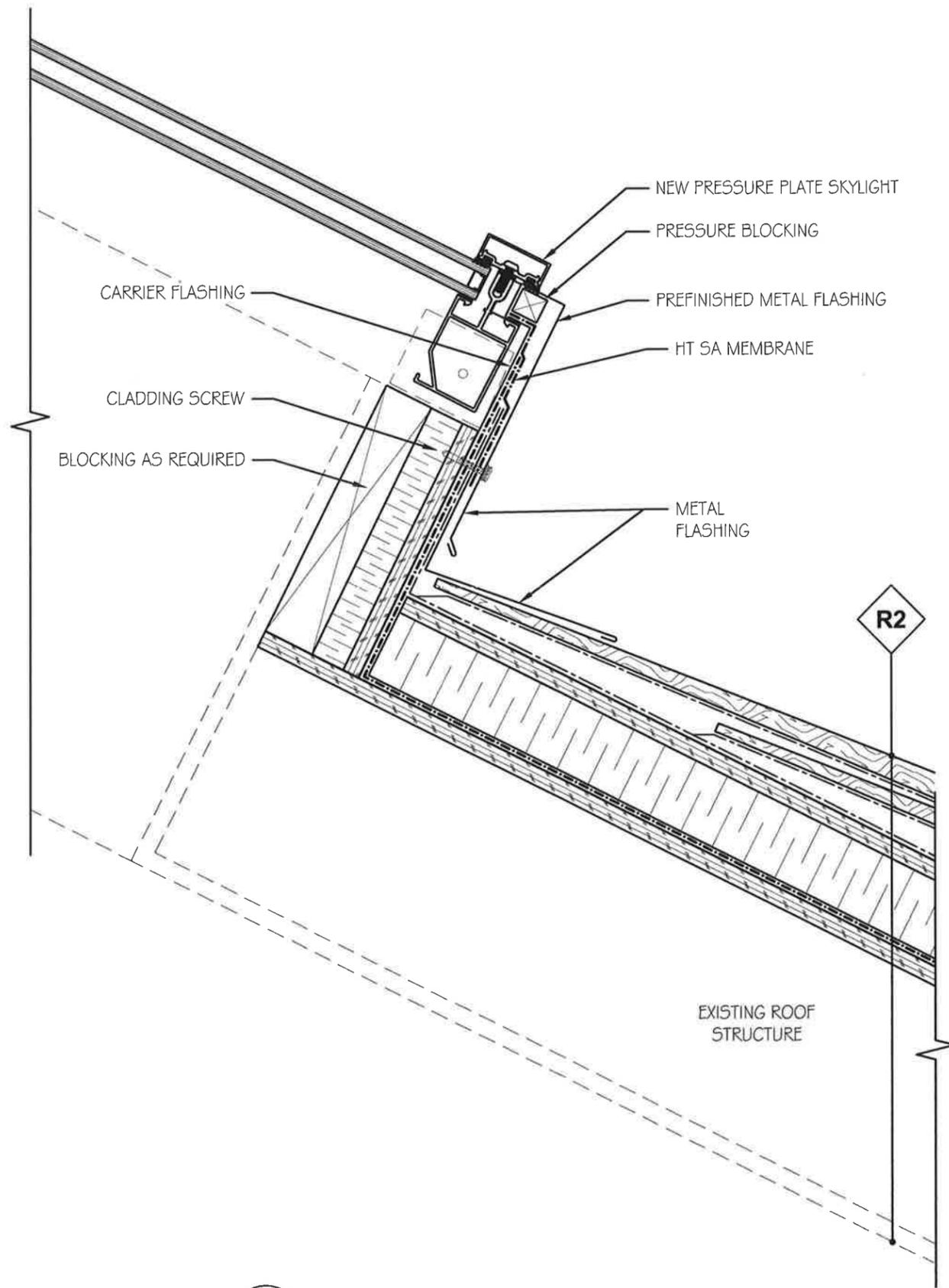
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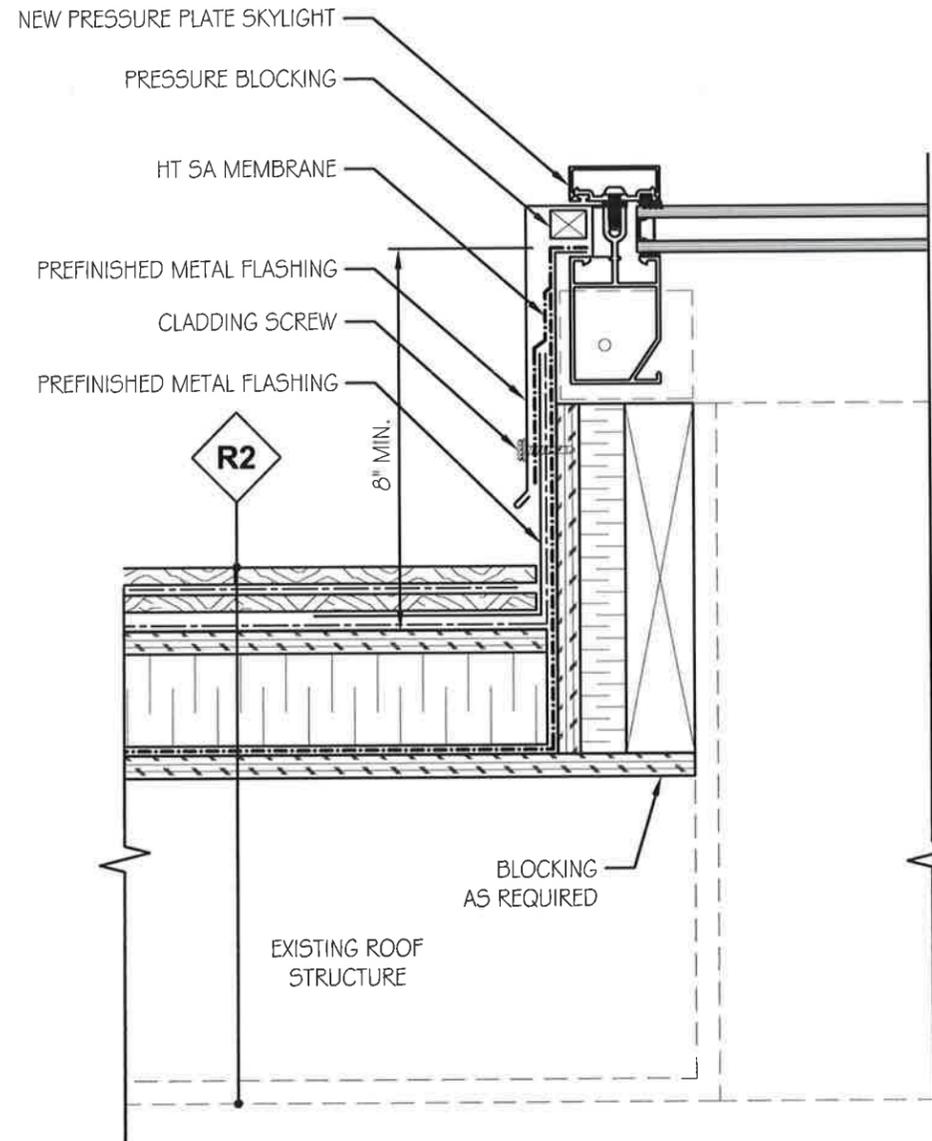
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1 ROOF @ FIXED SKYLIGHT BASE - CEDAR SHAKE
SCALE: 3"=1'-0"



2 ROOF @ FIXED SKYLIGHT SIDE - CEDAR SHAKE
SCALE: 3"=1'-0"

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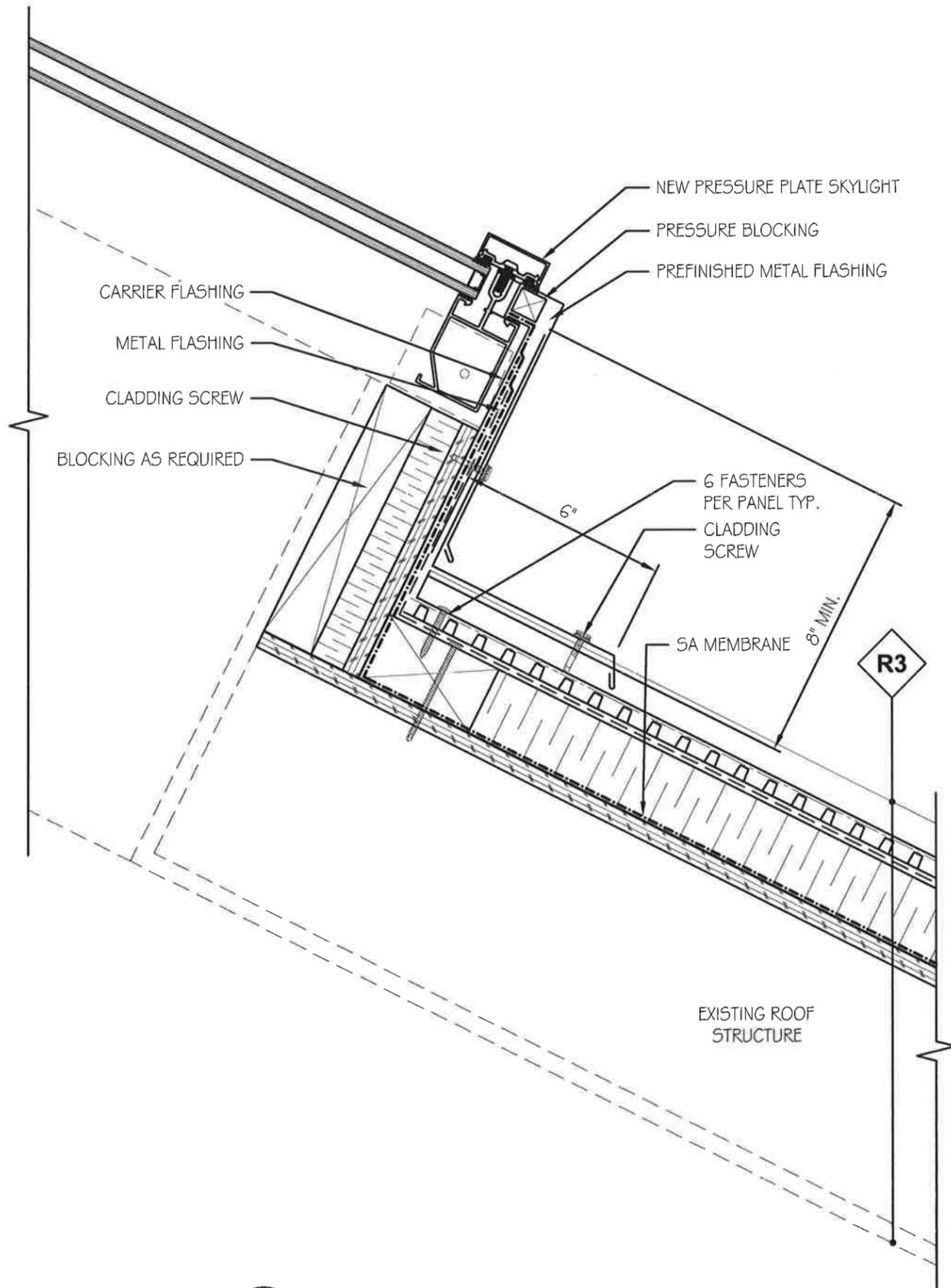
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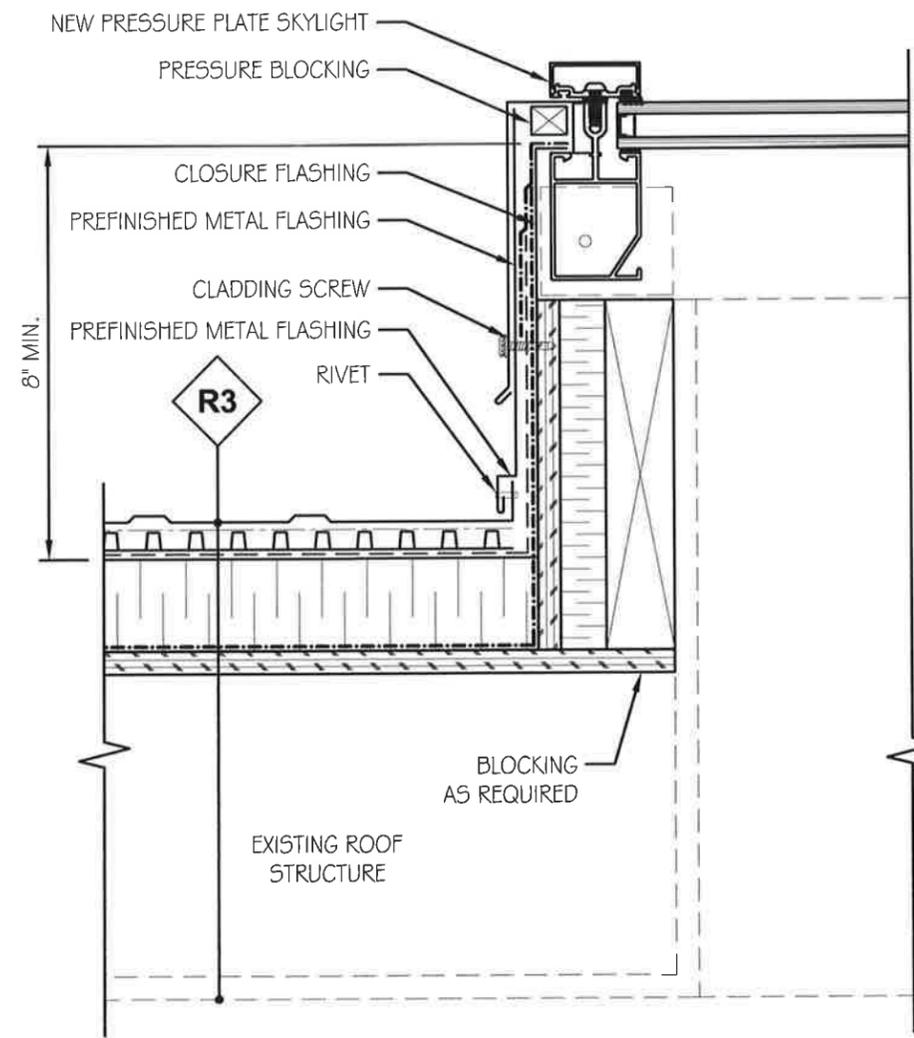
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1 ROOF @ FIXED SKYLIGHT BASE - METAL ROOF
SCALE: 3"=1'-0"



2 ROOF @ FIXED SKYLIGHT SIDE- METAL ROOF
SCALE: 3"=1'-0"

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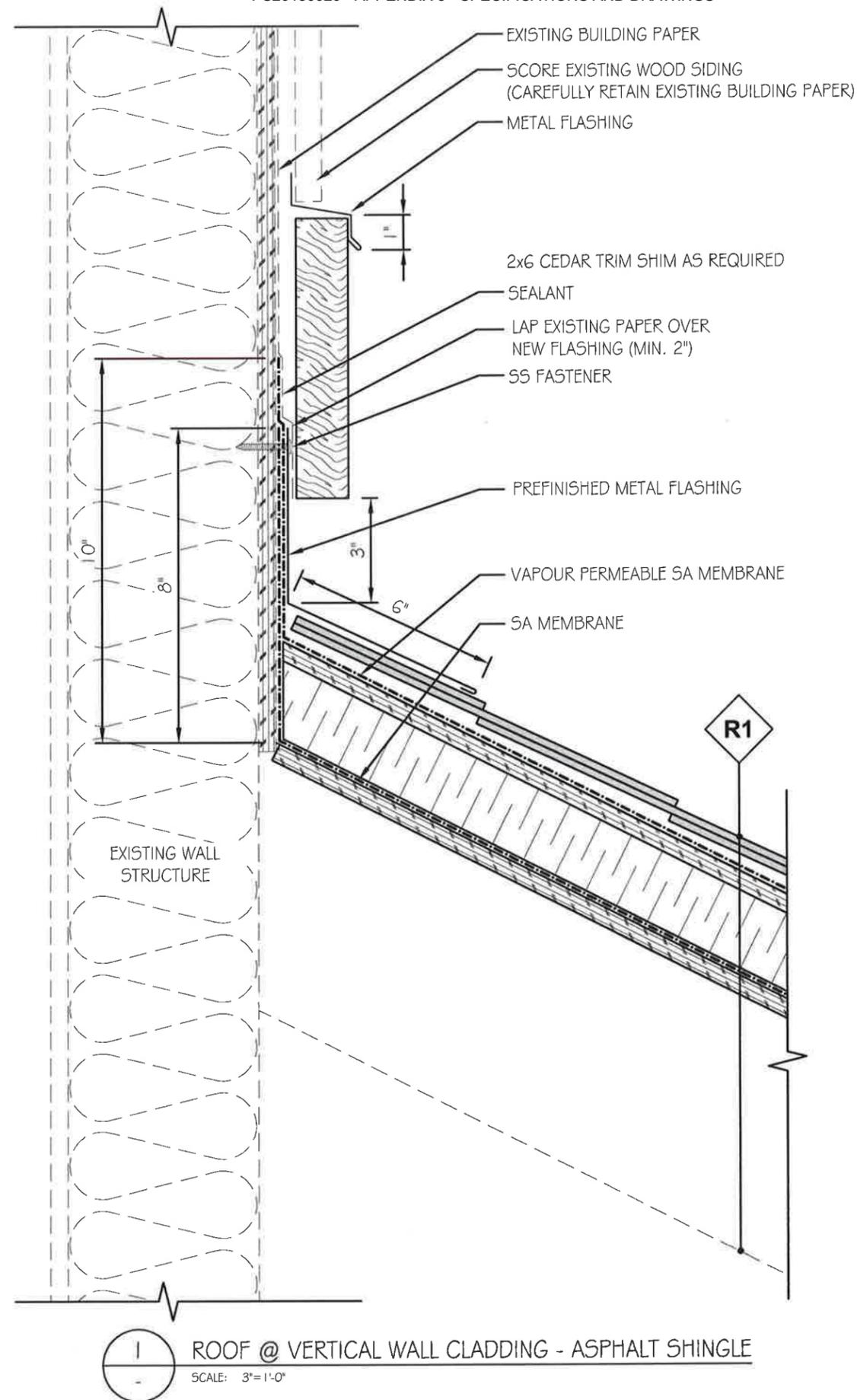
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1 ROOF @ VERTICAL WALL CLADDING - ASPHALT SHINGLE
SCALE: 3" = 1'-0"

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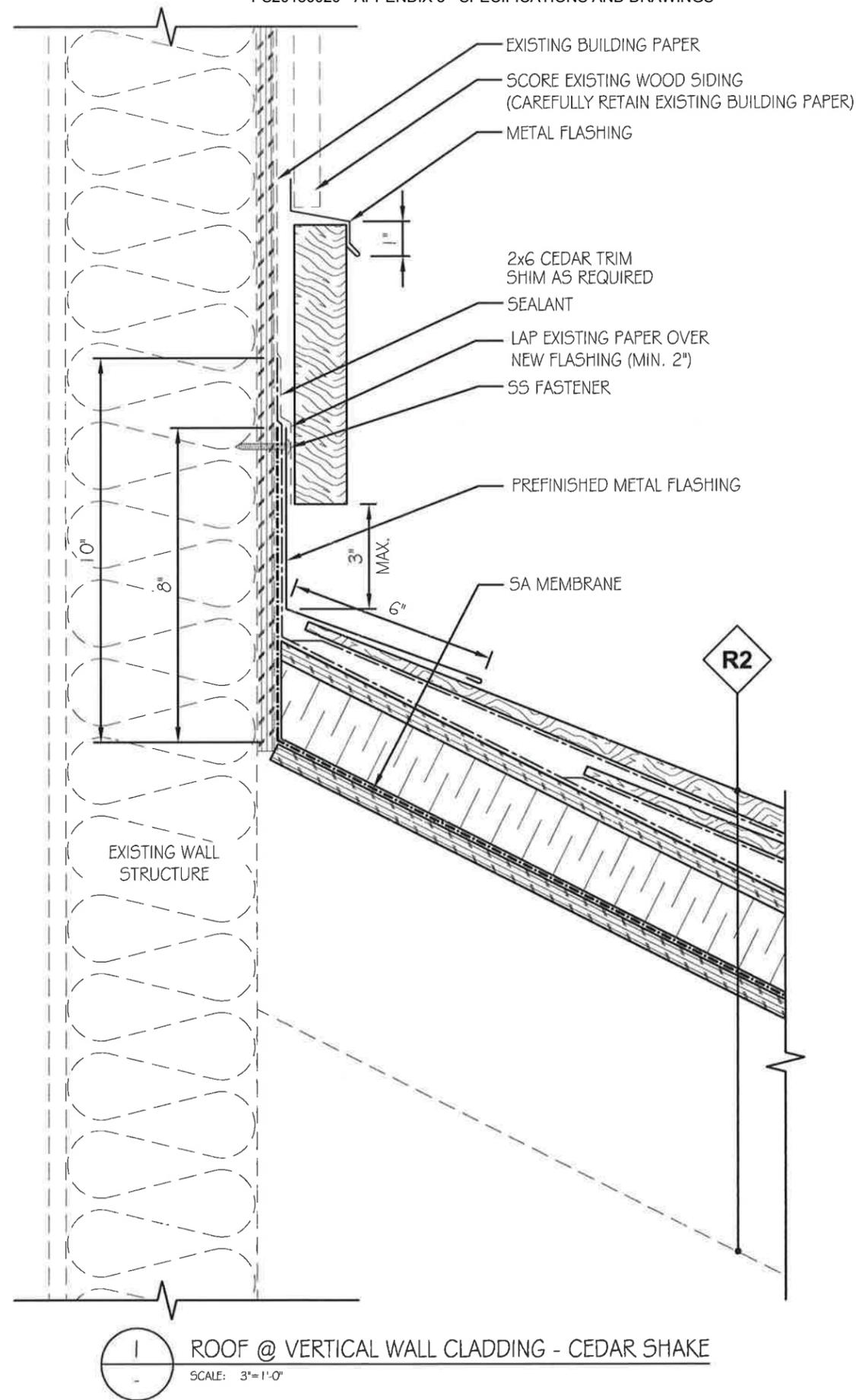
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1 ROOF @ VERTICAL WALL CLADDING - CEDAR SHAKE
SCALE: 3/8" = 1'-0"

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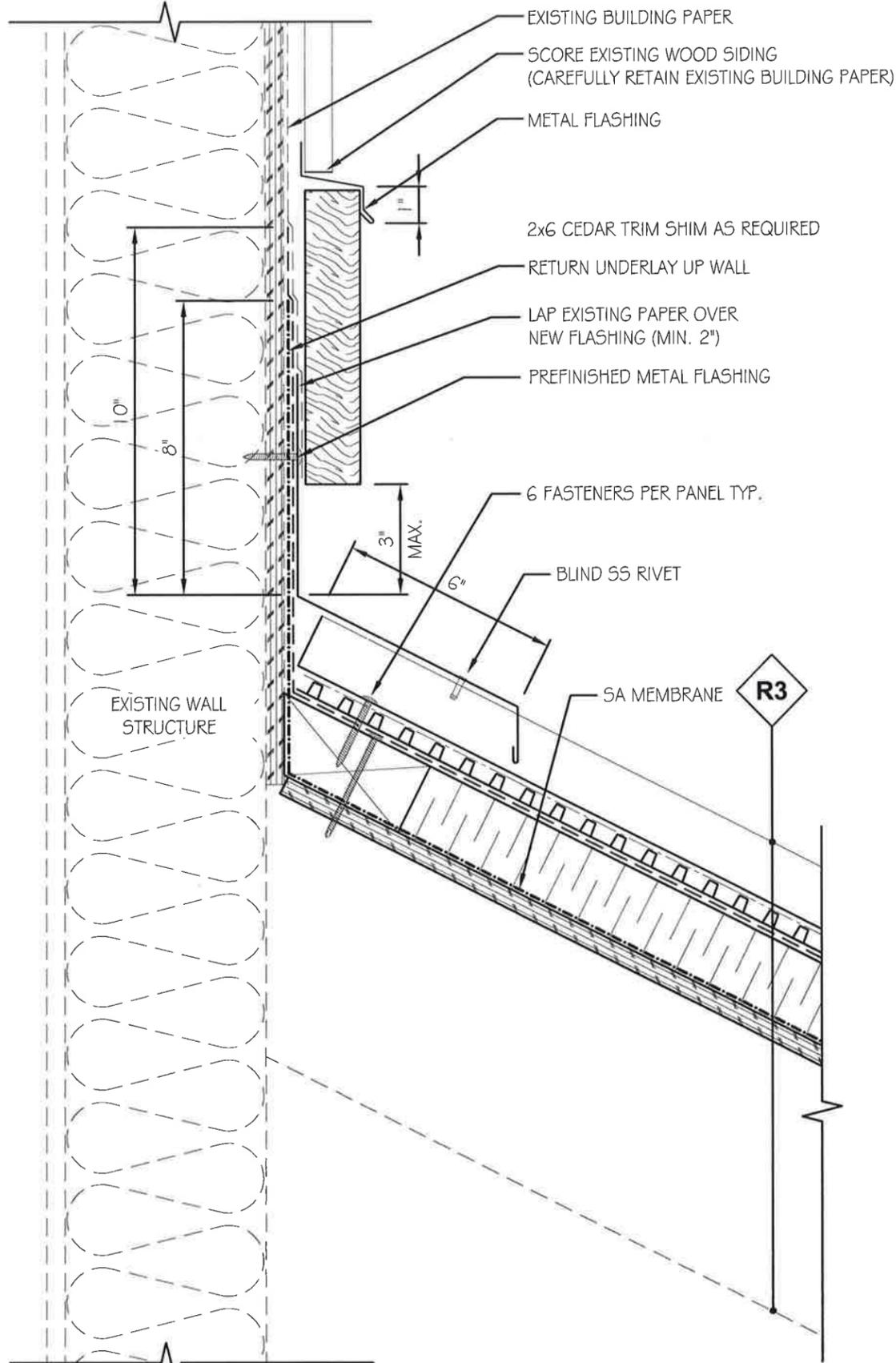
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REVIEWED:	5C / JJ		



1 ROOF @ VERTICAL WALL CLADDING - METAL ROOF
SCALE: 3" = 1'-0"

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ROOF REMEDIATION

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PROJECT TITLE PAGE

Section 00 01 01

PROJECT DOCUMENTS

PITCHED ROOF AND SKYLIGHT REPLACEMENT

CHAMPLAIN HEIGHTS COMMUNITY CENTRE

3350 Maquinna Drive
Vancouver, BC

Date: January 8, 2018

JRS Project No.: VR15104C



ISSUED FOR TENDER

Owner: **City of Vancouver**
453 West 12th Avenue
Vancouver, BC

Consultant: **JRS Engineering Ltd.**
300 – 4595 Canada Way
Burnaby, BC V5G 1J9

Project Engineer: Torsten Ball, P.Eng., RRO, GRP, LEED AP

Project Manager: Kurtis Topping, P.Eng., RRO

Project Consultant: José Rodriguez, M.Eng., RRO, TQ, Red Seal

Pitched Roof and Skylight Replacement

Champlain Heights Community Centre
3350 Maquinna Drive, Vancouver, BC

18-JAN-8

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	08 63 00.16	Pressure-Plate Metal-Framed Skylights	01-05
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END OF SECTION

Pitched Roof and Skylight Replacement

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LIST OF DRAWINGS

GROUP	DRAWING TITLE	NUMBER
	Drawing List	BE-0.01
	Roof Schedule	BE-0.01
PLANS & ELEVATIONS	Site Plan	BE-1.00
	Existing Architectural Roof Plan	BE-1.01
	Roof Plan	BE-1.01A
	South and East Elevations	BE-1.02
	North and West Elevations	BE-1.03
ROOF DETAILS	Roof Ridge/Hip – Asphalt Shingle	BE-5.00A
	Roof Ridge/Hip – Cedar Shakes	BE-5.00B
	Roof Ridge/Hip – Metal Roof	BE-5.00C
	Roof Eave – Asphalt Shingle	BE-5.01A
	Roof Eave – Cedar Shakes	BE-5.01B
	Roof Eave – Metal Roof	BE-5.01C
	Roof at Base of Wall – Asphalt Shingle	BE-5.02A
	Roof at Base of Wall – Cedar Shakes	BE-5.02B
	Roof at Base of Wall – Metal Roof	BE-5.02C
	Roof Valley – Asphalt Shingle	BE-5.03A
	Roof Valley – Cedar Shakes	BE-5.03B
	Roof Valley – Metal Roof	BE-5.03C
	Roof @ Base of Wall – Asphalt Shingle	BE-5.04A
	Roof @ Base of Wall – Cedar Shakes	BE-5.04B
	Roof @ Base of Wall – Metal Roof	BE-5.04C
	Roof Rake – Asphalt Shingle	BE-5.05A
	Roof Rake – Cedar Shakes	BE-5.05B
	Roof Rake – Metal Roof	BE-5.05C
	Fixed Skylight @ Wall	BE-5.06
	Roof @ Fixed Skylight Base/Side – Asphalt Shingle	BE-5.07A
	Roof @ Fixed Skylight Base/Side – Cedar Shakes	BE-5.07B
	Roof @ Fixed Skylight Base/Side – Metal Roof	BE-5.07C
	Roof @ Vertical Wall Cladding – Asphalt Shingles	BE-5.08A
	Roof @ Vertical Wall Cladding – Cedar Shakes	BE-5.08B
	Roof @ Vertical Wall Cladding – Metal Roof	BE-5.08C

END OF SECTION



Pitched Roof and Skylight Replacement

Champlain Heights Community Centre
3350 Maquinna Drive, Vancouver, BC

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SUMMARY OF WORK

1.0 GENERAL

1.1 SUMMARY

- .1 Section Includes:
 - .1 Title and description of the Work
 - .2 Contract method
 - .3 Contractor use of premises
 - .4 Owner occupancy
 - .5 Work sequence
 - .6 Scope of Work
- .2 Related Sections:
 - .1 01 00 00 General Requirements
 - .2 01 31 00 Project Management and Coordination
 - .3 01 40 00 Quality Requirements
 - .4 02 41 00 Demolition
 - .5 02 85 00 Mould Remediation

1.2 WORK INCLUDED IN CONTRACT

- .1 Work of this Contract comprises the cedar shingle roof and skylight replacement to community building located at 3350 Maquinna Drive, Vancouver, and further identified as "Champlain Heights Community Centre".

1.3 CONTRACT METHOD

- .1 Stipulated price with unit pricing.
- .2 Form of Contract: *CCDC 2 - 2008 Stipulated Price Contract*, Canadian Construction Documents Committee (CCDC).

1.4 CONTRACTOR USE OF PREMISES

- .1 Coordinate use of premises under direction of Owner and Consultant.
- .2 Assume full responsibility for protection and safekeeping of products under this Contract.
- .3 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

1.5 OWNER OCCUPANCY

- .1 Fully Occupied. Conduct all work with minimal disturbance of or inconvenience to building occupants.
- .2 Cooperate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.
- .3 Occupancy and use of premises by the Owner does not constitute acceptance of the Work

Pitched Roof and Skylight Replacement

Champlain Heights Community Centre
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SUMMARY OF WORK**1.6 WORK SEQUENCE**

- .1 Construct Work in stages to accommodate continued occupant use of premises during construction.
- .2 Undertake the Work in a manner that allows for completion of Work of a reasonably-sized area before proceeding with the next area, according to the approved schedules.
- .3 Coordinate the Work with the Owner and Consultant and execute the Work to accommodate existing conditions and dimensions.

1.7 SCOPE OF WORK**.1 DEMOLITION PHASE****.1 Sheet Metal Flashings**

- .1 Remove and dispose of existing sheet metal flashings and materials within the scope of work, including but not limited to:
 - .1 Parapet cap flashings at roofs and roof decks
 - .2 Base-of-wall flashings

.2 Cladding Removal

- .1 In preparation for new membranes, cut or remove wood cladding as required to accommodate waterproofing as described on the Drawings.
- .2 At locations indicated in the project drawings, remove the wood cladding to be replaced.
- .3 There is an ALTERNATE PRICE for complete cladding replacement at remaining locations where the pitched roofs meet the building walls, and not included in the base bid.

.3 Pitched Roofing

- .1 Remove and dispose of the following existing components and assemblies:
 - .1 Cedar roofing, sheet metal flashings, underlay, vents and other accessories to the level of the existing roof deck.
- .2 Remove, recycle or properly dispose of existing skylights and skylight accessories.
- .3 There is an ALTERNATE PRICE to replace two glulam beams in the lobby.

.2 RECONSTRUCTION PHASE**.1 Framing**

- .1 Repair, replace or modify existing wood studs, framing, sheathing and other underlying elements as directed by the Consultant.
- .2 Do not include this work in the base bid; Contractor to fill out Schedule of Unit Prices to determine extended amount.

.2 Pitched Roofing to be Replaced

- .1 Supply and install the following new components and assemblies:
 - .1 5/8"plywood over the existing strapping to fully sheath the pitched roofs within the scope of work.
 - .2 Self-adhesive air/vapour barrier to the entire roof surface. Tie-in with adjacent roof membranes.

Pitched Roof and Skylight Replacement

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SUMMARY OF WORK

- .3 Insulation over prepared substrate and mechanically fasten.
 - .4 5/8"plywood over insulation; fasteners and fastening pattern to comply with current BC code.
 - .5 Vapour Permeable self-adhesive membrane underlayment.
 - .6 Asphalt shingles.
 - .7 Sheet metal flashings and accessories, including but not limited to: sheet drip flashings at all gables, rakes, and eaves back wall and side wall locations.
 - .8 Roof accessories as required to replace existing, including plumbing stack flashings and caps and other roof vents.
 - .9 Tie-in roofing with membrane and flashings at all skylight locations.
 - .10 There is an ALTERNATE PRICE to supply and install a cedar shake roof assembly.
 - .11 There is an ALTERNATE PRICE to supply and install a metal roof assembly.
- .3 Skylights
- .1 Supply and install pressure-plate metal-framed skylights with required sealants, flashings and accessories, per approved shop drawings.
 - .2 Sprinkler heads are located under the skylights. The Contractor is to ensure the heads are protected during construction and that it is the Contractor's responsibility to know where the shutoff is for the sprinkler system.
 - .3 There is an ALTERNATE PRICE to supply and install a triple glazed skylight system.
- .4 Sheet Metal Flashings
- .1 Supply and install new sheet metal flashings in all locations, including but not necessarily limited to:
 - .1 cap flashings,
 - .2 wall flashings,
 - .3 all other sheet metal flashings as required by the Work.
 - .2 Supply and install new PVC downpipes and splash pans to match existing profile and configuration, as well as additional downpipe and accessories to match in appearance where existing configuration has been modified or changed.
- .5 Sealant
- .1 Supply and install sealant as required by the Work.

2.0 PRODUCTS**Not Used.****3.0 EXECUTION****Not Used.**

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SUMMARY OF WORK

END OF SECTION



Pitched Roof and Skylight Replacement

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PROJECT MANAGEMENT & COORDINATION

1.0 GENERAL

1.1 SUMMARY

- .1 Section Includes:
 - .1 Coordination of the Work
 - .2 Emergency Contact
 - .3 Access and Notification
 - .4 Construction Progress Documentation
 - .5 On-Site Documents
 - .6 Project Record Documents
 - .7 Meetings
 - .8 Submittals

1.2 REFERENCES

- .1 CCDC 2 - 2008 *Stipulated Price Contract*, Canadian Construction Documents Committee (CCDC).

1.3 COORDINATION

- .1 Coordinate progress of Work, progress schedules, submittals, use of site, temporary utilities, and construction facilities and controls.
- .2 Coordinate and supervise Work of trades and sub-trades.

1.4 EMERGENCY CONTACT

- .1 Provide 24-hour emergency contact telephone number for use in event of emergency arising from Work being undertaken.
- .2 Ensure that emergency service has a maximum response time of 3 hours and can accommodate all conditions that may arise from the Work, including water damage, hoarding, security, electrical failure, gas service interruption, utility interruption, broken glass and any other related failure.
- .3 Failure to respond adequately will be cause for Owner to retain other Contractors to address this work and to deduct resultant costs from Contract price.

1.5 ACCESS AND NOTIFICATION

- .1 Coordinate unit access for required interior work with Consultant prior to submitting notices or scheduling work.
- .2 Provide working schedule directly to each occupant not less than 1 week in advance of required work:
 - .1 where suite access is required, or
 - .2 when work is to be conducted on exterior walls of suite.
- .3 Provide written notice directly to occupant of each affected unit not less than 2 days in advance of required work. Place notice under door of unit and e-mail a copy to Property Manager or Owner's Representative.

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**PROJECT MANAGEMENT & COORDINATION**

- .4 Clearly indicate on working schedule and on notice when access to suite will be required or when work will take place, expected duration, and contact number for questions and further information.
- .5 If notice has been given and then work is not to be conducted as outlined therein, provide written notice to that effect no less than 24 hours prior to originally-scheduled time.
- .6 If required working schedule and notice have both been issued and access is not provided, a stand-by charge may be issued to Owner, derived from tendered hourly rates for affected workers to a cumulative maximum of 4 hours per unit per occurrence.

1.6 CONSTRUCTION PROGRESS DOCUMENTATION**.1 Schedules Required.**

- .1 Construction Progress Schedule.
- .2 Schedule of Values of the Work
- .3 Submittal Schedule for Shop Drawings and Samples.

.2 Format

- .1 Horizontal bar chart (Gantt chart), showing:
 - .1 Separate task bar for each trade or operation.
 - .2 Critical path with tasks in chronological order.
 - .3 Horizontal timescale identifying first work day of each week.

.3 Submission

- .1 Submit 1 copy of initial schedules to Consultant within 7 days after award of Contract.
- .2 Consultant will review schedule and return reviewed copy within 5 days after receipt.
- .3 Resubmit finalized schedule within 5 days after return of reviewed copy.

.4 Working Schedules

- .1 During progress of Work, revise and resubmit working schedules in accordance with GC 3.5.
- .2 Submit revised working schedules on regular and ongoing basis in order to notify occupants of approximate date(s) when work may be undertaken within occupied suites or when exterior work may significantly affect interior of suite.
- .3 Immediately notify Consultant and Owners' representative if scheduled or anticipated access dates are changed for any reason.

1.7 ON-SITE DOCUMENTS

- .1 Maintain one copy each of the following at job site and make available for review upon request by Owner's representative or Consultant:
 - .1 Contract Documents, including Specifications and Drawings.
 - .2 Applicable building codes and building by-laws.
 - .3 Addenda, Change Orders, Change Directives, and other modifications to Contract.
 - .4 Field test reports and site visit reports.
 - .5 Copy of approved up-to-date work schedule.

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- .6 Manufacturers' installation and application instructions.
- .7 Material Safety Data Sheets (MSDS) for Products on site in accordance with "Workplace Hazardous Materials Information System" (WHMIS).
- .8 Approved Shop Drawings.
- .9 Up-to-date daily record of work performed.
- .10 Daily timesheets of Contractor's personnel.

1.8 PROJECT RECORD DOCUMENTS

- .1 After award of Contract, Consultant will provide set of Drawings and Specifications for purpose of maintaining project record documents ("as-builts"). Accurately and neatly record deviations from Contract Documents caused by site conditions and changes ordered by Consultant.
- .2 Maintain project record documents in as-new condition; keep clean, dry, and legible.
- .3 Provide files, racks, and secure storage for record documents and samples in field office and keep apart from documents used for construction.
- .4 Label record documents and file in accordance with Section number listings in Section 00 01 10 Table of Contents. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .5 Do not use record documents for construction purposes.
- .6 Keep record documents and samples available for inspection by Consultant.
- .7 Provide felt-tip marking pens for recording information; use separate colours for each major system.
- .8 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .9 Drawings and Shop Drawings: Legibly mark each item to record actual construction, including:
 - .1 Record locations of concealed components of mechanical and electrical services. Record all locations of rot and structural repairs.
 - .2 Keep permanent records of repairs to gas vents or vent terminations in area of Work. These records are to be noted at bottom of letter provided by Homeowner Protection Office (HPO). Forward records of these repairs to gas safety program, as well as to Owner and Consultant.
 - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by Change Order.
 - .6 Details not on original Drawings.
 - .7 References to related Shop Drawings and modifications.
- .10 Specifications: Legibly mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addendum and by Change Order.
- .11 Other Documents: Maintain manufacturer's certifications, inspection certifications, and field test records as required by individual Specifications sections.

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**PROJECT MANAGEMENT & COORDINATION****1.9 MEETINGS****.1 Construction Organization and Start-up:**

- .1 Within 15 days after award of Contract, request meeting of parties to Contract to discuss and resolve administrative procedures and responsibilities.
- .2 Senior representatives of Owner, Owner's Representative, Consultant, Contractor, major subcontractors, field inspectors and supervisors must be in attendance.
- .3 Establish time and location of meeting and notify parties concerned a minimum of 5 days before meeting.
- .4 Incorporate mutually-agreed-upon variations to Contract Documents into Contract prior to signing.
- .5 Agenda to include the following as required herein and as stated elsewhere in Specifications and Contract Documents:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work (progress scheduling).
 - .3 Schedule for submission of shop drawings, samples and colour chips.
 - .4 Requirements for temporary facilities, site signage, offices, storage sheds, utilities and fences.
 - .5 Delivery schedule of specified equipment, materials and products.
 - .6 Site security.
 - .7 Proposed changes, Change Orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements (GC).
 - .8 Owner-provided Products.
 - .9 Record drawings.
 - .10 Maintenance information.
 - .11 Take-over procedures, acceptance, and warranties.
 - .12 Progress claims, administrative procedures, photographs, and holdbacks (GC).
 - .13 Appointment of inspection and testing agencies or firms, if required.
 - .14 Insurances and transcript of policies (GC).
- .6 Comply with Owner's and Consultant's allocation of mobilization areas of site; for field offices and sheds, access, traffic, and parking facilities.
- .7 During construction, coordinate use of site and facilities through Consultant's procedures for intra-project communications: Submittals, reports and records, schedules, coordination of drawings, recommendations, and resolution of ambiguities and conflicts.

.2 Project Meetings

- .1 Hold and preside at bi-weekly project meetings during progress of Work.
- .2 Record minutes, including significant proceedings and decisions and identifying action by parties.

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- .3 Agenda to include the following:
 - .1 Review and approval of previous meeting minutes.
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations, problems, conflicts.
 - .4 Problems that may impede construction schedule.
 - .5 Review of off-site fabrication delivery schedules.
 - .6 Corrective measures and procedures to regain projected schedule.
- .4 Produce copies of minutes within 3 days after each meeting and distribute to meeting participants, affected parties not in attendance, Consultant and Owner's Representative.

1.10 SUBMITTALS

- .1 Provide submittals in accordance with requirements of GC 3.10 SHOP DRAWINGS.
- .2 Accompany submittals with filled-out Submittal Transmittal Form as included in Section 00 62 11.
- .3 Do not proceed with work affected by submittal until review is completed and Consultant's approval has been received in writing.
- .4 Shop Drawings: Submit 2 copies of Shop Drawings as required and as Consultant may reasonably request.
- .5 Samples
 - .1 Submit samples to Consultant for review as requested in respective specifications sections.
 - .2 Keep samples available at the project site office and make available for Consultant review.

2.0 PRODUCTS

Not Used.

3.0 EXECUTION

Not Used.

END OF SECTION



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QUALITY REQUIREMENTS

1.0 GENERAL

1.1 SUMMARY

- .1 Section Includes: Regulatory requirements, quality assurance, and quality control requirements for the Project.

1.2 GENERAL

- .1 Immediately notify Consultant if required Work is such as to make it impractical to produce required results.
- .2 Decisions as to quality or fitness of workmanship in cases of dispute rest solely with Consultant, whose decision is final.
- .3 Remove and make good defective work at own expense and be responsible for delays and expenses resulting from rejection of work.

1.3 REGULATORY REQUIREMENTS

- .1 Conduct Work in accordance with the most recent edition of applicable building codes / building by-laws, and with the requirements of authorities having jurisdiction (AHJs).
- .2 Confirm with the local AHJ allowable working hours and inform both Owners and Consultant at project start-up meeting. Generally accepted hours of work to be Monday to Friday, 8 a.m. to 4 p.m.
- .3 Comply with WorkSafe BC requirements and applicable regulations.
- .4 Except where indicated otherwise, where reference is made to a specification, code or standard, comply with the latest edition of the specification, code, or standard (as amended) in effect as of the date of the Contract.

1.4 QUALITY ASSURANCE

.1 Labour and Supervision

- .1 Maintain person responsible for coordination and supervision on site at all times during the Work.
- .2 Only skilled tradespersons specialized in the work of the applicable section, officially employed by a contractor, and operating adequate and necessary equipment will be authorized to perform Work.
- .3 Do not employ any unfit person or anyone unskilled in their required duties.

.2 Products and Materials

- .1 Provide only Products that are not damaged or defective, that comply with specified requirements, and that are suitable for the purpose(s) intended. If requested, furnish evidence as to type, source and quality of Products provided.
- .2 Defective Products will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error.
- .3 If dispute should arise as to quality or fitness of Products, decision rests strictly with Consultant, based upon requirements of Contract Documents.
- .4 Delivery, Storage and Handling of Products

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QUALITY REQUIREMENTS

- .1 Handle and store products in accordance with manufacturer's instructions, taking care to prevent damage, deterioration, or soiling.
 - .2 Deliver, handle and store products in original wrappings and containers, with manufacturer's seals and labels intact.
 - .3 For products that have a defined shelf life, use prior to manufacturer's "use by" date, as marked on product packaging.
 - .4 Store products susceptible to weather damage in weatherproof enclosures.
 - .5 Avoid prolonged exposure of light- and heat-sensitive materials to sunlight.
 - .6 Store combustible materials away from heat and open flame.
 - .7 Consult manufacturer's material safety data sheets (MSDS) to determine special considerations applicable to appropriate and safe handling of each Product.
- .5 Manufacturer's Instructions
- .1 Unless otherwise specified, install products in accordance with manufacturer's instructions.
 - .2 Do not rely on labels or enclosed literature provided with products. Obtain written instructions directly from manufacturer.
 - .3 Notify Consultant in writing of conflicts between Specifications and manufacturer's instructions so Consultant may determine appropriate course of action.
 - .4 Improper installation or erection of Products resulting from failure to comply with these requirements authorizes Consultant to require removal and reinstallation at no increase in Contract price.
- .3 Contractor's Equipment
- .1 Equipment, tools and supplies brought on site and assigned to Work are to be thoroughly cleaned, free of defects, and suitable for purpose(s) for which they are intended.
- .4 Mock-Ups
- .1 Mock-ups are used to judge workmanship and substrate preparation against standard of quality required. Completed mock-ups of sufficient workmanship may be included in finished Work.
 - .2 Provide mock-ups for all aspects of Work for review by Consultant prior to full installation of a Product or material.
 - .3 Undertake Work of each section in a small, representative area and call Consultant for review before proceeding with Work on a larger scale.
 - .4 Upon review, Consultant will promptly forward written confirmation accepting or rejecting reviewed Work, noting reasons for acceptance or rejection.
 - .5 Do not proceed with Work on a larger scale without approval in writing from Consultant.
- 1.5 QUALITY CONTROL
- .1 Field Review and Inspection of Work:
- .1 Defective Work shall be rejected, regardless of previous inspections. Inspection does not relieve Contractor of responsibility, but is precaution against oversight or error.

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QUALITY REQUIREMENTS

2.0 PRODUCTS

Not Used.

3.0 EXECUTION

Not Used.

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TEMPORARY FACILITIES & CONTROLS**1.0 GENERAL****1.1 SUMMARY**

- .1 Section Includes:
 - .1 Temporary utilities.
 - .2 Construction facilities.
 - .3 Construction aids.
 - .4 Access and parking.
 - .5 Protection
 - .6 Security

1.2 INSTALLATION AND REMOVAL

- .1 Provide construction facilities and temporary controls required in order to execute the Work described in the Contract Documents.
- .2 Remove from site all such work after use and make good all areas.

1.3 TEMPORARY UTILITIES

- .1 Contractor is responsible for obtaining and paying for all required trade permits (electrical, plumbing, etc.), municipal water meter/supply, municipal damage deposits for surrounding streets/sidewalks/landscaping, and municipal inspection fees.
- .2 Temporary Power
 - .1 Provide for temporary power for temporary lighting and operating of power tools during construction to a maximum supply of 230 volts 30 amps.
 - .2 Arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.
 - .3 Owner will pay utility charge at prevailing rates.
- .3 Water Supply
 - .1 Owner will provide a continuous supply of potable water for construction use.
 - .2 If required, arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.
- .4 Sprinkler Heads
 - .1 The sprinkler heads are located under the skylights. The Contractor is to ensure the heads are protected during construction and that it is the Contractor's responsibility to know where the shutoff is for the sprinkler system.

1.4 CONSTRUCTION FACILITIES

- .1 Sanitary Facilities
 - .1 Provide sufficient sanitary facilities for workers in accordance with requirements of local health authorities.

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**TEMPORARY FACILITIES & CONTROLS**

- .2 Maintain sanitary facilities in clean condition.
- .3 Locate portable toilets in suitable location away from suites to protect occupants from unpleasant odours. Obtain Owner approval before locating toilets.

.2 Site Storage / Loading

- .1 Confine Work and operations of employees to area(s) of Work indicated by Contract Documents. Do not unreasonably encumber premises with Products, materials, facilities or workers.
- .2 Do not load or permit to be loaded any part of the Work with weight or force that will endanger the Work.
- .3 Equipment / Tool / Materials Storage
 - .1 Provide secure, lockable weatherproof storage for tools, equipment and materials. Maintain in clean and orderly condition.
 - .2 Locate materials that do not require weatherproof storage in a manner that will cause least amount of interference with work activities.
 - .3 A portion of the parking garage will be made available for site storage as indicated on Drawings. Lay-down areas will be identified during pre-bid site meeting.
 - .4 Do not unnecessarily store materials tools or equipment on roof areas.

1.5 CONSTRUCTION AIDS**.1 Scaffolding**

- .1 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms, temporary stairs, hoists and other related items required to access and execute Work. Refer to Section 01 54 23 Temporary Scaffolding and Platforms.

.2 Electrical Equipment

- .1 Electrical equipment used on this project must be protected with ground fault interrupters.

1.6 ACCESS AND PARKING

- .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as required for access to Work.
- .2 Provide and maintain signal flag operators, traffic signals, barricades and flares, and lights or lanterns as required to perform Work and to protect public.
- .3 If authorized to use existing roads and parking areas for access to project site, maintain such areas for duration of Contract and make good damage resulting from such use.
- .4 Maintain access to property, including overhead clearances for use by emergency response vehicles.
- .5 Parking: Limited space is available for parking on site. Available parking will be identified during pre-bid site meeting.
- .6 Clean areas where used by Contractor's equipment.



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TEMPORARY FACILITIES & CONTROLS

1.7 PROTECTION

- .1 Contractor is responsible for obtaining and paying for all required trade permits (electrical, plumbing, etc.), municipal water meter/supply, municipal damage deposits for surrounding streets/sidewalks/landscaping, and municipal inspection fees.
- .2 Protect surrounding private and public property from damage during performance of Work.
- .3 Protect adjacent work, materials and surfaces from splash, spray, spillage and water ingress. Provide protection for finished and partially finished building assemblies, finishes and equipment during performance of Work.
- .4 Ensure Work is adequately protected at the end of each working day and during any interruption of work.
- .5 At all times, protect interiors from weather and exterior elements. Have on site all necessary tarpaulins, polyethylene or other suitable waterproofing materials to provide required protection.
- .6 Provide appropriate protection to building and ground areas through or over which materials are being transported.
- .7 Provide necessary screens, covers, and hoardings.
- .8 Be responsible for damage incurred due to lack of or improper protection.
- .9 Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures.
- .10 Provide secure, rigid guardrails and barricades around open shafts, open stair wells, open edges of floors and roofs, and elsewhere as required to protect public and workers and as required by local regulations.
- .11 Hoarding and Weather Enclosures
 - .1 Erect hoarding to protect public, workers, and public or private property from injury or damage in accordance with Section 01 54 23 Temporary Scaffolding and Platforms.
 - .2 Erect weather enclosures to protect Work from weather in accordance with Section 01 54 23 Temporary Scaffolding and Platforms.

1.8 SECURITY

- .1 Provide security fencing as required to reasonably ensure safety and security of occupants during working and non-working hours.
- .2 Take reasonable precaution to prevent unauthorized access to work areas and interior of building at all times when on site and when off site.

2.0 PRODUCTS

Not Used.

3.0 EXECUTION

Not Used.

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TEMPORARY SCAFFOLDING & PLATFORMS

1.0 GENERAL

1.1 SUMMARY

.1 Section Includes:

- .1 Design, supply, erection, and maintenance of scaffolding to facilitate restoration work, including bracing, tie-backs, outriggers, guardrails, toe boards, platforms, access stairs and ladders.
- .2 Design, supply, erection and maintenance of hoarding to protect public, workers, and public and private property from injury or damage.
- .3 Weather-tight enclosures for scaffolding, as required.
- .4 Performance of daily scaffolding safety inspections throughout construction and maintaining safety of workers and pedestrians.

1.2 REFERENCES

- .1 Applicable Building Codes / Building By-Laws, most recent edition.
- .2 CAN/CSA-S269.2 *Access Scaffolding for Construction Purposes*.
- .3 CAN/CSA-Z271 *Safety Code for Suspended Elevating Platforms*.
- .4 *Workers' Compensation Act* [RSBC 1996] and *Workers' Compensation Amendment Act* (2002).
- .5 *Occupational Health and Safety Regulation* of British Columbia.

1.3 DEFINITIONS

- .1 The term **scaffolding**, when used by itself, generically refers to both stationary and suspended (swing stage) scaffolding systems.

1.4 DESIGN REQUIREMENTS

- .1 Scaffolding to be designed in compliance with requirements of referenced standards and codes.
- .2 Structural Support:
 - .1 Verify bearing condition of soil and supporting structure.
 - .2 Where existing structure is to be used for structural support of scaffolding, verify that existing structure can safely support resultant imposed loads. Should existing structure require strengthening for support of scaffolding, provide details from professional engineer for shoring or strengthening requirements.
 - .3 When relying on structural integrity of existing exterior building walls for lateral support of scaffolding, establish whether existing wall components can adequately support additional lateral loads. Provide adequate anchorage of lateral supports for scaffolding and restore existing wall to original condition after removal of scaffolding anchorage.
- .3 Enclosure
 - .1 When required, equip scaffolding with enclosure capable of providing protection to pedestrians and adjacent property from dust, dirt, debris, water spray, falling tools and materials, and any other related workplace hazards.

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**TEMPORARY SCAFFOLDING & PLATFORMS**

- .2 Design and construct enclosed scaffolding and weather enclosures to withstand wind pressure / wind loads and snow loads.
- .4 Access to Stationary Scaffolding
 - .1 Provide stairs or fixed vertical ladders to access all working levels of stationary scaffolding.
 - .2 Equip stairs and landings with handrails/railings such that if a worker trips and falls while descending stairs, it will not be possible for worker to fall through railing system.
 - .3 Surround stair openings on planked working areas of stationary scaffolding by railings to prevent workers from walking into back or sides of open stair.
- .5 Working Platforms
 - .1 Ensure that levels of scaffolding designated for work are fully planked. Do not remove isolated areas of planking on fully-planked working platforms. Replace damaged planks immediately.
 - .2 If fully-planked working platforms are not required or a partially-planked platform is required to facilitate lowering or raising material, install guardrails to prevent workers from falling off partially-planked platform.
 - .3 With exception of front of stair openings, ensure all openings in working platforms are equipped with railings to prevent workers from accidentally walking into openings.
- .6 Suspended Scaffolding
 - .1 Suspended scaffolding cannot be moved up or down if scaffold work platforms are more than 10% out of level.
 - .2 Suspended platforms are to be operated with power units equipped with positive pressure controls (i.e., dead-man switch and positive drives for raising and lowering scaffold).
 - .3 Parapet clamps are not permitted. Support of suspended scaffolding is to be independent of building parapet.

1.5 SUBMITTALS

- .1 Prior to erecting scaffolding, prepare and submit erection drawing and connection details for review by Consultant. Drawings are to be stamped by professional engineer (with experience in the structural design of scaffolding) registered in the Province of British Columbia. Consultant's review does not relieve Contractor from any contractual requirement or responsibility.
- .2 Erection drawings are to include:
 - .1 Reference specifications, materials and sizes for structural members.
 - .2 Main dimensions of scaffolding.
 - .3 Locations of tiebacks and bracing.
 - .4 Guardrails.
 - .5 Planking.
 - .6 Stairs.
 - .7 Ladders.
 - .8 Where necessary, shoring or strengthening of existing structures.
 - .9 Connection details.



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TEMPORARY SCAFFOLDING & PLATFORMS

- .10 Support details for suspended scaffolding.
- .11 Tieback arrangement for suspended scaffolding.
- .12 Counterweight arrangement and outrigger design for suspended scaffolding.
- .3 Submit copies of WorkSafe BC inspection reports, orders to comply, or other instructions/correspondence to Consultant and professional engineer responsible for certifying scaffolding erection drawings and confirming that scaffolding is erected in accordance with reviewed erection drawings. Immediately follow any WorkSafe BC life safety instructions/work orders prior to continuing with Work.

1.6 CERTIFICATIONS

- .1 After scaffolding is erected, provide written certification from professional engineer that scaffolding is erected in accordance with reviewed erection drawings.
- .2 Report revisions to lateral and gravity support arrangements for suspended scaffolding to professional engineer who certified erection drawings. In addition, obtain certification from professional engineer that revisions have been reviewed and are acceptable.
- .3 For stationary scaffolding erected over underground parking garage structures, obtain written certification from professional engineer that parking garage structure can support imposed loads.

2.0 PRODUCTS

2.1 SCAFFOLDING COMPONENTS

- .1 Obtain metal scaffolding components from a single source (supplier) for metal scaffolding components.
- .2 Obtain test data and test information from supplier; submit to Consultant upon request.

2.2 HOARDING AND ENCLOSURES

- .1 Provide posts, rafters, planking and plywood sheathing as required.
- .2 Construct roof structure of hoarding with wood framing capable of withstanding impact load from falling debris, materials, or tools in order to provide overhead protection to persons accessing building during construction. Ensure roof of hoarding is waterproof.
- .3 Use white-coloured tarps where enclosures will block daylight to occupied units.

3.0 EXECUTION

3.1 PREPARATION

- .1 Prepare surfaces in accordance with manufacturer's directions.

3.2 ERECTION

- .1 Erect scaffolding in accordance with erection drawings and in compliance with requirements of referenced standards and codes.
- .2 Position scaffold tiebacks in line with through-wall flashing, if possible. Install self-adhesive membrane on top of sheathing paper at locations where there are scaffold tiebacks penetrating sheathing paper. Seal membrane penetrations with mastic at time of tieback removal.

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**TEMPORARY SCAFFOLDING & PLATFORMS****3.3 SUSPENDED SCAFFOLDING**

- .1 Operate suspended scaffolding in accordance with rules and regulations set out in referenced standards.
- .2 Erect and operate commercially-manufactured suspended scaffolds in accordance with written operating procedures developed by manufacturer and in accordance with professional engineer's design, including instructions on erection, use and design.
- .3 When not in use, lash suspended scaffolding to structure or lower suspended scaffolding to ground and secure. Secure suspension lines and safety ropes to prevent damage.
- .4 Persons entering or exiting suspended scaffolding and persons working on or from suspended scaffolding must use a fall arrest system, including lifeline and rope grip.
- .5 Barricade area below suspended scaffolding or provide means of overhead protection, such as personal net or debris net. Post highly-visible warning signs to notify public of potential hazard overhead.
- .6 Protect supporting components of suspended scaffolding, such as suspension lines, tie-backs, lifelines and any other component made of rope, from damage by corrosion, abrasion, foreign materials, heat, or work activities that might damage rope or internal hoist mechanism.

3.4 HOARDING

- .1 Make all effort to reduce impact of hoarding on occupants and to minimize duration of hoarding in any one location any longer than is necessary to complete work.
- .2 Provide hoarding in accordance with rules and regulations set forth in referenced standards.
- .3 Provide hoarding protection at areas identified as being in scope of work.
- .4 If necessary, provide sufficient lighting for evening building entry and exit throughout covered walkways to ensure public safety and security. No dark corners are allowed.
- .5 Maintain hoarding in good condition at all times.
- .6 Repair damaged hoarding to satisfaction of Consultant and other applicable authorities.
- .7 Maintain environmental conditions, including temperature, within hoarding to allow for continuous work.
- .8 Keep hoarding clean at all times.
- .9 Remove hoarding from site only when authorized by Consultant.

3.5 INSPECTION

- .1 Perform daily safety inspection of scaffolding throughout construction. Repair or replace components as necessary to ensure continued safety of workers and public.

3.6 REPAIR / RESTORATION

- .1 Make good all damage to existing building caused by erection and dismantling of scaffolding and by loads imposed by scaffolding.

END OF SECTION



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CUTTING & PATCHING

1.0 GENERAL

1.1 SUMMARY

- .1 Section Includes: Requirements for incidental cutting, fitting, and patching required to complete the Work or to make its many parts fit together properly.
- .2 Related Sections:
 - .1 01 00 00 General Requirements.
 - .2 01 10 00 Summary of Work.
 - .3 01 31 00 Project Management and Coordination

1.2 SUBMITTALS

- .1 Submit written request in advance of cutting or alteration that affects:
 - .1 Structural integrity of any element of Project.
 - .2 Integrity of weather-exposed or moisture-resistant elements.
 - .3 Efficiency, maintenance, or safety of any operational element.
 - .4 Visual qualities of sight-exposed elements.
 - .5 Work of Owner or separate contractor.
- .2 Include in request:
 - .1 Identification of Project.
 - .2 Location and description of affected Work.
 - .3 Statement on necessity for cutting or alteration.
 - .4 Description of proposed Work and Products to be used.
 - .5 Alternatives to cutting and patching.
 - .6 Effect on Work of Owner or separate contractor.
 - .7 Written permission of affected separate contractor.
 - .8 Date and time work will be executed.

2.0 PRODUCTS

Not used.

3.0 EXECUTION

3.1 EXAMINATION

- .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2 After uncovering, inspect conditions affecting performance of Work.

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**CUTTING & PATCHING**

.3 Beginning cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

- .1 Provide supports to ensure structural integrity of surroundings; provide devices and methods to protect other portions of Project from damage.
- .2 Provide protection from elements for areas that may be exposed by uncovering work; maintain excavations free of water.

3.3 EXECUTION

- .1 Execute cutting, fitting, and patching to complete Work.
- .2 Fit several parts together to integrate with other Work.
- .3 Uncover Work to install ill-timed Work.
- .4 Remove and replace defective and non-conforming Work.
- .5 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.
- .6 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .7 Perform cutting and patching for weather-exposed and moisture-resistant elements and for sight-exposed surfaces.
- .8 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools are not allowed.
- .9 Restore Work with new Products in accordance with requirements of Contract Documents.
- .10 Fit Work air- and water-tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .11 At penetration of fire-rated wall, ceiling, or floor construction, completely seal voids with firestopping material(s) of thickness and composition appropriate to maintaining fire rating.
- .12 Refinish surfaces to match adjacent finishes: For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.
- .13 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

END OF SECTION

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CLOSEOUT PROCEDURES**1.0 GENERAL****1.1 SUMMARY****.1 Section Includes:**

- .1 Administrative procedures preceding preliminary, substantial and final inspections of Work.
- .2 Payment of holdback.
- .3 Close-out submittals.
- .4 Final cleaning.

1.2 INSPECTION**.1 Contractor's Inspection**

- .1 Contractor and all Subcontractors shall conduct an inspection of Work, and prepare and submit a valued list of deficiencies and defects to the Consultant.
- .2 Notify Consultant in writing of satisfactory completion of Contractor's Inspection and request Consultant's inspection to establish Substantial Performance of the Work.

.2 Consultant's Inspection

- .1 Consultant and Contractor will perform inspection of Work to identify obvious defects or deficiencies.
- .2 When it appears requirements of Contract have been substantially performed, Consultant will establish date of Substantial Performance of Work. Refer to CCDC 2, General Conditions Article GC 5.4 - Substantial Performance of Work for specifics to application.
- .3 Warranty periods to commence as of date stated on submitted Certificate of Substantial Performance.

.3 Completion: Submit written certificate confirming that:

- .1 Work has been completed and inspected for compliance with Contract Documents.
- .2 Defects have been corrected and deficiencies have been completed.
- .3 Any Certificates required by authorities having jurisdiction have been submitted.
- .4 Work is complete and ready for Final Inspection.

.4 Final Inspection: When items noted above are completed, request final inspection of Work by Consultant. If work is deemed incomplete by Consultant, complete outstanding items and request reinspection.**1.3 PAYMENT OF HOLDBACK**

- .1 After issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with CCDC 2 - 08, *General Conditions Article 5.5*.

1.4 CLOSE-OUT SUBMITTALS

- .1 On completion of Work and prior to final inspection, submit closeout submittals to Consultant as follows:

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- .1 Project Record Documents
 - .1 Submit 3 final comb-bound copies as outlined in Section 01 31 00 Project Management and Coordination.
 - .2 Separate each record set with index tab sheets keyed to Table of Contents listing.
 - .3 Bind Drawings in with Specifications; fold larger drawings to size of specifications pages.
- .2 Operation, Maintenance and Warranty Information
 - .1 Submit 3 final comb-bound copies.
 - .2 Format:
 - .1 Include "Operation, Maintenance and Warranty Information" title page listing:
 - .2 Project Title and Address
 - .3 Contractor Name and Address
 - .4 Date of issue
 - .5 Include Table of Contents naming project and identifying all sections.
 - .6 Organize with tabbed pages dividing sections.
- .3 Contents:
 - .1 Contact Information
 - .2 Date of submission; names, addresses, and telephone numbers of Consultant and Contractor with names of responsible parties;
 - .3 For each product or system, list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
 - .4 Products / Materials / Systems Information:
 - .5 Include inventory list of maintenance materials.
 - .6 Separate each product, material and system with index tab sheets keyed to Table of Contents listing.
 - .7 Manufacturer's printed data, including information on technical specifications, care, maintenance, and cleaning.
 - .8 Product Data: mark each sheet to clearly identify specific products and component parts and data applicable to installation. Delete inapplicable information.
 - .9 Add typewritten text as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
 - .10 Building Products, Materials, and Finishes: include product data with catalogue numbers, sizes, composition, and colour and texture designations. Provide re-ordering information for Products and materials.
 - .11 Cleaning Instructions: cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
 - .12 Additional Requirements: as specified in individual Specifications sections.

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- .13 Warranties and Bonds
- .14 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- .15 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- .16 Warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers.
- .17 Except for items put into use with Owner's permission, leave warranty start date until Date of Substantial Performance is determined.
- .18 Verify that documents are in proper form, contain full information, and are notarized.
- .19 Co execute submittals when required.
- .20 Additional information and requirements outlined in Section 01 78 36 Warranties.

.4 Maintenance Materials

- .1 Provide maintenance and extra materials in quantities specified in individual Specifications sections.
- .2 Ensure maintenance materials provided are new, undamaged or defective, and of same quality and manufacture as Products provided as part of Work.
- .3 If requested, furnish evidence as to type, source and quality of Products provided.
- .4 Deliver to site; place and store.
- .5 Receive and catalogue items. Submit inventory listing to Consultant. Include approved listings with Maintenance Information.

1.5 FINAL CLEANING

- .1 Refer to GC 3.14.
- .2 Prior to final review, remove surplus Products, tools, construction machinery and equipment.
- .3 Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site unless approved by Consultant.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Clean all glass in areas of Work.

1.6 FINAL PAYMENT

- .1 When Owner or Consultant considers final deficiencies and defects to have been corrected and it appears that all requirements of Contract have been totally performed, make application for final payment. Refer to CCDC 2, *General Conditions Article GC 5.7* for specifics to application.

2.0 PRODUCTS**Not used.**

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CLOSEOUT PROCEDURES

3.0 EXECUTION

Not used.

END OF SECTION



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WARRANTIES

1.0 GENERAL

1.1 SUMMARY

.1 Section Includes:

- .1 Requirements and obligations with respect to provision of Warranties to Owner for Work covered under this Contract.

1.2 ROOFING SYSTEMS WARRANTIES

.1 RCABC Warranty

- .1 Warranty: Upon completion of the Contract, provide a RCABC 5-Year Labour and Material Warranty for the full value of the roofing contract stating that the roofing system will remain leak-proof for a 5-year period, starting from the date of Substantial Performance, and that all deficient waterproof membrane and components will be replaced at no cost to the Owner. Coordinate and pay for all inspection costs directly; include inspection costs in the base bid.

.2 Roofing Manufacturer Warranty

- .1 Manufacturer Warranty: Upon completion of the Contract and in addition to the RCABC Warranty, provide 20-Year Limited Material warranty furnished by the Manufacturer, stating that the roofing system is free of manufacturing defects and will remain leak-proof for a 20-year period, starting from the date of Substantial Performance, and that all deficient roofing system components will be replaced at no cost to the Owner. This warranty is subject to the conditions and limitations of the manufacturer's standard exclusions. Include any cost attached to placing the Warranty in the Contract Price. Submit a sample of Warranty to the Owner for the system proposed upon notification of award of Contract.

.3 Roofing Contractor Warranty

- .1 Materials and Labour Warranty
- .2 Provide, for the benefit of the Owner, a Contractor warranty covering defects in materials and labour used in roofing systems.
- .3 The limit on claims under the Contractor's materials and labour warranty shall not be less than 100% of the total cost of the replaced roof area covered by the warranty.
- .4 Roofing materials and labour warranty coverage shall remain in effect for a period of 5 years after the date on which the building envelope renovation was substantially complete.
- .5 Include all costs, including any re-inspection, fees associated with this warranty

1.3 CONTRACTOR WARRANTY

.1 Materials and Labour Warranty

- .1 Provide for benefit of Owner a Contractor warranty covering defects in materials and labour used on Project.
- .2 Materials and labour warranty coverage to remain in effect for a period of 2 years after date of Substantial Performance of the Work.
- .3 Provide materials and labour warranty coverage for Work performed under this Contract.
- .4 Pay costs associated with this warranty, including re-inspection fees.

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WARRANTIES**.2 Water Penetration Warranty**

- .1 Issue a Contractor warranty to benefit of Owner, covering defects in building envelope that cause or permit water penetration and damage caused by unintended water penetration.
- .2 Water penetration warranty insurance to take effect immediately upon date of Substantial Performance of the Work and remain in effect for a period of 5 years.
- .3 Provide water penetration warranty coverage for Work performed under this Contract.
- .4 Pay costs associated with this warranty, including re-inspection fees.

1.4 PRODUCT AND SUBCONTRACTOR WARRANTIES

- .1 Secure such warranties or guarantees as may be available from subcontractors, Product manufacturers and suppliers, and which may extend past termination of other specified warranty periods.
- .2 Warranties to be fully transferable and to benefit of Owner.
- .3 Deliver originals plus 2 copies of such warranties or guarantees to Consultant.
- .4 Submittals to accompany request for Substantial Performance of the Work.
- .5 Secure warranties as specified within Contract Documents and individual Specifications sections.

2.0 PRODUCTS

Not used.

3.0 EXECUTION

Not used.

END OF SECTION



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DEMOLITION

1.0 GENERAL

1.1 SUMMARY

- .1 Section includes, but is not necessarily limited to removal of:
 - .1 Selected cedar shake roofing assemblies.
 - .2 All skylights.
 - .3 Other interior finishes and deteriorated building components.

1.2 REFERENCES

- .1 CSA-S350 Code of Practice for Safety in Demolition of Structures.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Carefully set aside and protect items to be reused.
- .2 Safety:
 - .1 Comply with safety requirements of applicable building code / building by-law, most recent edition.
 - .2 At end of each day's work, leave Work in safe condition so that no part is in danger of toppling or falling.
- .3 Waste Management and Disposal: Dispose of demolished materials in accordance with requirements of authorities having jurisdiction. Recycle waste wherever possible.

1.4 EXISTING CONDITIONS

- .1 Take over structures to be demolished based on their condition at time construction Contract is signed.

1.5 PROTECTION

- .1 Prevent movement, settlement, or other damage to adjacent structures, utilities, walks, paving, trees, landscaping adjacent grades, and parts of building to remain in place. Provide bracing and shoring as required.
- .2 Prevent blockage of surface drainage, elevators, and mechanical and electrical systems that must remain in operation.

2.0 PRODUCTS

Not Used.

3.0 EXECUTION

3.1 EXAMINATION

- .1 Examine area and report existing damage in writing to the Consultant prior to commencing demolition work. Commencement of demolition indicates acceptance of condition. Unreported damage is the responsibility of the Contractor to repair or make good.

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DEMOLITION**3.2 PREPARATION**

- .1 Do not disrupt active or energized utilities designated to remain undisturbed.
- .2 Prior to the removal of sheathing, ensure saw depth is set to avoid damaging framing members.
- .3 Prior to demolition, become familiar with the locations of wiring and plumbing hidden from view.
- .4 Remove existing equipment, services and obstacles as necessary to conduct the work, and reinstate as the work progresses.

3.3 DEMOLITION

- .1 Demolish items as indicated on Drawings and in Section 00 10 00 Summary of Work.
- .2 Remove and demolish materials by saw cutting, except as noted. Pneumatic or impact tools are not to be used for demolition unless stated otherwise. Minimize hammering and pounding.
- .3 Examine interior cavities and affected surfaces for deterioration, damage, or rot. Notify Consultant of locations and extent of damage.
- .4 Remove and dispose of deteriorated building components, including wet insulation, sheathing, structural members, interior drywall, vapour barrier, and any other component as directed by the Consultant.
- .5 Demolish to minimize production of dust. Keep dusty materials wetted.
- .6 Replace scored sheathing that occurs as a result of removing existing cladding in areas where sheathing is not being removed and replaced.

END OF SECTION

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WOOD TREATMENT**1.0 GENERAL**

1.1 SUMMARY

.1 Section Includes

- .1 Treated lumber for framing and replacement of damaged materials.
 - .2 Site application of antiseptic treatments to wood surfaces that have been affected by or are adjacent to surfaces that have been affected by mould, mildew or other biological influences causing deterioration of wood.
 - .3 Treatment of all cut ends of all preservative treated wood products.
 - .4 Confirmation of borate treatment.
- .2 This work does not include areas where wood deterioration is advanced and replacement or repair is required.

1.2 REFERENCES

- .1 Applicable Building Code / Building By-Law, most recent edition.
- .2 CAN/CSA 080 Series *Wood Preservation*.
- .3 AWPA C9-96 *Plywood Preservative Treatment by Pressure Process*

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Protect from freezing, moisture, water, UV exposure, and damage.
- .2 Guard against spillage. Store materials in spill-containment areas.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Do not burn, bury or throw away toxic waste.
- .2 Dispose of waste in manner approved by local regulations. Comply with applicable hazardous waste disposal regulations.

2.0 PRODUCTS

2.1 MATERIALS

- .1 Site-Applied Antiseptic Solutions: Borocal 20-2, as directed by Consultant.
- .2 Tools: Bristle brush or sponge brush.
- .3 Borate Test Kit: Verify! (borate testing kit) by CBR Products.

2.2 WOOD PRESERVATIVE

- .1 Use alkaline copper quaternary (ACQ) preservative for new lumber and plywood to be exposed to weather.
- .2 Use lumber, sheathing, blocking and strapping borate pressure-treated to CAN/CSA 080 Series *Wood Preservation*.
- .3 Leave deck and roof sheathing untreated to receive fully-adhered membranes.



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WOOD TREATMENT

3.0 EXECUTION

3.1 EXAMINATION

- .1 Carefully examine all wood surfaces exposed during Work of this and other sections.
- .2 Investigate structure for problems related to safe execution of Work and report unsatisfactory conditions to Consultant before beginning work.
- .3 Do not treat any piece affected by rot through more than 20 percent of its cross-sectional area. Notify Consultant and remove and replace as outlined in other Specifications sections.

3.2 PREPARATION

.1 Protection

- .1 Protect painted surfaces from contact with preservative during application and for 3 days afterward.
- .2 Protect adjacent surfaces from intentional or accidental contact with preservative.
- .3 Follow manufacturers' safety requirements.

3.3 SITE APPLICATION

- .1 Remove fungal growth on wood surface with scraper prior to application.
- .2 Apply mixture by brush.
- .3 Apply 2 coats of antiseptic solution mixture to:
 - .1 Wood surfaces where minor rot has been cut away and removed.
 - .2 Wood surfaces adjacent to or in contact with locations where rotted wood has been removed. Treat adjacent lumber to a minimum of 1 stud space.
 - .3 Cut edges of pressure-treated lumber.

3.4 FACTORY APPLICATION

- .1 ACQ-treated lumber to be factory treated to CSA 080.2 *Preservative Treatment of Lumber, Timber, Bridge, Ties and Mine Ties by Pressure Process*, to obtain an average net retention of 4.0 kg/m³ ACQ for above-ground or 6.4 kg/m³ ACQ for ground contact by assay.
- .2 Borate-treated lumber to be factory treated to CSA 080.
- .3 Treated plywood sheathing to be vacuum pressure impregnated with preservative in accordance with requirements of AWWA C9-96 *Plywood Preservative Treatment by Pressure Process*.
- .4 Following water-borne preservative treatment, dry dimensional lumber and plywood sheathing to maximum moisture content of 19 percent.

3.5 FIELD QUALITY CONTROL

- .1 Confirmation: At randomly selected locations or as directed by Consultant, use borate test kit to confirm application of borate.

END OF SECTION



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ROUGH CARPENTRY

1.0 GENERAL

1.1 SUMMARY

.1 Section Includes:

- .1 Miscellaneous wood blocking and materials, and other rough carpentry work as may be required to execute the work as specified in other sections of these specifications as shown in the drawings.
- .2 Rough carpentry repairs where required due to water damage and rot are specified herein but are not to be included in the base bid.

.2 Related Sections

- .1 Section 06 05 73 Wood Treatment

1.2 REFERENCES

- .1 Applicable Building Code / Building By-Law, most recent edition.
- .2 CAN3-086.1-M94 *Engineering Design in Wood*.
- .3 CAN/CSA-080 Series *Wood Preservation*
- .4 CAN/CSA-0141-91 (R2001) *Softwood Lumber*.
- .5 CAN/CGSB-71.26 *Adhesive for Field-Gluing Plywood to Lumber Framing for Floor Systems*.
- .6 B111-1974 (R1998) *Wire Nails, Spikes, and Staples*.
- .7 0121-M1978 (R2001) *Douglas Fir Plywood*.
- .8 ANSI/ASME B18.2.1-1996 *Square and Hex Bolts and Screws, Inch Series*.
- .9 ASME B18.6.4-1998 (R2005) *Thread Forming and Thread Cutting Tapping Screws And Metallic Drive Screws*
- .10 ASTM A 36/A 36M-00a *Carbon Structural Steel*.
- .11 ASTM A 307-00 *Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength*.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Protect from freezing, moisture, water, UV exposure and damage. Maintain and store in dry, weatherproof area.

2.0 PRODUCTS

2.1 MATERIALS - GENERAL

- .1 Moisture content of wood products and materials specified in this section to be 19 percent or less.

2.2 LUMBER MATERIAL

- .1 Lumber: unless specified otherwise, D.Fir, S4S, #2 grade or better, in accordance with CSA 0141 *Softwood Lumber* and *NLGA Standard Grading Rules for Canadian Lumber*, latest edition.
- .2 Blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers:

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- .1 Board sizes: Standard or better grade.
- .2 Dimension sizes: Standard light framing or better grade.
- .3 Post and timber sizes: Standard or better grade.

2.3 FASTENERS

- .1 Nails, spikes and staples to CSA B111.
- .2 Framing nailing to conform to requirements of applicable building code or building by-law.
- .3 Unless otherwise indicated, use stainless steel fasteners for or in ACQ-treated wood. Other fasteners to be hot-dip galvanized to CAN/CSA-G164 or irregularly-shaped articles with minimum zinc coating of 320g/m².
- .4 Use hot-dipped galvanized common nails for framing and sheathing to comply with wood-frame construction requirements of applicable codes. Use nails of sufficient length so that not less than half of their required length penetrates into second framing member.
- .5 Screws: to ASME B18.6.4-1998 (R2005) *Thread Forming and Thread Cutting Tapping Screws And Metallic Drive Screws*.
- .6 Proprietary Fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, explosive actuated fastening devices, as recommended for purpose by manufacturer.

2.4 ADHESIVE

- .1 Deck sheathing adhesive to CAN/CGSB-71.26 Adhesive for Field-Gluing Plywood to Lumber Framing for Floor Systems.

2.5 SOURCE QUALITY CONTROL

- .1 Lumber Identification: by grade stamp of agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood Identification: by grade mark in accordance with applicable CSA standards.

3.0 EXECUTION**3.1 EXAMINATION**

- .1 Carefully examine existing visible framing and surrounding sheathing; ensure all existing materials are in good condition and suitable to accept work of this section.
- .2 Before proceeding with the Work, notify Consultant of locations where there is evidence of water damage or rot.
- .3 Review wall framing for structural steel hardware, including hold-downs, straps, threaded rods and other hardware. Notify Consultant for review prior to covering up with new sheathing.
- .4 Review existing wall sheathing nail spacing. Notify Consultant if nail spacing is less than 6 inches on centre at panel ends and less than 12 inches along intermediate supports.
- .5 Where existing sheathing is removed, ensure framing has not been adversely affected by moisture before proceeding with work.
- .6 Mark areas of deterioration for removal and notify Consultant for review and approval before proceeding.

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- .7 In areas where sheathing has been removed to expose insulation, note position of plumbing, gas and electrical lines to avoid damaging these items when nailing or attaching covering material.
 - .1 Be responsible for and rectify damage to hidden utilities as a result of nailing or attaching covering material or failure to properly document locations of these items when exposed.

3.2 INSTALLATION - GENERAL**.1 Nailing Precautions**

- .1 Prior to nailing through plywood substrates, take all necessary precautions to ensure that plumbing, gas, and electrical lines will not be damaged.
- .2 Install a minimum #16 MSG steel plate on exterior face of studs to cover gas, plumbing or electrical lines that run through holes in studs or plates.
- .2 Surface-Applied Wood Preservative: Before installing, re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative as indicated in Section 06 05 73 Wood Treatment.

3.3 FRAMING INSTALLATION

- .1 Where directed by Consultant, replace existing damaged framing members with new borate-treated lumber to match or exceed size and grade of existing element.
- .2 Comply with wood framing requirements of applicable building code or building by-law.

3.4 MISCELLANEOUS INSTALLATION

- .1 Install blocking as required to space out and support casework, facings, fascia, soffit, railings, cladding and other work as required.
- .2 Align and plumb faces of blocking to tolerance of 1:600.
- .3 Install rough bucks, nailers, and linings to rough openings as required to provide backing for frames and other work.
- .4 Install wood cants, fascia backing, nailers, curbs and other wood supports as required and secure with galvanized fasteners.
- .5 Install sleepers as indicated.

3.5 MISCELLANEOUS FASTENING

- .1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .2 Countersink bolts where necessary to provide clearance for other work.

3.6 CUTTING AND PATCHING

- .1 Cut and patch in accordance with Section 01 73 29 Cutting and Patching.
- .2 Do not cut or patch framing or sheathing unless directed by Consultant. Consultant will issue site direction on appropriate and specific course of action to be taken.
- .3 Ensure cuts are straight, true and square.
- .4 Make vertical cuts at centreline over framing members. Where possible, make horizontal cuts over framing members.

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- .5 Ensure resulting surface left after cutting is in good condition, with no loose or broken edges, and suitable to receive patch without resulting gaps.
- .6 Cut patch piece to fit in area where deteriorated sheathing was removed and to fit snugly at all locations and along all edges.
- .7 Cut framing members affected by rot only at Consultant's direction, and not less than 24 inches from furthest point of deterioration.

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SELF-ADHERING BITUMINOUS MEMBRANE**1.0 GENERAL****1.1 SUMMARY****.1 Section Includes:**

- .1 Self-adhered bituminous membrane beneath other areas as required, including but not limited to:
 - .1 Horizontal surfaces
 - .2 Parapets
 - .3 Transition areas between substrate components

1.2 REFERENCES

- .1 Applicable Building Code / Building By-Law, most recent edition.
- .2 Association of Wall and Ceiling Contractors of BC (AWCC) *Specifications Standards Manual*.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Protect from moisture, water, UV exposure and damage. Provide and maintain dry, off-ground weatherproof storage.
- .2 Store rolls in upright position.
- .3 Do not allow membrane to remain exposed to direct sunlight for longer than 4 weeks.

1.4 PROJECT/SITE CONDITIONS

- .1 Do not install self-adhered bituminous membrane or primer when ambient temperature is at or below 5 degrees C. Alternately, where temperatures fall outside this range, use Products intended for use at or below 5 degrees C.

2.0 PRODUCTS**2.1 SELF-ADHERING BITUMINOUS MEMBRANE**

- .1 Minimum 40 mil (1.02 mm) self-adhering SBS modified bituminous composite sheet of appropriate grade for ambient temperature.
- .2 Accepted Products:
 - .1 PW 100/40 XL as manufactured by Protecto-Wrap.
 - .2 CCW-705 TDS as manufactured by Carlisle Coatings and Waterproofing
 - .3 SopraSEAL Stick 1100T by Soprema, Inc.
 - .4 Aquabarrier AVB by IKO Industries, Inc.

2.2 HIGH-TEMPERATURE, SELF-ADHERING BITUMINOUS MEMBRANE

- .3 Minimum 40 mil (1.02 mm) self-adhering SBS modified bituminous composite sheet of appropriate grade for high temperature.
 - .1 Accepted Products:

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SELF-ADHERING BITUMINOUS MEMBRANE

- .1 Lastobond Shield HT by Soprema
- .2 Ice & Water Shield HT by Grace.
- .3 Blueskin PE 200 HT by Bakor (Henry).

2.3 ACCESSORIES

- .1 Primer as recommended and approved by membrane manufacturer. Use primer that will have no deleterious effects on substrate.
- .2 Mastic sealant as recommended and approved by membrane manufacturer.

3.0 EXECUTION**3.1 EXAMINATION**

- .1 Carefully examine substrates to receive work of this section. Report or correct observed deficiencies that may not be corrected after work or that may adversely affect performance or appearance of work of this section.
- .2 Starting work of this section indicates acceptance of all conditions affecting the work.

3.2 PREPARATION

- .1 Clean and prime all surfaces to receive self-adhered bituminous membrane. Prime only areas to be membraned in one working day. Re-apply primer to areas not membraned within 24 hours.

3.3 SELF-ADHERING BITUMINOUS MEMBRANE

- .1 Apply membrane to primed substrate in accordance with manufacturer's application instructions. Minimize wrinkles and bubbles.
- .2 Apply heavy pressure with roller or by other suitable means while applying membrane to ensure continuous and positive seal.
- .3 Lap horizontal and vertical joints a minimum of 3 inches.
- .4 Seal exposed edges of membrane on horizontal surfaces with tooled bead of mastic sealant.
- .5 Seal penetrations through self-adhered bituminous membrane with additional pieces of membrane and mastic sealant.
- .6 Ensure proper lapping and sequencing of self-adhered bituminous membrane with work of this and other sections.
- .7 Apply sealant to upper exposed edges where membrane is installed vertically.
- .8 Do not install membrane continuously between non-breathable envelope components. Report these areas to Consultant.

3.4 CLEANING AND PROTECTION

- .1 Immediately clean up spilled and excess primers and mastic sealants that will not be completely covered by subsequent work. Make good appearance of any exposed areas.

END OF SECTION

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**RIGID INSULATION****1.0 GENERAL****1.1 SUMMARY**

- .1 Polyisocyanurate insulation on pitched metal roof level over conditioned space.
- .2 Expanded polystyrene foam board at pitched metal roof level over unconditioned spaces.

1.2 REFERENCES

- .1 Applicable Building Code / Building By-Law, most recent edition.
- .2 Roofing Contractors Association of BC (RCABC) *Roofing Manual*.
- .3 ASTM C 1289-11A *Standard Specification for Faced Rigid Cellular Polyisocyanurate Insulation Board*.
- .4 ASTM E 108 *Standard Test Methods for Fire Tests of Roof Coverings*.
- .5 ASTM E 119 *Standard Test methods for Fire Tests of Building Constructions and Materials*.
- .6 FM 4450 *Approval Standard – Class I Insulated Steel Roof Decks*.
- .7 FM 4470 *Approval Standard – Class I Roof Covers*.
- .8 CAN/ULC S770 *LTTR – Long-Term Thermal Resistance*, based on ASTM C1303

1.3 SUBMITTALS

- .1 Before commencement of the work provide to Consultant and Owner the following:
 - .1 Material Safety Data Sheets (MSDS) for review and posting on job site.
 - .2 Product literature, including specification sheets and installation instructions.
 - .3 Samples of relevant materials for selection.
 - .4 Written assurance from manufacturer that long-term resistance of insulation will not vary from manufacturer's published values.

1.4 QUALITY ASSURANCE

- .1 Conform to latest guarantee standards of the Roofing Contractors Association of British Columbia (RCABC) as published in *RCABC Roofing Practices Manual* for 5-year guarantee, unless modified by the Contract documents to exceed those minimums.
- .2 Employ only skilled applicators approved by insulation manufacturer.
- .3 Maintain a full-time supervisor on site during execution of the Work. Supervisor to have roofing trade qualifications or equivalent and a minimum of 5 years of experience in roofing work of a similar nature and scope as specified herein.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Store materials elevated from contact with ground and moisture and protected from weather.
- .2 Avoid prolonged exposure of light- and heat-sensitive materials to sunlight.
- .3 Store combustible materials away from heat and open flame.
- .4 Consult manufacturer's MSDS for information on materials safety and handling.



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RIGID INSULATION

.5 Waste Management and Disposal

- .1 Dispose of waste insulation daily in accordance with local regulations and insulation manufacturer's instructions.
- .2 Do not dispose of any materials through the interior of the building; dispose all materials externally via chutes, lifts, etc.

1.6 PROJECT/SITE CONDITIONS

- .1 Weather conditions permissible for roofing are subject to the discretion of the roofing contractor and the Consultant, except that in no case shall roofing work be carried out under the following conditions:
 - .1 When temperature of substrate or air is lower than or forecast to drop below 2 degrees C during course of work.
 - .2 During wet weather, forecast imminent wet weather, or when site conditions have been adversely affected by recent wet weather.
- .2 Maintain roof in weather-tight condition when not performing roofing work.

2.0 PRODUCTS

2.1 POLYISOCYANURATE INSULATION

- .1 Glass faced, closed-cell polyisocyanurate; achieve minimum LTTR (Long Term Thermal Resistance) R-value of 5.0 per inch at 24 degrees C, compressive strength of 20 pounds per square inch. Minimum thickness at drains to be 2 inches.
- .2 Preapproved Products:
 - .1 AC Foam III as manufactured by Atlas Roofing Corp.
 - .2 Sopra ISO Plus as manufactured by Soprema Inc.
 - .3 SecureShield HD Plus as manufactured by Carlisle Syntec
 - .4 H-Shield CG as manufactured by Hunter Panels LLC
 - .5 Paratherm as Manufactured by Siplast Canada Inc.

2.2 POLYSTYRENE TYPE 2 INSULATION

- .1 Rigid closed-cell expanded polystyrene thermal insulation board complying with the minimum requirements of CAN/ULC-S701, Type 2. Thermal resistance of RSI 0.70 per 25 mm (R-4.04 per inch) of thickness.
- .2 Acceptable Manufacturer's Product: PlastiSpan roof insulation.

3.0 EXECUTION

3.1 EXAMINATION

- .1 Carefully examine substrates to receive work of this section. Report observed deficiencies that may not be corrected after the work or that may adversely affect performance or appearance of work of this section.

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**RIGID INSULATION****3.2 PREPARATION**

- .1 Ensure surfaces to receive insulation are clean, dry and free of frost, dirt, and loose or foreign matter.
- .2 Protection
 - .1 Have on site necessary tarpaulins, polyethylene, or other suitable materials to provide required protection in the event of rain.
 - .2 Protect adjacent work, materials and surfaces from splash, spray, or spillage. Provide appropriate protection to building and ground areas where materials are being transported to roof.

3.3 APPLICATION

- .1 Polyisocyanurate
 - .1 Install insulation after building substrate materials are dry.
 - .2 Use only insulation boards free from chipped or broken edges. Use largest possible dimensions to reduce number of joints.
 - .3 Loose-lay polyisocyanurate insulation over substrate. Ensure half a sheet staggers insulation joints.
 - .4 Install insulation to maintain continuity of thermal protection to building elements and spaces.
 - .5 Fit insulation closely around electrical boxes, plumbing, heating pipes, ducts, and other protrusions.
 - .6 Cut and trim insulation neatly to fit spaces. Trim insulation to profile where insulation abuts a sloping surface.
 - .7 Butt joints tightly; offset vertical joints.
 - .8 Offset both vertical and horizontal joints in multiple layer applications a minimum of 12 inches.
 - .9 Do not enclose insulation until it has been inspected and approved by Consultant.
- .2 Rigid Polystyrene
 - .1 Loose-lay insulation boards. Do not adhere in place.
 - .2 Install insulation boards parallel and in line, with end joints staggered; butt together in moderate contact.
 - .3 Ensure no voids occur between substrate and insulation or between pieces of insulation. Trim insulation to profile where insulation abuts a sloping surface.

3.4 CLEANING AND PROTECTION

- .1 Protect installed insulation from damage during the course of Work.
- .2 Immediately clean up spilled and excess primers and mastic sealants that will not be completely covered by subsequent work. Make good the appearance of any exposed areas.

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ASPHALT SHINGLE PITCHED ROOFING**1.0 GENERAL****1.1 SUMMARY**

- .1 New laminate glass-fibre-reinforced asphalt shingles and underlay at sloped roofs.

1.2 REFERENCES

- .1 CSA A123.51, *Asphalt shingle application on roof slopes 1:6 and steeper*.
- .2 RCABC Specification STR-AS.
- .3 CAN2-51.32-M, *Sheathing, Membrane, Breather Type*.
- .4 CSA A123.1-M, *Asphalt Shingles Surfaced with Mineral Granules*.
- .5 CSA A123.2-M, *Asphalt Coated Roofing Sheets*.
- .6 CSA A123.3-M, *Asphalt or Tar Saturated Roofing Felt*.
- .7 CSA B111, *Wire Nails, Spikes, and Staples*.
- .8 CAN3 A93, *M82 Natural Airflow Ventilators*

1.3 SUBMITTALS

- .1 Samples of relevant materials for colour selection.
- .2 At completion of the Work, provide roof maintenance guide.

1.4 QUALITY ASSURANCE

- .1 Inspections: Coordinate and pay for inspections as required for RCABC Warranty. Include inspection costs in base bid.
- .2 Roof assembly shall have been tested and classified as Class C in accordance with CAN/ULC-S107-M *Standard Methods of Fire Tests of Roof Coverings*.
- .3 Complete asphalt shingle work to CSA-A123.51, *Asphalt Shingle Application on Roof Slopes 1:6 and Steeper* and RCABC Specification STR-AS except where specified otherwise.
- .4 Shingle application is to be conducted by tradesman with the following qualifications in the following crew ratios: 1 journeyman with a valid Provincial Trade Qualification certificate to 2 indentured apprentices to 3 labourers.
- .5 Apply roofing in accordance with Roofing Contractors Association of BC (RCABC) recommendations and requirements.
- .6 Apply roofing in accordance with manufacturers' printed application instructions.
- .7 If water penetrates through the assembly due to inadequate protection, cut and inspect for damage, remove, replace, and reinstall materials at own cost. Notify Consultant for review prior to repair.
- .8 Roofing must be watertight at end of each shift.

1.5 PROJECT/SITE CONDITIONS

- .1 Do not perform Work of this section during weather that may introduce moisture into the roofing system.

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**ASPHALT SHINGLE PITCHED ROOFING**

- .2 Before commencing work, ensure that forecast meteorological conditions will allow work to be carried out without interruption during the course of the day.
- .3 Minimum temperature for solvent-based adhesive is -5 degrees C.

1.6 WARRANTY

- .1 Refer to Section 01 78 36 Warranties.

2.0 PRODUCTS**2.1 ASPHALT SHINGLES**

- .1 Fibreglass base conforming to CAN/CSA A123.5-M90, and/or ASTM D3108 Type 1, UL approved #R-11271 (N) Class A fire and wind resistance. Colours to be selected by the Owner(s).
- .2 Pre-approved Products:
 - .1 Premier by Pabco Roofing Products
 - .2 Timberline HD by GAF Materials Corp.
 - .3 Landmark Pro by CertainTeed Corp.
 - .4 Cambridge by IKO Industries
- .3 All accessories (underlayment, eave protection, etc.) must be acceptable to the shingle manufacturer selected.

2.2 EAVES PROTECTION UNDERLAY / VALLEY UNDERLAY / DETAIL UNDERLAY

- .1 Minimum 60 mil (1.6 mm) self-adhering SBS modified bituminous composite sheet of appropriate grade for the ambient temperature
- .2 Pre-approved Products:
 - .1 Lastobond 195 by Soprema.
 - .2 Winterguard by CertainTeed Corp.
 - .3 Armourgard Ice and Water Shield by IKO Industries
- .3 Membrane Accessories
 - .1 Primer: Compatible with substrate and as recommended and approved by membrane manufacturer.
 - .2 Mastic Sealant: as recommended and approved by membrane manufacturer.

2.3 FIELD ROOF UNDERLAY

- .1 Fibreglass-reinforced asphalt saturated roof felt conforming to ASTM D226, D4869, UL.
- .2 Approved Products:
 - .1 Deck Armor by GAF Materials Corp.
 - .2 Diamond Deck by CertainTeed Corp.
 - .3 Roofgard SB by IKO Industries
 - .4 Titanium UDL 50 by Interwrap Inc.

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**ASPHALT SHINGLE PITCHED ROOFING****2.4 LOW-SLOPE UNDERLAY (FOR USE ON ROOF AREAS LESS THAN 4 IN 12)**

- .1 Minimum 2.8 mm thick self-adhesive SBS modified bitumen sheet with siliconized plastic backing to meet or exceed CSA A123.23. Winter- or summer-grade material shall be correctly used as per the manufacturer's specified temperature parameters for such applications. Pre-approved products:
 - .1 Sopraflash Flam Stick by Soprema
 - .2 Armourbond Flash 180 by Soprema

2.5 INTEGRATED METAL FLASHINGS

- .1 Step flashings; diverters; fascia flashings; eaves, rake and gable edge-drip flashings; wall flashings; cover flashings and other miscellaneous flashings:
 - .1 Zinc-coated sheet steel, 26-gauge commercial quality with Z275 designation zinc coating to ASTM A653/A653M, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - .2 Finish: Factory-applied baked enamel or urethane finish to manufacturer's standard range.

2.6 MISCELLANEOUS MATERIALS

- .1 Lap Cement: as recommended by membrane manufacturer.
- .2 Plastic Cement: as recommended by shingle manufacturer for shingle product in use.
- .3 Nails: large-headed hot-dipped galvanized roofing nails to CSA B 111-1974, sufficient length to penetrate 20 mm into roof deck.

2.7 FABRICATION

- .1 Integrated Sheet Metal Flashings
 - .1 Shop-fabricate work to greatest extent possible. Comply with details shown and with applicable requirements of *SMACNA Standards Manual* and *RCABC Roofing Practices Manual*, and with other recognized industry practices.
 - .2 Fabricate metal flashing and other sheet metal work in accordance with applicable RCABC guarantee standards.
 - .3 Form pieces in 10-foot maximum lengths. Allow for expansion at joints. Fabricate flashing in continuous pieces (under 10 feet) to avoid unnecessary joints.
 - .4 Hem exposed edges on underside by 1/2 inch. Mitre and seal corners with sealant.
 - .5 Form sections square, true and accurate to size, free from distortion, crude edges and other defects detrimental to appearance or performance.
 - .6 Sheet metal greater than 12 inches in depth to be fabricated from 24 gauge cross-broken sheets.
 - .7 Fabricate for waterproof and weather-resistant performance.
 - .8 Form exposed sheet metal work free from buckling, tool marks and any other distortion or marks affecting performance or appearance.
 - .9 Form inside corners by folding or continuous soldering.
 - .10 Locate all seams and joints to provide a uniform and consistent appearance.

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**ASPHALT SHINGLE PITCHED ROOFING**

- .11 Fabricate flashings covering roof membranes, pitched roofing, deck membranes, slab waterproofing, and others as a two-piece design that permits easy removal of the lower flashing to provide full access to membrane terminations protected by these flashings.

3.0 EXECUTION**3.1 EXAMINATION**

- .1 Install roofing on dry sheathing free of snow and ice; use only dry materials.

3.2 PREPARATION

- .1 Ensure items projecting through roof are solidly set. Protect surrounding surfaces from damage resulting from roofing work.
- .2 Remove remaining nails, shingle remnants, and other debris to provide a clean, smooth substrate.
- .3 Advise Consultant of damaged or deteriorated deck materials.
- .4 Replace damaged, deteriorated and or rotten decking with new material to match existing. (Provide unit rates in Section 00 41 13 Bid Form, Schedule of Unit Prices).
- .5 Knotholes and cracks in deck are considered defects; cover with sheet metal nailed in place.

3.3 UNDERLAYMENT INSTALLATION**.1 Eaves**

- .1 Install new self-adhered modified bituminous membrane to surface of new plywood decking at eaves. Extend ice and water shield to up slope of roof to a minimum of 24 inches to the interior of the exterior walls. Comply with RCABC and applicable Building Code requirements with respect to the installation of eaves protection.
- .2 Extend membrane underlay to positively lap gutters.
- .3 At end laps of membrane seal membrane with large 1" wide bead of mastic sealant between the plies of membrane.
- .4 Underlayment and eave protection to be continuous at ridges.

.2 Valleys

- .1 Install a 3-foot wide strip of self-adhering SBS modified bituminous composite sheet the full length of all valleys. Extend membrane into gutters.
- .2 At end laps of membrane seal membrane with large 1" wide bead of mastic sealant between the plies of membrane.

.3 Field Roof Underlay

- .1 Install a single layer of synthetic underlay to the entire roof deck substrate and down vertical fascias or rakes.
- .2 Starting at low point, apply underlay perpendicular to slope of roof, ensuring underlay is positively lapped and shingled.
- .3 Ensure underlay is continuous at hips and ridges unless a ridge vent is to be installed.
- .4 Ensure underlay is positively lapped with valley and eaves membrane underlay.
- .5 Extend underlay into roof gutters. Trim excess material.

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**ASPHALT SHINGLE PITCHED ROOFING**

- .6 Terminate underlay no less than 10 inches up vertical walls.
 - .7 Use sufficient nails to hold the underlay in position until shingles are applied. If underlayment is to be left exposed overnight use manufacturers approved washer topped nails.
- .4 Details
- .1 Install membrane underlay at all curbs and chimneys. Extend membrane 36 inches up-slope and 24 inches on either side of detail. Extend membrane on sides to the eaves.
- .5 Saddle Points
- .1 Provide waterproof membrane underlay so as to properly shed water from cladding or systems above correctly to the exterior.

3.4 INTEGRATED SHEET METAL FLASHINGS

- .1 Provide pre-finished sheet metal drip flashing at all eaves locations, below underlayment.
- .2 Provide pre-finished drip flashing at all gable/rake locations, on top of underlayment.
- .3 Provide 24-inch wide, 26-gauge pre-finished sheet metal the full length of all valleys (construct valley to an open design), overtop membrane and field underlayment.
- .4 Install step flashing in accordance with RCABC standards. Fasten step flashing as shown in Project documents. Provide new diversion flashing at step flashing terminations corners, pitched roof edges and other locations identified by Consultant to ensure water is correctly discharged into gutters.
- .5 Provide pre-finished T-style drip flashing at all eaves locations, over eaves protection and under field underlay.
- .6 Provide pre-finished drip flashing at all gable/rake locations, above field underlay and extending down fascia behind flashing.
- .7 Install new pre-finished rake diverter flashing, installed between first and second shingle, fastened underneath second shingle.

3.5 ASPHALT SHINGLE APPLICATION

- .1 Install asphalt shingles in accordance with RCABC minimum requirements.
- .2 Install asphalt shingles and shingle accessories in accordance with the manufacturer's latest printed application instructions. Maintain a copy on site at all times throughout the application.
- .3 Double starter course of shingles, with butts projecting 38 mm beyond the edge of the roof or far enough to ensure proper drainage. Install starter course tabs-up, using 4 nails per shingle on slopes less than 12 in 12 and 6 nails per shingle on slopes greater than 12 in 12.
- .4 Fasten each shingle with 4 corrosion resistant nails per shingle on slopes less than 12 in 12 and 6 corrosion resistant nails per shingle on slopes greater than 12 in 12, placed at designated areas as shown on shingle manufacturer's instructions. Apply shingles in a diagonal offset pattern as described by the manufacturers' printed application instructions. Use chalk guidelines to ensure that all vertical and horizontal lines run true.
- .5 Use nails of sufficient length to penetrate underlying strapping by minimum of 20 mm. Hand-drive nail heads flush and tight, but not so as to crush the wood.
- .6 Construct all valleys to an open design. Install valley material flashing as per RCABC standards.
- .7 Adhere shingles to all vent flanges set in mastic cement. Install shingles above and below vent flanges, close-cut to the vent riser. Set vents in mastic and fasten securely.

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**ASPHALT SHINGLE PITCHED ROOFING**

- .8 Hand-tab or seal all asphalt shingles by applying four 25 mm dabs of manufacturer's approved asphalt mastic. Do not apply mastic to the self-sealing strip portion of the shingle
- .9 Install capping shingles at hips and ridges in accordance with requirements of this section and manufacturers printed application instructions.
- .10 Install new zinc strips on both sides of ridge and hips below with galvanized roofing nails, applied at 36 inches on centre.

3.6 PENETRATION FLASHINGS

- .1 Install new plumbing stack flashings, including caps, at plumbing stacks. Ensure flange is shingled properly with adjacent products.
- .2 Install new pre-fabricated, self-sealing exhaust vent at exhaust penetrations. Install vent in accordance with manufacturer's written instructions.

END OF SECTION



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CEDAR SHAKES

1.0 GENERAL

1.1 SUMMARY

- .1 New cedar shakes, underlay and interlay at pitched roofs.
- .2 Snow retention (snow clips) where required.

1.2 REFERENCES

- .1 Applicable Building Code / Building By-Law, most recent edition.
- .2 Roofing Practices Manual - Roofing Contractors Association of British Columbia (RCABC)
- .3 Cedar Shake and Shingle Bureau *New Construction Manual*
- .4 CSA-O118.1 *Western Cedars, Shakes and Shingles*
- .5 CSA-A123.3 *Asphalt Saturated Organic Roofing Felt*
- .6 CSA-B111 *Wire Nails, Spikes and Staples*

1.3 SAMPLES

- .1 Submit duplicate samples of full-size shakes to consultant for review.

1.4 QUALITY ASSURANCE

- .1 The Contractor shall have successfully completed similar work over a period of not less than five years and when required shall submit supporting documentation.
- .2 Cedar Shingle application is to be conducted by tradesman with the following qualifications in the following crew ratios: One (1) Journeyman with a valid Provincial Trade Qualification certificate to one (1) indentured apprentices to two (2) labourers.
- .3 Apply roofing in accordance with Roofing Contractors' Association of B.C. recommendations and requirements. Apply roofing in accordance with all manufacturers' printed application instructions.

1.5 REVIEW AND TESTING

- .1 Notify the Consultant at least 24 hours before commencement of any roofing work.
- .2 The Consultant shall be notified in the event that the specifications conflict with the manufacturer's recommendations.
- .3 The review and testing service does not relieve the Contractor of their responsibility for quality control of production and for errors made by them.

1.6 PRECAUTIONS

- .1 Apply each part of roofing system only when surfaces are clean and dry.
- .2 All adjacent parts of the building shall be protected from damage caused by roofing operations. Cover walls and other surfaces in the vicinity of hoisting apparatus with heavy canvas or other suitable protective material. Any damage caused by the work shall be repaired to match the original materials and appearance.
- .3 Conduct operations so as to leave roof deck / strapping exposed for minimum period of time. Protect as required to prevent water infiltration or environmental damage to building interior.



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CEDAR SHAKES

- .4 All material shall be neatly stored, elevated and protected from damage due to wetness or freezing.
- .5 Maintain all site equipment in good working order.
- .6 Maintain a proper fence around work and storage areas.

1.7 STORAGE

- .1 Deliver and store all materials in their original packaging bearing the manufacturer's name, the grade, weight and standards pertaining thereto.
- .2 Store and protect materials at all times on dry, well ventilated premises protected against the elements. Only materials to be used the same day shall be removed from storage/protection.
- .3 Any material damaged and / or exposed to the wet weather shall be removed from the work site at the discretion of the Consultant.

1.8 COMPATIBILITY

- .1 Compatibility between all components of the roofing system is essential. The Contractor shall be responsible for ensuring that all items he elects to use are compatible with each other and with adjacent materials. Where requested by the Consultant, provide written declaration from the manufacturer to the Consultant stating that materials and components, as assembled in a system, meet this requirement.

1.9 MOCK-UP

- .1 Provide mock-up of cedar shake roof assembly.
- .2 Mock-up of roof assembly to include a roof edge and wall intersection and include all associated flashings and materials. Allow for inspection of mock-up by the Consultant before proceeding with work. Mock-up may form part of finished work.

2.0 PRODUCTS

2.1 HAND-SPLIT SHAKES

- .1 To CSA 0118.1-97.
 - .1 Grade: Premium Grade Hand-Split cedar shakes, grading audited by a Standards Council of Canada accredited agency.
 - .2 Pressure Preservative Treatment to CSA 080 series – 97
 - .3 Profile: 24 inch lengths, 3/4 inch thickness

2.2 FASTENERS

- .1 Nails: 14 gauge, stainless steel (Type 304 or 316) roofing nails to CSA B 111. Nail head diameter not less than 4.8 mm and shank thickness not less than 2.0 mm, with sufficient length to penetrate 19 mm into roof deck / strapping.

2.3 METAL FLASHINGS

- .1 To meet requirements of Section 076000 – Flashing and Sheet Metal.

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CEDAR SHAKES**2.4 UNDERLAYMENT**

- .1 Eaves Protection / Valley / Ridge / Hip / Detail Underlay
 - .1 Minimum 40 mil (1.0 mm) self-adhering SBS modified bituminous composite sheet of appropriate grade for the ambient temperature to CCMC 12413-R
 - .1 Approved products:
 - .1 Lastobond shield HT as manufactured by Soprema
 - .2 Titanium PSU as manufactured by Interwrap
 - .3 Jiffy Seal Ice and Water Guard HT by ProtectoWrap
 - .2 Primer and sealant: as recommended by membrane manufacturer.

2.5 INTERLAYMENT

- .1 NO. 15 ASPHALT SATURATED FELT IN ACCORDANCE WITH CSA-A123.3

2.6 ACCESSORIES

- .1 Vent stack flashings to be a aluminum sleeve to fit over vent stack. A [lead][aluminum] cap to fit outside the sleeve and inside the vent stack. The cap is not to restrict the vent stack inside diameter.
- .2 Self-adhering membrane: For use at wall tie-ins and wall detailing, consisting of an SBS rubberised asphalt compound integrally laminated to polyethylene film. The membrane shall be a self-adhering composite modified bitumen membrane conforming to CGSB 37-GP-56M.
 - .1 Acceptable Products:
 - .1 Soprema Sopraseal Stick 1100
 - .2 Protecto Wrap PW-100/40
 - .2 Primer and sealant: as recommended by Membrane Manufacturer.

3.0 EXECUTION**3.1 EXPOSURE**

- .1 Exposure to be 10 inch for 24 inch long shakes.

3.2 EAVES PROTECTION

- .1 Eave protection material to extend from the edge of the roof minimum of 36 inches up the roof to a point not less than 24 inches inside the interior face of the exterior wall.
- .2 Extend protection material minimum of 1 1/2 inch behind gutter.

3.3 FLASHINGS

- .1 Install drip edge along eaves and rake edges, as detailed, with minimum 3 inches flange extending onto roof decking.
- .2 Extend water barrier up the vertical face 6 inches or as otherwise detailed.
- .3 Install metal step flashing interleaved between shakes, extending minimum of 12 inches up vertical surfaces above finished roof surface and 4 inches between roof courses. Provide minimum headlap of

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**CEDAR SHAKES**

3 inches for each step flashing. Extend minimum of 3 inches beyond the down slope corners and be folded, not cut. Terminate shakes flush with vertical face.

- .4 Install metal apron flashing, extending minimum of 12 inches up vertical surfaces at walls, 4 inches over the roof material and 4 inches beyond the corners.

3.4 CEDAR ROOFING

- .1 Install shakes over dry sheathing.
- .2 Stagger joints minimum of 1 1/2 inch in succeeding courses. Ensure that in any 3 courses no two joints are in alignment.
- .3 Use two nails per shake. Space nails 3/4 inch from edge and 1 1/2 inches above butt line of following course.
- .4 Drive nails flush and tight but do not crush shakes.
- .5 Double shakes at eaves, projecting butts 1 1/2 inches from first sheathing board or bottom strapping. Project shakes 3/4 inches minimum at gable ends.
- .6 Lay shakes with grain perpendicular to eaves.
- .7 Apply 18 inch wide strip of No.15 asphalt felt interlayment laid over the top portion of the shakes extending onto the strapping or sheathing.
- .8 At ridges and hips complete work in a manner that ensures underlying membranes remain continuous and are not damage by cutting shakes.

3.5 COMPLETION OF DAY'S WORK

- .1 Inspect the day's work and repair any deficiencies prior to leaving the site for the day.
- .2 Clean up debris prior to leaving the site for the day.

END OF SECTION



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WOOD SIDING

1.0 GENERAL

1.1 SUMMARY

- .1 Wood siding at locations indicated in the project drawings.

1.2 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI A135.6-[06], Hardboard Siding Standard.
- .2 ASTM International
 - .1 ASTM D5116-[10], Standard Guide For Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products.
- .3 Canada Green Building Council (CaGBC)
 - .1 LEED Canada-NC Version 1.0-[2004], LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations (including Addendum [2007]).
 - .2 LEED Canada-CI Version 1.0-[2007], LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Guide For Commercial Interiors.
 - .3 LEED Canada 2009 for Design and Construction-[2010], LEED Canada 2009 for Design and Construction Leadership in Energy and Environmental Design Green Building Rating System Reference Guide.
 - .4 LEED Canada for Existing Buildings, Operations and Maintenance-[2009], LEED Canada 2009 Leadership In Energy and Environmental Design Green Building Rating System Reference Guide.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-51.32-[M77], Sheathing, Membrane, Breather Type.
- .5 CSA International
 - .1 CSA B111-[1974(R2003)], Wire Nails, Spikes and Staples.
 - .2 CSA O121-[08], Douglas Fir Plywood.
 - .3 CSA O151-[09], Canadian Softwood Plywood.
 - .4 CAN/CSA-Z809-[08], Sustainable Forest Management.
- .6 Environmental Choice Program (ECP)
 - .1 CCD-045-[95], Sealants and Caulking Compounds.
- .7 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001-[2004], FSC Principle and Criteria for Forest Stewardship.
- .8 National Lumber Grading Authority (NLGA)
 - .1 NLGA Standard Grading Rules for Canadian Lumber [2010].
- .9 Sustainable Forestry Initiative (SFI)



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WOOD SIDING

- .1 SFI-[2010-2014] Standard.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section [01 33 00 - Submittal Procedures].
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for [wood siding] and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit [2] copies of WHMIS MSDS in accordance with Section [01 35 29.06 - Health and Safety Requirements] [01 35 43 - Environmental Procedures]. Indicate VOC's for caulking materials during application [and curing].
- .3 Samples:
 - .1 Submit duplicate 12" x 6" size profile specified.
- .4 Sustainable Design Submittals:
 - .1 Construction Waste Management:
 - .1 Submit project [Waste Management Plan] [Waste Reduction Workplan] highlighting recycling and salvage requirements.
 - .2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that [50] [75]% of construction wastes were recycled or salvaged.
 - .2 Low-Emitting Materials:
 - .1 Submit listing of [adhesives and sealants] used in building, comply with VOC and chemical component limits or restriction requirements.
 - .2 Submit listing of [composite wood products used in building, stating that they contain no added urea-formaldehyde resins,] [lamine adhesives used in building, stating that they contain no urea-formaldehyde].
 - .3 Wood Certification: submit [vendor's] [manufacturer's] Chain-of-Custody Certificate number for CAN/CSA-Z809 or FSC or SFI certified wood.

1.4 QUALITY ASSURANCE

- .1 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .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.
 - .2 Store and protect wood siding from nicks, scratches, and blemishes.



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- .3 Replace defective or damaged materials with new.

2.0 PRODUCTS

2.1 MATERIALS

- .1 Lumber siding: to NLGA Standard Grading Rules for Canadian Lumber.
 - .1 Boards and battens: western red cedar, clear, size to match existing.
 - .2 CAN/CSA-Z809 or FSC or SFI certified.
- .2 Accessories: exposed trim, closures, cap pieces of manufacturer's standard, rough finish.
- .3 Exterior wall sheathing paper: Tyvek Commercial Wrap.
- .4 Fasteners: nails to CSA B111, stainless-steel nails. Other fasteners to be hot-dip galvanized to CN/CSA-G164 or irregularly-shaped articles with minimum zinc coating of 320g/m².

3.0 EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Consultant.
 - .2 Inform Consultant of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

3.2 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.3 INSTALLATION

- .1 Fasten wood siding in straight, aligned lengths to sheathing at 18" on centre maximum using two nails at each fixing location. Intermediate butt joints are not permitted.

3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Contract documents.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Contract documents.
- .3 Waste Management: separate waste materials for recycling.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

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3.5 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by wood siding installation.

END OF SECTION

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FULLY ADHERED EPDM ROOFING SYSTEM**1.0 GENERAL****1.1 DESCRIPTION**

- .1 Fully adhered ethylene propylene diene terpolymer (EPDM) membrane roofing system applied to existing wood gutters.
- .2 Alternates: Membrane manufacturers and suppliers are invited to submit applications and test data for approval of alternate systems for use on this project. To be accepted, proposed alternates must meet membrane requirements as specified herein. Submit applications to Consultant in a form that facilitates comparison to specified systems.

1.2 REFERENCES

- .1 Perform waterproofing membrane work in accordance with applicable standard in Roofing Contractors Association of British Columbia (RCABC) *Roofing Practices Manual*.
- .2 *ASTM D 4637 Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane*
- .3 *CSA A123.21-10, Standard Test Method for the Dynamic Wind Uplift Resistance of Membrane-Roofing Systems*.

1.3 SUBMITTALS

- .1 Before commencing Work, provide Consultant and Owner with the following:
 - .1 Test report showing that manufacturer's products meet required design pressures. Test report must be from approved CSA A123.21 testing laboratory.
 - .2 Material Safety Data Sheets (MSDS) for review and posting on job site.
 - .3 Product literature, including specification sheets and installation instructions.
 - .4 Samples of relevant materials for colour selection.
- .2 Shop drawings must be submitted to JRS from the manufacturer and contractor.
- .3 At project completion, provide Owner with warranty certificates and guarantee information, as well as Maintenance Guide for completed roofing system.

1.4 SYSTEM DESCRIPTION

- .1 Performance Requirements:
 - .1 Design and installation of new roof assembly to meet minimum performance levels of CSA A123.21-10.

1.5 QUALITY ASSURANCE

- .1 Use only components supplied or accepted by a single membrane manufacturer.
- .2 Conform to latest Guarantee Standards of the Roofing Contractors Association of British Columbia (RCABC) as published in RCABC's *Roofing Practices Manual*.
- .3 Do not use curable or perishable materials past their printed expiry dates.
- .4 Contractor Qualification

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**FULLY ADHERED EPDM ROOFING SYSTEM**

- .1 Roofing Contractor and subcontractors, throughout bidding and installation, must hold current business licenses and be officially approved contractors by the waterproofing product manufacturer.
- .2 Only skilled trade persons officially employed by a roofing Contractor and operating adequate and necessary equipment will be authorized to perform roofing work.
- .3 Membrane application is to be conducted by tradesman with the following qualifications in the following crew ratios: 1 journeyman with a valid Provincial Trade Qualification certificate to 2 indentured apprentices to 2 labourers.
- .5 Maintain a full-time supervisor on site during the execution of the work. Supervisor to have roofing trade qualification and have minimum 5 years' experience with waterproofing work of similar nature and scope.
- .6 Manufacturer Representative
 - .1 Enable and facilitate access to the work site by product manufacturer's designated representative.
 - .2 Manufacturer's representative must be present for the pre-installation meeting.
 - .3 Proof of Technical Competence: Prior to commencing project, submit to JRS proof that manufacturer's representative is certified by a relevant third-party association.
- .7 Pre-Installation Conference
 - .1 Hold a pre-installation meeting prior to start of waterproofing work with waterproofing contractor's representative, JRS Engineering and Owner in attendance. Purpose of this meeting is to review installation conditions particular to each project. Produce and distribute meeting minutes/report to attendees and other stakeholders as identified by JRS Engineering and Owner.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- .1 Consult manufacturers' MSDS for materials handling procedures.
- .2 Deliver and store materials in original containers with manufacturer's labels and seals intact.
- .3 Store materials elevated from contact with ground and moisture and protected from weather.
- .4 Where climatic conditions and installation procedures warrant, store membrane rolls in heated enclosures prior to use, as recommended by manufacturer. Bring only enough rolls to working area as can be used immediately.
- .5 Avoid prolonged exposure of light- and heat-sensitive materials to sunlight.
- .6 Store combustible materials away from heat and open flame.
- .7 Protect insulation and underlayment from elements and keep dry. Store off ground and cover completely with breathable material, such as tarp or canvas. Keep weighted as necessary to prevent wind damage.
- .8 Store curable materials (i.e. adhesives, sealants) within manufacturer-recommended temperature range, with lids tightly sealed. Liquid adhesives and sealants to be a minimum of 16 degrees C before use.



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1.7 PROJECT/SITE CONDITIONS

- .1 Do not perform installation work during periods of rain or inclement weather or on frosty or wet surfaces. Installation work may only be performed when outside air temperature is minimum 10 degrees C and rising.

1.8 WARRANTY

- .1 Refer to Section 01 78 36 Warranties.

2.0 PRODUCTS

2.1 GENERAL

- .1 Standards: conform to RCABC Guarantee Standards and appropriate CSA, CGSB, and ASTM standards for materials used in specified roofing system; use materials listed in RCABC Accepted Materials List of RCABC's *Roofing Practices Manual*.
- .2 EPDM Membrane: Meet performance criteria outlined in table below:

Product Characteristics	Test Method	Unreinforced Membrane
Sheet Thickness Min, mm (in)	ASTM D 751	2.29 (0.090)
Tensile Strength MPa (psi)	ASTM D 412	11.0 (1600)
Dynamic Puncture Resistance @ 5J	ASTM D 5635	Pass
Static Puncture Resistance @ 20kh (44.1lbf)	ASTM D 5602	Pass
Elongation, Ultimate, min %	ASTM D 412	465
Tensile set Max, %	ASTM D 412	10
Tear Resistance, Min, kN/m (lbf/in.)	ASTM D 624	35 (200)
Brittleness point, max °C (°F)	ASTM D 2137	-45 (-49)
Ozone Resistance, no cracks	ASTM D 1149	Pass
Heat Aging:	ASTM D 573	
Tensile Strength, min MPa (psi)	ASTM D 412	10 (1450)
Elongation, Ultimate, min %	ASTM D 412	280
Tear Resistance, Min, kN/m (lbf/in.)	ASTM D 624	37.6 (215)
Linear Dimensional Change, max %	ASTM D 1204	+ - 0.5
Water Absorption, max mass %	ASTM D 471	+ - 2
Factory seam strength, min, kN/m (lbf/in)	ASTM D816	Failure
Weather Resistance:	Practices G 151 and G 155	
Visual inspection	Practices G 151 and G 155	Pass
PRSFE, min %	Practices G 151 and G 155	30

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**FULLY ADHERED EPDM ROOFING SYSTEM**

Product Characteristics	Test Method	Unreinforced Membrane
Elongation, Ultimate, min %	ASTM D 412	200
Fungi Resistance	ASTM G21	0
Water Vapour Permeance, Mas, Perms	ASTM E 96	0.03
Flexibility / Torsion DMA, MPa @ -40°F	ASTM D5279	225
Xenon-Arc, total radiant exposure @ 0.70 W/m ² irradiance, 80°C black panel temperature	ASTM G155	No Cracks / Cracking
Total Exposure, kJ/m ²	ASTM G155	41,480
Total Time Exposed, hrs	ASTM G155	16,500

- .3 Unreinforced EPDM membrane with 6" wide factory applied seam tape (Maximize sheet width to be used to minimize seams)
 - .1 Approved Product: 90mil Sure-Seal by Carlisle Syntec
- .4 Accessories
 - .1 Adhesive
 - .1 Solvent based contact adhesive
 - .1 Pre-approved product
 - .1 90-8-30A Bonding Adhesive as manufactured by Carlisle Syntec
 - .2 Membrane Cleaner
 - .1 Solvent based membrane cleaner
 - .1 Pre-approved product
 - .1 Weathered Membrane Cleaner as manufactured by Carlisle Syntec
 - .3 Water Cut-off sealant
 - .1 One-component, low viscosity, self-wetting butyl blend sealant
 - .1 Pre-approved product
 - .1 Water Cut-Off Mastic as manufactured by Carlisle Syntec
 - .4 Lap Sealant
 - .1 Heavy bodied, gun grade sealant
 - .1 Pre-approved product
 - .1 Lap Sealant - Black as manufactured by Carlisle Syntec
 - .5 EPDM Primer
 - .1 Solvent Based one step cleaning and priming solution for EPDM
 - .1 Pre-approved product
 - .1 HP-250 Primer as manufactured by Carlisle Syntec
 - .6 Pressure Sensitive Accessories
 - .1 Pressure sensitive inside / outside corners

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**FULLY ADHERED EPDM ROOFING SYSTEM**

- .1 Pre-approved product
 - .1 Pressure-Sensitive Inside / Outside Corners as manufactured by Carlisle Syntec
- .2 Pressure sensitive T-joint covers
 - .1 Pre-approved product
 - .1 Pressure-Sensitive Inside / Outside Corners as manufactured by Carlisle Syntec
- .3 EPDM seam tape
 - .1 Pre-approved product
 - .1 Sure-Seal EPDM Pressure-Sensitive Securtape as manufactured by Carlisle Syntec

3.0 EXECUTION**3.1 PREPARATION**

- .1 Ensure substrate is even, without noticeable high spots or depressions and free of accumulated water, ice or snow.
- .2 Clear substrate of debris and foreign material. Immediately report defects in substrate surface to Consultant. Do not proceed with installation until defects are corrected and corrections approved by Consultant.

3.2 MEMBRANE INSTALLATION

- .1 Apply membrane waterproofing in accordance with current RCABC standards manual and manufacturer's printed instructions, including:
 - .1 Membrane
 - .2 Membrane accessories
- .2 Work in easily manageable sections and as quickly as possible to minimize exposure of roof deck.

3.3 CLEANING AND PROTECTION

- .1 Prevent damage from construction activities until permanent protection is installed.
- .2 Upon completion of roofing system, clean entire surface of membrane roof by scrubbing with non-abrasive soapy water and rinsing completely with clean water.

END OF SECTION



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FLASHING & SHEET METAL

1.0 GENERAL

1.1 SUMMARY

- .1 Metal flashings, profiles as required for assembly of:
 - .1 Sheet flashings (general)
 - .1 Parapet cap flashings
 - .2 Roof to Wall
 - .3 Miscellaneous flashings and trim as required
 - .2 Downpipes.
- .2 Other miscellaneous metalwork as may be required for construction of exterior wall assembly.

1.2 REFERENCES

- .1 Applicable Building Code / Building By-Law, most recent edition.
- .2 Roofing Contractors Association of British Columbia (RCABC) *Roofing Practices Manual*.
- .3 Canada Mortgage and Housing Corporation (CMHC) *Best Practice Guide: Flashings*.
- .4 Sheet Metal and Air Conditioning Contractors National Association (SMACNA) *Sheet Metal Work Architectural Manual and Architectural Specification for Sheet Metal Work*.
- .5 ASTM A755 / A755M-11, *Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products*.
- .6 ASTM A792 / A792M-05, *Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process*.
- .7 ASTM B117-11, *Standard Practice for Operating Salt Spray (Fog) Apparatus*.
- .8 ASTM D523-08, *Standard Test Method for Specular Gloss*.
- .9 ASTM D2244, *Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates*.
- .10 ASTM D2247-11, *Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity*.
- .11 ASTM D3363-05(2011)e2, *Standard Test Method for Film Hardness by Pencil Test*.
- .12 ASTM D3964-10, *Standard Practice for Selection of Coating Specimens for Appearance Measurements*
- .13 ASTM D4138-07a, *Standard Practices for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive, Cross-Sectioning Means*.
- .14 ASTM D4145-10, *Standard Test Method for Coating Flexibility of Prepainted Sheet*.
- .15 ASTM D4214-07, *Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films*.
- .16 ASTM D5402-06(2011), *Standard Practice for Assessing the Solvent Resistance of Organic Coatings Using Solvent Rubs*.



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1.3 SYSTEM DESCRIPTION

- .1 Fabricate and install flashings to provide waterproof and weather-resistant performance by directing water away from other building elements susceptible to deterioration when exposed to excessive wetting. Use flashings for intended purpose only.

1.4 SUBMITTALS

- .1 Submit 12-inch-long sample of each type and profile of sheet metal part, gauge and paint finish as specified.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver and store materials in protective wrappings and containers.

2.0 PRODUCTS

2.1 MATERIALS

- .1 Galvalume Sheet: Thickness as noted below to ASTM A792 / A792M, 55 percent AL-ZN, Grade: CS, Type A, SS 33, AZ50 / AZM 150 nominal coating weight of 0.5 oz per square foot (total both sides), except as noted below. Finish: To meet the performance Criteria as noted in the following Table:

Property	Test Method	PVDF: 70% Fluoropolymer Polyvinylidene Fluoride (PVDF) Resin
Dry Film Thickness	ASTM D 4138	25µm ± 5µm
Specular Gloss	ASTM D523	Typical 3 – 45 @ 60°C
Humidity Resistance	ASTM D 2247	1000 Hours; 100% Relative Humidity @ 38°C A few blisters no larger than #8
Salt Spray	ASTM B 117	1000 Hours; 5% Salt Spray @ 95°C Less than 3mm creep from scribe line. No Blisters
Chalk Resistance	ASTM D 4214	Method A; 40 Years Exposure Vertical: Rating no less than 8 Non Vertical: Rating no less than 6
Colour Retention	ASTM D 2244 (Clean Surfaces per ASTM D3964)	40 Years Exposure Able to withstand 100 Double MEK Rubs Vertical: Less than 5Δ Hunter Units Non
Pencil Hardness	ASTM 3363	Minimum F
T Bend	ASTM D 4145	No loss of adhesion when subjected to 1T 180° Bend and Tape pull test
Cure Test	ASTM D 5402	Able to withstand 100 Double MEK Rubs

- .2 Sheet metal to be minimum 26 gauge (0.217) thickness unless otherwise noted

- .1 Cap Flashings: 24 gauge (0.0276 inch).
- .2 Fascia Flashings (Roof): 22 gauge (0.0336 inch).

- .3 Downpipes

- .1 PVC downpipes to match existing.

2.2 ACCESSORIES

- .1 Touch-up paint as recommended by factory applying prefinished paint to sheet metal.



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FLASHING & SHEET METAL

- .2 Solder to ASTM B32. Flux shall be rosin, cut hydrochloric acid, or commercial preparation suitable for materials to be soldered.
- .3 Clips to be shop formed from minimum 22 gauge (0.0336 inch) galvalume or one gauge heavier than base material.
- .4 Isolation Coating: alkali resistant bituminous paint.
- .5 Fasteners: 300 Series stainless steel.

2.3 FABRICATION

- .1 Shop-fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA Standards Manual, RCABC Roofing Practices Manual and other recognized industry best practices.
- .2 Provide end dams in accordance with applicable Building Code / Building By-Law.
- .3 Fabricate metal flashing and other sheet metal work in accordance with applicable RCABC guarantee standards.
- .4 Form pieces in 10-foot maximum lengths. Make allowance for expansion at joints. Fabricate flashing in continuous consistent length pieces (under 10 feet) to avoid unnecessary joints.
- .5 Hem exposed edges on underside 1/2 inch. Mitre and seal corners with sealant.
- .6 Form sections square, true and accurate to size, free from distortion, crude edges and other defects detrimental to appearance or performance.
- .7 Sheet metal greater than 12 inches in depth to be fabricated from minimum 24 gauge (0.0276 inch) cross-broken sheets.
- .8 Form exposed sheet metal work free from buckling, tool marks and any other distortion or marks affecting performance or appearance.
- .9 Form inside corners by folding or continuous soldering.
- .10 Cap flashings shall be formed to slope to the interior, through-wall and sill pan flashings shall be formed to slope to the exterior.
- .11 Soldered joints are required at end flange terminations, including: saddle points, flashing terminations, hood vent flanges, and other custom flashing. Solder in accordance with good practice.
- .12 Fabricate flashings covering roof membranes, pitched roofing, deck membranes, slab waterproofing, and others as a two-piece design that permits easy removal of lower flashing to provide full access to membrane terminations protected by flashing.

3.0 EXECUTION

3.1 EXAMINATION

- .1 Take all necessary precautions to ensure that all plumbing, gas, and electrical lines will not be damaged prior to nailing through plywood substrates.
- .2 In areas where sheathing has been removed to expose the insulation, note position of plumbing, gas and electrical lines so as not to create damage when nailing or attaching covering material.
- .3 Assume responsibility for damage to said items as a result of nailing or attaching covering material, or failure to properly document location of these items when exposed.



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FLASHING & SHEET METAL

3.2 INSTALLATION

.1 General

- .1 Prevent contact between dissimilar metals to avoid galvanic corrosion.
- .2 Erect work straight, sharp, plumb, and level in true plain, free of bulges and waves, and in a consistent fashion. Verify all dimensions on site.
- .3 Use concealed fastener system for cap flashings; exposed fasteners are not acceptable. Install sill pan flashings using gasketed fasteners in locations to be fully covered by subsequent work.
- .4 Install continuous concealed on interior and exterior of vertical drip sections of cap flashing, fascia and other types of flashing.
- .5 Fabricate joints with "standing" or "S-lock" seams. Lap seams are not acceptable.
- .6 Provide minimum 5/8-inch high watertight end dams, formed using bread-pan method, at openings as required to prevent water from flowing into adjacent assemblies. Extend flashings beyond jamb openings.
- .7 Where soldering on pre-finished metal flashings:
 - .1 Remove factory enamel finish to expose raw metal in affected areas with neutralizing chemical. Wash surface with water and dry.
 - .2 Prime and finish affected area in accordance with Section 09 91 00 Painting
- .8 Where window head flashings require two separate pieces, locate flashing segment joints at the mid-point of the window.
- .9 Locate seams and joints to provide uniform and consistent appearance.
- .10 Fabricate and install pieces for cap flashings and through-wall flashings in maximum 10-foot lengths. Allow for expansion and contraction at joints.
- .11 Install sill pan flashings to fit snugly into existing or reconstructed openings. Ensure vertical returns are tight to building wall and pan drains to exterior.
- .12 Apply sealant to corners and joints to ensure permanent waterproof connections and assembly.
- .13 Apply isolation coating to metal surfaces to be embedded or in direct contact with concrete, mortar or cementitious materials.

.2 Downpipes

- .1 Install downpipes at existing active drain locations and extend to ground level or existing storm drain location.
- .2 Minimize number of separate downpipes. Tie-in drains to single vertical line in any one location.
- .3 Secure downpipes to building at through-system flashing and drains using specified fasteners. Do not secure through cladding assembly.
- .4 Provide concrete splash-pans at discharge locations where downpipes do not tie in to existing storm drains.

END OF SECTION



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STANDING SEAM SHEET METAL ROOFING

1.0 GENERAL

1.1 SUMMARY

- .1 Supply and installation of new concealed-fastener metal roof panel assembly to the surface of the pitched roof areas.

1.2 REFERENCES

- .1 Applicable Building Code / Building By-Law, most recent edition.
- .2 Roofing Contractors Association of British Columbia (RCABC) *Roofing Practices Manual*.
- .3 Canada Mortgage and Housing Corporation (CMHC) *Best Practice Guide: Flashings*.
- .4 ASTM A755 / A755M-11, Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products.
- .5 ASTM A792 / A792M-05, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- .6 ASTM B117-11, Standard Practice for Operating Salt Spray (Fog) Apparatus.
- .7 ASTM D523-08, Standard Test Method for Specular Gloss.
- .8 ASTM D2244, Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
- .9 ASTM D2247-11, Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
- .10 ASTM D3363-05(2011)e2, Standard Test Method for Film Hardness by Pencil Test.
- .11 ASTM D3964-10, Standard Practice for Selection of Coating Specimens for Appearance Measurements
- .12 ASTM D4138-07a, Standard Practices for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive, Cross-Sectioning Means.
- .13 ASTM D4145-10, Standard Test Method for Coating Flexibility of Prepainted Sheet.
- .14 ASTM D4214-07, Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films.
- .15 ASTM D5402-06(2011), Standard Practice for Assessing the Solvent Resistance of Organic Coatings Using Solvent Rubs.
- .16 Sheet Metal and Air Conditioning Contractors' National Association (SMACNA):
 - .1 Sheet Metal Work Architectural Manual
 - .2 Architectural Specification for Sheet Metal Work
- .17 ASTM A653/A653M-09a Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process, Physical (Structural) Quality.

1.3 SUBMITTALS

- .1 Prior to fabrication, submit product documentation and materials samples to Consultant, including panel sections, fasteners and hardware.

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- .2 Provide Mill Certification showing that the metal used meets the minimum requirements of this specification.
- .3 Provide calibration report on roll forming machine from within the previous year.
- .4 Engineered Shop Drawings completed with Engineer's Schedules must be submitted. Shop drawings to indicate the following:
 - .1 Roof plans,
 - .2 Details to allow for expansion and contraction, and are to include the following:
 - .1 Metal roof panels, fastening, including layout of fasteners and joints in panels
 - .2 Edge conditions, seams, joints, corners, panel profiles, assembly, anchoring techniques, and flashings
 - .3 Copings, closures, sealants, thickness of materials, and details of penetrations
 - .3 Description of proposed details that deviate from what is shown on plans.
 - .4 Drainage paths, and
 - .5 Method of structural attachment to building, including provisions for thermal movement and building movement. Identify structural fasteners.
- .5 Upon completion of the Work:
 - .1 Submit data for maintenance and cleaning
 - .2 Submit warranties

1.4 QUALITY ASSURANCE

- .1 Installer/tradesmen involved in the work of this section must have a minimum of 4 years' documented experience of having regularly undertaken the type of work as outlined herein. Installer/tradesmen to be certified with ASM ticket.
- .2 Mock-ups:
 - .1 Perform roof installation mock-up at Consultant-selected location.
 - .2 Schedule and undertake sequenced mock-up in presence of Consultant, complete with accessories, including membranes, flashings, trim, sealants, and cladding. Do not proceed with Work on a larger scale without approval in writing from Consultant.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Refer to Section 01 40 00 Quality Requirements

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**STANDING SEAM SHEET METAL ROOFING**

1.6

2.0 PRODUCTS**2.1 MATERIALS**

- .1 Galvalume Sheet: Thickness as noted below to ASTM A792 / A792M, 55 percent AL-ZN, Grade: CS, Type A, SS 33, AZ50 / AZM 150 nominal coating weight of 0.5 oz per square foot (total both sides), except as noted below. Finish: To meet the performance Criteria as noted in the following Table:

Property	Test Method	PVDF: 70% Fluoropolymer Polyvinylidene Fluoride (PVDF) Resin
Dry Film Thickness	ASTM D 4138	25µm ± 5µm
Specular Gloss	ASTM D523	Typical 3 – 45 @ 60°C
Humidity Resistance	ASTM D 2247	1000 Hours; 100% Relative Humidity @ 38°C A few blisters no larger than #8
Salt Spray	ASTM B 117	1000 Hours; 5% Salt Spray @ 95°C Less than 3mm creep from scribe line. No Blisters
Chalk Resistance	ASTM D 4214	Method A; 40 Years Exposure Vertical: Rating no less than 8 Non Vertical: Rating no less than 6
Colour Retention	ASTM D 2244 (Clean Surfaces per ASTM D3964)	40 Years Exposure Able to withstand 100 Double MEK Rubs Vertical: Less than 5Δ Hunter Units Non
Pencil Hardness	ASTM 3363	Minimum F
T Bend	ASTM D 4145	No loss of adhesion when subjected to 1T 180° Bend and Tape pull test
Cure Test	ASTM D 5402	Able to withstand 100 Double MEK Rubs

- .2 Sheet metal used for sheet metal roofing and all accessory metal to be minimum 24ga. unless noted.

2.2 ROLL FORMED METAL ROOF PROFILE

- .1 Provide a snap-lock standing seam 24-gauge metal roof system, 1-3/4 inch snap-lock profile (min 1 5/8" male throat) and 18" inches width.
- .2 Panel must be roll formed using a roll form panel machine with no less than 14 rolling stations on either side.
- .3 Stiffening ribs to be included within the panel, Owner to choose from standard stiffening rib options.
- .4 Tolerances:
- .1 1/32" for Dimensions
 - .2 1/2 Degree on Angles
- .5 Finish: Colour of metal to be chosen by the Owner from standard colour range.
- .6 Pre-approved Products:
- .1 Snap Lock II 675 Panel Profile by New Tech Machinery.
 - .2 UC-14 by Firestone Metal Products
 - .3 R-Mer Loc by Garland Industries.



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STANDING SEAM SHEET METAL ROOFING

2.3 DECK LEVEL SELF ADHESIVE MEMBRANE

.1 Pre-approved Products

- .1 Clad-Gard SA manufactured by Firestone BP
- .2 Lastobond Shield HT manufactured by Soprema.

2.4 UNDERLAY/SLIP SHEET

.1 High-performance synthetic roofing underlay:

- .1 Pre-approved Products:
 - .1 Clad-Gard MA manufactured by Firestone BP
 - .2 Deck Armor by GAF

2.5 WOVEN DRAINAGE MAT

.1 Above-sheathing ventilation:

- .1 Pre-approved products:
 - .1 Enkamat ASV 7010 or 7020 by Enka-Solutions
 - .2 or pre-approved equivalent

2.6 ACCESSORIES

.1 Clip Fasteners:

- .1 #12 Pan Head Dekfast by SFS Intec. Length to suit full penetration of plywood sheathing or appropriate alternate.

.2 Panel Clips (UL Listed): 18-gauge Zincalume steel, 3-1/2 inches wide, 1-7/8 inch high, with bearing plates. 24" spacing throughout.

.3 Panel Drag Fastening:

- .1 20ga. sheet metal angle screwed into the plywood back wall and running under the panel - drag fasteners are: #12 hex head self-drilling w/ bonded neoprene washer for panel to angle connection, and #10 hex head wood screw from sheet metal angle to plywood.

Panel length	Screw spacing - plywood	# Panel screws
(ft)	(in)	
10	9	2
20	6	3
30	3	4

.4 Touch-up Paint: as recommended by factory applying pre-finished paint to roofing panels.

.5 Closures: Z-Flashings; gauge and finish equal to or better than that of roofing panels.

.6 Sealant: Single-component urethane caulking.

.7 Flashing: Gauge and finish to match roofing panels.

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STANDING SEAM SHEET METAL ROOFING**2.7 FABRICATION**

- .1 Unless otherwise shown on the drawings or specified herein, fabricate panels in continuous one-piece lengths and fabricate flashings and accessories in longest practical lengths, avoid lengths of flashings under 2' unless consultant states otherwise.

3.0 EXECUTION**3.1 PREPARATION**

- .1 Field-verify all dimensions.
- .2 Install new field underlay/slip sheet to surface of substrate. Lap up/over penetrations and curbs to provide fully-sealed roof system.

3.2 EXAMINATION

- .1 Report improperly aligned, levelled or plumbed supports to the Consultant before proceeding with the Work, so that necessary corrections can be made.

3.3 INSTALLATION

- .1 Turn roof panel upper ends at least 1-1/2 inches up without cutting (bread panned) under flashing.
- .2 Install panel seams vertically, lapping panels away from prevailing wind direction.
- .3 Fully engage interlocking seams without causing warping or deflection.
- .4 Adjust metal roofing systems to final position before fastening permanently to structural supports.
- .5 Use concealed fastener and clip system in accordance with manufacturer's instructions; do not use exposed fasteners where entire roofs are to be replaced.
- .6 Lap ends by minimum 4 inches; locate end laps over supports.
- .7 Extend roof panels to overlap gutter openings by 1 1/2" inches, without restricting accessibility for cleaning.
- .8 Exercise care when cutting or drilling pre-finished materials to ensure that cuttings do not remain to rust on exposed pre-finished surfaces. Where practical, cut and drill so that cuttings do not strike or accumulate on exposed cladding surfaces. Hand trim edges cut with an abrasive blade.
- .9 Maximum alignment variation: 1/4 inch in 40 feet.

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SEALANT**1.0 GENERAL****1.1 SUMMARY**

- .1 Section Includes: Materials, preparation and installation of sealant.

1.2 REFERENCES

- .1 Applicable Building Codes / Building By-laws, most recent edition.
- .2 American Society for Testing and Materials International (ASTM)
 - .1 ASTM C834 Standard Specification for Latex Sealants
 - .2 ASTM C919 Standard Practice for Use of Sealants in Acoustical Applications.
 - .3 ASTM C920 Standard Specification for Elastomeric Joint Sealants.
 - .4 ASTM C1184 Standard Specification for Structural Silicone Sealants
 - .5 ASTM C1193-05a Standard Guide for Use of Joint Sealants

1.3 SUBMITTALS

- .1 Samples: submit samples of each type of sealant material and colour.
- .2 Submit manufacturer's product data for all sealants and accessories, including:
 - .1 Materials compatibility information.
 - .2 Product Material Safety Data Sheets (MSDS).
 - .3 Manufacturer's installation instructions, surface preparation and product limitations.

1.4 QUALITY ASSURANCE

- .1 Ensure sealant is properly adhered to substrate, whether primer is used or is not used.
- .2 Mock-Ups:
 - .1 Prepare mock-ups in accordance with Section 01 40 00, Quality Requirements.
 - .2 Show location, size, shape and depth of joint(s), complete with backup material and primer, if used. Mock-ups may be included as part of the finished work.
 - .3 Repair sealant where Consultant has performed pull testing to confirm adhesion.

1.5 ENVIRONMENTAL AND SAFETY REQUIREMENTS

- .1 Comply with Workplace Hazardous Materials Information System (WHMIS) requirements for use, handling, storage and disposal of hazardous materials, and with labelling and provision of material safety data sheets in accordance with Canada Labour Code requirements.
- .2 Ventilate area of work as directed by Consultant by use of approved portable supply and exhaust fans.

1.6 PROJECT/SITE CONDITIONS

- .1 Do not proceed with the installation of joint sealants under the following conditions:



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- .1 When ambient and substrate temperature conditions are outside limits permitted by the joint sealant manufacturer or are below 4.4 degrees C.
- .2 When joint substrates are wet or frost-laden.

2.0 PRODUCTS

2.1 MATERIALS

- .1 Only sealants listed on CGSB Qualified Products List issued by CGSB Qualification Board for Joint Sealants are acceptable for use on this project. Where sealants are qualified with primers, use only these primers.
- .2 Compatibility of materials is essential. Ensure compatibility of sealant with adjacent materials and components prior to application.
- .3 Sealant colour to closely match adjacent finishes unless otherwise specified.
- .4 Sealants:
 - .1 Sealant Type 1: Polyurethanes, single-component, non-sag. Acceptable materials:
 - .1 Tremco Dymonic FC
 - .2 Sikaflex 1a
 - .2 Sealant Type 2: Polyurethanes, multi-component, non-sag. Acceptable materials:
 - .1 Tremco Dymeric 240
 - .2 Sikaflex 2c NS
 - .3 Sealant Type 3: Silicone, single-component, non-sag. Acceptable materials:
 - .1 Tremco Spectrem 1
 - .2 Tremco Spectrem 2
 - .3 Tremco Tremsil 600
 - .4 Dow Corning 790
 - .5 Dow Corning 795
 - .6 Dow Corning Contractors Weatherproofing Sealant
 - .4 Sealant Type 4: Silicone, single-component, neutral cure for high-temperature application. Acceptable material:
 - .1 Dow Corning Hi-Temp
 - .2 TVM High Temperature Silicone
 - .3 NuFlex 302
 - .5 Sealant Type 5: Thermoplastic synthetic rubber, single-component. Acceptable materials:
 - .1 Sealant Type 5a:
 - .1 Guertin GS1010
 - .2 Tremco 830
 - .2 Sealant Type 5b:



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.1 OSI Pro-Series QUAD

.6 Sealant Type 6: Flexible synthetic rubber, single-component, non-skinning, non-hardening.
Acceptable materials:

.1 Tremco Acoustical Sealant

.7 Sealant Type 7: Paintable latex sealant. Acceptable materials:

.1 DAP DYNAFLEX 230

.2 Tremco Tremflex 834

2.2 COMPONENTS

.1 Exterior Sealant Joints:

.1 Widths less than 1/2": Sealant Type 1.

.2 Widths greater than 1/2": Sealant Type 2.

.2 Exterior SA membrane to breathable air barrier membrane interfaces: Sealant Type 5a.

.3 Exterior air barrier membrane to air barrier membrane interfaces: Sealant Type 5b.

.4 Interior polyethylene air/vapour barrier sealant: Sealant Type 6.

.5 Acoustical sealing of drywall partitions, corridors and party walls: Sealant Type 6.

.6 Interior finish sealant: Sealant Type 7.

2.3 ACCESSORIES

.1 Primer: As recommended by sealant manufacturer and as required to achieve adhesion.

.2 Backup Material: Foam backer rod as recommended by sealant manufacturer, compatible with sealant and sized to achieve correct joint depth and shape with approximately 30 percent compression.

.3 Bond Breaker Tape: Polyethylene bond breaker tape to which sealant will not bond.

.4 Joint Cleaner: Non-corrosive and non-staining type compatible with joint forming materials and sealant, as recommended by sealant manufacturer.

3.0 EXECUTION

3.1 PROTECTION

.1 Protect installed work and adjacent surfaces from staining or contamination by the work of this section.

3.2 EXAMINATION

.1 Examine joint surfaces to ensure that they are sound, clean, dry, and free from old sealant, dirt, dust, rust, oil, grease and other contaminants that may impair adhesion.

.2 Examine joint sizes and conditions to establish correct depth-to-width ratio for installation of backup materials and sealants.

3.3 PREPARATION

.1 Prepare surfaces in accordance with sealant manufacturer's instructions.

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- .2 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .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

- .1 Prime joint surfaces in accordance with sealant manufacturer's instructions immediately prior to applying sealant.

3.5 BACKUP MATERIAL

- .1 Apply bond breaker tape where required in accordance with manufacturer's instructions.
- .2 Install joint filler to achieve correct joint depth and shape, with approximately 30 percent compression.

3.6 SEALANT

- .1 **Mixing:** Mix materials in strict accordance with sealant manufacturer's instructions.
- .2 **Application:**
 - .1 Apply sealant in accordance with manufacturer's written instructions.
 - .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
 - .3 Apply sealant in continuous beads.
 - .4 Apply sealant as recommended by sealant manufacturer, using gun with proper-size nozzle.
 - .5 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets and embedded impurities.
 - .6 Tool exposed surfaces in accordance with sealant manufacturer's instructions, with sufficient pressure to fill voids and joints solid, before skinning begins to give slightly concave shape.
 - .7 Promptly remove excess sealant as work progresses and upon completion.
- .3 **Curing:**
 - .1 Cure sealants in accordance with manufacturer's instructions.
 - .2 Do not cover up sealant before it is fully cured.

3.7 CLEANING

- .1 Clean adjacent surfaces immediately and leave work neat and clean.
- .2 Remove excess and droppings, using manufacturer-recommended cleaners as work progresses.
- .3 Remove masking tape after initial set of sealant.

END OF SECTION



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PRESSURE-PLATE METAL FRAMED SKYLIGHTS

1.0 GENERAL

1.1 SUMMARY

- .1 Section Includes: Engineered pressure-plate and structurally glazed, aluminum-framed skylight system, pressure-equalized, raised leg, rainscreen design, inclusive of perimeter trims, accessories, shims and anchors.
- .2 Prepare existing rough openings with new membrane(s), metal anchoring angles, and related accessories for proper integration of wall and roof assemblies.
- .3 Skylight IGUs to have laminated glass.
- .4 Unless otherwise noted, skylights do not have operable units.

1.2 REFERENCES

- .1 Applicable Building Code / Building By-Law, most recent edition.
- .2 *BC Energy Efficiency Act*
- .3 *Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440, NAFS – North American Fenestration Standard/ Specification for Windows, Doors, and Skylights*
- .4 *Insulating Glass Manufacturers Association of Canada - Guidelines for Sloped Glazing*
- .5 *Glazing Contractors Association of BC Glazing Systems Specifications Manual*
- .6 *CAN/CGSB-12.3-M - Glass, Polished Plate or Float, Flat, Clear*
- .7 *CAN/CGSB-12.20-M89 - Structural Design of Glass for Buildings*
- .8 *CSA-S157-05 - Strength Design in Aluminium*
- .9 All items to CGSB, AAMA and ASTM including applicable test requirements specified therein
- .10 *ANSI H35.1 Alloy and Temper Designation Systems for Aluminum*

1.3 SYSTEM DESCRIPTION

- .1 Submit documentation to confirm supplied windows meet BC Energy Efficiency Act.
- .2 System to include self-supporting aluminium framing with raised leg profile complete with gaskets, baffles, overlaps, seals and end dams as required to effectively deter rainwater entry. Openings to be of sufficient cross-section to provide necessary drainage between cavities and the outside.
- .3 Structural Design
 - .1 Design to current edition of the VBBL, Snow Load and Wind Loads for Cladding and Windows, with aluminium design according to "Specification for Aluminium Structures" as published by the Aluminium Association.
 - .2 Provide for thermal movements of components without the overstressing of materials, failure of joints and glazing seals or other detrimental effects.
- .4 Performance Requirements
 - .1 New skylights to conform to AAMA/WDMA/CSA 101/I.S.2/A44-08 (NAFS) and the requirements of the following designation:

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- .1 Performance Class: AW
- .2 Performance Grade: 1680 (metric)
- .3 Water Penetration Resistance Test Pressure: 260 Pa
- .4 Air Infiltration/Exfiltration: A3
- .2 Wind loads: Skylight system, including anchorage, must be capable of withstanding inward and outward wind load design pressures to meet requirements of VBBL.
- .3 Uniform Load: No deflection in excess of L/175 of the span of any framing member when tested at static air design load of 1437 Pa applied in positive and negative direction in accordance with ASTM E 330. No glass breakage or permanent set in framing members in excess of 0.2 percent of their clear spans when tested at structural load equal to 1.5 times the specified design load.
- .4 Skylight glazing to meet the BC Energy Efficiency Act including overall U-Value of glazing system, including frame, to be no greater than 2.0 W/m²-degrees C and all required labelling standards.

1.4 SUBMITTALS

- .1 At project start, submit the following:
 - .1 Certified test reports confirming product meets specified performance requirements
 - .2 Manufacturer's structural calculations
 - .3 Manufacturer's installation instructions
- .2 Samples: Submit one representative sample of system. Show frame, glass and glazing, weatherproofing methods, and surface finish.
- .3 Submit original Schedule B-1, Assurance of Professional Design and Commitment for Field Review and Schedule B-2 Summary of Design and Field Review Requirements together with approved shop drawings.
- .4 Submit copies of field review reports from registered professional who signed the Schedules B-1 and B-2 to the Consultant (JRS Engineering Ltd.) via email.
- .5 Submit original Schedule C-B to the consultant upon completion of skylight installation.
- .6 Shop Drawings
 - .1 Submit shop drawings and product data, signed and sealed by professional engineer registered to practice in Province of British Columbia. Include the following information on drawings:
 - .1 Design loads,
 - .2 Design standards,
 - .3 Materials, parts and their sizes,
 - .4 Welds, indicated by welding symbols as defined in CSA W59.
 - .5 Location and number of fasteners and anchoring,
 - .6 Description of exposed finishes and fasteners
 - .7 Component details, profiles, materials, finishes, connection and joining methods, and relationship to adjoining work,



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- .8 Glass and glazing components,
- .9 Large/full scale details, including transitions to building envelope systems, and
- .10 Other required information.

1.5 QUALITY ASSURANCE

- .1 Obtain product from manufacturer capable of providing structural calculations, test reports, printed installation instructions, review of application method, and periodic field service representation during construction.
- .2 Ensure that the engineer who sealed and signed the shop drawings also performs sufficient field reviews at appropriate intervals so as to be able to provide appropriate letters of assurance at completion of work confirming that the work has been installed in general conformance with the shop drawings.
- .3 Pre-Installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements.
- .4 Pre-Installation Mock-Up Review: Prior to full-scale installations, provide mock-up of key details, in conformance with Section 01 40 00 Quality Requirements, including but not limited to: ridge detail; rafter detail at change in plane, purlin-to-rafter transition, gable end transition and drainage of rafters to roof detail.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Protect materials from exposure to harmful weather conditions. Handle skylight materials and components carefully so as to avoid damage. Protect against damage from elements, construction activities, and other hazards before, during and after skylight installation.
- .2 Ordering: Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

2.0 PRODUCTS

2.1 ALUMINUM-FRAMED SKYLIGHTS

- .1 Accepted Products:
 - .1 Kawneer Aluminum – Framing Member Profile 4-1/2 by 2-1/2 inches
 - .2 Advanced Glazing Systems – Framing Member Profile 5 by 3- 3/4 inches
 - .3 Columbia Glazing Systems SPM System – Framing Member Profile 4-3/4 by 2-1/2 inches
- .2 Product Substitutions:
 - .1 Products having equivalent characteristics will be considered provided deviations are minor and do not change concept or performance as described in Project Documents. Obtain acceptance in writing from Consultant prior to procuring product substitutes for the work of this section. Confirm pitch limitations prior to submitting alternates.

2.2 MATERIALS

- .1 Aluminum Skylight and Components:
 - .1 Material Standard: ASTM B 221; 6063-T6 alloy and temper.

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- .2 Member wall thickness: Framing members must provide structural strength sufficient to meet specified performance requirements.

2.3 FINISHES

- .1 Factory-applied, oven-thermosetting acrylic enamel coating, conforming to requirements of AAMA Publication 2603-98, Voluntary Specification, *Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels*.
 - .1 Accepted Product: Duracon Coating as manufactured by PPG Industries Inc.
 - .2 Colour: White
- .2 Pre-treatment: Pre-clean all aluminium surfaces to be coated and apply a chemical conversion coating. Pre-treat in accordance with coating manufacturer's instructions.
- .3 Application: Prime and apply a minimum of 2 coats in accordance with coating manufacturer's instructions. Dry film thickness of coating on exposed surfaces to be minimum 1.2 mils.

2.4 GLAZING

- .1 Insulating Glass Units: Double-glazed, double-sealed insulating glass units with argon-filled space. Minimal glass thickness and strength as required to meet applicable building code/ building by-law requirements.
 - .1 There is an ALTERNATE PRICE to supply triple-glazed, triple-sealed insulating glass units with argon filled spaces. Minimal glass thickness and strength as required to meet applicable building code/ building by-law requirements.
- .2 Glazing Units: Low-E coated on number 2 glass surface.

2.5 ACCESSORIES

- .1 Fasteners: Exposed fasteners to be Stainless Steel
- .2 Gaskets: Interior glazing gaskets to comply with ASTM C864, extruded of silicone-compatible EPDM rubber that provides for silicone adhesion. Exterior glazing gaskets to be Tremco Visionstrip® or pre-approved equal as recommended by manufacturer. Size to suit.
- .3 Perimeter Anchors: Aluminum or steel. Where different materials are used, provide isolation between steel material and aluminum material to prevent galvanic action.
- .4 Thermal Barrier: Extruded of silicone-compatible PVC (Poly Vinyl Chloride) rubber that provides for silicone adhesion.
- .5 Sealants: In accordance with Section 07 92 00 Sealant.

3.0 EXECUTION**3.1 EXAMINATION**

- .1 Site Verification of Conditions: Verify that substrate conditions are acceptable for product installation in accordance with manufacturer's instructions. Verify openings are sized to receive skylight system and sill plate is level in accordance with manufacturer's acceptable tolerances.
 - .1 Field Measurements: Verify actual measurements/openings by field measurements before assembly/installation; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

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- .1 Assemble components per manufacturer's installation instructions and with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
- .2 Rafter joints to be mitre cut at ridges and changes in plane. Purlins to be notched to sit on raised leg of rafters.
- .3 Fabrication of skylight sections to be performed in controlled factory environment for improved tolerances where practical. Field cutting of sections to be minimized.
- .4 Accurately fit, seal and secure joints and corners. Make joints flush, hairline and weatherproof.
- .5 Prepare components to receive anchor devices. Fabricate anchors.
- .6 Arrange fasteners and attachments to conceal from view.

3.3 SKYLIGHT INSTALLATION

- .1 Install skylight systems in accordance with approved shop drawings, plumb, level, and true to line, without warp or rack of frames and within manufacturer's prescribed tolerances. Provide support and anchor in place.
- .2 Dissimilar Materials: Prevent contact of dissimilar materials in order to avoid corrosion or electrolytic action.
- .3 Glass-to-metal contact is unacceptable.
- .4 Install HDPE or rigid PVC anti-rotation blocks where required. Other materials with lower compression strength are not acceptable.
- .5 Glazing: Outside glazed, held in place with extruded aluminum pressure plates anchored to rafters using stainless steel fasteners at rafters. Structural silicone joints are acceptable at horizontal joints only.
- .6 Water Drainage: Ensure water will be adequately diverted to rafters and exit to exterior of building through weeps in baffle and gutter. Typical horizontal covers and pressure plates will not require weep holes.

3.4 FIELD QUALITY CONTROL

- .1 Manufacturer's Field Services: Provide periodic site visit by manufacturer's field service representative upon Consultant's or Owner's request.

3.5 CLEANING AND PROTECTION

- .1 Cleaning: Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove construction debris from project site and dispose of debris legally.
- .2 Protection: Protect installed product's finish surfaces from damage during construction. Protect aluminum skylight system from damage from grinding and polishing compounds, plaster, lime, acid, cement, or other harmful contaminants.

END OF SECTION

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PAINTING

1.0 GENERAL

1.1 SUMMARY

- .1 Section includes painting of:
 - .1 Wood cladding surfaces, and other items as required by the work.
 - .2 Interior surfaces where required due to repairs to gypsum board in interior areas and where damaged as a result of the work of other sections. DO NOT include interior painting for this item in the base bid.

1.2 REFERENCES

- .1 Master Painters and Decorators Association (MPDA) *Specifications Standards Manual*.
- .2 CAN/CGSB 1.100-99 *Interior Flat Latex Paint*.
- .3 CAN/CGSB 1.119-2000 *Interior Latex Primer-Sealer*.
- .4 CAN/CGSB 1.138-97 *Exterior Latex Flat Paint*.
- .5 CAN/CGSB 1.153-M90 *High Build, Gloss Epoxy Coating*.
- .6 CAN/CGSB 1.177-M91 *Two-Component Polyurethane Coating, Resistant to Chalking and Yellowing*.
- .7 CAN/CGSB 1.183-99 *Zinc-Rich Epoxy Coating*.
- .8 CAN/CGSB 1.189-2000 *Exterior Alkyd Primer for Wood*.
- .9 CAN/CGSB 1.195-99 *Interior Latex Semigloss Paint*.
- .10 CAN/CGSB 1.209-2003 *Interior Latex Low Gloss Paint*.
- .11 CAN/CGSB 1.213-2004 *Etch Primer (Pretreatment Coating or Tie Coat) for Steel and Aluminum*.
- .12 CAN/CGSB 19.13-M87 *Sealing Compound, One Component, Elastomeric, Chemical Curing*.
- .13 MPI #154, *Light Industrial Coating, Interior, Water Based, Gloss (MPI Gloss Level 6)*.

1.3 SUBMITTALS

- .1 Submit colour samples in accordance with Section 01 31 00 Project Management and Coordination.
- .2 Provide additional sample of interior paint to be used directly to suite owner and obtain written approval before proceeding with the work.
- .3 Apply test patch of approved colour sample before proceeding with the work.

1.4 QUALITY ASSURANCE

- .1 Installer/tradesmen involved in the work of this section must have a minimum of 2 years of documented experience having regularly undertaken the type of work as outlined herein.
- .2 Mock-Ups: Provide mock-ups in accordance with Section 01 40 00 Quality Requirements. Provide 48 hours' notification to Consultant prior to application of mock-up for review.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Protect from freezing, moisture, water, UV exposure and damage.



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PAINTING

1.6 PROJECT/SITE CONDITIONS

- .1 Do not apply paint finishes in areas where dust is being generated.

2.0 PRODUCTS

2.1 MATERIALS

- .1 Qualified Products: only paint materials listed on the CGSB Qualified Products List are acceptable for use on this project.
- .2 Paint materials: to CGSB Standards listed in finishing formulae.
- .3 Paint materials for each coating formula to be products of a single manufacturer.
- .4 Paint type and reflectance to match existing in areas to be repaired.
- .5 Finish colours to be determined by Owner(s) from manufacturer's standard colour range.

2.2 EXTERIOR FINISHES

- .1 Existing Wood Boards
 - .1 Exterior oil wood primer to CAN/CGSB 1.189-2000 (MPI # 7).
 - .2 Exterior latex, flat, to CAN/CGSB 1.138-97 (MPI # 10).

2.3 INTERIOR SURFACES

- .1 Spray textured surfaces and plaster and gypsum board, gloss to match existing
- .2 Interior latex primer sealer to CAN/CGSB 1.119-2000 (MPI # 50)
- .3 Interior Latex:
 - .1 Eggshell to CAN/CGSB 1.209-2003 (MPI # 52)
 - .2 Flat to CAN/CGSB 1.100-99 (MPI # 53)
 - .3 Semigloss to CAN/CGSB 1.195-99 (MPI # 54)

3.0 EXECUTION

3.1 EXAMINATION

- .1 Carefully examine areas to be painted. Ensure surfaces are sound, dry, clean and free of oil, grease, wax, polish, dirt, mildew, form release agents, curing compounds, efflorescence, loose and flaking paint and other foreign substances.

3.2 PREPARATION

- .1 Protection
 - .1 Place drop cloths beneath all areas where the work will be executed.
 - .2 Mask off all adjoining areas and sections where paint is not to be applied.
- .2 Existing Wood Fascias
 - .1 Spot prime all exposed wood surfaces with an approved primer and let dry fully, unless manufacturer's instructions state otherwise.

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PAINTING

- .2 Clean and seal any cracks, joints, or knots with paintable single component urethane sealant.
- .3 Test moisture content of wood with an electronic moisture meter prior to painting. Do not apply paint if moisture content of wood exceeds 12 percent.
- .3 Interior Finishes
 - .1 Prepare plaster and wallboard surfaces to CGSB 85-GP-33M. Fill minor cracks with plaster patching compound.

3.3 APPLICATION

- .1 General
 - .1 Do not paint unless substrates and environmental conditions are acceptable for product application.
 - .2 Minimum painting standards shall be in accordance with *MPDA Specifications Manual*.
 - .3 Apply one complete coat prior to subsequent coat(s). Let each coat dry fully prior to applying subsequent coat, unless manufacturer's directions state otherwise.
 - .4 Sand and dust between each coat to remove defects visible from a distance of 3 feet.
 - .5 Apply paint with proper consistency to achieve smooth, uniform finish and to avoid material build-up, sags, and runs.
- .2 Existing Wood Boards: Apply 2 full coats of finish paint to visible surfaces.
- .3 Interior Finishes
 - .1 Formula 8 – for plaster and gypsum board walls, apply:
 - .1 1 coat interior latex primer-sealer to CAN/CGSB-1.119-2000.
 - .2 2 coats flat paint to CAN/CGSB-1.100-99.
 - .2 Formula 9 – for plaster and gypsum board ceilings, apply:
 - .1 1 coat interior latex primer-sealer to CAN/CGSB-1.119-2000.
 - .2 2 coats flat paint to CAN/CGSB-1.100-99.
 - .3 Formula 10 – for plaster and gypsum board ceilings, apply:
 - .1 1 coat interior latex primer-sealer to CAN/CGSB-1.119-2000.
 - .2 1 coat semigloss paint to CAN/CGSB-1.195-99.

END OF SECTION

INVITATION TO TENDER NO. PS20180020
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PART B - TERMS AND CONDITIONS OF ITT PROCESS

1.0 DEFINITIONS AND INTERPRETATION

1.1 Definitions

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

- (a) “City” means the City of Vancouver;
- (b) “Closing Time” has the meaning set out on the cover page of this ITT;
- (c) “Contract” means a contract substantially in the form of Part D - Form Agreement, to be entered into between the City and a successful Tenderer;
- (d) “Contractor” means a Tenderer, the Tender of which (or at least one offer contained within which) the City has accepted, and which Tenderer has consequently entered into a Contract;
- (e) “Consultant” means the architect, engineer or other professional consultant who will act as the City’s agent for the purpose of managing and administering a Contract, who may be an employee of the City or an independent consultant engaged by the City on its behalf;
- (f) “Drawings” means the portion of the Tender Documents consisting of the graphic and pictorial representations of the Work or Work requirements;
- (g) “Form of Tender” means the form of tender in Part C - Form of Tender to this ITT on which Tenderers are to complete their Tenders;
- (h) “GST” means the tax payable and imposed pursuant to Part IX of the *Excise Tax Act* (Canada), as amended or replaced from time to time;
- (i) “Information and Privacy Legislation” includes the *Freedom of Information and Protection of Privacy Act* (British Columbia) and the regulations thereunder;
- (j) “Losses” means, in respect of any matter, all:
 - (i) direct and indirect; and
 - (ii) consequential,

claims, demands, proceedings, losses, damages, liabilities, deficiencies, costs and expenses (including without limitation, all legal and other professional fees and disbursements, interest, penalties and amounts paid in settlement, whether from a third person or otherwise);
- (k) “Notice of Award” has the meaning set out in Part C - Form of Tender;
- (l) “Notice to Proceed” has the meaning set out in Part C - Form of Tender;

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- (m) "PST" means the provincial sales tax payable and imposed pursuant to the *Provincial Sales Tax Act* (British Columbia), as amended or replaced from time to time;
- (n) "Site" has the same meaning as "Place of the Work," as defined in the Form of Agreement;
- (o) "Specifications" means the portion of the Tender Documents consisting of the written requirements and standards for products, systems, workmanship, quality, and the services necessary for the performance of the Work;
- (p) "Tender" means a tender submitted to the City in response to this ITT;
- (q) "Tender Contract" means the contract between the City and each Tenderer governing the ITT process;
- (r) "Tender Documents" means the documents identified as such in Part A - Introduction;
- (s) "Tenderer" means an entity eligible to participate in this ITT process, or as used in Part C - Form of Tender, a particular such entity;
- (t) "Tender Price" means the amount stipulated by the Tenderer in the space provided therefor in the Form of Tender, including all applicable taxes, which price, for greater certainty, is the Tenderer's proposed Contract Price to complete all of the Work; and
- (u) "Work" means the total construction and related services required by the Tender Documents;

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

1.2 Interpretation

- (a) In the Tender Documents, any reference to the masculine, the feminine or the neuter includes the others unless the context requires otherwise. Also, any reference to the singular includes the plural where appropriate.
- (b) If there is a conflict between or among (i) the Specifications and Drawings and (ii) the other Tender Documents, the other Tender Documents shall prevail over the Specifications and Drawings.
- (c) In these Tender Documents, the word "should" and the terms "is asked to" and "are asked to" are used to denote actions or Tender inclusions that, while not mandatory, are strongly recommended. In contrast, the terms "will", "shall", "must", "is to", "are to", "is required to" and "are required to" are used to denote mandatory requirements of the ITT. If a Tenderer is uncertain as to whether or not a particular action or Tender inclusion is mandatory, the Tenderer should submit an inquiry to the Contact Person.

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2.0 SUBMISSION INSTRUCTIONS

- 2.1 Each Tenderer must complete its Tender on the Form of Tender and submit its Tender in accordance with the instructions set forth on the cover page of the ITT and elsewhere herein.
- 2.2 Any Tender received after the Closing Time may be returned unopened to the Tenderer.
- 2.3 Faxed or emailed Tenders and/or other documents will not be accepted.
- 2.4 Each Tender must be signed by an authorized signatory or authorized signatories of the Tenderer (as necessary for due execution on behalf of the Tenderer). Each Tender by a company or partnership should specify the full legal name of the legal entity submitting the Tender.
- 2.5 All blank spaces in the Form of Tender should be filled in and all schedules completed. Any failure by a Tenderer to complete the Form of Tender may result in preference being given to competing Tenderers. All prices and notations should be legibly written in a non-erasable medium. Erasures, interlineations or other corrections should be initialled by an authorized signatory of the Tenderer.
- 2.6 Subject to any alternatives or options in respect of which the City requests pricing or other information in a Schedule to the Form of Tender, Tenders are to be all inclusive and without qualification or condition.
- 2.7 The City may, at any time and for any reason, extend the Closing Time by means of a written amendment published on the City's website, as set out in Part A - Introduction.
- 2.8 A Tenderer that has already submitted a Tender may amend its Tender prior to the Closing Time: a) by submitting an amendment identifying a plus or minus variance to the Tenderer's Tender Price or the Tenderer's price for a subset of the Work (if, in the latter case, Section 1.0 of the Form of Tender requests that, in addition to offering a Tender Price for all of the Work, the Tenderer offer prices for subsets of the Work); or b) by sending in a completely new Tender, clearly indicating it replaces the previously submitted Tender. Any such revision must clearly identify the ITT number and the Closing Time. A Tender revision submitted as aforesaid shall effectively amend the Tender and the City shall only review and evaluate the Tender as amended.
- 2.9 The City will not be responsible for any cost incurred by any Tenderer in preparing a Tender.

3.0 BONDS

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

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

- 3.2 Each Tender must be accompanied by a "Consent of Surety", substantially in the form provided as a schedule to the Form of Tender, duly completed by a surety company authorized and licensed to carry on business in British Columbia.
- 3.3 The bid bonds of unsuccessful Tenderers will be returned to them as soon as possible after the Contract is awarded and the bid bond of the Tenderer to whom the award is made will be returned upon execution of the Contract, delivery of a performance bond for 50% of the Tender Price (or the aggregate tendered price for the subset(s) of the Work in respect of which a Notice of Award has been given) and a labour and material payment bond for 50% of such price, commencement of the Work, and compliance with any other conditions set out in the Form of Tender. The cost of all bond premiums must be included in the Tender Price.
- 3.4 All bonds must be issued by a surety company authorized and licensed to carry on business in British Columbia.

4.0 TENDER PRICE

- 4.1 Subject to any adjustment for changes to the Work, which is approved by the City in accordance with the Tender Documents or Contract Documents, the Tender Price shall be the maximum compensation owing to the Contractor for the Work (and each tendered price for any subset of the Work referred to in Section 1.0 of the Form of Tender (if applicable) shall be the maximum compensation owing to the Contractor for such subset of the Work) and the Contractor's compensation shall cover and include all profit and all costs of supervision, labour, material, equipment, overhead, financing and all other costs and expenses whatsoever incurred in performing the Work (or the relevant subset of the Work).
- 4.2 If unit prices or other price breakdowns are requested in a schedule to the Form of Tender, such information **must** be included in the Tender. Furthermore, if such unit prices or other price breakdowns are requested in a schedule to the Form of Tender, such amounts may be used to compute interim progress payments and will be reviewed by the City in its evaluation of Tenders; therefore Tenderers should ensure that such amounts accurately reflect their costs for each item. A Tenderer may be required to justify any submitted unit price or other price breakdown.
- 4.3 If an itemized breakdown of the Tender Price (or of the tendered price for any subset of the Work) is requested in a schedule to the Form of Tender, the City may delete any items in order to meet any budget limitation and award a Contract for only the remaining items to a Tenderer who is agreeable thereto.
- 4.4 If Section 1.0 of the Form of Tender requests that, in addition to offering a Tender Price for all of the Work, each Tenderer offer prices for subsets of the Work, then, each such offer made in respect of a subset of the Work by a Tenderer shall be irrevocable to the same extent as, and otherwise subject to all of the same terms and conditions as, the Tenderer's offer to complete all of the Work for the Tender Price. If Tenders are made in respect of subsets of the Work,

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the City may award a Contract for all of the Work to one Tenderer or it may award multiple Contracts to different Tenderers in respect of particular subsets of the Work. The City may also determine, in order to meet any budget limitation, to award Contract(s) only in respect of one or more, but not all, of the subsets of Work described in Section 1.0 of the Form of Tender. Tenderers are advised that the City is not bound to award any Contract to the Tenderer offering to complete the Work, or offering to complete any subset of the Work, for the lowest price. Without limiting the foregoing, the City may split the award of Contracts even though the aggregate Contract price is higher than any particular Tenderer's Tender Price.

5.0 ACCEPTANCE OF TENDERS

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

- (a) Tenderers are notified that the lowest or any Tender (or the lowest price offered for any particular subset of the Work, if applicable) need not necessarily be accepted and the City reserves the right to reject any and all Tenders at any time, or cancel the ITT process, without further explanation or to accept any Tender (or any offer made within a Tender) that is considered advantageous to the City.
- (b) Acceptance of any offer made within a Tender is contingent on funds being approved and a contract award being made by, or pursuant to authority delegated by, Vancouver City Council and the compliance of the Tenderer with the conditions required to be satisfied upon receipt of a Notice of Award.
- (c) Tenders which fail to conform to the Tender Documents may or may not be disqualified or rejected. The City may or may not waive any non-compliance with the Tender Documents, including any material non-compliance, irregularity or anomaly, and including any non-compliance as to the timing of delivery of anything required by the Tender Documents, and may at its sole discretion elect to retain for consideration Tenders which are non-conforming because they do not contain the content or form required by the Tender Documents or because they have not complied with the process for submission set out in this ITT.
- (d) Where the City is of the view, in its sole discretion, that there is an ambiguity or other discrepancy which cannot be discerned or resolved from examining the contents of a Tender, then whether or not such an ambiguity or discrepancy actually exists on the face of the Tender, the City may, prior to any Contract award, solicit clarification from the Tenderer or accept clarification from the Tenderer on any aspect of the Tender. Such clarification may include the acceptance of any further documents or information which will then form part of the Tender. The soliciting or accepting of such clarification (whether or not solicited) by the City will be without any duty or obligation of the City to advise any other Tenderers or to allow them to vary their tendered price(s) as a result of the acceptance of clarification from any one or more Tenderers and the City will have no liability to any Tenderer as a result of such acceptance of clarification.
- (e) The award of any Contract will be based on an evaluation of the Tenders by the City to determine which, in the City's opinion, offer the best overall value to the City. The City expects to place the greatest emphasis on price; however, the City may take into

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account other factors affecting value, including those concerning quality, service or sustainability, or Tenderers' past work, reputations or experience. The City may also focus, where relevant, on the overall net impact of a Tender (or an offer therein) on the finances of the City (including both capital and operating costs). Therefore, the City may accept a Tender other than the lowest Tender.

- (f) If the City determines that all Tender Prices are too high, all Tenders may be rejected.
- (g) The City may, prior to any Contract award, agree, with the Tenderer considered to provide best value or any one or more Tenderers, to certain changes to the scope of the Work or certain changes to Contract conditions, in each case without having any duty or obligation to advise any other Tenderers or to allow them to vary any tendered prices as a result of such changes, and the City will have no liability to any other Tenderer as a result of such changes. However, each Tender must be a tender in respect of the Work set forth herein, to complete that Work (or to complete subsets of that Work, if so specified in Section 1.0 of the Form of Tender) under an agreement in the form of the Form of Agreement included as Part D of the ITT, and not propose variations thereto.
- (h) Each Tenderer acknowledges and agrees that the City will not be responsible for Losses incurred by the Tenderer as a result of or arising out of submitting a Tender, or due to the City's acceptance or non-acceptance of its Tender, or any part thereof, or any breach by the City of the Tender Contract between the City and the Tenderer, or arising out of any Contract award not being made in accordance with the express or implied terms of the Tender Documents.
- (i) The City may award a Contract on the basis of policies and preferences not stated in the Tender Documents or otherwise than as stated in the Tender Documents.
- (j) Prior to any Contract award, a Tenderer may be required to demonstrate financial stability. Should the City so request, a Tenderer may be required to provide annual financial reports or a set of financial statements prepared by an accountant.
- (k) City guidelines or policies that may be applicable to the ITT will not give rise to legal rights on the part of any Tenderer, Contractor, subcontractor, supplier, or other person as against the City and will in no case create any liability on the part of the City. For certainty, the City's Procurement Policy, as amended or replaced from time to time, is now agreed to be an internal guideline document and creates no legal rights or obligations with respect to this ITT.
- (l) The City may reject any Tender by a Tenderer that has engaged in collusion with another Tenderer or otherwise attempted to influence the outcome of the ITT other than through the submission of its Tender.
- (m) The City may elect, in its sole discretion, to accept for consideration Tenders that contain conditions or qualifications that are in the nature of corrections of typos or resolutions of internal inconsistencies in this ITT or the Form of Agreement in Part D, or that represent immaterial changes to the Form of Agreement in Part D and do not consist of changes of substance or changes to allocations of risk, or with respect to the scope of any Work, that are for the avoidance of doubt only and do not suggest any

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deviation from the requirements of the ITT. This Section 5.1(m) is a reservation of rights for the benefit of the City and no Tenderer may rely on this paragraph to qualify its Tender.

6.0 AWARD OF CONTRACT

- 6.1 Award of a Contract will be subject to approval by, or pursuant to authority delegated by, Vancouver City Council and the Tenderer's compliance with the conditions required to be met upon receipt of the Notice of Award.
- 6.2 Any successful Tenderer will become a Contractor and will be required to sign a Contract with the City, subject to any amendments approved by the City in writing.

7.0 EXAMINATION OF TENDER DOCUMENTS

- 7.1 Each Tenderer should examine the Tender Documents and must also satisfy itself of the extent of the Work. Each Tenderer must make its own estimate of the facilities and difficulties attending the performance and the completion of Work.
- 7.2 No allowance will be made on behalf of a Contractor for any error, omission or negligence on the Contractor's part or for non-compliance with the requirements of the foregoing clause 7.1.

8.0 SITE EXAMINATION/PRE-SUBMISSION DUE DILIGENCE BY TENDERER

- 8.1 Tenderers should make a careful examination of the Site and investigate and satisfy themselves at their own risk and expense as to all matters relating to the nature and extent of Work, the means of access to the Site, the extent of required coordination with public use of adjacent areas, and any and all matters which are referred to in the Specifications and Drawings and other Tender Documents, or which are necessary for the full and proper completion of any Work or are required by the conditions under which it must be performed. No allowance will be made subsequently for any error, negligence, interpretation, or misinterpretation on a Contractor's part.
- 8.2 The City and the Consultant do not make any representations or warranties concerning the completeness or accuracy of Site and geotechnical information (if any) provided in or with the Tender Documents, and each Tenderer must evaluate such information as part of its overall assessment of actual Site conditions.
- 8.3 If any Tenderer wishes to evaluate any Site conditions, and, for that purpose, requires access or documents from the City beyond the access and documents already provided for in this ITT, the City encourages the Tenderer to submit a written request to the City as far in advance of the Closing Time as is possible. The City will then consider whether or not to facilitate the request. In response to such a request, the City may elect to, itself, undertake a particular study and distribute the results to all Tenderers.

9.0 INTERPRETATION AND CLARIFICATIONS

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

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that may be subsequently given in accordance with the Contract Documents, after award of a Contract.

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

10.0 PRODUCT APPROVAL

- 10.1 Wherever any material, machinery, equipment or fixture (any "Product") is specified or shown in the Tender Documents by reference to a proprietary item, product or model number, catalogue number, manufacturer or trade name or similar reference, each Tenderer obligates itself to submit its Tender and, if applicable, accept award of a Contract based upon the use of such Product. Use of any such reference in the Tender Documents is intended to establish the measure of quality which the City (or its Consultant) has determined to be requisite and necessary for the Work. Where two or more Products are shown or specified, the Contractor has the option of which to use.
- 10.2 For approval of Products other than those specified, a Tenderer should submit a request in writing to the City at least five business days prior to the Closing Time. Requests must clearly define and describe the Product for which approval is requested. Requests should be accompanied by manufacturer's literature, specifications, drawings, cuts, performance data or other information necessary to completely describe the items. Approval by the City will only be in the form of an addendum to the Specifications issued by the City.
- 10.3 Approvals of Products, as noted in clause 10.2 above, shall only be deemed effective insofar as the Products conform to the Specifications.

11.0 INSURANCE

- 11.1 Each Tenderer should ensure that it can maintain the insurance described in the Form of Agreement (Part D).
- 11.2 The Tenderer should complete and submit the "Certificate of Existing Insurance" attached as a Schedule to the Form of Tender, together with the "Undertaking of Insurance" attached as a Schedule to the Form of Tender.
- 11.3 Following Contract award, a successful Tenderer will be required to complete a certificate[s] of insurance for the Work (or the particular subset of the Work in respect of which the Contract is made), in the form[s] attached as a schedule to the Form of Tender.

12.0 WORKSAFEBBC

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

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13.0 LABOUR RATES AND EQUIPMENT

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

14.0 LISTS OF SUBCONTRACTORS AND SUPPLIERS

- 14.1 Tenderers should provide, if requested in a schedule to the Form of Tender, lists of proposed subcontractors and suppliers, specifying the name and address of, and the portion of the Work to be completed by, or the equipment or materials to be supplied by, each proposed subcontractor or supplier.
- 14.2 The City reserves the right to object to any of the proposed subcontractors or suppliers listed in a Tender. If the City objects to a listed subcontractor or supplier, then the City will permit a Tenderer to propose a substitute subcontractor or supplier acceptable to the City. A Tenderer will not be required to make such a substitution and, if the City objects to a listed subcontractor or supplier, the Tenderer may, rather than propose a substitute subcontractor or supplier, consider its Tender rejected by the City and, by written notice, withdraw its tender. The City shall, in that event, return the Tenderer's bid security.

15.0 TAXES AND FEES

- 15.1 The successful Tenderer will be required to obtain and pay for any applicable municipal, provincial and federal permits and licences necessary for the proper completion of the Work. The City will not be liable in any manner for the same, and the successful Tenderer agrees to indemnify and save the City harmless from and against all claims and Losses in relation to obtaining and paying for any applicable municipal, provincial and federal permits and licences necessary for the proper completion of the Work.
- 15.2 Each Tenderer's Tender Price (and each other price offered by the Tenderer in its Tender, if applicable) must, unless otherwise expressly stated, be inclusive of all applicable municipal, provincial, federal and other taxes, and all customs and excise duties and other assessments and charges, including sales taxes assessed upon the sale of goods and services to the City under the Contract, and the successful Tenderer agrees to indemnify and save the City harmless from and against all claims which shall be made with respect thereto.

16.0 NON-RESIDENT WITHHOLDING TAX

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

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17.0 NO CLAIM AGAINST THE CITY

- 17.1 The Tenderer acknowledges and agrees that the City will not be responsible for any Losses incurred by the Tenderer, including, without limiting the generality of the foregoing, any Losses incurred by the Tenderer directly or indirectly caused by any act or omission of the City or breach of any agreement or duty by the City, express or implied, and by submitting a Tender each Tenderer shall be deemed to have agreed that it has no claim whatsoever.
- 17.2 The Tenderer now indemnifies and will protect and save the City and any of its employees, advisors or representatives (including the Consultant) harmless from and against all Losses, in respect of any claim or threatened claim by any of its subcontractors, or materials or equipment suppliers alleging or pleading:
- (a) a breach of the Tender Contract by the City or any of its employees, advisors or representatives (including the Consultant);
 - (b) an unintentional tort, of the City or any of its employees, advisors or representatives (including the Consultant), occurring in the course of conducting this ITT; or
 - (c) liability on any other basis related to the ITT or the Tender Contract.

18.0 DISPUTE RESOLUTION

- 18.1 Any dispute relating in any manner to this ITT, except only disputes arising between the City and any Tenderer to whom the City has made an award of a Contract, which arise under such Contract, will be resolved by arbitration in accordance with the *Commercial Arbitration Act* (British Columbia), amended as follows:
- (a) The arbitrator will be selected by the City's Director - Supply Chain Management;
 - (b) Sections 17.1 and 17.2 above will:
 - (i) bind the arbitrator, the Tenderer and the City; and
 - (ii) survive any and all awards made by the arbitrator; and
 - (c) The Tenderer will bear all costs of the arbitration.

19.0 CONFIDENTIALITY AND PRIVACY

- 19.1 Each Tender, once submitted to the City, will be held in accordance with the City's role as a public body required under Information and Privacy Legislation to protect or disclose certain types of records according to certain statutory rules. Each Tender, upon submission to the City, will be received and held in confidence by the City, unless and to the extent that it is or must be disclosed pursuant to Information and Privacy Legislation or other applicable legal requirements, and except that the City may publicly disclose information about or from Tenders, including without limitation names and prices, in the course of publicly reporting to the Vancouver City Council about the ITT.
- 19.2 If unsuccessful, a Tenderer, at the City's request, shall destroy or return all copies and originals (in any format or medium) of the Tender Documents.

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
PART B - TERMS AND CONDITIONS OF ITT PROCESS

20.0 RELEASE OF INFORMATION RESTRICTED

- 20.1 The release of information about Tenders is restricted. Tenderers may attend the opening and registering of Tenders (referred to on the cover page of this ITT) in order to obtain information concerning the names of the other Tenderers who have submitted a Tender and the Tender Price (and tendered prices for subsets of the Work, if referred to in Section 1.0 of the Form of Tender) shown on each Form of Tender. However, no other information is anticipated to be disclosed by the City.

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 PART C - FORM OF TENDER

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

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
PART C - FORM OF TENDER

1.0 TENDER PRICE AND SCHEDULE

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

ITT NO. <u>PS20180020</u>
The Tender Price (including all costs, taxes and fees)(as per Schedule A), is _____ dollars and _____ cents (\$_____)
The Tender Price <u>includes all PST and GST.</u>

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

- (a) Work will begin by June 4, 2018, subject to the City issuing a Notice to Proceed.
- (b) Substantial performance of the Work will occur by August 31, 2018.
- (c) Total performance of the Work will occur by September 14, 2018.

2.0 ELECTRONIC PAYMENTS ACKNOWLEDGEMENT

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

3.0 IRREVOCABILITY; NOTICE OF AWARD

The Tenderer agrees that each offer made by the Tenderer herein will be irrevocable and open for acceptance by the City for a period of ninety (90) calendar days commencing on the Closing Time, even if an offer of another Tenderer is accepted by the City. If within this period the City delivers a written notice by which the City accepts an offer of the Tenderer (a "Notice of Award"), the Tenderer will, within ten (10) Working Days (as defined in CCDC 2) of the receipt of the Notice of Award, deliver to the City:

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

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
PART C - FORM OF TENDER

- (b) a detailed construction schedule consistent with the preliminary construction schedule included in this Tender, which indicates the timing of the major activities of the relevant Work and provides sufficient detail of the critical events and their inter-relationship to demonstrate such Work will be performed by the relevant completion date stated in this Tender;
- (c) a detailed traffic management plan addressing vehicular and pedestrian movement, safety and access with specific details of the methods, signage and materials used to maintain Site operations and access to staff and public users of the Site;
- (d) a detailed Site-specific safety and health plan addressing as a high-level overview the health and safety issues including, but not limited to hazards, mitigation measures, site orientations, safety meetings, first aid attendant requirements, and training requirements and record keeping;
- (e) a WorkSafeBC number and a "clearance letter" confirming that the Tenderer is in WorkSafeBC compliance;
- (f) a valid City of Vancouver business licence;
- (g) a completed Contractor's Pre-Contract Hazard Assessment Form (in the form of Schedule 9 to the Form of Agreement);
- (h) banking details to support payments by Electronic Funds Transfer (EFT); and
- (i) a completed and signed certificate of insurance (in the form attached as a schedule to this Form of Tender) indicating that all of the insurance coverage required by the Contract is in place.

4.0 NOTICE TO PROCEED

The Tenderer agrees that upon the City's receipt and acceptance (in the City's discretion) of the required submissions listed above, the Tenderer will, within two (2) Working Days, execute and return to the City the Contract and the other Contract Documents requiring execution (in each case, as prepared by the City for execution) and, upon the City's receipt and acceptance thereof, the City may deliver to the Tenderer a "Notice to Proceed", and the Tenderer will:

- (a) commence the relevant Work within two (2) Working Days of the receipt of the Notice to Proceed or such longer time as may be otherwise specified in the Notice to Proceed; and
- (b) issue, post, and copy the City on the "Notice of Project" as and when required under section 20.2 of the *Occupational Health & Safety Regulation* (BC Regulation 296/97).

5.0 CONDITIONS

- (a) The Tenderer agrees that if the Tenderer receives a Notice of Award or a Notice to Proceed and fails or refuses to comply with the requirements stated in the foregoing clause 3.0 or clause 4.0, as the case may be, then such failure or refusal will be

**INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
PART C - FORM OF TENDER**

deemed to be a repudiation of the Tender Contract and refusal to enter into the relevant Contract and the City may, on written notice to the Tenderer, award the Contract to another party. It is further agreed that, as full compensation on account of damages suffered by the City because of such failure or refusal, the bid security shall be forfeited to the City in the amount equal to the lesser of:

- (i) the face value of the bid security; and
 - (ii) the amount by which the Tender Price is less than the amount for which the City contracts with another party to perform the Work.
- (b) The lowest or any submitted tender will not necessarily be accepted in relation to all or any of the Work. The City reserves the right to reject this Tender at any time without further explanation or to accept any Tender considered advantageous to the City.
- (c) The schedules attached to this Form of Tender form an integral part of the same.

6.0 ADDENDA, AMENDMENTS AND QUESTIONS AND ANSWERS

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

Addendum No.
Amendment No.
Questions and Answers No.

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

7.0 CITY PRE-CONTRACT HAZARD ASSESSMENT

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
PART C - FORM OF TENDER

The Tenderer acknowledges receipt of the completed City Pre-Contract Hazard Assessment (Schedule 8 of Part D - Form of Agreement), subject to GC 9.4.12, Schedule 1 of Part D - Form of Agreement.

8.0 CERTIFICATION

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

9.0 LABOUR

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

10.0 CONTRACT TERMS IN THE ITT

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

SIGNED on behalf of the Tenderer this _____ day of _____ 20____ by _____ the _____ duly authorized signatory or signatories of the Tenderer:

Per: _____

Name and Title: _____

Per: _____

Name and Title: _____

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

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

Witness signature

Witness name

Witness address

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE "A" (PART C - FORM OF TENDER)

SCHEDULE "A"

SCHEDULE OF QUANTITIES AND PRICES

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

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE "A" (PART C - FORM OF TENDER)

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

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

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

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

Item	Description	Amount (including PST)
1.	Mobilization / Demobilization	\$
2.	Cedar Shake Roof Replacement with an Asphalt Shingle Assembly and All Related Metal Flashings and Roof Accessories	\$
3.	Skylight Installation	\$
4.	Wall Cladding Replacement (allow for 3000 Square feet)	\$
5.	HAZMAT Abatement	\$
6.	Other (contingency allowances and any other work or costs not reflected in the items above but required to complete the Work covered by the Tender Documents)	\$
19.	Subtotal (including all PST)	\$
20.	GST (5%)	\$
21.	Tender Price (including all costs, taxes and fees)	\$ (including PST and GST)

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE "A" (PART C - FORM OF TENDER)

List of Unit Prices for Any Additional Work

These unit prices will be used for changing quantities from those indicated in the Tender Documents or Contract Documents upon written instruction from the City. The unit prices will be applied in accordance with PART 6 CHANGES IN THE WORK of the General Conditions of the Stipulated Price Contract (CCDC 2 - 2008), as modified by the Supplementary General Conditions (Schedule 1 to Part D - Form of Agreement). The prices should include (i) all labour, material and other costs, (ii) overhead and profit, (iii) PST, and (iv) all other taxes, duties, assessments, charges and fees, *except for GST*.

Item	Description	Unit	Unit Price (including PST)
1.	Replace Wood Decking	SF	\$
2.	Repair, Replace Wood Studs and Framing	SF	\$

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE "A" (PART C - FORM OF TENDER)

Alternate Prices

These alternate prices will be used to change the scope of the Work upon written instruction from the City. The alternate prices will be applied in accordance with PART 6 CHANGES IN THE WORK of the General Conditions of the Stipulated Price Contract (CCDC 2 - 2008), as modified by the Supplementary General Conditions (Schedule 1 to Part D - Form of Agreement). The prices should include (i) all labour, material and other costs, (ii) overhead and profit, (iii) PST, and (iv) all other taxes, duties, assessments, charges and fees, *except for GST*.

Description	Price Change to Tender Price	
	Value to Add to Tender Price (inc. PST)	Value to Deduct from Tender Price (incl. PST)
1. Provide a price for the cost premium to include a CEDAR SHAKE roof assembly in place of the asphalt shingle assembly.	\$	N/A
2. Provide a price for the cost premium to include a STANDING SEAM METAL ROOF assembly in place of the asphalt shingle assembly.	\$	N/A
3. Provide a price for the cost premium to include a triple glazed skylight system for all four skylights in place of the double glazed system in the base bid.	\$	N/A
4. Provide a price for the cost premium to replace TWO GLULAM BEAMS at the lobby of the community centre. Assume Glulam beams to match existing exterior grade.	\$	N/A
5. Provide a price for the cost premium to include the CLADDING REPLACEMENT at all other sections of the walls affected by the pitched roof replacement but not indicated in the project drawings. Include commercial building wrap at areas where building paper is nonexisting.	\$	N/A

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE "B" (PART C - FORM OF TENDER)

SCHEDULE "B"

PRELIMINARY CONSTRUCTION SCHEDULE

The Work is expected to begin the week of **June 4, 2018** and substantial performance is targeted for **August 31, 2018**. Please clearly define time requirements for project milestones identified in the table below. If necessary, please add an attachment to this Schedule.

TABLE 1 - PROJECT MILESTONES	
Milestone	Date of Completion
Project Start/Mobilization	June 4, 2018
Substantial Completion	August 31, 2018
Total Completion	September 14, 2018

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20180020, FORM OF TENDER - SCHEDULE B", and is to be signed by the Tenderer.

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE "C" (PART C - FORM OF TENDER)

2.0 A hazardous materials survey has been performed at the Site and is attached. The following hazardous materials have been identified in the following areas:

- Lead paint on the exterior of the building in various areas as per the hazardous material.

Hazardous materials will be disturbed during the re-roofing, skylight replacement and cladding replacement work.

The Tenderer must use one of the City's pre-qualified hazardous materials abatement contractors for any abatement work. The City will retain a pre-qualified hazardous materials consultant to oversee the abatement contractor's work. As such, the Tenderer **must** propose to use one or more of the following pre-qualified hazardous materials consultants and abatement contractors for the abatement work and such consultants(s)/contractor(s) **must** be named in the table of subcontractors above.

Hazardous materials abatement must be completed in accordance with the Occupational Health and Safety Regulation and hazardous waste disposed of in accordance with the Environmental Management Act. A completion report including all disposal documentation will be completed by the consultant and provided to the City's Hazardous Materials Team upon project completion.

IF THE TENDERER DOES NOT PROPOSE A PRE-QUALIFIED ABATEMENT CONTRACTOR AND/OR CONSULTANT, ITS TENDER WILL BE DEEMED NON-COMPLIANT AND WILL NOT BE CONSIDERED.

PRE-QUALIFIED ABATEMENT CONTRACTORS (in alphabetical order):

Company	Key contact/Email/Phone
Actes Environmental Limited	Michael Fleming, Michael@actesenvironmental.com 604-990-4258
Enviro-Vac	Chris Mitsche, chris@envirovac.com 888-296-2499
Nucor Environmental Solution Limited	Jim Dumelie, jimd@nucorenv.ca 604 521 2214
Phoenix Enterprise	Richard Purdy, rpurdy@phoenixenterprisesltd.com 604-594-0224
Pro Active Hazmat and Environmental	Sheldon White, Sheldonw@proactivehazmat.com 778-298-2268
Quantum Murray	Gustavo Perez, gperez@qmlp.ca 604 270 7388

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE "D" (PART C - FORM OF TENDER)

SCHEDULE "D"

TENDERER'S EXPERIENCE WITH RELATED WORK

Tenderers should confirm that they and their proposed subcontractors have the required experience to perform the Work. Each Tenderer should:

1. Complete and submit a CCDC 11 (latest) issued by the Canadian Construction Documents Committee;
2. Provide information concerning completed projects in the previous five (5) years in the City of Vancouver and for other civic clients, in particular where such projects were of similar scope and size to the Work, for each of itself and its proposed subcontractors, including the following information:

Reference #1

Description of Project:

Location of Project:

Contract Value:

\$ _____ (Cdn. Dollars)

Start and Completion Dates:

Completed on Schedule?

Yes No (Circle Correct Response)

Name of Contract City:

Name of Project Reference:

Current Telephone Number and E-mail of Project Reference:

Names of Key Personnel and Subcontractors:

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE "D" (PART C - FORM OF TENDER)

Reference #2

Description of Project:

Location of Project:

Contract Value:

\$ _____ (Cdn. Dollars)

Start and Completion Dates:

Completed on Schedule?

Yes No (Circle Correct Response)

Name of Contract City:

Name of Project Reference:

Current Telephone Number and E-mail of Project Reference:

Names of Key Personnel and Subcontractors:

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE "D" (PART C - FORM OF TENDER)

Reference #3

Description of Project:

Location of Project:

Contract Value:

\$ _____ (Cdn. Dollars)

Start and Completion Dates:

Completed on Schedule?

Yes No (Circle Correct Response)

Name of Contract City:

Name of Project Reference:

Current Telephone Number and E-mail of Project Reference:

Names of Key Personnel and Subcontractors:

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20180020, FORM OF TENDER - SCHEDULE D", and is to be signed by the Tenderer.

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE "E" (PART C - FORM OF TENDER)

SCHEDULE "E"

FORCE ACCOUNT LABOUR & EQUIPMENT RATES

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

TABLE 1 - SCHEDULE OF LABOUR RATES

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

TABLE 2 - SCHEDULE OF EQUIPMENT RATES

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

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

Additional pages may be attached to this page. Each such additional page is to be clearly marked "ITT No. PS20180020, FORM OF TENDER - SCHEDULE E", and is to be signed by the Tenderer.

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE "F" (PART C - FORM OF TENDER)

SCHEDULE "F"

FORM OF CONSENT OF SURETY

PROJECT: _____

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

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

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

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE "G" (PART C - FORM OF TENDER)

SCHEDULE "G"

SUSTAINABILITY

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

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

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

Item	Type of Product/Equipment	Disposal Method

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

Item	Carbon Emission Risk	Solution to Reduce Carbon Emissions

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE "H" (PART C - FORM OF TENDER)

SCHEDULE "H"

CERTIFICATE OF INSURANCE

(TO BE COMPLETED IF AWARDED THE CONTRACT)



LIABILITY INSURANCE CERTIFICATE



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

1. **THIS CERTIFICATE IS ISSUED TO:** City of Vancouver and its Board of Parks & Recreation
453 West 12th Avenue, Vancouver, BC, V5Y 1V4

and certifies that the insurance policy (policies) as listed herein has/have been issued to the Named Insured and is/are in full force and effect as of the effective date of the agreement described below.

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

BUSINESS TRADE NAME OR DOING BUSINESS AS

BUSINESS ADDRESS

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

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

Including the following coverages:

- Personal Injury
- Cross Liability or Severability of Interest
- Employees as Additional Insureds
- Blanket Contractual Liability
- Broad Form Products and Completed Operations
- Broad Form Property Damage including Loss of Use
- Non-Owned Auto Liability

Check Additional Extensions where applicable and included:

- Work below ground level over 3 metres
- Excavation, shoring, underpinning, pile driving or caisson
- Demolition, removal or weakening of support of property
- Blasting
- Operation of hoist or attached machinery
- 24 months Completed Operations

INSURER: _____ POLICY NUMBER: _____

POLICY PERIOD: FROM: _____ To: _____

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

Per Occurrence \$ _____ Aggregate \$ _____

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

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

INSURER: _____

LIMITS OF LIABILITY:

POLICY NUMBER: _____

Combined Single Limit: \$ _____

POLICY PERIOD: From _____ to _____

If vehicles are insured by ICBC, complete and provide Form APV-47.

5. **UMBRELLA OR** **EXCESS LIABILITY INSURANCE**

Limits of Liability (Bodily Injury and Property Damage Inclusive) -

INSURER: _____

Per Occurrence \$ _____

POLICY NUMBER: _____

Aggregate \$ _____

POLICY PERIOD: From _____ to _____

Self-Insured Retention \$ _____

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

7. **POLICY PROVISIONS**

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

- a) *The City of Vancouver and its Board of Parks & Recreation, their officials, officers, employees, servants and agents have been added as Additional Insureds with respect to liability arising out of the operation of the Named Insured pursuant to the governing contract, agreement, lease, permit or license.*
- b) *The insurance shall not be cancelled or endorsed to reduce Limits of Liability without thirty (30) days notice in writing by Registered Mail to the City of Vancouver; the exception is cancellation for non-payment of premiums in which case the applicable statutory conditions will apply.*
- c) *The insurance policy (policies) listed herein shall be primary with respect to liability arising out of the operation of the Named Insured. Any insurance or self-insurance maintained by the City of Vancouver and its Board of Parks & Recreation shall be in excess of this insurance and shall not contribute to it.*

SIGNED BY THE INSURER OR ITS AUTHORIZED REPRESENTATIVE

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

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE "1" (PART C - FORM OF TENDER)

SCHEDULE "1"

CERTIFICATE OF EXISTING INSURANCE

(TO BE COMPLETED AND SUBMITTED WITH TENDER)



**CERTIFICATE OF EXISTING INSURANCE
TO BE COMPLETED AND APPENDED TO THE PROPOSAL/TENDER**



Section 2 through 8 – to be completed and executed by the Insurer or its Authorized Representative

1. **THIS CERTIFICATE IS ISSUED TO:** City of Vancouver as represented by its Board of Parks & Recreation
2099 Beach Avenue, Vancouver, B.C. V6G 1Z4
and certifies that the insurance policy (policies) as listed herein has/have been issued to the Named Insured and is/are in full force and effect.

2. **NAMED INSURED** *(must be the same name as the proponent/bidder and is either an individual or a legally incorporated company)*

BUSINESS TRADE NAME or DOING BUSINESS AS

BUSINESS ADDRESS

DESCRIPTION OF OPERATION

3. **PROPERTY INSURANCE (All Risks Coverage including Earthquake and Flood)**
 INSURER _____ **Insured Values (Replacement Cost) -**
 TYPE OF COVERAGE _____ Building and Tenants' Improvements \$ _____
 POLICY NUMBER _____ Contents and Equipment \$ _____
 POLICY PERIOD From _____ to _____ Deductible Per Loss \$ _____

4. **COMMERCIAL GENERAL LIABILITY INSURANCE (Occurrence Form)**
 Including the following extensions: INSURER _____
 Personal Injury POLICY NUMBER _____
 Property Damage including Loss of Use POLICY PERIOD From _____ to _____
 Products and Completed Operations **Limits of Liability (Bodily Injury and Property Damage Inclusive) -**
 Cross Liability or Severability of Interest Per Occurrence \$ _____
 Employees as Additional Insureds Aggregate \$ _____
 Blanket Contractual Liability All Risk Tenants' Legal Liability \$ _____
 Non-Owned Auto Liability Deductible Per Occurrence \$ _____

5. **AUTOMOBILE LIABILITY INSURANCE** for operation of owned and/or leased vehicles
 INSURER _____ **Limits of Liability -**
 POLICY NUMBER _____ Combined Single Limit \$ _____
 POLICY PERIOD From _____ to _____ *If vehicles are insured by ICBC, complete and provide Form APV-47.*

6. **UMBRELLA OR** **EXCESS LIABILITY INSURANCE** **Limits of Liability (Bodily Injury and Property Damage Inclusive) -**
 INSURER _____ Per Occurrence \$ _____
 POLICY NUMBER _____ Aggregate \$ _____
 POLICY PERIOD From _____ to _____ Self-Insured Retention \$ _____

7. **PROFESSIONAL LIABILITY INSURANCE** **Limits of Liability**
 INSURER _____ Per Occurrence/Claim \$ _____
 POLICY NUMBER _____ Aggregate \$ _____
 POLICY PERIOD From _____ to _____ Deductible Per Occurrence/Claim \$ _____

If the policy is in a "CLAIMS MADE" form, please specify the applicable Retroactive Date: _____

8. **OTHER INSURANCE** **Limits of Liability**
 TYPE OF INSURANCE _____ Per Occurrence \$ _____
 INSURER _____ Aggregate \$ _____
 POLICY NUMBER _____ Deductible Per Loss \$ _____
 POLICY PERIOD From _____ to _____
Limits of Liability
 TYPE OF INSURANCE _____ Per Occurrence \$ _____
 INSURER _____ Aggregate \$ _____
 POLICY NUMBER _____ Deductible Per Loss \$ _____
 POLICY PERIOD From _____ to _____

SIGNED BY THE INSURER OR ITS AUTHORIZED REPRESENTATIVE

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

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE "J" (PART C - FORM OF TENDER)

SCHEDULE "J"

UNDERTAKING OF INSURANCE

To: City of Vancouver

Re: PS20180020 - CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT CHAMPLAIN
HEIGHTS COMMUNITY CENTRE

Dear Sirs:

We, the undersigned have completed, signed and attached the "Certificate of Existing Insurance" enclosed with this undertaking and now also do hereby undertake and agree that if _____ (the "Tenderer") is awarded a Contract, we will insure the Contractor in accordance with the requirements of the Contract, the form of which is included in the Tender Documents and will form part of the Contract Documents.

Dated at _____, British Columbia, this _____ day of _____ 20____.

By: _____

Title: _____

Full Corporate Name of Insurer:

The "Certificate of Existing Insurance" provided with the ITT should be completed and signed and enclosed with this schedule, both of which are to be signed by the Insurance Company or an authorized broker on behalf of the Insurance Company. A SEPARATE FORM (AND CERTIFICATE OF EXISTING INSURANCE) SHOULD BE SIGNED FOR EACH POLICY IF THE TENDERER HAS MORE THAN ONE INSURER OR BROKER FOR ITS POLICIES.

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE "K" (PART C - FORM OF TENDER)

Schedule "K"
 DECLARATION OF SUPPLIER CODE OF CONDUCT COMPLIANCE

Purpose: All proposed suppliers are to complete and submit this form to certify compliance with the supplier performance standards set out in the Supplier Code of Conduct.

The City of Vancouver expects each supplier of goods and services to the City to comply with the supplier performance standards set out in the City's Supplier Code of Conduct (SCC) <http://vancouver.ca/policy_pdf/AF01401P1.pdf>. The SCC defines minimum labour and environmental standards for City suppliers and their subcontractors.

Suppliers are expected to comply with the aforementioned standards upon submitting a tender, proposal, application, expression of interest or quotation to the City, or have a plan in place to comply within a specific period of time. The City reserves the right to determine an appropriate timeframe in which suppliers must come into compliance with these standards. To give effect to these requirements, an authorised signatory of each proposed vendor must complete the following declaration and include this declaration with its submission:

As an authorised signatory of _____ (*vendor name*), I declare that I have reviewed the SCC and to the best of my knowledge, _____ (*vendor name*) and its proposed subcontractors have not been and are not currently in violation of the SCC or convicted of an offence under national and other applicable laws referred to in the SCC, other than as noted in the table below (*include all violations/convictions that have occurred in the past three years as well as plans for corrective action*).

Section of SCC / title of law	Date of violation /conviction	Description of violation / conviction	Regulatory / adjudication body and document file number	Corrective action plan

I understand that a false declaration and/or lack of a corrective action plan may result in no further consideration being given to the submission of _____ (*vendor name*).

Signature: _____

Name and Title: _____

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE "L" (PART C - FORM OF TENDER)

SCHEDULE "L"

CONFLICT OF INTEREST DECLARATION

NO CONFLICT OF INTEREST / NO COLLUSION / NO LOBBYING

Declaration as to no Conflict of Interest in ITT

- (a) The Tenderer confirms and warrants that there is no officer, director, shareholder, partner, employee or contractor of the Tenderer or of any of its proposed subcontractors, or any other person related to the Tenderer's or any proposed subcontractor's organization (a "person having an interest") or any spouse, business associate, friend or relative of a person having an interest who is:
- a. an official or employee of the City; or
 - b. related to or has any business or family relationship with an elected official or employee of the City,
- in each case, such that there could be any conflict of interest or any appearance of conflict of interest in the evaluation or consideration of the Tender by the City, and, in each case, except as set out, in all material detail in the section titled "Disclosure" in this Schedule "L".
- (b) The Tenderer confirms and warrants that there is no person having an interest (as defined above) who is a former official, former employee or former contractor of the City and who has non-public information relevant to the ITT obtained during his or her employment or engagement by the City, except as set out, in all material detail, in the section titled "Disclosure" in this Schedule "L".

Declaration as to No Conflict of Interest Respecting Proposed Supply

The Tenderer confirms and warrants that neither the Tenderer nor any of its proposed subcontractors is currently engaged in supplying (or is proposing to supply) goods or services to a third party such that entering into an agreement with the City in relation to the subject matter of the ITT would create a conflict of interest or the appearance of a conflict of interest between the Tenderer's duties to the City and the Tenderer's or its subcontractors' duties to such third party, except as set out, in all material detail, in the section titled "Disclosure" in this Schedule "L".

Declaration as to No Collusion

The Tenderer confirms and warrants that:

- (a) the Tenderer is not competing within the ITT with any entity with which it is legally or financially associated or affiliated; and
- (b) the Tenderer is not cooperating in any manner in relation to the ITT with any other tenderer responding to the ITT,

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE "L" (PART C - FORM OF TENDER)

in each case, except as set out, in all material detail, in the section titled "Disclosure" in this Schedule "L".

Declaration as to Lobbying

The Tenderer confirms and warrants that:

- (a) neither it nor any officer, director, shareholder, partner, employee or agent of the Tenderer or any of its proposed subcontractors is registered as a lobbyist under any lobbyist legislation in any jurisdiction in Canada or in the United States of America; and
- (b) neither it nor any officer, director, shareholder, partner, employee or agent of the Tenderer or any of its proposed subcontractors has engaged in any form of political or other lobbying whatsoever with respect to the Tender or sought, other than through the submission of the Tender, to influence the outcome of the ITT,

in each case, except as set out, in all material detail, in the section titled "Disclosure" in this Schedule "L".

Disclosure [Add disclosure here.]

(NOTE: The City will evaluate each matter disclosed to determine whether and to what extent the Tenderer can be given consideration in the ITT in light of the particular matter.)

THE TENDERER HAS EXECUTED AND DELIVERED THIS DECLARATION AS AN INTEGRAL PART OF ITS TENDER IN THE MANNER AND SPACE SET OUT BELOW:

Signature of Authorized Signatory for the Tenderer

Date

Name and Title

Signature of Authorized Signatory for the Tenderer

Date

Name and Title

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE "M" (PART C - FORM OF TENDER)

SCHEDULE "M"
PRIME CONTRACTOR AGREEMENT FORM
(TO BE COMPLETED AND SUBMITTED WITH TENDER)

PRIME CONTRACTOR AGREEMENT FORM

1.0 DEFINITIONS

- a) **"OH&S Regulation"** means the Occupational Health & Safety Regulation (British Columbia Regulation 296/97) enacted pursuant to the WCA, and any successor legislation, all as such Regulation is amended or re-enacted from time to time;
- b) **"Owner"** means City of Vancouver;
- c) **"Place of the Work"** means the work site at **Champlain Heights Community Centre, 3350 Maquinna Drive, Vancouver, British Columbia**;
- d) **"Prime Contractor"** means the Contractor, who is designated pursuant to Article 3 below by the Owner to be the Prime Contractor for the Project with respect to occupational health and safety for the purposes of WCB Legislation;
- e) **"Project"** means **PS20180020 - Contractor for Roof and Skylight Replacement at Champlain Heights Community Centre**, as contemplated by the Contract Documents, and includes all the Work;
- f) **"WCA"** means the *Workers Compensation Act*, R.S.B.C. 1996, Chapter 492, and any successor legislation, as such Act is amended or re-enacted from time to time;
- g) **"WCB"** means the Worker's Compensation Board of British Columbia; and
- h) **"WCB Legislation"** means the WCA and all regulations thereto including the OH&S Regulation, and all rules, regulations and requirements of WorkSafeBC, and any successor legislation, rules, regulations and requirements, all as amended or re-enacted from time to time; and
- i) **"WorkSafeBC"** means the British Columbia Provincial governmental organization by that name which is responsible, inter alia, for promoting workplace health and safety for the workers and employers of British Columbia, and for working with the affected parties to provide return-to-work rehabilitation, compensation, health care benefits and a range of other services, in the event of work-related injuries or diseases suffered by workers in British Columbia.

All other capitalized terms used in this Prime Contractor Agreement have the meanings given to them in the Contract Documents of which this Prime Contractor Agreement is a part, as applicable.

2.0 PRIME CONTRACTOR'S RESPONSIBILITIES

Proof of Qualification to act as Prime Contractor

- The Prime Contractor is to provide a current copy of its WorkSafeBC "Clearance Letter", a signed copy of this Prime Contractor Agreement and all other documents requested by the Owner prior to commencement of the Work.
- The Prime Contractor is to notify the Owner of any changes of status with WorkSafeBC or the WCB during the course of the Project.

After the Prime Contractor has been designated and before Work has commenced, the Prime Contractor shall:

- Conduct all necessary and appropriate inquiries of all relevant Owner staff and records in order to verify in writing to the Owner that the Owner has given to the Contractor all information known to the Owner that is necessary to identify and eliminate or control hazards to the health and safety of persons at the Place of the Work.
- Conduct a pre-contract hazard assessment and carefully review, and plan to address, all hazards identified in that assessment.
- Inform all other employers whose employees are providing services for the Project at the Place of the Work, that it is the Prime Contractor.
- Establish and maintain a system or process to ensure all employers, employees and visitors at/to the Place of the Work comply with the WCA, the OH&S Regulation and the requirements of WorkSafeBC. The Prime Contractor will thus be responsible for site orientation and hazard communication.
- Review and complete a "Pre-Job Meeting Form" if the Owner requests.
- For construction projects, post the Notice of Project on the Place of the Work and deliver a copy to WorkSafeBC at least twenty-four (24) hours before construction commences.
- Comply with Section 20.2 of the OH&S Regulation in respect of the Notice of Project.
- Identify and set expectations for each subcontractor's safety contact.
- Coordinate all safety-related activities, from site orientations to safety committee meetings and toolbox talks, to inspections and incident reviews.
- Inform employers and workers of the workplace hazards associated with the Place of the Work.
- At the Place of the Work, provide the information listed in Section 20.3(4) of the OH&S Regulation.
- In all other respects strictly comply with, and strictly enforce compliance by others, as applicable, with, the WCA, the OH&S Regulation, the requirements of WorkSafeBC, the safety policies and procedures of the Owner and the terms and conditions of the Contract Documents applicable.

Throughout the term of the Project, the Prime Contractor shall:

- Ensure that all hazards are promptly and appropriately identified and addressed.
- Ensure the health and safety of the workers on the Project.

- Maintain a current list of persons that each sub-trade (employer) has designated to be responsible for that employer's health and safety activities.
- Ensure provision of first aid equipment and services as required by the OH&S Regulation.
- Coordinate all occupational health and safety activities for the Project.
- Prepare, and communicate to all workers on the Place of the Work, an emergency response plan, taking into account the number of people onsite, the people who work outside regular hours and the types of emergencies that may arise. This plan should also describe subcontractor and individual worker responsibilities (e.g. responding to a fire) and provide for any necessary training and equipment, including first aid supplies as work processes change over the course of the Project, this emergency response plan must be updated as appropriate.
- Make and maintain detailed notes and reports in respect of the initial site safety meeting, safety committee meetings, reviews of contractors' safety systems, inspection and incident investigations, first aid records and orientation and training.
- On any site where workers of two (2) or more employers are working at the same time and the combined workforce is greater than five (5), identify and designate a "Qualified Coordinator" to coordinate health and safety activities.
- In all other respects strictly comply with, and strictly enforce compliance by others, as applicable, with, the WCA, the OH&S Regulation, the requirements of WorkSafeBC, the safety policies and procedures of the Owner and the terms and conditions of the Contract Documents applicable.

Prime Contractor's Qualified Coordinator, if applicable, (Construction Only) responsibilities:

- Comply with all requirements listed in Section 20.3(3) of the OH&S Regulation and on page 13 of the Owner's Multiple Employer Workplace/Contractor Coordination Program (2003).
- Coordinate all health and safety activities for the Project.
- Post workplace drawings showing where first aid is located, the emergency transportation system for injured workers and evacuation marshalling points.
- Ensure that regular workplace safety meetings are held and documented.
- Know who all other contractors' "Qualified Persons" are.
- Ensure that all workers at the Place of the Work are informed of workplace hazards, from both the pre-contract hazard assessment and from ongoing work activities of all employers at the Place of the Work, and ensure that hazards are properly and punctually addressed throughout the duration of the Project.

3.0 DESIGNATION AS PRIME CONTRACTOR

By signing this Prime Contractor Agreement, the undersigned Contractor accepts all responsibilities of a **Prime Contractor** as outlined above and in the Owner's Contractor Coordination Program (2003), Part III of the WCA and the OH&S Regulation, as well as any other responsibilities required by WorkSafeBC.

As a Contractor signing this Prime Contractor Agreement with the Owner, the undersigned company agrees that the company and its management staff, supervisory staff and workers will comply with the all WorkSafeBC requirements, the OH&S Regulation and Part III of the WCA.

Any violation of a requirement of WCB Legislation by the Prime Contractor may be considered a breach of the Contractor's Contract with the Owner resulting in possible termination or suspension of the Contract and/or any other actions deemed appropriate at the discretion of the Owner.

Any penalties, sanctions or additional costs levied against the Owner, as a result of an action or inaction of the Prime Contractor in its capacity as such, are the sole responsibility of the Prime Contractor, as set out in the Contract.

I, the undersigned, acknowledge that I have read and understand the information above. By signing this Prime Contract Agreement, I agree as an authorized representative of the Contractor to accept all responsibilities of the **Prime Contractor** for this Project.

Date _____

Contract # _____

Name of Contractor _____

Qualified Coordinator's Name _____ (Construction Only)

Signature of Authorized Representative _____

Print Name and Title _____

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
TITLE PAGE (PART D --FORM OF AGREEMENT)



INVITATION TO TENDER ("ITT") NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE

CONSTRUCTION AGREEMENT

between

[CONTRACTOR NAME]

and

CITY OF VANCOUVER

[DATE]

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
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INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
PART D - FORM OF AGREEMENT

CONSTRUCTION AGREEMENT

THIS CONSTRUCTION AGREEMENT (the "Agreement") dated for reference [insert date] is entered into

BETWEEN:

CITY OF VANCOUVER
453 West 12th Avenue
Vancouver, British Columbia V5Y 1V4

(the "City")

OF THE FIRST PART

AND:

[INSERT NAME OF CONTRACTOR]
[insert address]

(the "Contractor")

OF THE SECOND PART

BACKGROUND

- A. By way of an Invitation to Tender for Contractor for Roof and Skylight Replacement at Champlain Heights Community Centre, the City requested tenders from general contractors to perform the Work.
- B. In response to the Invitation to Tender, the Contractor submitted a tender dated [insert date].
- C. After evaluating the tenders and obtaining necessary approvals, the City issued a Notice of Award to the Contractor, thereby creating this Contract with the Contractor for the Work based on the Contractor's tender.

THE CITY AND THE CONTRACTOR NOW AGREE AS FOLLOWS:

ARTICLE A-1 THE WORK

The Contractor shall:

- 1.1 perform the Work required by the Contract Documents for Contractor for Roof and Skylight Replacement at Champlain Heights Community Centre in Vancouver, British Columbia (which is the Place of the Work), in respect of which Work [insert name of Consultant] is acting as, and is, the Consultant;
- 1.2 do and fulfill everything indicated by the Contract Documents; and

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
PART D - FORM OF AGREEMENT

- 1.3 commence the Work by the [day] day of [month], [year] and, subject to adjustment to the Contract Time as provided for in the Contract Documents, attain Substantial Completion of the Project, as certified by the Consultant, by the [day] day of [month], [year], in accordance with the Project Schedule, included as a schedule to this Agreement.

ARTICLE A-2 AGREEMENTS AND AMENDMENTS

- 2.1 The Contract supersedes all prior negotiations, representations, or agreements, either written or oral, relating in any manner to the Work, including the tender documents that are not expressly listed in Article A-3 of this Agreement.
- 2.2 The Contract may be amended only as provided in the Contract Documents.

ARTICLE A-3 CONTRACT DOCUMENTS

- 3.1 The following are the Contract Documents referred to in Article A-1 of this Agreement, whether or not attached to this Agreement:
- (a) this Agreement;
 - (b) the "Definitions" and "General Conditions of Stipulated Price Contract" contained within standard construction document CCDC 2 - Stipulated Price Contract, 2008 edition, not attached but incorporated by reference;
 - (c) the following schedules to this Agreement:
 - (i) Schedule 1 - Supplementary General Conditions (the "Supplementary General Conditions")
 - (ii) Schedule 2 - List of Specifications and Drawings (the listed Specifications and Drawings are incorporated by reference);
 - (iii) Schedule 3 - Schedule of Prices (the "Schedule of Prices");
 - (iv) Schedule 4 - Subcontractors and Suppliers;
 - (v) Schedule 5 - Project Schedule (the "Project Schedule");
 - (vi) Schedule 6 - Performance and Labour and Material Payments Bonds;
 - (vii) Schedule 7 - Insurance Certificate;
 - (viii) Schedule 8 - City Pre-Contract Hazard Assessment Form
 - (ix) Schedule 9 - Contractor Pre-Contract Hazard Assessment Form
 - (x) Schedule 10 - Force Account Labour and Construction Equipment Rates (the "Schedule of Force Account Labour and Construction Equipment Rates");
 - (xi) Schedule 11 - Prime Contractor Agreement Form;

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
PART D - FORM OF AGREEMENT

- (d) the Form of Tender submitted by the Contractor, dated [insert], titled [insert] (incorporated by reference) (the "Form of Tender");
 - (e) the traffic management plan provided by the Contractor to the City (incorporated by reference);
 - (f) the Place of the Work-specific safety and health plan provided by the Contractor to the City (incorporated by reference)
 - (g) [insert any other relevant documents to be incorporated by reference].
- 3.2 Capitalized terms used in the Contract Documents will have the meanings ascribed to such terms in the Contract Documents.

ARTICLE A-4 CONTRACT PRICE

- 4.1 The Contract Price to do, perform and supply all the Work in accordance with, and perform all the obligations specified by, the Contract Documents is [insert price without GST], plus GST of [insert amount], for a total Contract Price of [insert total amount, including GST].
- 4.2 The Contract Price is inclusive of GST, PST and all other taxes, and all duties assessments, charges and fees, permit and inspection costs, and WorkSafeBC assessments relating to the Work. For the avoidance of doubt, the Contract Price includes, without limitation, all PST on materials, other Products and Construction Equipment.
- 4.3 The PST, GST and other taxes, duties, assessments, charges and fees included in the Contract Price will be remitted by the Contractor to the applicable authorities as and when the City pays the Contract Price to the Contractor or as earlier required by applicable law.
- 4.4 All amounts are in Canadian dollars.
- 4.5 The Contract Price shall be subject to adjustments as provided for in the Contract Documents.
- 4.6 For purposes of the Contract Documents, "GST" means the tax payable and imposed pursuant to Part IX of the *Excise Tax Act* (Canada), as amended or replaced from time to time, and "PST" means the provincial sales tax payable and imposed pursuant to the *Provincial Sales Tax Act* (British Columbia), as amended or replaced from time to time.

ARTICLE A-5 PAYMENT

- 5.1 Subject to the terms and conditions of the Contract Documents, the City will pay the Contract Price to the Contractor in consideration of the performance of the Work.
- 5.2 The payment for any Work under this Contract made to the Contractor by the City will not be construed as an acceptance of any Work being in accordance with the Contract Documents.
- 5.3 Should either party fail to make payments as they become due under the terms of the Contract Documents, interest at the Bank Rate plus two percent (2%) per annum on such unpaid amounts will also become due and payable until payment. Such interest will be compounded on a monthly basis. The "Bank Rate" for these purposes is the rate established by the Bank of

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PART D - FORM OF AGREEMENT

Canada from time to time as the minimum rate at which the Bank of Canada makes short term advances to Canadian chartered banks.

ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES

6.1 Except as otherwise expressly provided in the Contract Documents, communications between the parties hereto or between them and the Consultant will be in writing and may be delivered by hand or sent by electronic transmission or by courier or registered mail:

(i) to the City at:

City of Vancouver
453 West 12th Avenue
Vancouver, British Columbia V5Y 1V4

Attention: [insert name]
[insert title]

Fax No.: [insert]
Email: [insert];

(ii) to the Contractor at:

[insert name and address]; or

(iii) to the Consultant at:

[insert name and address]

or to such other person or address of which one party may advise the others in writing from time to time or at any time, and each such communication will be deemed to be received by the recipient:

- (A) on the date of delivery, if delivered by hand: to the individual, if the recipient is an individual; to a partner, if the recipient is a partnership; or to an officer of the corporation, if the recipient is a corporation; or
- (B) on the day following transmission, if sent by electronic transmission and confirmed by documentation of successful transmission or receipt of an email reply effectively acknowledging delivery; or
- (C) one Working Day after the date of confirmed delivery, if sent by courier or registered mail.

ARTICLE A-7 LAW OF CONTRACT

The laws of British Columbia will apply to and govern the Contract Documents and the courts of British Columbia will have jurisdiction over all disputes not resolved by mediation or arbitration.

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
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PART D - FORM OF AGREEMENT

ARTICLE A-8 SUCCESSORS AND ASSIGNS

The Contract shall enure to the benefit of and be binding upon the City and Contractor and their respective successors and permitted assigns.

ARTICLE A-9 TIME OF THE ESSENCE

All time limits stated in this Contract are of the essence of the Contract.

IN WITNESS WHEREOF the parties hereto have executed this Agreement on the date first herein above written.

CITY OF VANCOUVER

by its authorized signatories:

Signature: _____

Name: _____

Title: _____

Signature: _____

Name: _____

Title: _____

[INSERT NAME OF CONTRACTOR]

by its authorized signatories:

Signature: _____

Name: _____

Title: _____

Signature: _____

Name: _____

Title: _____

Proof of authority in the form of a certified copy of a resolution naming the person or persons in question as authorized to sign the Agreement for and on behalf of the corporation or partnership, who are parties to this Agreement, shall be attached.

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE 1 (PART D - FORM OF AGREEMENT)

SCHEDULE 1
SUPPLEMENTARY GENERAL CONDITIONS

(SUPPLEMENTARY GENERAL CONDITIONS ARE MODIFICATIONS TO CCDC 2 -2008)

INTRODUCTION

- 1.1.1 These Supplementary General Conditions amend the "Definitions" and the "General Conditions of the Stipulated Price Contract" contained within standard construction document CCDC 2 - Stipulated Price Contract, 2008 edition ("CCDC 2"), available for download at <http://www.ccdc.org/downloads/index.html>. Any reference in the Contract Documents to "General Conditions" or "GC" means the General Conditions contained in CCDC 2 as amended by these Supplementary General Conditions. Whenever there is a conflict between these Supplementary General Conditions and the other Contract Documents or wherever the Contract Documents are silent and these Supplementary General Conditions speak to a particular issue or matter, the provisions of these Supplementary General Conditions shall take precedence.
- 1.1.2 Unless the context dictates otherwise and to the extent not otherwise defined in the Contract Documents, capitalized terms used in these Supplementary General Conditions have the meanings given thereto in CCDC 2.
- 1.1.3 To the extent that the *Lien Act* (as defined below) expressly forbids parties from contracting out of all or some of the provisions of the *Lien Act* then, to the extent that those provisions of the *Lien Act* apply, such provisions of the *Lien Act* shall take precedence over any provision of the Contract Documents that is determined to contradict or contravene such provisions of the *Lien Act*, but only to the extent of such contradiction or contravention.

AMENDMENTS TO THE DEFINITIONS

The following amendments are made to the "Definitions" in CCDC 2:

Add the following at the end of paragraph 5 (the definition of "Contract"):

The Contract supersedes all prior negotiations, representations or agreements, either written or oral, except to the extent included in the Contract Documents or expressly incorporated by reference into the Contract by an actual reference to the same in Article A-3 of the Agreement - CONTRACT DOCUMENTS.

Delete paragraph 6 and replace with the following:

6. Contract Documents

The Contract Documents consist of those documents listed in Article A-3 of the Agreement - CONTRACT DOCUMENTS, those documents expressly incorporated by reference into the Contract by an actual reference to the same in Article A-3 of the Agreement - CONTRACT DOCUMENTS, and amendments agreed upon in writing between the parties together with all other documents, schedules and additions mutually agreed to or settled by the parties from time to time in respect of the Contract.

Delete the definition of Owner at paragraph 12 and replace with the following:

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"Owner" or "City"

"Owner" and "City" each mean the entity identified as the "City" in the Agreement (represented as stated therein or otherwise) or the City's authorized agent or representative, as designated to the Contractor in writing. However, "Owner" and "City" each expressly do not include the Consultant and expressly do not include the City of Vancouver acting in its capacity as a municipal regulatory authority.

Delete the definition of Substantial Performance of the Work at paragraph 20 and replace with the following:

20. Substantial Performance of the Work

Substantial Performance of the Work shall have the same meaning as "substantial performance" of the Agreement, as determined under Section 1(2) of the *Lien Act*.

Delete the definition of Work at paragraph 25 and replace it with the following:

25. Work

Work means the total construction and related services required by the Contract Documents or properly inferable therefrom.

Add the following definitions:

27. Applicable Laws

Applicable Laws means all applicable federal, provincial and municipal laws, bylaws, codes, rules, regulations, policies and requirements applicable to the Work and the Project.

28. Certificate of Completion

Certificate of Completion means the certificate under section 7 of the *Lien Act* stating that work under a contract or subcontract has been completed and includes an order made under section 7(5) of the *Lien Act*.

29. Cost Plus Work

Cost Plus Work means Work that is described or designated as cost-plus work in the Contract Documents.

30. Environmental Law

Environmental Law means any applicable law relating to the protection of the environment or occupational health and safety including those pertaining to (a) reporting, licensing, permitting, investigating, remediating and cleaning up in connection with any presence or release, or the threat of the same, of Hazardous Substances, and (b) the generation, manufacture, processing, distribution, use, re-use, treatment, storage, disposal, transport, labelling, handling and the like of Hazardous Substances.

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31. Final Certificate for Payment

Final Certificate for Payment means the certificate issued on Total Performance of the Work.

32. Hazardous Substance

Hazardous Substance means any contaminant, waste, hazardous substance, hazardous waste, or dangerous goods in such quantities and concentrations as contravene applicable limitations under Environmental Law and that may impair the environment, injure or damage property or plant or animal life or harm or impair the health of any individual.

33. Holdback

Holdback means a holdback required by the *Lien Act*.

34. Lien or Liens

Lien or Liens means a lien under the *Lien Act*.

35. Lien Act

Lien Act means the *Builders Lien Act* (British Columbia) and any additional successor or replacement legislation which may be passed that is applicable to the Place of the Work.

36. Lump Sum Work

Lump Sum Work means Work that is described or designated as lump sum work in the Contract Documents or Work that is not so described or designated but is also not Unit Price Work or Cost Plus Work.

37. Site Labour Disturbance

Site Labour Disturbance means any strike, lock-out or labour disturbance, including those resulting from any jurisdictional or non-affiliation issues, involving employees, whether or not members of a trade union, of the Contractor, any Subcontractor, any Supplier, or any of their respective subcontractors of any tier, which delays or in any way adversely affects the performance and completion of Work at the Place of the Work.

38. Total Performance of the Work

Total Performance of the Work means the entire Work has been satisfactorily performed and is so certified by the Consultant.

39. Trade Union Council

Trade Union Council means a council or association of trade unions of which employees of the Contractor or a Subcontractor are members

40. Unit Price Work

Unit Price Work means Work that is described or designated as unit price work in the Contract Documents.

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41. WorkSafeBC Rules

WorkSafeBC Rules means the *Workers Compensation Act* (British Columbia) and the regulations thereunder, including without limitation the *WorkSafeBC Occupational Health and Safety Regulation* (British Columbia), and all amendments made to such act and regulations and in force from time to time, and any statute or regulation that may be passed which supplements or supersedes such regulations.

ALTERATION OF GENERAL CONDITIONS AND ADDITIONAL CONDITIONS

The following amendments are made to the "General Conditions of the Stipulated Price Contract" in CCDC 2:

GC1.1 CONTRACT DOCUMENTS

GC1.1.7.1 is deleted in its entirety and replaced as follows:

- .1 The order of priority of documents, from highest to lowest, shall be:
- the Agreement between the City and the Contractor (excluding its schedules);
 - these Supplementary General Conditions;
 - the Definitions from CCDC 2;
 - the General Conditions from CCDC 2;
 - the Specifications;
 - the Drawings;
 - the other schedules to the Agreement between the City and the Contractor;
 - the other Contract Documents (except for the below document); and
 - the Form of Tender.

GC1.5 ADVERTISING

GC1.5 is added as follows:

GC1.5 ADVERTISING

- 1.5.1 The Contractor will obtain the City's prior written approval for any public advertising, press release or other general publicity matter, in which the name, logo, official marks or trademarks of the City or any related person are mentioned or used or in which words are used from which any connection with the City may be inferred. The Contractor will not allow or permit any public ceremony in connection with the Work without the permission of the City provided in writing. The Contractor will not erect or permit the erection of any sign or advertising without the prior written approval of the City.

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GC2.2 ROLE OF THE CONSULTANT

GC2.2.5 is deleted in its entirety and replaced with the following:

- 2.2.5 The Consultant will be the “payment certifier” pursuant to the *Lien Act*. Based on the Consultant’s observations and evaluation of the Contractor’s applications for payment for Work and the Consultant’s review of the status of the Work, including as against the Project Schedule, the Consultant will issue certificates of payment and will issue each Certificate of Completion and the Final Certificate for Payment.

GC2.2.19 is added as follows:

- 2.2.19 Notwithstanding GC2.2.13, the Contractor shall be responsible for requesting any required instructions or clarifications from the Consultant which are needed for the performance of the Work and shall request such instructions or clarifications in time to avoid any delay of the Work.

GC2.2.20 is added as follows:

- 2.2.20 Nothing in GC2.2 shall derogate from or affect the terms and provisions of any contractual or other legal relations between the City and the Consultant, and such contractual and other legal relations shall in all cases take precedence over GC2.2 in the event of a conflict.

GC2.3 REVIEW AND INSPECTION OF THE WORK

GC2.3.1 is amended by deleting the first sentence of the paragraph and replacing it with the following:

The City and the Consultant and their authorized representatives shall have access to the Work at all times.

GC2.3.2 is amended by deleting the first sentence of the paragraph and replacing it with the following:

If work is designated for review, tests, inspections or approvals in the Contract Documents, or by the Consultant’s instructions, or by the laws or ordinances of the Place of the Work, the Contractor shall give the Consultant reasonable notification of when the work will be ready for review and inspection.

GC2.3.4 is deleted in its entirety and replaced with the following:

- 2.3.4 If the Contractor covers, or permits to be covered, work that has been designated for review, tests, inspections or approvals before such review, tests, inspections or approvals are made, given or completed, the Contractor shall, if so directed, uncover such work, have the reviews, tests, inspections or approvals satisfactorily completed, and make good covering work at the Contractor’s expense.

GC2.3.8 is added as follows:

- 2.3.8 The Consultant may:

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- .1 review and monitor the Contractor's performance of any aspects of the Work for conformance with the requirements of the Contract, including review and monitor the following:
 - (a) the Contractor's submittals; and
 - (b) any and all construction activities; and
- .2 perform or arrange for the performance of any tests, checks, and inspections of the Work as the City may reasonably request whether or not specifically required by the Contract Documents.

Should the Consultant be required to make more than one review of rejected work or should the Consultant perform additional reviews due to failure of the Work to comply with the status of completion asserted by the Contractor in an application, the Contractor is required to compensate the City for such additional Consultant services including expenses incurred. Adjustment for such compensation should be made as outlined under PART 6 - CHANGES IN THE WORK.

GC2.3.9 is added as follows:

- 2.3.9 Review, monitoring and/or approval by the Consultant or City of the Contractor's performance of the Contract shall not relieve the Contractor of its sole responsibility and liability for the proper performance of the Contract strictly in accordance with its terms.

GC2.3.10 is added as follows:

- 2.3.10 Acceptance of the Work by the City does not free the Contractor from its obligation to correct deficiencies as provided in GC2.4 - DEFECTIVE WORK, which are not identified at the time of drawing up the deficiency list or are hidden deficiencies.

GC2.4 DEFECTIVE WORK

GC2.4.1 is amended by adding the following to the end of the paragraph:

In the event that work or materials are found to be condemned, then if the Contractor does not remove such condemned materials or work within the time fixed by written notice, the City may remove them and may store such materials at the expense of the Contractor. If the Contractor does not pay the expense of such removal within five (5) calendar days thereafter, the City may, upon ten (10) days written notice sell such materials with the proceeds thereof, if any, after deducting all the costs and expenses that should have been borne by the Contractor, being returned to the Contractor.

GC2.4.3 is deleted in its entirety and replaced with the following:

- 2.4.3. If in the opinion of the Consultant it is not expedient to correct defective work or work not performed as provided in the Contract Documents, the City may deduct from the amount otherwise due to the Contractor the difference in value between the work as performed and that called for by the Contract Documents or, at the option of the City, the cost or value of such work as would have been necessary to correct such non-

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compliance with the Contract Documents. If the City and the Contractor do not agree on the difference in value, they shall refer the matter to the Consultant for a determination.

GC3.1 CONTROL OF THE WORK

GC3.1.3 is added as follows:

3.1.3 The Contractor shall, and shall ensure that each Subcontractor shall, employ competent and skilled workmen and apprentices and employ proper equipment in good condition. The Contractor shall have complete control over its employees and Subcontractors and shall enforce discipline and order among its employees and assure discipline and order by its Subcontractors including, in all cases, without limiting the foregoing, compliance with and enforcement of WorkSafeBC Rules.

GC3.1.4 is added as follows:

3.1.4 The Contractor shall be familiar with, and its performance of this Contract shall be governed by and comply with, all Applicable Laws and applicable permits which exist at present or which may be respectively enacted or obtained after the date hereof by or from bodies or tribunals having jurisdiction or authority over the Work.

GC3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

GC3.2.2 is amended by deleting the first sentence and replacing it with the following:

When separate contracts are awarded for other parts of the Project, or when work is performed by the City's own forces, the Contractor shall:

GC3.2.2.3 is deleted in its entirety.

GC3.2.2.4 is deleted in its entirety.

GC3.2.3.3 is amended by adding the following to the end of the paragraph:

Failure by the Contractor to so report shall invalidate any claims against the City by reason of the deficiencies of the other contractors' or the City's own forces' work, except those of which the Contractor was not reasonably aware.

GC3.2.7 is added as follows:

3.2.7 The Contractor acknowledges that the Place of the Work generally and portions of the Project will continue to be used by the City and others as described in the Contract Documents. The Contractor will work simultaneously and harmoniously with others using the Place of the Work and use all efforts not to interfere with or delay others.

GC3.5 CONSTRUCTION SCHEDULE

GC3.5.1.1 is deleted in its entirety and replaced with the following:

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- .1 if the City states in writing that the Contractor has not yet done so to the City's satisfaction, prepare and submit to the City and the Consultant a construction schedule that indicates the timing of the major activities of the Work and provides sufficient detail of the critical events and their inter-relationship to demonstrate the Work will be performed in conformity with the Contract Time, which such construction schedule will, if agreed to by the City, thereafter be deemed to supersede the schedule included in Schedule 5 of the Agreement as the "Project Schedule";

GC3.5.1.3 is amended by adding the following to the end:

... indicating the results expected from the resulting change in schedule.

GC3.5.2 is added as follows:

- 3.5.2 The Contractor will regularly monitor the progress of the Work and advise the City and the Consultant of any revisions to, or any slippage in, the construction schedule.

GC3.5.3 is added as follows:

- 3.5.3 The Contractor will submit to the Consultant and the City monthly updates and provide comments on adherence to the construction schedule and details of any remedial actions being undertaken to improve schedule slippages.

GC3.5.4 is added as follows:

- 3.5.4 If the construction schedule is not adhered to, the Contractor will use all reasonable means to accelerate the Work, without additional compensation, to comply with the construction schedule. For the avoidance of doubt, references in the Contract Documents to the "construction schedule" will be deemed to be references to the "Project Schedule" unless the context requires otherwise.

GC3.6 SUPERVISION

GC3.6.3 is added as follows:

- 3.6.3 Any superintendent or foreman whose work is unsatisfactory to the Consultant, or to whom the Consultant may have any reasonable objection, shall be dismissed from the Work upon written notice of the Consultant. No superintendents or foremen will be substituted or replaced, except at the request or with the written consent of the City, or as a result of any such employee's voluntary termination of employment or incapacity and any replacement will have comparable or superior qualifications and experience.

GC3.7 SUBCONTRACTORS AND SUPPLIERS

GC3.7.2 is deleted in its entirety and replaced as follows:

- 3.7.2 No Subcontractor or Supplier listed in Schedule 4 (if any) shall be replaced without the written consent of the City, which consent shall not be unreasonably withheld.

GC3.7.7 is added as follows:

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- 3.7.7 In every subcontract the Contractor shall specify that the Consultant shall be the person responsible for payment certification under that subcontract for the purposes of the *Lien Act*. With every request to the Consultant for a determination whether a subcontract has been completed, the Contractor shall furnish a detailed description of the scope of work covered by the subcontract and a complete reconciliation of the subcontract account. In this GC3.7.7, the word "subcontract" shall have the meaning it has when used in the *Lien Act*.

GC3.8 LABOUR AND PRODUCTS

GC3.8 is deleted in its entirety and replaced with the following:

GC 3.8 LABOUR AND PRODUCTS

3.8.1 *Unions and Wages*

(a) *Open Site*

The Place of the Work and adjacent work areas associated with the Project are, or are part of, an "open site" and the Work will be performed on a "no strike/no lockout" basis. Accordingly, the Contractor and its Subcontractors, as well as the City and other contractors, may employ labourers at the Place of the Work who are members of a trade union, including a trade union affiliated with a Trade Union Council or who are members of another trade union, or who are not members of a trade union.

(b) *Labour Disruptions*

The Contractor will use its best commercial efforts to ensure that no Site Labour Disturbance shall occur and the Contractor:

- (i) will only retain Subcontractors for the Work whose employees are either:
- (1) certified in British Columbia to be represented by a trade union and subject to a collective agreement which does not expire until after the expected date of Total Performance of the Work; or
 - (2) not certified to be represented by a trade union; and
- will require such Subcontractors to only retain subcontractors and suppliers whose employees are either certified in British Columbia to be represented by a trade union and subject to a collective agreement which does not expire until after the expected date of Total Performance of the Work or not certified to be represented by a trade union; and
- (ii) represents and warrants that, with respect to any employees of the Contractor who may work at or near the Place of the Work and who are certified in British Columbia to be represented by a trade union and subject to a collective agreement, such collective agreement to which such employees are subject does not expire until after the expected date of Total Performance of the Work;

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but if any Site Labour Disturbance occurs and does or may adversely impact the City, the Work or the Contract Time, the Contractor will use its best commercial efforts to ensure that the length and extent of such impact is minimized (including without limitation by cooperating with the City in any measures it may take to ameliorate such impact) and the Contractor will be liable to the City for any such impact.

(c) *Required for Union Contractors*

Without limiting the generality of Section (b) above, if the Contractor, or any Subcontractor, proposes to employ labourers at the Place of the Work who are members of a trade union, including a trade union that is affiliated with a Trade Union Council authorized to bind its member trade unions, then the Contractor must first submit to the Consultant:

- (i) a waiver of all non-affiliation or reservations rights under applicable collective agreements, including renewals or replacements thereof, effective for the duration of the Contract and executed by the Trade Union Council on behalf of all trades, or executed by the particular trade unions whose members will be so employed; and
- (ii) an agreement that there will be no Site Labour Disturbance at or affecting the Place of the Work and/or the progress of the Work, effective for the duration of the Contract, and executed by the Trade Union Council on behalf of all trades, or executed by the particular trade unions whose members will be so employed.

(d) *Fair Wages*

The Contractor shall pay or cause to be paid to every person employed on the Work not less than the wages or remuneration generally accepted as current at that time.

- 3.8.2 The Contractor shall provide and pay for labour, Products, tools, Construction Equipment, water, heat, light, power, transportation, and other facilities and services necessary for the performance of the Work in accordance with the Contract.
- 3.8.3 Unless otherwise specified in the Contract Documents, Products provided shall be new. Products which are not specified shall be of a quality consistent with those specified and their use acceptable to the Consultant. All Products supplied by the Contractor must at all times contain 0.00% asbestos. Should any Product be found to contain more than 0.00% asbestos, the Contractor will promptly abate and remove all Products containing asbestos at its sole cost.
- 3.8.4 The Contractor shall maintain good order and discipline among the Contractor's employees engaged on the Work and shall not employ on the Work anyone not skilled in the tasks assigned. The City shall have the right, by written notification to the Contractor, to require the removal from the Project of any employee of the Contractor or a Subcontractor or employee of a Subcontractor of the Contractor who is incompetent, untrained, acts in an unsafe manner, is disorderly or is otherwise unsatisfactory, or who causes a breach of the terms of this Contract. Any such employee or Subcontractor shall be immediately removed from the Place of the Work

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by the Contractor and shall not be employed again on the Project without the prior written approval of the City.

- 3.8.5 All materials shall be delivered, stored, handled and applied in strict accordance with the manufacturer's instructions, and shall be delivered with type, grade and brand name clearly identifiable and with seals intact.

GC3.9 DOCUMENTS AT THE SITE/DAILY RECORD

GC3.9.1 is deleted in its entirety and replaced with the following:

- 3.9.1 The Contractor shall keep one copy (as opposed to the originally executed set) of all Contract Documents, Shop Drawings, Change Orders, Change Directives, the diary record required by GC3.9.2 below, submittals, reports, and records of meetings at the Place of the Work, in good order, properly indexed, and available at all regular working hours on Working Days to the City and the Consultant.

GC3.9.2 is added as follows:

- 3.9.2 The Contractor shall, from the date of commencement of the Work, maintain a careful diary record of the progress of the Work. This record shall be open to the Consultant's inspection at all reasonable times and delivered to the Consultant on completion of the Work. The diary shall detail:
- .1 daily weather conditions;
 - .2 the commencement, progress and completion of various portions of the work;
 - .3 the dates of all meetings and their purposes; and
 - .4 the dates of visits or inspections by government authorities, inspectors, utility companies, etc.

GC3.10 SHOP DRAWINGS

GC3.10.2 is amended by adding the following to the end:

... or as the Consultant may reasonably request.

GC3.10.13 is added as follows:

- 3.10.13 The Contractor represents and warrants that it has reviewed all Contract Documents and inspected and examined the Place of the Work and the Project to the extent it considers necessary and in accordance with prudent practice and satisfied itself as to the nature and extent of the conditions, including the physical and climatic conditions which may be encountered in the performance of the Work and to the extent possible to establish the state and quality of the existing construction. The Contractor further acknowledges that it will be required to share the Place of the Work with the City and others, all as described in the Contract Documents.

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GC3.12 CUTTING AND REMEDIAL WORK

GC3.12.3 is amended by adding the following to the end:

... unless the City elects to do the work or retain other contractors, after having given the Contractor written notice of the work to be performed. Such work shall be performed in accordance with GC3.2.

GC4.1 CASH ALLOWANCES

GC4.1.1 is deleted in its entirety and replaced as follows:

4.1.1 The Contract Price includes the cash allowances, if any, stated in the Contract Documents. Except to the extent specifically described in the Contract Documents, such cash allowances:

- (a) will cover the net out-of-pocket cost of the Contractor for services, products, construction machinery and equipment, freight, unloading, handling, storage, installation and other authorized expenses incurred in performing the work stipulated under the cash allowances, but
- (b) will not cover labour or installation, unless (and then only to the extent):
 - (i) specifically stated in the Contract Documents as being included in the cash allowance, or
 - (ii) specifically designated as an itemized or separate price for purposes of the cash allowance,

and otherwise will be deemed to be included in the Contract Price (ex-cash allowances).

GC4.1.2 is deleted in its entirety and replaced as follows:

4.1.2 The Contract Price (ex-cash allowances), and not the cash allowances, includes the Contractor's and Subcontractors' overhead and profit in respect of such cash allowances. Unless noted otherwise in the Contract Documents, none of the work included in the Drawings and Specifications is intended to be paid for by the cash allowances. The cash allowances are for the City's use, at the City's sole discretion.

GC4.1.3 is amended by adding the following to the end of the paragraph:

The Consultant may require that cash allowance Work proceed only after competitive tenders or proposals are sought and received by the Contractor for all or any part of such Work. The Contractor shall provide full disclosure to the Consultant of all such tenders or proposals. The Contractor shall not accept any such tenders or proposals without the prior consent of the Consultant. The Contractor shall maintain at the Place of the Work, or such other location as the Consultant may approve, accurate and complete records and accounts documenting all costs incurred under cash allowances. These records and accounts shall be available for inspection by the Consultant and the City at all reasonable times, and the Consultant and the City may take copies thereof.

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GC5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

GC5.1 is deleted in its entirety and replaced with the following:

GC5.1 GENERAL FINANCIAL/PAYMENT PROVISIONS

- 5.1.1 The City shall, at the request of the Contractor, before signing the Contract, and promptly from time to time thereafter, furnish to the Contractor reasonable evidence that financial arrangements have been made to fulfill the City's obligations under the Contract. The Contractor now acknowledges that the City's financial statements as published pursuant to the *Financial Information Act* (British Columbia) constitute full satisfaction of this requirement and satisfactory evidence of the City's ability to fulfill its obligations under this Contract.
- 5.1.2 The City shall give the Contractor Notice in Writing of any material change in the City's financial arrangements to fulfill the City's obligations under the Contract during the performance of the Contract.
- 5.1.3 The City shall pay to the Contractor for the proper and timely performance and completion of the Work the Contract Price, consisting of:
- (i) if all or part of the Work is described or designated as Unit Price Work in the Schedule of Prices, the product of each unit price stated in the Schedule of Prices, multiplied by the quantity of each corresponding item of Work necessary for the proper performance and completion of the Work (and if such quantity differs from the quantity expressed in the Contract Documents and such difference is approved in writing by the City, the Contract Price expressed in ARTICLE A-4 of the Agreement shall be deemed to be adjusted to coincide with the approved quantity);
 - (ii) if all or part of the Work is Lump Sum Work, the aggregate of lump sum prices stated in the Schedule of Prices;
 - (iii) the aggregate of all cash allowances, if any, specified in Schedule 3 of the Agreement; and
 - (iv) if all or part of the Work is described or designated as Cost Plus Work, the cost reasonably and necessarily incurred by the Contractor in performing and completing such Work, such cost to be determined in accordance with GC5.1A.3, plus a percentage or fixed fee, as stated in GC5.1A.3.
- 5.1.4 The Contract Price is subject to adjustment only in accordance with the Contract Documents.
- 5.1.5 The Contract Price is expressed and payable in Canadian dollars.
- 5.1.6 Subject to the provisions of the Contract Documents and in accordance with the *Lien Act* in respect of Holdbacks, the City shall:
- .1 make progress payments to the Contractor on account of the Contract Price monthly when due, based on:

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- (i) the value of the Work completed and Products and materials incorporated into the Work as certified by the Consultant, and
 - (ii) Products and materials delivered to the Place of the Work but not yet incorporated into the Work, as agreed to by the City;
- .2 upon issuance of a Certificate of Completion in respect of a subcontract to which the Contractor is a party, and where fifty-five (55) calendar days have elapsed since the issuance of the Certificate of Completion without any Liens having been filed which arose under the subcontract, pay the Holdback to the Contractor in respect of the subcontract;
- .3 upon issuance of the Certificate of Completion (in respect of Substantial Performance of the Work), and where fifty-five (55) calendar days have elapsed since the issuance of the Certificate of Completion without any Liens or other liens having arisen with respect to this Contract, pay the balance of the Holdback to the Contractor in respect of this Contract;
- .4 upon issuance of the Final Certificate for Payment (in respect of Total Performance of the Work), and provided no Liens or other liens have arisen in respect of this Contract, pay the balance of the Contract Price to the Contractor.
- 5.1.7 If either party fails to pay when due an amount owing to the other under this Contract, that amount will bear interest at the Bank Rate plus two percent (2%), calculated daily from the due date to the date of payment. For this purpose, the "Bank Rate" means the rate of interest established from time to time by the Bank of Canada as the minimum rate at which the Bank of Canada advances short term loans to Canadian chartered banks.
- 5.1.8 If the Work suffers any loss or damage, as a result of which an amount is paid under any policy of insurance provided by the City under the Contract, then such amount shall be paid to the City and advanced to the Contractor in monthly progress payments as the Contractor performs and completes repair or restoration Work in respect of such loss or damage.

GC5.1A BASIS OF PAYMENT:

5.1A.1 Basis of Payment for Unit Price Work

- .1 *Unit Price Work:* Payment for Unit Price Work, if any, shall be based on the unit prices set out in the Schedule of Prices.
- .2 *Measurement:* The Contractor shall measure the Work and the Consultant will verify such measurements to determine payment to the Contractor in accordance with the measurement provisions of the Contract Documents.

5.1A.2 Basis of Payment for Lump Sum Work

- .1 *Lump Sum Work:* Payment for Lump Sum Work, if any, shall be based on the lump sum prices set out in the Schedule of Prices.

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5.1A.3 *Basis of Payment for Cost Plus Work*

- .1 *Cost Plus Work:* Payment for Cost Plus Work, if any, shall be based on the cost of such Work, as provided in GC5.1A.3.2, plus a fixed fee or percentage fee calculated as a percentage of the cost of such Work, for the Contractor's overhead and profit, except as stated in GC5.1A.4 or GC6.3.6. The fixed fee or percentage fee shall be as provided in the Schedule of Prices (or, if not so specified, as agreed between the City and the Contractor in writing), except as stated in GC5.1A.4.
- .2 *Cost of the Work:* The cost of Cost Plus Work, except as otherwise specified in the Contract Documents or agreed in writing between the City and the Contractor, shall be at rates prevailing in the locality of the Place of the Work and shall include the following cost elements as applicable to such Work:
 - (i) wages and benefits paid for labour in the direct employ of the Contractor under applicable collective bargaining agreements, or under a salary or wage schedule agreed upon by the Consultant and the Contractor;
 - (ii) salaries, wages, and benefits of the Contractor's personnel, when stationed at the field office, in whatever capacity employed; or personnel at shops or on the road, engaged in expediting the production or transportation of materials or equipment;
 - (iii) contributions, assessments, or taxes incurred for such items as employment insurance, provincial or territorial health insurance, workers' compensation, and Canada Pension Plan, insofar as such cost is based on wages, salaries, or other remuneration paid to employees of the Contractor and included in the cost of the Work as provided in paragraphs (i) and (ii);
 - (iv) travel and subsistence expenses of the Contractor's personnel described in paragraphs (i) and (ii), to be included only with the prior approval of the City;
 - (v) the cost of all Products, including the cost of transportation thereof;
 - (vi) the cost of Construction Equipment, Temporary Work, and hand tools not owned by the workers, including transportation, and maintenance thereof, which are consumed in the performance of the Work, at cost less salvage value on such items used but not consumed, which remain the property of the Contractor;
 - (vii) the cost of all tools and Construction Equipment, exclusive of hand tools used in the performance of the Work, whether rented from or provided by the Contractor or others, including installation, minor repairs and replacements, dismantling, removal, transportation and delivery cost thereof;
 - (viii) deposits lost;

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- (ix) the amounts of all subcontracts;
 - (x) the cost of quality assurance such as independent inspection and testing services;
 - (xi) charges levied by authorities having jurisdiction at the Place of the Work;
 - (xii) any adjustment in premiums for all bonds and insurance which the Contractor is required by the Contract Documents to purchase and maintain;
 - (xiii) any adjustment in value-added taxes (not including taxes on income or capital), for which the Contractor is liable;
 - (xiv) charges for long distance telephone and facsimile communications, courier services, expressage, and petty items incurred in relation to the performance of the Work;
 - (xv) the cost of removal and disposal of waste products and debris; and
 - (xvi) cost incurred due to emergencies affecting the safety of persons or property.
- .3 *Approval Required:* The Contractor shall obtain the Consultant's approval prior to subcontracting or entering into other agreements for Cost Plus Work.
- .4 *Rejection of Costs:* The Consultant may refuse to certify payment for all or part of the cost of any item under any cost element, where the item in question was unsuitable or unnecessary, or the cost was otherwise improperly incurred in the performance of the Work.
- .5 *Records:* The Contractor shall keep full and detailed accounts and records necessary for the documentation of the cost of Cost Plus Work and shall provide the Consultant with copies thereof when requested.
- .6 *Access to Records:* the City and the Consultant shall be afforded reasonable access to all of the Contractor's books, records, correspondence, instructions, drawings, receipts, vouchers, and memoranda related to the cost of Cost Plus Work and for this purpose the Contractor shall preserve such records for a period of one (1) year after the date of Substantial Performance of the Work.

5.1A.4 *Cost Plus Contract Rates and Mark Ups*

Notwithstanding any other provision hereof, when Cost Plus Work is performed then:

- (i) the costs of labour will be determined by the labour rates specified in the schedules to the Agreement, including the Schedule of Force Account Labour and Construction Equipment Rates, if any, in each case without any mark-up unless otherwise specified therein; and

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- (ii) the costs of Construction Equipment will be determined by the construction equipment rates specified in the schedules to the Agreement, including the Schedule of Force Account Labour and Construction Equipment Rates, if any, in each case without mark-up unless otherwise specified therein.

GC5.2 APPLICATIONS FOR PROGRESS PAYMENT

GC5.2 is deleted in its entirety and replaced with the following:

GC5.2 APPLICATIONS FOR PROGRESS PAYMENT

- 5.2.1 Applications for payment shall be submitted to the Consultant on or before the last day of each calendar month, dated as of the last day of the month, and be in respect of the Work completed prior to the application being signed (the "payment period").
- 5.2.2 The amount claimed shall be the value, proportionate to the amount of the Contract, of Work performed and Products delivered to the Place of the Work as of the last day of the payment period.
- 5.2.3 The Contractor shall submit to the Consultant at least fifteen (15) calendar days before the first application for payment, a schedule of values for the parts of the Work, aggregating the total amount of the Contract Price, so as to facilitate evaluation of applications for payment. A second schedule, stating the anticipated monthly progress payments, is to be submitted upon request.
- 5.2.4 The schedule of values shall be made out in such form and supported by such evidence as the Consultant may reasonably direct and when accepted by the Consultant, shall be used as the basis for applications for payment, unless it is found to be in error.
- 5.2.5 When making an application for payment, the Contractor shall submit a statement based upon the schedule of values. Claims for Products delivered to the Place of the Work but not yet incorporated into the Work shall be supported by such evidence as the Consultant may reasonably require to establish the ownership, value and delivery of the Products. The City has the right to refuse payment for Products delivered to the Place of the Work but not incorporated in the Work. The Contractor shall obtain the City's permission prior to invoicing for such Products.
- 5.2.6 Each application for payment shall:
 - .1 be in such form and detail as the Consultant shall require and submitted consistently in such form and detail unless otherwise advised by the Consultant and clearly show:
 - (D) the Contractor's full name, address and telephone number;
 - (E) the City's purchase order number;
 - (F) the name of the City's project manager;
 - (G) the application for payment number and date; and

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- (H) the Contractor's PST and GST registration number(s);
- .2 be attached to a statement or statutory declaration sworn by an officer of the Contractor, which attests to the accuracy and completeness of the information contained therein, and for each application following the first application also include in addition to the foregoing and not in lieu of the same, a current CCDC 9A Statutory Declaration of Progress Payment Distribution by Contractor, which shall be completed and sworn before a Notary Public or Commissioner for Oaths for the Province of British Columbia;
- .3 relate the Work for which payment is claimed to the Project Schedule and the schedule of values provided and provide such back-up invoices and other materials as may be reasonably necessary for the Consultant to review such application;
- .4 be accompanied by a sworn declaration that there are no Liens or other liens relating to the Contractor, the Work or the Products registered against the City, the Project or the Place of the Work or the City's interest therein or against the Holdback;
- .5 attach the documents required under GC9.4 demonstrating compliance by the Contractor and each Subcontractor with WorkSafeBC Rules;
- .6 attach the monthly update contemplated by GC3.5.3; and
- .7 provide a comprehensive list of items which remain to be completed and any defective items which remain to be corrected and the Contractor's estimate of the costs and time to complete or correct such items.
- 5.2.7 The Contractor shall deliver a complete application as provided in GC5.2.6 and if such application is not complete, the Consultant may reject all or the applicable portions of the same by promptly (and in any event within five (5) calendar days of its receipt) notifying the Contractor of the deficiencies in the application. The Contractor will promptly supply to the Consultant such further certification or information as may be necessary to remedy the deficiencies in the application.
- 5.2.8 An application for payment shall be deemed to be received by the Consultant only if and when submitted in full conformity with GC5.2.6.

GC5.3 PROGRESS PAYMENT

GC5.3.1.2 is amended by adding the following before the last sentence of the paragraph:

If, after a certificate for payment has been issued to the City (and prior to payment by the City), the Consultant determines on the basis of new information that the amount certified for payment is incorrectly high or low relative to the Work being certified, then the Consultant shall issue a revised certificate.

GC5.3.1.3 is amended by deleting the words "Article A-5 of the Agreement - PAYMENT" and replacing with "this GC5 and the *Lien Act*".

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GC5.3.2 is added as follows:

- 5.3.2 Subject to the provisions of the *Lien Act*, the City may retain a deficiency holdback from progress payments prior to Substantial Performance of the Work to ensure that sufficient money is withheld to fund any agreed deficiency holdback at Substantial Performance of the Work

GC5.4 SUBSTANTIAL PERFORMANCE OF THE WORK

GC5.4 is deleted in its entirety and replaced with the following:

GC5.4 SUBSTANTIAL PERFORMANCE OF THE WORK/CERTIFICATE OF COMPLETION

- 5.4.1 When the Contractor considers that Substantial Performance of the Work has been achieved, or if permitted by the *Lien Act* the Contractor wishes to apply for a Certificate of Completion with respect to a subcontract with a Subcontractor, the Contractor shall, within one Working Day, deliver to the Consultant and to the City an application for a Certificate of Completion (a "Completion Certificate Application") in conformity with GC5.4.4.
- 5.4.2 The Consultant will review the Work to verify the validity of the application and shall promptly, and in any event, no later than ten (10) calendar days after receipt of the Contractor's application:
- .1 advise the Contractor in writing that the Work or the designated portion of the Work is not "completed" (as that term is used in the *Lien Act*) and give reasons why, or
 - .2 prepare a Certificate of Completion in respect of the Work or subcontract stating on the certificate the date of issuance in accordance with the *Lien Act* and issue a copy of that certificate to each of the City and the Contractor.
- 5.4.3 Immediately following the issuance of the Certificate of Completion for all of the Work, the Contractor, in consultation with the Consultant, shall establish a reasonable date for Total Performance of the Work (which date will be deemed to be the date for the same set out in the Project Schedule if such date is specified).
- 5.4.4 Each Completion Certificate Application referred to in GC5.4.1 shall also contain an application for payment and shall consist of the following:
- .1 a cover letter stating that the submittal is an application for a Certificate of Completion as well as an application for payment, and clearly identifying the Work or subcontract for which the Certificate of Completion is being sought;
 - .2 all of the certifications and information required on an application for payment, as set out in GC5.2.6;
 - .3 with respect to the Work or subcontract, as applicable, all deliverables, including copies of all manufacturer's warranties, called for in the Contract Documents which are or should be available at the time of the Completion Certificate Application, including, without limitation and by way of example

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only, all operation manuals, service manuals, warranty certificates, maintenance contracts, service contracts, software licences, inspection reports, and other applicable manuals, contracts, certificates, guarantees and warranties.

- 5.4.5 Failure to specify an incomplete or defective item on a Completion Certificate Application or the Consultant's issuance of a Certificate of Completion or certificate of payment in respect of the same does not alter the responsibility of the Contractor to complete the Contract.
- 5.4.6 Subject to the requirements of the *Lien Act* relative to the date of issuance by the Consultant of the Certificate of Completion of the Work pursuant to GC5.4.2.2:
- .1 the Consultant shall issue to the City and copy to the Contractor a certificate of payment for an amount equal to the Contract Price less:
 - (i) three times the value of any deficiencies shown on the comprehensive list of items to be completed or corrected, as determined by the Consultant,
 - (ii) the value of incomplete work as determined by the Consultant, and
 - (iii) the amounts of all previous certificates of payment;
 - .2 the City shall then make payment to the Contractor in accordance with the provisions of GC5.3.1.3 provided always that a Completion Certificate Application shall be deemed received only if and when submitted in accordance with GC5.2.6 as well as GC5.4.4; and
 - .3 for the avoidance of doubt, this GC5.4.6 does not create an obligation to avoid retaining, or to release, any Holdback.

GC5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

GC5.5 is deleted in its entirety and replaced with the following:

GC5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

- 5.5.1 After the issuance of the Certificate of Completion evidencing Substantial Performance of the Work, the Contractor shall:
- .1 submit an application for payment of the Holdback,
 - .2 submit a current CCDC 9A Statutory Declaration of Progress Distribution by Contractor, as well as a current CCDC 9B Statutory Declaration of Progress Distribution by Subcontractor from each of the Subcontractors, which in every case shall be fully and properly completed and sworn before a Notary Public or Commissioner for Oaths for the Province of British Columbia;
 - .3 verify that there are no Liens or other liens relating to the Contractor, the Work or the Products registered against the City, the Project or the Place of

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the Work or the City's interest therein or against the Holdback, and swear and submit to the Consultant a written declaration that there are no such Liens or other liens;

- .4 attach the documents required under GC9.4 demonstrating compliance by the Contractor and each Subcontractor with WorkSafeBC Rules; and
- .5 attach copies of a current title search of the Place of the Work confirming that no Liens have been registered prior to the time the release of the Holdback is due.

5.5.2 After the receipt of and approval of the application documents described in GC5.5.1, the Consultant will issue a certificate for payment of the Holdback (less any previous releases of the Holdback on account of subcontract Certificates of Completion).

5.5.3 The Contractor now acknowledges that the City is exempt under the regulations of the *Lien Act* from the requirement to keep the Holdback in a separate holdback account.

5.5.4 The Holdback is due and payable as set out in GC5.1.6.3. The City may retain out of the Holdback any sums required by law to satisfy any Liens arising under the Contract or any subcontract or, if permitted by the *Lien Act*, claims against the Contractor.

GC5.6 PROGRESSIVE RELEASE OF HOLDBACK

GC5.6.1 is deleted in its entirety and replaced with the following:

- 5.6.1 Any portion of the Holdback in respect of a Subcontractor or Supplier subcontract is due and payable as set out in GC5.1.6.3. The City may retain out of the subcontract portion of the Holdback any sums required by law to satisfy any Liens arising in connection therewith or, if permitted by the *Lien Act*, other claims.

GC5.6.2 is deleted in its entirety.

GC5.6.3 is amended by deleting the words "final certificate for payment" and replacing with "Final Certificate for Payment".

GC5.7 FINAL PAYMENT

GC5.7.1 is deleted in its entirety and replaced as follows:

- 5.7.1 When the Contractor considers that Total Performance of the Work has been achieved, the Contractor shall submit its final application for payment. The application for payment on attaining Total Performance of the Work shall consist of the following:

- .1 all of the certifications and information required on an application for payment as set out in GC5.2.6, all appropriately amended to clearly confirm that the Work is fully completed, all Products have been delivered, and all Lien periods have expired with no Liens or other liens having been filed;
- .2 a current CCDC 9A Statutory Declaration of Progress Distribution by Contractor, as well as a current CCDC 9B Statutory Declaration of Progress Distribution by

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Subcontractor from each of the Subcontractors, which in every case shall be fully and properly completed and sworn before a Notary Public or Commissioner for Oaths for the Province of British Columbia;

- .3 copies of a current title search of the Place of the Work confirming that no Liens have been registered as at the date of application for Final Certificate for Payment; and
- .4 all deliverables called for in the Contract Documents which were not delivered at the time of Substantial Performance of the Work.

GC5.7.3 is amended by deleting the words "final certificate for payment" and replacing with "Final Certificate for Payment".

GC5.7.4 is deleted in its entirety and replaced as follows:

- 5.7.4 Subject to paragraph 9.4.1 of GC9.4 - CONSTRUCTION SAFETY & WORKPLACEBC RULES, and the *Lien Act*, the City shall, no later than twenty-one (21) calendar days after the issuance of a Final Certificate for Payment, pay the Contractor as provided in GC5.1.6.4

GC6.1 OWNER'S RIGHT TO MAKE CHANGES

GC6.1.3 is added as follows:

- 6.1.3 Change Orders, contemplated Change Orders, and Change Directives shall be on printed forms supplied by the City or Consultant and may include:
 - .1 job site instructions or site memo forms, for immediate authorization at the Place of the Work in order not to delay the performance of the Work and for changes of a minor nature with no price variation, which shall be issued on site on the signature of the Consultant only;
 - .2 contemplated Change Orders issued by the Consultant for purposes of the Contractor's response to a proposed method of adjustment and extent of adjustment to the Contract Price or Contract Time, which shall be signed by the Consultant only;
 - .3 Change Orders authorizing the Contractor to proceed with the Work as set out by the Consultant and Contractor in a contemplated Change Order, which shall be signed by the City and the Contractor.

GC6.1.4 is added as follows:

- 6.1.4 *Basis of Payment for Changes on Cost Plus Basis*
 - .1 *Work Done on Cost Plus Basis:* The cost of Work done under a Change Directive or Change Order on a cost-plus basis, except as otherwise specified in the Contract Documents or agreed in writing between the City and the Contractor, shall be at rates prevailing in the locality of the Place of the Work and, subject

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to GC6.1.6, shall include the cost elements set out in GC5.1A.3(i) through (xvi) as applicable to such Work.

- .2 *Approval Required:* The Contractor shall obtain the Consultant's approval prior to subcontracting or entering into other agreements for Work done under a Change Directive or Change Order on a cost-plus basis.
- .3 *Rejection of Costs:* The Consultant may refuse to certify payment for all or part of the cost of any item under any cost element, where the item in question was unsuitable or unnecessary, or the cost was otherwise improperly incurred in the performance of the Work.
- .4 *Records:* The Contractor shall keep full and detailed accounts and records necessary for the documentation of the cost of Work done under a Change Directive or Change Order on a cost-plus basis, and shall provide the Consultant with copies thereof when requested.
- .5 *Access to Records:* the City and the Consultant shall be afforded reasonable access to all of the Contractor's books, records, correspondence, instructions, drawings, receipts, vouchers, and memoranda related to the cost of Work done under a Change Directive or Change Order on a cost-plus basis, and for this purpose the Contractor shall preserve such records for a period of one (1) year after the date of Substantial Performance of the Work.
- .6 Notwithstanding any other provision hereof, when a change in the Work is valued on a cost-plus basis, then:
 - (i) the costs of labour will be determined by the labour rates specified in the schedules to the Agreement, including the Schedule of Force Account Labour and Construction Equipment Rates, if any, in each case without any mark up unless otherwise specified therein;
 - (ii) the costs of Construction Equipment will be determined by the construction equipment rates specified in the schedules to the Agreement, including the Schedule of Force Account Labour and Construction Equipment Rates, if any, in each case without mark up unless otherwise specified therein; and
 - (iii) for further certainty, to the extent that any changes involve changes in the quantities of Unit Price Work such changes will be determined solely by the unit prices, without mark-up, unless otherwise specified in the schedules to the Agreement.

GC6.1.5 is added as follows:

6.1.5 Valuation and Marks ups for all Change Orders and Change Directives

The following terms and conditions will apply to any quotation for a Change Order prepared by the Contractor pursuant to GC 6.2 - *CHANGE ORDER*, and will also apply to any Change Directive issued pursuant to GC 6.3 - *CHANGE DIRECTIVE*:

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- .1 The valuation for all (except previously agreed separate prices and unit prices) Work done under a Change Directive or Change Order which result in an increase in the Contract Price, whether valued as a lump sum or on a cost-plus basis, will be based on the actual direct unavoidable costs incurred by the Contractor and will be deemed to include all amounts on account of overhead, profit, administrative, and any other indirect expenses or allowances except as follows:
 - .1 The Contractor will receive combined overhead and profit equal to ten percent (10%) of the direct unavoidable costs incurred by the Contractor's use of his own forces;
 - .2 The Contractor will receive five percent (5%) combined overhead and profit on the amounts paid by the Contractor to any Subcontractor or Suppliers as a direct result of the Change Order or Change Directive (provided always that the Subcontract contains the same limitations on Change Orders and Change Directives as this Contract).
 - .3 The Subcontractor will receive combined overhead and profit of ten percent (10%) on account of the direct unavoidable costs incurred by the Subcontractor as direct result of the Change Order or Change Directive, and
 - .4 The Supplier will receive no overhead, profit or other markup on account of the Change Order or Change Directive.
- .2 The valuation for all (except previously agreed separate price and unit rates) changes in the Work which result in a decrease in the Contract Price will be based on the actual savings in all costs to the Contractor, Subcontractor and Suppliers, exclusive of markups or deductions for overhead, profit, administrative or any other indirect costs not causally related to the Change Order or Change Directive.
- .3 If a change in the Work results in both expenditures and savings, any overhead or profit that is otherwise payable by the City shall be payable only on the net increase in expenditures, if any, with respect to that change in the Work.
- .4 The Contractor will only enter into Subcontracts with Subcontractors and Suppliers which obligate each Subcontractor and Supplier to comply with the provisions of this Part 6 - CHANGES IN THE WORK.
- .5 Upon the request of the Consultant, the Contractor will promptly deliver all supporting documentation including labour, Products, services, Subcontract breakdowns and all other documentation in order to substantiate any Change Order quotation or change in the Contract Price pursuant to a Change Directive.
- .6 The Contractor will be responsible for having time sheets covering all personnel respecting any Change Order or Change Directive checked and approved daily by the Consultant, and claims for reimbursement of any extra

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wages, salaries or other expenses relating to such personnel will only be accepted when properly supported by such signed time sheets.

- .7 All costs and expenses incurred by the Contractor and any Subcontractor or Suppliers in preparing any requested Change Order quotation or submitting, substantiating or otherwise administering a claim pursuant to a Change Order or Change Directive will be the responsibility of the Contractor and may not be included in any adjustment to the Contract Price.

GC6.1.6 is added as follows:

6.1.6 Cost Plus Maximum under Change Order

When a change in Work is valued on a cost-plus basis, the City may require that the aggregate amount incurred under the corresponding Change Directive shall not exceed a maximum amount acceptable to the City, acting reasonably, and specified in the Change Directive, as such amount may be revised from time to time by subsequent written authorization of the City. The Contractor shall not be entitled to payment in excess of such applicable maximum amount in respect of any such Change Directive.

GC6.3 CHANGE DIRECTIVE

GC6.3.3 is deleted in its entirety.

GC6.3.5 is deleted in its entirety.

GC6.3.6 is deleted in its entirety.

GC6.3.7 is deleted in its entirety.

GC6.3.8 is deleted in its entirety.

GC6.3.9 is deleted in its entirety.

GC6.3.10 is deleted in its entirety.

GC6.4 CONCEALED OR UNKNOWN CONDITIONS

GC6.4.1 is deleted in its entirety and replaced as follows:

- 6.4.1 If the Contractor discovers conditions at the Place of the Work which: (i) are subsurface or otherwise concealed physical conditions which existed before the commencement of the Work; (ii) could not reasonably have been discovered by proper investigation by the Contractor under GC3.10.13; and (iii) differ materially from those disclosed in the Contract Documents, including any geotechnical report, environmental assessment, or other report included or referenced in the Contract Documents or provided or made known to the Contractor before the commencement of the Work, then the Contractor shall give Notice in Writing to the Consultant of such conditions before they are disturbed and in no event later than five (5) Working Days after first observance of the conditions.

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GC6.4.1A is added as follows:

6.4.1A The Contractor must give notice under GC6.4.1 within five (5) Working Days after discovery of the conditions or the time when the Contractor by reasonable diligence could have discovered the conditions, failing which the Contractor may not make or enforce any claim against the City, whether for a change in the Contract Price or other compensation or for an extension of the Contract Time arising from those conditions.

GC6.4.2 is amended by deleting the words "If the finding is that the conditions differ materially and this would cause" and replacing with "If the requirements of GC6.4.1 and GC6.4.1A are satisfied and the relevant conditions would cause".

GC6.4.3 is amended by deleting the words "the conditions at the Place of Work are not materially different" and replacing with "the requirements of GC6.4.1 and GC6.4.1A are not satisfied".

GC6.4.4 is deleted in its entirety and replaced as follows:

6.4.4 If such concealed or unknown conditions relate to Hazardous Substances, artefacts and fossils, or mould, the parties will be governed by the provisions of GC9.2 - TOXIC AND HAZARDOUS SUBSTANCES, GC9.3 - ARTIFACTS AND FOSSILS and GC9.5 - MOULD.

GC7.1 OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT

GC7.1.5.2 is amended by deleting the words "final certificate for payment" and replacing with "Final Certificate for Payment".

GC7.1.7 is added as follows:

7.1.7 The City may terminate the Contract at any time for the convenience of the City by notice given to the Contractor. If the Contract is terminated under this GC7.1.7, then:

- (a) the Contractor shall suspend performance of the Work and shall not incur further cost or expense in relation to the Work, except (i) as necessary to protect the Work and the safety of persons, or (ii) as authorized or directed in writing by the City;
- (b) the Contractor shall remove from the Place of the Work its personnel and all Construction Equipment and other material that is owned or leased by the Contractor, except as otherwise required to comply with GC7.1.7(a)(i) and (ii); and
- (c) the City shall pay the Contractor for all Work performed, including the cost of complying with GC7.1.7(a)(i) and (ii), in accordance with the terms and conditions of payment set out in the Contract, together with the documented and reasonable cost of terminating subcontracts with Subcontractors and Suppliers and demobilizing the Contractor's personnel and Construction Equipment, all as certified by the Consultant, and upon such payment being made, the Contractor shall have no further or other claim against the City for, or in connection with, termination of the Contract.

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GC7.2 CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE CONTRACT

GC7.2.2 is amended by replacing the number "20" where it appears in the first sentence with the number "30".

GC7.2.3 is amended by adding the following to the beginning of the first sentence:

If the default cannot be corrected in five (5) Working Days or in such other time as may be subsequently agreed in writing by the parties,

GC7.2.3.1 is deleted in its entirety.

GC7.2.3.4 is deleted in its entirety and replaced with the following:

.4 the City violates the requirements of the Contract to a substantial degree and the Consultant, except for GC5.1- GENERAL FINANCIAL/PAYMENT PROVISIONS, confirms by written statement to the Contractor that sufficient cause exists.

GC7.2.4 is amended by revising the second line to read:

...corrected within fourteen (14) Working Days following the receipt of the Notice in Writing, the Contractor may, without prejudice to any ...

GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION

GC8.2.1.1 is deleted in its entirety and replaced as follows:

.1 within thirty (30) Working Days after the Contract was awarded, or

GC8.2.1.2 is deleted in its entirety and replaced as follows:

.2 if the parties neglected to make an appointment within the thirty (30) Working Days, within twenty (20) Working Days after either party by Notice in Writing requests that the Project Mediator be appointed.

GC8.2.3 is amended by adding the following to the end:

However, the City and the Contractor nonetheless irrevocably and unconditionally attorn to the jurisdiction of the courts of British Columbia, and courts to which appeals therefrom may be taken, in respect of any dispute or claim arising under or relating to the Contract. The City and the Contractor acknowledge and agree that such courts have jurisdiction, but not necessarily exclusive jurisdiction in respect of any such dispute or claim. If a dispute arises under or in relation to this Contract, and the dispute cannot be resolved by the City's project manager and the Contractor's principal representative at the Place of the Work within three (3) Working Days after the dispute arises, or the City's project manager is not authorized to resolve the dispute, then:

(a) the dispute will be referred to the City's Director of Facilities and the Contractor's project manager for resolution, and if they cannot resolve the dispute within three (3) Working Days after referral to them, then

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- (b) the dispute will be referred to a senior executive of the City designated by it and a senior executive of the Contractor designated by it, for resolution, and if they cannot resolve the dispute within three (3) Working Days after referral to them, then
- (c) either party may take such further legal proceedings as they consider necessary for the resolution of the dispute either concurrently with or in lieu of the process outlined in GC8.2.4 to GC8.2.9.

GC8.2.4 is amended by revising the second line to read:

...the parties may request the Project Mediator...

GC8.2.6 is amended by revising the second line to read:

...either party may request referral of the dispute...

GC8.2.7 is deleted in its entirety and replaced as follows:

- 8.2.7 If a Notice in Writing is not given under paragraph 8.2.6 within the required time or the other party does not reply and agree to binding arbitration, the parties may refer the unresolved dispute to the courts or to any other form of dispute resolution, including arbitration, which they have agreed to use.

GC8.2.9 is added as follows:

- 8.2.9 Where references are made in the Contract Documents to "the time of bid closing", it is intended by the parties that this shall mean the effective date of the contract.

GC9.1 PROTECTION OF WORK AND PROPERTY

GC9.1.1 is deleted in its entirety and replaced with the following:

- 9.1.1 The Contractor shall protect the Work, Products delivered to the Place of the Work, the City's property and property on or adjacent to the Place of the Work from theft and damage which may arise as the result of the Contractor's operations under the Contract, and shall be responsible for such theft and damage, except theft and damage which occurs as the result of:
 - .1 errors in the Contract Documents;
 - .2 acts or omissions by the City, other contractors, or their agents and employees.

GC9.1.4 is amended by revising the first line to read:

Should damage occur to the Work, Products delivered to the Place of the Work, the City's property or property on or adjacent to the Place of the Work, for which the Contractor is not responsible, as provided in paragraph...

GC9.1.5 is added as follows:

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9.1.5 The Contractor is responsible for protection of the Work during shutdown, including shutdowns caused by strikes.

GC9.2 TOXIC AND HAZARDOUS SUBSTANCES

GC9.2.1 is deleted in its entirety and replaced with the following:

9.2.1 For the purposes of the Contract, the City shall be deemed to have control and management of the Place of the Work with respect to the condition of the Place of the Work prior to the commencement of the Work in relation to applicable Environmental Law and the presence of any Hazardous Substances.

GC9.2.2 is deleted in its entirety and replaced with the following:

9.2.2 Prior to the Contractor commencing the Work, the City shall:

.1 take reasonable steps to determine whether the Place of the Work contains any Hazardous Substances and, if so, whether the condition of the Place of the Work is in compliance with applicable Environmental Law; and

.2 provide the Consultant and the Contractor with a written list of any such Hazardous Substances that the City knows to exist on, and their locations within, the Place of the Work.

GC9.2.3 is deleted in its entirety and replaced with the following:

9.2.3 Unless the Contract expressly provides otherwise, the City shall be responsible for taking such steps as may be necessary, in accordance with applicable Environmental Law to dispose of, store or otherwise deal with Hazardous Substances so as to cause the Place of the Work to comply with the requirements of applicable Environmental Law before the Contractor commences the Work.

GC9.2.4 is deleted in its entirety and replaced with the following:

9.2.4 Except as previously disclosed in writing by the City or as otherwise known by the Contractor, if the Contractor:

.1 encounters Hazardous Substances at the Place of the Work; or

.2 has reasonable grounds to believe that Hazardous Substances are present at the Place of the Work which were not brought to the Place of the Work by the Contractor or anyone for whom the Contractor is responsible or which were disclosed but have not been dealt with as required under paragraph 9.2.3,

the Contractor shall:

(a) take reasonable steps, including stopping the Work, to ensure that no person's exposure to any Hazardous Substance at the Place of the Work exceeds any levels contrary to the requirements of applicable Environmental Law, and

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- (b) immediately report the circumstances to the Consultant and the City by Notice in Writing.

GC9.2.5 is deleted in its entirety and replaced with the following:

- 9.2.5 If the City and the Contractor, acting reasonably, fail to agree on whether the condition of the Place of the Work is in compliance with applicable Environmental Law prior to the commencement of the Work or whether Hazardous Substances were brought onto the Place of the Work by the Contractor or anyone for whom the Contractor is responsible, or whether the Contractor or anyone for whom the Contractor is responsible caused the release of Hazardous Substances at the Place of the Work, the City shall retain an independent qualified expert to investigate and report on the subject of the dispute. Subject to paragraph 9.2.6, the City shall pay for the cost of the expert's investigation and report. The City will provide a copy of the expert's report to the Contractor.

GC9.2.6 is deleted in its entirety and replaced with the following:

- 9.2.6 If the expert's report under paragraph 9.2.5 determines that the Place of the Work was in compliance with applicable Environmental Law prior to the commencement of the Work or that Hazardous Substances were brought onto the Place of the Work by the Contractor or any for whom the Contractor is responsible, or that the Contractor or anyone for whom the Contractor is responsible caused the release of a Hazardous Substance at the Place of the Work, the Contractor shall pay for the cost of the expert's investigation and report.

GC9.2.7 is deleted in its entirety and replaced with the following:

- 9.2.7 If the City and the Contractor agree, or if the expert's report under paragraph 9.2.5 concludes, that the Contractor or anyone for whom the Contractor is responsible brought a Hazardous Substance onto, or caused the release of a Hazardous Substance on, the Place of the Work, the Contractor shall promptly at the Contractor's expense:
- .1 take such steps as are necessary to safely and in compliance with Environmental Law remove, transport and dispose of such Hazardous Substance and to remediate the Place of the Work to such extent as is required to cause the Place of the Work to comply with all applicable Environmental Law;
 - .2 make good any damage to the Work, the City's property and any property affected by any migration of the Hazardous Substance as provided in paragraph 9.1.3 of GC9.1 - PROTECTION OF WORK AND PROPERTY;
 - .3 reimburse the City for all resultant costs and expenses reasonably incurred by the City; and
 - .4 indemnify the City as required by GC12.1 - INDEMNIFICATION

GC9.2.8 is deleted in its entirety and replaced with the following:

- 9.2.8 If the City and the Contractor agree, or if the expert's report under paragraph 9.2.5 concludes, that neither the Contractor nor anyone for whom the Contractor is

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responsible is responsible for bringing a Hazardous Substance onto, or for causing the release of a Hazardous Substance on, the Place of the Work, the City shall promptly at the City's expense:

- .1 take such steps as are necessary to safely and in compliance with Environmental Law remove, transport and dispose of such Hazardous Substance and to remediate the Place of the Work to such extent as is required to cause the Place of the Work to comply with all applicable Environmental Law;
- .2 reimburse the Contractor for all resultant costs and expenses reasonably incurred by the Contractor;
- .3 extend the Contract time for such reasonable time as the Consultant may recommend in consultation with the Contractor and the expert referred to in paragraph 9.2.5 and reimburse the Contractor for costs reasonably incurred as a result of the delay, and
- .4 indemnify the Contractor as required by GC12.1 - INDEMNIFICATION.

GC9.2.9 is amended by deleting the words "Part 8 of the General Conditions - Dispute Resolution" from the second line and replacing with "Part 8 - DISPUTE RESOLUTION".

GC9.2.10 is added as follows:

- 9.2.10 The Contractor shall, and shall ensure that anyone for whom the Contractor is responsible shall, at all times comply with all applicable Environmental Law and ensure that all Work is conducted in compliance with all applicable Environmental Law.

GC 9.3 ARTIFACTS AND FOSSILS

GC9.3.1 is deleted in its entirety and replaced with the following:

- 9.3.1 If the Contractor or anyone for whom the Contractor is responsible discovers fossils coins, articles of value or antiquity, structures and other remains or things of scientific, cultural or historical interest at the Place of the Work (in GC9.3 called, "Historical Items"), the Contractor shall immediately give Notice in Writing thereof to the City and the Consultant. As between the City and the Contractor, all Historical Items shall be, and shall be deemed to be, the absolute property of the City, and the Contractor hereby irrevocably waives and disclaims any right, title or interest therein.

GC9.3.2 is deleted in its entirety and replaced with the following:

- 9.3.2 The Contractor shall take all reasonable precautions, and shall comply with all reasonable directions from the Consultant, to prevent removal or damage to Historical Items as identified in paragraph 9.3.1 or as otherwise known to be present at the Place of the Work.

GC9.3.3 is deleted in its entirety and replaced with the following:

- 9.3.3 The Consultant will investigate the impact on the Work of the discovery of any Historical Item identified in paragraph 9.3.1. If conditions are found that would cause

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an increase or decrease in the Contractor's cost or time to perform the Work, the Consultant, with the City's approval, will issue appropriate instructions for a change in the Work as provided in GC6.2 -CHANGE ORDER or GC6.3 - CHANGE DIRECTIVE.

GC9.4 CONSTRUCTION SAFETY

The above heading for GC9.4 is amended by adding "&WORKSAFEBC RULES" to the end.

GC9.4.2 is added as follows:

- 9.4.2 Unless otherwise specified in the Contract Documents or notified to the contrary by the Consultant, the Contractor is the "prime contractor" for the purpose of the WorkSafeBC Rules, notwithstanding that the City, the Consultant or another contractor may provide from time to time some of the services normally provided by such a "prime contractor".

GC9.4.3 is added as follows

- 9.4.3 If the Contractor is the "prime contractor", the Contractor shall:

- .1 *Compliance with Law:* comply with all Applicable Laws, and all reasonable rules established by the City of which the Contractor is given timely notice through the Consultant, relative to occupational health and safety;
- .2 *Safety Programs:* initiate, maintain and supervise all safety programs and measures in connection with the performance of the Work, which program shall respond fully to the requirements of all Applicable Laws relative to occupational health and safety, all to the satisfaction of the Consultant;
- .3 *Site Meetings:* conduct regular safety meetings at the Place of the Work, no less frequently than weekly, record minutes of such meetings and give copies of such minutes to the Consultant on a weekly basis;
- .4 *Safety Equipment:* supply and maintain at the Place of the Work all safety equipment necessary to protect workers and others from accident or injury; and
- .5 *First Aid:* supply and maintain at the Place of the Work all personnel, equipment and supplies necessary for the provision of appropriate first-aid to any worker or person suffering an accident or injury at or about the Place of the Work, and establish an emergency procedure for prompt removal of any such person from the Place of the Work to a hospital, clinic or medical office for further treatment.
- .6 *Notice of Project:* prior to commencement of construction:
 - (a) complete and file a "Notice of Project" with the WorkSafeBC in compliance with Section 20.2 of the *Occupational Health and Safety Regulation*;
 - (b) post the Notice of Project at the Place of the Work, and

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- (c) provide a copy of the Notice of Project to the City and confirm in writing that the Notice of Project has been posted at the Place of the Work.

GC9.4.4 is added as follows

- 9.4.4 If, or for so long as the Contractor is not the "prime contractor", the Contractor shall:
- .1 *Compliance with Law:* comply with all Applicable Laws, and all reasonable rules established by the City of which the Contractor is given timely notice through the Consultant, relative to occupational health and safety;
 - .2 *Compliance with Directions:* comply with all reasonable directions issued by the "prime contractor" regarding compliance with Applicable Laws, and rules established by the City, relative to occupational health and safety; and
 - .3 *Site Safety Meetings:* attend all Place of the Work safety meetings convened by the "prime contractor".

GC9.4.5 is added as follows

- 9.4.5 Whether or not the Contractor is the "prime contractor", it shall:
- .1 *Reporting:* report immediately to the "prime contractor" (if not the Contractor) and the Consultant all accidents and injuries of any kind or severity occurring on or about the Place of the Work and involving employees of the Contractor or any Subcontractor, or any other person of which the Contractor is aware, and arising out of or in connection with the Work;
 - .2 *Written Confirmation:* confirm in writing each report made under subparagraph (a); and
 - .3 *City Policy:* respect and adhere to City's safety and training policies relative to the Place of the Work and the Work.

GC9.4.6 is added as follows

- 9.4.6 If the Consultant determines that the Contractor is not in compliance with its obligations as "prime contractor", if applicable, the City may, but is not obliged to, provide some or all of the services required to discharge those obligations. All costs incurred by the City in providing such services shall be paid by the Contractor to the City, and may be deducted from any amount then or thereafter becoming due to the Contractor under the Contract.

GC9.4.7 is added as follows:

- 9.4.7 The Contractor shall indemnify and save harmless the City from any and all damages, liabilities, cost, fines, penalties, fees and expenses whatsoever including, without limitation, legal fees, charges and disbursements as between a solicitor and his own client, related to or arising out of the assignment to the Contractor, and the

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Contractor's assumption, of the responsibilities, obligations and liabilities of the "prime contractor" under the WorkSafeBC Rules with respect to the Place of the Work.

GC9.4.8 is added as follows:

- 9.4.8 The Contractor agrees that it shall at its own expense procure and carry or cause to be procured and carried and paid for, full WorkSafeBC coverage for itself and all workers, employees, servants and others engaged in or upon any work or service which is the subject of this Contract.

GC9.4.9 is added as follows:

- 9.4.9 The Contractor agrees that the City has the unfettered right to set off the amount of the unpaid premiums and assessments for such WorkSafeBC coverage against any monies owing by the City to the Contractor. The City shall have the right to withhold payment under this Contract until the WorkSafeBC premiums, assessments or penalties in respect of work done or service performed in fulfilling this Contract had been paid in full.

GC9.4.10 is added as follows:

- 9.4.10 Promptly upon execution of this Agreement, the Contractor will provide the City with the Contractor's and all Subcontractors' WorkSafeBC registration numbers.

GC9.4.11 is added as follows:

- 9.4.11 Promptly upon execution of this Agreement, and concurrently with making any application for payment under this Contract, the Contractor will provide the City with written confirmation that the Contractor and all Subcontractors are registered in good standing with WorkSafeBC and that all assessments have been paid to the then current date.

GC9.4.12 is added as follows:

- 9.4.12 The Contractor may or may not have received, as part of the Contract Documents, a "Pre-Contract Hazard Assessment" prepared by or for the City pursuant to the City's statutory obligations under the WorkSafeBC Rules (Section 119 of the *Workers' Compensation Act*) as an "owner of a workplace". Despite the City's statutory obligations, the Contractor now acknowledges and agrees that the Contractor may not rely on the "Pre-Contract Hazard Assessment" and now agrees to assume by the terms of this Contract full responsibility for carrying out the City's obligations under Section 119 of the *Workers' Compensation Act*, including without limitation and by way of example only, conducting all due diligence inquiries of all applicable City staff and departments in order to ascertain what, if any, information is known or has been recorded by City staff about the Place of the Work that is necessary to identify and eliminate or control hazards to the health or safety of persons at the Place of the Work. The City now agrees to make all reasonable efforts to assist the Contractor in obtaining timely access to City staff and City records for this purpose.

GC9.4.13 is added as follows:

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9.4.13 The Contractor will indemnify the City and hold harmless the City from all manner of claims, demands, costs, losses, penalties and proceedings arising out of or in any way related to:

- .1 unpaid WorkSafeBC assessments of the Contractor or any other employer for whom the Contractor is responsible under this Contract;
- .2 the acts or omissions of any person engaged directly or indirectly by the Contractor in the performance of this Contract, or for whom the Contractor is liable pursuant to the Contractor's obligations as the "prime contractor", and which acts or omissions are or are alleged by WorkSafeBC to constitute a breach of the WorkSafeBC Rules or other failure to observe safety rules, regulations and practices of WorkSafeBC, including any and all fines and penalties levied by WorkSafeBC; or
- .3 any breach of the Contractor's obligations under Clause GC9.1.

GC9.4.14 is added as follows:

9.4.14 The Contractor agrees to retain a full-time construction safety officer whenever required by the then-current Vancouver Building By-law. The construction safety officer shall bear written proof of qualification satisfactory to the City of Vancouver's Director of Permits and Licenses.

GC9.5 MOULD

GC9.5.1 is deleted in its entirety and replaced with the following:

9.5.1 If the Contractor or the City observes or reasonably suspects the presence of mould at the Place of the Work of the nature and quantity such that special handling and precautions are required under Environmental Law or that otherwise may reasonably present a hazard to the health and safety of persons, the remediation of which has not been separately arranged by the City or is not expressly part of the Work,

- .1 the observing party shall promptly report the circumstances to the other party by Notice in Writing;
- .2 the Contractor shall promptly take all reasonable steps, including stopping all or such portions of the Work as may be necessary to ensure that no person suffers injury, sickness or death and that no property is damaged as a result of exposure to or the presence of the mould; and
- .3 if the City and the Contractor do not agree on whether any mould discovered is of the nature and quantity such that special handling and precautions are required under Environmental Law, or whether such mould may otherwise reasonably present a hazard to the health and safety of persons, or with respect to what steps are appropriate to be taken to deal with the mould, or as to the cause of the presence of the mould, the City shall retain an independent qualified expert to investigate and report on the subject of the dispute. Subject to paragraph 9.5.2, the City shall pay for the cost of the expert's

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investigation and report. The City will provide a copy of the expert's report to the Contractor.

GC9.5.2 is deleted in its entirety and replaced with the following:

- 9.5.2 If the expert's report under paragraph 9.5.1.3 determines that the mould does not require special handling and precautions in compliance with Environmental Law or does not otherwise reasonably present a hazard to the health and safety of persons, the Contractor will pay for the cost of the expert's investigation and report. If the expert's report under paragraph 9.5.1.3 determines that the mould was caused as the result of the acts or omissions of the Contractor or anyone for whom the Contractor is responsible, the Contractor shall promptly, at the Contractor's expense:
- .1 take such steps as are necessary to safely and in compliance with Environmental Law remove, transport and dispose of such mould and to remediate the Place of the Work to such extent as is required to cause the Place of the Work to comply with all applicable Environmental Law;
 - .2 make good any damage to the Work, the City's property and any property affected by the mould as provided in paragraph 9.1.3 of GC9.1 - PROTECTION OF WORK AND PROPERTY;
 - .3 reimburse the City for all resultant costs and expenses reasonably incurred by the City; and
 - .4 indemnify the City as required by GC12.1 - INDEMNIFICATION.

GC9.5.3 is deleted in its entirety and replaced with the following:

- 9.5.3 If the City and the Contractor agree, or if the expert's report under paragraph 9.5.1.3 concludes, that the presence of mould at the Place of the Work requires special handling or precautions under Environmental Law or otherwise presents a hazard to the health or safety of persons, and that the Contractor or anyone for whom the Contractor is responsible is not responsible for the presence of such mould, the City shall promptly at the City's expense:
- .1 take such steps as are necessary to safely and in compliance with Environmental Law remove, transport and dispose of such mould and to remediate the Place of the Work to such extent as is required to cause the Place of the Work to comply with all applicable Environmental Law;
 - .2 reimburse the Contractor for the cost of taking the steps under paragraph 9.5.1.2 and making good any damage to the Work as provided in paragraph 9.1.4 of GC9.1 - PROTECTION OF WORK AND PROPERTY; and
 - .3 extend the Contract Time for such reasonable time as the Consultant may recommend in consultation with the Contractor and the expert referred to in paragraph 9.5.1.3 and reimburse the Contractor for reasonable costs incurred as a result of the delay.

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GC10.1 TAXES AND DUTIES

GC10.1.1 is deleted in its entirety and replaced as follows:

10.1.1 The Contractor shall allow for the payment by the Contractor out of the Contract Price of all PST, GST and other federal, provincial and municipal taxes, rates, levies, assessments and duties, both refundable and non-refundable, and all deposits, (temporary crossings, excavations, etc.). The Contractor agrees to indemnify and save harmless at all times the City from and against all claims which may be made with respect thereto.

GC10.1.2 is amended by revising the first line to read:

...due to changes in such included taxes, duties and rebates after the time...

GC10.1.3 is added as follows:

10.1.3 Where an exemption or recovery of government sales taxes, customs duties or excise taxes is applicable to the Contract, the Contractor shall submit for the City's review the exemption or recovery application and the supporting invoices of the actual quantities of materials incorporated in the Work prior to applying for the rebate. The City will then issue a certificate verifying the application.

GC10.1.4 is added as follows:

10.1.4 Notwithstanding any other provision to the contrary, if the City determines that it is necessary to satisfy its obligations under any Applicable Law relating to taxes, the City may:

- .1 withhold an amount from a payment made to the Contractor hereunder; and
- .2 pay the withheld amount directly to the competent government authority,

in which case the amount so withheld and paid by the City to the relevant competent government authority shall be deemed to have been paid to the Contractor on the date on which the remainder of the payment to which it relates was paid to the Contractor, and the Contractor agrees and acknowledges that it shall have no claim against the City for such amount withheld and paid to the competent government authority.

GC10.2 LAWS, NOTICES, PERMITS AND FEES

GC10.2.2 is deleted in its entirety and replaced as follows:

10.2.2 The Contractor shall, except as set out below in this GC10.2.2 and unless otherwise specified in the Contract Documents, obtain and maintain all permits, licences, and certificates and pay all fees required for the performance of the Work, and obtain all necessary access and storage rights for areas outside of the Place of the Work (including without limitation and by way of example only, parking for its workers, the swing arc of any construction crane required for the Work, or storage space for materials) but this shall not include any development permit (if applicable) or building permit, which have been obtained by the Consultant, paid for by the City,

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and issued to the City; nor shall it include the obligation to obtain easements or other access rights over the actual Place of the Work.

GC10.2.3 deleted in its entirety and replaced as follows:

10.2.3 The Contractor shall be responsible for the procurement of permits, licences, inspections, and certificates, which are necessary for the performance of the Work and customarily obtained by contractors in the jurisdiction of the Place of the Work after the issuance of the building permit. The Contract Price includes the cost of all permits (except building and development permits but including occupancy permits), licences, inspections and certificates and their procurement. The Contractor will arrange for all inspections and testing required by such permits. The Contractor shall provide to the Consultant copies of all permits and inspection reports from the various authorities as soon as they are received.

GC10.2.5 is amended by revising the first sentence to read:

10.2.5 The Contractor shall be responsible to provide reasonable verification that the Contract Documents are in compliance...

GC10.4 WORKERS' COMPENSATION

GC10.4 is deleted in its entirety.

GC10.5 LIVING WAGE

GC10.5 is added as follows:

GC10.5 LIVING WAGE

10.5.1 For the purposes of this GC10.5, the following terms shall have the following meanings:

- (a) "Living Wage" means the hourly wage established by the Living Wage Certifier from time to time during the Term, which, as of the date of execution of the Contract, is \$20.62 per hour, which includes: (i) direct wages; and (ii) the value of any non-mandatory benefits such as paid sick leave, employer-paid Medical Services Plan premiums and extended health benefits;
- (b) "Living Wage Certifier" means the Living Wage for Families Campaign, any successor entity, or, in the event the Living Wage for Families Campaign ceases to carry on operations, such other living wage certification entity designated by the City to the Contractor in writing;
- (c) "Living Wage Employee" means any and all employees of the Contractor and all Subcontractors of the Contractor that perform any part of the Work on a property owned by or leased to the City, including all streets, sidewalks and other public rights of way, for at least one consecutive hour, but excluding Students, volunteers and employees of Social Enterprises;

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- (d) “Social Enterprise” means a business that: (i) is owned by a non-profit organization or community services co-operative; (ii) is directly involved in the production and/or selling of goods and services for the combined purpose of generating income and achieving social, cultural, and/or environmental aims; and (iii) has a defined social and/or environmental mandate.
- (e) “Student” means an individual who is enrolled in a school, college, university or other educational institution and is employed by the Contractor or a Subcontractor, as the case may be, to obtain practical workplace experience as a requirement of or credit for their education;
- 10.5.2 Notwithstanding any other provision of any Contract Document but subject to GC 10.5.3, the Contractor shall pay all Living Wage Employees not less than the Living Wage.
- 10.5.3 Notwithstanding GC 10.5.2, the Contractor has up to 6 months from the date on which any increase in the Living Wage is published by the Living Wage Certifier to increase wages for all Living Wage Employees such that all Living Wage Employees continue to be paid not less than the Living Wage.
- 10.5.4 The Contractor shall ensure that the requirements of GC 10.5.2 apply to all Subcontractors.
- 10.5.5 A breach by the Contractor of its obligations pursuant to GC 10.5.2 and 10.5.4 shall be deemed to constitute a failure by the Contractor to comply with the requirements of the Contract to a substantial degree and shall entitle the City to terminate the Contract in accordance with GC 7.1.2.
- 10.5.6 The Contractor shall maintain up-to-date records and accounts which clearly document its satisfaction of the requirements of this GC 10.5 and shall make the same available to the City upon request. The City may request copies of all such records and accounts which shall be provided to the City by the Contractor (subject to reimbursement of the Contractor’s reasonable copying costs and any other direct costs and expenses, if any) at any time prior to the expiry of 365 days after Total Completion of the Work or earlier termination of this Agreement. Any records and accounts provided by the Contractor in accordance with this Section 10.5.5 shall be treated by the City as confidential information.
- 10.5.7 The Contractor shall, at the direction of the City, post signs at Places of Work that are owned by or leased to the City, including all streets, sidewalks and other public rights of way, informing Living Wage Employees of the obligations of the Contractor and Subcontractor pursuant to this GC 10.5 and providing contact information to report any breaches thereof. The City shall supply the Contractor with all such signs and the Contractor shall return all such signs upon completion of the Work or otherwise at the request of the City.
- 10.5.8 The Contractor shall prepare and submit to the City in a format reasonably acceptable to the City before January 31 of each calendar year of the term or, for each partial calendar year of the term, within 30 days of the expiry of the term a living wage report setting out:

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- (a) the number of Living Wage Employees of the Contractor and each Subcontractor who were paid a Living Wage pursuant to this Section 3.12 during the previous calendar year or portion thereof that would not have received a Living Wage for substantially similar work but for the obligations of the Contractor pursuant to this GC10.5; and
- (b) the total incremental costs incurred by the Contractor, including any amounts paid to Subcontractors, in order to fulfill its obligations pursuant to this GC10.5 to pay a Living Wage to the Living Wage Employees described in GC10.5.8(a).

GC11.1 INSURANCE

GC11.1 is deleted in its entirety and replaced as follows:

GC11.1 GENERAL INSURANCE REQUIREMENTS

- 11.1.1 The Contractor and Subcontractors shall be required to file with the City on or prior to the date of this Agreement (or at such later time as they become Subcontractors), "Certificates of Insurance" in the form required by the City, and where required by the City's Director of Risk Management, certified copies of all insurance policies and endorsements evidencing the placement and endorsement of insurance in accordance with this GC11.1 and GC11.2.
- 11.1.2 The Contractor and Subcontractors shall be required to file evidence of renewal of the insurance policies required under this GC11.1 and GC11.2 with the City at least fifteen (15) calendar days prior to their expiry.
- 11.1.3 In addition to the specific requirements set out below, all policies of insurance shall:
 - .1 be endorsed so as to provide for thirty (30) calendar days' prior notice to the City of cancellation, lapse or material change;
 - .2 if they are for property insurance (as opposed to liability) insurance, contain a waiver of subrogation in favour of the City Insurance Group (as defined below) and all employees and agents of the City Insurance Group;
 - .3 specifically name the City of Vancouver, the Consultant and their officials, officers, employees, agents and consultants engaged on the Project as additional insureds (collectively referred to as the "City Insurance Group");
 - .4 be issued by a company or companies authorized to issue insurance policies in British Columbia; and
 - .5 be issued on a policy form acceptable to the City's Director of Risk Management.
- 11.1.4 Unless otherwise specified, insurance shall be continuously maintained from a date not later than the date hereof, through to the date on which both the Certificate of Completion has been issued for the Work and an occupancy permit, if required, has been issued for the Place of the Work.

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GC11.2 CONTRACT SECURITY

GC11.2 is deleted in its entirety and replaced with the following:

GC 11.2 SPECIFIC INSURANCE COVERAGE

11.2.1 Without restricting the generality of GC12.1 - INDEMNIFICATION, and despite the limits of liability set out in GC12.1 - INDEMNIFICATION, the Contractor and Subcontractors, at their expense, shall retain the following types of insurance:

(a) *Commercial General Liability Insurance:*

Commercial general liability insurance protecting the City Insurance Group, the Contractor, and their respective subcontractors, agents and employees against damages arising from personal injury (including death) and claims for property damage which may arise out of the operations of the Contractor, its Subcontractors, or their respective agents or employees in connection with the Work.

The policy shall be placed prior to commencement of the Work and shall specifically cover liability arising out of the performance of this Contract and shall cover all liability assumed by the Contractor under any contract or agreement, including the indemnity provisions of this Contract. The policy shall be maintained continuously throughout the entire term of the contract through to the date on which both the Certificate of Completion has been issued for the Work and an occupancy permit, if required, has been issued for the Place of the Work, and thereafter, in the case of completed operations coverage for a further period of twenty-four (24) months, and the policy shall provide:

1. broad-form property damage and completed operations coverage;
2. personal injury coverage;
3. blanket contractual liability coverage;
5. contingent employer's liability coverage; and
6. non-owned automobile liability coverage,

and where such further risk exists, the following extensions of coverage shall be included:

1. coverage for shoring, blasting, excavating, underpinning, demolition, removal, pile-driving and grading, as applicable;
2. coverage for hoist liability;
3. coverage for operation of attached machinery; and

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4. contractor's pollution liability coverage, including coverage for asbestos, mould or other hazardous substances.

This insurance shall be for an amount of not less than five million dollars (\$5,000,000) per occurrence, and shall include a standard form of severability of interests and cross-liability clause. The deductible per occurrence shall not exceed ten thousand dollars (\$10,000) and the Contractor shall be liable for all deductible amounts.

(b) *Property & Mechanical and Electrical Breakdown Insurance:*

- (1) All-risks course-of-construction property insurance in the joint names of the Contractor and the City Insurance Group, covering the Work and all property of every description to be used in the performance of the Work. This insurance shall be primary, and be of an amount of not less than the Contract Price. The deductible per occurrence shall not exceed ten thousand dollars (\$10,000); and
- (2) Mechanical and electrical breakdown insurance insuring the interests of the Contractor and the City Insurance Group for not less than the Contract Price.

The following conditions will apply to the property and mechanical and electrical breakdown insurance:

- (A) Where the City wishes to use or occupy part or all of the Work prior to Total Performance of the Work, it shall give written notice to the Contractor pursuant to GC13 - Occupancy and if requested the Contractor shall promptly notify the City in writing of the additional premium cost, if any, to maintain property and boiler insurance, which shall be at the City's expense.
- (B) If, because of such use or occupancy, the Contractor is not requested to or is requested to but is unable to provide coverage, the City upon written notice from the Contractor and prior to such use or occupancy shall provide, maintain and pay for property and mechanical and electrical breakdown insurance insuring the full value of the Work, as in subparagraphs (1) and (2), including coverage for such use or occupancy and shall provide the Contractor with proof of such insurance. The Contractor shall refund to the City the unearned premiums applicable to the Contractor's policies upon termination of coverage.
- (C) The policy shall provide that, in the event of loss or damage, payment shall be made to the City. Loss or damage shall not affect the rights and obligations of either party under the Contract.
- (D) The Contractor shall be entitled to receive from the City, in addition to the amount due under the Contract, the amount at which the City's interest in restoration of the Work has been appraised, such amount to

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be paid as the restoration of the Work proceeds and in accordance with the requirements of GC5.3 - APPLICATIONS FOR PAYMENT and GC5.4 - PROGRESS PAYMENTS. In addition the Contractor shall be entitled to receive from the payments made by the insurer the amount of the Contractor's interest in the restoration of the Work.

- (E) The Contractor shall be responsible for payment of all deductible amounts.
- (F) In the event of loss or damage to the Work arising from the work or act of the City or another Contractor, then the City shall pay the Contractor the cost of restoring the Work as the restoration of the Work proceeds and in accordance with the requirements of GC5.3 - APPLICATIONS FOR PAYMENT and GC5.4 - PROGRESS PAYMENTS.
- (c) *All-Risk Contractor's Equipment Insurance* covering all equipment owned or rented by the Contractor and its agents or employees against all risks of loss or damage with coverage sufficient to allow for immediate replacement.
- (d) *Automobile Liability Insurance* to be carried at all times on all licensed vehicles owned by or leased to the Contractor, protecting against damages arising from bodily injury (including death), and from claims for property damage arising from the operations of the Contractor, its agents or employees. This insurance shall be for a minimum amount of five million dollars (\$5,000,000) inclusive per accident.
- (e) *Environmental Impairment Liability Insurance* if any for a limit not less than \$5,000,000 per occurrence for Contractors and for Subcontractors, and shall include a standard form of severability of interests and cross-liability clause. The deductible per occurrence shall not greater than \$50,000 covering third party bodily injury, property damage and clean-up costs arising out of a pollution event including but not limited to unexpected and unintentional spill, discharge, emission, dispersal, leakage, migration, release or escape of pollutants. Coverage will include the transportation, loading and unloading of materials. The City of Vancouver added as an Additional Insured.

11.2.2 If the Contractor or a Subcontractor fails to provide evidence of the required insurance under this GC11 as and when required by the Contract Documents, then the City shall have the right to obtain the insurance and then give evidence of the same to the Contractor and Consultant, and the cost of doing so will then be payable by the Contractor to the City or at the City's option may be deducted from the Contract Price by Change Directive.

GC11.3 CONTRACT SECURITY

GC11.3 is added as follows:

GC11.3 CONTRACT SECURITY

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11.3.1 The Contractor shall pay for and deliver to the City, on or prior to the date of this Agreement, a performance bond and a labour and material payment bond, which shall each be for fifty percent (50%) of the Contract Price and shall include provision for, without limitation:

1. payment of any Consultant's and legal expenses incurred by the City in determining the extent of the Work executed and Work still to be executed, and any additional Work required as a result of the interruption of the Work,
2. payment of additional expenses caused to the City for watchmen's services, light, heat, power, etc. incurred by the City during the period between the Contractor's default under the Contract and the commencement of a new contract,
3. extended guarantee periods, corrections after final payment, and warranty obligations, and
4. coverage of the faithful performance of all terms and conditions of the Contract Documents including all additions and revisions thereto permitted under the Contract.

11.3.2 Such bonds shall be issued by a duly licensed surety company authorized to transact the business of a surety in British Columbia and the bonds shall be maintained in good standing until the issuance of the Final Certificate for Payment and the expiry of the warranty. Subject to the requirements of this GC11.3, the bonds shall be in accordance with the latest edition of the CCDC approved bond forms.

11.3.3 The Contractor will give the City Notice in Writing of any material change in the surety within five (5) calendar days of the occurrence.

GC12.1 INDEMNIFICATION

GC12.1.1 is deleted in its entirety and replaced as follows:

12.1.1 The Contractor now indemnifies and shall defend, indemnify and hold harmless the City, the Consultant, the project manager and their respective directors, officers, employees, agents, consultants or advisors (collectively, the "Indemnitees") from and against all claims, demands, losses, costs, damages, actions, suits or proceedings ("Liability"), whether founded in equity or at law including contract, tort or statute and howsoever caused, arising from or in any way connected with (A) any wrongful or negligent act, error or omission of, or defective goods supplied by, the Contractor, Subcontractors, Suppliers or their respective employees or agents when attending the Place of the Work or in the performance of the Work, in each case whether or not any one or more of the Indemnitees are contributorily negligent, and (B) any claim made under the Lien Act by a Subcontractor, or a "subcontractor" as defined in the Lien Act. Expressly excluded from this indemnity is any Liability caused solely and directly by the wrongful act or negligence of an Indemnatee.

GC12.1.2 is deleted in its entirety and replaced as follows:

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12.1.2 The obligation of the Contractor to indemnify the Indemnitees shall be limited to the greater of the Contract Price or five million dollars (\$5,000,000) but in no event shall the sum be greater than twenty million dollars (\$20,000,000). However, despite any other term of this Contract, in no event will this limitation apply in any way to reduce or limit the indemnity or recovery by either party under any insurance policy or bond required by the Contract Documents and in no event will this limit apply to the Contractor's or the City's obligations to indemnify under GC9.2 - TOXIC AND HAZARDOUS SUBSTANCES, GC9.4 CONSTRUCTION SAFETY & WORKSAFE BC RULES, GC9.5 -MOULD and GC10.3 - PATENT FEES.

GC12.1.3 is deleted in its entirety and replaced as follows:

12.1.3 The obligation of the Contractor to indemnify the Indemnitees hereunder shall be inclusive of interest and all legal costs.

GC12.1.4 is deleted in its entirety and replaced as follows:

12.1.4 The City and the Contractor shall indemnify and hold harmless the other from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of their obligations described in GC9.2 - TOXIC AND HAZARDOUS SUBSTANCES, GC9.4 CONSTRUCTION SAFETY & WORKSAFE BC RULES, GC9.5 -MOULD and GC10.3 - PATENT FEES

GC12.1.5 is deleted in its entirety.

GC12.1.6 is deleted in its entirety and replaced as follows:

12.1.6 In respect of any claim for indemnity or to be held harmless by the City or the Contractor, Notice in Writing of such claim shall be given within a reasonable time after the facts upon which such claim is based became known;

GC12.1.7 is added as follows:

12.1.7 In the event of any Liability being alleged against or claimed from an Indemnitee in respect of which an indemnity is required to be provided by the Contractor pursuant to GC12.1.1, the following provisions shall apply:

(a) subject to GC12.1.7(b), GC12.1.7(c) and GC12.1.7(d), where it appears that the Indemnitee is or may be entitled to indemnification from the Contractor in respect of all (but not part only) of the liability arising out of a claim, such person entitled to indemnification may at its sole election and subject to:

(i) approval by any relevant insurers (without prejudice to GC12.1.7(e); and

(ii) the Contractor providing the Indemnitee with a secured indemnity to its reasonable satisfaction against all costs and expenses (including legal expenses) that it may incur by reason of such action,

permit or require the Contractor to dispute the claim on behalf of the Indemnitee at the Contractor's own expense and take conduct of any defence,

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dispute, compromise, or appeal of the claim and of any incidental negotiations; provided that the Indemnitee shall give the Contractor (provided at the Contractor's cost) all reasonable cooperation, access and assistance for the purposes of considering and resisting such claim;

- (b) with respect to any claim conducted by the Contractor pursuant to GC12.1.7(a)
 - (i) the Contractor shall keep the Indemnitee fully informed and consult with it about material elements of the conduct of the claim;
 - (ii) the Contractor shall not bring the name of the Indemnitee into disrepute; and
 - (iii) the Contractor shall not pay or settle such claims without the prior consent of the Indemnitee, such consent not to be unreasonably withheld or delayed;
- (c) a Indemnitee shall be free to pay or settle any claim on such terms as it thinks fit (and without prejudice to its rights and remedies under the Contract Documents) if:
 - (i) the Contractor is not entitled to, or is not permitted or instructed, take conduct of the claim in accordance with GC12.1.7(a); or
 - (ii) the Contractor fails to comply in any material respect with the provisions of GC12.1.7(e) or GC12.1.7(b);
- (d) the Indemnitee entitled to indemnification pursuant to GC12.1.1 shall be free at any time to give notice to the Contractor that it is retaining or taking over (as the case may be) the conduct of any defence, dispute, compromise or appeal of any claim (or of any incidental negotiations) to which GC12.1.7(a) applies. On receipt of such notice the Contractor shall promptly take all steps necessary to transfer the conduct of such claim to the Indemnitee, and shall provide to the Indemnitee all reasonable co-operation, access and assistance for the purposes of considering and resisting such claim; and
- (e) the Contractor shall inform the Indemnitee of the requirements of any insurer who may have an obligation to provide an indemnity in respect of any liability arising under this Agreement and in relation to such the Indemnitee shall issue instructions accordingly.

GC12.2 WAIVER OF CLAIMS

GC12.2.1 is deleted in its entirety and replaced as follows:

- 12.2.1. *Waiver of Claims by City.* As of the date of the Final Certificate for Payment, the City expressly waives and releases the Contractor from all claims against the Contractor including without limitation those that might arise from the negligence or breach of Contract by the Contractor except one or more of the following:

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- .1 those made in writing prior to the date of the Final Certificate for Payment and still unsettled;
- .2 those arising from the provisions of GC12.1 - INDEMNIFICATION or GC12.3 - WARRANTY;
- .3 those arising from the provisions of GC9.2 - TOXIC AND HAZARDOUS SUBSTANCES, GC9.4 CONSTRUCTION SAFETY & WORKSAFE BC RULES, GC9.5 - MOULD and GC10.3 - PATENT FEES and those arising from the Contractor bringing or introducing any toxic or hazardous substances and materials to the Place of the Work after the Contractor commences the Work; and
- .4 those arising from the Contractor's actions, errors, omissions or negligence which result in delays or substantial defects or deficiencies in the Work. "Substantial defects or deficiencies" means those defects or deficiencies in the Work which affect the Work to such an extent or in such a manner that all or any part of the Work is unfit for the purpose intended by the Contract Documents.

GC12.2.2 is deleted in its entirety and replaced as follows:

12.2.2 *Waiver of Claims by Contractor:* As of the date of the Final Certificate for Payment, the Contractor expressly waives and releases the City from all claims against the City including without limitation those that might arise from the negligence or breach of Contract by the City except:

- .1 those made in writing prior to the Contractor's application for Final Payment and still unsettled; and
- .2 those arising from the provisions of GC9.2 - TOXIC AND HAZARDOUS SUBSTANCES or GC10.3 - PATENT FEES.

GC12.2.3 is deleted in its entirety and replaced as follows:

12.2.3 GC12.2 - WAIVER OF CLAIMS shall take precedence over the provisions of paragraph 1.3.1 of GC1.3 - RIGHTS AND REMEDIES.

GC 12.2.4 is deleted in its entirety and replaced as follows:

12.2.4 The City waives and releases the Contractor from all claims referred to in paragraph 12.2.1.4 except claims for which Notice in Writing of claim has been received by the Contractor from the City within a period of six (6) years from the date of Substantial Performance of the Work.

GC12.2.5 is deleted in its entirety.

GC12.2.6 is deleted in its entirety.

GC12.2.7 is deleted in its entirety.

GC12.2.8 is deleted in its entirety.

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GC12.2.9 is deleted in its entirety.

GC12.2.10 is deleted in its entirety.

GC12.3 WARRANTY

GC12.3.1 is deleted in its entirety and replaced as follows:

12.3.1 The Contractor shall perform the Work in a good and workmanlike manner.

GC12.3.2 is deleted in its entirety and replaced as follows:

12.3.2 The Contractor now warrants that the Work (and all Products) will be free from all defects arising from faulty construction, manufacturing, installation, materials, equipment or workmanship in any part of the Work (or Products) for a period of one (1) year commencing on the issuance of the Certificate of Completion for the Work, and with respect to any Work or Products warranted by a Subcontractor or Supplier for a period of longer than one (1) year after the issuance of the Certificate of Completion, the Contractor now warrants that it has fully and effectively assigned such warranty to the City and that the City may enforce the same to the same extent and in the same manner as if the warranty had been issued directly to the City by that Subcontractor or Supplier.

GC12.3.3 is deleted in its entirety and replaced as follows:

12.3.3 For the purposes of this GC12.3, the phrase, "defects arising from faulty construction, manufacturing, installation, materials, equipment or workmanship in any part of the Work (or Products)"

- (a) expressly excludes any and all defects arising from or contributed to by the acts or omissions of the Consultant in the design and specification of the Work as set out in the Drawings, Specifications, or other written instructions or directives issued by the Consultant under this Contract, but only to the extent of the Consultant's defective design or specification, and
- (b) expressly includes all defects or deficiencies that arise even if the Work is carried out in a good and workmanlike manner.

GC12.3.4 is deleted in its entirety and replaced as follows:

12.3.4 During the warranty period, the Contractor will promptly repair and correct all defects at no cost to the City. If the Contractor fails to repair or correct any defect during the warranty period within ten (10) calendar days of written notice of its existence, the City may but is not obligated to make the repairs or corrections itself and the actual out-of-pocket costs of such repairs or corrections made by the City will be payable by the Contractor to the City within seven (7) calendar days of receiving an invoice from the City for same. In the event of an emergency where, in the opinion of the City, delay could cause serious loss or damage, or inconvenience to the public, the repairs or corrections may be made without prior notice being sent to the Contractor.

GC12.3.5 is deleted in its entirety and replaced as follows:

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12.3.5 Where, pursuant to GC13.1 - Occupancy, the City commences the use of the Work and Products for their intended purposes prior to the issuance of the Certificate of Completion for the Work, the warranty period will be deemed to commence from the issuance date despite such prior use.

GC12.3.6 is deleted in its entirety and replaced as follows:

12.3.6 Issuance of the Certificate of Total Performance of the Work will not extinguish any of the Contractor's obligations under this Contract and the Contractor will remain liable to perform and complete all Work and carry out all obligations required under this Contract

GC13.1 OCCUPANCY

GC13.1 is added as follows:

GC13.1 OCCUPANCY

13.1.1 The City reserves the right to take possession of and use any completed or partially completed portion of the Work, regardless of the time of completion of the Work, providing it does not interfere with the Contractor's Work, as determined by the Consultant.

13.1.2 Such taking possession or use of such Work or part thereof as described in GC13.1.1 shall not be construed as final acceptance of the Work or any part thereof, or an acknowledgement of fulfillment of the Contract.

END OF SUPPLEMENTARY GENERAL CONDITIONS

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SCHEDULE 2 (PART D - FORM OF AGREEMENT)

SCHEDULE 2
LIST OF SPECIFICATIONS AND DRAWINGS

The following is the list of Specifications and Drawings referred to in Article A-3:

[To be added.]

All are incorporated by reference in the form made available by the City during the ITT.

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SCHEDULE 3 (PART D - FORM OF AGREEMENT)

SCHEDULE 3
SCHEDULE OF PRICES

[When the Contract is finalized, this Schedule will be based on the breakdown of the tendered price in relation to the particular Work for which the Contract is awarded, as provided in the successful Tenderer's Form of Tender.]

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 SCHEDULE 4 (PART D - FORM OF AGREEMENT)

SCHEDULE 4
 SUBCONTRACTORS AND SUPPLIERS

The following are Subcontractors that the Contractor will use for the Work:

Subcontractor	Address	Division/Section Of Work
[To be completed, based on Tender]		

The following are Suppliers that the Contractor will use for the Work:

Supplier	Manufacturer	Address	Item
[To be completed, based on Tender]			

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SCHEDULE 5 (PART D - FORM OF AGREEMENT)

SCHEDULE 5
PROJECT SCHEDULE

[Insert the construction schedule provided in response to the Notice of Award, as accepted by the City.]

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SCHEDULE 6 (PART D - FORM OF AGREEMENT)

SCHEDULE 6
PERFORMANCE AND LABOUR AND MATERIAL PAYMENT BONDS

[Attach copies of performance bond and labour and material payment bond
provided after contract award.]

(see attached)

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SCHEDULE 7 (PART D - FORM OF AGREEMENT)

SCHEDULE 7
INSURANCE CERTIFICATES

[\[Attach copies of insurance certificates for the project provided after Contract award.\]](#)

(see attached)

Owners List of Known Workplace Hazards

CONTRACT TITLE Champlain C.C. - Cedar Shake Roof and Skylight Replacement

PROJECT MANAGER (CITY EMPLOYEE) Desh Jehman

CONTRACT NAME & # (IF KNOWN) _____

Purpose

This document shall be completed by the project manager, who shall list all the **known** worksite hazards and all the **existing** work process hazards that will be associated with the upcoming contract. The completed document shall then be provided to all potential contractors, as part of the tender package, so the project can be bid appropriately based on the known worksite hazards.

Definitions

Project Manager - the City employee designated to be the liaison with the contractor for the purpose of managing, overseeing, coordinating or in any other way administering the contract.

Instructions for Completion

The document must be completed in full. Choices for each entry are:

Y - Yes - the known worksite hazard or existing work process hazard does exist

N - No - the known worksite hazard or existing work process hazard does not exist*, or, a third party (environmental consultant) will address the issue (usually for a hazardous materials assessment)

*based on reasonable estimation from all input by persons with expertise or relevant knowledge and understanding

NA - Not Applicable - the worksite hazard or existing work process is not applicable for this contract type

Information from Hazardous Materials Assessments Provided by a Third Party

A hazardous materials assessment may be completed prior to the Project Manager completing the Owners List of Known Workplace Hazards. Any such assessment should be referenced by the Project Manager in this document and provided with the tender package. Hazardous materials may include asbestos, lead, crystalline silica, ammonia, PCB's, CFC's, moulds, mercury, ozone depleting substances (ODS), radioactive substances.

Assistance in Completing this Document

If you have questions while completing this document, or are unsure if the listed hazards apply, please seek assistance from Health and Safety (604.871.6078 or healthandsafety@vancouver.ca).

HAZARD OR ISSUE	Project Manager
1. ASBESTOS-CONTAINING MATERIALS - disturbance or penetrations of flooring, walls, ceiling tiles, pipe lagging, ac pipe, transite siding, particularly in older facilities; e.g., furniture/fixture installation, carpeting/flooring services, and boiler repair/tune-up services.	Yes No N/A
a) Asbestos containing materials (ACM) will be encountered	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
b) A hazardous materials assessment for asbestos is provided in the tender package	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
c) A hazardous materials assessment for asbestos is the responsibility of the contractor	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
2. LEAD-CONTAINING MATERIALS - disturbance of lead-based paint, particularly in older facilities. Also present in certain electrical circuitry and metal alloys; .e.g., overhead bridge crane maintenance/repair, high-voltage cable splicing services, boiler repair/tune-up services, fixture installation services, and chiller maintenance/repair services.	Yes No N/A
a) Inorganic lead-containing materials may be encountered	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
b) A hazardous materials assessment for lead is provided in the tender package	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
c) A hazardous materials assessment for lead is the responsibility of the contractor	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
3. OTHER HAZARDOUS MATERIALS - may include ammonia, pcb's, cfc's, moulds, mercury, ozone depleting substances (ods), radioactive substances, sewage, unknown contaminated materials, other: (list other here)_____	Yes No N/A
a) A hazardous materials assessment for ammonia is provided in the tender package	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
b) A hazardous materials assessment for (list the specific hazardous material) will be provided in the tender package	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
c) A hazardous materials assessment for (list the specific hazardous materials) will be the contractors responsibility	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
4. CONFINED SPACES - working in vaults, chambers, pits, tanks, etc.; e.g., construction, inspection and testing services, water/fuel storage tank clean-out services, and utility corrosion inspection services.	Yes No N/A
a) A hazard assessment (for entry and inspection only) from the City of Vancouver is provided in the tender package	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
b) The City of Vancouver shall provide procedures to isolate adjacent piping, or to lock out equipment (complicated systems only)	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
c) The contractor shall be responsible for isolation and lockout procedures	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

5. LOCK OUT - industrial equipment maintenance, power machinery repair services, pump maintenance/repair services, mechanical refrigeration systems, elevator repair, overhead bridge crane maintenance/repair services, cathodic protection services, hydraulic test systems repair/service, and air compressor rebuilding services.	Yes No N/A
a) Lockout will be required to isolate or prevent the unexpected release of energy (electrical, mechanical, hydraulic, chemical, thermal, kinetic, gravitational, pneumatic)	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
b) Work will be performed on or near energized equipment, lines, or circuits	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

If yes to a) or b) describe:

Contractors are required to lock out their own equipment and any equipment on site required to facilitate their work.

6. FALL PROTECTION - tree pruning, window and ledge cleaning, window replacement, overhead bridge crane maintenance/repair services, roll-up door replacement, tent installation, awning/canopy installation, overhead air exchange installation, construction inspection and testing services.	Yes No N/A
a) Workers will be exposed to a potential fall in excess of 3 m (10 feet), or to a fall of less than 3 m which would likely result in a serious injury (ex. impalement on rebar)	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
b) Scaffolding or ladders will be required to be secured to a building or structure	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

7. OVERHEAD AND UNDERGROUND UTILITIES - tree pruning services, tree removal, utility relocation or replacement, underground utility identification (digging with powered equipment), concrete sawing services, pole painting	Yes No N/A
a) There will be electrical hazards associated with overhead power lines such as limits of approach and contact	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
b) Necessary assurances (in writing) have (or will be) obtained by the City, through the utility company, for any work where minimum limits of approach cannot be maintained (provide documentation and review at pre job meeting with the successful contractor candidate)	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
c) Necessary assurances must be obtained (in writing) by the successful contractor, through the utility company, for any work where minimum limits of approach will not be able to be maintained	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
d) Underground or hidden utilities are located on the job site and any excavation or drilling work in proximity to an underground utility service must be undertaken in conformity with the requirements of the owner of that utility service	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>

If yes to c), and the specific physical locations where minimum limits of approach will not be able to be maintained are known, how will this information be provided to the contractor?

8. CONSTRUCTION, EXCAVATION, SHORING AND DEMOLITION	Yes No N/A
a) As Prime Contractor, the City of Vancouver project manager will submit the Notice of Project	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
b) Workers will be required to enter an excavation over 1.2m (4 ft) in depth	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>

9. CHEMICALS, SOLVENTS, FUMES, VAPORS, AND/OR DUSTS (existing work processes or known worksite hazard only) - ice rinks, swimming pools, cleaning solvents, adhesives, paints, coatings, binders; e.g., storage tank clean-out services, countertop installation (epoxies), and flooring	Yes No N/A
a) The worksite has chemicals solvents, fumes, vapors or dusts that may affect the contractor	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
b) Material Safety Data Sheets for chemicals currently in use at the worksite will be available, on request, to the contractor	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>

If yes to a), list the work processes and/or chemicals in use:
Contractors work will result in fumes, vapor's, and dusts being released.

10. NOISE - (existing work processes only)	Yes No N/A
a) Employees will be exposed to noise levels above 85dbA	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

OTHER HAZARDS (NOT IDENTIFIED ABOVE)
a) Community Centre will be in full operation during construction with Patrons walking around the inside and outside of the building.
b)
c)

KNOWN WORKPLACE HAZARDS LIST COMPLETED BY	
Project Manager Name (print): Desh Jehman	
Project Manager Signature: 	Date: March 7, 2017
Title: Project Manager	Phone: (604)-673-8239

**Hazardous Materials Survey of:**

**Champlain Heights Community Centre
(Sloped Roof & Skylights)**

Building Code: 3210

Address: 3350 Maquinna Drive

Surveyor: Patrick Li

Work Notification Number: 10317686

Requested By: Desh Jehman

Purpose: TARGETED HAZARDOUS MATERIAL SAMPLING

**Executive Summary**

A City of Vancouver Hazardous Materials Technician has completed a Targeted Hazardous Material Sampling Survey of the Sloped Roof & Skylights at 3350 Maquinna Drive - Champlain Heights Community Centre.

A targeted hazardous material sampling survey only identifies the hazardous building materials that could be encountered or disturbed in a specified area (Sloped Roof & Skylights). Although this was a semi-destructive survey, any hidden materials that were not addressed which may contain asbestos or lead should be assumed to be hazardous until sampling demonstrates otherwise.

HAZARDOUS MATERIAL SURVEY	3350 Maquinna Drive - Champlain Heights CC	2017-APRIL
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Scope of Work

- A visual inspection of the sloped roof & skylight areas at the Champlain Heights Community Centre for the presence of building materials suspected to contain asbestos or lead. Surficial and Test Cut sampling were conducted.
- An assessment of potentially hazardous materials, denoting their condition, potential for disturbance/damage, accessibility to workers or public, estimated quantity, if suspect asbestos containing, their friability, potential for fiber release and worker exposure was assessed.
- Collection and analysis of material samples from the roof areas for the presence of suspect hazardous materials.
- A risk assessment for the current condition of any damaged asbestos/lead containing materials determined to be present within the buildings including the priorities for removal/repairs.
- Recommendations for the removal/repair of any damaged hazardous materials determined to require immediate action.

Asbestos-Containing Material: Methodology and Results

Materials sampled were selected based on our experience and guidelines provided by WorkSafeBC (Safe Work Practices for Handling Asbestos). Building materials were assessed for potential asbestos content and have been analyzed for asbestos by COV-approved labs.

NO asbestos was found in any of the samples analyzed.

Table 1: Materials Sampled and Analyzed for Asbestos Content

Wes-Har Lab Reference No. 14307			
Sample No.	Location	Material	Result
ROOF-R03	Sloped Roof - By Main Entrance	Black Felt Under Cedar Shingles	Asbestos Fibres Not Detected
AASL Lab Reference No. B01685			
Sample No.	Location	Material	Result
3210EXT-A01	Exterior - East End	Black Paper Vapour Barrier Behind Vertical Wood Siding	Asbestos Fibres Not Detected
3210EXT-A02	Exterior - South West End	Black Paper Vapour Barrier Behind Vertical Wood Siding	Asbestos Fibres Not Detected
Wes-Har Lab Reference No. 16131			
Sample No.	Location	Material	Result
EXT-A03	Exterior of Fitness Centre (SE)	Black Paper Vapour Barrier Behind Horizontal Wood Siding	Asbestos Fibres Not Detected
AASL Lab Reference No. B01821			
Sample No.	Location	Material	Result
3210-SL01	Skylights (North)	Black Caulking on Metal Flashing	Asbestos Fibres Not Detected
3210-SL02	Skylights (North)	White/Clear Caulking on Exterior Between Glass & Frame	Asbestos Fibres Not Detected
3210-SL03	Skylights (South)	Cream/Black Caulking on Metal Flashing	Asbestos Fibres Not Detected
3210-SL04	Skylights (South)	White/Clear Caulking on Exterior Between Glass & Frame	Asbestos Fibres Not Detected

HAZARDOUS MATERIAL SURVEY	3350 Maquinna Drive - Champlain Heights CC	2017-APRIL
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Lead-Based Paints and Coatings: Methodology and Results

Total Lead in Paint

Representative samples of paint were collected to test for the presence of lead. The sample was analyzed at a COV-approved lab for total lead.

Information from the U.S. Occupational Safety and Health Administration (OSHA) suggests that the improper removal of lead paint containing 600 mg/kg lead results in airborne lead concentrations that exceed half of the exposure limit. Depending on the potential receptors and the work to be performed, paints with lead contents as low as 90 mg/kg can also result in dangerous airborne lead levels. **A task-, and site-specific risk assessment must be conducted by City of Vancouver’s Hazardous Materials Team to determine if an Exposure Control Plan and safe work procedures are required** (Lead-Containing Paints and Coatings: Preventing Exposure in the Construction Industry, WSBC 2011).

All paint samples exceeded the suggested exposure prevention limit of 600 mg/kg paint (Table 2).

Leachable Results of Lead in Paint

The Canadian Hazardous Waste Regulation specifies the limit for concentration of leachable lead extracted in waste samples as 5mg/litre.

The paint sample was determined to be below the limit of 5mg/L, therefore is non-leachable and is not classified as a hazardous waste as defined by the BC Ministry of Environment

Table 2: Materials Sampled and Analyzed for the Presence of Lead and Leachable/Hazardous Waste

MAXXAM Lab Reference No. B701148

Sample No.	Location	Description	RESULTS (mg/kg)
3210EXT-L01	East End	Light Green Paint on Wooden Trim/Post	3680
3210EXT-L02	North East End	Green Paint on Wood Trim/Window Sill	3230
3210EXT-L03	East End	Dark Green Paint on Wood Siding	14700
3210EXT-L04	South End - Roof Valley	Light Green Paint on Wooden Beam	13000
3210EXT-L05	South West End	Dark Green Paint on Wood Siding	13300

MAXXAM Lab Reference No. B729678

Sample No.	Location	Description	TCLP LEAD (mg/L)
3210EXT-TCLP	Exterior Wood Siding	Green Paint on Wood Siding	0.55

OTHER HAZARDS AND NOTES: None observed

RISK ASSESSMENT AND RECOMMENDATIONS

Prior to renovation or demolition activities, the hazardous materials identified in this report must be safely contained before disturbance. Depending on the areas to be renovated or demolished, Additional destructive sampling may be required to identify asbestos-containing materials that were not accessed during this targeted hazardous material sampling survey.

Report Prepared by City of Vancouver Hazardous Materials Team

Per:

Patrick Li, Hazardous Materials Technician

Reviewed by:

Roger Johnson, Hazardous Materials Team Coordinator

PHOTOS: ATTACHED

LABORATORY REPORTS: AVAILABLE

PHOTOS:



Photo 1: **NON-Asbestos** Black Felt under Cedar Shingles
(Sloped Roof - By Main Entrance)

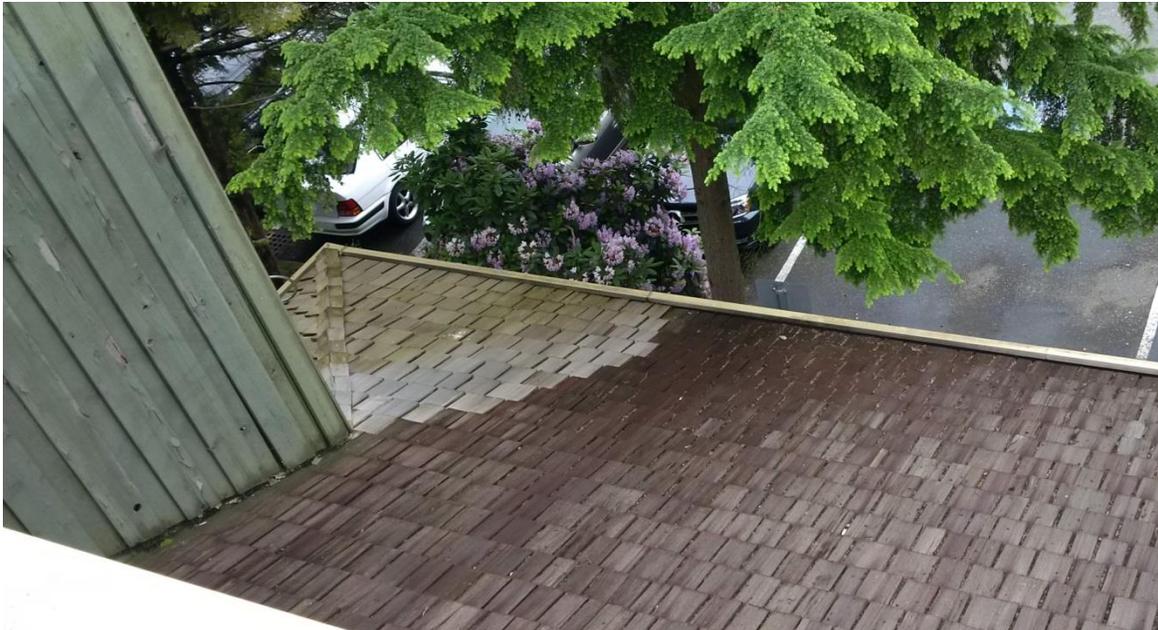


Photo 2: **LEAD-BASED** Green Paint on Exterior Wood Siding



Photo 3: **NON-Asbestos** Black Paper Vapour Barrier Behind Exterior Wood Siding



Photo 4: **NON-Asbestos** White/Clear Caulking Between Exterior Glass & Frame (Skylights)



Photo 5: **NON-Asbestos** Black Caulking on Metal Flashing (Skylights)



Photo 6: **NON-Asbestos** Black Caulking on Metal Flashing (Skylights)

LABORATORY REPORTS:

Wes-Har Asbestos Analysis & Consulting Ltd.

Bulk Asbestos Report

**For City Of Vancouver - Real Estate
and Facilities Management**
320-507 West Broadway Vancouver, BC V5Z 0B4

Location : Champlain Heights CC, 3350 Maquinna Drive
[Notification # 10255850]
Project : L20610

14307	L20610	Sample Location / Description	Result(s)	Analyzed	Analyst ACM
1	ROOF-R01	Roofing Material, South East End, Roof - East	Asbestos Fibres Not Detected 40 - 50 % Cellulose Fibres 5 - 10 % Hair Fibres > 40 % Non-fibrous	Jun 17 2015	HM ---
* Subjected To An Ashing Procedure					
2	ROOF-R02	Roofing Material, West End, Roof - West	Asbestos Fibres Not Detected 40 - 50 % Cellulose Fibres 5 - 10 % Hair Fibres > 40 % Non-fibrous	Jun 17 2015	HM ---
* Subjected To An Ashing Procedure					
3	ROOF-R03	Black Felt Under Cedar Shingles, By Main Entrance, Sloped Roof	Asbestos Fibres Not Detected 20 - 30 % Fibrous Glass > 70 % Non-fibrous	Jun 17 2015	HM ---
* Subjected To An Ashing Procedure					
4	ROOF-R04	Roofing Material on Concrete Deck, Under Brick Flooring, SW End	Asbestos Fibres Not Detected 30 - 40 % Cellulose Fibres 5 - 10 % Hair Fibres 5 - 10 % Fibrous Glass > 40 % Non-fibrous	Jun 17 2015	HM ---
* Subjected To An Ashing Procedure					

Comments

Samples Analyzed In Accordance With The NIOSH ASBESTOS (bulk) by PLM Method 9002 [15 August 1994]
 Visual Estimation Quantitation Limit For Asbestos Analysis Is 1 %
 ACM Means Asbestos Containing Material; T - Present
 LP - Means Percent : Layer or Phase o
 DNQ - Means Detected Not Quantitated
 Samples Submitted Will Be Retained For 30 Days After Receipt And Will Be Disposed Of Thereafter Unless Otherwise Notified In Writing
 Sample Submitted By City Of Vancouver - Real Estate

June 17, 2015

[Facsimile]

H. McKnight
Analyst

H. McKnight
Reviewed By



Asbestos Analytical Services Ltd.

7 - 2883 East Kent Avenue N, Vancouver, BC, V5S 3T9

ASBESTOS ANALYSIS REPORT

Project Location: Champlain Heights Community Centre,
3350 Maquinna Drive, Vancouver, BC
Reference #: Building Code 3210 (L20610), Notification # 10317686
Number of Samples: 2

AASL Report #: **B01685**
Analyst: Gabrielle Sutton
Report Date: 10JAN2017
Method: NIOSH Method 9002

#	B01685	Sample	Sub-Sample	Sample Description / Location	Results	ASB
1	**	3210EXT-A01	Single Phase - brown fibrous	Black Paper Vapour Barrier Behind Vertical Wood Siding, East End, Exterior	Asbestos Fibres Not Detected 60 - 80 % Cellulose Fibres > 20 % Non-Fibrous	—
2	**	3210EXT-A02	Single Phase - brown fibrous	Black Paper Vapour Barrier Behind Vertical Wood Siding, South West End, Exterior	Asbestos Fibres Not Detected 60 - 80 % Cellulose Fibres > 20 % Non-Fibrous	—

Comments

Samples analyzed in accordance with NIOSH Laboratory Method 9002
American Industrial Hygiene Association (AIHA) BAPAT Program Laboratory Number 204301
Estimated Limit of Detection is 0.5%
ASB = Asbestos present/absent in material
T = Asbestos Present
AASL Asbestos Analytical Services Ltd. will not accept any responsibility as to the manner of interpretation or application of these results.

** Sample preparation included ashing process.

Analyst: _____

Gabrielle Sutton, B.A.

Date: January 10, 2017

Reviewed By: _____
Gabrielle Sutton, B.A.

Wes-Har Asbestos Analysis & Consulting Ltd.

1

Detailed Bulk Asbestos Report

For City Of Vancouver - Real Estate
and Facilities Management

320-507 West Broadway Vancouver, BC V5Z 0B4

Location : Champlain Heights Community Centre
3350 Maquinna Dr., Van. [Notification # 10317686]

Project : 3210

16131	3210	Sample Location / Description	Result(s)	Analyzed	Analyst	ACM
1	EXT-A03	Black Paper Vapour Barrier Behind Horizontal Wood Siding, (SE) Exterior of Fitness Centre	Asbestos Fibres Not Detected 70 - 80 % Cellulose Fibres > 20 % Non-fibrous	Feb 28 2017	HM	---

* Subjected To An Ashing Procedure

Comments

Samples Analyzed In Accordance With The NIOSH ASBESTOS (bulk) by PLM Method 9002 [15 August 1994]
Asbestos may be detected at Less Than 0.5 % by Visual Estimation, but this detection limit is highly material dependant
ACM Means Asbestos Containing Material; T - Present
LP - Means Percent : Layer or Phase of Whole Sample
ACM Means Asbestos Containing Material; T
DNQ - Means Detected Not Quantitated
Samples Submitted Will Be Retained For 30 Days After Receipt And Will Be Disposed Of Thereafter Unless Otherwise Notified In Writing
Sample Submitted By City Of Vancouver - Real Estate

February 28, 2017 [Facsimile]

H. McKnight
Analyst

G. Nawrocki
Reviewed By



ASBESTOS ANALYSIS REPORT

Project Location: Champlain Heights Community Centre,
3350 Maquinna Drive, Vancouver, BC

Reference #: Building Code 3210 (L20610), Notification # 10317886

Number of Samples: 4

AASL Report #: **B01821**
Analyst: Gabrielle Sutton
Report Date: 23APR2017
Method: NIOSH Method 9002

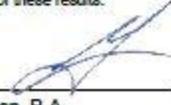
#	B01821	Sample	Sub-Sample	Sample Description / Location	Results	ASB
1	**	3210-SL01	Single Phase - dark brown, rubbery	Black Caulking on Metal Flashing, Skylights, North	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	—
2	**	3210-SL02	Single Phase - clear, rubbery	White / Clear Caulking on Exterior of Glass, Between Glass & Frame, Skylights, North	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	—
3	1 **	3210-SL03	Layer 1 - dark brown, rubbery	Cream / Black Caulking on Metal Flashing, Skylights, South	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	—
3	2 **	3210-SL03	Layer 2 - beige, rubbery	Cream / Black Caulking on Metal Flashing, Skylights, South	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	—
4	**	3210-SL04	Single Phase - clear, rubbery	White / Clear Caulking on Exterior of Glass, Between Glass & Frame, Skylights, South	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	—

Comments

Samples analyzed in accordance with NIOSH Laboratory Method 9002
American Industrial Hygiene Association (AIHA) BAPAT Program Laboratory Number 204301
Estimated Limit of Detection is 0.5%
ASB = Asbestos present/absent in material
T = Asbestos Present

AASL Asbestos Analytical Services Ltd. will not accept any responsibility as to the manner of interpretation or application of these results.

** Sample preparation included ashing process.

Analyst: 
Gabrielle Sutton, B.A.

Date: April 23, 2017

Reviewed By: 
Gabrielle Sutton, B.A.



Success Through Science®

Maxxam Job #: B701148
Report Date: 2017/01/09

City of Vancouver
Client Project #: 10317686
Site Location: BUILDING ENVELOPE CONDITION ASSESS
[3210] CHAMPLAIN HEIGHTS-3350
MADCQUINNA DR.
Your P.O. #: 4700002203
Sampler Initials: PL

LEAD IN PAINT CHIPS (PAINT)

Maxxam ID		QJ1126	QJ1127	QJ1128	QJ1129		
Sampling Date		2017/01/04	2017/01/04	2017/01/04	2017/01/04		
COC Number		08434657	08434657	08434657	08434657		
	UNITS	3210EXT-L01 NORTH EAST END LIGHT GREEN PAINT ON WOODEN TRIM/POST	3210EXT-L02 NORTH EAST END GREEN PAINT ON WOOD TRIM/WINDOW SILL	3210EXT-L03 EAST END (EXT OF STORAGE) DARK GREEN PAINT ON WOOD SIDING	3210EXT-L04 (S. END-ROOF VALLEY POST) LIGHT GREEN PAINT ON WOODEN BEAM	RDL	QC Batch
Total Metals by ICP							
Total Lead (Pb)	mg/kg	3680	3230	14700	13000	3.0	8522785
RDL = Reportable Detection Limit							

Maxxam ID		QJ1130		
Sampling Date		2017/01/04		
COC Number		08434657		
	UNITS	3210EXT-L05 (SOUTH WEST END) DARK GREEN PAINT ON WOOD SIDING	RDL	QC Batch
Total Metals by ICP				
Total Lead (Pb)	mg/kg	13300	3.0	8522785
RDL = Reportable Detection Limit				



Success Through Science®

Maxxam Job #: B729678
Report Date: 2017/04/25

City of Vancouver
Client Project #: (10317686) SLOPED ROOF PROJECT
Site Location: 3210 CHAMPLAIN HEIGHTS CC-3350
MACQUINNA DR
Your P.O. #: 4700002203
Sampler Initials: PL

TCLP METALS (SOLID)

Maxxam ID		QX5860		
Sampling Date		2017/04/21		
COC Number		08438005		
	UNITS	3210EXT-TCLP GREEN PAINT ON EXTERIOR WOOD SIDING	RDL	QC Batch
TCLP Extraction Procedure				
LEACHATE Lead (Pb)	mg/L	0.55	0.10	8612227
RDL = Reportable Detection Limit				



ASBESTOS ANALYSIS REPORT

Project Location: Champlain Heights Community Centre,
3350 Maquinna Drive, Vancouver, BC
Reference #s: Building Code 3210 (L20610), Notification # 10317686
Number of Samples: 2

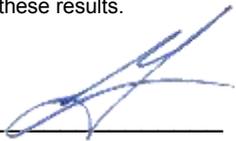
AASL Report #: **B01685**
Analyst: Gabrielle Sutton
Report Date: 10JAN2017
Method: NIOSH Method 9002

#	B01685	Sample	Sub-Sample	Sample Description / Location	Results	ASB
1	**	3210EXT-A01	Single Phase - brown fibrous	Black Paper Vapour Barrier Behind Vertical Wood Siding, East End, Exterior	Asbestos Fibres Not Detected 60 - 80 % Cellulose Fibres > 20 % Non-Fibrous	---
2	**	3210EXT-A02	Single Phase - brown fibrous	Black Paper Vapour Barrier Behind Vertical Wood Siding, South West End, Exterior	Asbestos Fibres Not Detected 60 - 80 % Cellulose Fibres > 20 % Non-Fibrous	---

Comments

Samples analyzed in accordance with NIOSH Laboratory Method 9002
American Industrial Hygiene Association (AIHA) BAPAT Program Laboratory Number 204301
Estimated Limit of Detection is <0.5 %
ASB = Asbestos present/absent in material
T = Asbestos Present
AASL *Asbestos Analytical Services Ltd.* will not accept any responsibility as to the manner of interpretation or application of these results.

** Sample preparation included ashing process.

Analyst: 

Gabrielle Sutton, B.A.

Date: January 10, 2017

Reviewed By: 

Gabrielle Sutton, B.A.



ASBESTOS ANALYSIS REPORT

Project Location: Champlain Heights Community Centre,
3350 Maquinna Drive, Vancouver, BC
Reference #s: Building Code 3210 (L20610), Notification # 10317686
Number of Samples: 4

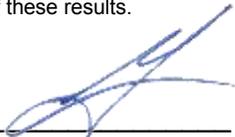
AASL Report #: **B01821**
Analyst: Gabrielle Sutton
Report Date: 23APR2017
Method: NIOSH Method 9002

# B01821	Sample	Sub-Sample	Sample Description / Location	Results	ASB
1 **	3210-SL01	Single Phase - dark brown, rubbery	Black Caulking on Metal Flashing, Skylights, North	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
2 **	3210-SL02	Single Phase - clear, rubbery	White / Clear Caulking on Exterior of Glass, Between Glass & Frame, Skylights, North	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
3. 1 **	3210-SL03	Layer 1 - dark brown, rubbery	Cream / Black Caulking on Metal Flashing, Skylights, South	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
3. 2 **	3210-SL03	Layer 2 - beige, rubbery	Cream / Black Caulking on Metal Flashing, Skylights, South	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
4 **	3210-SL04	Single Phase - clear, rubbery	White / Clear Caulking on Exterior of Glass, Between Glass & Frame, Skylights, South	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---

Comments

Samples analyzed in accordance with NIOSH Laboratory Method 9002
American Industrial Hygiene Association (AIHA) BAPAT Program Laboratory Number 204301
Estimated Limit of Detection is <0.5 %
ASB = Asbestos present/absent in material
T = Asbestos Present
AASL *Asbestos Analytical Services Ltd.* will not accept any responsibility as to the manner of interpretation or application of these results.

** Sample preparation included ashing process.

Analyst: 

Gabrielle Sutton, B.A.

Date: April 23, 2017


Reviewed By: Gabrielle Sutton, B.A.

Attention: Patrick Li

City of Vancouver
West Broadway
320-507 West Broadway Avenue
Vancouver, BC
Canada V5Z 0B4

Your P.O. #: 4700002203
Your Project #: 10317686
Site Location: BUILDING ENVELOPE CONDITION ASSESS
[3210] CHAMPLAIN HEIGHTS-3350
MADCQUINNA DR.
Your C.O.C. #: 08434657

Report Date: 2017/01/09
Report #: R2329261
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B701148

Received: 2017/01/06, 15:05

Sample Matrix: PAINT
Samples Received: 5

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Elements by ICP-AES (acid extr. solid)	5	2017/01/09	2017/01/09	BBY7SOP-00018	EPA 6010c R3 m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Morgan Melnychuk, Burnaby Project Manager
Email: MMelnychuk@maxxam.ca
Phone# (604)638-8034 Ext:8034

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Maxxam Job #: B701148
Report Date: 2017/01/09

City of Vancouver
Client Project #: 10317686
Site Location: BUILDING ENVELOPE CONDITION ASSESS
[3210] CHAMPLAIN HEIGHTS-3350
MADCQUINNA DR.

Your P.O. #: 4700002203
Sampler Initials: PL

LEAD IN PAINT CHIPS (PAINT)

Maxxam ID		QJ1126	QJ1127	QJ1128	QJ1129		
Sampling Date		2017/01/04	2017/01/04	2017/01/04	2017/01/04		
COC Number		08434657	08434657	08434657	08434657		
	UNITS	3210EXT-L01 NORTH EAST END LIGHT GREEN PAINT ON WOODEN TRIM/POST	3210EXT-L02 NORTH EAST END GREEN PAINT ON WOOD TRIM/WINDOW SILL	3210EXT-L03 EAST END (EXT OF STORAGE) DARK GREEN PAINT ON WOOD SIDING	3210EXT-L04 (S. END-ROOF VALLEY POST) LIGHT GREEN PAINT ON WOODEN BEAM	RDL	QC Batch

Total Metals by ICP							
Total Lead (Pb)	mg/kg	3680	3230	14700	13000	3.0	8522785
RDL = Reportable Detection Limit							

Maxxam ID		QJ1130		
Sampling Date		2017/01/04		
COC Number		08434657		
	UNITS	3210EXT-L05 (SOUTH WEST END) DARK GREEN PAINT ON WOOD SIDING	RDL	QC Batch

Total Metals by ICP				
Total Lead (Pb)	mg/kg	13300	3.0	8522785
RDL = Reportable Detection Limit				

Maxxam Job #: B701148
Report Date: 2017/01/09

City of Vancouver
Client Project #: 10317686
Site Location: BUILDING ENVELOPE CONDITION ASSESS
[3210] CHAMPLAIN HEIGHTS-3350
MADCQUINNA DR.
Your P.O. #: 4700002203
Sampler Initials: PL

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Job #: B701148
Report Date: 2017/01/09

QUALITY ASSURANCE REPORT

City of Vancouver
Client Project #: 10317686
BUILDING ENVELOPE CONDITION ASSESS
[3210] CHAMPLAIN HEIGHTS-3350
Site Location: MADQUINNA DR.
Your P.O. #: 4700002203
Sampler Initials: PL

QC Batch	Parameter	Date	Method Blank		RPD		QC Standard	
			Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8522785	Total Lead (Pb)	2017/01/09	<3.0	mg/kg	2.9	35	99	80 - 120
<p>Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.</p> <p>QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p>								

Maxxam Job #: B701148
Report Date: 2017/01/09

City of Vancouver
Client Project #: 10317686
Site Location: BUILDING ENVELOPE CONDITION ASSESS
[3210] CHAMPLAIN HEIGHTS-3350
MADCQUINNA DR.
Your P.O. #: 4700002203
Sampler Initials: PL

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Rob Reinert, B.Sc., Scientific Specialist

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Maxxam Job #: [REDACTED]

COC #: [REDACTED]



Page: ___ of ___

Invoice To: Require Report? Yes No

Report To:

Company Name: City Of Vancouver
 Contact Name: Accounts Payable
 Address: PO BOX 7757 - 349 West Georgia St.
Vancouver PC: V6B 0L5
 Phone / Fax#: Ph: _____ Fax: _____
 E-mail: APIinvoice@vancouver.ca

Company Name: City Of Vancouver
 Contact Name: Patrick Li
 Address: 507 West Broadway
Office 320 PC: _____
 Phone / Fax#: Ph: 604-873-7988 Fax: _____
 E-mail: pat.li@vancouver.ca

PO #:	4700002203
Quotation #:	
Project #:	
Proj. Name:	10317686 - Building Envelope Condition Assess.
Location:	[3210]Champlain Heights - 3350Macquinna Dr.
Sampled by:	Patrick Li

REGULATORY REQUIREMENTS:

SERVICE REQUESTED:

- CSR
- CCME
- BC Water Quality
- Other Lead
- DRINKING WATER

- Regular Turn Around Time (TAT)
(5 days for most tests)
- RUSH (Please contact the lab)
 1 Day 2 Day 3 Day

Date Required: _____

SPECIAL INSTRUCTIONS:

Return Cooler Ship Sample Bottles (please specify)
 Please report in mg/kg. Thanks!

ANALYSIS REQUESTED

Sample ID	Sample Description	Sample Type	Date/Time (24hr) Sampled	Field Filtered?	Field Acidified?	TOTAL LEAD	Number of Containers
				Y	Y		
1	3210EXT-L01 NORTH EAST END	Paint Chips	17/01/04			X	
2	Light Green Paint on Wooden Trim / Post						
3	3210EXT-L02 NORTH EAST END	Paint Chips	17/01/04			X	
4	Green Paint on Wood Trim / Window Sill						
5	3210EXT-L03 EAST END (EXT OF STORAGE)	Paint Chips	17/01/04			X	
6	Dark Green Paint On Wood Siding						
7	3210EXT-L04 (S. END - ROOF VALLEY POST)	Paint Chips	17/01/04			X	
8	Light Green Paint on Wooden Beam						
9	3210EXT-L05 (SOUTH WEST END)	Paint Chips	17/01/04			X	
10	Dark Green Paint On Wood Siding						
11							
12							



Print name and sign		Print name and sign			Laboratory Use Only					
*Relinquished By:	Date (yy/mm/dd):	Time (24hr):	Received by:	Date (yy/mm/dd):	Time (24hr):	Time Sensitive	Temperature on Receipt (°C)	Custody Seal	Yes	No
Courier	16/01/06	15:00	KEVIN CHAN	2017/01/06	15:05	<input type="checkbox"/>	A) [] B) [] C) []	Present?	<input type="checkbox"/>	<input type="checkbox"/>
							Just sampled & rec'd on ice:	Intact?	<input type="checkbox"/>	<input type="checkbox"/>

IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORDS. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE 9 (PART D - FORM OF AGREEMENT)

SCHEDULE 9
CONTRACTOR PRE-CONTRACT HAZARD ASSESSMENT FORM

[Completed form to be attached to the finalized agreement.]

CONTRACT TITLE _____

PROJECT MANAGER (CITY EMPLOYEE) _____

CONTRACTOR REPRESENTATIVE _____

CONTRACT NAME & # _____

Purpose

This document shall be completed by the contractor awarded the contract, who shall identify all the known and potential work process hazards associated with the contract. The contractor, who is responsible for all identified actions, shall provide a completed Contractors Pre-Work Hazard Identification (CHI) document to the Project Manager (City employee) for review and consultation before the contract work begins.

Reference Material

In order to complete this document, the contractor should reference a completed copy of the **List of Known Workplace Hazards**, initially provided with the tender package. The contractor is also responsible to reference any **Hazardous Materials Assessments**, provided by the City with the tender package, and possibly referenced in the List of Known Workplace Hazards document.

Instructions for Completion

The document must be completed in full. Choices for each entry are:

Y - Yes - this work process or worksite hazard will exist for this contract and are the responsibility of the contractor

N - No - Even though the work process or worksite hazard will exist, it will not be the responsibility of the contractor

NA - Not Applicable - the work process or worksite hazard is not applicable for this contract

TBD - a third party (environmental consultant) will address the issue (primarily for a hazardous materials assessment)

Each grouping of safety hazards or issues in this document (bold text, capitalized) may list some examples of work tasks where this hazard may be encountered. These examples are not conclusive; there may be other examples of work tasks that create this hazard or issue.

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE 9 (PART D - FORM OF AGREEMENT)

Documentation and Training Requirements

During the contract term, the contractor may be requested by the City of Vancouver, and shall provide documented evidence for items identified with a **(D)** in this document.

The summary table at the end of the document provides all potentially required documentation, and if applicable, the WCB OHS Regulation reference.

For any identified hazard marked with a **(T)**, the contractor is responsible to train their employees.

HAZARDOUS MATERIALS

The contractor is responsible for providing additional information on hazardous materials which may be encountered as part of the work process, yet not identified in the List of Known Workplace Hazards.

HAZARD OR ISSUE	Contractor Confirmation
1. ASBESTOS-CONTAINING MATERIALS - disturbance or penetrations of flooring, walls, ceiling tiles, pipe lagging, ac pipe, transite siding, particularly in older facilities; e.g., furniture/fixture installation, carpeting/flooring services, and boiler repair/tune-up services.	Yes (Y) No (N) Not Applicable (NA) or To Be Determined (TBD)
a) We have reviewed the hazardous materials assessment for asbestos provided by the City of Vancouver (or third party) in the tender package	Y N NA TBD
b) We will provide a written hazardous materials assessment for asbestos	Y N NA TBD
c) We have a written Asbestos Program (D)	Y N NA
d) As Prime Contractor, we will submit a Notice of Project Asbestos(NOP-A) to WorksafeBC at least 24 hours in advance of the project startup	Y N NA

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 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE 9 (PART D - FORM OF AGREEMENT)

2. LEAD-CONTAINING MATERIALS - disturbance of lead-based paint, particularly in older facilities. Also present in certain electrical circuitry and metal alloys; .e.g., overhead bridge crane maintenance/repair, high-voltage cable splicing services, boiler repair/tune-up services, fixture installation services, and chiller maintenance/repair services.	Yes (Y) No (N) or Not Applicable (NA)
a) We have reviewed the hazardous materials assessment for lead provided by the City of Vancouver (or third party) in the tender package	Y N NA TBD
b) We will provide a written hazardous materials assessment for lead	Y N NA TBD
c) We have a written exposure control program for Lead (D)	Y N NA

3. OTHER HAZARDOUS MATERIALS - may include PCBs, CFCs, molds, mercury, ozone depleting substances (ODS), radioactive substances, sewage and unidentified contaminated hazardous materials, other: (list other here) _____	Yes (Y) No (N) or Not Applicable (NA)
a) We have reviewed the hazardous materials assessment for (insert hazardous material type here) provided by the City of Vancouver, or a third party, in the tender package	Y N NA TBD
b) We have reviewed the hazardous materials assessment for (insert hazardous material type here) provided by the City of Vancouver, or a third party, in the tender package	Y N NA TBD
c) We will provide a hazardous materials assessment for (insert hazardous material type here)	Y N NA TBD
d) We will provide a hazardous materials assessment for (insert hazardous material type here)	Y N NA TBD

4. CONFINED SPACES - working in vaults, chambers, pits, tanks, etc.; e.g., construction, inspection and testing services, water/fuel storage tank clean-out services, and utility corrosion inspection services.	Yes (Y) No (N) or Not Applicable (NA)
a) We have reviewed the confined space hazard assessment provided by the City of Vancouver in the tender package	Y N NA TBD
b) We have a written confined space entry program (D)	Y N NA
c) Our employees have received confined space training (T)	Y N NA
d) We shall complete a confined space hazard assessment specific to the work to be performed (D)	Y N NA
e) We shall develop site specific written safe operating procedures (including evacuation	Y N NA

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE 9 (PART D - FORM OF AGREEMENT)

and rescue components) prior to starting work (D)	
f) We shall identify and record isolation points (D)	Y N NA
g) We will develop alternate procedures (as per WCB OHS Regulation # 9.22) to be used to isolate adjacent piping containing harmful substances (D)	Y N NA
h) We will provide for the services of rescue persons	Y N NA

If yes to g), provide brief description:

5. LOCK OUT - industrial equipment maintenance, power machinery repair services, pump maintenance/repair services, mechanical refrigeration systems, elevator repair, overhead bridge crane maintenance/repair services, cathodic protection services, hydraulic test systems repair/service, and air compressor rebuilding services.	Yes (Y) No (N) or Not Applicable (NA)
a) We will be required to lock out in order to isolate or prevent the unexpected release of energy (electrical, mechanical, hydraulic, chemical, thermal, kinetic, gravitational, pneumatic)	Y N NA
b) We will perform work on, or near, energized equipment, lines or circuits	Y N NA

Note: If yes to a) or b) above, no work may be performed until reviewed by City of Vancouver project manager or project manager designate.

If yes to a) or b) describe:

6A. FALL PROTECTION - tree pruning, window and ledge cleaning, window replacement, overhead bridge crane maintenance/repair services, roll-up door replacement, tent installation, awning/canopy installation, overhead air exchange installation, construction inspection and testing services.	Yes (Y) No (N) or Not Applicable (NA)
a) Our employees will be exposed to a potential fall in excess of 3 m (10 feet), or to a fall of less than 3 m which would likely result in a serious injury (ex. impalement on rebar)	Y N NA
b) We will produce a written Fall Protection Plan for work that will occur more than 25 feet above grade, or, if written procedures (control zone) are to be used as the means of fall protection (D)	Y N NA
c) Our employees who will be required to use fall protection have received training (T)	Y N NA

If yes to a), describe:

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE 9 (PART D - FORM OF AGREEMENT)

6B. SCAFFOLDING AND LADDERS - window replacement or cleaning, tree pruning, roll-up door replacement, tent installation, and awning/canopy installation.	Yes (Y) No (N) or Not Applicable (NA)
a) Our employees will use scaffolding or ladders for access to the work	Y N NA
b) The scaffolding or ladders will be exposed to wet and/or slippery conditions	Y N NA
c) We will ensure scaffolding or ladders are secured before accessing the worksite	Y N NA
d) Scaffolding will be erected and dismantled only by qualified workers	Y N NA

7. OVERHEAD POWER LINES AND UNDERGROUND UTILITIES - tree pruning services, tree removal, utility relocation or replacement, underground utility identification services, concrete sawing services, pole painting	Yes (Y) No (N) or Not Applicable (NA)
a) There are electrical hazards associated with overhead power lines such as limits of approach and contact	Y N NA
b) We will obtain necessary assurances, in writing, through the utility company, for any work where minimum limits of approach cannot be maintained	Y N NA
c) Underground or hidden utilities may be on the job site and we shall contact the Project Manager and BC OneCall at least four business days prior to the start of any excavation work	Y N NA
d) In the event of an inadvertent utility strike, we will have a written procedure for immediate notification of both the utility company and WorkSafeBC (D)	Y N NA

8. CONSTRUCTION, EXCAVATION, SHORING AND DEMOLITION	Yes (Y) No (N) or Not Applicable (NA)
a) As Prime Contractor, we will submit a Notice of Project (NOP) to WorkSafeBC at least 24 hours in advance of the project startup date	Y N NA
b) Workers may be required to enter an excavation over 1.2m (4 ft) in depth	Y N NA
c) We will develop site specific written safe operating procedures, including evacuation and rescue components, prior to starting any excavation work (D)	Y N NA
d) Shoring will be installed in accordance with Part 20 of the WorkSafeBC OH&S	Y N NA

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE 9 (PART D - FORM OF AGREEMENT)

Regulation	
e) We will provide safe means of entry and exit for excavations	Y N NA
f) We will provide for the services of rescue persons and equipment (excavation rescue)	Y N NA
g) We will develop a demolition/salvage plan (D)	Y N NA
h) We will evaluate the demolition materials for reuse or recycling	Y N NA
i) We will protect passers-by from potential hazards	Y N NA

9. CHEMICALS, SOLVENTS, FUMES, VAPORS, AND DUSTS - cleaning solvents, adhesives, paints, coatings, binders; e.g., storage tank clean-out services, countertop installation (epoxies), and flooring	Yes (Y) No (N) or Not Applicable (NA)
a) We will complete a hazard assessment for chemicals we will use in our work, and if chemicals already exist at the workplace, our assessment will identify possible results of any reactions between our chemicals and those of the City's operations	Y N NA

10. NOISE AND VIBRATION - includes installations and heavy equipment operation. Noise examples for 85 - 90 dbA (at noise source) include forklift, smoke alarm, table saw. Whole body vibration examples include truck or equipment operator and jackhammer operation	Yes (Y) No (N) or Not Applicable (NA)
a) Our employees will be exposed to noise levels above 85dbA	Y N NA
b) We have a written hearing conservation program (D)	Y N NA
c) Our employees will be exposed to excessive levels of whole body vibration (WBV)	Y N NA

11. OCCUPATIONAL HEALTH AND SAFETY PROGRAM	Yes (Y) No (N) or Not Applicable (NA)
a) We have a written Safety Program (D)	Y N NA
b) We will make regular inspections of all workplaces	Y N NA
c) We will immediately investigate any reported unsafe conditions and correct as required	Y N NA
d) We will investigate all incidents and provide written incident reports to the Project Manager	Y N NA

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE 9 (PART D - FORM OF AGREEMENT)

e) We will develop a written plan (D) identifying how risk to the public and workers will be minimized (may include the use of barriers and safe entry/exit points from the worksite)	Y N NA
--	--------

12. FIRST AID	Yes (Y) No (N) or Not Applicable (NA)
a) First aid equipment, supplies, facilities and services will be readily accessible during working hours	Y N NA
b) We will complete a first aid assessment (D)	Y N NA
c) We will post site drawings and signs indicating the location of, and how to summon, first aid	Y N NA
d) We will develop an effective means of communication between the first aid attendant and the work areas	Y N NA

13. FIRE PROTECTION - solvents, fuels, soldering, torch cutting, or heating devices; e.g., gasoline and diesel fuel delivery services, flooring services, fire suppression service, and water pipe repair services	Yes (Y) No (N) or Not Applicable (NA)
a) We will weld, solder, or cut with a torch	Y N NA
b) We will use or store flammable/combustible liquids	Y N NA
c) We will use temporary heating devices	Y N NA
d) We will provide water and/or fire extinguishers on the job site	Y N NA

14. PERSONAL PROTECTIVE EQUIPMENT (PPE)	Yes (Y) No (N) or Not Applicable (NA)
a) We will ensure our workers have appropriate personal protective clothing and equipment (e.g., safety footwear, hi-vis vests, hardhats, eye protection, face protection, hearing protection, chemical gloves/clothing)	Y N NA
b) We have a written PPE program (D)	Y N NA

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE 9 (PART D - FORM OF AGREEMENT)

15. RESPIRATORY PROTECTION	Yes (Y) No (N) or Not Applicable (NA)
a) The work will involve materials or processes requiring respiratory protection	Y N NA
b) We have a written respiratory protection program (D)	Y N NA

16. TOOLS MACHINERY AND EQUIPMENT	Yes (Y) No (N) or Not Applicable (NA)
a) We will use powder-actuated tools.	Y N NA
b) Our employees who operate equipment have been trained and are qualified in use of that equipment. (T)	Y N NA

If yes to a), describe:

17. CRANES, FORKLIFTS, AND MANLIFTS - heavy or oversized goods delivery, tree pruning, overhead bridge crane maintenance/repair, and roll-up door replacement.	Yes (Y) No (N) or Not Applicable (NA)
a) We will use a crane, forklift, manlift or other lifting equipment	Y N NA
b) Our lifting and rigging equipment is certified where applicable, and inspected on a regular basis	Y N NA
c) Our operators shall have a valid operators certificate (mobile crane or tower crane) or have received training (boom lift, scissor lift or forklift) (T)	Y N NA
d) Only lifting attachments approved for use by the forklift manufacturer will be used	Y N NA

18. RIGGING	Yes (Y) No (N) or Not Applicable (NA)
a) We will lift or sling loads overhead	Y N NA
b) We will inspect ropes, hooks and slings before use on each shift	Y N NA

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE 9 (PART D - FORM OF AGREEMENT)

19. MOTOR VEHICLES AND HEAVY EQUIPMENT - goods delivery, personnel transportation services, trailer relocation services, oil/water pumpout and recycling services, asphalt grinding and asphalt sealing services, weed/brush abatement and mowing services, landscape hydroseed services, tree stump grinding, and concrete sawing and removal	Yes (Y) No (N) or Not Applicable (NA)
a) We will use motor vehicles or heavy equipment at the work location	Y N NA
b) All operators have a valid provincial driver's license	Y N NA
c) We will inspect vehicles, including safety features (e.g., ROPS)	Y N NA

20. TRAFFIC CONTROL	Yes (Y) No (N) or Not Applicable (NA)
a) There will be uncontrolled movement of vehicular traffic at the worksite	Y N NA
b) We will develop a written traffic control plan (D)	Y N NA
c) We will put in place any required traffic control devices	Y N NA
d) The traffic control devices conform to the Ministry of Transportation and Infrastructure (MoTI) " <i>Traffic Control Manual for Work on Roadways</i> "	Y N NA
e) We will provide Traffic Control Persons (TCP's) as required by law	Y N NA

21. CRYSTALLINE SILICA DUST	Yes (Y) No (N) or Not Applicable (NA)
a) Our work will involve jackhammering, rotohammering, drilling, grinding or other disturbance of concrete or stone, creating potential exposure to silica dust	Y N NA

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE 9 (PART D - FORM OF AGREEMENT)

22. Additional Concerns	Yes (Y) No (N) or Not Applicable (NA)
We foresee additional health and safety concerns associated with the work	Y N NA

If yes, describe:

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

Describe the control measures each of the concerns listed above:

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

PRE CONTRACT HAZARD ASSESSMENT COMPLETED BY	
Contractor's Representative Name (print):	
Contractor's Representative Signature:	Date:
Title:	Phone:

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE 9 (PART D - FORM OF AGREEMENT)

CONTRACTOR'S DESIGNATE RESPONSIBLE FOR ONSITE SAFETY	
Name (print):	
Title:	Phone:

SUMMARY OF DOCUMENTATION (D) TO BE PROVIDED BY THE CONTRACTOR upon request by the City of Vancouver (documentation required as per Workers Compensation Board Occupational Health and Safety (WCB OHS) Regulation, the Workers' Compensation Act (WCA) or the City of Vancouver)	Yes (Y) or Not Applicable (NA)
a) Safety Program (WCB OHS Regulation Parts 3.1-3.3)	
b) Asbestos Exposure Control Plan (WCB OHS Regulation Part 6.3)	
c) Lead (Pb) Exposure Control Plan (WCB OHS Regulation Part 6.60)	
d) Respiratory Protection Program (WCB OHS Regulation Part 8.5)	
e) Confined Space Entry Program (WCB OHS Regulation Parts 9.5 and 9.6)	
f) Plan for minimizing risk to public and to workers (City of Vancouver)	
g) Personal Protective Equipment (PPE) Program (WCB OHS Regulation Part 8.5)	
h) Hearing Conservation Program (WCB OHS Regulation Part 7.5)	
i) Confined Space Hazard Assessment (WCB OHS Regulation Part 9.9)	
j) Work Procedure, including evacuation and rescue, for confined space (WCB OHS Regulation Part 9.10 and 9.11)	
k) Identification of Isolation Points (confined space) (WCB OHS Regulation Part 9.19)	
l) Alternate procedures to isolate adjacent piping (confined space) (WCB OHS Regulation Part 9.22)	
m) Fall Protection Plan (WCB OHS Regulation Part 11.3)	
n) Traffic Control Plan (Ministry of Transportation and Infrastructure (MOTI) manual, as referenced in WCB OHS Regulation Part 18.3)	
o) In the event of a utility strike, a written procedure for notification of Utility Provider (WCB OHS Regulation Part 4.18) and WorksafeBC (Workers' Compensation Act Part 3, Division 10, Sec. 172 (1)(c))	
p) Work Procedure (including evacuation and rescue) for excavations (City of Vancouver)	

INVITATION TO TENDER NO. PS20180020
 CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
 CHAMPLAIN HEIGHTS COMMUNITY CENTRE
 SCHEDULE 9 (PART D - FORM OF AGREEMENT)

q) Demolition/Salvage Plan (City of Vancouver in reference to WCB OHS Regulation Part 20.112)	
r) First Aid Assessment (WCB OHS Regulation Part 3.16 (2))	

SUMMARY OF TRAINING REQUIREMENTS (T) OF CONTRACTOR EMPLOYEES (for any persons completing this type of work throughout the duration of the contract)	Yes (Y) or Not Applicable (NA)
a) Confined Space Entry (WCB OHS Regulation Part 9.8)	
b) Fall Protection (WCB OHS Regulation Part 11.2 (6))	
c) Equipment Operation (WCB OHS Regulation Part 4.3 (1) (b)(i) (ii))	
d) Mobile Equipment (ex. boom lift, scissor lift, forklift) (WCB OHS Regulation Part 16.4)	

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE 10 (PART D - FORM OF AGREEMENT)

SCHEDULE 10
FORCE ACCOUNT LABOUR AND CONSTRUCTION EQUIPMENT RATES

[When Contract is finalized, insert table of labour and equipment rates provided with successful Tenderer's Form of Tender]

INVITATION TO TENDER NO. PS20180020
CONTRACTOR FOR ROOF AND SKYLIGHT REPLACEMENT AT
CHAMPLAIN HEIGHTS COMMUNITY CENTRE
SCHEDULE 11 (PART D - FORM OF AGREEMENT)

SCHEDULE 11
PRIME CONTRACTOR AGREEMENT FORM

[When Contract is finalized, insert Prime Contractor Agreement Form provided with successful Tenderer's Form of Tender]