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Part 1 General

.1 **Project Information Table:**

Project Name:	Frank Jameson Community Centre (FJCC) 2024 Roofing Program	
Roof Sections:	Base Bid – Replace Roof Sections 6 & 8 Optional – Replace Roof 6 Eavestrough	
Project Address:	810 - 6 Avenue, Ladysmith, BC V9G 1A2	
Date of Mandatory Site Meeting:	See RFP Document	
Project Inquiries:	Roof Consultant: Joel Sharp, Ph: 780-993-1323	
Owner and Address:	The Town of Ladysmith 410 Esplanade – PO Box 220 Ladysmith, BC V9G 1A2	
Bid Bond Amount:	See RFP Documents	
Surety Bonds:	See RFP Documents	
Warranty:	30 Year Manufacturer Warranty Certificate(s)	
Insurance:	See RFP Document	
Bid Submission Location:	See RFP Document	
Bid Closing Date and Time:	See RFP Document	
Bid Submission Documents:	 The following documents are to be included with your bid submission on the above closing date: 1. Completed Bid Form 2. Bid Bond 3. Consent to Provide Surety Bonds (2) 4. Certificate of Insurance 5. WorkSafe BC Clearance Letter 6. Compliance with Town of Ladysmith Prime Contractor Program. See document 'Prime Cont Pre Construction Checklist' 	
Commence Project By:	See '01 11 00 Summary of Work'	
Project Completion Date:	See '01 11 00 Summary of Work'	

1.2

INVITATION

.1 Bid Call:

- .1 Ensure offers are signed under seal, executed, and dated and are received by **Owner's Representative** and Consultant. See Table 1.1 for Bid Submission Requirements.
- .2 Offers submitted after above time may be rejected.
- .3 Offers will be opened privately.
- .4 Amendments to submitted offer will be permitted if received in writing prior to Bid closing and if endorsed by same party or parties who signed and sealed offer.

1.3 SITE ASSESSMENT

- .1 Site Examination:
 - .1 A mandatory pre-bid meeting will be held at the site. See Table 1.1 for prebid meeting information.
 - .2 Bids shall not be accepted from bidders who were not represented at the site meeting.

1.4 INTENT

- .1 The Town of Ladysmith is seeking proposals to perform work to complete the Roof Replacements on Roof Sections 6 & 8 at the Frank Jameson Community Centre (FJCC) in Ladysmith, BC using a Stipulated Price Contract, in accordance with the Contract Documents.
- .2 Perform Work within the time stated in Section 01 11 00 Summary of Work.

1.5 CONTRACT/BID DOCUMENTS

- .1 Agreement Form.
- .2 Definitions:
 - .1 Contract Document: defined in CCDC 2 (2020).
 - .2 Bid Document: Contract Documents supplemented with Instructions to Bidders, Bid Form.
 - .3 Bid, Offer, or Bidding: act of submitting an offer under seal.
 - .4 Bid Price: monetary sum identified in Bid Form as an offer to perform Work.
- .3 Availability:
 - .1 Bid Documents are made available only for purpose of obtaining offers for this project. Their use does not confer license or grant for other purposes.

- .4 Queries/Addenda:
 - .1 Direct questions to the Consultant by e-mail to: <u>jsharp@alpineroof.ca</u>.

- .2 Addenda may be issued during Bidding period. Addenda will become part of Contract Documents. Include costs in Bid Price.
- .3 Verbal answers are only binding when confirmed by written addenda.
- .4 Clarifications requested by Bidders must be in writing not less than 5 days before date set for receipt of Bids. Reply will be in form of an addendum. Copy of addendum will be forwarded to known Bidders no later than 2 working days before receipt of Bids.
- .5 Product/System Options:
 - .1 Where Bid Documents stipulate a particular product, substitutions will be considered up to 10 days before receipt of Bids.
 - In submission of substitutions to products specified, Bidders are to include in their Bid, changes required in Work to accommodate such substitutions. Later claim by Bidder for addition to Contract Price a result of changes in Work necessitated by use of substitutions will not be considered.
 - .3 Ensure submission provides sufficient information to enable Consultant to determine acceptability of such products.
 - .4 Provide complete information on required revisions to other work to accommodate each substitution, dollar amount of additions to or reductions from Bid Price, including revisions to other work.
 - .5 Provide specified products unless substitutions are submitted as noted and subsequently accepted.
 - .6 Approval to submit substitutions prior to submission of Bids is required.

1.6 QUALIFICATIONS

- .1 Bidders must be capable, competent, and qualified to perform the work of the contract.
- .2 Must be current members of the Canadian Roofing Contractor's Association.
- .3 Subcontractors:
 - .1 Owner reserves right to reject proposed subcontractor for reasonable cause.

1.7 BID SUBMISSION

- .1 Bid Ineligibility:
 - .1 Bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may be rejected at Owner's discretion.
 - .2 Bids with Bid Forms or enclosures which are improperly prepared maybe rejected at Owner's discretion.
 - .3 Bids that fail to include security deposit, bonding or insurance requirements will be rejected.
- .2 Submissions:

- .1 Bidders are solely responsible for delivery of their Bids in manner and time prescribed.
- .2 Submit on Bid Forms provided, signed and with corporate seal together with required security in sealed opaque envelope, clearly identified with Bidder's name, project name and Owner's name on outside.
- .3 Improperly completed information, irregularities in Bid Bond, may be cause not to open Bid envelope and declare Bid unacceptable.

1.8 BID ENCLOSURES/REQUIREMENTS

- .1 Security Deposit:
 - .1 See RFP Documents
- .2 Consent of Surety or Agreement to Bond:
 - .1 See RFP Documents
- .3 Insurance:
 - .1 Provide a Certificate of Insurance proving that the Bidder has a valid insurance policy in place with the insurance required in accordance with Contract Documents.
- .4 Bid Form Requirements:
 - .1 State in Bid Form, time required to complete Work. Completion date in Agreement must be completion time added to commencement date.
 - .2 Bidder, in submitting an offer, accepts time period stated in Contract documents for performing Work.
 - .3 Bidder, in submitting an offer, agrees to complete Work by date indicated in Contract Documents.
 - .4 Consideration will be given to time of completion when reviewing Bids.
- .5 Bid Signing:
 - .1 Bid Form to be signed under seal by Bidder.
 - .2 Sole Proprietorship: Bids shall not be accepted from "Sole Proprietors".
 - .3 Partnership: signature of all partners in presence of witness who shall also sign. Insert word 'Partner' under each signature. Affix seal to each signature.
 - .4 Limited Company: signature of duly authorized signing officer(s) in normal signatures. Insert officer's capacity in which signing officer acts, under each signature. Affix corporate seal. If Bid is signed by officials other than President and Secretary of company, or President-Secretary-Treasurer of company, copy of by-law resolution of Board of Directors authorizing them to do so must also be submitted with Bid.
 - .5 Incorporated Company: signature of duly authorized signing officer(s) in normal signatures. Insert officer's capacity in which signing officer acts, under each signature. Affix corporate seal. If Bid is signed by officials other than President and Secretary of company, or President-Secretary-Treasurer

of company, copy of by-law resolution of Board of Directors authorizing them to do so must also be submitted with Bid.

- .6 WorkSafe BC Clearance Letter
- .7 Safety Program Submittals.

1.9 OFFER ACCEPTANCE/ REJECTION

- .1 Duration of Offer:
 - .1 Bids to be open to acceptance, and irrevocable for 60 days after closing date.
- .2 Acceptance of Offer:
 - .1 Owner reserves right to accept or reject any or all offers.
 - .2 After acceptance, written acceptance shall be issued to the retained Bidder.

END OF SECTION

FROM (Bidder):	
	(Name)

(Address)

(Representative Name)

(Phone Number)

(E-Mail Address)

TO (Owner):The Town of Ladysmith
410 Esplanade – PO Box 220
Ladysmith, BC V9G 1A2

PROJECT: Frank Jameson Community Centre (FJCC) 2024 Roofing Program

We, the undersigned, have examined the Bid Documents, Specifications, and Drawings, including all addendums up to and including Addendum(s) No._____, and we do hereby offer to provide all equipment, materials, labour, supervision and project management to perform the construction of the **Frank Jameson Community Centre 2024 Roofing Program (Sections 6 & 8)** in its entirety, according to the RFP Documents, Specifications, and Drawings, for the Stipulated Price of:

(Total in Words)		
		DOLLARS
	\$(Total in Figures)	WHICH EXCLUDES GST
Add-on Price to Remove & Replace <u>Roof Section 6 Eavestrough</u>	\$ (Total in Figures)	WHICH EXCLUDES GST

- 1. We do hereby declare that we are competent and qualified to perform all the Work of the Contract in accordance with the Bid Documents, Specifications, and Drawings.
- 2. We do hereby declare that this bid is based upon and includes performance of all the Work of the Contract in complete accordance with the Bid Documents, Specifications, and Drawings without exception.
- 3. We do hereby declare that this bid price includes all of our costs and obligations stemming from the complete performance of all of the Work of the Contract, in accordance with the Bid Documents, Specifications, and Drawings
- 4. We acknowledge and agree that the Owner is not obligated to accept this or any bid, nor to accept the lowest priced bid, but may accept any bid or reject all bids at its sole discretion.
- 5. This Bid shall be open to acceptance by the Owner for a period of sixty (60) days from the time and date of the bid closing.
- 6. If this Bid is accepted, then we shall enter into a Contract Agreement with the Owner for the performance of the Work in accordance with the Bid Documents, Specifications, and Drawings.
- 7. If this Bid is accepted, then we accept the role of Prime Contractor for the Work Site for the purposes of the Occupational Health and Safety Act of Alberta.
- 8. We agree to accept the costs of any injury or damage to any persons or property resulting from actions, errors, or omissions of our company, our employees, or subcontractors during the performance of the Work of the Contract.
- 9. We agree to comply with all applicable laws, bylaws, codes, and regulations of the authorities having jurisdiction during the performance of the Work of the Contract.

HOURLY RATES

In the event that chargeable time work is authorized by the Owner, the following rates shall apply.

Supervisor	\$	per hour
Qualified Tradesperson	\$	per hour
Labourer	\$	per hour
PROJECT SCHEDULE		
Roof Replacement will begin by no later than:	(Date)	
All work as specified will be 100% complete by no later than:	(Date)	
Executed this day of	, 2024	4.
Signature of Authorized Representative(s):		
(Signature)	(Name and Title)	
(Signature)	(Name and Title)	
Witness Signature or Corporate Seal		

Part 1 GENERAL

1.1 **PROJECT INFORMATION**

.1 The name of the project is:

Frank Jameson Community Centre (FJCC) 2024 Roofing Program

.2 The location of the work site is:

810 - 6 Avenue, Ladysmith, BC V9G 1A2

1.2 PARTIES

.1 The Owner is:

The Town of Ladysmith 410 Esplanade – PO Box 220 Ladysmith, BC V9G 1A2

.2 The Consultant is:

Alpine Roof Consulting Ltd. Joel Sharp, Civ. Tech., ARCA Accepted Inspector Email: <u>jsharp@alpineroof.ca</u>

.3 Direct inquiries to the Consultant.

1.3 BIDDING REQUIREMENTS

- .1 Refer to Section 00 21 13 Instructions to Bidders and RFP Document.
- .2 Upon acceptance of the Bid, and prior to the Owner's entering into a contract agreement, the retained Bidder shall submit contract security in the form of two project specific bonds to the Owner from a Surety provider authorized to provider surety in the jurisdiction of the work. Those two bonds shall be as follows:
 - 1. A Performance Bond for 50% of the Bid Price.
 - 2. A Labour and Material Payment Bond for 50% of the Bid Price.
- .3 No other form of contract security shall be accepted.

1.4 INSURANCE REQUIREMENTS

.1 At the time of bid submission, and for the duration of the project, the contractor shall have in force a general liability insurance policy with a limit of minimum **TEN MILLION CANADIAN DOLLARS**, provided by a credible insurance provider.

1.5 WORKSAFE BC ACCOUNT

.1 At the time of bid submission, and for the duration of the project, the contractor shall be registered and in good financial standing with WorkSafe BC.

.2 A Clearance Letter from the WorkSafe BC shall be submitted prior to the Owner's entering into a contract agreement, and upon request for the duration of the project.

1.6 FORM OF CONTRACT

.1 The form of contract shall be Canadian Construction Documents Committee CCDC II (2020) Stipulated Price Contract.

1.7 DOCUMENT PRECEDENCE

- .1 The precedence of documents shall be as follows:
 - .1 Contract Agreement
 - .2 Addenda (if any)
 - .3 Specifications
 - .4 Drawings

1.8 INDEMNIFICATION

- .1 The Contractor agrees to release from liability and hold harmless the Owner and the Owner's representatives and employees for any loss or damage, injury, or death they may sustain or cause as a result of the Contractor's bid submission or the Contractor's entering into the contract agreement, or by the Contractor's conducting of the work of the contract.
- .2 The Contractor's involvement in the project is not confidential. By submitting a Bid, the Bidder accepts that involvement in the project shall be public knowledge and may be publicized by any party at any time for any reason.

Part 2 SAFETY

2.1 PRIME CONTRACTOR

- .1 By submitting a Bid, the Bidder agrees to accept the role of Prime Contractor for the Work Site. By entering into a contract agreement, the party entered into a contract agreement with the Owner does accept the role of Prime Contractor for the Work Site for the purposes of the WCB OHS Regulation and WC Amendment Act. Upon request, the Contractor shall submit formal acceptance of that role in writing.
- .2 If a notice of project is required, the contractor is required to send it to the Workers Compensation Board/WorkSafe BC.
- .3 Any failure to meet the safety requirements of the contract would result in cancellation of the contract.
- .4 The Work Site shall be defined as the roof, and the areas on the ground which are within the Prime Contractor's control and affected by the Work.
- .5 The Prime Contractor must have in place a written safety program and written safe work procedures specific to the work being performed.

- .6 The Prime Contractor shall be solely responsible for defining, identifying, limiting access to, or otherwise controlling the Work Site.
- .7 The safety program and all written safe work procedures must be available at the workplace prior to the commencement of the work.
- .8 The Prime Contractor must be a registered firm with the WCB.
- .9 The Prime Contractor is responsible to provide occupational first aid services.
- .10 Contractor to have toolbox safety meetings at least weekly and formal safety meetings monthly, with minutes forwarded to The Town of Ladysmith.
- .11 The Prime Contractor shall be solely responsible for the safety of all persons on the Work Site.
- .12 The Prime Contractor shall dictate the rules and policies regarding safety on the Work Site.
- .13 All persons on the Work Site shall report to and comply with the requirements of the Prime Contractor.
- .14 The Prime Contractor shall be solely responsible for enforcing the requirements of the Occupational Health and Safety Act on the Work Site.

2.2 CONTRACTOR SAFETY PROGAM

- .1 To comply with WCB OHS Regulation the following elements of a basic Contractor's Safety Program **must be present** and functioning:
 - .1 Policy statement
 - .1 The policy clearly states the employer's aims and the responsibilities of the employer, managers, supervisors, and workers.
 - .2 Inspection of premises
 - .1 Provision for Regular inspection of the premises, equipment, work methods and work practices, including specific instruction that states the intent of inspections, who is to inspect, what is to be inspected and inspection frequency.
 - .3 Supplementary instructions
 - .1 Appropriate written instructions to supplement the WCB Occupational Health and Safety Regulation. All employees must make copies of the instructions available for reference.
 - .4 Management meetings
 - .1 Provision for holding periodic meetings for the purpose of reviewing health and safety activities and accident trends, and for determining necessary action.
 - .5 Investigation of accidents
 - .1 Provision for the prompt investigation of accidents including what to report to the WCB, which accidents to investigate, the intent of the investigation, and the content, distribution, and follow-up of reports.
 - .6 Records and statistics

- .1 Instruction is given to maintain records and statistics that include reports of inspections and accident investigations and make this information available to the Joint Health and Safety Committee and workers.
- .7 Joint Health & Safety Committee
 - .1 Provisions is made for establishing and maintaining a committee including membership, function, and detailed duties.
- .8 Instruction and supervision of workers
 - .1 Provision is made for instruction and supervision of workers in the safe performance of their work.
- .9 First Aid
 - .1 Written instructions directing the services and equipment to be provided, the maintenance of a treatment record book, the procedure to follow to summon a first aid attendant and the reporting of injuries.
- .10 WHMIS
 - .1 Written instructions that assign responsibility for the program, provide direction on maintaining material safety data sheets and labels, and detail the education and training.

2.3 SAFETY RECORD KEEPING

- .1 The documents required to be maintained and available by the Prime Contractor will include, but will not be limited to:
 - .1 The Prime Contractor's safety program.
 - .2 All notices which the Prime Contractor is required to provide to the Workers' Compensation Board by the WCB OHS Regulation.
 - .3 Any written summary of remedial actions taken to reduce occupational health and safety hazards within the area of responsibility.
 - .4 All directives and inspection reports issued by the WCB.
 - .5 Reports on incidents and accidents occurring within the Prime Contractor's area of responsibility for which notification to the WCB is required.
 - .6 Records of all safety meetings held between contractors and their workers.
 - .7 Records of workplace health and safety orientation.
 - .8 Written evidence of inspections within the workplace.
 - .9 Occupational first aid records.
 - .10 Worker training records.

2.4 CONFIRMATION OF RESPONSIBILITIES

The following is to be completed and confirmed prior to work commencing:

Discussion with Contractor Supervisor/Coordinator

Date:

Meeting Location:

Contractors:

Contractor Representative:

Town of Ladysmith Representative:

Acknowledges the appointment.	□ yes □ no
Understands that in any conflict of directions, WCB OHS Regulation and/or the Act shall prevail.	□ yes □ no
Understands and will direct that all supervisors/coordinators must immediately report any apparent conflict as described above.	□ yes □ no
The supervisor shall immediately notify Town of Ladysmith of any reported conflict.	□ yes □ no
Has requested and received information to eliminate or control hazards to the health and safety of persons at the workplace.	□ yes □ no
Has conducted an inspection of the workplace to verify the presence of any hazards.	□ yes □ no
Will communicate hazards to any persons who may be affected and ensure that appropriate measures are taken to effectively control or eliminate the hazards.	□ yes □ no
Accepts that written documentation (e.g. notes, records, inspections, meetings etc.) on all health and safety issues must be available upon request to Town of Ladysmith and/or to a Board officer at the workplace.	□yes □no
Will confirm that all workers are suitably trained and competent to perform the duties for which they have been assigned.	□ yes □ no
Safety orientation of all new workers will be conducted.	□ yes □ no
Contractor's written Safety Program has been provided.	□ yes □ no
Meetings to exchange any safety issues, concerns, hazards, or safety directives will be conducted weekly (or more often if required).	□ yes □ no
Before the commencement of work crews will attend a daily crew safety meeting	🗆 yes 🗆 no
The supervisor has assessed and will coordinate the first aid requirements.	□ yes □ no
Transport of Injured Worker procedure is established.	□ yes □ no

Notes/Follow-up:

Contractor Rep.

Town of Ladysmith Rep.

2.5 WIND

- .1 The Prime Contractor shall be solely responsible for securing all object on the Work Site from blowing in wind.
- .2 At all times, the Prime Contractor shall prevent all objects on the Work Site from moving out of control due to wind.

2.6 OVERLOADING

- .1 The Prime Contractor shall be solely responsible for not overloading any part of the structure.
- .2 Do not place materials, equipment, or other objects on top of the structure in excess of the structure's capacity to bear the load.
- .3 Accept responsibility for any damages resulting from overloading the structure.

2.7 WORKER QUALIFICATIONS

.1 A portion of workers shall have a valid first aid training certificates from a qualified training provider, in accordance with the minimum portion of workers required by the WCB OHS Regulation and WC Amendment Act and shall produce their certificates upon demand.

Part 3 ADMINISTRATIVE REQUIREMENTS

3.1 PERMITS

.1 The Contractor shall apply for and obtain any permits required from the authority having jurisdiction. The cost of any required permits shall be included in the contract price.

3.2 HOURS OF WORK

.1 The hours of work shall be at the discretion of the Owner, and in accordance with the local bylaws.

3.3 INVOICING

- .1 The Contractor may submit invoices not more than once per calendar month.
- .2 The amount of any invoice shall not exceed the value of materials installed and construction completed on the date of the invoice.
- .3 The Consultant shall evaluate the invoice in consideration of work completed and make recommendation to the Owner on whether or not to accept the invoice.
 Payment shall not be authorized in excess of the value of work completed on the date of invoice.
- .4 All invoices shall be accompanied by a Clearance Letter from the WCB.

.5 The second and all subsequent invoices shall be accompanied by a Statutory Declaration certified by a Commissioner for Oaths.

3.4 LIEN HOLD BACK

- .1 Ten per cent (10%) Builders Lien Holdback shall be deducted from each progress invoice.
- .2 The contractor may declare in writing that Substantial Performance has been achieved when the roofing membrane system has been completely applied to all areas included in the Scope of Work. The Owner shall then have five business days to dispute that declaration.
- .3 Forty-five (45) days after the date of receipt of the written declaration of Substantial Performance, and if the declaration of Substantial Performance is not disputed, the contractor may submit an invoice for the amount of the Builders Lien Holdback withheld to that date.

3.5 PAYMENT

.1 Accepted invoices shall be payable thirty (30) days after receipt.

Part 4 EXTRAS

4.1 UNFORESEEN CONDITIONS

.1 The contractor shall notify the Owner's Representative and the Consultant immediately upon discovery of any unforeseen condition.

4.2 CONTRACTOR PROPOSED CHANGES

.1 The contractor shall notify the Owner's Representative and the Consultant if he wishes to propose a change to the design of any detail.

4.3 CONTEMPLATED CHANGE NOTICES

- .1 If changes to the scope of work are proposed or found to be necessary, then the Consultant shall issue a Contemplated Change Notice to the Contractor.
- .2 The Contractor shall promptly submit a written price quotation in response to a Contemplated Change Notice.

4.4 CHANGE ORDERS

- .1 If the Contractor's quote in response to a Contemplated Change Notice is accepted by the Owner, then the Consultant shall issue a Change Order to the Contractor.
- .2 No changes to the Contract Price, the Scope of Work, nor the Schedule, shall be considered to be valid unless authorized by a Change Order.

4.5 TIME AND MATERIALS WORK

- .1 In the event that extra work is required on a time and materials basis, then the Contractor shall submit in writing to the Owner's Representative and the Consultant the reason why it is necessary.
- .2 Charges for time and materials work shall not be accepted without prior written authorization from the Owner's Representative.
- .3 If chargeable time work is authorized, then the Contractor shall submit a record of the chargeable hours worked at the end of each day on which they are worked.
 - .1 The rates for chargeable time shall be in accordance with the rates submitted on the Bid Form. Overhead and profit shall be included in the hourly rates. There shall be no mark up on time charged at hourly rates.
- .4 If the installation of chargeable extra material is authorized, then the Contractor shall promptly submit a detailed accounting of the quantity of all extra material installed.
 - .1 The base cost for the extra materials shall be indicated. The base cost shall not exceed the price for which the same materials may be purchased at a retail store.
 - .2 The mark up for overhead and profit on the base cost of authorized extra materials shall be ten percent (10%).

Part 5 USE OF THE PREMISES

5.1 WORKER CONDUCT

- .1 Workers are strictly forbidden from attending the property while under the influence of alcohol, cannabis, or other intoxicating drugs. Possession, use, or consumption of alcohol, cannabis, or other intoxicating drugs on the property is strictly forbidden.
- .2 Smoking and vaping are not permitted on the property. Workers wishing to smoke or vape must do so off the property.
- .3 Workers shall be required to refrain from using loud and profane language.
- .4 Workers shall be fully clothed. Shirts are mandatory. Short sleeved shirts are permitted. Sleeveless shirts are not permitted.
- .5 Clothing bearing offensive images or text are not permitted on the property. At the discretion of the Owner's Representative, workers shall, upon request, remove objectionable clothing.

.6 Workers shall comply with the above rules. Any violation of the above rules may result in the person being asked to leave the property and may result in the police being called.

5.2 FENCING

- .1 The contractor shall erect a temporary fence to enclose and limit access by the public to all areas on the ground adjacent to the building and below the work site on the roof.
- .2 Placement of the fence shall be at the discretion of the Owner's Representative. Coordinate the placement of the fence with the Owner's Representative.

5.3 **PROTECTION OF PROPERTY**

- .1 Protect property, including but not limited to sidewalks and curbs, landscaping, windows, and building exterior finishes, from damage during the performance of the work.
- .2 Repair any damages caused as a result of the performance of the work to the acceptance of the Owner's Representative.

5.4 PARKING

- .1 At the discretion of the Owner, trucks, trailers, and equipment may be parked on the property as may be necessary for the performance of the work. Obtain permission from the Owner's Representative for all parking on the property.
- .2 Worker's personal vehicles may not be parked on the property. They shall park on the public roads in accordance with the posted bylaw signage.

5.5 SANITARY FACILITY

- .1 Workers may not use the facilities inside the building.
- .2 The Contractor shall provide a suitable temporary sanitary facility for the use of the workers and maintain in a clean condition.

5.6 SECURITY

- .1 The Contractor shall be solely responsible for securing all object on the Work Site from blowing in wind. At all times, the Contractor shall prevent all objects on the Work Site from moving out of control due to wind.
- .2 The Contractor shall be solely responsible for the security of the Work Site while it is under his control, and for the security of his property. The contractor leaves his property on the Owner's property at his own peril, including but not limited to vehicles, tools, equipment, and construction materials.
- .3 The Contractor accepts that the Owner shall not be liable for any loss of or damage to the Contractor's property from any cause, including but not limited to theft, vandalism, fire, lightning, or weather event.

5.7 ACCESS TO THE ROOF

- .1 Access to the roof shall be by exterior temporary ladder, scaffold tower, or other approved form of access, which shall be supplied by and shall be the sole responsibility of the Contractor.
- .2 Workers shall not be permitted to enter the building except for specifically necessary tasks related to the performance of the work. Prior to entering the building, workers shall obtain permission from the Owner's Representative, and comply with the Owner's instructions.

Part 6 CONSTRUCTION REQUIREMENTS

6.1 EQUIPMENT

.1 The Contractor shall supply all required ladders, hoists, tools, power cords, generators, and equipment to perform and execute the work of the contract.

6.2 ELECTRICITY

- .1 The Contractor shall use his own portable generators and fuel to produce all electricity required for the performance of the work.
- .2 Use of the Owner's electricity shall be at the sole discretion of the Owner. Obtain permission from the Owner prior to using the Owner's electricity.

6.3 WASTE MANAGEMENT

- .1 The Contractor shall remove all demolished materials, packaging, and other waste from the site and dispose of in accordance with the requirements of the authority having jurisdiction.
- .2 The cost of all waste disposal shall be included in the Bid Price.

6.4 QUALITY CONTROL

- .1 The Consultant shall conduct periodic visual reviews of the work. Correct any deficiencies identified by the Consultant.
- .2 The Contractor shall be solely responsible for ensuring that the finished construction conforms to the specifications, drawings, and the referenced standards.
- .3 Construction which does not conform to the specifications, drawings, and the referenced standards shall be deemed to be deficient. Deficient construction shall be promptly corrected by the Contractor. No claims for extras shall be considered for correction of deficient work. Payment shall not be authorized for deficient construction.

6.5 **PROGRESS CLEANING**

- .1 Contain waste and debris.
- .2 Maintain the work site is a neat and tidy condition acceptable to the Owner.

6.6 FINAL CLEANING

- .1 Remove all equipment, waste, and debris from the site.
- .2 Clean any surfaces or property which were marred during the performance of the work.
- .3 Leave the site in a condition acceptable to the Owner.

END OF SECTION

1.1 PREREQUISITES

- .1 Examine the site. Verify existing conditions. Accept the specifications and drawings. Notify the Consultant of any discrepancies, or concerns with the design.
- .2 Accept the role of Prime Contractor for the Work Site for the purposes of the Occupational Health and Safety Act.
- .3 Closely co-ordinate with the Owner's Representative and the Consultant throughout the duration of the project.

1.2 SCHEDULE

- .1 **Roof Section 6 (Pool):** Mobilize, deliver all required materials, and commence the work on or after **the first day of the pool shutdown of August 18th, 2024.** Some mobilization or preparatory work may commence prior to that date at the sole discretion of the Owner. For any work prior to that date, request permission and closely co-ordinate with the Owner's Representative.
- Roof Section 6 (Pool): Complete the membrane roofing system application and demobilize from the site by the last day of the pool shutdown September 9th, 2024. If this condition is not met, then the Owner will submit in writing to the Contractor's surety provider that unsatisfactory progress in being made.
- .3 **Roof Section 8 (Fitness Centre):** Mobilize, deliver all required materials, and commence the work no later than **July 24th**, **2024**. Some mobilization or preparatory work may commence prior to that date at the sole discretion of the Owner. For any work prior to that date, request permission and closely co-ordinate with the Owner's Representative.
- .4 **Roof Section 8 (Fitness Centre):** Complete the membrane roofing system application and demobilize from the site by **September 9th, 2024.** If this condition is not met, then the Owner will submit in writing to the Contractor's surety provider that unsatisfactory progress in being made.
- .5 Minor detail work and metal flashing installation may continue after September
 9th, 2024, at the sole discretion of the Owner. For any work after that date, request permission and closely co-ordinate with the Owner's Representative.

1.3 EXTENT OF WORK

Replace the roofing systems (Sections 6 & 8) down to the existing metal deck in accordance with these specifications and drawings.

1.4 SCOPE OF WORK

- .1 Remove the existing roofing systems on the specified roof sections in accordance with these specifications. Refer to Section 02 41 19 Selective Demolition.
- .2 Supply and install all carpentry related to the membrane roofing in accordance with Rough Carpentry Section 06 10 00 and accordance with the drawings.
- .3 **Roof Sections 6 & 8:** Apply membrane roofing system in accordance with Section 07 54 19 Single Ply Roofing and in accordance with the drawings.
- .4 Supply and install all metal flashings related to the membrane roofing in accordance with Sheet Metal Flashings Section 07 62 00 and accordance with the drawings.
- .5 Supply and install new sheet metal specialties. Refer to Sheet Metal Roof Specialties Section 07 63 00.
- .6 Replace the roof drains. Supply and install one new internal roof drains, complete with drain piping. Refer to Mechanical Section 23 05 00.
- .7 Refer to Mechanical Requirements Section 23 05 00 and Electrical Requirements Section 26 05 00.
- .8 Provide a **<u>30 Year Manufacturer Warranty Certificate</u>**.

END OF SECTION

Part 1 General

1.1 REGULATORY REQUIREMENTS

- .1 Conform to applicable code for demolition work, dust control, products requiring electrical disconnection and reconnection.
- .2 Obtain required permits from authorities.
- .3 Do not close or obstruct egress width to any building or site exit.
- .4 Do not disable or disrupt building fire or life safety systems without prior written approval from the Owner.
- .5 Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.

1.2 **PROJECT CONDITIONS**

- .1 Conduct demolition to minimize interference with adjacent and occupied building areas.
- .2 Cease operations immediately if structure appears to be in danger and notify Consultant. Do not resume operations until directed.

Part 2 Products

2.1 MATERIALS

- .1 No materials included.
- .2 The composition of the existing roofing systems are as follows.

.1 <u>Roof Section 6 (Pool)</u>:

- .1 3-Ply SBS Membrane
- .2 1" PolyISO Insulation, in asphalt
- .3 3" PolyISO Insulation, in asphalt
- .4 Felt Vapour Retarder, in asphalt
- .5 1/2" DensDeck Mechanically Fastened
- .6 Steel Deck (Sloped)

.2 Roof Section 8 (Fitness Centre):

- .1 2-Ply SBS Membrane
- .2 7/16" Fibreboard
- .3 Tapered EPS Insulation
- .4 3" PolyISO Insulation
- .5 Kraft Vapour Retarder
- .6 Steel Deck

Part 3 Execution

3.1 PREPARATION

- .1 Protect existing materials which are not to be demolished.
- .2 Notify affected utility companies before starting work and comply with their requirements.
- .3 Mark location and termination of utilities.

3.2 DEMOLITION

- .1 Demolish in an orderly and careful manner.
- .2 Protect and do not damage, mar, or deface existing building elements which are to remain in place.
- .3 Remove sheet metal flashings.
- .4 **<u>Roof Sections 6 & 8</u>**: Remove all existing roofing materials down to the decking.
- .5 Remove demolished materials from site except where specifically noted otherwise. Dispose of in accordance with the requirements of the authority having jurisdiction.
- .6 Do not burn or bury materials on site.
- .7 Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Local Building Codes, current editions.
- .2 National Lumber Grades Authority- Standard Grading Rules for Canadian Lumber.
- .3 Canadian Roofing Contractors Association Roofing Systems Application Standards.

1.2 QUALITY ASSURANCE

- .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood, particleboard, OSB and wood based composite panels in accordance with CSA and ANSI standards.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Storage and Handling Requirements:
 - .1 Store materials off ground; keep clean and dry.
 - .2 Store and protect wood from moisture, mud, or other defects.
 - .3 Replace defective or damaged materials with new.

1.4 REFERENCE STANDARDS

- .1 Lumber: softwood, S4S, moisture content 19% (S-dry) or less in accordance with CSA 0141 and NLGA Standard Grading Rules for Canadian Lumber.
- .2 Canadian softwood plywood (CSP): to CSA 0151, standard construction.

Part 2 Products

2.1 WOOD PRODUCTS

- .1 Spruce lumber, 1.5" thick.
 - .1 Finger jointed lumber shall not be accepted.
- .2 Sheathing: Plywood, 1/2" thick.
 - .1 Oriented Strand Board (OSB) shall not be accepted.

2.2 FASTENERS

- .1 Fasteners for lumber:
 - .1 Phosphorous coated nails, 3"
 - .2 No.8 x 3" wood screws.
 - .3 On concrete or masonry: Minimum ¹/₄" x 2.5" hit pin anchors.

.2 Fasteners for sheathing:

- .1 Phosphorous coated nails, 2"
- .2 No.8 x 1.25" wood screws.
- .3 To concrete or masonry: Min. ¹/₄" x 1.25" hit pin anchors.
- .3 Staples shall not be accepted.

2.3 INSULATION

.1 Fiberglass batt insulation.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrates are acceptable for product installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate.
 - .2 Inform Consultant of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and reviewed by the Consultant.
 - .4 Proceeding with work indicates acceptance of existing conditions.

3.2 CARPENTRY IN CONNECTION WITH ROOFING

- .1 Build up parapets, area dividers, building expansion joints, curbed penetrations, and other projections to the required heights using plies of dimensional lumber.
 - .1 Apply lumber straight, flush, and true.
 - .2 Apply lumber of the same width as the top of the parapet, curb, etc. that it is being applied on top of.
 - .3 Apply lumber continuously. Tightly abut end joints.
 - .4 Fasten each ply of lumber with 3" nails at maximum 12" on center, between 1" and 1.5" of the sides of the lumber plies, staggered from side to side.
- .2 Line the vertical faces of parapets, area dividers, building expansion joints, curbed penetrations, and roof to wall connections with the specified sheathing.
- .3 At roof to wall connections, bevel the top edges of the sheathing.
- .4 Remove any existing gum box penetrations and construct new wooden curbs, anchored to the roof deck.
- .5 Build curbs at other penetrations where noted on the drawings.
- .6 Install wooden elements as required to construct the details in accordance with the intent of the detail drawings.

3.3 **PROTECTION**

- .1 Protect installed products and components from damage during construction.
- .2 Protect installed products and components from moisture immediately after installation.
- .3 Repair damage to adjacent materials caused by rough carpentry installation.

END OF SECTION

Part 1 GENERAL

1.1 SECTION INCLUDES

.1 Adhered Single-Ply Roof Membrane and Associated Components.

1.2 REFERENCE STANDARDS

.1 Canadian Roofing Contractors Association - Roofing Systems Application Standards Manual.

1.3 SYSTEM DESCRIPTION

.1 <u>Roof Section 6</u>

- .1 Basis of Design: New TREMCO 60mil Single-Ply KEE Membrane, Adhered.
- .2 New ¹/₂" DensDeck Prime Coverboard, Adhered
- .3 New 4" Non-Organic Polyisocyanurate Insulation, Adhered
- .4 New Self-Adhered Vapour Retarder Membrane.
- .5 New ¹/₂" Auxiliary Levelling Surface, Adhered.
- .6 Existing Steel Decking (Sloped)

.2 Roof Section 8

- .1 Basis of Design: New TREMCO 60mil Single-Ply KEE Membrane, Adhered.
- .2 New ½" Coverboard, Adhered
- .3 New 2" Non-Organic Polyisocyanurate Insulation, Adhered
- .4 New Min. 2" Thick, 1.5% Tapered Type II EPS Insulation, Adhered
- .5 New Self-Adhered Vapour Retarder Membrane.
- .6 New ¹/₂" Auxiliary Levelling Surface, Adhered.
- .7 Existing Steel Decking

1.4 SUBMITTALS FOR REVIEW

.1 Shop drawings for tapered insulation.

1.5 QUALITY ASSURANCE

- .1 Perform Work to applicable CRCA Roofing Systems Application Standards Manual, and in accordance with the manufacturer's written instructions.
- .2 Installer Qualifications: Company specializing in performing the work of this section and approved by the manufacturer.
- .3 Installer Qualifications: An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of five years' experience installing products comparable to those specified, able to communicate verbally with Contractor, Owner's Consultant and employees, and qualified by the roofing system manufacturer to install manufacturer's product and furnish warranty of type specified.

- .4 Manufacturer Qualifications: Approved manufacturer with UL listed roofing systems comparable to those specified for this Project, with minimum five years' experience in manufacture of comparable products in successful use in similar applications, and able to furnish warranty with provisions matching specified requirements.
- .5 Manufacturer's Installation Instructions: Obtain and maintain on-site access to manufacturer's written recommendations and instructions for installation of products.

1.6 REGULATORY REQUIREMENTS

.1 Conform to the Local Building Code where applicable.

1.7 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- .2 Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - .1 Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- .3 Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- .4 Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.8 PROJECT / FIELD CONDITIONS

- .1 Protect building, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from roofing operations.
- .2 Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- .3 Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- .4 Store all materials prior to application at temperatures between 5 and 32 deg. C (40 and 90 deg. F).
- .5 Apply materials within range of ambient and substrate temperatures recommended by manufacturer. Do not apply materials when air temperature is below 5 or above 43 deg. C (40 and 110 deg. F).

- .6 Do not apply roofing in snow, rain, fog, or mist.
- .7 Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- .8 Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 - .1 Provide tie-offs at end of each day's work to cover exposed roofing and insulation with a course of roofing sheet securely in place with joints and edges sealed.
 - .2 Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
 - .3 Remove temporary plugs from roof drains at end of each day.
 - .4 Remove and discard temporary seals before beginning work on adjoining roofing.

1.9 WARRANTY

- .1 Manufacturer's Warranty: Roof System Manufacturer's standard form in which Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within warranty period, as follows.
 - .1 Form of Warranty: Manufacturer's standard warranty form.
 - .2 Scope of Warranty: The warranty covers material and workmanship.
 - .3 Warranty inspection and maintenance program provided with warranty at a minimum of 5-year intervals. (Provided and included by the manufacturer)
 - .4 Warranty Extension: Warranty extension program available at the end of the warranty period.
 - .5 Transfers: No limitation on number of warranty transfers.
 - .6 Scope of Warranty: Work of this Section and including sheet metal details and termination details installed by the roof system Installer and approved by the Roof System Manufacturer.
 - .7 Warranty Period: <u>**30 years from date of completion.**</u>
- .2 Manufacturer Inspection and Preventive Maintenance Service: To report maintenance responsibilities necessary for preservation of Owner's warranty rights and to perform periodic routine maintenance required, as described in Manufacturer's standard form. The cost of manufacturer's inspections and preventive maintenance is included in the Contract Sum.
 - .1 Scope of Service: Manufacturer's standard form.
 - .2 Inspections to occur in following years: 2, 5, 10,15, 20 and 25 following completion.

Part 2 PRODUCTS

2.1 MATERIALS, GENERAL

- .1 Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
- .2 The following noted system is based on a Tremco KEE Membrane system. Alternate systems to be submitted for pre-approval a minimum of five (5) days before tender closing.

2.2 PERFORMANCE REQUIREMENTS

- .1 General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
 - .1 Dynamic Impact/Puncture Resistance, ASTM D5635: >35.
 - .2 Static Puncture Resistance ASTM D 5602 (99 lbf): >150.
- .2 Refer to Section 02 41 19 Selective Demolition.

2.3 DECK LEVELLING SURFACE AND INSULATION COVERBOARD

- .1 $\frac{1}{2}$ " thick glass faced 4'x 8' glass faced gypsum boards.
- .2 Basis of design product:
 - .1 ¹/₂" Thick Densdeck Prime Gypsum Sheathing, by Georgia Pacific.

2.4 VAPOUR RETARDER

.1 **Roof Section 6 & 8:**

- .1 Description: Self-adhesive vapour barrier membrane composed of a trilaminated woven polyethylene facer and SBS modified bitumen. The underface is covered with a silicone release film.
 - .1 Basis of design product:
 - .1 Specified product: Sopravap'R, by Soprema.
 - .2 Specified Primer(s): Elastocol Stick Primer, by Soprema.

2.5 ROOF INSULATION

- .1 Full Tapered Insulation Package (**Roof Area 8 Only**):
 - .1 Accepted Product:
 - .1 Type II Expanded Polystyrene Insulation
 - .2 Slope: 1.5%.
 - .3 Min. 2" Thickness
 - .4 Board size: 4' x 4'.
 - .1 Accepted Products: Any approved Type II EPS insulation listed on the Accepted Products list by the RCABC.
- .2 Flat Non-Organic PolyISO Insulation:
 - .1 **Roof Section 6**: One (1) layer of **4**" thick non-organic polyisocyanurate insulation boards.
 - .2 **Roof Section 8:** One (1) layer of **2**" thick non-organic polyisocyanurate insulation boards.
 - .3 Accepted Products: Any approved non-organic PolyISO insulation listed on the Accepted Products list by the RCABC.
 - .4 Board Size, 4' x 4'.

2.6 ROOF MEMBRANE:

- .1 Thermoplastic Ketone Ethylene Ester (KEE) coated polyester fabric-reinforced sheet, ASTM D6754.
 - .1 Basis of design product:
 - .1 Tremco, TremPly KEE FB (Fleece Backed) Single Ply Roof Membrane.
 - .2 Breaking Strength, minimum, ASTM D751: Machine direction, 87 kN/m (500 lbf); Cross machine direction, 70 kN/m (400 lbf).
 - .3 Tear Strength, minimum, ASTM D751: Machine direction, 21 kN/m (125 lbf); Cross machine direction, 25 kN/m (145 lbf).
 - .4 Elongation at Break, ASTM D751: 20 percent.
 - .5 Dynamic Impact/Puncture Resistance, ASTM D5635: 35.
 - .6 Minimum Membrane Thickness, nominal, less backing, ASTM D751: 1.5 mm **(60 mils)**
 - .7 Thickness over fiber, optical method: 0.016 inches.
 - .8 Accelerated Weathering, ASTM G155 and ASTM G154: 15,000 hr., no cracking or crazing.
 - .9 Abrasion Resistance, ASTM D3389: Not greater than 2,000 cycles, H-18 wheel, 1,000 g load.
 - .10 Colour: White

- .2 Membrane Flashing: Manufacturer's standard, smooth-backed, sheet flashing of same material, type, reinforcement, thickness, and colour as PVC sheet membrane.
 - .1 Basis of design:
 - .1 TremPly KEE 60mil Non-Reinforced (Smooth Non Fleece Backed)

2.7 AUXILIARY ROOFING MATERIALS

- Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - a. Single-Ply Roof Membrane Sealants: 450 g/L.
 - b. Nonmembrane Roof Sealants: 300 g/L.
 - c. Sealant Primers for Nonporous Substrates: 250 g/L.
 - d. Sealant Primers for Porous Substrates: 775 g/L.
- .2 Roof Membrane and Flashing Membrane Adhesive:
 - .1 Bonding adhesive, solvent based fast drying, VOC-compliant, for bonding KEE fleece-backed single ply membranes and flashings to substrates.
 - .1 Basis of design product **<u>Field Membrane (Fleece Backed)</u>**:
 - .1 Tremco, TremPly POWERply Endure BIO Bonding Adhesive.
 - .2 Basis of design product **Membrane Flashings (Smooth)**:
 - .1 Tremco, TremPly KEE LV Bonding Adhesive.
- .3 Walkway:
 - .1 Basis of design products:
 - .1 **Roof Section 6:** 36" x 120" Wide Fibergrate Molding Grating with rubber feet, by Tremco.
 - .2 **Roof Section 8**: 24" x 24" Smooth concrete on 1" EXPS Insulation Strips
- .4 Spray Foam @ Roof Divider:
 - .1 Basis of design product:
 - .1 Dow Froth-Pak Foam Insulation
- .5 Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 25 mm by 3 mm (1 by 1/8 inch) thick; with anchors.
- .6 Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening components to substrate, and acceptable to membrane roofing system manufacturer.
- .7 Joint Sealant: Elastomeric joint sealant compatible with roofing materials, with movement capability appropriate for application.

- .1 Joint Sealant, Polyurethane: ASTM C920, Type S, Grade NS, Class 50 singlecomponent moisture curing sealant, formulated for compatibility and use in dynamic and static joints; paintable.
 - .1 Basis of design product: Tremco, TremSEAL Pro.
 - .2 Colour: Closest match to substrate.
- .8 Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- .9 Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.
- .10 Insulation Adhesive: Low-Rise two-part foam adhesive by IKO, Soprema or Tremco.

Part 3 EXECUTION

3.1 EXAMINATION

- .1 Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 - .1 Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
 - .2 Retain paragraph below if project will be let with wood cants, blocking, and nailers installed under another trade subcontract.
 - .3 Verify that blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 - .4 Existing Prepared Roof Substrate: Verify that existing insulation and substrate is sound and dry. Refer to requirements of Division 07 Section "Preparation for Re-Roofing."
 - .5 Wood Roof Deck: Verify that deck is sound and dry and securely fastened with no projecting fasteners and with no adjacent units in excess of 1.6 mm (1/16 inch) out of plane relative to adjoining deck.
- .2 Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- .1 Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- .2 Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

.3 Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.3 INSTALLATION, GENERAL

- .1 Install roofing system in accordance with manufacturer's written instructions and approved details.
- .2 Install blocking, curbs, and nailers in accordance with requirements of Division 06 Section "Miscellaneous Rough Carpentry."
- .3 NRCA Installation Details: Install roofing system in accordance with applicable NRCA Manual Plates and NRCA recommendations.

3.4 GYPSUM BOARD DECK LEVELLING SURFACE

- .1 Fully cover the steel deck with the new gypsum board cover board.
- .2 Offset joints minimum of 12" in both directions.
- .3 Tightly butt the board joints leaving no gaps.
- .4 Apply low-rise two-part foam adhesive to <u>every second steel deck top flute</u>.
- .5 Ensure all boards are laying flat and flush with all adjacent boards.

3.5 VAPOUR RETARDER APPLICATION

- .1 Apply primer to the full area of the deck levelling surface at the manufacturer's recommended rate of application. Allow to flash off gas in strict accordance with the manufacturer's requirements.
- .2 Fully adhere the self-adhering vapour retarder membrane, free of wrinkles, air pockets, or other defects.
- .3 Extend the vapour retarder up the walls at perimeters and penetrations to minimum 2" above the insulation.
- .4 Seal vapour retarder to all pipe penetrations.

3.6 FLAT AND TAPERED INSULATION APPLICATION

- .1 Ensure all substrates are clean and dry.
- .2 Place and adhere the polyisocyanurate board insulation to the vapour retarder in lowrise two-part polyurethane foam adhesive.
- .3 Adhere the insulation board to the surface of the vapour retarder in 2 component lowrise two-part polyurethane foam adhesive applied in strict compliance with the manufacturer's instructions and in the following application rate and pattern:
 - .1 Minimum $\frac{1}{2}$ " diameter ribbons.
 - .2 FIELD AREA SPACING: Maximum 12" on center, minimum 4 ribbons in the length of a 4'x4' board.
 - .3 PERIMETER SPACING: Maximum 8" on center, minimum 8 ribbons in the length of a 4' x 4' board.
 - .4 CORNER SPACING: Maximum 6" on center, minimum 12 ribbons in the width of each board to an 8' wide perimeter and 8'x 8' corner.
- .4 Tightly abut all insulation board joints.
- .5 Stuff any gaps greater than ¹/₄" with batt insulation.
- .6 Apply no more insulation than can be covered with membrane in same day.
- .7 Create a minimum 24" x 24" x 1" deep sump at each drain location.

3.7 GYPSUM BOARD INSULATION COVER BOARD

- .1 Fully cover the tapered insulation with the new gypsum board cover board.
- .2 Offset joints minimum of 12" in both directions.
- .3 Tightly butt the board joints leaving no gaps.
- .4 Place and adhere the gypsum board to the insulation in low-rise two-part polyurethane foam adhesive.
- .5 Adhere the insulation board to the surface of the vapour retarder in 2 component lowrise two-part polyurethane foam adhesive applied in strict compliance with the manufacturer's instructions and in the following application rate and pattern:
 - .1 Minimum $\frac{1}{2}$ " diameter ribbons.
 - .2 FIELD AREA SPACING: Maximum 12" on center, minimum 4 ribbons in the length of a 4'x4' board.
 - .3 PERIMETER SPACING: Maximum 8" on center, minimum 8 ribbons in the length of a 4' x 4' board.
 - .4 CORNER SPACING: Maximum 6" on center, minimum 12 ribbons in the width of each board to an 8' wide perimeter and 8'x 8' corner.
- .6 Ensure all boards are laying flat and flush with all adjacent boards.

3.8 ADHERED MEMBRANE ROOFING INSTALLATION

- .1 Adhere membrane roofing over area to receive roofing and install according to membrane roofing system manufacturer's written instructions.
- .2 Start installation of membrane roofing in presence of membrane roofing system manufacturer's technical personnel.
- .3 Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- .4 Bonding Adhesive: Apply to substrate at rate required by manufacturer. Install membrane immediately into adhesive, avoiding any air entrapment; do not allow adhesive to dry. Roll membrane into wet adhesive. Do not apply adhesive to splice area of membrane.
- .5 In addition to adhering, mechanically fasten membrane roofing securely at terminations, penetrations, and perimeter of roofing.
- .6 Apply membrane roofing with side laps shingled with slope of roof deck where possible.
- .7 Welded Seams: Clean seam areas, overlap membrane roofing, and hot-air weld side and end laps of membrane roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.
- .8 Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of sheet membrane.
- .9 Verify field strength of seams a minimum of twice daily and repair seam sample areas.
- .10 Repair tears, voids, and lapped seams in roofing that do not comply with requirements.
- .11 Spread sealant bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.
- .12 Install membrane roofing and auxiliary materials to tie into existing roofing to maintain weathertightness of transition.

3.9 WALKWAYS

- .1 Supply and install new concrete paver walkway where shown on roof plan in a straight line from the roof access hatch to the east perimeter.
- .2 Tightly abut existing pavers on EXPS insulation strips to allow surface drainage.
- .3 Supply and install new fibergrate walkway at eave for servicing eavestrough.

3.10 SPRAY FOAM INSULATION

.1 install according to manufacturer's written instructions.
3.11 PERIMETER FLASHING INSTALLATION

- .1 Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- .2 Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
- .3 Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- .4 Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.
- .5 Seal top termination of base flashing with a metal termination bar and a continuous bead of joint sealant.

3.12 FIELD QUALITY CONTROL

- .1 Retain this article if field inspecting and testing are required. Revise to suit local practices and requirements of authorities having jurisdiction, if applicable.
- .2 Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation at commencement and upon completion.
 - .1 Notify Owner's Consultant and Owner 48 hours in advance of date and time of inspection.
- .3 Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.13 PROTECTING AND CLEANING

- .1 Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Owner's Consultant and Owner.
- .2 Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- .3 Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

1.1 **REFERENCES**

.1 The Canadian Roofing Contractors Association Roofing Systems Application Standards Manual.

1.2 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials to prevent dents, bends, scratches, or other defects.

Part 2 Products

2.1 STEEL SHEET

- .1 24-gauge prefinished sheet steel with factory applied coating of colour selected by the Owner's representative.
 - .1 The Contractor shall obtain the Owner's colour selection in writing prior to ordering.
- .2 24-gauge galvanized sheet steel for capping area dividers.

2.2 ACCESSORIES

- .1 Fasteners:
 - .1 Minimum 1.5" spiral nails.
 - .2 1.25" coarse threaded screws with flanged, pre-painted hex heads and neoprene washers.
 - .3 Minimum No. 8 x 1.25" screws with flat pan heads.
- .2 Masonry wall anchors: Minimum 3/16" x 1.25" hit pin anchors.
- .3 Sealant: Mulco Supra or equal upon submission of product data for acceptance. Colour to match metal flashings.

2.3 FABRICATION

- .1 Maximum length of parapet cap flashings shall be 5'.
 - .1 If 8' or 10' lengths are to be used, wind clips and/or mid-span fastening required.
- .2 Fabricate metal flashings and other sheet metal work in accordance with the CRCA Standards.
- .3 All edges shall be hemmed.
- .4 Bottom outside edges of cap flashings and drip edge flashings shall kick out minimum $\frac{1}{2}$ " at 45 degrees.
- .5 All joints shall be S-locked.

- .6 All transitions, joints, intersections, and corners shall be of minimum 1" tall locked standing seams.
- .7 Cap flashings shall have minimum 4" vertical flanges on outside faces and shall extend minimum 1.5" over top termination of lower finishes.
- .8 Counter flashings shall extend up minimum 3" behind higher existing metal flashings or claddings.

Part 3 Execution

3.1 INSTALLATION

- .1 Install sheet metal flashings in accordance with the CRCA Standards.
- .2 Conceal fastenings in the S-locked joints.
- .3 Allow for expansion in the S-locked joints.
- .4 Hem and lock standing seams at corners.

3.2 COUNTER FLASHINGS ON MASONRY WALLS

.1 Fasten metal flashings with hit pin anchors in pre-drilled holes at each joint and at maximum 18" on center.

3.3 FIELD QUALITY CONTROL

- .1 The completed work shall be visually reviewed by the Consultant. Correct any deficiencies.
- .2 The Contractor shall be solely responsible for ensuring that the work conforms to the specifications and referenced standard.

3.4 CLEANING

- .1 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools, and equipment.
- .2 Leave work areas clean, free from asphalt, grease, finger marks and stains.

1.1 SCOPE OF WORK

- .1 Supply and install <u>all new</u> sheet metal specialties including but not limited to the following:
 - .1 Chimney caps.
 - .2 Serviceable enclosures for curbed conduits and horizontal pipes.
 - .3 Manufactured hoods for curbed air inlets and outlets.

1.2 REFERENCES

- .1 ASTM A653/A653M-13 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 Sheet Metal & Air Conditioning Contractors' National Association (SMACNA) HVAC Duct Construction Standards.
- .3 Sheet Metal & Air Conditioning Contractors' National Association (SMACNA) Architectural Sheet Metal Standards.

1.3 SUBMITTALS FOR REVIEW

- .1 Shop Drawings: Submit shop drawings of the sheet metal fabrication, indicating shape, configuration, and dimension of components, detailing of joints and seams, required clearances and tolerances, and other affected work.
- .2 Product Data for pre-manufactured Chimney Cap Assemblies.

1.4 QUALITY ASSURANCE

.1 Perform Work to SMACNA 1120 standard details and requirements.

1.5 WARRANTY

.1 The sheet metal specialties installed under this contract shall be included in the warranty certificate on the roofing system and related metal flashings.

Part 2 Products

2.1 MATERIALS

.1 Galvanized Steel: ASTM A653/A653M, zinc coating Z275 / G90, 24-gauge core sheet steel.

2.2 COMPONENTS

- .1 Chimney Caps.
- .2 Serviceable Enclosures for curbed conduits and horizontal pipes.
- .3 Roof Vents: Air inlets and outlets of galvanized sheet metal, conforming to these specifications.

2.3 ACCESSORIES

- .1 Anchors and Fasteners: Minimum No.10 x 1.25" sheet metal screws, coated, noncorrosive, with flat backed round heads.
 - .1 Wood screws with flat faced, taper backed heads shall not be accepted.
- .2 Storm collars; screw clamping type. Locking tab style storm collars shall not be accepted.
- .3 Heat resistant sealant.

2.4 FABRICATION: HORIZONTAL PIPE & CONDUIT PENETRATIONS

- .1 Custom fabricated steep sloped galvanized steel serviceable enclosures with the following characteristics:
 - .1 Steep sloped, removable tops overhanging minimum 2".
 - .2 All edges hemmed.
 - .3 Pipes or conduits exiting openings in the vertical faces sized to snuggly fit the penetrating pipes or conduits.
 - .4 Awning style shelters over top of the openings in the vertical faces, hanging minimum 2" outside the vertical faces.

2.5 FABRICATION: VENT HOODS

- .1 Vent hoods shall be of water shedding design.
- .2 New vent hoods shall match or closely resemble those previously existing.
- .3 New vent hoods shall be fabricated to the same standard or better that those previously existing.
- .4 Vent hoods shall be sized to fit onto roof curbs, with vertical faces overlapping the tops of the curbs by minimum 3".
 - .1 The contractor shall be solely responsible for ensuring that the sheet metal specialties fit on the curbs.
- .5 Bottom horizontal edges of all sheet metal specialties shall be hemmed drip edges.
- .6 All exposed sheet metal edges shall be hemmed.
- .7 All sheet metal joints shall be at corners and shall include break shape profiles providing rigidity.
 - .1 Overlapped sheet metal joints at locations other than corners shall not be accepted.
- .8 Vertical metal surfaces shall be continuously flashed over the roof curbs. Any horizontal joints shall be lapped in water shedding direction and <u>soldered</u>.
- .9 If the specialties include any horizontal flanges or changes in plane, then all joints shall be overlapped, locked, and <u>soldered</u>.

- .10 Vertical joints and seams shall be tight, interlocked and crimped. Shop drawings shall indicate the means of seaming joints.
- .11 Air inlet/outlet openings shall be sheltered by overhanging components and shall be at maximum 30° from horizontal.
- .12 Air inlet/outlet openings shall be protected with a galvanized wire bird screen, with maximum openings of 3/8" x 3/8".
- .13 Air inlet/outlet openings shall provide the same opening area as the curb or duct which they are serving.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify existing conditions before starting work.
- .2 Verify that deck, curbs, roof membrane, base flashing, and other items affecting work of this Section are in place and positioned correctly.

3.2 INSTALLATION - GENERAL

- .1 Install components to manufacturer's written instructions.
- .2 Coordinate installation of components of this section with installation of roofing systems.
- .3 Securely fasten the specialties to the curbs with accepted fasteners.
- .4 Drive fasteners horizontally.
- .5 Fully drive screws, pulling the backs of the screw heads tightly to the hoods.
- .6 Install components to a watertight condition.

3.3 INSTALLATION – SERVICEABLE ENCLOSURES

- .1 Apply sealant to the openings around the pipes or conduits.
- .2 Install sloping cap in a direction that slopes away from conduit opening.

3.4 FIELD QUALITY CONTROL

- .1 The Consultant shall conduct periodic observations of the work. Correct any identified deficiencies.
- .2 The Contractor shall be solely responsible for ensuring that the work conform to the specifications and references standards and manufacturer's requirements.

3.5 CLEANING

- .1 In areas where finished surfaces are soiled by work of the contract, consult manufacturer of surfaces for cleaning advice and comply with their instructions.
- .2 Repair or replace defaced or disfigured finishes caused by work of the contract.

.3 At completion, the finished surfaces shall be clean, free from stain, soil, mars, or other contaminants.

3.6 **PROTECTION OF FINISHED WORK**

- .1 Protect finished surfaces of sheet metal specialties against damage from roofing work.
- .2 At completion, the sheet metal specialties free from dents, damages, or other defects. Replace any damaged or defecting components.
- .3 During installation of sheet metal specialties, protect roofing membranes and other finished surfaces from damage. Make good any damages caused by the work of this section.

1.1 INTENT

- .1 Replace roof drains on Roof Section 8. Sump insulation a minimum of 1" (typical).
- .1 Temporarily disconnect, remove, raise, re-install, etc. mechanical system components as required to conduct roofing and raise curb heights to a minimum of 8" above finished roof system. Refer to drawings for further instructions.

1.2 INSTALLER QUALIFICATIONS

.1 Drain installations and gas line work shall be conducted by qualified technicians only.

1.3 CO-ORDINATION

.1 Closely co-ordinate any mechanical shutdowns or modifications with the owner's representative.

1.4 REFERENCE STANDARD

- .1 All work shall conform to the applicable codes.
- .2 All work shall conform to the Local Building Codes and to the National Plumbing Code of Canada.

1.5 RELATED SECTIONS

.1 Refer to Section 23 05 50 Mechanical Insulation.

Part 2 Products

2.1 DRAINS

- .1 Z-121 by Zurn Engineered Water Solutions, sized to match existing piping.
- .2 Drain screens: RD-7A by Thaler Metal Industries, sized to match Zurn drain bowls.
- .3 External rubber pipe connectors with stainless steel screw type clamping bands.
 - .1 Connectors inside the pipe diameter shall not be accepted.

2.2 DRAIN INSULATION

.1 Min. 1" thick fiberglass insulation with reinforced aluminum foil facer.

2.3 PIPING

- .1 PVC drain piping, Type XFR, 4" diameter.
- .2 Wye connector of same pipe diameter and material as the vertical pipe inside the wall discharge.

2.4 PIPING HARDWARE

- .1 Galvanized Uni-Strut steel channels, 12 gauge, 1" x 1-5/8", for mounting to ceiling.
- .2 Minimum No.14 x 2.5" plates screws for mounting uni-struts.
- .3 Galvanized or plated clevis hangers.
- .4 <u>Ceiling Sealant</u>: 3M Fire Barrier Sealant CP25WB+ or equal alternate.

2.5 SLEEPERS

.1 For gas lines: C-Port C-10 rubber blocks with galvanized steel channels.

Part 3 Execution

3.1 EXAMINATION

- .1 Prior to commencement, inspect all existing drain piping, vent piping, chimneys, chimney caps, air extractors, hoods, and sheet metal specialties.
- .2 Notify the Owner's Representative of any components or systems which are damaged or otherwise unacceptable for re-use.
- .3 Commencement of work indicates acceptance of existing conditions.

3.2 NEW DRAIN PIPING

- .1 Install new 4" PVC drain piping where shown on the drawing.
- .2 Above the suspended ceiling, fasten Uni-struts through the gypsum board ceiling to the 24" o.c. roof joists, perpendicular to the roof joists, at maximum 8' on center.
- .3 At the drain location, neatly cut the gypsum board ceiling tightly around the new drainpipe. <u>Apply fire protection sealant to the ceiling penetration</u>.
- .4 Create a neat opening through the corridor masonry wall, just large enough for the pipe.
- .5 Hang the pipe from the Uni-Struts with clevis hangers, sloping the pipe at minimum 1/8" per foot.
- .6 Inside the discharge point through the west exterior wall, connect the new pipe to the existing vertical pipe with a wye connector.

3.3 DRAINS

- .1 Replace existing drain assemblies with new ones of matching pipe diameter.
- .2 Connect new drains to existing piping.
- .3 Cut holes in the roof deck as required to complete the pipe connections.
- .4 Insulate the undersides of the drain assemblies. Lap and seal drain insulation onto existing pipe insulation.

3.4 H.V.A.C. UNITS, AIR EXTRACTORS, GAS LINES, ETC.

- .1 Closely co-ordinate this work with the building operations staff.
- .2 Obtain permission for system shutdowns and provide notification of shutdowns as dictated by the building operations staff.

- .3 Temporarily decommission HVAC units, air extractors, gas lines as required to perform roofing work.
- .4 Raise the HVAC units up as required to conduct roofing work.
- .5 Recommission all systems as soon as possible after roofing work.

3.5 GAS SUPPORTS

- .1 Support all gas lines with new C-Port C10 sleepers.
- .2 Place the C-Ports in the spacing required by the applicable code for the pipe thickness and diameter.
- .3 Install metal or rubber shims as required. Ensure that pipe is resting on and supported by each C-Port.
- .4 Clamp the pipes to each C-Port using galvanized or zinc plated clamps and bolts.

1.1 ELECTRICAL REQUIREMENTS

- .1 Any electrical work is to be conducted only by competent and qualified electricians.
- .2 Any electrical work is to be conducted in accordance with the Local Building Code.
- .1 Temporarily disconnect, remove, raise, re-install, etc. electrical system components as required to conduct roofing and raise curb heights to a minimum of 8" above finished roof system. Refer to drawings for further instructions.
- .2 Notify the Owner of any existing electrical systems or components which do not conform to current applicable Codes.
- .3 Obtain any required permits and inspections. The cost of any such permits or inspections is to be included in the contract price.
- .4 Co-ordinate any required electrical work with the building owner's representative. Provide notice for shutdowns in accordance with the owner's requirements.

1.2 ELECTRICAL SCOPE

- .1 Disconnect and temporarily remove any electrical devices and services as required to conduct roofing work, and re-install and re-commission afterwards.
- .2 Temporarily terminate any electrical services in a safe condition.
- .3 Protect any temporarily removed electrical devices from damage. Re-install in the same condition as was before removal. Be responsible for any damages caused to any components during the performance of the work of the contract.
- .4 Any component of any lightning rod grounding system which is disconnected and reconnected shall be inspected by a qualified lightning system inspector. The cost of such inspection shall be included in the contract price. Submit the lightning grounding system re-certification to the Owner's representative at project close out.







