



INVITATION TO TENDER

RDCK LAKESIDE OFFICE ROOF REPLACEMENT PRJ #24047

Regional District of Central Kootenay

Issued: November 25, 2024

Closing Location:

Regional District of Central Kootenay
Box 590, 202 Lakeside Drive
Nelson, BC V1L 5R4

Closing Date and Time:

2:00 pm, Local Time, **January 22, 2025**

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END OF SECTION

1.1 BID CALL

1. Bids will be received before **2:00 pm LOCAL TIME on January 22, 2025** (the "bid closing time") at:

Regional District of Central Kootenay
Attn: AJ Evenson
tenders@rdck.bc.ca and aevenson@rdck.bc.ca

2. The official bid closing time will be determined by the RDCK email server.
3. Bids received after the specified bid closing time will be returned unopened.
4. The Owner reserves the right to extend the bid closing time or cancel the bid call by addendum.
5. Bids will be opened promptly after the bid closing time, at the specified bid closing location. ~~Bidders are invited to attend the bid opening. The name of each Bidder and the bid price stated on the Bid Form will be read aloud.~~
6. Bid results will be disclosed promptly to all Bidders. Such disclosure will not imply that the bids received are compliant or that a contract will be awarded to the lowest or any Bidder.

1.2 BID DOCUMENT AVAILABILITY

1. Bid Documents are made available in electronic form only for the purpose of obtaining bids for this project. It does not confer a license to use the Bid Documents for any other purpose.

1.3 EXAMINATION OF BID DOCUMENTS

1. Examine the Bid Documents and promptly notify the person designated to receive inquiries of any perceived errors, omissions, conflicts or discrepancies in the Bid Documents.

1.4 SITE EXAMINATION

1. Bidders shall visit the site and familiarize themselves with conditions affecting the Work before submitting a bid.
2. Bidders' only opportunity to visit the Place of the Work will be in conjunction with the specified pre-bid meeting and site visit.
3. Bidders visiting the Place of the Work shall provide their own personal protective equipment.
4. Bidders visiting the Place of the Work shall be accompanied at all times by a representative of the Owner.
5. Refer to 00 31 00 - Available Project Information which identifies available information pertaining to the Project.

6. By inference of the "Concealed or Unknown Conditions" GC in the General Conditions of the Contract, Bidders shall include in their bid price for non-concealed and known conditions that are either visible or can be reasonably inferred from a site examination at the Place of the Work before bid submission.

1.5 PRE-BID MEETING AND SITE VISIT

1. Due to the onset of winter weather, no pre-bid meeting is scheduled. Contractors may contact the project manager to make arrangements to visit the site if desired.

1.6 BID FORM SUPPLEMENTS

1. Submit the following Bid Form Supplements together with the Bid Form:
 1. Bid security as specified below.
 2. Section 00 43 23 - Bid Form Supplement - Alternative Prices.
 3. Section 00 43 36 - Bid Form Supplement - List of Subcontractors.
2. The Owner may, after the bid closing time and before contract award, require any Bidder to submit additional supplementary information about any aspect of the Bidder's bid to verify compliance with the Bid Documents.

1.7 BID SECURITY

1. Submit with the bid a CCDC 220 form of bid bond in an amount of not less than 10% of the bid price.
2. The bid bond shall name the Regional District of Central Kootenay as the obligee and shall be signed, sealed, and dated by both Bidder and surety.
3. Upon request, bid bonds of unsuccessful Bidders will be returned after the successful Bidder has entered into a contract with the Owner and provided the specified contract security, or earlier at the Owner's discretion.
4. In lieu of a bid bond, Bidders may submit a certified cheque or bank draft in favour of the Regional District of Central Kootenay and in an amount of not less than 10% of the bid price.
5. Certified cheques and bank drafts will be returned to Bidders after the successful Bidder has entered into a contract with the Owner and has provided the specified contract security, or earlier at the Owner's discretion.

1.8 BIDDER DEFAULT AND FORFEITURE OF BID SECURITY

1. If a Bidder whose bid is accepted by the Owner in writing, without conditions, and within the acceptance period specified in the Bid Documents, refuses or fails within 15 calendar days after the date of issuance of the written acceptance of the bid, to sign a formal agreement with the Owner for the performance of the Work and to provide contract performance security as specified in the Bid Documents, the Bidder will be liable to the Owner for the

difference in money between the Bidder's bid price and the amount for which the Owner legally contracts with another party to perform the Work, if the latter amount is in excess of the former, up to the maximum amount of the bid security provided.

1.9 CONTRACT SECURITY

1. Refer to Section 00 73 63 - Contract Security Requirements.

1.10 PREQUALIFIED SUBCONTRACTORS AND SUPPLIERS

1. Not Applicable

1.11 BID DEPOSITORY

1. Not Applicable

1.12 TAXES

1. Include in bid price all taxes and customs duties in effect at the time of the bid closing, except for Value Added Taxes as defined in the CCDC standard form of contract.

1.13 CONTRACT TIME

1. The Bidder, in submitting a bid, agrees to attain Substantial Performance of the Work by the date specified in the Bid Form, which will become the Contract Time under the Contract.

1.14 SUBSTITUTIONS

1. Where the Bid Documents specify particular Products by proprietary name, the Consultant will consider Bidder requests for approval of substitutions during the bid period, provided such requests are received, in writing, at least 7 days before the bid closing time and are in accordance with the requirements specified in Section 01 25 00 - Substitution Procedures. If the Consultant approves a substitution, the substitute Product will be named in an addendum. Otherwise Bidders shall consider the request for approval of the substitution to be rejected.

1.15 ALTERNATIVES

- .1 Not Applicable

1.16 LIST OF SUBCONTRACTORS

1. Complete and submit Section 00 43 36 - Bid Form Supplement - List of Subcontractors, indicating those Subcontractors or Suppliers whose bids have been received by the Bidder, which names the Bidder would be prepared to accept for the performance of the work indicated.
2. The purpose of this requirement is to protect the interests of subcontract bidders and the integrity of the bidding process. Provided the List of Subcontractors has been properly

completed and submitted, the information will not be used in evaluating the Bids to determine the lowest compliant bidder.

1.17 BID FORM SIGNING

1. Complete the Bid Form as follows:
2. Incorporated Company: Provide company name and name and signature of the duly authorized signing representative(s). Insert under each signature the representative's capacity to act on behalf of the company.
3. Joint Venture: Each entity within the joint venture shall execute the Bid Form as specified.
4. Partnership: Provide name of partnership and name and signature of duly authorized representatives of the partnership.
5. Sole Proprietorship: Provide name of sole proprietorship and name and signature of sole proprietor in the presence of a witness who shall also sign.

1.18 BID SUBMISSION

1. Complete Bid Form, in its entirety, on the form provided and submit together with the required Bid Form Supplements, completed in their entirety, in an email to:
 - i. Tenders@rdck.bc.ca with a CC to aevenson@rdck.bc.ca
 - ii. Verbal, telephoned, faxed, or text message bids will not be accepted nor acknowledged.
2. Except as expressly and specifically permitted in this Invitation to Tender, each Bidder, by submitting a Bid, irrevocably waives any claim, action, or proceeding against the Owner including without limitation any judicial review or injunction application or against the Owner and its employees, advisors or representatives for damages, expenses or costs, including costs of Bid preparation, loss of profits, loss of opportunity or any consequential loss for any reason including:
 1. any actual or alleged unfairness on the part of the Owner at any stage of the Tender process;
 2. if the Owner does not award or execute a Contract with the Bidder; or
 3. if the Owner is alleged or is subsequently determined to have accepted a noncompliant Bid or otherwise breached or fundamentally breached the terms of this Invitation to Tender.

1.19 BID MODIFICATION AND WITHDRAWAL

1. A bid, including the Bid Form and Bid Form supplements, submitted in accordance with these bidding requirements may be modified or withdrawn, provided the modification or withdrawal request:

1. is in the form of an email received at the email specified in "Bid Call" article before the bid closing time, or
 2. states the project title, name of the Bidder, the nature of the modification or withdrawal request,
 3. and is signed by a duly authorized person.
2. For bid closing time purposes, the official time of receipt of faxed bid modifications or withdrawal requests will be the time of receipt automatically printed on the fax transmission by the receiving fax machine.
 3. If a bid is withdrawn, a new bid may be submitted in accordance with the specified requirements, provided it is received before the bid closing time.
 4. When submitting a modification directing a change in a bid price, do not reveal the original amount nor the revised amount:
 1. On stipulated price bids, state only the amount to be added to or deducted from the original bid price.
 2. On unit price bids, state only the amount to be added to or deducted from each original unit price or lump sum in the Schedule of Prices. The Owner will adjust extended amounts and the total bid price as required by the modification.
 5. When submitting a second or more modifications related to a particular bid price, ensure that there is no ambiguity as to the intended bid price. The written modification shall clearly indicate whether:
 1. the bid price first submitted is being modified and any previous modifications are to be disregarded, or
 2. a revised bid price derived from a previous modification is being modified.
 6. State all addendum numbers received, if different from what was indicated on originally submitted Bid Form.
 7. The Owner will assume no responsibility or liability for modifications or withdrawals that are, for any reason, delayed, illegible, unclear as to intent, ambiguous, contrary to these instructions, or otherwise improperly received. The Owner may disregard improperly received modifications or withdrawals.

1.20 BIDDING IRREGULARITIES

1. Bids with Bid Forms or required Bid Form Supplements that are improperly prepared, signed or submitted contrary to these Instructions to Bidders, or that contain added conditions or other irregularities of any kind, may, at the Owner's discretion, be rejected as non-compliant.

2. The Owner may accept or waive a minor and inconsequential irregularity. The determination of what is, or is not, a minor and inconsequential irregularity, the determination of whether or not to accept or waive such an irregularity, and the final determination of whether the bid is compliant, will be at the Owner's sole discretion.
3. The following irregularities relate to what are considered mandatory bidding requirements. These will not be considered minor and inconsequential and will cause the bid to be rejected as non-compliant:
 1. Bid or Bid Form Supplement is received after the specified bid closing time.
 2. Required Bid Form or Bid Form Supplement is missing.
 3. Bid Form or Bid Form Supplement is not in the form provided or required.
 4. A bid price is illegible, ambiguous or unclear.
 5. One or more conditions are added to or submitted with the bid, the effect of which is a material modification of the Bid Documents.
 6. Failure to indicate in the Bid Form the addendum number(s) of all addenda received.
 7. Failure to comply with any other bidding requirement expressly characterized as mandatory in elsewhere in the Bid Documents.

1.21 BID ACCEPTANCE PERIOD

1. The lowest or any bid will not necessarily be accepted, and the Owner may reject any and all bids. Without limiting the foregoing, Bidders are hereby notified that the Owner intends to review bids and award the Contract based not only on the bid price, but may also consider the Bidder's experience and qualifications considered essential by the Owner for the satisfactory completion of the Work, including the past experience of the Owner with respect to the Bidder's performance in completing projects in a timely, efficient and satisfactory manner, the Bidder's methods of doing business, and the Bidder's ability to establish and maintain a good working relationship with the Owner.
2. After bid closing and before expiry of the bid acceptance period stated in the Bid Form, the Owner may request all Bidders to agree to an extension of the originally specified bid acceptance period. In such case the bid acceptance period will be extended subject to the Bidder, who's bid the Owner wishes to accept, having agreed in writing to the extension.

1.22 BID ACCEPTANCE

1. The lowest or any bid will not necessarily be accepted and the Owner may reject any and all bids.
2. The Contract will be established if and when the successful Bidder receives from the Owner a written notification accepting the bid without any conditions. If the Owner's written

notification accepting the bid contains, or is subject to, any conditions, the Contract will be established if and when the Bidder accepts all such conditions in writing or when the parties execute the agreement.

3. If the lowest compliant bid exceeds the Owner's budget, and the Owner is unwilling or unable to award a contract at the bid price, the Owner may:
 1. negotiate, with the lowest compliant Bidder only, changes to the Bid Documents and a reduced bid price acceptable to the Owner, or
 2. invite the three lowest compliant Bidders (only) to re-bid on modified Bid Documents under a new bid call.

1.23 INTERPRETATION AND MODIFICATION OF BID DOCUMENTS

1. If an inquiry requires an interpretation or modification of the Bid Documents, the response to that inquiry will be issued in the form of a written Addendum only, to ensure that all Bidders base their bids on the same information.
2. Replies to inquiries or interpretations or modifications of the Bid Documents made by e-mail, verbally, or in any manner other than a written Addendum, will not form part of the Bid Documents and will not be binding.

1.24 ADDENDA

1. Addenda may be issued to modify the Bid Documents in response to Bidder inquiries or as may be considered necessary.
2. All addenda issued during the bid period will become part of the Bid Documents.
3. No addenda will be issued later than 2 working days before the bid closing time.
4. Each Bidder shall ascertain before bid submission that it has received all addenda issued during the bid period and shall indicate in the Bid Form the addendum number(s) of all addenda received.

1.25 INQUIRIES

1. Direct all inquiries in writing, via e-mail to:

AJ Evenson
Senior Project Manager
Email: aevenson@rdck.bc.ca
2. Submit inquiries as early as possible in the bid period and not less than 4 Working Days before the bid closing time. Inquiries received after this time may not receive a response.

END OF SECTION

1.1 STATUS OF AVAILABLE PROJECT INFORMATION

1. Available Project information means information of any type and in any form that is expressly identified as available project information in this Section.
2. No available Project information forms part of the Contract Documents unless copied or transcribed into Drawings or Specifications or is expressly listed in the agreement as a Contract Document.

1.2 USE AND RELIANCE UPON AVAILABLE PROJECT INFORMATION

1. Available Project information is made available to Bidders to fulfil the Owner's duty to disclose all relevant Project information to Bidders.
2. Bidders shall interpret and draw their own conclusions about available Project information, including consideration of the time when it was created. Available project information may be time sensitive. The Owner and Consultant assume no responsibility for such interpretations and conclusions.
3. Available Project information, or any part thereof, shall not be construed as contract requirements unless also reflected in Drawings or Specifications, and in case of conflict the Drawings or Specifications shall govern.
4. Bidders, acting reasonably, may rely on available Project information in preparing their bids, subject to any qualifications stated in such available Project information and unless expressly stated otherwise in this Section.

1.3 AVAILABLE PROJECT INFORMATION

- .1 Not Applicable

END OF SECTION

Project/Contract: RDCK Lakeside Office Roof Replacement

From (Bidder):

Legal Name of Bidder (please print)

Address of Bidder

Telephone Number of Bidder

Facsimile Number of Bidder

GST Registration Number

Signature

Date

Print Name and Title

To (Owner):

Regional District of Central Kootenay
202 Lakeside Drive
Nelson, BC V1L 5R4

We, the undersigned, having examined the Bid Documents for the above named project/contract, including Addendum Number(s) _____, and having visited the Place of the Work, hereby offer to perform the Work in accordance with the Bid Documents, for the stipulated price of:

\$ _____ in Canadian dollars, excluding Value Added Taxes.
(amount in figures)

We, the undersigned, declare that:

1. we are qualified to perform the Work in accordance with the Bid Documents and our bid price covers all of our obligations and things necessary for the performance of the Work,
2. our bid price includes the allowance(s) specified in Section 01 21 00 - Allowances,
3. we agree to attain Substantial Performance of the Work by August 31, 2025,
4. we have arrived at this bid without collusion with any competitor,
5. all bid form supplements called for by the Bid Documents form an integral part of this bid, and

6. this bid is open to acceptance by the Owner for a period of 90 calendar days from the bid closing time.

Signatures

Signed and submitted by:

(business name)

(name and title of authorized signing representative)

(signature of authorized signing representative)

(name of witness, if business is sole proprietorship)

(signature of witness, if business is sole proprietorship)

(name and title of authorized signing representative)

(signature of authorized signing representative)

Dated this _____ day of _____, 20__.

END OF SECTION

Project/Contract: RDCK Lakeside Office Roof Replacement

From (Bidder): _____
(Bidder name)

We, the above named Bidder, offer the alternative prices stated below for the alternatives specified in more detail in Section 01 23 00 - Alternatives. The effect on our base bid price stated in the Bid Form and the effect on the Contract Time, if any, is entered for each alternative. All alternative prices exclude Value Added Taxes. If there is no change to the base bid price for an alternative or if there is no change to the Contract Time for an alternative, we have so indicated. It is understood that:

1. the Owner may accept any of the alternatives and corresponding alternative prices in any order or combination, including all or none, as specified in the Instructions to Bidders,
2. the alternative prices will be taken into account in determining the lowest compliant bidder,
3. the alternatives and alternative prices are open for acceptance by the Owner for the same period of time as the base bid price,
4. the work of the Contract, the Contract Price, and the Contract Time will reflect the alternatives and alternative prices, if any, accepted by the Owner at the time of contract award, and
5. where applicable, alternative prices include the cost of coordinating all related Work and modifying adjacent or affected Work as required to integrate the Work of each alternative.

| No | Description of Alternative | Effect on Base Bid Price | | Effect on Contract Time (in Calendar Days) | |
|----|----------------------------|--------------------------|--------|--|--------|
| | | Add | Deduct | Add | Deduct |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |

END OF SECTION

Project/Contract: RDCK Lakeside Office Roof Replacement

From (Bidder): _____
(Bidder name)

We, the above named Bidder, have received bids from the Subcontractors or Suppliers named below for the items of work requested, and are prepared to accept these names for the performance of these items of work.

| No | Item of Work | Name of Subcontractor or Supplier |
|----|--------------|-----------------------------------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |

END OF SECTION

1.1 FORM OF CONTRACT

- .1 The form of Contract, including the Agreement, Definitions, and General Conditions is CCDC 2 (2020), Stipulated Price Contract, subject to the modifications specified in Section 00 73 00 – Supplementary Conditions.

1.2 CONTRACT COPYRIGHT AND AVAILABILITY

1. The CCDC form of Contract is a copyrighted document published by the Canadian Construction Documents Committee (CCDC). It is incorporated into these Bid Documents by reference. It is available for purchase from any CCDC document outlet. Refer to ccdc.org.

1.3 CONTRACT PREPARATION FOR SIGNING

1. The Consultant will prepare 2 (two) copies of the form of Contract for signing by the Contractor and the Owner after notice of award. Each copy will be comprised of the CCDC form of Contract with a CCDC copyright seal affixed, with a completed Agreement form, and with other Contract Documents referenced or appended.

END OF SECTION

1.1 INTENT

1. These amendments amend the Agreement forming part of CCDC 2 (2020), Stipulated Price Contract as indicated below. Provisions not amended remain in full force and effect.

1.2 AMENDMENTS TO AGREEMENT

- .1 Not Applicable

END OF SECTION

1.1 INTENT

1. These amendments amend the Agreement and Definitions forming part of CCDC 2 (2020) Stipulated Price Contract as indicated below. Provisions not amended remain in full force and effect.

1.2 AMENDMENTS TO DEFINITIONS

- .1 Not Applicable

END OF SECTION

1.1 INTENT

1. These Supplementary Conditions amend the General Conditions of CCDC 2 (2020) Stipulated Price Contract as indicated below. Provisions not amended remain in full force and effect.

1.2 AMENDMENTS TO GENERAL CONDITIONS

- .1 Not Applicable

END OF SECTION

1.1 PERFORMANCE BOND

1. Provide security for performance of the Contract in the form of a Performance Bond for 50% of the Contract Price.
2. Bond shall be in accordance with the latest edition of the Canadian Construction Documents Committee (CCDC) Standard Form of Performance Bond, CCDC 221.
3. Bond shall be issued by a duly licensed surety company authorized to transact the business of suretyship in the province or territory of the Place of the Work.
4. Bond shall name the Regional District of Central Kootenay as the obligee and shall be signed, sealed, and dated by both Contractor and surety company.
5. Submit bond to Owner within 15 days after contract award.

1.2 LABOUR AND MATERIAL PAYMENT BOND

1. Provide security for payment of labour and material provided in the performance of the Work in the form of a Labour and Material Payment Bond for 50% of the Contract Price.
2. Bond shall be in accordance with the latest edition of the Canadian Construction Documents Committee (CCDC) Standard Form of Labour and Material Payment Bond, CCDC 222 .
3. Bond shall be issued by a duly licensed surety company authorized to transact the business of suretyship in the province or territory of the Place of the Work.
4. Bond shall name the Regional District of Central Kootenay as the obligee and shall be signed, sealed, and dated by both Contractor and surety company.
5. Submit bond to the Owner within 15 days after contract award.

1.3 CERTIFIED CHEQUE OR BANK DRAFT

1. The Contractor may provide, in lieu of the specified Performance Bond, security for performance of the Contract in the form of a certified cheque or bank draft for 10% of the Contract Price.
2. The certified cheque or bank draft shall be in favour of the Regional District of Central Kootenay.
3. Submit certified cheque or bank draft to the Owner within 15 days after contract award. Alternatively, and subject to mutual agreement, the Owner may retain as contract security a certified cheque or bank draft provided as bid security.
4. The certified cheque or bank draft will be deposited and the monies will not be returned to the Contractor, in whole or in part, until satisfactory performance of all of the Contactor's obligations under the Contract.

5. Provided the Contractor has satisfactorily fulfilled all of its obligations under the Contract, the Owner will return to the Contractor the monies provided as contract security without interest, no later than 30 days after Substantial Performance of the Work.

1.4 IRREVOCABLE BANK LETTER OF CREDIT

1. The Contractor may provide, in lieu of the specified Performance Bond or the specified certified cheque or bank draft, security for performance of the Contract in the form of an irrevocable bank letter of credit for 10% of the Contract Price.
2. The letter of credit shall be in favour of the Regional District of Central Kootenay.
3. Submit the letter of credit to the Owner within 15 days after contract award.
4. The letter of credit shall have an expiry date no earlier than 24 months from the date of the tender close.
5. The letter of credit will not be returned to the Contractor until satisfactory performance of all of the Contractor's obligations under the Contract.
6. Provided the Contractor has satisfactorily fulfilled all of its obligations under the Contract, the Owner will return the letter of credit to the Contractor no later than 30 days after Substantial Performance of the Work.

END OF SECTION

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1. WORK OF THIS CONTRACT

- .1 Work of this Contract comprises the following:
 - .1 Replacement of the southern portion of the roof at the RDCK Lakeside Office.
- .2 Municipal Address: 202 Lakeside Drive, Nelson BC
- .3 Legal Description: 202 Lakeside Drive, Nelson BC
- .4 Physical Limits: Work of the Contract is not necessarily restricted to work within property lines of site, but includes all Work required by Contract Documents, both within and outside property lines.

2. CONTRACT TIME

- .1 Refer to Section 01 11 05 – Contract Time and Time Control.

3. CONTRACTUAL ARRANGEMENT

- .1 Work shall be performed under a single contract under a Stipulated Price Arrangement.

4. ASSIGNABLE CONTRACTS

- .1 Not Applicable

5. RELATED WORK BY OTHER CONTRACTORS

- .1 Other Contractors will be employed under separate contract with the RDCK to perform the following work which will be performed after completion of the Work of this Contract:
 - .1 Not Applicable
 - .2 Afford Other Contractors every opportunity for the introduction and storage of their materials as required.
 - .3 Coordinate and connect work of this Contract with work of Other Contractors as required.
 - .4 Cut, fit and patch work of this Contract as required to fit it to receive or be received by work of Other Contractors.

6. MATERIALS SUPPLIED OR INSTALLED UNDER SEPARATE CONTRACTS

- .1 Not Applicable
-

7. RELATED WORK BY RDCK

- .1 Not Applicable

8. MATERIALS SUPPLIED BY RDCK

- .1 Not Applicable

9. PREORDERED MATERIALS

- .1 Not Applicable

10. SERVICE CONNECTIONS

- .1 As used in this Article, "Utility" means a public or private utility company, or a municipality.
- .2 The following Utility service lines and sources will be installed under separate contract(s) and will be completed prior to the start of this Contract.
 - .1 Water
- .3 The following Utility service lines and sources shall be installed as part of this Contract.
 - .1 Not Applicable

11. ROADS, CURBS, GUTTERS, AND SIDEWALKS

- .1 Contractor shall be responsible for the following in connection with roads, curbs, gutters and sidewalks occurring outside property lines:
 - .1 Work required to be done to existing roads, curbs, gutters, and sidewalks.
 - .2 Connecting new and existing roads, curbs, gutters and sidewalks.
 - .3 Provision of new roads, curbs, gutters and sidewalks and portions thereof.
 - .4 Making good of damage to existing roads, curbs, gutters and sidewalks caused by Work of this Contract.
- .2 Contractor shall make arrangements with, pay costs and charges levied by and comply with requirements of authorities having jurisdiction.

12. FUTURE WORK

- .1 Not Applicable
-

13. WORK SEQUENCE

- .1 Not Applicable

14. CONTRACTOR'S USE OF PREMISES

- .1 Contractor shall have partial use of premises for performance of the Work.
- .2 Contractor shall limit his use of premises to the following areas:
 - .1 Contractor to define required staging and stockpile areas required.

15. USER OCCUPANCY

- .1 User will temporarily vacate portions of the premises to permit access to those areas for performance of the Work.

16. PARTIAL UTILIZATION

- .1 Not applicable

17. RESPONSIBILITY FOR EXISTING PROPERTY

- .1 Contractor shall assume responsibility for premises assigned to him for performance of the Work.
- .2 Contractor shall assume responsibility for and shall make good damage to existing property attributable to performance of Work of this Contract.

END OF SECTION

1. RELATED SECTIONS

- | | |
|------------------------------------|-------------------|
| .1 Agreement Form: | CCDC2 (2020). |
| .2 Supplementary Conditions: | Section 00 73 00. |
| .3 Summary of Work: | Section 01 11 00. |
| .4 Construction Schedules: | Section 01 32 16. |
| .5 Contract Acceptance Procedures: | Section 01 77 20. |

2. DEFINITIONS

- .1 Critical Product: a product whose delivery time is critical to the completion of one or more stages of the Work.

3. CONTRACT TIME

- .1 Time and all time limits stated in the Contract Documents are of the essence of the Contract. Contractor shall perform work expeditiously and with adequate forces to:
- .1 attain completion of each stage of the Work within the time specified herein for completion of each stage, and
 - .2 attain Interim Acceptance of the Work within the specified Contract Time.
- .2 Date of commencement of the Contract shall be the date of issuance of the Letter of Acceptance.
- .3 Commence work at the Place of the Work by: July 1, 2024.
- .4 Attain Interim Acceptance of the Work by: August 31, 2024.

4. CONTRACT URGENCY

- .1 Attainment of Interim Acceptance of the Work of the Contract within the specified Contract Time is urgent and imperative, for the following reasons:
- .1 Not Applicable.
 - .2 If Interim Acceptance of the Work of the Contract is not attained within the specified Contract Time, the RDCK may suffer loss or damages, as follows:
 - .1 Not Applicable.

- .3 Contract Price shall include for all special measures necessary to ensure completion of each stage of the Work by the dates or times established therefor and attainment of Interim Acceptance of the Work within the specified Contract Time. Such special measures shall, if required, include, but not necessarily be limited to, the following:
 - .1 Special measures to arrange for and ensure the availability of labour, products, and construction machinery and equipment when and as required.
 - .2 Premium time, including overtime and double shifting.

5. TIME CONTROL SYSTEM

- .1 Contractor shall provide and maintain a system of time control to identify, schedule and monitor activities related to progress of the Work.
- .2 Time control system shall be based on construction progress schedules specified in Section 01 32 16.
- .3 Incorporate contract stages, completion times, and milestones specified herein, including times for completion of contract stages established by Contractor.
- .4 Times and dates for completion of contract stages shall, upon acceptance by the RDCK, form the basis for the time control system.

6. PROGRESS ACCELERATION

- .1 If, in the RDCK's opinion, the progress of the Work, or any stage or part thereof, is too slow to ensure attainment of Interim Acceptance of the Work within the Contract Time, the Contractor shall, upon written notification by the RDCK to do so, take such special measures, including, but not limited to, those specified in paragraph 4.3, as are deemed necessary by the RDCK to accelerate progress to ensure attainment of Interim Acceptance of the Work within the Contract Time.
 - .2 Contractor shall not be entitled to any extra payment on account of having to take special measures to accelerate progress.
-

7. CONTRACT STAGES, COMPLETION TIMES, AND MILESTONES

| Stage | Time for Completion | Completion Milestone |
|--------------------------------|---|----------------------------------|
| Contract Award | Mid April 2025 | Acceptance by the RDCK |
| Submission of Shop Drawings | Jun 1, 2025 | Acceptance by the RDCK |
| Mobilization | Jul 1, 2025 | Acceptance by the RDCK |
| Completion of All Roofing Work | Aug 31, 2025 | Interim Acceptance of the Work |
| Site and Roofing Cleanup | Sep 15, 2025 | Practical Completion of the Work |
| Completion of all Deficiencies | Sep 30, 2025 | Final Acceptance of the Work |
| Warranty: | 12 months from date of Interim Acceptance of the Work | Total Completion of the Work |

END OF SECTION

1. CONTINGENCY ALLOWANCE AMOUNT

- .1 Include in the Contract Price a contingency allowance in the amount of 10% as described in Section 00 41 13.

2. EXPENDITURE OF CONTINGENCY ALLOWANCE

- .1 The RDCK anticipates using the contingency allowance to pay for some or all extra cost changes in the Work.
- .2 Expenditures from the contingency allowance, if any, are authorized and valued as changes in the Work, as specified in the General Conditions of Contract. The RDCK determines which changes in the Work are paid for from the contingency allowance.

3. ADJUSTMENT OF CONTRACT PRICE

- .1 Upon completion of the Work, the Contract Price is adjusted by credit change order to provide for the difference, if any, between the total amount of authorized expenditures from the contingency allowance and the original amount of the contingency allowance. The Contractor is not entitled to all or any part of an unexpended balance of the contingency allowance.

END OF SECTION

1. GENERAL COORDINATION

- .1 Coordinate all construction activities as required to ensure efficient and orderly installation of each part of the Work.
- .2 Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule and coordinate construction activities in the sequence required to obtain the best results.
- .3 Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
- .4 Make adequate provisions to accommodate items scheduled for later installation under separate contract or by the RDCK's own forces.

2. ADMINISTRATIVE PROCEDURES

- .1 Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities shall include, but not be limited to, the following:
 - .1 Preparation of schedules.
 - .2 Installation and removal of temporary facilities.
 - .3 Delivery and processing of submittals.
 - .4 Progress meetings.
 - .5 Contract acceptance procedures.

3. LEED COORDINATION

- .1 Not Applicable

4. GENERAL INSTALLATION PROVISIONS

- .1 Require the installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
 - .2 Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
 - .3 Inspect Materials immediately upon delivery and again prior to installation. Reject damaged and defective items.
-

- .4 Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.
- .5 Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the RDCK for final decision.
- .6 Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- .7 Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
- .8 Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the RDCK for final decision.
- .9 Supervise construction activities to ensure that no part of the Work, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

5. CUTTING AND REMEDIAL WORK

- .1 Do the cutting and remedial work required to make the several parts of the Work come together properly.
- .2 Coordinate the Work to ensure that this requirement is kept to a minimum.
- .3 Cutting and remedial work shall be performed by specialists familiar with Materials affected and shall be performed in a manner to neither damage nor endanger the Work.

END OF SECTION

1. RELATED SECTIONS

- .1 Construction Schedules: Section 01 32 16.

2. PRE-CONSTRUCTION MEETING

- .1 Schedule a pre-construction meeting within 15 Days after date of commencement of the Contract and prior to commencement of activities at the Place of the Work.
- .2 Purpose: to review personnel assignments, responsibilities, and administrative and procedural requirements.
- .3 Location: 202 Lakeside Drive, Nelson, BC.
- .4 Meeting Chaired By: the RDCK's representative.
- .5 Attendees:
 - .1 Contractor's representatives: Contractor's senior management, Contractor's project manager, Contractor's site superintendent, representatives of major Subcontractors,
 - .2 RDCK's representatives: as determined by the RDCK.
- .6 Agenda:
 - .1 Introduction of the RDCK's and Contractor's representatives.
 - .2 Review of significant contractual responsibilities and administrative and procedural requirements.
 - .3 Other business.

3. LEED MEETINGS

- .1 Not Applicable

4. CONSTRUCTION PROGRESS MEETINGS

- .1 Schedule regular construction progress meetings during the course of the Work.
 - .2 Purpose: to monitor construction progress and to identify problems and action required for their solution, to expedite the Work.
-

- .3 Frequency: every two weeks, or as otherwise directed by the RDCK.
- .4 Location: 202 Lakeside Drive, Nelson, BC.
- .5 Attendees:
 - .1 Contractor's representatives: Contractor's project manager, Contractor's site superintendent and when so requested by the RDCK, Subcontractors, suppliers and other parties involved in the Work. Contractor's representatives shall be qualified and authorized to act on behalf of the party each represents.
 - .2 RDCK's representatives: as determined by the RDCK.
- .6 Meeting Chaired By: RDCK's representative.
- .7 Agenda:
 - .1 Review and approval of minutes of previous meeting.
 - .2 Review of items of significance that could affect progress.
 - .3 Other topics for discussion as appropriate to current status of the Work.
- .8 Minutes: the RDCK's prime consultant will record minutes and distribute copies to all attendees within seven Days after meeting.

5. COMMISSIONING (PRE-FACILITY START-UP) MEETINGS

- .1 Commissioning (Pre-Facility Start-Up) meetings shall be held from the start of the Work until the Contractor Start-Up subschedules specified in Section 01 32 16, have been approved by the RDCK.
 - .2 Purpose: To monitor development of Contractor Start-Up subschedules and Contractor Start-Up report forms.
 - .3 Frequency: Every month, or as otherwise directed by the RDCK.
 - .4 Location: Contractor's site office or other location agreed to between the RDCK and Contractor.
 - .5 Attendees:
 - .1 Contractor's representatives: Contractor's project manager, Contractor's site superintendent, mechanical and electrical Subcontractors, Commissioning Agent and when so requested by the RDCK, Sub-subcontractors, suppliers and other
-

parties involved in the Work. Contractor's representatives shall be qualified and authorized to act on behalf of the party each represents.

- .2 RDCK's representatives: as determined by the RDCK.
- .6 Meeting Chaired By: RDCK's representative.
- .7 Agenda:
 - .1 Review and approval of minutes of previous meeting.
 - .2 Review of progress of Contractor Start-Up subschedule preparation.
 - .3 Review of progress of Contractor Start-Up report form preparation.
 - .4 Identification of problems impeding progress.
 - .5 Other business.
- .8 Minutes: Same as construction progress meetings.

6. COMMISSIONING (FACILITY START-UP) PROGRESS MEETINGS

- .1 Commissioning (Facility start-up) progress meetings shall be held during Facility Start-Up.
 - .2 Purpose: to monitor commissioning (Facility Start-Up) progress and to identify problems and action required for their resolution, to expedite Facility Start-Up.
 - .3 Frequency: as otherwise directed by the RDCK.
 - .4 Location: same as Commissioning (Pre-Facility Start-Up) meetings.
 - .5 Attendees: same as Commissioning (Pre-Facility Start-Up) meetings.
 - .6 Meeting Chaired By: RDCK's representative.
 - .7 Agenda:
 - .1 Review and approval of minutes of previous meeting.
 - .2 Review of Commissioning (Facility Start-Up) progress.
 - .3 Identification of problems impeding progress towards achievement of Commissioning (Facility Start-Up) milestones.
 - .4 Review of outstanding Contract Deficiencies.
 - .5 Review of Change Orders and Requests for Proposals.
 - .6 Other business.
 - .8 Minutes: same as construction progress meetings.
-

7. WARRANTY MEETINGS

- .1 Warranty meetings shall be held between Final Acceptance of the Work and Total Completion of the Work.
- .2 Purpose: to bring to Contractor's attention Contract Deficiencies identified during warranty period, determine action required for their correction, and monitor progress of Contract Deficiency correction.
- .3 Frequency: called by the RDCK on an as-needed basis.
- .4 Location: as agreed to between the RDCK and Contractor.
- .5 Attendees: same as construction progress meetings.
- .6 Meeting Chaired By: RDCK's representative.
- .7 Agenda:
 - .1 Review and approval of minutes of previous meeting.
 - .2 Review of progress of Contract Deficiency correction.
 - .3 Identification of problems impeding Contract Deficiency correction.
 - .4 Review of outstanding Contract Deficiencies.
 - .5 Other business.
- .8 Minutes: same as construction progress meetings.

END OF SECTION

1. RELATED SECTIONS

- | | |
|---|-------------------|
| .1 Contract Time: | Section 01 11 05. |
| .2 Work sequence: | Section 01 11 00. |
| .3 Products supplied by RDCK: | Section 01 11 00. |
| .4 Shop Drawings, Product Data and Samples: | Section 01 33 23. |

2. CONSTRUCTION PROGRESS SCHEDULE

- .1 Form of Schedule:
 - .1 Horizontal bar chart of sufficient size to clearly indicate all required information.
 - .2 Divide time into months, weeks and days. Identify first work day of each week.
 - .3 Allow space for revisions.
- .2 Content of Schedule:
 - .1 List and provide a separate bar for each activity.
 - .2 Indicate start and completion dates for each activity and for milestones specified in Section 01 11 05.
 - .3 Indicate projected percentage of completion for each activity as of first day of each month.
- .3 Progress Revisions:
 - .1 Keep schedule on site and up-to-date for duration of Contract.
 - .2 Indicate actual progress of work.
 - .3 Indicate major changes in scope.
 - .4 Revise projections of progress and completion as required.
- .4 Submissions:
 - .1 Within 15 Days after date of commencement of Contract, submit a copy of an initial construction schedule for the RDCK's review and acceptance at the pre-construction meeting.
 - .2 Revise and resubmit schedule as required by the RDCK.
 - .3 Submit copy of updated schedule when requested by the RDCK.

3. SUBSCHEDULES

- .1 Not Applicable
-

4. SUBMITTALS SCHEDULE

- .1 Prepare a schedule of shop drawings, product data and samples which are proposed to be submitted during the course of the Contract.
- .2 Submit Submittals Schedule for the RDCK's review within 30 days after date of commencement of Contract.
- .3 Not Applicable
- .4 After review, the RDCK may require submission of additional information or request that some proposed submittals not be submitted. Submittals not requested may not be processed or reviewed by the RDCK.
- .5 Submittals Schedule may be part of Construction Progress Schedule.

END OF SECTION

1. RELATED SECTIONS

| | |
|---|------------------|
| .1 Construction Schedules | Section 01 32 16 |
| .2 Shop Drawings, Product Data and Samples | Section 01 33 23 |
| .3 Contractor Start-Up Report Forms | Section 01 33 35 |
| .4 Product List | Section 01 62 35 |
| .5 Closeout Procedure | Section 01 77 00 |
| .6 Contract Acceptance Procedures | Section 01 77 20 |
| .7 Operation and Maintenance Data and Manuals | Section 01 78 23 |

2. WORKERS' COMPENSATION BOARD CERTIFICATE

- .1 Before commencement of activities at the Place of the Work, obtain and submit to the RDCK a certificate of an account with the Workers' Compensation Board.

3. COST BREAKDOWN

- .1 Before submission of first application for payment, submit to the RDCK a complete, itemized breakdown of the Contract Price, providing as a minimum:
 - .1 all subcontract amounts,
 - .2 cost of all own forces work,
 - .3 cost of all major supply only items,
 - .4 all specified allowance amounts,
 - .5 cost of general requirements items, including Contractor's overhead and profit.
- .2 The cost breakdown must aggregate to the total amount of the Contract Price.

4. CASH FLOW FORECAST

- .1 Before submission of first application for payment, submit to the RDCK for approval, a forecast of approximate monthly progress payments for the duration of the Contract.
- .2 Submit revised cash flow forecasts as required as the work progresses or when requested by the RDCK.

5. PHOTOGRAPHS

- .1 Provide progress photographs taken every two weeks.
 - .2 Not Applicable
 - .3 Take progress photos from two separate viewpoints determined by the RDCK;
-

- .4 In addition, illustrate any special operation, phase of construction or special detail of unusual interest for record purposes.
- .5 Take photos of primary entrance at substantial completion.
- .6 Forward one clear [200 mm x 250 mm colour print] [digital photographs in .jpg format, 150 dpi resolution minimum, 3 MB maximum] of each photograph along with monthly progress estimates. Provide the following information on each photograph:

Date
Name of Contractor
Name of Project
Set Number

- .7 On completion of building, provide a photograph of the completed project, taken from the best possible view point to show the completed project to its best advantage.
- .8 All photographs will become the RDCK's property, to be used for whatever purposes the RDCK may desire.

6. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES - GENERAL

- .1 Submit to the RDCK, for review, shop drawings, product data and samples called for by the Contract Documents and for such other items as the RDCK may reasonably request. Do not proceed with work until related submission has been reviewed.

7. SHOP DRAWINGS

- .1 Shop Drawings means technical data specially prepared for work of this Contract including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form.
- .2 Submit shop drawings presented in a clear and thorough manner to appropriately illustrate the work.

8. PRODUCT DATA

- .1 Product Data means standard printed information describing materials, products, equipment and systems; not specially prepared for work of this Contract, other than the designation of selections.
-

- .2 Product data consisting of manufacturers' standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and descriptive data will be accepted in lieu of shop drawings provided that:
 - .1 information not applicable to the work of this Contract is deleted, and
 - .2 standard information is supplemented with information specifically applicable to the work of this Contract.

9. SAMPLES

- .1 Samples means cuts or containers of materials or partial sections of manufactured or fabricated components which are physically identical to products proposed for use.

10. SUBMISSION OF SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

- .1 Review, date and sign, shop drawings, product data and samples, prior to submission.
 - .2 Determine and verify:
 - .1 Field measurements.
 - .2 Field construction criteria.
 - .3 Catalogue numbers and similar data.
 - .4 Conformance with Contract Documents.
 - .3 Notify the RDCK, in writing, on the submission and at the time of submission, of deviations from requirements of Contract Documents.
 - .4 Submit one set of transparent sepia for each required shop drawings and one set of clear reproducible pre-printed or photocopied information for product data submission.
 - .5 Make corrections or changes to rejected submittals and resubmit, as specified for initial submittal.
 - .6 After final review, the RDCK will reproduce at its expense, the number of prints he requires, and return reviewed sepia. Contractor shall reproduce at his expense the number of prints required for performance of the Work.
 - .7 The RDCK's review of submittals does not relieve Contractor from responsibility for errors and omissions, nor deviations from requirements of the Contract Documents.
-

11. LEED SUBMITTALS

.1 Not Applicable

END OF SECTION

1. INTENT

- .1 Submit to the RDCK, for review, shop drawings, product data and samples called for by the Contract Documents and for such other items as the RDCK may reasonably request.
- .2 Until submittal is reviewed, do not proceed with work involving the relevant product.

2. RELATED SECTIONS

- .1 Submittals Schedule: Section 01 32 16

3. SHOP DRAWINGS

- .1 Shop drawings means technical data specially prepared for work of this Contract; including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form.
- .2 Present shop drawings in a clear and thorough manner to appropriately illustrate the work.
- .3 Identify field dimensions on drawings.
- .4 Identify shop drawings by appropriate references to sheet, detail, and schedule or room numbers.
- .5 Maximum drawing size: 860 mm x 1120 mm.
- .6 Leave a clear space of 100 mm x 75 mm on each sheet of shop drawings for placement of the RDCK's review stamp.
- .7 Submit one set of mylars for each required shop drawing.

4. PRODUCT DATA

- .1 Product data means standard printed information describing materials, products, equipment and systems; not specially prepared for work of this Contract, other than the designation of selections.
 - .2 Clearly mark product data to identify products.
-

- .3 Manufacturer's standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and descriptive data will be accepted in lieu of shop drawings provided that:
 - .1 information not applicable to work of this Contract is deleted, and
 - .2 standard information is supplemented with information specifically applicable to the work of this Contract.
- .4 Submit clear reproducible information as follows:
 - .1 One copy when product data is submitted as:
 - .1 Data sheets larger than 216 mm x 355 mm. Submit mylars.
 - .2 Unbound data sheets 216 mm x 355 mm or smaller. Submit printed or photocopied sheets.
 - .2 two copies when product data is submitted as follows:
 - .1 Information which cannot be duplicated using a photocopier with an automatic document feeder, such as bound or multi-fold information.
 - .2 Information containing photographs or other information that does not reproduce well on a commercial photocopier.

5. SAMPLES

- .1 Samples means cuts or containers of materials or partial sections of manufactured or fabricated components which are physically identical to products proposed for use and which establish minimum standards by which the work will be judged.
- .2 Label samples as to origin and intended use in the Work.

6. SUBMITTAL PREPARATION

- .1 Review, date and sign, shop drawings, product data and samples, prior to submission.
 - .2 Determine and verify:
 - .1 Field measurements.
 - .2 Field construction criteria.
 - .3 Catalogue numbers and similar data.
 - .4 Conformance with Contract Documents.
-

- .5 Coordinate each submittal with requirements of work and Contract documents. Individual drawings will not be reviewed until all related shop drawing and product data are available.
- .6 Notify the RDCK, in writing, on the submittal and at the time of submission, of deviations from requirements of Contract Documents.

7. SUBMISSION REQUIREMENTS

- .1 Make submittals sufficiently in advance of date that reviewed submittals will be required and in such sequence as to cause no delay in the Work.
 - .2 Accompany submittals with transmittal letter, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Number of each shop drawing, product data and sample submitted.
 - .5 Other pertinent data.
 - .3 Submittals shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name of:
 - .1 Contractor.
 - .2 Subcontractor.
 - .3 Supplier.
 - .4 Manufacturer.
 - .5 Name of detailer when details not prepared by Contractor, sub-contractor, or supplier.
 - .4 Contractor's stamp, initialed or signed, certifying review of submittal, verification of field measurements, and compliance with Contract Documents.
 - .4 Make corrections or changes to rejected submittals and resubmit, as specified for initial submission.
-

8. RESPONSIBILITY FOR ERRORS, OMISSIONS AND DEVIATIONS

- .1 The RDCK's review of submittals does not relieve Contractor from responsibility for errors and omissions, nor deviations from requirements of the Contract Documents.

9. REPRODUCTION OF SUBMITTALS

- .1 After final review, the RDCK will reproduce at his expense, the number of copies he requires, and return reviewed reproducible documents. Contractor shall reproduce at his expense the number of copies required for performance of the Work.

END OF SECTION

1. INTENT

- .1 These procedures apply to requirements for patching and making good around new and existing work.

2. SITE VISIT

- .1 Review existing site conditions during bid period. Investigate site and other building systems affected by the Work.
- .2 Confirm dimensions of applicable existing equipment with field measurements.
- .3 Use visit to note required materials which may be difficult provide and notify the RDCK as soon as possible.

3. SUBMITTALS

- .1 Comply with requirements of Section 01 33 00.
- .2 Submit drawings of structural alterations and temporary support systems for the RDCK's review before proceeding with structural alterations.
- .3 Provide drawings fully detailing alterations to structure, signed and sealed by a professional structural engineer registered to practice in the Province of British Columbia.
- .4 Submit, for the RDCK's approval, details of methods other than specified coring, drilling, or cutting.

4. STRUCTURAL ALTERATIONS

- .1 Do not cut, cut into or alter any building structure, or bearing walls and partitions until proposed methods and procedures for doing so, including temporary support system, are reviewed by the RDCK.
- .2 Conform strictly to approved details. Cut or remove only to extent shown on engineer's drawing reviewed by the RDCK.

5. SPECIAL PROTECTION REQUIREMENTS

- .1 Protect unaffected finishes, equipment and adjacent work from damage caused by cutting, moving, removal and patching operations. Protect surfaces which will remain as part of finished work.
-

- .2 Notify the RDCK immediately of damage to fireproofing coatings.
- .3 Protect fireproofing coating to structural members. If damaged due to work of this Contract, restore damaged areas to original condition using materials to match existing colour, texture and required fire protection rating.
- .4 Protect personnel, building occupants and public from airborne dust and contaminants when cleaning spray fireproofing or contaminant-generating materials from structure.
- .5 Protect area below welding work from sparks and molten metal, using wet double canvas blankets.

6. CUTTING, REMOVAL AND FITTING

- .1 Make cuts with clean, true, smooth edges. Provide patches inconspicuous in final assembly.
- .2 Use electric percussion tools to cut clay tile, plaster and concrete blocks.
- .3 Carefully remove material being cut. Do not cut services discovered.
- .4 Where required, carefully remove modular, manufactured type finishes, including lay-in ceiling tile in component ceiling systems.
- .5 Fit alteration work airtight to pipes, sleeves, ducts, conduits and other required penetrations through building elements.

7. MATERIALS

- .1 Obtain new products to patch, match or extend existing products and meet or exceed quality of existing products.
 - .2 Quality of existing products, available for assessment during pre-bid site visit, shall serve as basis for requirements for appearance and performance of materials used in the Work.
 - .3 Where existing material cannot be matched with new, salvaged material may be used subject to approval by the RDCK.
 - .4 Where matching materials are not available, the RDCK will consider similar product which meets same performance requirements as existing.
 - .5 Obtain acceptance of the RDCK before installing any materials not matching existing.
-

8. PATCHING, EXTENDING AND MAKING GOOD TO EXISTING WORK

- .1 Patch, extend and make good existing work using skilled workers able to match existing quality. Quality of work shall meet technical requirements for similar components throughout Specifications.
- .2 Where a portion of existing finished surface is damaged, lifted, stained, or otherwise imperfect, patch or replace with matching materials. Match existing finishes unless specified otherwise.
- .3 If patched or imperfect surface was painted or coated, repaint or recoat entire surface area.
- .4 Replace damaged lay-in type ceiling tile and other components with new.
- .5 Patch surfaces and materials exposed by partition removal, with finishes to match adjacent.
- .6 Restore existing work damaged during construction to a condition matching existing finishes.

9. TRANSITIONS

- .1 Make transitions as smooth as possible where new work abuts or finishes flush with existing work.
- .2 Match existing adjacent work in texture and appearance, providing transition invisible to the eye from distance of 2 meters.
- .3 When smooth transition is not practicable, e.g., from a smooth finish to masonry, tile or plaster, terminate existing surface along a straight line at a natural point of division and provide trim to the RDCK's approval.
- .4 Where two or more spaces become one space and planes are nominally continuous, re-work floors and walls and ceilings to provide planes meeting without breaks, steps or bulkheads.
- .5 Where change of plane exceed 75 mm, obtain instructions from the RDCK for method of executing transition.

10. EXISTING SERVICES

- .1 Establish location and extent of services in area of work and notify the RDCK of findings before starting Work.
 - .2 Inform the RDCK immediately of unknown services that are encountered. Confirm findings in writing.
-

11. ALTERATIONS TO MECHANICAL AND ELECTRICAL SERVICES

- .1 Not Applicable

12. CORING, DRILLING AND SAW-CUTTING CONCRETE

- .1 Complete an x-ray inspection of affected concrete area before coring. Employ the services of an experienced x-ray inspector. Confirm with the RDCK before coring or drilling, location of reinforcing steel and raceways that may be present.
- .2 Perform coring and drilling after normal working hours, unless specified otherwise. Confirm coring and drilling times with the RDCK.
- .3 Wet or dry core drilling and saw-cutting are acceptable. Reduce amount of cooling water used to minimum required and collect water used in suitable containers, or use a suitable vacuum system that will collect water.
- .4 Do not core structural beams or cut conduits or reinforcing steel without written permission from the RDCK.

END OF SECTION

1. WORK SITE SAFETY - THIS CONTRACTOR IS "PRIME CONTRACTOR"

- .1 The Contractor shall, for the purposes of the *Occupational Health and Safety Act* (British Columbia), and for the duration of the Work of this Contract:
 - .1 be the "prime contractor" for the "work site", and
 - .2 do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with the Act and its regulations, as required to ensure the health and safety of all persons at the "work site".
- .2 The Contractor shall direct all Subcontractors, Sub-subcontractors, Other Contractors, employers, workers and any other persons at the "work site" on safety related matters, to the extent required to fulfill its "prime contractor" responsibilities pursuant to the Act, regardless of:
 - .1 whether or not any contractual relationship exists between the Contractor and any of these entities, and
 - .2 whether or not such entities have been specifically identified in this Contract.
- .3 The RDCK anticipates that Other Contractors will be engaged in work near the "work site" concurrently with the Work of this Contract. These may include, but are not necessarily limited to, contractors performing work under the following other contracts:
 - .1 Not applicable

2. SAFETY PLAN / CERTIFICATE OF RECOGNITION (COR)

- .1 The Contractor shall maintain a valid safety plan OR a standard COR, COREL, or TLC for the duration of the Work of this Contract.

3. SUBMITTALS

- .1 Contractor to submit 2 copies of their Safety Plan to the RDCK within 15 days of Contract Acceptance.

4. SAFETY REQUIREMENTS

- .1 All safety-related incidents must be reported to the RDCK within 24 hours of occurrence.

END OF SECTION

1. DEFINITIONS

- .1 Regulatory requirements means laws, by-laws, ordinances, rules, regulations, codes, orders of authorities having jurisdiction, and other legally enforceable requirements applicable to the Work and which are or become in force during the performance of the Work.

2. GENERAL

- .1 Comply with regulatory requirements.
- .2 Except as otherwise specified, apply for, obtain, and pay all fees associated with, permits, licenses, certificates, and approvals required by regulatory requirements and the Contract Documents, based on:
 - .1 regulatory requirements and fees in force on date of tender submission, and
 - .2 any change in regulatory requirements or fees scheduled to become effective after date of tender submission and of which public notice has been given prior to date of tender submission.
- .3 The RDCK will obtain permanent easements and rights of servitude which may be required for performance of the work.
- .4 Contractor shall give all notices required by regulatory requirements.

3. CONTRACT DOCUMENTS

- .1 Contractor shall not be responsible for verifying that Contract Documents comply with regulatory requirements. If Contract Documents are at variance therewith, or changes which require modification to Contract Documents are made to regulatory requirements, by authorities having jurisdiction, subsequent to date of tender closing, Contractor shall notify The RDCK in writing, requesting direction, immediately such variance or change becomes known to him. The RDCK may make changes required to Contract Documents, and any resulting change in Contract Price or Contract Time will be made in accordance with the General Conditions of Contract.
 - .2 If Contractor fails to notify the RDCK in writing and obtain the RDCK's direction as required in paragraph 3.1 and performs work knowing it to be contrary to regulatory requirements, Contractor shall be responsible for and shall correct violations thereof and shall bear costs, expenses and damages attributable to his failure to comply with provisions of such regulatory requirements.
-

4. BUILDING CODE

- .1 Conform to and perform work in accordance with the respective Building Code, except as otherwise indicated in Contract Documents.

5. PERMITS

- .1 Development Permit: The RDCK will apply for, obtain, and pay for development permit if required.

- .2 Building Permit:

- .1 Contractor shall apply for, obtain and pay for building permit and other permits required for the Work and its various parts.

- .2 Contractor shall display the building permit and such other permits in a conspicuous location at the Place of the Work.

- .3 Occupancy Permits:

- .1 Where required by authority having jurisdiction, Contractor shall apply for, obtain, and pay for occupancy permits, including partial occupancy permits.

- .2 Where Contract Document deficiencies are required to be corrected in order to obtain occupancy permits, including partial occupancy permits, the RDCK will issue appropriate instructions to correct the Work.

- .3 Turn occupancy permits over to the RDCK.

END OF SECTION

1. TESTING BY CONTRACTOR

1. Contractor shall furnish to the RDCK, upon request, test results from testing performed by Contractor.

2. TESTING BY RDCK

- .1 The RDCK reserves the right to employ services of independent testing agencies to establish if work complies with Contract Documents. The RDCK will appoint and pay for services of such testing agency.
- .2 Where tests or inspections, by the RDCK appointed testing agency, indicate work is not in accordance with the Contract Documents, additional tests or inspections, as the RDCK may require, to verify acceptability of corrected work, shall be paid for by Contractor.

3. REFERENCE STANDARDS

- .1 Within the text of these specifications, reference may be made to the following standards:
 - .1 ANSI - American National Standards Institute
 - .2 ASTM - American Society for Testing and Materials
 - .3 CGSB - Canadian General Standards Board
 - .4 CSA - Canadian Standards Association
 - .5 CAN - National Standard of Canada (published by CGSB)
 - .6 FM - Factory Mutual Engineering Corporation
 - .7 ULC - Underwriters Laboratories of Canada
- .2 The referenced standard and any amendments in force on the day of receipt of bids shall be applicable to the work during the duration of the Contract.

END OF SECTION

1. RELATED REQUIREMENTS

- .1 Submittals: Section 01 33 00.
- .2 Product options and substitutions: Section 01 62 00.

2. SUBMITTALS

- .1 Comply with requirements specified in specification Section 01 33 00.
- .2 .2 Within 30 days of date of commencement of Contract, submit two (2) copies of Document 01 62 35A - Products List, complete with names of products and manufacturers for each item of work listed.

3. PRODUCTS LIST

- .1 Comply with requirements specified in Document 01 62 35A appended to this section.
- .2 RDCK's Review: The RDCK will with reasonable promptness:
 - .1 Review the Contractor's submission and determine whether products and manufacturers named comply with requirements of Contract Documents.
 - .2 Notify the Contractor, in writing, of acceptance or rejection of products and manufacturers named.
 - .3 If requested in writing by the Contractor, provide details relating to non-compliance of products.
- .3 Upon rejection of a Contractor proposed product the Contractor shall:
 - .1 Provide, at no additional cost to the RDCK, a product meeting the requirements of the Contract Documents, and acceptable to the RDCK.

END OF SECTION

1. FROM: (Contractor) _____
(Name)
- _____
- (Address)

TO: AJ Evenson, Project Manager
Regional District of Central Kootenay
Box 590, 202 Lakeside Drive
Nelson, BC V1L 5R4

PROJECT: **Lakeside Office Roof Replacement**

202 Lakeside Drive, Nelson, BC

Plan/Project No.: PRJ #24047

2. It is understood that:
- .1 This Products List forms part of the Contract Documents for the above project.
 - .2 Product names/model numbers and manufacturer's names are provided for the Items of Work listed.
 - .3 All Items of Work are not necessarily listed.
3. In submitting this Products List the Contractor represents that:
- .1 Products and manufacturers named meet the applicable requirements of the Contract Documents and have been selected in accordance with requirements of specification Section 01 62 00.
 - .2 Substitutions, if any, in lieu of specified proprietary products, comply with applicable requirements of specification Section 01 62 00.

4. The following conditions apply to the Products List:
 - .1 The RDCK will determine whether the named products and manufacturers meet requirements of the Contract Documents and shall have the right to reject named products and manufacturers that, in the RDCK's opinion, do not meet such requirements.
 - .2 RDCK's acceptance of a product or manufacturer, proposed by Contractor in Products List, shall not relieve Contractor from his responsibility to comply with Contract Documents, including the submission of shop drawings, product data and samples which may be required.
 - .3 Products and manufacturers accepted by the RDCK shall be used in the performance of the Work and shall not be changed without the RDCK's written consent.

5. Products specified by the proprietary method are indicated with an asterisk (*).

6. Products List:

| Spec. Section Number | Item of Work | Product Name/ Model No. | Manufacturer's Name |
|----------------------|--------------|-------------------------|---------------------|
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END OF SECTION

1. CONTRACT ACCEPTANCE PROCEDURES

- .1 Prior to requesting the RDCK's inspection for Interim Acceptance, Contractor shall do the following:
 - .1 Ensure that the Work is ready for use for the purpose intended.
 - .2 Review Contract Documents and inspect Work to confirm that prerequisites to Interim Acceptance of Work have been fulfilled and that Work is ready for inspection for Interim Acceptance.
 - .2 Submit written request to the RDCK for inspection for Interim Acceptance of the Work, certifying that prerequisites have been fulfilled and specifying known exceptions in the form of a list of items to be completed, corrected or submitted.
 - .3 Results of the RDCK's inspection for Interim Acceptance will form initial Contract Deficiency list.
 - .4 Following inspection, the RDCK will:
 - .1 issue a Letter of Interim Acceptance stating effective date of Interim Acceptance of the Work, with a copy of the Contract Deficiency list attached thereto, or
 - .2 advise Contractor that prerequisites to Interim Acceptance are not fulfilled and repeat inspection for Interim Acceptance as necessary.
 - .5 Upon issuance of Letter of Interim Acceptance, the RDCK will assume responsibility for care, custody and control of the Work, including responsibility for:
 - .1 Facility operation, including all systems and equipment.
 - .2 Maintenance.
 - .3 Security.
 - .4 Property insurance.
 - .5 Utility costs.
 - .6 Prior to requesting the RDCK's inspection for Final Acceptance, Contractor shall do the following:
 - .1 Ensure that the entire Work, except those items arising from the warranty provisions of the Contract Documents, has been performed to the requirements of the Contract Documents.
-

- .2 Review Contract Documents and inspect Work to confirm that prerequisites for Final Acceptance of Work have been met and that Work is ready for inspection for Final Acceptance.
- .7 Submit written request to the RDCK for inspection for Final Acceptance of Work, including copy of the RDCK's most recent Contract Deficiency list, and certifying that each Contract Deficiency has been corrected or otherwise resolved in a manner agreed to between the RDCK and Contractor. List known exceptions, if any, in request.
- .8 Following inspection, the RDCK will:
 - .1 issue a Letter of Final Acceptance, stating effective date of Final Acceptance of Work, or
 - .2 advise Contractor of Contract Deficiencies which must be corrected prior to issuance of Letter of Final Acceptance.

2. FINAL CLEANING

- .1 Perform final cleaning prior to request for inspection for Interim Acceptance of the Work.
- .2 Use experienced workers or professional cleaners for final cleaning.
- .3 Remove grease, paint spots, dirt, dust, stains, labels, fingerprints and other foreign matter from surfaces.
- .4 Repair, patch and touch-up marred surfaces to match adjacent finishes.
- .5 Replace cracked and broken glass.
- .6 Ensure that cleaning agents and methods do not remove finishes and permanent protective coatings on surfaces being cleaned.
- .7 If required, broom clean or remove snow and ice from all exterior paved areas designed for pedestrian or vehicular traffic, including parking areas.
- .8 Remove waste, surplus materials and temporary facilities from the site.
- .9 Leave all surfaces in perfectly clean and unsoiled condition.

3. PROJECT RECORD DOCUMENTS

- .1 The RDCK will provide a set of cad drawings for record drawing purposes.
-

- .2 Maintain project record drawings separate from construction drawings and record deviations from Contract Documents caused by site conditions and changes ordered by RDCK. Mark changes in red coloured ink.
- .3 Record the following:
 - .1 Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.
 - .2 Field changes of dimensions and detail.
 - .3 Changes made by change and field order.
 - .4 Depths of various elements of foundation in relation to datum established by RDCK.
 - .5 Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
- .4 Submit project record drawings to RDCK before or with request for inspection for Interim Acceptance.

4. OPERATION AND MAINTENANCE DATA

- .1 Provide RDCK with 2 copies of operation and maintenance data, as called for in the Contract Documents, made up as follows:
 - .1 Bind data in vinyl hard cover, variable capacity, expanding binder with full metal hinge and slide lock mechanism for 215 x 280 mm size paper.
 - .2 Enclose title sheet, labeled "Operating and Maintenance Data Manual", project name, date and list of contents.
 - .3 Organize contents into applicable sections of work to parallel project specifications section break-down. Identify each section with tabs of laminated mylar plastic.
 - .2 Include the following information plus data specified.
 - .1 Maintenance instructions for finished surfaces and materials.
 - .2 Copy of hardware and paint schedules.
 - .3 Names, addresses and phone numbers of subcontractors and suppliers.
-

.4 Guarantees, warranties and bonds indicating:

- .1 Name and address of project.
- .2 Warranty/Guarantee/Bond commencement date and duration.
- .3 Clear indication of what is being guaranteed and what remedial action will be taken under guarantee.
- .4 Signature and seal of Contractor.

.5 Additional material/equipment used in project listed under various sections showing name of manufacturer and source of supply.

.3 Neatly type lists and notes. Use clear drawings, diagrams or manufacturers' literature.

.4 Include one complete set of reviewed shop drawings (bound separately) indicating corrections and changes made during fabrication and installation.

.5 Submit operation and maintenance manuals before or with request for inspection for Interim Acceptance.

5. SPARE PARTS AND MAINTENANCE MATERIALS

.1 Deliver specified spare parts and maintenance materials before request for inspection for Interim Acceptance.

.2 Use unbroken cartons, or if not supplied in cartons, they shall be securely packaged. Clearly mark as to content.

.3 If applicable, identify colour, room number or area where materials are used.

END OF SECTION

1. SUMMARY OF PROCESS

- .1 A Contract acceptance process shall be used to facilitate the RDCK's acceptance of the Work. The process can be summarized as follows:
 - .1 Substantial Performance of the Work:
 - .1 Fulfillment of prerequisites to Substantial Performance.
 - .2 Inspection for Substantial Performance.
 - .3 Issuance of Letter of Substantial Performance.
 - .2 Not Applicable
 - .3 Total Performance of the Work:
 - .1 Fulfillment of prerequisites to Total Performance.
 - .2 Inspection for Total Performance.
 - .3 Issuance of Letter of Total Performance.
 - .4 Total Completion of the Work:
 - .1 Fulfillment of prerequisites to Total Completion.
 - .2 Inspection for Total Completion.
 - .3 Issuance of Letter of Total Completion.

2. RELATED SECTIONS

- .1 Regulatory Requirements: Section 01 41 00.
- .2 Operation and Maintenance Data: Section 01 78 23.
- .3 Project Record Documents: Section 01 78 39.

3. PARTIAL ACCEPTANCE OF WORK

- .1 Not Applicable

4. PREREQUISITES TO SUBSTANTIAL PERFORMANCE

- .1 Prior to requesting the RDCK's inspection for Substantial Performance, Contractor shall do the following, not necessarily in order listed:
 - .1 Perform Contractor Start-Up activities.
-

- .2 Obtain and submit evidence of compliance with regulatory requirements as specified in Section 01 41 00.
- .3 Complete final cleaning as specified in Section 01 77 00.
- .4 Submit project record documents as specified in Section 01 78 39.
- .5 Submit operation and maintenance data as specified in Section 01 78 23.
- .6 Ensure that all Contract Deficiencies which may affect operation of systems have been corrected.
- .7 Ensure that the Work is complete and ready for use for the purpose intended.
- .8 Review Contract Documents and inspect Work to confirm that prerequisites to Substantial Performance of Work have been fulfilled and that Work is ready for inspection for Substantial Performance.

5. INSPECTION FOR SUBSTANTIAL PERFORMANCE

- .1 Submit written request to the RDCK and the Consultant for inspection for Substantial Performance of the Work, certifying that prerequisites specified in Article 4 above have been fulfilled and specifying known exceptions in the form of a list of items to be completed, corrected or submitted.
- .2 The RDCK and Consultant will within a reasonable time after receipt of Contractor's request:
 - .1 proceed with inspection, or
 - .2 advise Contractor that prerequisites are not adequately fulfilled.
- .3 Results of the Consultant's inspection for Substantial Performance will form initial Contract Deficiency list.

6. SUBSTANTIAL PERFORMANCE OF THE WORK

- .1 Following inspection, the Consultant will:
 - .1 issue a Letter of Substantial Performance stating effective date of Substantial Performance of the Work, with a copy of the Contract Deficiency list attached thereto, or
 - .2 advise Contractor that prerequisites to Substantial Performance are not fulfilled and repeat inspection for Substantial Performance as necessary.
-

- .2 Upon issuance of Letter of Substantial Performance, the RDCK will assume responsibility for care, custody and control of the Work, including responsibility for:
 - .1 Facility operation, including all systems and equipment.
 - .2 Maintenance.
 - .3 Security.
 - .4 Property insurance.
 - .5 Utility costs.

7. PREREQUISITES TO PRACTICAL COMPLETION

- .1 Not Applicable.

8. INSPECTION FOR PRACTICAL COMPLETION

- .1 Not applicable.

9. PRACTICAL COMPLETION OF THE WORK

- .1 Not Applicable.

10. PREREQUISITES TO TOTAL PERFORMANCE

- .1 .Prior to requesting the Consultant's inspection for Total Performance, Contractor shall do the following:
 - .1 Ensure that the entire Work, including the correction of all Contract Deficiencies, except those items arising from the warranty provisions of the Contract Documents, has been performed to the requirements of the Contract Documents.
 - .2 Review Contract Documents and inspect Work to confirm that prerequisites for Total Completion of Work have been met and that Work is ready for inspection for Total Performance.

11. INSPECTION FOR TOTAL PERFORMANCE

- .1 Submit written request to the Consultant for inspection for Total Performance of the Work, including copy of the Consultant's most recent Contract Deficiency list, and certifying that each Contract Deficiency has been corrected or otherwise resolved in a manner agreed to between the Consultant and Contractor. List known exceptions, if any, in request.
 - .2 The Consultant will within a reasonable time after receipt of Contractor's request:
-

- .1 proceed with inspection, or
- .2 advise Contractor that prerequisites are not adequately fulfilled.

12. TOTAL PERFORMANCE OF THE WORK

- .1 Following inspection, the Consultant will:
 - .1 issue a Letter of Total Performance, stating effective date of Total Performance of Work, or
 - .2 advise Contractor of Contract Deficiencies which must be corrected prior to issuance of Letter of Total Performance.

13. PREREQUISITES TO WARRANTY COMPLETION

- .1 The prerequisites to Warranty Completion of the Work are:
 - .1 Total Performance of the Work.
 - .2 Expiry of one year warranty period, excluding extended warranties, if any.
 - .3 Items arising from the one year warranty period required by the Contract Documents shall have been corrected by the Contractor.

14. INSPECTION FOR WARRANTY COMPLETION

- .1 Just prior to end of one year warranty period, the RDCK will conduct an inspection for Warranty Completion.

15. 15. WARRANTY COMPLETION OF THE WORK

- .1 Following inspection, the RDCK will:
 - .1 If applicable, provide a list of deficiencies required by the Contract Documents requiring correction by the Contractor.

END OF SECTION

1. INTENT

- .1 Contractor shall obtain all specified operation and maintenance data. Using this data, Contractor shall prepare and submit operation and maintenance manuals as specified.

2. DESCRIPTION OF TYPES OF OPERATION AND MAINTENANCE DATA

- .1 Contractor Designed System Data: includes the following for systems designed by Contractor:
 - .1 System Design Criteria
 - .2 System and Controls Descriptions
 - .3 System and Controls Schematics
 - .4 Operating Instructions
 - .2 Installation Instructions: manufacturer's printed instructions describing manufacturer's recommended installation procedures.
 - .3 Operating Instructions: manufacturer's printed instructions describing proper operation.
 - .4 Equipment Identification: name plate information for each piece of equipment, on forms approved by the RDCK.
 - .5 Maintenance Instructions: manufacturer's printed instructions describing manufacturer's recommended maintenance.
 - .6 Spare Parts Lists: parts lists and manufacturer's recommended spare parts.
 - .7 Suppliers and Contractors List: list of contractors and suppliers who supplied and installed equipment, systems, materials or finishes, organized by Division and system. Includes company name, address, and telephone number.
 - .8 Tag Directories: directory identifying tag number and equipment description and location.
 - .9 Drawings List: list of contract drawings.
 - .10 Shop Drawings: final reviewed shop drawings.
 - .11 Product Data: manufacturer's product data for equipment, systems, materials and finishes.
 - .12 Certifications: includes the following:
 - .1 Copies of inspection reports prepared by authorities having jurisdiction.
-

.2 Certified copies of test reports prepared by independent testing agencies.

.3 Any other certificates required by the Contract Documents.

.13 Warranties and Bonds: RDCK's copy of manufacturer's warranties, maintenance bonds and service contracts.

.14 Reports: includes the following:

.1 Reports documenting the performance of tests required by the Contract Documents and the results of those tests.

.2 Documentation of other material, equipment or system related information required by the Contract Documents.

3. SUBMISSION OF DATA FOR RDCK PREPARED OPERATION AND MAINTENANCE MANUALS

.1 Not Applicable

4. CONTRACTOR PREPARED OPERATION AND MAINTENANCE MANUAL(S)

.1 General Organization:

.1 Include the following in each volume:

.1 Title page.

.2 Table of contents. Identify volume number where listed information is located.

.3 Ten percent free space for additional data.

.2 Present textual information, schematics and data on 21.5 X 28 cm, 75 g/m², white bond paper.

.2 Manual Contents Organization:

.1 For each major equipment, system, materials or finishes area, organize operation and maintenance data as follows:

.1 Operation Division: include the following, as applicable:

.1 System Design Criteria.

.2 System and Controls Descriptions.

- .3 System and Controls Schematics.
 - .4 Operating Instructions.
- .2 Maintenance Division: include the following, as applicable:
- .1 Maintenance Tasks and Schedules.
 - .2 Spare Parts.
 - .3 Suppliers and Contractors.
 - .4 Tags and Directories.
- .3 Contract Document Division: include the following, as applicable:
- .1 Drawings List.
 - .2 Shop Drawings and Product Data.
 - .3 Certifications.
 - .4 Warranties and Bonds.
 - .5 Maintenance Brochures.
 - .6 Reports.
- ~~.3 Document Binding Methods:~~
- ~~.1 Standard 21.5 X 28 cm sheets: punch sheets to fit binder.~~
 - ~~.2 Sheets up to 28 X 41.5 cm: punched and neatly folded to allow use without removing from binder.~~
 - ~~.3 Drawings larger than 28 X 41.5 cm: insert drawings in sturdy vinyl envelopes with reinforced binding holes, open on one side and overall folded size not exceeding 21.5 X 28 cm. Do not punch holes in drawings.~~
- ~~.4 Binders:~~
- ~~.1 Commercial quality, fabric coated, hard covers attached to spine with metal piano hinges, three post, designed to accommodate 21.5 X 28 cm paper. Maximum 100 mm thick.~~
 - ~~.2 Silk screen project title and identification, in white, on front cover and spine of binder.~~
- ~~.5 Divider Tabs:~~
- ~~.1 Heavy weight coloured paper, mylar laminated with tab number and title printed on tab as follows:~~
-

- ~~.1 Main Divisions: White tabs, labeled with division name, two bank tab length.~~
- ~~.2 Sections of a Main Division: tabs of same colour as Binder fabric for Mechanical, Electrical or Architectural sections of a Main Division, labeled with section name, four bank tab length.~~
- ~~.3 Subsections: tabs of same colour as Binder fabric for Mechanical, Electrical or Architectural subsections, printed label, eight bank tab length.~~

5. SUBMISSION OF OPERATION AND MAINTENANCE MANUAL(S)

- .1 Submit four copies of completed Contractor prepared operation and maintenance manual(s) prior to Interim Acceptance of the Work.

END OF SECTION

1. DESIGNATION OF PROJECT RECORD DOCUMENTS

- .1 Request from the RDCK at commencement of the Work the following documents to be designated and retained as project record documents:
 - .1 One copy of specifications manual(s):
 - .2 One complete sets of Drawings.
 - .3 One set of all Addenda issued.

2. MAINTENANCE OF PROJECT RECORD DOCUMENTS

- .1 Store record documents in site office apart from documents used for construction.
- .2 Label each document "PROJECT RECORD COPY" in neat, large printed letters.
- .3 Maintain record documents in a clean, dry and legible condition. Do not use record documents for construction purposes.
- .4 Keep record documents available for inspection by the RDCK and Consultant.

3. RECORDING INFORMATION ON PROJECT RECORD DRAWINGS

- .1 Record information on cad drawings.
 - .2 Use coloured erasable pencils to record information.
 - .3 Use different colours to record information pertaining to each major system.
 - .4 Record changes and variations from Contract Drawings concurrently with construction process. Do not conceal any work until required information is recorded.
 - .5 Legibly mark project record drawings to record actual construction, including:
 - .1 Not applicable
 - .2 Not applicable
 - .3 Measured locations of internal utilities and appurtenances concealed in construction. Reference to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes to equipment layout and services.
-

4. SUBMISSION OF PROJECT RECORD DOCUMENTS

- .1 Prior to placing concrete slab, submit one set of project record drawings showing locations of:
 - .1 Not applicable
 - .2 Not applicable
- .2 Submit balance of completed project record documents before or with application for Interim Acceptance of the Work.
- .3 Submit with each submission a covering letter including:
 - .1 Date of Submission.
 - .2 Project Title, Plan No. and Centre Code.
 - .3 Contractor's name, address and telephone number.

END OF SECTION

APPENDICES

APPENDIX A: PROJECT SPECIFICATIONS AND DRAWINGS

APPENDIX B: PROJECT PHOTOS

APPENDIX C: CCDC 2 (2020) STIPULATED PRICE CONTRACT and INSURANCE REQUIREMENTS (bound separately)



APPENDIX A

PROJECT SPECIFICATION AND DRAWINGS

INVITATION TO TENDER

RDCK LAKESIDE OFFICE ROOF REPLACEMENT

2025 Roofing Replacement Specifications prepared by Pacific Interior Roof Consulting
and Inspection (59 Pages)



**2025 ROOF REPLACEMENT
FOR
RDCK Administration Office – Section B**

**JOB SITE VISIT
WEDNESDAY APRIL 2, 2025
11:00AM
202 LAKESIDE DRIVE, NELSON, BC V1L 5R4**

TENDER CLOSING DATE

| | |
|---|-------------------------|
| COVER PAGE | SECTION 07 11 01 |
| TABLE OF CONTENTS | SECTION 07 11 02 |
| ROOFING TERMINOLOGY AND DEFINITIONS | SECTION 07 11 03 |
| GENERAL CONDITIONS | SECTION 07 15 01 |
| SPECIFIC CONDITIONS AND PROJECT PROCEDURES | SECTION 07 15 02 |
| DEMOLITION | SECTION 07 15 03 |
| ROUGH CARPENTRY | SECTION 07 15 04 |
| MODIFIED BITUMINOUS ROOFING | SECTION 07 15 06 |
| SHEET METAL FLASHING, TRIM & SEALANT | SECTION 07 15 07 |
| SITE/ROOF PLANS & DETAILS | SECTION 07 20 01 |

Common Roofing Terms Defined & Explained

The following is a list of terms or phrases commonly used in the roofing industry. Each term is accompanied by a brief definition.

A

- **Absorption:** the ability of a material to accept within its body quantities of gases or liquid, such as moisture.
- **Accelerated Weathering:** the process in which materials are exposed to a controlled environment where various exposures such as heat, water, condensation, or light are altered to magnify their effects, thereby accelerating the weathering process. The material's physical properties are measured after this process and compared to the original properties of the unexposed material, or to the properties of the material that has been exposed to natural weathering.
- **Adhere:** to cause two surfaces to be held together by adhesion, typically with asphalt or roofing cements in built-up roofing and with contact cements in some single-ply membranes.
- **Aggregate:** rock, stone, crushed stone, crushed slag, water-worn gravel, or marble chips used for surfacing and/or ballasting a roof system.
- **Aging:** the effect on materials that are exposed to an environment for an interval of time.
- **Alligatoring:** the cracking of the surfacing bitumen on a built-up or SBS roof, producing a pattern of cracks similar to an alligator's hide; the cracks may or may not extend through the surfacing bitumen.
- **Aluminum:** a non-rusting metal sometimes used for metal roofing and flashing.
- **Ambient Temperature:** the temperature of the air; air temperature.
- **Application Rate:** the quantity (mass, volume, or thickness) of material applied per unit area.
- **Apron Flashing:** a term used for a flashing located at the juncture of the top of the sloped roof and a vertical wall or steeper-sloped roof.
- **Architectural Shingle:** shingle that provides a dimensional appearance.
- **Asphalt:** a dark brown or black substance found in a natural state or, more commonly, left as a residue after evaporating or otherwise processing crude oil or petroleum.
- **Asphalt Emulsion:** a mixture of asphalt particles and an emulsifying agent such as bentonite clay and water. These components are combined by using a chemical or a clay emulsifying agent and mixing or blending machinery.
- **Asphalt Felt:** an asphalt-saturated and/or an asphalt-coated felt. (See Felt.)
- **Asphalt Roof Cement:** a trowelable mixture of solvent-based bitumen, mineral stabilizers, other fibers and/or fillers. Classified by ASTM Standard D 2822-91 Asphalt Roof Cement, and D 4586-92 Asphalt Roof Cement, Asbestos-Free, Types I and II.
- **Attic:** the cavity or open space above the ceiling and immediately under the roof deck of a steep-sloped roof.

B

- **Back-Nailing:** (also referred to as Blind-Nailing) the practice of nailing the back portion of a roofing ply, steep roofing unit, or other components in a manner so that the fasteners are covered by the next sequential ply, or course, and are not exposed to the weather in the finished roof system.
- **Ballast:** an anchoring material, such as aggregate, or precast concrete pavers, which employ the force of gravity to hold (or assist in holding) single-ply roof membranes in place.
- **Barrel Vault:** a building profile featuring a rounded profile to the roof on the short axis, but with no angle change on a cut along the long axis.
- **Base Flashing (membrane base flashing):** plies or strips of roof membrane material used to close-off and/or seal a roof at the roof-to-vertical intersections, such as at a roof-to-wall juncture. Membrane base flashing covers the edge of the field membrane. (Also see Flashing.)
- **Base Ply:** the lowermost ply of roofing in a roof membrane or roof system.
- **Base Sheet:** an impregnated, saturated, or coated felt placed as the first ply in some multi-ply built-up and modified bitumen roof membranes.
- **Batten:** (1) cap or cover; (2) in a metal roof: a metal closure set over, or covering the joint between, adjacent metal panels; (3) wood: a strip of wood usually set in or over the structural deck, used to elevate and/or attach a primary roof covering such as tile; (4) in a membrane roof system: a narrow plastic, wood, or metal bar which is used to fasten or hold the roof membrane and/or base flashing in place.
- **Batten Seam:** a metal panel profile attached to and formed around a beveled wood or metal batten.
- **Bitumen:** (1) a class of amorphous, black, or dark colored, (solid, semi-solid, or viscous) cementitious sub-stances, natural or manufactured, composed principally of high molecular weight hydrocarbons, soluble in carbon disulfide, and found in petroleum asphalts, coal tars and pitches, wood tars and asphalts; (2) a generic term used to denote any material composed principally of bitumen, typically asphalt or coal tar.
- **Blackberry (sometimes referred to as Blueberry or Tar-Boil):** a small bubble or blister in the flood coating of an aggregate-surfaced built-up roof membrane.
- **Blind-Nailing:** the use of nails that are not exposed to the weather in the finished roofing system.
- **Blister:** an enclosed pocket of air, which may be mixed with water or solvent vapor, trapped between impermeable layers of felt or membrane, or between the membrane and substrate.
- **Blocking:** sections of wood (which may be preservative treated) built into a roof assembly, usually attached above the deck and below the membrane or flashing, used to stiffen the deck around an opening, act as a stop for insulation, support a curb, or to serve as a nailers for attachment of the membrane and/or flashing.
- **BOMA:** [Building Owners & Managers Association](#)
- **Brake:** hand-or power-activated machinery used to form metal.
- **British Thermal Unit (BTU):** the heat energy required to raise the temperature of one pound of water one-degree Fahrenheit (joule).

- **Brooming:** an action carried out to facilitate embedment of a ply of roofing material into hot bitumen by using a broom, squeegee, or special implement to smooth out the ply and ensure contact with the bitumen or adhesive under the ply.
- **Buckle:** an upward, elongated tenting displacement of a roof membrane frequently occurring over insulation or deck joints. A buckle may be an indication of movement within the roof assembly.
- **Building Code:** published regulations and ordinances established by a recognized agency prescribing design loads, procedures, and construction details for structures. Usually applying to designated jurisdictions (city, county, state, etc.). Building codes control design, construction, and quality of materials, use and occupancy, location and maintenance of buildings and structures within the area for which the code has been adopted.
- **Built-Up Roof Membrane (BUR):** a continuous, semi-flexible multi-ply roof membrane, consisting of plies or layers of saturated felts, coated felts, fabrics, or mats between which alternate layers of bitumen are applied. Generally, built-up roof membranes are surfaced with mineral aggregate and bitumen, a liquid-applied coating, or a granule-surfaced cap sheet.
- **Bundle:** an individual package of shakes or shingles.
- **Butt Joint:** a joint formed by adjacent, separate sections of material, such as where two neighboring pieces of insulation abut.
- **Button Punch:** a process of indenting two or more thicknesses of metal that are pressed against each other to prevent slippage between the metal.
- **Butyl:** rubber-like material produced by copolymerizing isobutylene with a small amount of isoprene. Butyl may be manufactured in sheets or blended with other elastomeric materials to make sealants and adhesives.
- **Butyl Coating:** an elastomeric coating system derived from polymerized isobutylene. Butyl coatings are characterized by low water vapor permeability.
- **Butyl Rubber:** a synthetic elastomer based on isobutylene and a minor amount of isoprene. It is vulcanizable and features low permeability to gases and water vapor.
- **Butyl Tape:** a sealant tape sometimes used between metal roof panel seams and end laps; also used to seal other types of sheet metal joints, and in various sealant applications.

C

- **Camber:** a slight convex curve of a surface, such as in a prestressed concrete deck.
- **Canopy:** any overhanging or projecting roof structure, typically over entrances or doors. Sometimes the extreme end is unsupported.
- **Cant:** a beveling of foam or wood at a right angle joint for strength and water runoff.
- **Cant Strip:** a beveled or triangular-shaped strip of wood, wood fiber, perlite, or other material designed to serve as a gradual transitional plane between the horizontal surface of a roof deck or rigid insulation and a vertical surface.
- **Cap Flashing:** usually composed of metal, used to cover, or shield the upper edges of the membrane base flashing, wall flashing, or primary flashing. (See Flashing and Coping.)

- **Cap Sheet:** a granule-surface coated sheet used as the top ply of some built-up or modified bitumen roof membranes and/or flashing.
- **Capillary Action:** the action that causes movement of liquids by surface tension when in contact with two adjacent surfaces such as panel side laps.
- **Caulking:** (1) the physical process of sealing a joint or juncture; (2) sealing and making weather-tight the joints, seams, or voids between adjacent units by filling with a sealant.
- **Cavity Wall:** a wall built or arranged to provide an air space within the wall (with or without insulating material), in which the inner and outer materials are tied together by structural framing.
- **CCF:** 100 cubic feet.
- **Chalk:** a powdery residue on the surface of a material.
- **Chalk Line:** a line made on the roof by snapping a taut string or cord dusted with colored chalk. Used for alignment purposes.
- **Chalking:** the degradation or migration of an ingredient, in paints, coatings, or other materials.
- **Chimney:** stone, masonry, prefabricated metal, or a wood framed structure, containing one or more flues, projecting through and above the roof.
- **Cladding:** a material used as the exterior wall enclosure of a building.
- **Cleat:** a metal strip, plate or metal angle piece, either continuous or individual (“clip”), used to secure two or more components together.
- **Closed-Cut Valley:** a method of valley application in which shingles from one side of the valley extend across the valley while shingles from the other side are trimmed back approximately 2 inches (51mm) from the valley centerline.
- **Closure Strip:** a metal or resilient strip, such as neoprene foam, used to close openings created by joining metal panels or sheets and flashings.
- **Coal Tar:** a dark brown to black colored, semi-solid hydrocarbon obtained as residue from the partial evaporation or distillation of coal tars. Coal tar pitch is further refined to conform to the following roofing grade specifications:
- **Coal Tar Bitumen:** a proprietary trade name for Type III coal tar used as the dampproofing or waterproofing agent in dead-level or low-slope built-up roof membranes, conforming to ASTM D 450, Type III.
- **Coal Tar Pitch:** a coal tar used as the waterproofing agent in dead-level or low-slope built-up roof membranes, conforming to ASTM Specification D 450, Type I or Type III.
- **Coal Tar Waterproofing Pitch:** a coal tar used as the dampproofing or waterproofing agent in below-grade structures, conforming to ASTM Specification D 450, Type II.
- **Coated Base Sheet:** a felt that has previously been saturated (filled or impregnated) with asphalt and later coated with harder, more viscous asphalt, which greatly increases its impermeability to moisture.
- **Coated Fabric:** fabrics that have been impregnated and/or coated with a plastic-like material in the form of a solution, dispersion hot-melt, or powder. The term also applies to materials resulting from the application of a preformed film to a fabric by means of calendaring.
- **Coated Felt (Sheet):** (1) an asphalt-saturated felt that has also been coated on both sides with harder, more viscous “coating” asphalt; (2) a glass fiber felt that has been simultaneously impregnated and coated with asphalt on both sides.

- **Coating:** a layer of material spread over a surface for protection or decoration. Coatings for SPF are generally liquids, semi-liquids, or mastics; spray, roller, or brush applied; and cured to an elastomeric consistency.
- **Cohesion:** the degree of internal bonding of one substance to itself.
- **Cold Process Built-Up Roof:** a continuous, semi-flexible roof membrane, consisting of a ply or plies of felts, mats or other reinforcement fabrics that are laminated together with alternate layers of liquid-applied (usually asphalt-solvent based) roof cements or adhesives installed at ambient or a slightly elevated temperature.
- **Combustible:** capable of burning.
- **Compatible Materials:** two or more substances that can be mixed, blended, or attached without separating, reacting, or affecting the materials adversely.
- **Composition Shingle:** a unit of asphalt shingle roofing.
- **Concealed-Nail Method:** a method of asphalt roll roofing application in which all nails are driven into the underlying course of roofing and covered by an adhered, overlapping course.
- **Condensation:** the conversion of water vapor or other gas to liquid state as the temperature drops or atmospheric pressure rises. (Also see Dew Point.)
- **Conductor Head:** a transition component between a through-wall scupper and downspout to collect and direct run-off water.
- **Contact Cements:** adhesives used to adhere or bond various roofing components. These adhesives adhere mated components immediately on contact of surfaces to which the adhesive has been applied.
- **Contamination:** the process of making a material or surface unclean or unsuited for its intended purpose, usually by the addition or attachment of undesirable foreign substances.
- **Coping:** the covering piece on top of a wall which is exposed to the weather, usually made of metal, masonry, or stone. It is preferably sloped to shed water back onto the roof.
- **Copper:** a natural weathering metal used in metal roofing; typically used in 16 or 20 ounce per square foot thickness (4.87 or 6.10 kg/sq m).
- **Cornice:** the decorative horizontal molding or projected roof overhang.
- **Counterflashing:** formed metal sheeting secured on or into a wall, curb, pipe, rooftop unit, or other surface, to cover and protect the upper edge of the membrane base flashing or underlying metal flashing and associated fasteners from exposure to the weather.
- **Course:** (1) the term used for each row of shingles of roofing material that forms the roofing, waterproofing, or flashing system; (2) one layer of a series of materials applied to a surface (e.g., a five-course wall flashing is composed of three applications of roof cement with one ply of felt or fabric sandwiched between each layer of roof cement).
- **Coverage:** the surface area covered by a specific quantity of a particular material.
- **Cricket:** an elevated roof substrate or structure, constructed to divert water around a chimney, curb, away from a wall, expansion joint, or other projection/penetration. (See Saddle.)
- **Cross Ventilation:** the effect that is provided when air moves through a roof cavity between the vents.

- **Cupola:** a relatively small roofed structure, generally set on the ridge or peak of a main roof area.
- **Curb:** (1) a raised member used to support roof penetrations, such as skylights, mechanical equipment, hatches, etc. above the level of the roof surface; (2) a raised roof perimeter relatively low in height.
- **Cure:** a process whereby a material is caused to form permanent molecular linkages by exposure to chemicals, heat, pressure, and/or weathering.
- **Cure Time:** the time required to effect curing. The time required for a material to reach its desirable long-term physical characteristics.
- **Cutoff:** a permanent detail designed to seal and prevent lateral water movement in an insulation system and used to isolate sections of a roofing system. (Note: A cutoff is different from a tie-off, which may be a temporary or permanent seal.) (See Tie-Off.)
- **Cutout:** the open portions of a strip shingle between the tabs.

D

- **Dead Level:** essentially horizontal or flat, as in a roof deck or rooftop with no intentional slope to the roof drains. Also referred to as zero (0) slope.
- **Dead Loads:** permanent non-moving loads that result from the weight of a building's structural and architectural components, mechanical and electrical equipment, and the roof assembly itself. Essentially the same as "dead weight" or "dead weight loads."
- **Deck:** a structural component of the roof of a building. The deck must be capable of safely supporting the design dead and live loads, including the weight of the roof systems, and the additional live loads required by the governing building codes. Decks are either non-combustible (e.g., corrugated metal, concrete, or gypsum) or combustible (e.g., wood plank or plywood), and provide the substrate to which the roofing or waterproofing system is applied.
- **Deflection (Bowing, Sagging):** the downward displacement of a structural member or system under load.
- **Delamination:** separation of the laminated layers of a component or system.
- **Design Loads:** those loads specified in building codes or standards published by federal, state, county, or city agencies, or in owners' specifications to be used in the design of a building.
- **Dew Point Temperature:** the temperature at which water vapor condenses in cooling air at the existing atmospheric pressure and vapor content. Cooling at or below the dew point will cause condensation.
- **Dome:** a roof that is shaped like a half-circle, or a variation of one.
- **Dormer:** a framed projection through the sloping plane of a roof.
- **Double Graveling:** the process of applying two layers or flood coats of bitumen and aggregate to a built-up roof. Loose aggregate should be swept from the first application prior to the second coating of bitumen and aggregate. Approximately 50% of the second aggregate application will remain adhered in the bitumen flood coat unless physically removed.
- **Double Lock Standing Seam:** a standing seam that utilizes a double, overlapping interlock between two seam panels. (See Standing Seam.)

- **Downspout:** a conduit used to carry runoff water from a scupper, conductor head, or gutter of a building to a lower roof level, or to the ground or storm water runoff system.
- **Drain:** an outlet or other device used to collect and direct the flow of runoff water from a roof area.
- **Drip Edge:** a metal flashing, or other overhanging component, with an outward projecting lower edge, intended to control the direction of dripping water and help protect underlying building components. A drip edge also can be used to break the continuity of contact between the roof perimeter and wall components to help prevent capillary action.
- **Dynamic Load:** any load which is non-static, such as a wind load or a moving live load.

E

- **Eave:** a projecting edge of a roof that extends beyond the supporting wall.
- **Efflorescence:** the formulation of crystalline deposits, generally whitish in color, on the surface of stone, brick, concrete, or other masonry surface when moisture moves through and evaporates on the masonry. May also be caused by free alkalies leached from mortar, grout, or adjacent concrete.
- **Elastomeric Coating:** a coating system which, when fully cured, is capable of being stretched at least twice its original length (100% elongation) and recovering to its original dimensions.
- **EPDM:** Ethylene Propylene Diene Monomer (See also Ethylene Propylene Diene Terpolymer.)
- **Expansion Joint:** a structural separation between two building elements that allows free movement between the elements without damage to the roofing or waterproofing system.
- **Exposed-Nail Method:** a method of asphalt roll roofing application in which all nails are driven into the adhered, overlapping course of roofing. Nails are exposed to the weather.
- **Exposure:** (1) the traverse dimension of a roofing element or component not overlapped by an adjacent element or component in a roof covering. For example, the exposure of any ply in a built-up roof membrane may be computed by dividing the felt width minus 2 inches (51mm) by the number of shingled plies; thus, the exposure of 36 inch (914mm) wide felt in a shingled, four-ply membrane should be approximately 8 1/2 inches (216mm) (See Figure 8); (2) the dimension of sidewall or roofing covering that is not covered or overlapped by the upslope course of component. The typical exposure for a standard-size, 3-tab shingle is 5 inches (127mm), depending upon manufacturer specifications.
- **Extrusion:** a manufacturing process which consists of forcing batched and formulated material (which may be molten) through an orifice called a “die.” The shape and dimensions of the orifice determine the shape and dimensions of the finished product. Extrusion is one method by which some single-ply roofing membranes are manufactured.
- **Eyebrow:** a dormer, usually of small size, whose roof line over the upright face is typically an arched curve, turning into a reverse curve to meet the horizontal at either end. Also, a small shed roof projecting from the gable end of the larger, main roof area.

F

- **Fabric:** a woven cloth or material of organic or inorganic filaments, threads, or yarns used for reinforcement in certain membranes and flashings.
- **Factory Seam:** a splice/seam made by the manufacturer during the assembly of sections of materials into large sheets.
- **Fading:** any lightening of initial color.
- **Fascia:** a vertical or steeply sloped roof or trim located at the perimeter of a building. Typically, it is a border for the low-slope roof system that waterproofs the interior portions of the building.
- **Fasteners:** any of a wide variety of mechanical securement devices and assemblies, including nails, screws, cleats, clips, and bolts, which may be used to secure various components of a roof assembly.
- **Felt:** a flexible sheet manufactured by the interlocking of fibers through a combination of mechanical work, moisture, and heat. Roofing felts may be manufactured principally from wood pulp and vegetable fibers (organic felts), asbestos fibers (asbestos felts), glass fibers (fiberglass felts or ply sheet), or polyester fibers.
- **Ferrule:** a small metal sleeve placed inside a gutter at the top. A spike is nailed through the gutter into the fascia board to hold the gutter in place. The ferrule acts as a spacer in the gutter to maintain its original shape.
- **Fiberglass Insulation:** blanket or rigid board insulation, composed of glass fibers bound together with a binder, faced or unfaced, used to insulate roofs and walls. Rigid boards usually have an asphalt and kraft paper facer.
- **Field of the Roof:** the central or main portion of a roof, excluding the perimeter and flashing.
- **Fishmouth:** (also referred to as an Edge Wrinkle) (1) a half-cylindrical or half-conical shaped opening or void in a lapped edge or seam, usually caused by wrinkling or shifting of ply sheets during installation; (2) in shingles, a half-conical opening formed at a cut edge.
- **Flaking:** detachment of a uniform layer of a coating or surface material, usually related to internal movement, lack of adhesion, or passage of moisture.
- **Flame Retardant:** a substance which is added to a polymer formulation to reduce or retard its tendency to burn.
- **Flange:** the projecting edge of a rigid or semi-rigid component, such as a metal edge flashing flange, skylight flange, flashing boot, structural member, etc.
- **Flash Point:** the lowest temperature of a liquid at which it gives off vapors sufficient to form an ignitable mixture with air near its surface.
- **Flashing:** components used to weatherproof or seal the roof system edges at perimeters, penetrations, walls, expansion joints, valley, drains, and other places where the roof covering is interrupted or terminated. For example, membrane base flashing covers the edge of the field membrane, and cap flashings or counter flashings shield the upper edges of the base flashing.

- **Flashing Cement:** as used by the roofing industry, an ASTM D 2822 Type II roof cement that is a trowelable mixture of solvent-based bitumen and mineral stabilizers that may include asbestos or other inorganic or organic fibers. Generally, flashing cement is characterized as vertical grade, which indicates it is intended for use on vertical surfaces. (See Asphalt Roof Cement and Plastic Cement.)
- **Flashing Collar:** (sometimes referred to as a Roof Jack or Flashing Boot) an accessory flashing used to cover and/or seal soil pipe vents and other penetrations through the roof.
- **Flat Lock:** a method of interlocking metal panels in which one panel edge is folded back on top of itself and the other panel is folded under, after which the two panels are hooked together.
- **Flood (Pour) Coat:** the surfacing layer of bitumen into which surfacing aggregate is embedded on an aggregate-surfaced built-up roof. A flood coat is generally thicker and heavier than a glaze coat and is applied at approximately 45-60 pounds per square (2-3 kilograms per meter).
- **Flood Test:** the procedure where a controlled amount of water is temporarily retained over a horizontal surface to determine the effectiveness of the waterproofing.

G

- **Gable:** a triangular portion of the end wall of a building directly under the sloping roof and above the eave line.
- **Gable-Shaped Roof:** a single-ridge roof that terminates at gable end(s).
- **Galvalume**®: trade name for a coating, used over metal, that is composed of aluminum zinc for corrosion protection.
- **Galvanic Action:** an electrolytic reaction between dissimilar metals in the presence of an electrolyte.
- **Galvanize:** to coat with zinc.
- **Galvanized Steel:** steel coated with zinc for corrosion resistance.
- **Gambrel:** a roof that has two pitches on each side.
- **Granule:** (also referred to as Mineral or Ceramic Granule) opaque, natural, or synthetically colored aggregate commonly used to surface cap sheets, shingles, and other granule-surfaced roof coverings.
- **Gravel:** aggregate resulting from the natural erosion of rock.
- **Gravel Stop:** a low profile upward-projecting metal edge flashing with a flange along the roof side, usually formed from sheet or extruded metal. Installed along the perimeter of a roof to provide a continuous finished edge for roofing material. Acts as a bitumen-stop during mop application of hot bitumen along a perimeter edge.
- **Gutter:** a channeled component installed along the downslope perimeter of a roof to convey runoff water from the roof to the drain leaders or downspouts.

H

- **Heat Welding:** method of melting and fusing together the overlapping edges of separate sheets or sections of polymer modified bitumen, thermoplastics, or some uncured thermoset roofing membranes by the application of heat (in the form of hot air or open flame) and pressure.

- **Hem:** the edge created by folding metal back on itself.
- **Hip:** the inclined external angle formed by the intersection of two sloping roof planes.
- **Hip Roof:** a roof that rises by inclined planes to form one or more hips.
- **Hoist:** a mechanical lifting device.
- **“Hot” or “Hot Stuff”:** the roofer’s term for hot bitumen.
- **Humidity:** the amount of moisture contained in the atmosphere. Generally expressed as percent relative humidity (the ratio of the amount of moisture [water vapor] present in the air, compared to the maximum amount that the air could contain at the same temperature.)
- **HVAC:** heating, ventilating, and air conditioning equipment.

I

- **Ice Dam:** a mass of ice formed at the transition from a warm to a cold roof surface, frequently formed by refreezing meltwater at the overhang of a steep roof, causing ice and water to back up under roofing materials.
- **Ignition Temperature:** the minimum temperature to which a solid, liquid, or gas must be heated to initiate or cause self-sustained combustion independent of the heating element.
- **Impact Resistance:** the ability of a roofing material to resist damage (e.g., puncturing) from falling objects, application equipment, foot traffic, etc. The impact resistance of the roofing assembly is a function of all its components, not just the membrane itself.
- **Impregnate:** to coat, saturate, and/or surround the fibers of a reinforcing mat or fabric with an enveloping liquid material, (e.g., bitumen, elastomeric compound, etc.).
- **Infrared Thermography:** a practice of roof system analysis where an infrared camera is used to measure the temperature differential of a roof surface to locate areas of underlying wet or moist insulation.
- **Inorganic:** any chemical or compound that is derived from minerals, does not contain carbon, and is not classified as organic; being or composed of materials other than hydrocarbons and their derivatives; not of plant or animal origin.
- **Interlocking Shingles:** individual shingles that mechanically attach to each other to provide wind resistance.
- **Inverted Roof Membrane Assembly (IRMA TM):** a patented, proprietary variation of the “Protected Membrane Roof Assembly” in which Styrofoam[®] Brand Insulation and ballast are placed over the roof membrane. IRMA TM and Styrofoam[®] are registered trademarks of the Dow Chemical Company.

J

- **Joist:** any of the small timbers, metal or wood beams arranged parallel from wall to wall to support a floor, ceiling, or roof of a building.

L

- **Lap:** that part of a roofing, waterproofing, or flashing component that overlaps or covers any portion of the same or another type of adjacent component.

- **Lap Cement:** an asphalt-based roof cement formulated to adhere overlapping plies or asphalt roll roofing.
- **Lap Seam:** occurs where overlapping materials are seamed, sealed, or otherwise bonded.
- **Latex:** a colloidal dispersion of a polymer or elastomer in water which coagulates into a film upon evaporation of the water.
- **Lead:** a soft workable metal used for miscellaneous flashings.
- **Live Loads:** temporary loads that the roof structure must be designed to support, as required by governing building codes. Live loads are generally moving and/or dynamic or environmental, (e.g., people, installation equipment, wind, snow, ice, or rain, etc.).
- **Loose-laid Membranes:** membranes that are not attached to the substrate except at the perimeter of the roof and at penetrations. Typically, loose-laid membranes are held in place with ballast, such as water-worn stone, gravel, pavers, etc.

M

- **Mansard:** a decorative steep-sloped roof on the perimeter of a building.
- **Mansard Roof:** a steeper roof that terminates into a flat roof at its high point.
- **Mechanically Fastened Membranes:** generally used to describe membranes that have been attached at defined intervals to the substrate. Mechanical fastening may be performed with various fasteners and/or other mechanical devices, such as plates or battens.
- **Membrane:** a flexible or semi-flexible material, which functions as the waterproofing component in a roofing or waterproofing assembly, and whose primary function is the exclusion of water.
- **Metal Flashing:** accessory components fabricated from sheet metal and used to weatherproof terminating roof covering edges. Frequently used as through-wall flashing, cap flashing (coping), counterflashing, step flashing, etc. (See Flashing.)
- **Meter:** unit of length measurement in the metric system, equal to 39.37 inches.
- **Mil:** a unit of measure, one mil is equal to 0.001 inches or 25.400 microns, often used to indicate the thickness of a roofing membrane.
- **Mildew:** a superficial coating or discoloring of an organic material due to fungal growth, especially under damp conditions.
- **Millimeter:** a unit of measure equal to one thousandth (0.001) of a meter, or 0.03937 inches.
- **Mineral-Surfaced Roofing:** roofing materials whose surface or top layer consists of mineral granules.
- **Mineral-Surfaced Sheet:** a roofing sheet that is coated on one or both sides with asphalt and surfaced with mineral granules.
- **Miter:** the joint produced by joining two diagonally cut pieces.
- **Modified Bitumen:** (1) a bitumen modified through the inclusion of one or more polymers (e.g., atactic polypropylene, styrene butadiene styrene, etc.); (2) composite sheets consisting of a polymer modified bitumen often reinforced and sometimes surfaced with various types of mats, films, foils, and mineral granules.

- **Mopping:** the application of hot bitumen, with a roofer's hand mop or mechanical applicator, to the substrate or to the felts of a bituminous membrane.
 - *Solid Mopping:* a continuous mopping of a surface.
 - *Spot Mopping:* a mopping pattern in which hot bitumen is applied in roughly circular areas, leaving a grid of unmopped, perpendicular bands on the roof.
 - *Sprinkle Mopping:* a random mopping pattern in which heated bitumen beads are strewn onto the substrate with a brush or mop.
 - *Strip Mopping:* a mopping pattern in which hot bitumen is applied in parallel bands.

N

- **Nailer:** (commonly referred to as Blocking) a piece or pieces of dimensional lumber and/or plywood secured to the structural deck or walls, which provide a receiving medium for the fasteners used to attach membrane or flashing. Generally, it is recommended that nailers be the same thickness as the adjacent insulation and may be treated with a non-oil-borne preservative, and be of sufficient width to fully support the horizontal flashing flange of a metal flashing (where used).
- **Nailing:** the application of nails. May be: (1) exposed nailing of roofing wherein nail heads are exposed to the weather; (2) concealed nailing of roofing wherein nail heads are concealed from the weather by an overlapping material.
- **Neoprene:** a synthetic rubber (polychloroprene) used in liquid-applied and sheet-applied elastomeric roof membranes or flashings.
- **Net Free Vent Area:** the area, measured in square inches, open to unrestricted air flow and commonly used as a yardstick to measure relative vent performance.
- **Night Seal (or Night Tie-Off):** a material and/or method used to temporarily seal a membrane edge during construction to protect the roofing assembly in place from water penetration. Usually removed when roofing application is resumed.
- **Nineteen-Inch Selvage (Double-Coverage or Split-Sheet):** a prepared roofing sheet with a 17-inch (430mm) granule surfaced exposure and a non-granule surfaced 19-inch (485mm) selvage edge. This material is some-times referred to as SIS, double-coverage, or according to ASTM Standard D 371-89, Standard Specification for Asphalt Roll Roofing (Organic Felt) Surfaced with Mineral Granules, Wide Selvage.
- **Ninety-Pound:** a prepared organic felt roll roofing with a granule surfacing that has a mass of approximately 90 pounds per 100 square feet, (4400 g/m²).
- **NRCA:** [National Roofing Contractors Association](#).

O

- **Open Valley:** a method of valley construction in which the steep-slope roofing on both sides are trimmed along each side of the valley, exposing the valley flashing.
- **Organic:** being or composed of hydrocarbons or their derivatives originating from plant or animal matter.
- **Organic Felt:** an asphalt roofing base material manufactured from cellulose fibers.
- **Organic Shingle:** an asphalt shingle reinforced with material manufactured from cellulose fibers.

P

- **Pallet:** a platform (typically wooden) used for storing and shipping materials.
- **Pan:** the bottom flat part of a roofing panel which is between the ribs of the panel.
- **Parapet Wall:** that part of a perimeter wall immediately adjacent to the roof which extends above the roof.
- **Penetration:** (1) any object passing through the roof; (2) the consistency (hardness) of a bituminous material expressed as the distance, in tenths of a millimeter (0.1 mm), that a standard needle penetrates vertically into a sample of material under specified conditions of loading, time, and temperature.
- **Perlite:** an aggregate used in lightweight insulating concrete and in preformed perlitic insulation boards, formed by heating and expanding siliceous volcanic glass.
- **Pitch-Pocket (Pitch-Pan):** a flanged, open bottomed enclosure made of sheet metal or other material, placed around a penetration through the roof, filled with grout and bituminous or polymeric sealants to seal the area around the penetration.
- **Pittsburgh Lock Seam:** a method of interlocking metal, usually at a slope change.
- **Plastic Cement:** a roofing industry generic term used to describe Type I asphalt roof cement that is a trowel-able mixture of solvent-based bitumen, mineral stabilizers, other fibers and/or fillers. Generally, intended for use on relatively low slopes — not vertical surfaces.
- **Pliability:** the material property of being flexible or moldable.
- **Ply:** a layer of felt, ply sheet, or reinforcement in a roof membrane or roof system.
- **PMR:** Protected Membrane Roof.
- **Polyvinyl Chloride (PVC):** a synthetic thermoplastic polymer prepared from vinyl chloride. PVC can be compounded into flexible and rigid forms using plasticizers, stabilizers, fillers, and other modifiers; rigid forms are used in pipes; flexible forms are used in the manufacture of sheeting and roof membrane materials.
- **Ponding:** the excessive accumulation of water at low-lying areas on a roof.
- **Pop Rivet:** a relatively small headed pin with an expandable head for joining relatively light gauge metal.
- **Positive Drainage:** the drainage condition in which consideration has been made during design for all loading deflections of the deck, and additional roof slope has been provided to ensure drainage of the roof area within 48 hours of rainfall, during ambient drying conditions.
- **Primer:** (1) a thin, liquid-applied solvent-based bitumen that may be applied to a surface to improve the adhesion of subsequent applications of bitumen; (2) a material which is sometimes used in the process of seaming single-ply membranes to prepare the surfaces and increase the strength (in shear and peel) of the field splice.
- **Puncture Resistance:** extent to which a material can withstand the action of a sharp object without perforation.
- **Purlin:** horizontal secondary structural member that transfers loads from the primary structural framing.

R

- **Rafter:** one of a series of sloped structural members, that extend from the ridge or hip to the downslope perimeter or eave, designed to support the roof deck and its associated loads
- **Raggle:** a groove or slot, often cut in a masonry wall or other vertical surface adjoining a roof, for inserting an inset flashing component such as a reglet.
- **Rake:** the sloped edge of a roof at or adjacent to the first or last rafter.
- **Rake-Starter (Bleeder Strip):** starter-strip used along rake edges in conjunction with asphalt shingle roofing.
- **Reglet:** a sheet metal receiver for the attachment of counterflashing. (A reglet may be inset into a raggle, embedded behind cladding, or be surface mounted.)
- **Reinforced Membrane:** a roofing or waterproofing membrane that has been strengthened by the addition or incorporation of one or more reinforcing materials, including woven or nonwoven glass fibers, polyester mats or scrim, nylon, or polyethylene sheeting.
- **Ridge:** highest point on the roof, represented by a horizontal line where two roof areas intersect, running the length of the area.
- **Ridge Cap:** a material or covering applied over the ridge of a roof.
- **Ridge Course:** the last or top course of roofing materials, such as tile, roll roofing, shingles, etc., that covers the ridge and overlaps the intersecting field roofing.
- **Ridge Vent:** a ventilator located at the ridge that allows the escape of warm and/or moist air from the attic area or rafter cavity. Most ridge vents are either premanufactured metal or flexible, shingle-over type.
- **Roll Roofing:** smooth-surfaced or mineral-surfaced, coated, prepared felts.
- **Roof Assembly:** an assembly of interacting roof components (includes the roof deck, vapor retarder [if present], insulation, and roof covering).
- **Roof Jack:** a metal bracket used to support toe-boards on steep-slope roofs.
- **Roof Slope:** the angle a roof surface makes with the horizontal, expressed as a ratio of the units of vertical rise to the units of horizontal length (sometimes referred to as run). For English units of measurement, when dimensions are given in inches, slope may be expressed as a ratio of rise to run, such as 4:12, or as a percent.
- **Run:** horizontal dimension of a slope.

S

- **Saddle:** a relatively small raised substrate or structure constructed to channel or direct surface water to drains or off the roof. A saddle may be located between drains or in a valley and is often constructed like a small hip roof or like a pyramid with a diamond-shaped base. (See Cricket.)
- **Sag:** undesirable excessive flow in material after application to a surface.
- **Saturated Felt:** a felt that has been partially saturated with low softening point bitumen.
- **Seam Strength:** the force or stress required to separate or rupture a seam in the membrane material.

- **Self-Adhering Membrane:** a membrane that can adhere to a substrate and to itself at overlaps without the use of an additional adhesive. The undersurface of a self-adhering membrane is protected by a release paper or film, which prevents the membrane from bonding to itself during shipping and handling.
- **Self-Drilling Screw:** a fastener that drills and taps its own hole during application.
- **Self-Sealing Shingle:** an asphalt shingle containing factory-applied strip or spots of heat sensitive adhesive intended to adhere the overlying shingle once installed on the roof and warmed by the sun.
- **Self-Tapping Screw:** a fastener that forms receiving threads when turned into a previously drilled hole.
- **Selvage:** (1) an edge or edging that differs from the main part of a fabric, granule-surfaced roll roofing or cap sheet, or other material; (2) a specially defined edge of the material (lined for demarcation), which is designed for some special purpose, such as overlapping or seaming.
- **Selvage Edge:** an edge designed for certain sheet good materials, e.g., mineral-surfaced sheets. With mineral surfaced sheets, the surfacing is omitted over a portion of the longitudinal edge of the sheet (e.g., mineral sur-face cap sheet) to obtain better adhesion of the overlapping sheet.
- **Shading:** slight differences in surfacing color, such as shingle granule coloring, that may occur because of manufacturing operations.
- **Shed Roof:** a roof containing only one sloping plane. Has no hips, ridges, or valleys.
- **Shingle:** (1) individual unit of prepared roofing material designed for installation with similar units in overlap-ping rows or courses on inclines normally exceeding 3:12 slope (25%); (2) to cover with shingles; (3) to apply any roofing material in succeeding overlapping rows or courses like shingles.
- **Shingling:** (1) the application of shingles; (2) the procedure of applying shingles or laying parallel felts so that one longitudinal edge of each felt overlaps and the other longitudinal edge of the adjacent shingle or felts underlaps. Felts are normally shingled from a downslope portion of the roof to the upslope portion of the roof area so that runoff water flows over rather than against each felt lap. Felts are also applied in shingle fashion on relatively low slopes.
- **Side Lap:** the continuous longitudinal overlap of neighboring like materials.
- **Sill:** the bottom horizontal framing member of an opening, such as below a window or door.
- **Sill Flashing:** a flashing of the bottom horizontal framing member of an opening, such as below a window or door.
- **Skylight:** a roof accessory, set over an opening in the roof, designed to admit light. Normally transparent and mounted on a raised framed curb.
- **Slab-On-Grade:** a horizontal placement of concrete placed directly over a prepared earth substrate.
- **Slate:** a hard, brittle metamorphic rock consisting mainly of clay minerals, used extensively as dimensional stone for steep roofing, and in granular form as surfacing on some other roofing materials.
- **Slope:** the angle of incline, usually expressed as a ratio of rise to run, or as a percent.

- **Snow Guard:** a series of devices attached to the roof in a pattern that attempts to hold snow in place, thus preventing sudden snow or ice slides from the roof.
- **Snow Load:** a load imposed on buildings or other structures due to snowfall. (Categorized as live or environmental load.)
- **Soffit:** the enclosed underside of any exterior overhanging section of a roof eave.
- **Soffit Vent:** a premanufactured or custom-built air inlet source located at the downslope eave or in the soffit of a roof assembly.
- **Soil Stack:** a sanitation pipe that penetrates the roof; used to vent plumbing fixtures.
- **Spalling:** a condition in which the outer layer or layers of masonry or concrete material begin to break off or flake away.
- **Splash Block:** a small masonry or polymeric block laid on the ground or lower roof below the opening of a downspout used to help prevent soil erosion and aggregate scour in front of the downspout.
- **Square:** 100 square feet (9.29 m²) of roof area.
- **Stainless Steel:** an alloy of steel that contains a high percentage of chromium. Also, may contain nickel or copper. Generally, has very good resistance to corrosion.
- **Standing Seam:** a metal roof system that consists of an overlapping or interlocking seam that occurs at an upturned rib. The standing seam may be made by turning up the edges of two adjacent metal panels and overlapping them, then folding or interlocking them in a variety of ways.
- **Starter Course:** the first layer of roofing, applied along a line adjacent to the downslope perimeter of the roof area. With steep-slope water shedding roof coverings, the starter course is covered by the first course.
- **Starter Sheets:** (1) felt, ply sheet, or membrane strips that are made or cut to widths narrower than the standard width of the roll, used to start the shingling pattern at an edge of the roof; (2) particular width sheets designed for perimeters in some mechanically attached and fully adhered single-ply systems.
- **Starter Strip:** roll roofing or shingle strips applied along the downslope eave line, before application of the first course of roofing, intended to fill spaces between cutouts and joints of the first course.
- **Static Load:** any load, as on a structure, that does not change in magnitude or position with time.
- **Step Flashing:** individual pieces of material used to flash walls, around chimneys, dormers, and such projections along the slope of a roof. Individual pieces are overlapped and stepped up the vertical surface.
- **Substrate:** the surface upon which the roofing or waterproofing membrane is applied (e.g., in roofing, the structural deck or insulation).
- **Sump:** an intentional depression around a roof drain or scupper that serves to promote drainage.

T

- **Tab:** the exposed portion of strip shingles defined by cutouts.
- **Test Cut:** a sample of the roof, which may contain all components or just the membrane, usually used to diagnose the condition of the existing membrane, evaluate the type and number of plies or number of membranes, or rates of application such as determine the weight of the average interply bitumen moppings.
- **Thermal Shock:** the stress-producing phenomenon resulting from sudden temperature changes in a roof membrane when, for example, a cold rain shower follows brilliant hot sunshine, which may result in sudden cooling or rapid contraction of the membrane.
- **Tie-Off:** (in roofing and waterproofing) the transitional seal used to terminate a roofing or waterproofing application at the top or bottom of flashings, or by forming a watertight seal with the substrate, membrane or adjacent roofing or waterproofing system.
- **Toggle Bolt:** a two-piece assembly consisting of a threaded bolt and an expanding clip that can fit through a drilled hole. The clip can spring outward to provide anchorage from the blind side.
- **Tongue and Groove Planks:** one of the oldest types of dimensional structural wood used as roof decking. The sides are cut with convex and concave grooves so adjacent planks may join in alignment with each other to form a uniform roof deck.

U

- **Ultraviolet (UV):** (1) situated beyond the visible spectrum, just beyond the violet end, having wavelengths shorter than wavelengths of visible light and longer than those of X-rays; (2) relating to, producing, or employing ultraviolet radiation.
- **Underlayment:** an asphalt-saturated felt or other sheet material (may be self-adhering) installed between the roof deck and the roof system, usually used in a steep-slope roof construction. Underlayment is primarily used to separate the roof covering from the roof deck, to shed water, and to provide secondary weather protection for the roof area of the building.

V

- **Valley:** the internal angle formed by the intersection of two sloping roof planes.
- **Vapor Retarder:** material installed to impede or restrict the passage of water vapor through a roof assembly.
- **Vent:** an opening designed to convey air, heat, water vapor or other gas from inside a building or a building component to the atmosphere.
- **Ventilation Short Circuit:** (as it relates to a passive ventilation system where the system is designed for air flow between intake and exhaust vents) a ventilation short circuit occurs when air is introduced into the ventilation system from an area higher than the intake vent thereby minimizing or defeating the effectiveness of the intake vent. One example can be a gable vent in a soffit-to-ridge ventilation system. Air intake from the gable vent can short circuit the stack-effect draw of air through the soffit vents and interrupt the thorough venting of the roof cavity.
- **Ventilator:** an accessory that is designed to allow for the passage of air.

W

- **Weep Holes:** small openings whose purpose is to permit drainage of water that accumulates inside a building component (e.g., a brick wall, skylight frame, etc.).
- **Wicking:** the process of moisture movement by capillary action, as contrasted to movement of water vapor.
- **Wind Uplift:** the force caused by the deflection of wind at roof edges, roof peaks or obstructions, causing a drop in air pressure immediately above the roof surface. This force is then transmitted to the roof surface. Uplift may also occur because of the introduction of air pressure underneath the membrane and roof edges, where it can cause the membrane to balloon and pull away from the deck.
- **Woven Valley:** a method of valley construction in which shingles or roofing from both sides of the valley extend across the valley and are woven together by overlapping alternate courses as they are applied.

1. NOTIFICATION

- .1 Contractors shall notify the Consultant and Inspector at least **72 hours** prior to the commencement of the work and he is responsible for re-notification after a work delay. Failure to give such prescribed notices will render the Contractor liable for removal or uncovering of work at the Contractors expense to permit proper inspection procedures.
- .2 If for any reason additional inspections are required which are the fault of the Roofing Contractor (e.g., water ingress, poor site clean-up, materials improperly secured on the roof, re-inspections of a final Inspection due to numerous deficiencies) the cost of the Inspection is to be paid by the Roofing Contractor to the owner at a cost of \$1,550.00 + GST per inspection.

2. PERMITS AND REGULATIONS

- .1 Contractor shall obtain all necessary permits, pay fees, and comply with all relevant Federal, Provincial and Municipal codes, by-laws or ordinances relative to this contract, including all safety requirements under the Workers' Compensation Act.

3. EXISTING FEATURES

- .1 The location of existing features, both above and below ground, has been determined from available records but is not guaranteed. The location of all such features shall be investigated and verified in the field by the Contractor.
- .2 Roofing Contractor is responsible for ensuring the substrate being adhered to is acceptable and not contaminated before adhering any material to the substrate. Bid is to include allowances for replacing or repairing substrates.

4. PROTECTION OF PROPERTY

- .1 Contractor shall provide protection to the property and the surrounding properties from damage resulting from his/her work. Any damages caused by the Contractor shall be made good by him/her at no cost to the Owner.

5. SITE HOUSEKEEPING AND DISPOSAL

- .1 Contractor shall maintain the site in as clean condition as possible, to the satisfaction of the Owner or Consultant. Failure to do so will result in cleanup costs to be deducted from the amount owing the Contractor.
- .2 At the end of each day, the ground perimeters shall be cleaned up and any loose debris on the roof shall be removed or properly secured to prevent blowing off.

- .3 All traffic areas used by roof crews within the building must be protected during reroofing phase. Any damage caused or cleanup required because of roofing activities will be remedied at the contractor's expense.

6. WORK SCHEDULE

- .1 Contractor shall provide approximate starting and completion dates. When the work commences, the operation must be continuous, barring inclement weather, until completion.

7. CHANGE ORDERS

- .1 Any changes required during application must be approved in writing by the Consultant and Owner prior to the work being started.

8. UTILITIES & FACILITIES

- .1 Owners shall make temporary provisions for domestic power and water. Roofing Contractor to provide temporary washroom facilities on site.

9. ENVIRONMENTAL CONDITIONS

- .1 Provide adequate weather protection at all times to property, materials, and uncompleted work. Damage due to failure in providing such protection will result in replacement or repair as directed by the Consultant, at the cost of the Contractor.

10. SUBCONTRACTING OF WORK

- .1 The Contractor will be held responsible for the work and coordination of the and to see they properly execute the provisions of the Contract in a timely fashion to prevent delay of completion.

11. ACCESS TO WORK

- .1 Access to work will be as directed by the Owner/Consultant and included in the specification instructions **or** as indicated at any pre-tender meetings.

12. WORK SITE SAFETY PLAN AS MANDATED BY W.C.B.

- .1 Roofing Contractors to provide to the Owner & Consultant a Work Site Safety Plan that includes but is not limited to a Fall Protection Plan.

13. SEQUENCE OF WORK

- .1 The requirement is that work proceeds from the most upper roof down. Debris from Roof demolition may only be safely contained and deposited on lower roofs destined for replacement under this contract.
- .2 All roof areas must be made watertight before proceeding on the next roof area. The Contractor may only remove as much of the existing roof system as can be replaced and made watertight within the same day and under favorable weather conditions as they exist.

14. TIME OF WORK

- .1 The Contractor must attend to his/her work during normal daytime working periods with no restrictions on the general continuity of his/her work.

15. JOB SITE CONSIDERATIONS (CAUTION AND WARNINGS)

A. Safety

1. Keep all adhesives, sealants, and cleaning materials away from all ignition sources (i.e., flames, fire, sparks, etc.). Do not smoke while using these materials.
2. Consult container labels, Material Safety Data Sheets and Technical Information Sheets for specific safety instructions for all products used on the project.

B. Cautions

1. Care must be used when installing fasteners to avoid possible conduits and other piping, both in and under the deck.
2. Store Roofing Membrane Material in the original undisturbed plastic wrap in a manner to protect it from damage.
3. Do not use oil-based or bituminous-based roof cement, mastics, or caulks in direct contact with TPO membranes.
4. Insulation must be properly stored and protected from ignition sources, moisture, and damage.
5. Follow all Occupational Safety and Health Administration (OSHA), National Roofing Contractors Association (NRCA) and other industry recommendations for fire and fall protection.

C. Measurements

1. Roofing Contractor is to verify all measurements and roof dimensions. All dimensions listed are approximate and must be confirmed by the Roofing Contractor.

16. REFERENCES

Latest edition of all listed references; most stringent requirements to govern in conflicts:

Latest edition of all listed references; most stringent requirements to govern in conflicts:

1. American Society for Testing and Materials International, (ASTM).
 - .1 ASTM C726-17, Standard Specification for Mineral Wool Roof Insulation Board.
 - .2 ASTM C728-17a, Standard Specification for Perlite Thermal Insulation Board.
 - .3 ASTM C1002-18, Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
 - .4 ASTM C1177/C1177M-17, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 - .5 ASTM D41/D41M-11(2016), Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
 - .6 ASTM D312/D312M-16a, Standard Specification for Asphalt Used in Roofing.
 - .7 ASTM D448-12(2017) Standard Classification for Sizes of Aggregate for Road and Bridge Construction.
 - .8 ASTM D2178/D2178M-15a(2021), Standard Specification for Asphalt Glass Felt Used in Roofing and waterproofing.
 - .9 ASTM D3273-16, Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
 - .10 ASTM D6162/D6162M-16, Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fibre Reinforcements.
 - .11 ASTM D6163/D6163M-16, Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fibre Reinforcements.
 - .12 ASTM D6164/D6164M-16, Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
 - .13 ASTM D6222/D622M-16, Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using Polyester Reinforcement.
 - .14 ASTM D6223/D6223M-16, Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcement.

- .15 ASTM D6509/D6509M-16, Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Base Sheet Materials Using Glass Fiber Reinforcement.
- .16 ASTM E96/E96M-16, Standard Test Methods for Water Vapor Transmission of Materials.
2. Roofing Contractors Association of British Columbia (RCABC)
 - .1 RCABC Roofing Specifications Manual.
3. Canadian Standards Association (CAN/CSA): CSA A123
 - .1 A123.21-14: Standard Wind Uplift of Membrane
 - .2 A123.16: Asphalt Coated Glass Base Sheets.
 - .3 A231.1: Precast Concrete Paving Slabs.
 - .4 0121M: Douglas Fir Plywood.
 - .5 0151M: Canadian Softwood Plywood.
4. Canadian General Standards Board (CAN/CGSB):
 - .1 37.29M: Rubber-Asphalt Sealing Compound
 - .2 37-GP-9M: Primer, Asphalt, unfilled, for Asphalt Roofing and Waterproofing.
 - .3 37-GP-15M: Application of Asphalt Primer for Asphalt Roofing & Waterproofing.
 - .4 37-GP-56M: Membrane, Bituminous, Prefabricated and Reinforced for Roofing.
 - .5 51.26M: Thermal Insulation, Urethane and Isocyanurate, Boards, Faced.
 - .6 51.33M: Vapour Barrier Sheet, Excluding Polyethylene Sheet for use in Construction.
 - .7 51.34M: Vapour Barrier Sheet, Polyethylene Sheet for use in Construction.
5. Underwriters Laboratories of Canada (CAN/ULC):
 - .1 S701: Thermal Insulation, Polystyrene, Boards and Pipe Covering.
 - .2 S702: Thermal Insulation, Mineral Fibre, for Buildings.
 - .3 S704: Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Fixed.
 - .4 Roofing Contractors Association of BC (RCABC): Roofing Manual.
 - .5 Canadian Roofing Contractors Association (CRCA): Roofing and Waterproofing Manual.

17. ASSURANCE

- .1 All work is to be performed as per the Contract Documents and Manufacturer's requirements.
- .2 Make no changes from the Specifications or shop drawings without prior written approval by the Consultant or the Manufacturer.
- .3 Contractor to arrange for a Technical Representative of the Manufacturer to review the installed roof system wherever a Warranty requirement has been required.

18. QUALITY ASSURANCE OBSERVATION

- .1 **Pacific Interior Roof Consulting & Inspections (2015) Ltd.** is an independent Inspection Firm appointed by the Owner to observe the performance of roof work.
- .2 Provide to Pacific Interior the date when each phase of work will begin by at least seventy-two (72) hours prior commencement of work for each phase.
- .3 Cooperate with the Inspector and afford all facilities to permit full observations during performance of Work. Act immediately on any instructions given regarding deficiencies or changes.
- .4 When required, provide roof cut tests in field where directed by the Inspector without additional cost to Owner.
- .5 When work fails to meet contract requirements, pay for any additional testing and observations by Pacific Interior or third-party testing agency for correction of Work, without additional cost to the Owner.

1.0 GENERAL

- .1 **Contract:** 2025 Roof Replacement RDCK Administration Office – Section B

1.1 CODES AND STANDARDS

- .1 Contractor and Subcontractor to conform to the most recent issue of all relevant codes, standards, ordinances, and bylaws as amended and revised on date of Closing.

1.2 SAFETY REQUIREMENTS

- .1 Observe, regulate, and enforce all construction safety measures required by the National Building Codes of Canada, Worker's Compensation Board of British Columbia, and Canada Labour (Safety) Code as well as all applicable Federal, Provincial and Municipal statutes or bylaws.
- .2 In the event of conflict between any of the above authority provisions, the most demanding provision will apply.

1.3 WARRANTY

- .1 Provide an RCABC **RoofStar 5-Year Roofing Guarantee**. **Any and all** costs attached to this guarantee shall be included in the Contract Price.
- .2 The Membrane Manufacturer shall supply the owner with a non-prorated 10-year written Warranty.
- .3 Perform all Work as required by RCABC under the Five (5) year Guarantee Program and Conform to the latest Guarantee Standards of the Roofing Contractors Association of British Columbia (RCABC) as published in the "RCBC Roofing Practices Manual" for a Five (5) year Guarantee, unless modified by the Contract Documents to exceed those minimums.
- .4 Provide the Owner with one set of any required Material Safety Data Sheets (MSD) prior to commencement of work, for review and posting on the job site.

1.4 QUALITY CONTROL

- .1 Application Inspections provided by an independent inspection company that being Pacific Interior Roof Consulting & Inspection Ltd.
- .2 The Owner reserves the right to inspect the work site, materials, and application procedure at any time.

1.5 CONTRACTORS QUALIFICATIONS:

- .1 The Roofing Contractor shall be officially recognized as an approved Contractor by the roofing membrane manufacturer and a RCABC member in good standing.
- .2 Roofing work shall be performed only by qualified “B.C. Licensed” tradesmen, employed by a company operating all adequate and necessary equipment to execute such work.
- .3 The roofing crew shall consist of a minimum of one journeyman qualified to install the specified products. A maximum of 3 apprentices for every journeyman is also recommended.
- .4 Contractor is to be a member in good standing with the Roof Construction Association of British Columbia (RCABC).

1.6 CHANGES TO THE WORK

- .1 The Owner may, without invalidating the Tender, make changes by, adding to, deducting from, or altering the Work with the Contract Price being adjusted accordingly. The value or pricing procedures of any changes shall be agreed upon prior to the affected Works continuation. All such changes to Work will be executed under the terms and conditions of original Tender and Contract.

1.7 ALTERNATE OR EQUIVALENT MATERIALS, SYSTEMS AND PROCEDURES

- .1 Materials, systems, or procedures other than those specified in these Documents will only be considered for approval if received Ten (10) days prior to the Closing Date.
- .2 The Consultant may approve a material, system, or procedure as an “equal” or an “alternate” and will issue an Addendum to known Bidders.
- .3 If an “equal” status has been approved this then implies that the material, system, or procedure may be used in place of the originally specified item.
- .4 If an “alternate” status has been approved, this then implies that a Separate Price must be included in the price for materials, systems or procedures used in place of the original specified item.
- .5 Approval of “equal” or “alternate” status implies that the Manufacturer, Supplier and/or Contractor must make the appropriate adjustments necessary to be totally compatible and consistent with all other sections of the Contract.
- .6 The Consultant reserves the right to reject any and all applications for “equal” or “alternate” status should he/she deem them unsuitable. This decision shall be final and binding.

1.8 GENERAL SCOPE OF WORK

.1 SBS ROOF SYSTEM REPLACEMENT LOW SLOPE ROOF SECTIONS

1. Comply with manufacturers' written recommendations or specifications, including technical bulletins, handling, storage and installation instructions, and data sheets.
2. Before roofing commences, inspect and check roof surfaces for levels as existing roof has ponding located away from existing roof drains.
3. Before commencing work, ensure environmental and site conditions are suitable for installation of material in accordance with manufacturer's recommendations.
4. Prevent debris from blocking drains.
5. Remove existing BUR to expose the insulation below.
6. Ensure existing roof system is in suitable condition to secure specified overlay board.
7. Loose lay a layer of 50.8 mm (2inch) polyisocyanurate insulation over the existing EPS insulation.
8. Mechanically fasten the manufacturer's recommended 1 layer of 3/16" asphaltic overlay board to existing skinned roof system. (Standard wind uplift calculations are provided to the roofing contractor and manufacturer in the Drawings Section of the Specifications.)
9. All exposed wood or contaminated substrate surfaces are to be covered with asphaltic cover board.
10. Fire tape where required.
11. Fully torch the 180 Base Membrane (3.0 mm minimum thickness). It is essential that the membrane be fully and evenly bonded to the substrate. As the roll is installed, the roofer must ensure the full width of the roll is melted and the preceding roll's side lap is preheated. A small "wave" or "bead" of melted bitumen in front of the roll usually indicates sufficient heat. Special attention to seams is required.
12. Self-adhered Base Membrane Flashings must be used as substitute to fully torched membrane flashing. Contaminated or not approved substrates will have to be covered.
13. While the roof is being applied, all membrane openings at eaves, walls, vents, etc. must be sealed to prevent moisture from entering roofing or between plies of stripping.
14. Both the base sheet and cap sheet in 2-Ply modified bituminous systems must be modified bitumen materials using the same polymer.
15. Both the base sheet and cap sheet must be installed in a parallel direction (not at 90° to each other).
16. Fully Torch a 250 Granulated Cap Sheet membrane and membrane flashings. (4.0 mm minimum thickness).
17. All modified bitumen base stripping terminating on vertical surfaces must be mechanically fastened.
18. Manufacturer's printed instructions for overlaps are to be followed.

19. Granules are to be embedded prior to forming laps on all torch applied modified bituminous cap sheets.
20. Membrane end lap corners must be cut on a bias (clipped or trimmed on an angle) prior to forming laps on all torch applied modified bituminous membrane roof systems.
21. Direct torch (open flame) to wood surfaces is NOT permitted. All wood surfaces, decks, walls, blocking, cants, etc., MUST be protected from torch (open flame) by an acceptable separation or overlay material.
22. All cant edge and parapet wall details must have membrane flashing (stripping) that overlaps the exterior finish (i.e., wall cladding) by a minimum of 50 mm (2"). Only fibre cants manufactured from non-combustible materials i.e.: perlite or fire-resistant fibreboard are acceptable for use on roof systems with torch applied membranes.
23. All roof flanges in contact with asphaltic membranes of any type shall be primed both sides with membrane manufacturers approved primer and embedded in a trowel coating of compatible mastic. Flanges are to be a minimum of 100 mm (4") wide.
24. All vent plumbing flashings shall be constructed of non-ferrous material.
25. All roof protrusion and penetration flashings, vents, curbs, sleepers, cable pipes, drains, etc. shall NOT be installed LESS than 200mm (8") from the base of walls, cants, eaves and other roof equipment, protrusion, and penetration flashings. The exceptions are overflow drains and roof scuppers that are installed through walls.
26. Strip-in type roof penetration flashings (lead, aluminum, stainless steel, copper, etc.) must be properly sized to fit pipe penetrations or alternatively, when pipes are irregular in size, spray foam urethane insulation may be used to fill gaps between pipes and flashings. Strip-in type roof penetration flashings are only permitted for use with single pipe roof penetrations, must incorporate properly fitted settlement caps, and be a minimum height of 200 mm (8") above finished roof surfaces. Pipes that are higher than standard flashings must have site formed non-bituminous flexible roof membrane storm collars sealed with compatible sealants and stainless-steel clamps. Where shrink-wrapped terminations are employed, they shall be fitted with a stainless-steel mechanical compression strap, and sealant shall be applied between shrink-wrap and penetration.
27. All strip-in flanges shall have fully soldered seams up to 200 mm (8") above roof level, and all open corners of flanges shall be filled in and soldered watertight. Flanges shall be mechanically attached on all nailable decks and unless specified otherwise adhered only to non-nailable decks, with a membrane compatible sealant.
28. All purpose-made multiple penetration flashings must provide a positive weather seal by use of manufacturer's proprietary rubber-based friction seals, mechanical clamps, or gooseneck type design, and be a minimum height of 200 mm (8") above finished roof surfaces.

29. All flange type roof drains shall be constructed of non-ferrous material and include a primary drain strainer. Flanged copper drains shall be formed from a minimum weight of 16 oz. sheet copper for external (on outside of walls) drains and 24 oz. sheet copper for internal (inside walls or buildings) drains. The minimum gauge for aluminum sheets to be used for roof drains shall be 20-gauge for external use and 12-gauge for internal use.

PART 1 - GENERAL

1.1 RELATED WORK

- .1 The following items of work related to work of this section are specified in the other sections as noted:
- Rough Carpentry
 - Modified Bituminous Roofing
 - Metal Flashing, Trim and Sealant

1.2 WORK INCLUDED

- .1 This Contractor shall furnish all labour, materials, and equipment necessary to remove all roofing materials, flashing, etc. as necessary to comply with the specifications, roof plans and details, as required to complete the Work.

1.3 SEQUENCE OF OPERATIONS

- .1 Demolition of existing roof system requires removal of roofing materials starting at the upper most roofs and working toward the lowest roof if applicable. Only remove as much of the existing roof as can be replaced in the same working day with the new roofing system. Leave the site in a safe and tidy condition at the end of each working day.

1.4 PROTECTION

- .1 Provide protection to landscaping, building and occupants.
- .2 Keep grounds clean from debris and during transport ensure debris is confined. Protect all roofing accessories removed for reinstallation. Failure to do so will result in the Contractor replacing these damaged items with new product at no cost to the Owner.
- .3 No removal or installation work shall be performed during rainy or inclement weather.
- .4 Arrange demolition work so that interference with the use of the building by the Owner is minimized.
- .5 Maintain safe access to and from occupied buildings.

- .6 Protect from damage all roof accessories removed during demolition, which will be reinstalled during application of the new roofing system.

1.5 DEBRIS

- .1 Arrange for a government approved disposal site and dispose of demolished materials away from the work site. All products of demolition are the property of the Contractor except as otherwise noted.

PART 2 - EXECUTION

ROOF AREAS

- .1 Removal of existing roofing to expose Wood Deck.
- .2 Remove all metal flashings in preparation for new.
- .3 Remove all roof jacks, plumbing vent flashings and drains in preparation for new.
- .4 Lift up or remove A/C units, curbed units, or any other rooftop equipment to ensure **proper** roof installation. Replace ensuring a proper seal and hookup unless otherwise noted.
- .5 Roofer is to install new drains that are SBS compatible and connect with MJ Clamps below the roof deck.

PART 1 - GENERAL

1.1 RELATED WORK

- .1 The following items of work related to the work in this section are specified in other sections as noted:
- Demolition
 - Modified Bituminous Roofing
 - Sheet Metal Flashing, Trim and Sealant

1.2 WORK INCLUDED

- .1 Work of this section includes supply and installation of rough carpentry as specified and as shown on the drawings and plans.

1.3 REFERENCE STANDARDS

- .1 British Columbia Building Code. (Latest edition)
.2 Canadian Standards Association (CSA)
CSA A101 – M1983 Thermal Insulation, Mineral Fiber, for Buildings
CSA 0141 – 1978 Softwood Lumber
CSA 0151 – M1978 Canadian Softwood Plywood
CSA B111 – 1974 Wire Nails, Spikes and Staples
CSA G164 – M1981 Hot Dipped Galvanizing of Irregularly Shaped Articles

1.4 SOURCE QUALITY CONTROL

- .1 Identification of lumber and plywood components shall be by a recognized visible grade Stamp of an agency certified by Canadian Lumber Standards Association Accreditation Board.

PART 2 - PRODUCTS

2.1 DIMENSIONAL LUMBER

- .1 Conforming to requirements of CSA Standard 0141 – 1978, Spruce, Fir, or Pine species, construction grade or better

2.2 BATT INSULATION

- .1 Batt Insulation shall be R12, friction fit, pre-formed type, fibrous glass complying with CSA A101 – M 1983

2.3 PLYWOOD

- .1 Conforming to requirements of CSA 0151 – 1978, exterior type, minimum 13 mm (1/2") **nominal** thickness unless otherwise stated.

2.4 METAL FASTENERS

- .1 Fasteners shall be in accordance with the requirements of the latest edition of British Columbia Building Code and shall conform to CSA Standard B111 – 1974, galvanized in accordance with CSA G164 – M1981.
- .2 Specialty fasteners such as toggle bolts, drive pins, expansion shields, screws, and plugs, etc., shall be selected for use as recommended by the fastener manufacturer.

PART 3 - EXECUTION

3.1 GENERAL

- .1 Comply with requirements of the latest edition of the British Columbia Building Code, Wood Frame Construction, except where otherwise specified.
- .2 Construct wooden elements from continuous members of longest practical lengths, uniformly spaced, true to line and elevations as specified and as shown on drawings.
- .3 All wooden elements such as wooden curbs, sleepers for roof mounted equipment, perimeter blocking etc. Shall be adequately fastened to the substrate to ensure all Roofing materials covering them are properly supported.

3.2 INSTALLATION

- .1 Supply and install wood curbs as required to house existing mechanical equipment and ensure that the curb height is a minimum of 203.2 mm (8") above the finished roof surface. Extension of interior sheet metal duct if required to be done by Roofing Contractor.
- .2 Parapet wall heights are to be increased where required when installing additional insulation to a minimum height of 139.7 mm (5.5 inches).
- .3 The top of parapets is to be sloped at 6%, **where required**.
- .4 Mechanically fasten 13 mm primed plywood at all concrete walls if contaminated.
- .5 All substrates are to be suitable for membrane application. Any non-conforming substrates are to be replaced, and consultants are notified of the change required. The change order, with additional costs, will be issued.

MODIFIED BITUMINOUS

PART 1 - GENERAL

1.1 RELATED WORK

- .1 The following items of work related to the work of this Section are specified in other Sections as noted:
 - Demolition
 - BUR Removal
 - Rough Carpentry
 - Sheet Metal Flashing
 - Trim and Sealant

1.2 WORK INCLUDED

- .1 Work of this Section includes supply and installation of Modified Bituminous Roofing System as specified in these documents and shown in the drawings inclusive.

1.3 REFERENCE STANDARDS

- .1 Publications listed below form part of this specification as it relates to materials or products herein specified.

Canadian Standard Association (CSA)
Canadian General Standards Board (CGSB)
British Columbia Building Code

1.4 DELIVERY, STORAGE & HANDLING

- .1 Deliver materials in original containers, sealed with identification intact. Keep the materials elevated off the ground and roof surface.
- .2 Protect the material from weather and store rolled material on end, one-pallet high, with selva edge up.
- .3 When storing materials and equipment on the roofing deck, ensure decking adequately supports the load.
- .4 Roofing materials damaged by improper storage or handling will be rejected and Contractor shall remove them from site.
- .5 Store membrane rolls in heated enclosures prior to use where climate conditions warrant and as recommended by the manufacturer: bring only enough rolls for immediate use to work area.

1.5 REFERENCE STANDARDS

- .1 Conform to the RCABC “Guarantee Standards” and to the appropriate ASTM, CSA and CGSB Standards for the materials used in the roofing system specified. Unless otherwise specified acceptable materials are listed in Section 2.2 of the RCABC RPM.
- .2 Conform to CSA wind uplift Standards for mechanically fastened systems.

1.6 MATERIALS

- .1 Primers as recommended by membrane manufacturer.
- .2 Separator Sheet: shall be non-combustible torch safe material to meet membrane manufacturers and RCABC’s safety and warranty requirements. Minimum requirement is # 40 asphalt coated fiberglass base sheet to meet CAN/CAS – A123.8 (R1996) or equal.
- .3 Vapour Retardant: self-adhere bituminous membrane (IKO M.V.P., Soprapap’R by Soprema or equal).
- .4 Asphalt: Conforming to CSA 123.7 Type 3 – Mastic: Conforming to CSA 123.7 type 3.
- .5 Cold Adhesive: Two-part polyurethane adhesive as recommended by Manufacturer. Acceptable Manufacturer: Duotack by Soprema, IKO Millennium Adhesive or equal. Apply adhesive in accordance with Manufacturer’s requirements to meet specified wind up-lift performance.
- .6 Torchable Protection Board: shall be a **3/16 inch** (6.35mm) semi-rigid Torchable asphaltic board of a mineral fortified asphaltic core formed between 2 asphaltic saturated fiberglass liners or equal.
- .7 Mechanical Fasteners: Screw and plate type to meet the membrane Manufacturer’s **minimum**-fastening requirement.
- .8 Insulation: shall be glass-faced Polyisocyanurate foam, conforming to CAN/CGSB-51.26-m86.
- .9 Base Membrane: Field & Stripping SBS modified bitumen, thickness 3.0 mm, weight minimum 3.6 kg/m², polymer content minimum 12%, reinforcement woven glass fiber scrim or 180g/m² polyester conforming to CGSB-GP-56M, Type 2, Class C, Grade 2. Torchable surfaces on both sides.
(Sopralene Flam 180 base by Soprema, IKO TP-180-FF or equal).
- .10 Cap and Cap Sheet stripping: Minimum 4.0 mm thick, 12% SBS modified bituminous membrane; minimum 4.8 kg/m² total weight with 250 g/m² non-woven polyester reinforcing; polypropylene bottom surface and granular top surface; for torched application; conforming to CGSB 37-GP-56M 1985, Type 1 Class A Grade 2 **(Sopralene Flam 250 GR Cap sheet, IKO TP-250 Cap or equal).**
- .11 Membrane Adhesive: Use membrane Manufacturers recommended compatible adhesive for adhesion of membrane to accessories.

- .12 Metal Flashing: Shall be 26-gauge steel, galvanized, colors to match existing and as approved by consultant. Fasteners: Non-corrosive fasteners, compatible with materials to which they are fastened, with neoprene backed washers.
- .13 Plumbing stacks: Extruded aluminum, conical type complete with vandal resistant caps, which are permanently fixed to the top off plumbing stacks. Provide pipe extensions to extend plumbing vent pipes as required. Where installing one-piece flashing is not practical, pre-manufactured split flashings are to be used. Pipes that are higher than standard flashings must have site formed non-bituminous flexible roof membrane storm collars sealed with compatible sealants and stainless-steel clamps.
- .14 Drains: New drains are to be spun copper and attached to the existing pipe with U-flow connections. Flash-Tite Super Drains or Proliner by Marathon is an approved substitution.
- .15 Flashing nails or screws: To wood – galvanized roofing nails, to concrete – screw/plug type in pre-drilled holes. All exposed fastening to match color of flashing.
- .16 Caulking: Single component elastomeric or polysulphide, color to match.
- .17 Roof Walkways/Splash Pads: Proprietary walkway-specific product by membrane manufacturer **(use a contrasting color)**.
- .18 Liquid membrane Flashing: Alsan Flashing by Soprema or other Manufacturers' equal.
- .19 Penetration Flashing System: Inter Clip by Soprema or equal by IKO or Purpose Made Flashings by Roofing Contractor.
- .20 Pipe Supports: Quick Block by Pipe-Ease Inc. or an approved substitution.
- .21 Mastic: Conforming to CSA 123.7 Type 3.

3.1 GENERAL PREPARATION

- .1 Before commencing work, ensure environmental and site conditions are suitable for installation of roofing materials.
- .2 Ensure that the deck and substrate are clean, dry and of sufficient strength to withstand construction traffic and equipment loads.
- .3 Notify Consultant of unsuitable surfaces or conditions. Commencement of work shall imply acceptance of surface and conditions.
- .4 Prime wood, concrete and metal surfaces where bituminous membrane is to be installed using asphalt primer at a rate of 300 sq. ft. per gallon (4.0 m² per liter) allowing it to dry.
- .5 If applicable cut siding at roof/wall junction to accommodate membrane flashings. Cut to be straight and neat.
- .6 The roofing Contractor is responsible for damage to wiring conduits through the application of mechanical fastening into the deck. Roof Contractor must make every effort to map out the conduit layout if a risk of potential puncture damage is evident. A change in application technique will be considered if the risk of puncture damage is too high prior to the job start up.

3.2 MODIFIED BITUMENT ROOFING MEMBRANE (ALL SECTIONS)

.1 Base Sheet Membrane (Torch Applied)

Following manufacturer's recommendations fully torch weld base sheet to Torchable recovery board. Beginning at the drains and perpendicular to the slope, install the base sheet, dry and in parallel courses.

Working up the slope, install each course of base sheet. Lap side joints a minimum of 300mm, and end joints a minimum of 150mm. Stagger end joints a minimum of 300mm.

Direct propane torch along underside of roll, melting the surface modified bitumen: preheat seam of previous roll concurrently.

Unroll membrane as modified bitumen melts. Push first roll back after starting to check for full bonding of the membrane: adjust torching and speed accordingly: avoid stopping and starting, which may cause voids or insufficient bonding.

If the base sheet stripping is not to be installed immediately after the application of the base sheet field, then install it approximately 2" higher on the upstands or install fire stop membrane prior to installing the base sheet.

.2 Base Sheet Stripping

At all combustible perimeter edges. Roof/wall junctions and curbed penetration details, mechanically fasten 1 layer of Torchable protection board with fire tape prior to torch application of SBS base stripping membrane.

Carry the membrane 4" onto the horizontal surface (8 inches for IKO) and up any vertical walls a minimum of 8 inches.

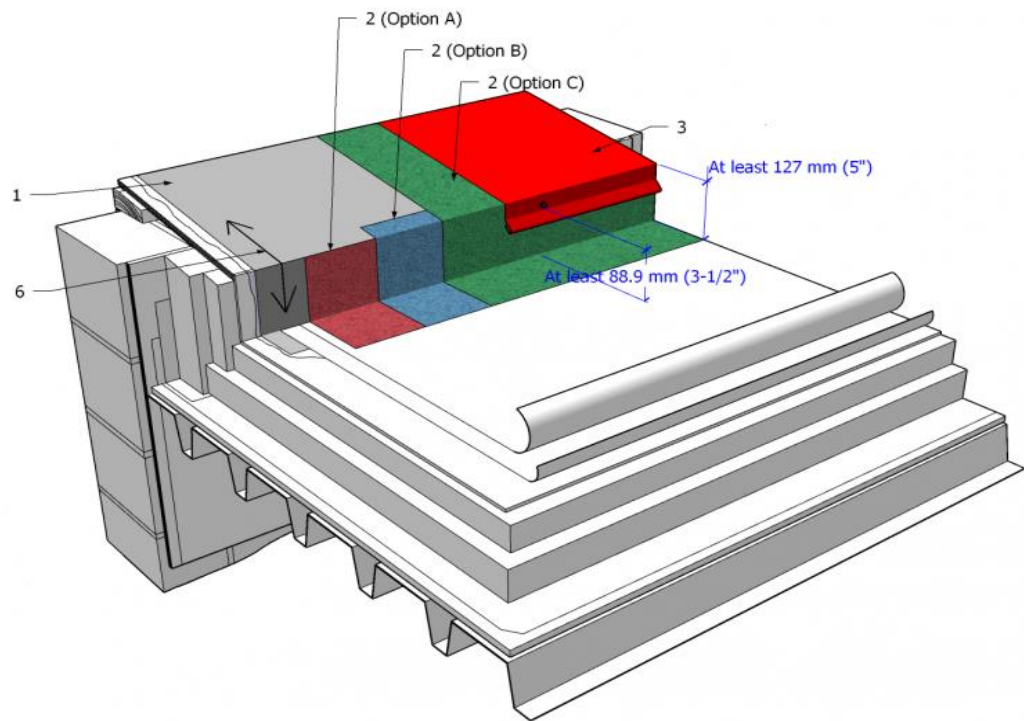
On parapet walls continue the membrane over the parapet and down the fascia a minimum of 2" where it is to be nailed 12" o/c.

Mechanically fasten the top of membrane flashing 12" o/c on all vertical walls.

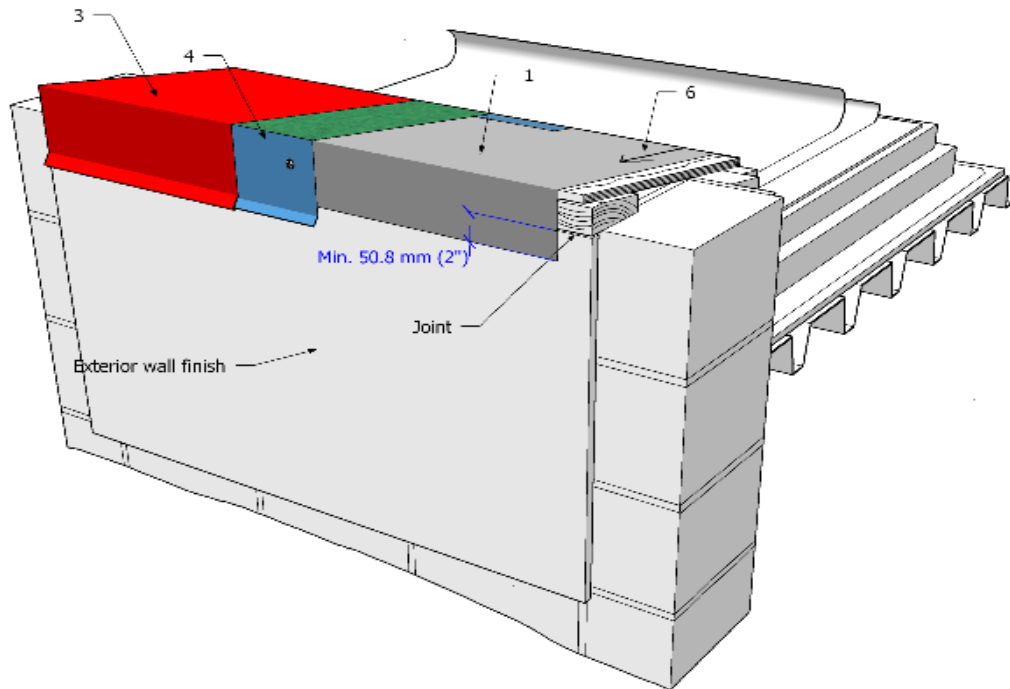
Install gussets at all inside and outside corners.

Install reinforcement membranes diagonally (45 degrees) around drains and all penetrations.

Note: Contaminated or rough vertical surfaces must be covered by a minimum 9.5mm (3/8") nominal thick plywood sheathing overlay.



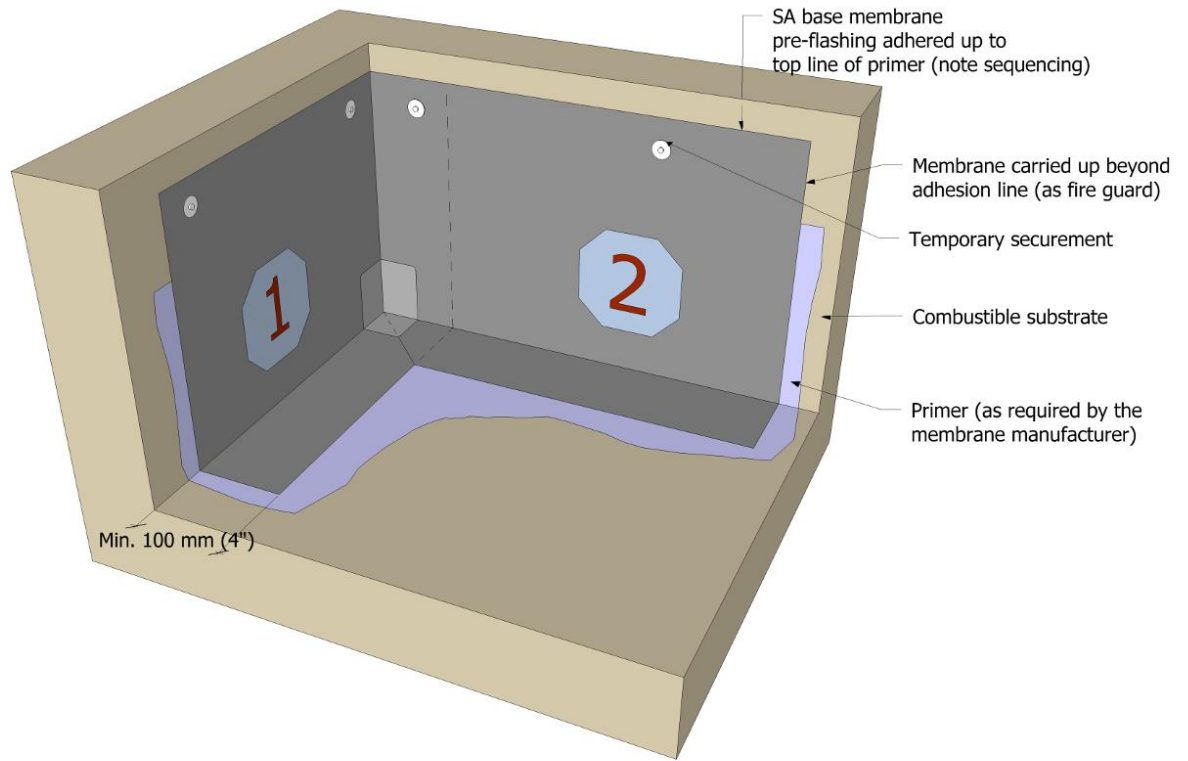
Reference RCABC



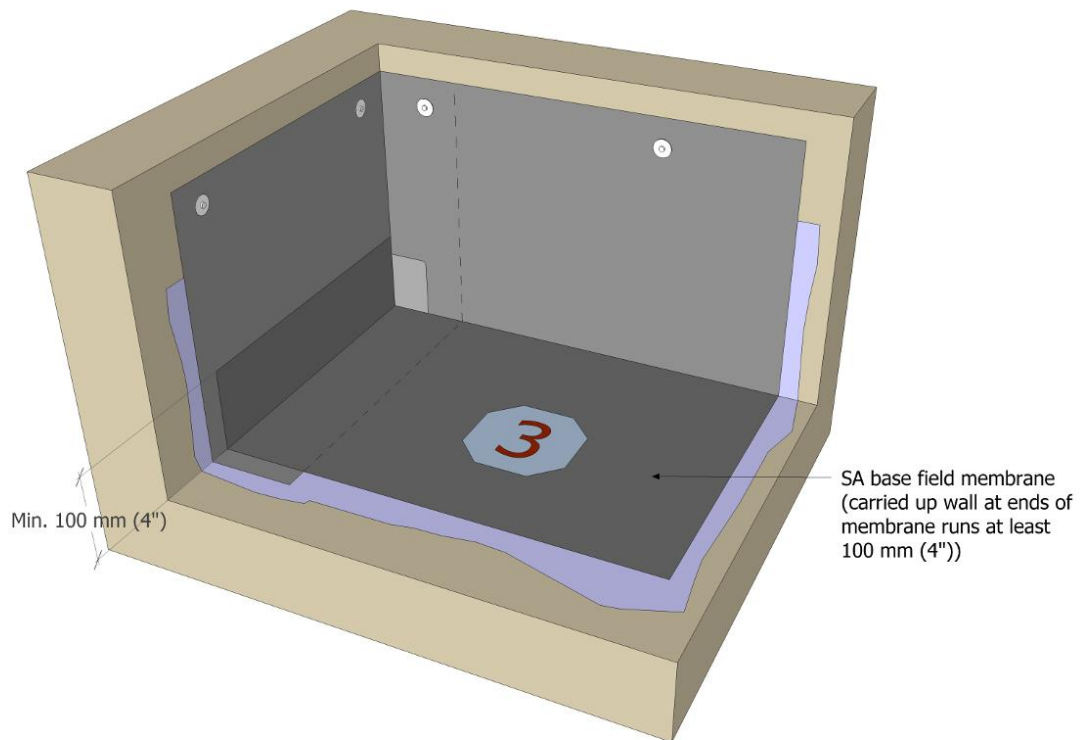
2.1 Base Sheet Stripping (Optional Methods)

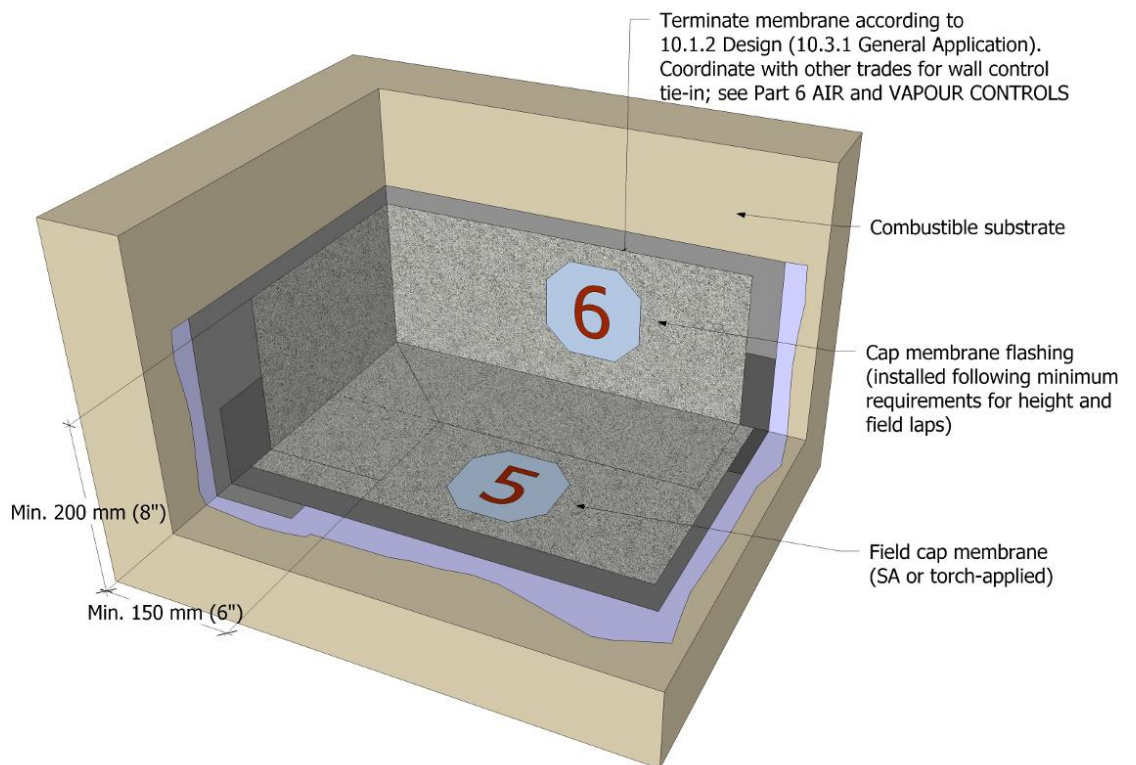
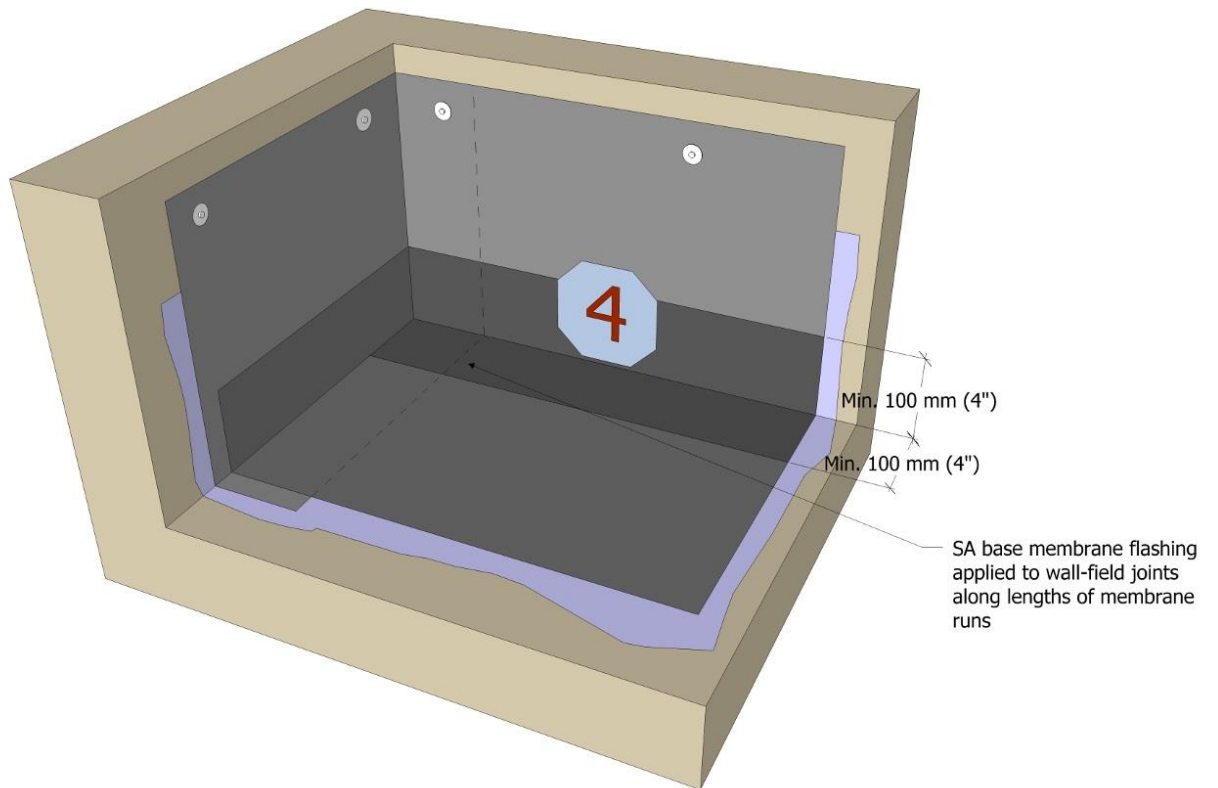
Alternate Membrane Flashing Approaches

1. When field membranes or flashing plies are heat-welded, or if required by construction sequence, site personnel must assess the best approach.
2. The Project design and installation may incorporate one or more of the following alternatives to conventional membrane flashing methods:
 - a. **Pre-flashing Approach:**
 - i. Before installing the base field membrane, self-adhering or adhesive-applied base membrane flashing (“pre-flashing”) must be applied to both vertical surfaces and to a suitable substrate on the roof field
 - ii. Base membrane flashings must be finished and “battered” at the joints using a hot-air welder
 - iii. Base membrane flashing plies must extend
 - 1) no less than 100 mm (4”) onto the roof field
 - 2) no less than 200 mm (8”) on walls or tall parapets, or to fully cover parapets up to 600 mm (24”) in height
 - iv. The ends of field membrane run, applied after base membrane flashing, must continue up the face of the wall or parapet at least 100 mm (4”)
 - v. Additional base membrane flashing must be installed along the lengths of base field membranes, applied to the vertical surface and onto the roof field at least 100 mm (4”)
 - vi. Cap field and flashing membranes must be installed in keeping with RCABC General Application standards
 - vii. All other applicable Standards in this Manual apply

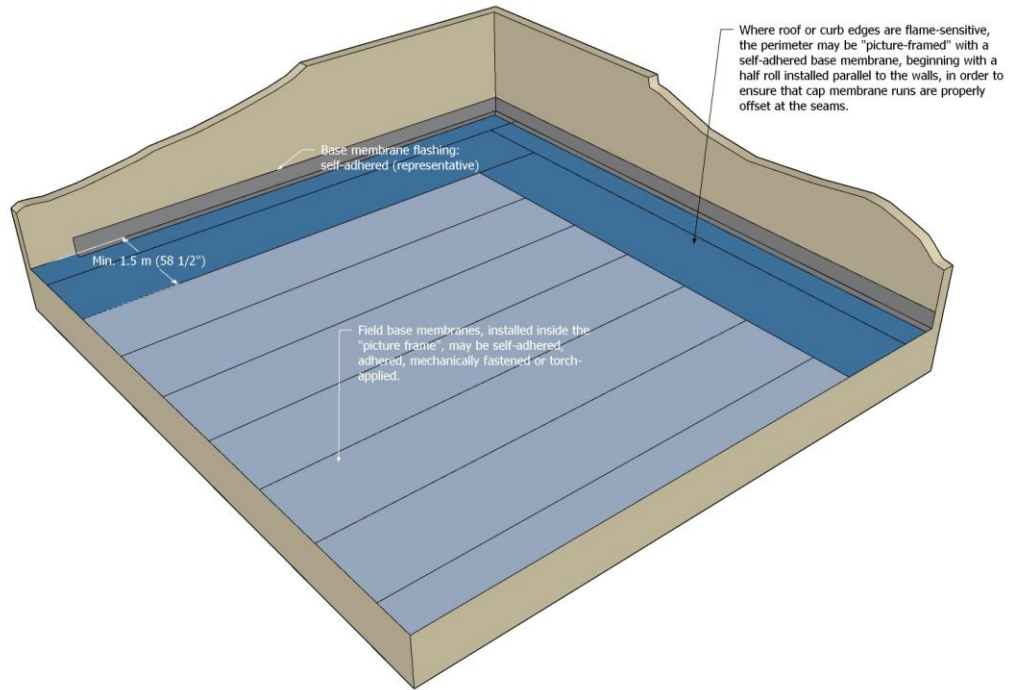


Reference RCABC

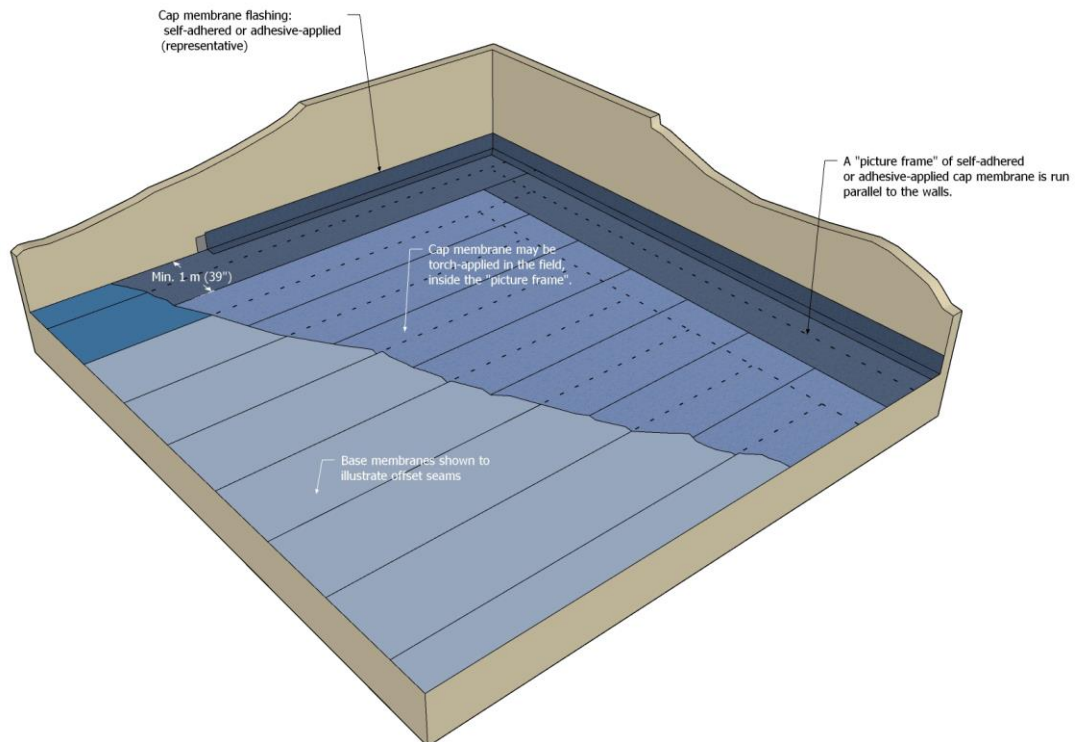




- b. **Picture-frame Approach:**
- i. Before installing the base field membrane, “picture-frame” the field area adjacent to risk areas with self-adhering or adhesive-applied membranes, to a width of at least 1.5 m (58 ½”), beginning with a half-width sheet along the roof edge
 - ii. Perimeters must be flashed with self-adhering or adhesive-applied membrane base flashing. Base membrane flashing plies must extend
 - 1) no less than 100 mm (4”) onto the roof field
 - 2) no less than 200 mm (8”) on walls or tall parapets, or to fully cover parapets up to 600 mm (24”) in height
 - iii. Field base membrane must be installed and tied into the “picture frame” following the RCABC General Application standards for side and end laps
 - iv. Standard application of cap field membranes must be carried no closer than 1 m (39”) of the wall or parapet
 - v. Self-adhering or adhesive-applied cap membranes must be applied to complete the field. The side and end laps must be heat-sealed with a hot-air welder
 - vi. Self-adhered or adhesive-applied cap membrane flashing must be applied to parapets or walls, in keeping with RCABC General Application standards for membrane flashing. The side and end laps must be heat-sealed with a hot-air welder
 - vii. All other applicable Standards in this Manual apply



Reference RCABC



.3 Cap Sheet and Cap Sheet Stripping

Following manufacturer's recommendations fully torch weld granular cap sheet to base sheet and terminate. Fully unroll each roll and allow the sheet sufficient time to relax (minimum 15 minutes regardless of temperature). Re-roll approximately half the membrane into a firm roll. Direct propane torch along underside of roll, melting the surface modified bitumen; preheat seam of previous roll concurrently. Unroll membrane as modified bitumen melts.

Push first roll back after starting to check for full bonding of the membrane; adjust torching and speed; accordingly, avoid stopping and starting, which may cause voids or insufficient bonding. Bevel "T" joints at roll ends and repair "fish mouths" using a torch-heated trowel. Re-roll opposite end and repeat the process.

Lap side and end joints as per manufacturer's recommendations staggering joints between plies of membrane so that at no location will the distance between joints of the two plies be less than 12". Embed granules at end laps of torched cap sheets; use a torch to soften the bitumen and a heated trowel to push the granules into the bitumen; do not scrape granules away.

Cut membrane in 1 m (39") wide, the roll width, by the length required to suit detail. Cap sheet membrane stripping is to be torch installed to all at vertical surfaces as per membrane manufacturer's recommendations extending a minimum of 6" from the bottom of the vertical termination onto the flat surface.

Install Liquid membrane flashing, or any sealant recommended by the membrane manufacturer to all top edges of the stripping plies that terminate on vertical walls, planters, or parapets.

3.3 GENERAL MODIFIED BITUMEN APPLICATION PROCEDURES

1. For aesthetics asphalt bleed-out at seams should be a minimum of 3 mm to a maximum of 8 mm and should have granule embedment directly behind torch application if cap sheet is burned or overheated.
2. Using compatible cold adhesive, caulk cap membrane terminations at flanged penetrations.
3. Provide a smooth application, free of air pockets, fish mouths, wrinkles, or tears.
4. Repair any un-bonded areas in membrane field using full roll width of cap sheet extending 12" beyond repair area.

3.4 ACCESSORIES

- .1 Install new aluminum plumbing stack flashings with caps, size to be compatible with pipe penetrations.
- .2 Install new drains (c/w U-flows), and prefinished downspouts as required. See drawings for location or site instructions will be given.
- .3 Embed all flanges as required by membrane manufacturer in a trowel coating of membrane compatible mastic.
- .4 Lift up or remove A/C units, curbed units, or any other roof top equipment to ensure proper roof installation. Replace with owner to ensure a proper seal and hookup.
- .5 Ensure all curb heights are to be at a minimum of 200mm (8 inches) above the finished roof surface. Extension of interior sheet metal ductwork if required is to be done by the Roofing Contractor.
- .6 Replace all gum pans with Purpose Made Flashings or pre-molded curbs with pourable sealant. See Roof Plan, Detail Drawings or review site instructions given at the Mandatory Site Visit for more instructions.

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED IN OTHER SECTIONS

- .1 The following items of work related to the work of this section are specified in other sections as noted:
- Demolition
 - Rough Carpentry
 - Modified Bituminous Roofing

1.2 WORK INCLUDED

- .1 Work of this section includes supply and installation of wall cladding, sheet metal flashings, trim and caulking as specified and as shown on Drawings.

1.3 REFERENCE STANDARDS

- .1 Most recent publications listed below form part of this Specification to the extent specified in this section:
- .1 British Columbia Building Code.
 - .2 American Society for Testing and Materials (ASTM)
 - A525M-86 Steel Sheet, Zinc Coated (Galvanized) by the Hot Dip Process, General Requirements (Metric)
 - A526M-85 Steel Sheet, Zinc Coated (Galvanized) by the Hot Dip Process, Commercial Quality.
 - A446M-80 Steel Sheet, Zinc Coated (Galvanized) by the Hot Dip Process, Structural (Physical) Quality.
 - .3 Canadian Standards Association (CSA)
 - CSA Bill – 1974 Wire Nails Spikes and Staples.
 - CSA B164 – M1981 Hot Dipped Galvanizing of Irregularly Shaped Articles.

PART 2 - PRODUCTS

2.1 PRE-FINISHED STEEL SHEET

- .1 Pre-finished sheet metal flashing and trim shall be fabricated from sheet steel conforming to ASTM A446M-80, structural quality, based steel nominal thickness of 0.46 mm (26 ga) minimum and a zinc coating designation of z275 complying with ASTM A525M-86. Baked on enamel finish shall be 5000 series coating selected from Manufacturer's standard colors.

2.3 FASTENERS

- .1 Fasteners shall be in accordance with the requirements of the B.C. Building Code and shall comply with CSA B111-1974, galvanized to CSA G164-M1981.

2.4 FABRICATION

- .1 In accordance with the details of this specification and
- .2 Maximum flashing lengths to be 3000 mm (10') formed on a bending brake to ensure accurate dimensions and bend angles free from distortion and waves.
- .3 Hem exposed sheet metal flashing edges, do not leave raw cut edges.
- .4 Fabricate sheet metal accessories with continuous deck flanges a minimum 101.6 mm (4") wide with no open corners.
- .5 All metal to be joined by "S" locks or standing seams; no lap joints will be permitted.
- .6 Remove flux residue from any soldered joints required during fabrication.
- .7 Protect pre-finished components from damage to their paint coating during fabrication, delivery to job site and installation.

PART 3 - EXECUTION

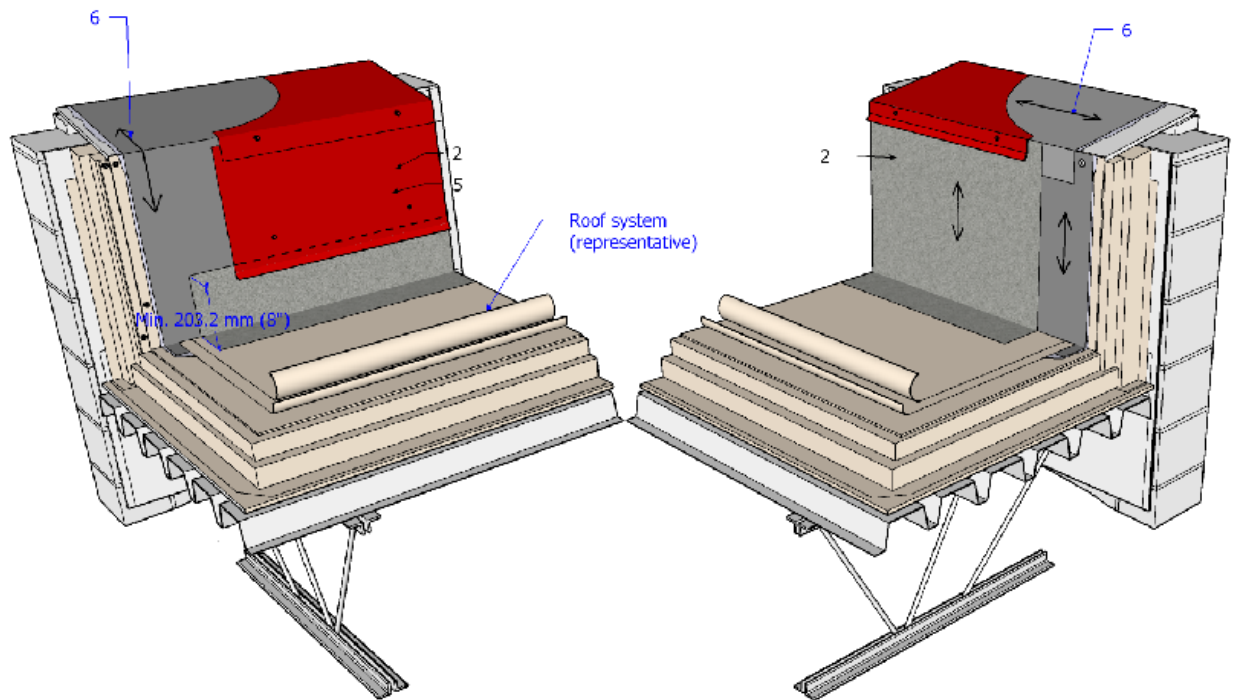
3.1 INSTALLATION

- .1 Install sheet metal flashing and trim in accordance with RCABC minimum standards for 10-year warranty and this specification.
- .2 Sheet metal flashings and trim shall cover bituminous flashings installed at roof perimeters and at intersections with vertical surfaces unless otherwise noted. Install sheet metal flashings and trim as soon as practical after application of bituminous membrane flashing to protect them from mechanical damage and/or ultra-violet degradation.
- .3 Install sheet metal flashings level and true to line, free from distortion or oil canning.
- .4 Where roof surface slopes, install metal flashings in a uniform slope parallel to roof slope.

- .5 Install sheet metal flashings so one end of each flashing section is free to move. Do not caulk flashing end joints.
- .6 Fasten flashing with approved fasteners. Ensure fasteners are installed a minimum of 200 mm (8") wherever possible. Conceal fasten sheet metal flashings unless otherwise approved.
- .7 Where indicated, caulk joints between upper termination of sheet metal wall flashings. Apply sealant in accordance with manufacturer's application instructions.
- .8 Clean and prime surfaces to receive sealant as required by sealant manufacturer. Install joint filler rod, if required, to achieve correct joint depth. Apply joint sealant using caulking fin with appropriately sized nozzle using sufficient pressure to apply a continuous bead of sealant to completely fill joint without breaks or voids.
- .9 Sheet metal accessories to be incorporated into a modified bitumen roofing system shall have their deck flanges installed as per the individual membrane system manufacturer's application procedures.
- .10 Cut reglet into concrete wall 75 mm (3/4") in depth 10 inches to 12 inches maximum to concrete walls above roof surfaces and install metal counter flashings where required.

3.2 SCUPPERS AND RAINWATER LEADERS

- .1 Install minimum 150 mm wide scuppers (spun aluminum or copper) with 3-inch flanges at locations as indicated on the roof plan and recess a minimum of 13 mm (1/2").
- .2 Connect Pre-finished 100 mm diameter rainwater leaders to each scupper and securely fasten into position. Install goosenecks back to building walls as required and mechanically fasten rainwater leaders to walls at 1200 mm (4 ft.) centers maximum. Do not install rainwater leaders across window openings. Ensure all connections are watertight.
- .3 Provide splash pads at outlets discharging onto roofing systems.



Reference RCABC

(3) **Metal Cap Flashing**

Designed and installed as required in Part 13 and secured on the outside face with a metal cleat (see Article 13.3.2.1., “General Requirements for Linear Metal Flashings”). Gasketed screw fasteners shown on the inside face of the flashing.

(4) **Securement cleat**

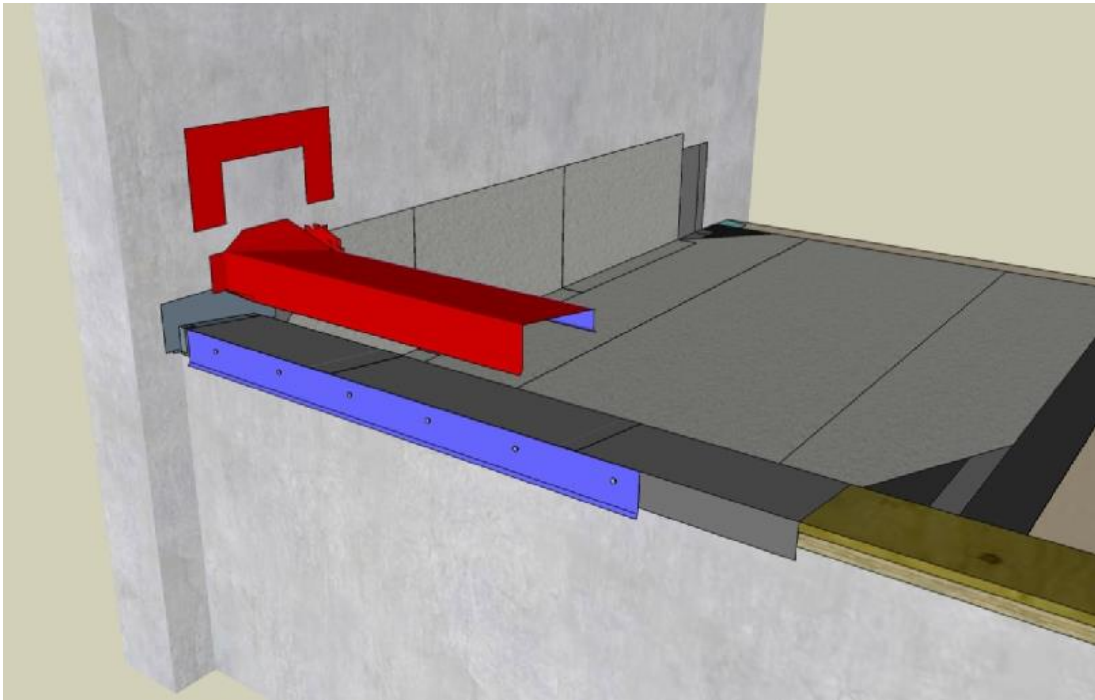
Wind Clip.

(5) **Counter-flashing**

Required if membrane on inside surface of parapet is not protected from UV light (granule-surfaced membrane is considered UV resistant; Ref. Drawing (A1)). The illustrated flashing underlaps the cap flashing and is secured to the inside face of the parapet with S-locked seams and additional gasketed fasteners; all fasteners must be located at least 88.9 mm (3-1/2”) above the finished roof system surface. Counter-flashing may be removed for future sheet membrane renewal.

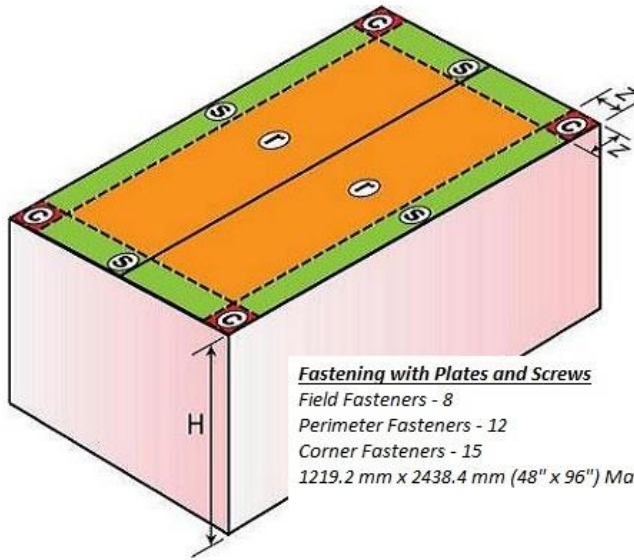
(6) **Machine direction**

Membrane oriented in the direction of manufacturing.



Reference RCABC

Membrane and Metal Saddles Required



Fastening with Plates and Screws
 Field Fasteners - 8
 Perimeter Fasteners - 12
 Corner Fasteners - 15
 1219.2 mm x 2438.4 mm (48" x 96") Material Dimension

Factored Wind Loads for Roof Cladding

Roof area **Wind load**
 End zone width, Z 5.9 ft
 Corner -36 psf
 Edge -17 psf
 Field -12 psf

Building Parameters

Building Location: Nelson, British Columbia

Building Geometry

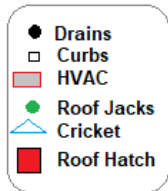
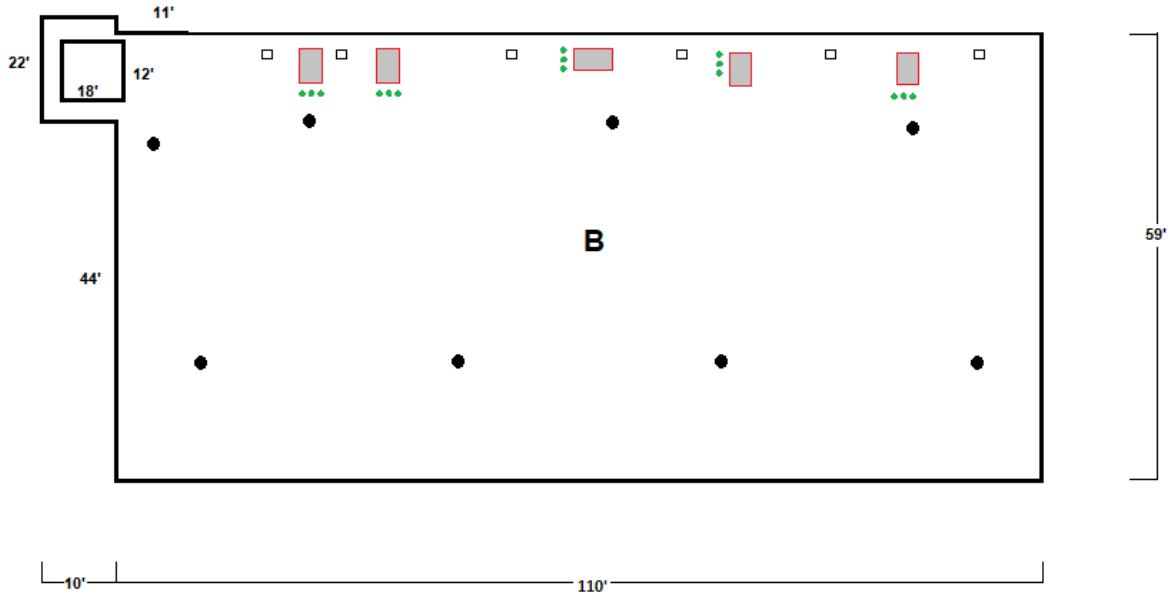
Roof type: Low-rise building, Low-slope roof
 Height (reference height): 15 ft
 Width (smaller plan dimension): 59 ft
 Length: 110 ft
 Height of perimeter parapet: 2 ft
 Building exposure: Rough
 Building openings: Category 1
 Building importance: Normal

Conversion Unit: 1 ft = 0.3048 m, 1 psf = 47.88 Pa, 1lb/ft2 = 4.8824 kg/m2)

New Roof System

- Existing 5/8" T & G Plywood Deck
- Existing Dry Ply
- Existing Sloped EPS Insulation
- New 2" Polyiso Insulation
- 3/16" Asphaltic Cover Board - Mechanically Fastened
- 180 Base Membrane - Fully Torched
- Self-adhered Base Membrane Flashings
- 250 Cap Sheet - Fully Torched

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|---|--|
| Project: RDCK Adminstration Office | Address: 202 Lakeside Drive, Nelson, BC |
| PACIFIC INTERIOR ROOF CONSULTING & INSPECTION LTD 1962 COVINGTON CRESCENT WEST KELOWNA, BC V1Z 3M2 PH: 778-755-3320 | Title: Wind Uplift Calculation |
| | Drawn By: ABK |
| | Drawing #: 001 |
| | Date: 2024-11-02 |



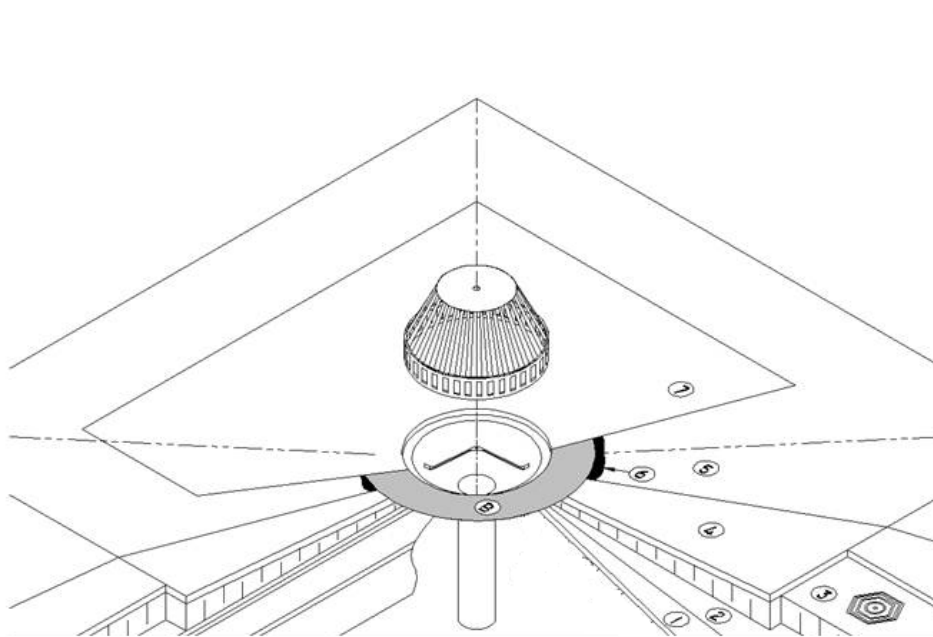
Existing Roof System

- Plywood Deck
- Dry Ply
- 2% Sloped Rigid Insulation
- 4 Ply BUR

New Roof System

- Plywood Deck
- Dry Ply
- Existing 2% Sloped Insulation
- 2 Layers 3/16" Asphaltic Cover Board - Mechanically Fastened
- 180 Base Membrane - Fully Torched
- Self-Adhered Base Membrane Flashing
- 250 Cap Sheet Membrane - Fully Torched

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| Project: RDCK Administration Office | Address: 202 Lakeside Drive, Nelson, BC |
| PACIFIC INTERIOR ROOF CONSULTING & INSPECTION LTD 1962 COVINGTON CRESCENT WEST KELOWNA, BC V1Z 3M2 PH: 778-755-3320 | Title: Section B Roof Plan |
| | Drawn By: ABK |
| | Drawing #: 002 |
| | Date: 2024-11-02 |

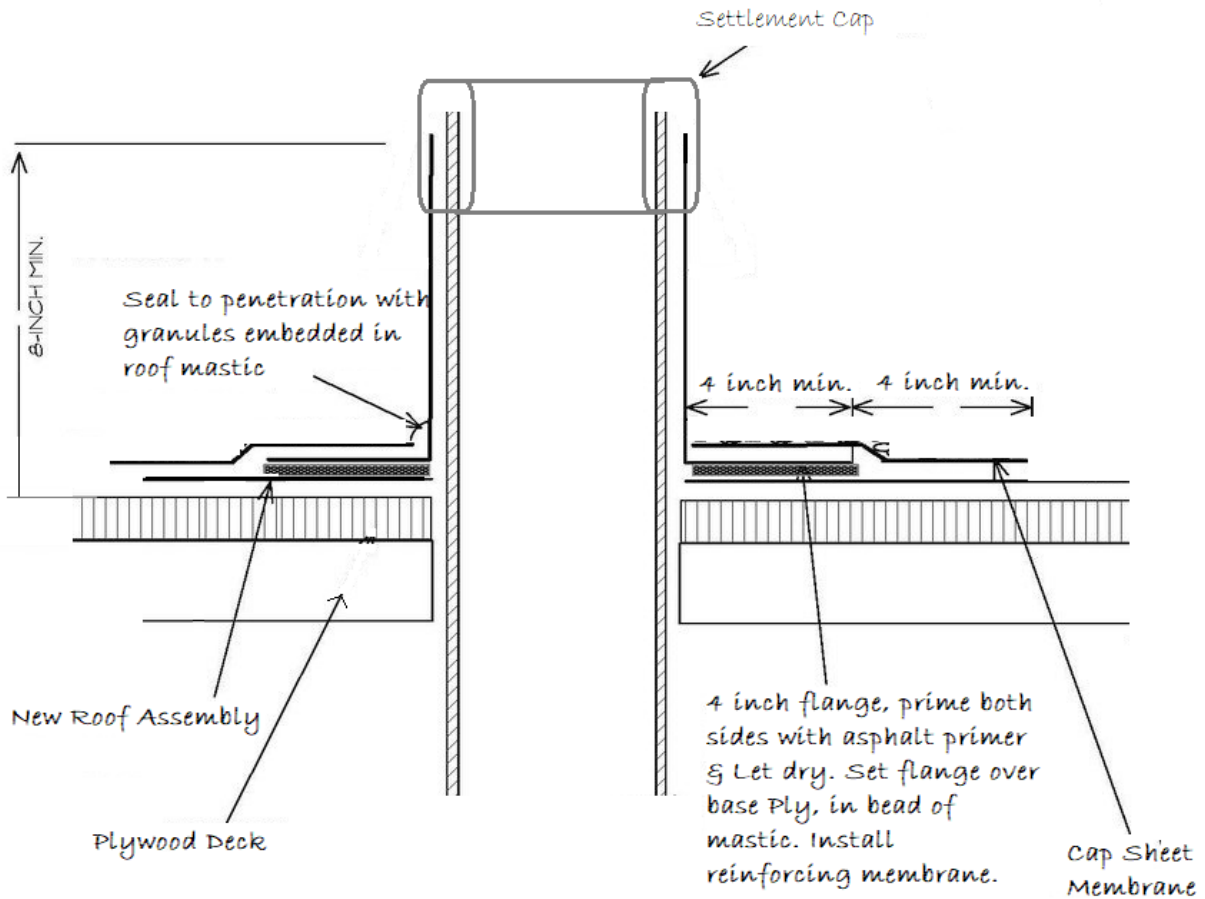


NEW COPPER SPUN DRAIN ASSEMBLY

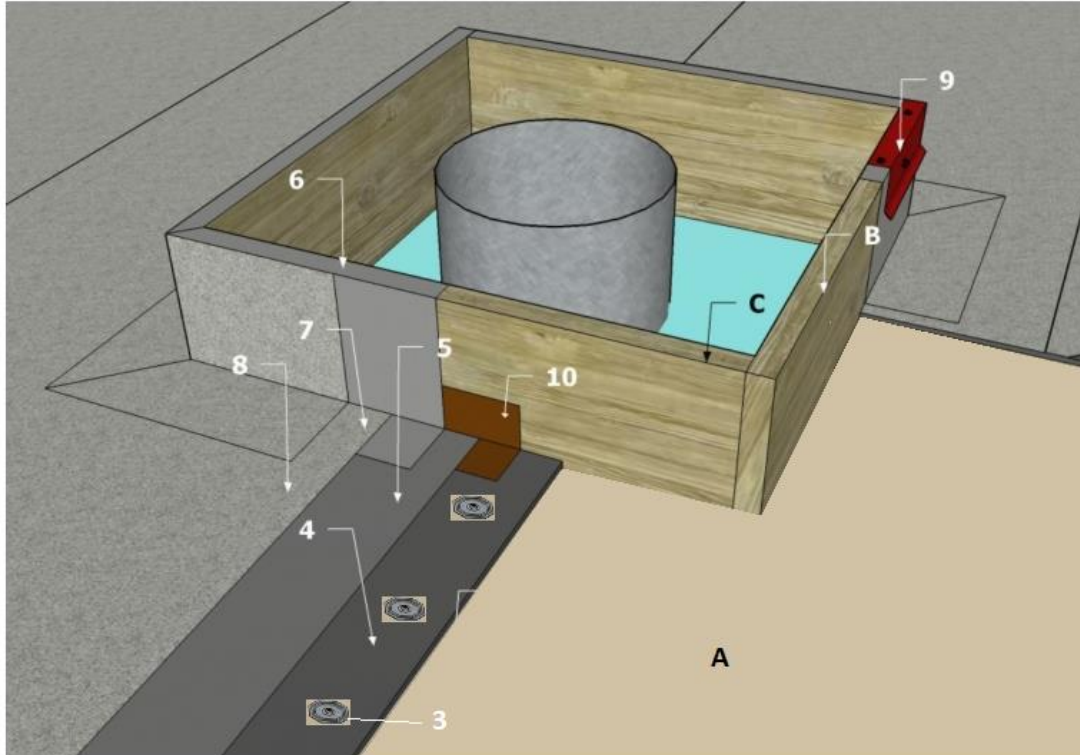
B - New Copper Spun Drain with MJ Clamp Connection

1. Wood Deck
2. Dry Ply
3. Sloped Rigid Insulation
4. Two Layers 3/16" Asphaltic Cover Board - Mechanically Fastened
5. 180 Base Membrane
6. Drain Flange Embedded in Mastic
7. 180 Base Membrane Reinforcing Target Patch

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| Project: RDCK Administration Office | Address: 202 Lakeside Drive, Nelson, BC |
| PACIFIC INTERIOR ROOF CONSULTING & INSPECTION LTD 1962 COVINGTON CRESCENT WEST KELOWNA, BC V1Z 3M2 PH: 778-755-3320 | Title: Drain Assembly |
| | Drawn By: ABK |
| | Drawing #: 003 |
| | Date: 2024-11-02 |



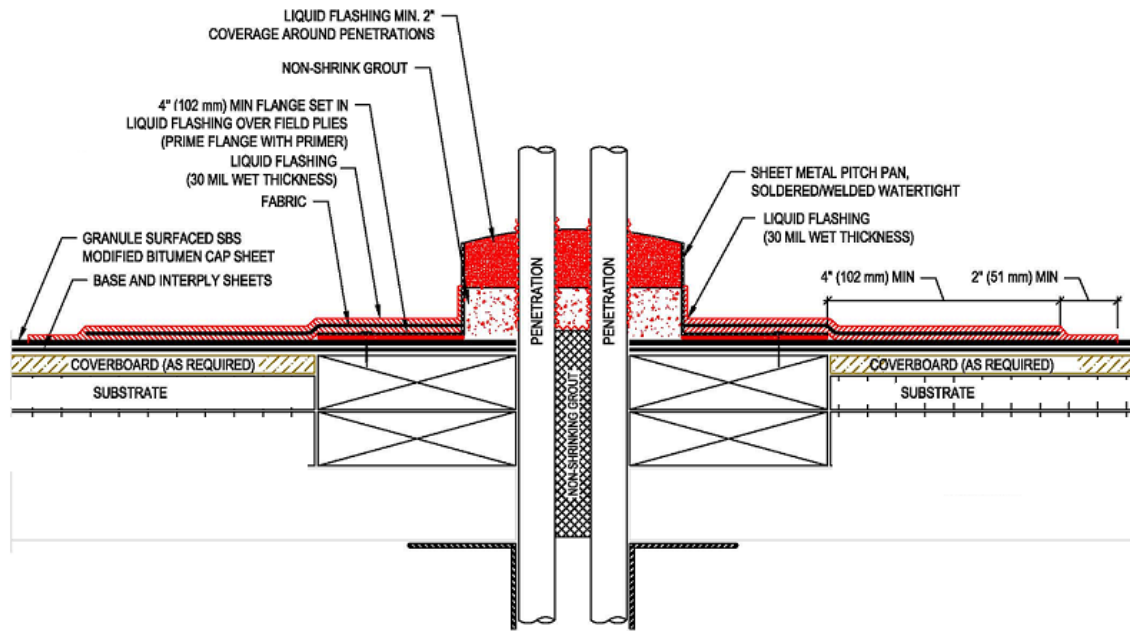
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| PACIFIC INTERIOR ROOF CONSULTING & INSPECTION LTD 1962 COVINGTON CRESCENT WEST KELOWNA, BC V1Z 3M2 PH: 778-755-3320 | Title: Penetration Detail |
| | Drawn By: ABK |
| | Drawing #: 004 |
| | Date: 2024-11-02 |



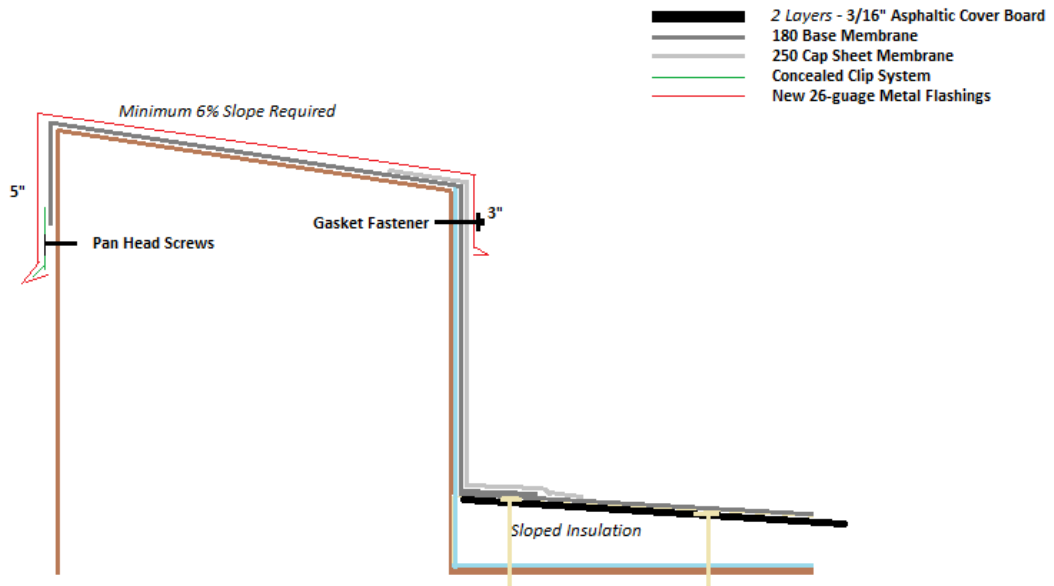
CONSTRUCTION DETAILS
 A - Wood Deck
 B - Liquid Adhesive
 C - New Cub Construction

ASSEMBLY DETAILS
 3. Plates and Screws
 4. 3/16" Asphaltic Cover Board
 5. 180 Base Membrane (Fully Torched)
 6. Self-Adhered Base Membrane Flashing
 7. 250 Granulated Cap Sheet Membrane (Fully Torched)
 8. Cap Sheet Stripping Membrane
 9. New 26 Gauge Metal Cap Flashing
 10. Fire Tape

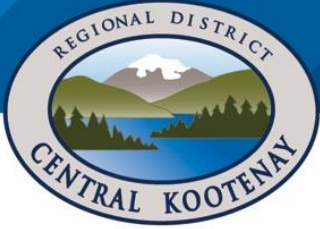
| | |
|---|--|
| Project: RDCK Administration Office | Address: 202 Lakeside Drive, Nelson, BC |
| PACIFIC INTERIOR ROOF CONSULTING & INSPECTION LTD 1962 COVINGTON CRESCENT WEST KELOWNA, BC V1Z 3M2 PH: 778-755-3320 | Title: Curb Detail |
| | Drawn By: ABK |
| | Drawing #: 005 |
| | Date: 2024-11-02 |



| | |
|--|--|
| Project: RDCK Administration Office | Address: 202 Lakeside Drive, Nelson, BC |
| <p><i>PACIFIC INTERIOR ROOF CONSULTING & INSPECTION LTD</i> 1962 COVINGTON CRESCENT WEST KELOWNA, BC V1Z 3M2 PH: 778-755-3320</p> | Title: Precurbs & Pourable Sealer |
| | Drawn By: ABK |
| | Drawing #: 006 |
| | Date: 2021-03-14 |



| | |
|---|---|
| Project: RDCK Administration Office | Address: 202 Lakeside Drive, Nelson, BC |
| <p>PACIFIC INTERIOR ROOF CONSULTING & INSPECTION LTD 1962 COVINGTON CRESCENT WEST KELOWNA, BC V1Z 3M2 PH: 778-755-3320</p> | Title: Perimeter Detail #1 |
| | Drawn By: ABK |
| | Drawing #: 007 |
| | Date: 2024-11-02 |



APPENDIX B

PROJECT PHOTOS

INVITATION TO TENDER

RDCK LAKESIDE OFFICE ROOF REPLACEMENT



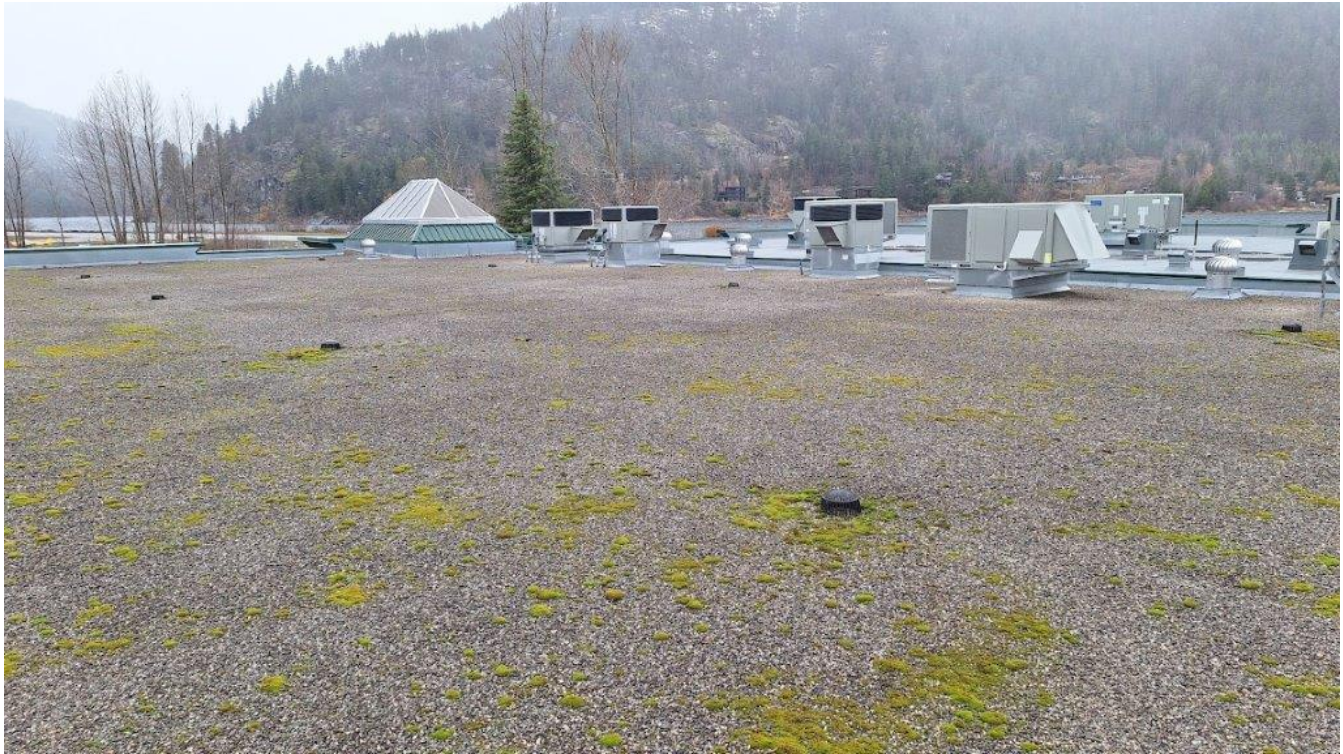
Transition between new roof and old roof above lobby – facing east



Old roof above lobby – facing west



Old roof – facing east from SW corner



Old Roof – facing west from SE corner



Separation between old and new sections of roof



Old roof – facing south



Separation between old and new sections of roof – all roof top units and curbs have been replaced in 2022



Rooftop unit typical penetration detail



APPENDIX C

CCDC 2 (2020) STIPULATED PRICE CONTRACT and INSURANCE REQUIREMENTS

(Contract bound separately)

INVITATION TO TENDER

RDCK LAKESIDE OFFICE ROOF REPLACEMENT

CCDC 41
CCDC INSURANCE REQUIREMENTS

PUBLICATION DATE: December 14, 2020

1. General liability insurance shall be with limits of not less than \$10,000,000 per occurrence, an aggregate limit of not less than \$10,000,000 within any policy year with respect to completed operations, and a deductible not exceeding \$10,000. The insurance coverage shall not be less than the insurance provided by IBC Form 2100 (including an extension for a standard provincial and territorial form of non-owned automobile liability policy) and IBC Form 2320. To achieve the desired limit, umbrella or excess liability insurance may be used. Subject to satisfactory proof of financial capability by the *Contractor*, the *Owner* may agree to increase the deductible amounts.
2. Automobile liability insurance in respect of vehicles that are required by law to be insured under a contract by a Motor Vehicle Liability Policy, shall have limits of not less than \$10,000,000 inclusive per occurrence for bodily injury, death and damage to property, covering all vehicles owned or leased by the *Contractor*. Where the policy has been issued pursuant to a government-operated automobile insurance system, the *Contractor* shall provide the *Owner* with confirmation of automobile insurance coverage for all automobiles registered in the name of the *Contractor*.
3. Manned Aircraft and watercraft liability insurance with respect to owned or non-owned aircraft and watercraft (if used directly or indirectly in the performance of the *Work*), including use of additional premises, shall have limits of not less than \$10,000,000 inclusive per occurrence for bodily injury, death and damage to property including loss of use thereof and limits of not less than \$10,000,000 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the *Owner*.
4. Unmanned aerial vehicle liability insurance with respect to owned or non-owned aircraft (if used directly or indirectly in the performance of the *Work*), shall have limits of not less than \$5,000,000 per occurrence or accident for bodily injury, death and damage to property or such amounts as required by any applicable law or regulation.
5. "Broad form" property insurance shall have limits of not less than the sum of 1.1 times *Contract Price* and the full value, as stated in the *Contract*, of *Products* and design services that are specified to be provided by the *Owner* for incorporation into the *Work*, with a deductible not exceeding \$10,000. The insurance coverage shall not be less than the insurance provided by IBC Forms 4042 and 4047 or their equivalent replacement. Subject to satisfactory proof of financial capability by the *Contractor*, the *Owner* may agree to increase the deductible amounts.
6. Boiler and machinery insurance shall have limits of not less than the replacement value of the permanent or temporary boilers and pressure vessels, and other insurable objects forming part of the *Work*. The insurance coverage shall not be less than the insurance provided by a comprehensive boiler and machinery policy including hot testing and commissioning.
7. Contractors' equipment insurance coverage written on an "all risks" basis covering *Construction Equipment* used by the *Contractor* for the performance of the *Work*, shall be in a form acceptable to the *Owner* and shall not allow subrogation claims by the insurer against the *Owner*. Subject to satisfactory proof of financial capability by the *Contractor* for self-insurance, the *Owner* may agree to waive the equipment insurance requirement.
8. Contractors' Pollution liability insurance shall have limits of not less than \$5,000,000 per occurrence for bodily injury, death and damage to property.

Association of
Canadian
Engineering
Companies

Canadian
Construction
Association

Construction
Specifications Canada

The Royal Architectural
Institute of Canada



Certificate of Insurance Form

Construction Projects

This certifies that policies of insurance as described below have been issued to the Insured named below and are in full force and effect at this time.

NOTE: PROOF OF INSURANCE WILL BE ACCEPTED ON THIS FORM ONLY. INSURANCE COMPANIES MUST BE LICENSED TO OPERATE IN CANADA AND HAVE A MINIMUM AM BEST RATING OF A- OR HIGHER.

This Certificate is issued to the Regional District of Central Kootenay.

Insured Name: _____

Address: _____

Broker Name: _____ Agent's Name: _____

Address: _____ Phone: _____

Title, number and nature of contract, permit, lease, license or operation to which this Certificate applies:

| Type of Insurance | Insurer Name and Policy Number | Policy Term dd/mm/yy | Limits of Liability/Amounts |
|---|--------------------------------|-------------------------|--|
| Section 1 Commercial General Liability Occurrence Form Claims Made Form | | From: To: | Bodily Injury, Death & Property Damage \$ _____ Per Occurrence \$ _____ Aggregate \$ _____ Deductible |
| Section 2 Umbrella Liability Excess Liability | | From: To: | \$ _____ Umbrella Liability \$ _____ Excess Gen. Liability |
| Section 3 Professional Errors and Omissions Liability Claims Made Basis | | From: To: | \$ _____ Per Claim \$ _____ Aggregate \$ _____ Deductible Per Claim |

| | | | |
|--|---|------------------|--|
| Section 4 Pollution/Environmental Liability Occurrence Form Claims Made Form | | From: To: | \$ _____ Per Occurrence \$ _____ Aggregate \$ _____ Deductible |
| Section 5 Course Construction Occurrence Form Claims Made Form | | From: To: | \$ _____ Per Occurrence \$ _____ Aggregate \$ _____ Deductible |
| Section 6 All Risk Property – Construction Equipment | | From: To: | \$ _____ Limit \$ _____ Aggregate \$ _____ Deductible |
| Section 7 Broad Form Property | | From: To: | \$ _____ Limit \$ _____ Aggregate \$ _____ Deductible |
| Section 8 Boiler and Machinery (Equipment Breakdown) | | From: To: | \$ _____ Limit \$ _____ Aggregate \$ _____ Deductible |
| Section 9 Automobile Liability (owned or leased vehicles) | If insured by ICBC, attach a copy of the ICBC form APV-47 | From: To: | Personal Injury & Property Damage \$ _____ Limit |
| Section 10 Manned Aircraft and Watercraft Liability Occurrence Form Claims Made Form | | From: To: | \$ _____ Per Occurrence \$ _____ Aggregate \$ _____ Deductible |
| Section 11 Unmanned Aerial Vehicle Liability Occurrence Form Claims Made Form | | From: To: | \$ _____ Per Occurrence \$ _____ Aggregate \$ _____ Deductible |
| Section 12 Other (Specify) | | From: To: | \$ _____ Limit \$ _____ Aggregate \$ _____ Deductible |

| | | |
|--------------------------------------|-------|---|
| Section 13 Other (Specify) | From: | \$ _____ Limit |
| | To: | \$ _____ Aggregate \$ _____ Deductible |

Details of Coverage (Sections 1 & 2): indicates that the coverage is included.

| | | |
|---|---|--|
| The Regional District of Central Kootenay, its officials, officers, employees servants and agents added as Additional Insured | Contingent Employer's Liability | Water Ingress Coverage |
| Blanket Contractual | Sudden & Accidental Pollution Liability Added as Loss Payee | 12 months Completed Operations- Wrap-Up Liability |
| Cross Liability/ Severability Interests | Broad Form Products & Completed Operations | 24 months Completed Operations- Wrap-Up Liability |
| Occurrence Property Damage | Owners & Contractors Protective | Work below ground level over 3meters including tunneling and grading (XCU Endorsement) |
| Broad Form Property Damage | Broad Form Loss of Use | |
| Personal Injury | Attached Machinery | Vibration from pile driving or caisson work |
| Premises & Operations | Employees as Additional Insureds | |
| Waiver of Subrogation in favour of the RDCK | Contingent Employer's Liability | Watercraft liability |
| Coverage is Primary and not contributory | Use of explosives for blasting | Non-owned watercraft liability |
| 30 days notice of cancellation | Demolition | Aircraft/Aviation liability |
| 60 days notice of cancellation | Shoring and Underpinning Hazard | Non-owned aircraft liability |
| Installation Floater | Use of Underpinning, Demolition, Pile Driving, Caisson Work | Non-Owned Automobile Firefighting Expenses |

Particulars of Pollution/Environmental Liability Insurance (Section 4) indicates that the coverage is included.

| | | |
|--|---|----------------------------------|
| The Regional District of Central Kootenay, its officials, officers, employees, servants and agents added as Additional Insured | Waiver of subrogation in favour of the RDCK | Property Damage |
| | Coverage is primary and not contributory | Clean-up |
| Blanket Contractual | 30 days notice of cancellation | Monitoring and remediation costs |
| Cross Liability/ Severability Interests | Bodily Injury | 3 Year Extended Reporting |

Particulars of Manned Aircraft and Watercraft Liability Insurance (Section 10) indicates that the coverage is included.

| | | |
|--|---|--|
| The Regional District of Central Kootenay, its officials, officers, employees, servants and agents added as Additional Insured | Cross Liability/ Severability Interests | Coverage is primary and not contributory |
| | Waiver of subrogation in favour of the RDCK | 30 days notice of cancellation |
| Blanket Contractual | | |

Particulars of Unmanned Aerial Vehicle Liability Insurance (Section 11) indicates that the coverage is included.

| | | |
|--|---|--|
| The Regional District of Central Kootenay, its officials, officers, employees, servants and agents added as Additional Insured | Cross Liability/ Severability Interests | Coverage is primary and not contributory |
| | Waiver of subrogation in favour of the RDCK | 30 days notice of cancellation |
| Blanket Contractual | | |

Details of Coverage (Section 12) indicates that the coverage is included.

| | | |
|--|---|--|
| The Regional District of Central Kootenay, its officials, officers, employees, servants and agents added as Additional Insured | Cross Liability/ Severability Interests | Coverage is primary and not contributory |
| | Waiver of subrogation in favour of the RDCK | 30 days notice of cancellation |
| Blanket Contractual | | |

Details of Coverage (Section 13) indicates that the coverage is included.

The Regional District
of Central Kootenay,
its officials, officers,
employees, servants
and agents added as
Additional Insured

Cross Liability/
Severability Interests

Coverage is primary and
not contributory

Waiver of subrogation in
favour of the RDCK

30 days notice of
cancellation

Blanket Contractual

These policies comply with the insurance requirements of the governing contract, permit, lease, license or other requirements of the Regional District of Central Kootenay. It is understood and agreed any deductible or reimbursement clause contained in the policy shall be the sole responsibility of the Named Insured.

Signature and Broker's Stamp
Authorized to Sign on Behalf of Insurers

Title

Date Signed