City of Parksville – Jensen Centre

Roof Repairs

132 Jensen Ave East

Parksville BC, V9P 2H3

Project # C03192025G1

April 2025

Site Visit: **April 24, 2025 - 11AM PST**

Submission Deadline: May 2, 2025 - 12PM PST

To: City of Parksville
Attn: Mr. Keith Martin
Ops@parksville.ca

Bid Closing: Friday, May 2, 2025 at 12 PM Pacific Time

Name of Company Phone Number

Address

Primary Contact

WCB Registration Number

We acknowledge receipt of the following addenda to the tender documents:

Addendum No.: _____ Date: _____ Pages: _____

Addendum No.: _____ Date: _____ Pages: _____

Addendum No.: _____ Date: _____ Pages: _____

Addendum No.: _____ Date: _____ Pages: _____

Addendum No.: _____ Date: _____ Pages: _____

Addendum No.: _____ Date: _____ Pages: _____

Bid Price:

1. Phase 1-4: Increase height of parapet wall. Install drain. 2 PLY SBS patch work. Re-seal failed sealant along wall.

SUB:_____ Dollars ($_____)

GST:_____ Dollars ($_____)

TOT:_____ Dollars ($_____)

Anticipated Schedule:

_____

Commencement Date of This Engagement

_____

Substantial Completion Date of This Engagement

ACCEPTANCE

.1 This Bid is open to acceptance for a period of ninety (90) days from the date of bid closing and is promised in consideration of the attached Bid Security.

.2 Having examined the Project site, the Specifications and Drawings, including Addenda, we hereby offer to perform the Work set forth in the aforesaid documents.

.3 Submission of this Bid implies acceptance of the existing conditions at the site.

.4 We understand that selected items may be deleted from the Project as represented in the Bid Form.

.5 In submitting this tender, we recognize and agree that the Owner reserves the right to accept any tender, to reject any or all tenders, to waive any irregularity or informality in a tender, and to negotiate with and award to one or more of the bidders after the Tender Closing. Without limitation, the Owner shall not be obligated to accept the lowest or any other tender, and by submitting a tender each bidder assumes all costs and risks associated therewith, and irrevocably releases any claim it may have against the Owner or any of its trustees, officers, employees or agents, whether based in contract, tort, legitimate expectation or any other principle of law, trade, custom or practice.

Name of Company

Date

Signature & Name of Company Official

PART 1 - GENERAL

1.1 DESCRIPTION

.1 Roofing Contractor to provide all labour, plant, equipment, and materials necessary to perform to completion. Work as described in these Contract Documents for:

City of Parksville, Jensen Centre
Repairs on designated roof and wall areas located at:
132 Jensen Avenue East, Parksville, BC V9P 2H3

.2 Contract Documents to be reviewed in their entirety with all sections, including Division 1 - General Requirements, to be considered interrelated and form part of this section.

1.2 PROJECT SCHEDULE: PHASE 1-4

.1 Contractor to mobilize forces and trades to commence work on site as early as June 2, 2025, weather permitting.

.2 Substantial Completion of Work must be achieved by no later than October 1, 2025. Full completion must be reached by October 30, 2025.

.3 The Contractor shall be responsible to develop a project schedule which ensures that the work is completed on schedule, while maintaining a high quality of work.

1.3 EXAMINATION OF DRAWINGS, SPECIFICATIONS, AND WORKSITE

.1 Carefully examine and study, as indicated in Instructions to Bidders, all Bid Requirements together with existing site conditions and any other necessary data or conditions that may affect performance of Work in order to determine full extent of Work.

1.4 OWNER OCCUPANCY

.1 Cooperate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.

1.5 CONTRACTOR USE OF PREMISES

.1 Contractor to limit use of premises for Work, for storage, and access.

.2 Coordinate use of premises under direction of Owner and Consultant.

.3 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

1.6 GENERAL SITE REQUIREMENTS

.1 Temporary Barriers, enclosures and signage will be highly enforced given use of property.

.2 Contractor to ensure safety and proper execution of public routing; ensuring temporary access to fire exits if and when they are affected as part of Work.

.3 Obtain Construction/Building Permit and sidewalk/roadway occupation permits as required by local municipality.

.4 Determine nature and extent of all site services above and below grade prior to commencement of Work.

.5 Coordination of trades will be responsibility of Contractor to ensure work is completed as soon as possible. Provide winter protection and heating as required to perform Work if required and as specified.

.6 There will be no interior access to the roof. Supply, set-up, maintain and remove scaffolding, man-lift platforms and/or swing-stages during performance of Work to access work areas. Contractor to provide complete shop drawings bearing seal of a Professional Engineer, licensed to practice in Place of Work. Work to include review and approval of installed scaffolding by Designer. Allowance should be made for access to all elevations of building.

.7 No public access to Work area to be allowed. Ensure access to fire exits are maintained and hoarded through Work area. Pedestrian access along sidewalks must be maintained as per Owner's requirements. No areas of access to or around building are to be restricted without approval of Owner.

.8 Install temporary protection at all locations of Work, as required to ensure safe, clean, orderly removal and disposal work, and to provide protection for all interior and exterior building components, vehicles, pedestrians and occupants.

.9 Provide temporary support to existing structural and cladding components during performance of work if required.

.10 Install temporary protection for all materials and building components, which have been exposed during demolition/removals as specified.

.11 Dispose of all materials at landfill site authorized by authorities having jurisdiction.

1.7 PROTECTION OF ROOFS

.1 Protect all roof areas within area of Work and where equipment or materials are stored. Do not store equipment or materials directly on roof surface.

.2 Protect existing roof systems to remain against damage from traffic generated by new Work.

.3 Protection of existing and newly installed roof membranes to use sheets of 25mm (1") polystyrene insulation cover with 13mm (0.5") plywood.

1.8 BUILDING CODES AND STANDARDS

.1 All work performed under the Contract shall meet or exceed the latest requirements of the Codes of all National, Provincial, County, Municipal and other authorities exercising jurisdiction over construction work at the project, provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

.2 All work shall meet or exceed requirements of specified standards, codes and referenced documents, of the latest edition.

.3 All work must comply with BCBC 2024, NBCC 2020, NPCC 2015, NFCC 2015, NECB 2017, SMACNA Architectural Sheet Metal Manual, RCABC Roofing Practices Manual, TSBC requirements as well as any other applicable as well as any other applicable Federal, Provincial or Municipal code or bylaw.

1.9 COMPATIBILITY

.1 Compatibility between all components of roofing system is essential.

.2 The Contractor shall be responsible for ensuring that all items elected for use are compatible with each other.

.3 Ensure compliance with RCABC warranty standards and manufacturers installation recommendations.

1.10 STANDARDS

.1 In the event that the drawings and specifications differ from the manufacturer's printed instruction, to such a degree that the specified warranties may be affected, consult the Owners representative for instructions.

1.11 QUALIFICATIONS

.1 Company specializing in modified bituminous roofing installation with a minimum 5 years' experience and authorized by roofing system manufacturer as qualified to install manufacturer's roofing materials. Contractor must be a Roofing Contractors Association of BC (RCABC) member in good standing as of 2025.

.2 Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work and at any time roofing work is in progress. Maintain proper supervision of workmen. Maintain a copy of the specifications in the possession of the Supervisor/Foremen and on the roof at all times.

.3 Immediately correct roof leakage during construction. If the Contractor does not respond within twenty four (24) hours, the Owner has the right to hire a qualified contractor and backcharge the original contractor.

1.12 INSURANCE

.1 The Contractor shall provide and maintain Comprehensive General Liability Insurance and Automotive Liability Insurance in the minimum amount of $10,000,000.00. The successful tender will be required to submit a copy of the insurance policy upon request no later than five business days after the request has been made. Failure to provide the necessary proof of insurance may result in forfeiture of the contract and the contract may be awarded to others.

1.13 WARRANTY

.1 Upon completion of installation, and acceptance by the Owner, the roofing Contractor shall issue a 5 year workmanship warranty for the work on Contractor letterhead, signed, authorized and executed. In event any work is found to be within Contractor's warranty term, defective or otherwise not in accordance with Contract Documents, Contractor to repair that defect at no cost to the Owner.

1.14 WORK SUMMARY

.1 Jensen Centre: RA 1, RA 4 and Walled Area

Perform roof and wall repairs and general upgrades to parapet wall to permanently correct leaks into the building. Perform additional drain installation.

1.15 CLEANING

.1 Perform daily and final clean-up of work area and areas surrounding site.

PART 2 – PRODUCTS

2.1 ROOFING ASSEMBLY MATERIALS

.1 Base Sheet – Field and Flashing: One (1) ply SBS (Styrene-Butadiene-Styrene) fiberglass scrim reinforced membrane. CSA 123.23, Type C, Grade 3, at 23°C Strain Energy MD 27kN/m, Peak Load MD 53 Kn/m, Low Temp Flex: Pass, ASTM D6162, Type III.

.2 Cap Sheet – Field and Flashing: One (1) ply SBS (Styrene-Butylene-Styrene) fiberglass scrim reinforced membrane. CSA 123.23 Type C, Grade 3, at 23°C Strain Energy MD: 18 (100) Peak Load MD: 63 (355) Elongation MD: 13%

.3 Membrane Interply Adhesive: Cold applied SEBS/SIS modified asphalt adhesive for modified bitumen membrane and roof assembly surfacing.

.4 Flashing Membrane Adhesive: Cold applied SEBS/SIS modified asphalt adhesive for modified bitumen flashing membranes.

.5 Insulation Adhesive: Two-part adhesive compatible for use with substrate and insulation types specified, as recommended by the manufacturer.

.6 Insulation Overlay Board: One layer of 12.5mm (0.5") Asphalt coated fibreboard sheathing conforming to CAN/CSA-A247-M86 installed in adhesive. Maximum board size is 4'x4'.

.7 Roofing Aggregate: Clean roofing aggregate to conform to ASTM D-1863 in cold adhesive.

.8 Screws, Bolts, Nails and Fasteners: Non-ferrous metal or galvanized steel compatible with adjacent surfaces, except that hard copper nails shall be used with copper; aluminum or stainless steel nails shall be used with aluminum; and stainless steel nails shall be used with stainless steel. All fasteners must conform to the RCABC Guarantee Standards. Fasteners in contact with pressure treated wood must be 304 or 316 stainless steel.

.9 Cant Strip: Cant strips are required at all 90° transitions for modified bitumen work.

.10 Mastic Compound: V.O.C. compliant, ASTM D2822, Type II. Trowel grade fibered mastic.

.11 Fiberglass Scrim: SBR coated reinforced fiberglass reinforcement scrim meeting ASTM D-1668-86 Type III.

.12 Caulking Compound: One part, non-sag sealant with the following characteristics;

.1	Tensile Strength (ASTM D412)	250 psi
.2	Elongation (ASM D412)	950%
.3	Hardness, Shore A (ASTM C920)	35
.4	Adhesion-in-Peel (ASTM C920)	30 pli

.13 Roof Drains: Spun copper clamp-tite drain with aluminum dome strainer and perforated ballast stainless screen. Mechanical connections required, unless otherwise approved.

.14 Sheet Metal Flashings: 24 gauge completed in accordance with accepted RCABC Guarantee Standards and drawings conforming to ASTM A653 / A653M-06 CS Type B, Z275 (G90) coating. Colour to be chosen by owner.

.15 Asphalt Primer: Asphalt emulsion based primer to prepare surfaces for adhesion.

.16 Liquid Flashing: Shall be composed of polyester fleece reinforcement encapsulated with a polymethel methacrylate (PMMA) resin.

PART 3 – EXECUTION

3.1 GENERAL

.1 The Contractor is responsible to verify site conditions. The current assembly at the sample location was identified as the following.

RA 4:

- Wood Deck
- .5” Wood Fibreboard
- .5” Wood Fibreboard
- 2 Ply SBS w/Mineral Surface

RA 1 & 3:

- Wood Deck
- 2” EPS Insulation
- 1” Wood Fibreboard
- 1” Wood Fibreboard
- 3” EPS Insulation
- 1” Wood Fibreboard
- 2 Ply SBS w/Mineral Surface

3.2 SCOPE OF WORK

.1 **PHASE 1: RA 4 - Increase height of parapet wall to 8”**

.1 Remove all coping cap metal along required area to expose top of parapet wall.

.2 Perform rough carpentry and increase wood blocking heights to 8” as required to meet RCABC guidelines and replacement design.

.3 Prepare parapet wall be flashed with asphalt primer. Allow primer to dry tack free.

.4 Install SBS base flashing ply to new perimeter detail. Trowel flashing adhesive to a uniform rate of 1/4” to 1/8” (3.175mm-6.35mm). Apply the flashing adhesive to the underside of the membrane and solidly adhere the entire sheet of flashing membrane to the substrate. Base flashing ply to extend past the cant on the field of the roof 6”.

.5 Adhere the SBS cap flashing ply to the SBS base flashing ply in adhesive. Apply the flashing adhesive to the underside of the cap flashing membrane and solidly adhere to the base flashing membrane. Stagger overlaps of cap ply from base ply. Cap flashing ply to extend past the cant on the field of the roof 9”. Trowel flashing adhesive to a uniform rate of 1/4” to 1/8” (3.175mm-6.35mm).

.6 Base and cap plies to extend up and over perimeter and be secured to the outside face.

.7 Apply three course of flashing adhesive and fiberglass mesh over vertical cap flashing seams. Extend reinforcement from leading edge of flashing membrane to the top of the flashing membrane.

.8 Seal parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.

.9 Coordinate counter flashing, cap flashings, and similar work with modified bitumen roofing work.

.10 Coordinate roof accessories, miscellaneous sheet metal accessory items, and other devices with the roofing system work.

.11 Install new 24 gauge metal counter flashings, coping caps. Colour is to be chosen by and acceptable to the owner. All metal must be done in strict accordance to RCABC standards.

.2 PHASE 2: Installation of drain

.1 Drains in this section to sit in an 4’ x 4’ tapered drain sump.

.2 New drain assembly to be installed in its entirety. Tie-in to existing plumbing infrastructure to be made via mechanical clamp connection and completed by a certified plumbing contractor.

.3 Associated mechanical costs (unit removal, temporary displacement, craning, etc,) is the sole responsibility of the Roofing Contractor.

.4 Roof Drains – Connection of replacement roof drains shall be connected to existing piping using code complaint materials and methods.

.5 Pipe Support – Pipes and joints shall be supported and braced in accordance with NPCC and to ensure no joint separation is experienced as a result of pipe weight or water column.

.6 Insulation – Repair any damaged rainwater leader insulation and vapour barrier as required as a result of performing this work.

.7 Trades – All work on mechanical and plumbing systems to be performed by qualified and licensed technicians.

.8 Roof Drain Shop Drawing – Provide roof drain shop drawing once product is selected. Shop drawing to indicate size and CSA listing. Plumbing fixture shop drawing to be provided when available.

.3 PHASE 3: Repair existing stucco wall – Sealant Application

.1 Identify cracks and failed sealant needing to be repaired

.2 Remove failed sealant as necessary

.3 Clean areas around cracks and joints

.4 Add highly durable, waterproofing sealant

.4 PHASE 4: Cut out existing failed 2-ply, SBS section and replace with SBS modified bituminous membrane roofing over prepared substrate.

SBS BASE PLY

.1 Ensure base sheet is unrolled to enable membrane to relax prior to installation. Time required for relaxation will vary with weather conditions. Cut the membrane to maximum length of 18’ (5.5m).

.2 Tape all insulation joints prior to applying adhesive to prevent material from seeping between the coverboard (duct tape can be used).

.3 Commencing at the lowest point of the roof, install one layer of SBS base sheet to a properly prepared substrate in 2.5 gallons per square of adhesive (1.02 l/m2) applied by 1/4" notched squeegee. Uneven surfaces may require additional adhesive. Shingle in proper direction to shed water on each area of roofing.

.4 Lightly broom membrane to ensure complete adhesion. Do not step on sheet, fish mouths should be cut and patched.

.5 Ensure complete adhesion of ply by maintaining consistent bleed-out at membrane edge.

.6 Repeat this operation with subsequent rolls with side laps of 4" (101mm) and end laps of 8" (202mm).

.7 Extend ply two (2) inches (50mm) beyond top edges of cants at wall and roof projections and equipment bases.

.8 Install base flashing ply to all perimeter and projections details in membrane flashing adhesive, extending 6" onto the field.

SBS CAP PLY

.1 Both base and cap membrane plies must be installed the same day.

.2 Before installing the cap sheet, you must sweep or blow away any dust, dirt or debris off the base sheet, as this will interfere with adhesion.

.3 Ensure base sheet is unrolled to enable membrane to relax prior to installation. Time required for relaxation will vary with weather conditions. Cut the membrane to maximum length of 18' (5.5m).

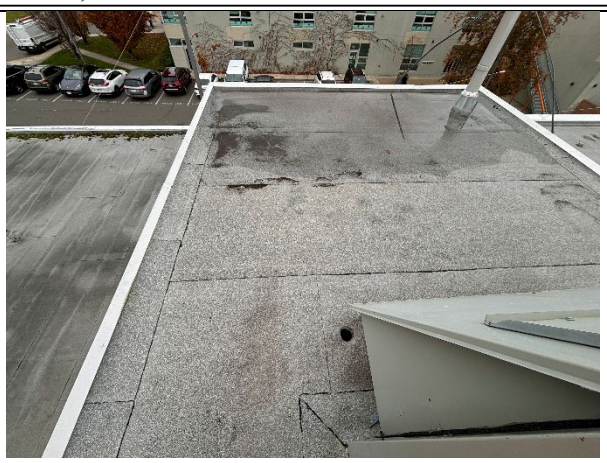
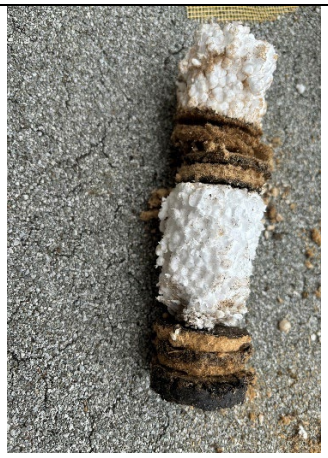
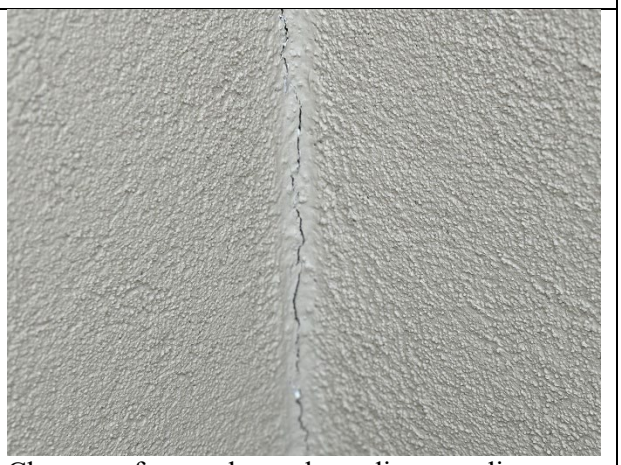
.4 Plan membrane application so that laps are not superimposed over laps of the base sheet, offset 18" (45cm). Mark a chalk line where the first course is to start. Unroll 2.0 m to 3.0 m of the membrane and line it up to the chalk line or to selvage edge. Reroll and commence application. If the roll goes out of line by more than 12 mm, cut and realign.

.5 Using the same methodology as the base sheet, install the cap sheet, ensuring that the membrane is unrolled into adhesive at a rate of 2.5 gallons per square of adhesive (1.02 l/m2) per 100 square feet, applied by 1/4" notched squeegee, and lightly broom or use weighted roller to ensure complete adhesion. Uneven surfaces may require additional adhesive. Do not step on sheet, fish mouths should be cut and patched. Ensure complete adhesion of ply by maintaining consistent bleed-out at membrane edge.

.6 Repeat this operation with subsequent rolls with side laps of 4" (101mm) and end laps of 8" (202mm).

.7 Extend membrane two (2) inches (50mm) beyond top edge of all cants.

3.3 REFERENCE IMAGES

 RA4 - Increase parapet wall 8” & Install drain	 RA 4 - Core cut
 Cut out SBS roof section & Replace with new 2 ply SBS roof assembly	 RA 1 - Core cut
 Wall: Reseal any cracked areas of stucco wall	 Close up of example crack needing resealing

	
Joint needing to be resealed.	Close up of joint.

END OF SECTION

1.1 GENERAL

1.2 HOURS OF WORK

.1 Use of all equipment to be in accordance with local noise bylaws.

1.3 DISPOSAL BINS

.1 The Contractor is responsible to keep the area around any disposal bin swept clean.

1.4 SANITARY FACILITIES

.1 Provide washroom facilities for workers as necessary.

1.5 ROOF ACCESS

.1 There will be no interior access to the roof. Supply, set-up, maintain and remove scaffolding, man-lift platforms and/or swing-stages during performance of Work to access work areas. Contractor to provide complete shop drawings bearing seal of a Professional Engineer, licensed to practice in Place of Work. Work to include review and approval of installed scaffolding by Designer. Allowance should be made for access to all elevations of building.

1.6 PROTECTION OF WORK AND PROPERTY

.1 The Contractor shall protect the property adjacent to the Work site from damage as a result of his operations under the Contract. Likewise, the Contractor shall protect the Work and the Owner's property from damage as a result of his operations.

1.7 CONTRACTOR'S USE OF SITE

.1 The laws of the place of building shall govern the Work. The Contractor shall comply with laws, ordinances, rules and regulations relating to work and shall obtain and/or pay all Permits, Notices, Fees, Taxes, Duties, as may be required.

.2 It is the responsibility of the contractor to perform testing of the materials at the site, as required by WorkSafe BC, which will be affected and/or disrupted through the course of the work. If there is a requirement for materials to be tested, the contractor is to provide a copy of the test report to the Owner.

.3 It is the responsibility of the contractor to prevent damage to conduit or other equipment through preliminary investigation (excluding that which is hidden or inaccessible).

.4 Do not unreasonably encumber the Place of Work with materials or equipment.

.5 Do not overload the structure.

.6 Do not close or obstruct or store materials in roadways, sidewalks or

passageways without prior approval from the Owner. Do not interfere with safe passage to and from the building and adjacent public sidewalks and roads. Move stored products or equipment that interferes with operations of the building.

.7 Take all precautions and provide all required protection to ensure the safety of the general public.

.8 Build a safe, temporary scaffolding structure to access the roof level. No access through inside of the building will be granted.

1.8 BUILDING CODES AND STANDARDS

. 1 All work performed under the Contract shall meet or exceed the latest requirements of the Codes of all National, Provincial, County, Municipal and other authorities exercising jurisdiction over construction work at the project, provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

.2 All material and equipment subject to Underwriters laboratories of Canada or Canadian Standards Association inspection and approval, shall bear ULC and/or CSA labels.

.3 All work shall meet or exceed requirements of specified standards, codes and referenced documents, of the latest edition.

.4 All work must comply with BC Building Code 2024, NBCC 2020, NPCC 2015, NFCC 2015, NECB 2017, SMACNA Architectural Sheet Metal Manual, RCABC Roofing Practices Manual, TSBC requirements as well as any other applicable as well as any other applicable Federal, Provincial or Municipal code or bylaw.

1.9 JOB SITE SAFETY

.1 Safety is of paramount importance at all stages of the roofing project and it is understood that the British Columbia Construction Safety Association and WorkSafe BC will be considered the minimum standard. Failure to adhere to this standard may require the project to temporarily shut down.

.2 The Contractor shall, for the purposes of the Workers Compensation Act, 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".

.3 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.

.4 As per the requirements of the Workers Compensation Act Part 3, Division 3, Section 118(1-3) which states:

1) Coordination of multiple-employer workplaces 118(1) In this section: "multiple-employer workplace" means a workplace where workers of 2 or more employers are working at the same time; "prime contractor" means, in relation to a multiple-employer workplace,
(a) the directing contractor, employer or other person who enters into a written agreement with the owner of that workplace to be the prime contractor for the purposes of this Part, or
(b) if there is no agreement referred to in paragraph (a), the owner of the workplace.
2) The prime contractor of a multiple-employer workplace must
(a) ensure that the activities of employers, workers and other persons at the workplace relating to occupational health and safety are coordinated, and
(b) do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with this Part and the regulation in respect to the workplace.
3) Each employer of workers at a multiple-employer workplace must give to the prime contractor the name of the person the employer has designated to supervise the employer's workers at that workplace.

2.0 PRODUCTS

Not applicable.

3.0 EXECUTION

Not applicable.

END OF SECTION

1.1 GENERAL

1.2 PROJECT COORDINATION

.1 The Contractor is responsible for coordination with other trades. Lines of demarcation between the Contractor's work and trades' work are solely the responsibility of the Contractor. The Consultant assumes no responsibility for division of the work or for any jurisdiction regarding such division.

.2 The Contractor is responsible for coordination with the Owner of all on-site activity as it affects the operation of the building.

1.3 CONSTRUCTION REVIEW

.1 When the project is in progress, the Owner's Representative will provide the following:

- .1 Conduct a pre-project start-up meeting with the Building Owner, Project Manager, and Contractor to ensure that all aspects of the project are understood and are acceptable to all parties concerned.
- .2 Keep the Owner informed as to the progress and quality of the work as observed.
- .3 Shall inspect roof work in progress a minimum of three days per week to ensure full compliance with the specifications. An inspector temporarily employed is not acceptable.
- .4 Shall provide reports showing details for each inspection day, of work undertaken. These details shall include pictures and notes for each stage of the work, including all layers of the built up roof system. This report shall be provided in an electronic format.
- .5 Report to the Owner in writing any failure or refusal of the Contractor to correct unacceptable practices called to the Contractor's attention.
- .6 Confirm after completion that there are no application procedures in conflict with the specifications other than those that may have been previously reported and corrected.

.2 The Owner or his Representative shall have access to the work for the purpose of inspection. The Owner or his Representative may order any extra tests or inspections that may be deemed necessary to ascertain the proper execution of the work. If the work is found in accordance with the Contract, the Owner shall pay the cost of the extra tests or inspections. If the work is found deficient in terms of the Contract, then the Contractor shall pay the costs, including any additional costs to make the work acceptable under the contract.

1.4 PROJECT CONDITIONS

.1 Proceed with roofing work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.

.2 Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

1.5 SEQUENCING AND SCHEDULING

.1 Sequence installation of modified bituminous sheet roofing with related units of work, to ensure that roof assemblies including roof accessories, flashing, trim and joint sealers are protected against damage from effects of weather, corrosion and adjacent construction activity.

.2 Fully complete all modified bituminous membrane roofing field assembly work each day. Phased application of the membrane plies will not be accepted.

2.0 PRODUCTS

Not applicable.

3.0 EXECUTION

Not applicable.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

.1 This section includes for compliance and submittals required for health and safety during Work.

1.2 REFERENCES

.1 Federal regulations, latest edition including all amendments up to project date:

.1 Fire Commissioners of Canada, FC 301, Standard for Construction Operations.
.2 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.

.2 Provincial regulations, latest edition including all amendments up to project date:

.1 Provincial or National Building Code for Place of Work.
.2 Provincial Occupational Health and Safety Act.

1.3 SUBMITTALS

.1 Informational Submittals:

.1 Notice of Project filed with Provincial Ministry of Labour or equivalent for Place of Work.

.2 Health and Safety Plan for Specific Work Site including, but not limited to:

.1 Name and contact info of Contractor's Health and Safety Representative for Work Site; including twenty-four (24) hour emergency contact phone numbers.

.2 Phone numbers of local fire, police, and ambulance outside of 911 services.

.3 Location of nearest medical facility and level of injury that each can service.

.4 Copies of certification for all employees on site of applicable safety training including, but not limited to:

.1 WHIMIS.
.2 Fall arrest and protection.
.3 Suspended Access Equipment.
.4 Erection of Scaffolding.
.5 License for powder actuated devices.

.5 Material Safety Data Sheets (MSDS) of controlled products to be used.

.6 On-site Contingency and Emergency Response Plan addressing:

.1 Standard procedures to be implemented during emergency situations.

.2 Preventative planning and protocols to address possible emergency situations. For example, if swing stage work is required, list protocol to be followed if supporting cable breaks.

.7 Guidelines for handling, storing, and disposing of hazardous materials that may be encountered on site, including measures to prevent damage or injury in case of an accidental spill.

.1 Incident and accident reports, promptly if and upon occurrence.

.2 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.4 RESPONSIBILITY

.1 Contractor responsible for health and safety of persons on Work Site and for protection of persons adjacent to Site to extent that they may be affected by performance of Work.

.2 Contractor responsible for safety of property and environment on Work Site and for protection of same adjacent to Site to extent that they may be affected by performance of Work.

.3 Contractor is responsible for health and safety at Work Site and is not relieved by Consultant's review of Health and Safety Plan for Specific Work Site.

1.5 OCCUPATIONAL HEALTH AND SAFETY

.1 Comply and conform to all health and safety work practices in accordance with regulations and authorities having jurisdiction at Place of Work including, but not limited to:

.1 WHMIS awareness and training.
.2 Fall-arrest, temporary guardrails, and travel-restraint systems.
.3 Eye protection, hardhats, and safety boots.

.2 Maintain one reference copy on site of Occupational Health and Safety Act and Regulations for Construction Projects for Place of Work, latest edition.

.3 Ensure that all personnel are adequately equipped to comply with safety regulations and that sufficient safety equipment is available.

.4 Provide at Work Site sufficient equipment to supply first aid.

.5 Promptly report to Owner and Consultant all accidents, and any claims made against Contractor or Subcontractor on account of accident.

.6 Enforce proper work methods and act immediately on directions regarding safety and work practices given by authorities having jurisdiction or by Owner, at no additional cost to Owner.

.7 Failure of Contractor to comply with verbal or written instructions or orders from Ministry of Labour Inspector, other authorities, Owner, or Consultant regarding safe work practices or provision of specified requirements under regulations to be considered Non-Compliance with Contract.

.1 Owner or Consultant may stop Work for failure to rectify non-compliance of health and safety regulations.

1.6 WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHIMS)

.1 Contractor to be familiar with WHIMIS regulations and be responsible for compliance.

.2 Contractor responsible for all other requirements of regulations as applicable to Employers.

.3 All controlled products to be properly labelled and stored.

.4 Immediately inform Owner and Consultant if any unforeseen or peculiar safety-related factor, hazard, or condition becomes evident during performance of Work.

PART 2 - PRODUCTS

Not Applicable

PART 3 – EXECUTION

Not Applicable

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

.1 Barriers

.2 Environmental Controls

.3 Fall Arrest

.4 Traffic Controls

.5 Fire Routes

1.2 APPLICABLE PUBLICATIONS

.1 Canadian General Standards Board (CGSB)

.1 CGSB 1.189M – Primer, Alkyd, Wood, Exterior

.2 CGSB 1.59 – Alkyd Exterior Gloss Enamel

.2 Canadian Standards Association (CSA)

.1 CSA O121M – Douglas Fir Plywood

.3 Occupational Health and Safety Act and regulations for Construction Projects, 2000 Edition.

.4 Canadian Standards Association (CSA), CSA S350-M, Code of Practice for Safety in Demolition of Structures.

.5 Comply with National Building Code of Canada, Part 8, “Safety Measures at Construction and Demolition Sites”, and Provincial requirements.

1.3 INSTALLATION AND REMOVAL

.1 Provide temporary controls in order to execute Work expeditiously.

.2 Remove from site all such work after use.

1.4 WORK AREA HOARDING

.1 Erect temporary site enclosures where required using:

.1 38 x 89 mm (2” x 4”) construction grade lumber framing at 600 mm (2’) centres and 1200 x 2400 x 13 mm (4’ x 8’ x 1/2”) exterior grade fir plywood to CSA O121. Apply plywood panels vertically flush and butt jointed.

.2 1800 mm (6’) high interlocking steel fence, with openings no greater than 38 mm (1.5”)

.2 Where required provide a minimum of one lockable truck entrance gate and at least one pedestrian door as directed and conforming to applicable traffic restrictions on adjacent streets.

Equip gates with locks and keys.

.3 Erect and maintain pedestrian walkways including roof and side covers, complete with signs and electrical lighting as required by law.

.4 Paint public side of site enclosure in selected colours with one coat primer to CAN/CGSB 1.189M and one coat exterior paint to CAN/CGSB 1.59. Maintain public side of enclosure in clean condition.

.5 Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures.

1.5 COVERED HOARDING

.1 Covered hoardings will be required when working over exits that serve as fire exits and locations where entrance or exit is required to remain open during work as stipulated by Owner.

.2 Covered hoardings to be erected from vertical face of exit/entrance a minimum of:

.1 a line from top of work extending on 60^{o} angle from vertical, or

.2 6000 mm (20') long.

.3 Covered hoardings to be provided when work occurs overhead of following:

.1 Emergency exits

.2 Safe Areas

.3 Emergency access roads

.4 Entrances and exits determined by Owner to remain open during work

.5 Entrances and exits required to remain open to provide adequate egress in and out of building

.4 Covered hoardings for pedestrian traffic to be constructed as follows:

.1 Scaffolding frames with X-bracing at 2400 mm (8') o/c;

.2 2x10 planks across top of frames tight together fastened to scaffolding frames;

.3 19 mm (3/4") plywood fastened to top of 2x10 planks;

.4 minimum 12 mm (1/2") plywood on 38 x 89 mm framing side walls set inside of overhead framing;

.5 provide and maintain lighting to a minimum of 50 lux, constructed in a fashion that will mitigate vandalism.

.5 Covered hoardings for Access roads and Safe Areas to be designed by a Professional Engineer licensed in province for Place of Work under guidelines of provincial Occupational Health and Safety Act and with local authorities having jurisdiction.

1.6 WORKING FROM ROOF

.1 If and when work is performed on roof, existing roof composition to be protected by following:

.1 minimum 25 mm (1") rigid insulation;

.2 6 mil polyethylene sheet, lapped at discontinuities by 300 mm (12");

.3 19 mm (3/4") plywood sheathing.

1.7 FALL ARREST

.1 If building does not have an approved roof anchor system in place, supply an engineered rigging system signed and sealed by a Professional Engineer.

.2 Provide rigging drawings showing location of anchors, life lines and primary suspension lines indicating following:

.1 Primary suspension line size.

.2 Life safety line size.

.3 Quantity and location of counter weights.

.4 Size and length of outrigger beam.

.5 Configuration of stages, whether bosuns chair, swing stage or tiered swing stage.

.6 Details indicating:

.1 proprietary beam saddles with anchorage

.2 compression fittings

.3 shackles or forged hooks

.4 protection of life lines

.5 size and quantity of cable clips

.3 Where swing stage rigging is not used prepare plans indicating a location of life line tie offs.

.4 Provide typical details indicating construction and anchorage for secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs.

.5 Conform to requirements of Occupational Health and Safety Act and regulations for Construction Projects

1.8 WEATHER ENCLOSURES

.1 Weather to be considered incidental to work and to not be claimed as additional.

.2 Applicable standard to be used for materials or building components when enclosures and/or heating is required to complete work.

.3 Provide weather tight closures for, but not limited to:

.1 unfinished door and window openings;

.2 openings in floors and roofs;

.3 openings through walls;

.4 locations where daily work is not completed in a days work and components left exposed are sensitive to weather conditions;

.5 protection of materials used that are sensitive to weather conditions.

.4 Design enclosures to withstand wind pressure, snow loading etc.

1.9 DUST TIGHT SCREENS

.1 Provide dust tight screens to localize dust generating activities, and for protection of workers, finished areas of Work and public.

.2 Maintain and relocate protection until such work is complete.

.3 Provide means for ventilating area if work is to occur in an interior or confined space.

.4 Ventilate work area when it corresponds with areas used by tenants or patrons concurrently for parking or egress. If dust generation will affect tenants or patrons provide sealed enclosure with adequate ventilation for health and safety of workers.

1.10 ACCESS TO SITE

.1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

.2 Provide all appropriate signage directing public and building occupants away from work area

.3 Emergency exits: Maintain clear and unobstructed use of all existing exit doors and routes. This may include provision of overhead protection and enclosed exit walkways in case of overhead work. Provide adequate lighting for 24 hour use.

1.11 PUBLIC TRAFFIC FLOW

.1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.

1.12 FIRE ROUTES

.1 Maintain access to property including overhead clearances for use by emergency response vehicles.

.2 Provide all required signage to inform emergency vehicles of temporary route for access if modified as part of work.

1.13 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

.1 Protect surrounding private and public property from damage during performance of Work.

.2 Be responsible for damage incurred.

1.14 PROTECTION OF BUILDING FINISHES

.1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.

.2 Provide necessary screens, covers, and hoardings.

.3 Confirm with Consultant locations and installation schedule 3 days prior to installation.

.4 Be responsible for damage incurred due to lack of or improper protection.

PART 2 - PRODUCTS

Not Applicable

PART 3 – EXECUTION

Not Applicable

END OF SECTION

1.1 GENERAL

1.2 WORK INCLUDED

.1 Conduct all cleaning and disposal operations during the work.

1.3 REFERENCES

.1 Waste Control Regulation – British Columbia Environmental Protection and Enhancement Act. (British Columbia Occupational Health and Safety).

2.1 PRODUCTS

2.2 MATERIALS AND EQUIPMENT

.1 Use only cleaning materials and equipment approved by the manufacturer of the surface to be cleaned, and only as recommended by the cleaning material manufacturer.

3.1 EXECUTION

3.2 WASTE REMOVAL AND CLEANING DURING CONSTRUCTION

.1 Maintain the Place of Work and adjacent public properties free from accumulations of waste materials and rubbish.

.2 Separate and recycle all recoverable waste materials.

.3 All wastes that create hazardous conditions must be removed from the premises daily.

.4 Disposal of all waste products to be performed in strict accordance with the product manufacturer's Material Safety Data Sheet, and in accordance with the provincial Waste Control Regulations.

.5 Drainage system nor sump pits shall not be used to dispose of project wastes and materials.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED SECTIONS

.1 Section 01 11 00 – Summary of Work

1.2 APPLICABLE PUBLICATIONS

.1 Most recent revision of following:

.1 Canadian Standards Association CSA S350, Code of Practice for Safety in Demolition of Structures.

.2 National Building Code of Canada, Part 8, "Safety Measures at Construction and Demolition Sites", and Provincial requirements.

.3 Occupational Health and Safety Act and regulations for Construction Projects.

.4 Canadian Environmental Protection Act (CEPA), 1988.

.5 Canadian Environmental Assessment Act (CEAA), 1995.

.6 Transportation of Dangerous Goods Act (TDGA), 1992.

1.3 ASBESTOS AND DESIGNATED SUBSTANCES

.1 Demolition of spray or trowel applied asbestos can be hazardous to health. Notify Consultant if material resembling spray or trowel-applied asbestos is encountered on site. Stop work and do not proceed with removals until written instructions have been received from Consultant.

1.4 STORAGE AND PROTECTION

.1 Protect existing items designated to remain and items designated for salvage. In event of damage to such items, immediately replace or make repairs to approval of Consultant and at no cost to Owner.

.2 In all circumstances, ensure that demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.

.3 Protect trees, plants and foliage on site and adjacent properties where indicated.

1.5 EXISTING CONDITIONS

.1 Prior to start of any demolition work, remove contaminated or hazardous materials from site and dispose of at designated disposal facilities.

.2 Record and discuss with Consultant any deviations from existing assumed conditions as indicated by drawings and/or specifications.

1.6 REGULATORY REQUIREMENTS

.1 Ensure all work is performed in compliance with CEPA, CEAA, TDGA, and all applicable

provincial regulations.

1.7 NOTICE

.1 Provide a minimum twenty-four (24) hour notice to Consultant and Owner prior to proceeding with any work that may disrupt building access or services.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

3.1 PREPARATION

.1 Examine site with Consultant and verify extent and location of items designated for removal, disposal, recycling, salvage and items to remain.

.2 Locate and protect utilities where applicable. Notify and obtain approval of utility companies before starting demolition.

3.2 GENERAL PROTECTION

.1 Prevent movement, settlement, or other damage to adjacent structures, utilities, and parts of building to remain in place. Provide engineered bracing and shoring as required.

.2 Minimize noise, dust, and inconvenience to occupants.

.3 Protect existing building systems, services and equipment.

.4 Provide temporary dust screens, covers, railings, supports and other protection as required.

.5 Provide required signage, barricades, hoarding, overhead protection and temporary egress.

.6 Support affected structure or building components and if safety of structure being demolished or adjacent structures or services appears to be endangered, take preventative measures and then cease operations and notify Consultant immediately.

.7 Ensure that demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.

.8 Do not dispose of waste or volatile materials such as: mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers. Ensure proper disposal procedures are maintained throughout project.

.9 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers, or onto adjacent properties.

.10 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities.

.11 Prevent extraneous materials from contaminating air beyond application area, by providing temporary enclosures during demolition work.

.12 Cover or wet down dry materials and waste to prevent blowing dust and debris. Control dust on all temporary roads.

3.3 DEMOLITION SALVAGE AND DISPOSAL

.1 Remove parts of existing structure or roof system to permit repairs or new installation. Sort materials into appropriate piles for recycling and or reuse.

.2 Refer to drawings and specifications for items identified for reuse or salvage, if applicable.

.3 Remove items to be reused, store in a protected location, and reinstall under appropriate section of specification.

.4 Trim edges of partially demolished building elements to suit future use.

.5 Include for disposal of removed materials to appropriate Landfill and/or recycling facilities, except where specified otherwise, and in accordance with authority having jurisdiction.

.6 Dispose of debris on a continuous basis. Do not stockpile debris in a manner which would overload structure, or impede access around site.

3.4 SEQUENCE OF OPERATION

.1 Removal:

.1 Remove items as indicated. Do not disturb items designated to remain in place.

.2 Removal From Site:

.1 Interim removal of stockpiled material may be required, if it is deemed to interfere with operations of Owner.

.3 Salvage:

.1 Carefully dismantle items containing materials for salvage and stockpile salvaged materials at locations acceptable to Owner and Consultant.

.4 Disposal of Material:

.1 Dispose of materials not designated for salvage or reuse on site to be hauled to an authorized disposal site and or recycling facilities.

.5 Backfill:

.1 Backfill in areas as indicated.

3.5 RESTORATION

.1 Restore areas and existing works outside areas of demolition to match condition of adjacent,

undisturbed areas.

.2 Use only soil treatments and procedures which are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent water courses or ground water.

3.6 CLEANUP

.1 Upon completion of work, remove debris, trim surfaces and leave work site clean.

.2 Use only cleaning solutions and procedures which are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent water courses or ground water.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

.1 Section 01 11 00 – Summary of Work

.2 Section 07 62 00 – Sheet Metal Flashing and Trim

1.2 REFERENCES

.1 American Society for Testing and Materials (ASTM)

- .1 ASTM A123/A123M, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .2 ASTM A653/A653M, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealled) by the Hot-Dip Process.
- .3 ASTM C578, Specification for Rigid, Cellular Polystyrene Thermal Insulation.
- .4 ASTM C1396/C1396M, Standard Specification for Gypsum Board.
- .5 ASTM D5055, Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists.

.2 Canadian General Standards Board (CGSB)

- .1 CAN/CGSB-51.32, Sheathing, Membrane, Breather Type.
- .2 CAN/CGSB-51.34, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
- .3 CAN/CGSB-71.26, Adhesive for Field-Gluing Plywood to Lumber Framing for Floor Systems.

.3 Canadian Standards Association (CSA)

- .1 CSA A123.2, Asphalt Coated Roofing Sheets.
- .2 CAN/CSA-A247, Insulating Fiberboard.
- .3 CSA B111, Wire Nails, Spikes and Staples.
- .4 CSA 0112.9, Evaluation of Adhesives for Structural Wood Products (Exterior Exposure).
- .5 CSA O121, Douglas Fir Plywood.
- .6 CAN/CSA-O141, Softwood Lumber.
- .7 CSA O151, Canadian Softwood Plywood.
- .8 CAN/CSA-O325.0, Construction Sheathing.

.4 National Lumber Grades Authority (NLGA)

- .1 Standard Grading Rules for Canadian Lumber.

1.3 QUALITY ASSURANCE

.1 Lumber identification: 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.

PART 2 PRODUCTS

2.1 FRAMING AND LUMBER MATERIALS

.1 Lumber: unless specified otherwise, softwood, No. 1 or No. 2 grade, S4S, moisture content 19% (S-dry) or less in accordance with following standards:

.1 CAN/CSA-O141.

.2 NLGA Standard Grading Rules for Canadian Lumber.

.2 Framing and board lumber: in accordance with NBC.

.3 Furring, blocking, nailing strips, grounds, rough bucks, fascia backing and sleepers:

.1 Board sizes: "Standard" or better grade.

.2 Dimension sizes: "Standard" light framing or better grade.

.3 Post and timbers sizes: "Standard" or better grade.

.4 Pressure treated material to be Alkaline Copper Quaternary (ACQ).

2.2 PANEL MATERIALS

.1 Plywood, OSB and wood based composite panels: to CAN/CSA-O325.0.

.2 Douglas fir plywood (DFP): to CSA O121, standard construction.

.3 Canadian softwood plywood (CSP): to CSA O151, standard construction.

.4 Insulating fiberboard sheathing: to CAN/CSA-A247.

.5 Gypsum sheathing: to 09 21 16 – Gypsum Board Assemblies.

2.3 ACCESSORIES

.1 General purpose adhesive: to CSA O112.9.

.2 Nails, spikes and staples: to CSA B111.

.3 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.

.4 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, explosive actuated fastening devices, recommended for purpose by manufacturer.

2.4 FASTENER FINISHES

.1 Galvanizing: to ASTM A123/A123M, ASTM A653, use galvanized fasteners for exterior work, interior highly humid areas and fire-retardant treated lumber.

PART 3 EXECUTION

3.1 INSTALLATION

.1 Comply with requirements of NBC latest edition, Part 9 supplemented by following paragraphs.

.2 Install members true to line, levels and elevations, square and plumb.

.3 Construct continuous members from pieces of longest practical length.

.4 Install spanning members with "crown-edge" up.

.5 Select exposed framing for appearance. Install lumber and panel materials so that grade-marks and other defacing marks are concealed or are removed by sanding where materials are left exposed.

.6 Install wall sheathing in accordance with manufacturer's printed instructions.

.7 Install roof sheathing in accordance with requirements of NBC.

.8 Install furring and blocking as required to space-out and support facings, fascia, and other work as required.

.9 Install furring to support siding applied vertically where there is no blocking and where sheathing is not suitable for direct nailing.

.1 Align and plumb faces of furring and blocking to tolerance of 1:600.

.10 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.

.11 Install wood cants, fascia backing, nailers, curbs and other wood supports as required and secure using galvanized steel fasteners. Coordinate height of roof curbs with Division 7 Sections.

.12 Use dust collectors and high quality respirator masks when cutting or sanding wood panels.

3.2 ERECTION

.1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.

.2 Countersink bolts where necessary to provide clearance for other work.

.3 Use nailing disks for soft sheathing as recommended by sheathing manufacturer.

END OF SECTION

1.1 GENERAL

1.2 RELATED SECTIONS

.1 Section 01 11 00 – Summary of Work

.2 Section 07 92 00 – Joint Sealants

1.3 REFERENCES

.1 American Society for Testing and Materials (ASTM International)

.1 ASTM A591/A591M-98, Standard Specification for Steel Sheet, Electrolytic Zinc-Coated, for Light Coating Applications.

.2 ASTM A653/A653M-01a, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.3 ASTM A792/A792M-02, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.

.3 Canadian Roofing Contractors Association (CRCA)

.1 Roofing Specifications Manual 1997.

.4 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-93.1-M85, Sheet Aluminum Alloy, Prefinished, Residential.

.5 Canadian Standards Association (CSA International)

.6 RGC Roofing Practices Manual, Roofing Contractors Association of British Columbia (RCABC).

.7 Architectural Sheet metal Manual, Sheet metal and Air Conditioning Contractors National Association, Inc (SMACNA).

1.4 SAMPLES

.1 Submit 50 x 50 mm samples of each type of sheet metal material, colour and finish.

2.1 PRODUCTS

2.2 SHEET METAL MATERIALS

.1 Zinc coated steel sheet: 0.61 mm thickness (24 gauge), commercial quality to ASTM A653/A653M, with Z275 designation zinc coating.

.2 Aluminum-zinc alloy coated steel sheet: to ASTM A792/A792M, commercial quality, grade 33 with AZ180 coating.

2.3 PREFINISHED STEEL SHEET

.1 Prefinished steel with factory applied silicone modified polyester.

.1 Class F2S.

.2 Colour selected by Owner.

.3 Specular gloss: 30 units +/- 5 in accordance with ASTM D523.

.1 Coating thickness: not less than 25 microns.

2.4 ACCESSORIES

.1 Cleats: of same material, and temper as sheet metal, minimum 150 mm wide. Thickness 0.76 mm.

.2 Fasteners: of same material as sheet metal, to CSA B111, Sheet metal screws with integral washers and neoprene grommets.

.3 Washers: of same material as sheet metal, 1 mm thick with rubber packings.

.4 Touch-up paint: as recommended by prefinished material manufacturer.

2.5 FABRICATION

.1 Fabricate metal flashings and other sheet metal work in accordance with SMACNA and RCABC guidelines as indicated.

.2 Form pieces in 3050 mm (10') maximum lengths. Make allowance for expansion at joints.

.3 Hem exposed edges on underside 12 mm. Mitre and seal corners with sealant.

.4 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

.5 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

2.6 METAL FLASHINGS

.1 Form flashings, copings and fascias to profiles indicated of 0.61mm prefinished sheet metal.

3.1 <u>EXECUTION</u>

3.2 INSTALLATION

.1 Install sheet metal work in accordance with SMACNA detail and RCABC acceptance requirements and as shown on drawings.

.2 Counter-flashing to extend down to roof level to conceal modified bitumen flashing

membrane.

.3 Use concealed fastenings except where approved before installation. Fasteners penetrating horizontal surfaces or cap flashings of any kind are not acceptable.

.4 Provide underlay under sheet metal. Secure in place and lap joints 100 mm (4”).

.5 Counterflash bituminous flashings at intersections of roof with vertical surfaces and curbs. Extend flashings down to roof level. Counterflashing joints to be double S-lock where applicable.

.6 Parapet cap flashings to have standing seam joints, forming tight fit over hook strips, at terminations and corners.

.7 Install matching sheet metal fascia over exposed wood fascia boards.

.8 Lock end joints and caulk with sealant.

.9 All cap flashings to have sloping surfaces, minimum 10% slope unless indicated otherwise on drawings.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED SECTIONS

.1 Section 01 11 01 – Summary of Project

.2 Section 02 41 13 – Selective Demolition & Removal

.3 Section 07 62 00 – Sheet Metal Flashing & Trim

1.2 REFERENCES

Latest edition of all listed references to apply:

.1 ASTM C920 – Elastomeric Joint Sealants

.2 CAN/CGSB-19.13 – Sealing Compound, One-component, Elastomeric, Chemical Curing

.3 Sealants: Professionals' Guide, Sealant, Waterproofing and Restoration Institute

.4 SWRI (Sealant, Waterproofing and Restoration Institute) – Sealant and Caulking Guide Specification

1.3 QUALITY ASSURANCE OBSERVATION

.1 Observation of work will be carried out by designated QA Observer.

.2 Prior to mobilizing on site, prepare and install sealant samples for adhesion testing, a minimum of two (2) samples for each substrate combination, according to manufacturers written guidelines. Test sealant in contact with samples of materials to be caulked to ensure that proper adhesion will be obtained and no staining of material will result. Testing to be completed prior to mobilization on site. Do not proceed with Work until samples have been approved.

.3 Adhesion tests on new sealant will be performed at random locations at discretion of Owner's representative. Any work that is found to be sub-standard, is to be removed and replaced at no cost to Owner. Contractor is to assist with sealant adhesion tests as directed.

.4 Execute Work of this Section by Subcontractors approved by manufacturers of materials incorporated in Work; who has equipment, adequate for Project, and skilled tradesmen to perform it expeditiously; and is known to have been responsible for satisfactory installations similar to that specified during a period of at least immediate past five years.

.5 Remove sealant and re-caulk disapproved joints.

.6 Approved joints will establish minimum acceptable quality of workmanship and will serve as standard by which subsequent Work will be compared for Acceptance.

1.4 DELIVERY, STORAGE, AND HANDLING

.1 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact.

.2 Protect from freezing, moisture, water and contact with ground or floor.

1.5 PROJECT CONDITIONS

.1 Environmental Limitations:

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

.1 When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 4.4 degrees C.

.2 When joint substrates are wet.

.2 Joint-Width Conditions:

.1 Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

.3 Joint-Substrate Conditions:

.1 Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.6 ENVIRONMENTAL AND SAFETY REQUIREMENTS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of material safety data sheets acceptable to local Labour regulations.

.2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Place materials defined as hazardous or toxic waste in designated containers.

.2 Ensure emptied containers are sealed and stored safely for disposal away from children.

.3 Dispose of surplus chemical and finishing materials in accordance with federal regulations.

.4 Fold up metal banding, flatten, and place in designated area for recycling.

.5 Use trigger operated spray nozzles for water hoses.

.6 Return solvent and oil soaked rags for contaminant recovery and laundering or for proper disposal.

.7 Use least toxic sealants, adhesives, sealers, and finishes necessary to comply with requirements of this section.

.8 Close and seal tightly all partly used sealant containers and store protected in well ventilated fire-

safe area at moderate temperature.

.9 Place used hazardous sealant tubes and other containers in areas designated for hazardous materials.

PART 2 - PRODUCTS

2.2 SEALANT MATERIALS

.1 Sealants and caulking compounds must:

.1 meet or exceed all applicable governmental and industrial safety and performance standards.

.2 be manufactured and transported in such a manner that all steps of process, including disposal of waste products arising therefrom, will meet requirements of all applicable governmental acts, by laws and regulations including.

.2 Sealant and caulking compounds must be accompanied by detailed instructions for proper application so as to minimize health concerns and maximize performance, and information describing proper disposal methods.

.3 Caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant to not be used in or near air handling units.

.4 When low toxicity caulks are not possible, confine usage to areas which offgas to exterior, are contained behind air barriers, or are applied several months before occupancy to maximize offgas time.

.5 Where sealants are qualified with primers use only these primers.

2.3 SEALANT MATERIAL DESIGNATIONS

.1 Acceptable single component neutral cure silicone sealants for skylight related work include:

.1 To CAN/CGSB-19.13.

.1 795 by Dow Corning

.2 Pre-approved alternate.

.2 Acceptable single component, moisture curing, polyurethane sealants for reglets and other roofing related flashing termination work include:

.1 Tuff Stuff.

.2 Pre-approved alternate.

.3 Butyl (for concealed skylight related sealant joints): Tremco Curtainwall Sealant or approved alternate.

.4 Primers:

.1 Primers to be as recommended by sealant manufacturer.

.5 Cleaners:

.2 Acceptable cleaners:

.1 Xylol

.2 Methylethylketone (MEK)

.3 Isopropyl Alcohol

.3 Surfaces to receive silicone sealants to not be cleaned with Xylol.

.4 All substrate materials to be cleaned with compatible cleaners.

.6 Preformed Compressible and Non-Compressible back-up materials.

.1 Polyethylene, Urethane, Neoprene or Vinyl Foam:

.1 Extruded closed cell foam backer rod.

.2 Size: oversize 30 to 50 %.

.2 Neoprene or Butyl Rubber

.1 Round solid rod, Shore A hardness 70.

.3 High Density Foam

.1 Extruded closed cell polyvinyl chloride PVC, extruded polyethylene, closed cell, Shore A hardness 20, tensile strength 140 to 200 kPa, extruded polyolefin foam, 32 kg/m3 density, or neoprene foam backer, size as recommended by manufacturer.

.4 Bond Breaker Tape.

.1 Polyethylene bond breaker tape which will not bond to sealant.

.7 Compatibility: All materials in a sealant system to be compatible with each other, with substrate and any coating or waterproofing to be installed. sealants used with elastomeric coating or waterproofing systems must be approved by coating or waterproofing manufacturer.

2.4 JOINT PRIMER

.1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant.

.2 Primer as recommended by sealant manufacturer.

PART 3 - EXECUTION

3.1 PROTECTION

.1 Protect existing facades from staining or contamination.

.2 Protect public from falling debris during installation.

.3 At end of each day's work or when stoppage occurs due to inclement weather, provide protection for completed work and materials out of storage. At no time shall unsealed joints be left open. If protection is required, then entire drop/bay to be adequately protected.

3.2 EXAMINATION

.1 Before commencing Work, verify that joint configuration and surfaces have been provided as specified under Work of other Sections to meet intent of sealant Specification, that joint conditions will not adversely affect execution, performance or quality of completed Work and that they can be put into acceptable condition by means of preparation specified in this Section. Verify Site conditions together with manufacturer's representative of sealant to be applied.

.2 Examine existing conditions and substrates upon which work of this section is dependent. Report to Consultant in writing any defects or discrepancies. Commencement of work implies acceptance of existing conditions and assuming full responsibility for finished condition of work.

.3 Ascertain that sealers applied to sealant substrates are compatible with sealant used and that full bond between sealant and substrate is attained. Request samples of sealed or coated substrate from their fabricators for testing of compatibility and bond if necessary.

.4 Examine sealant configuration for width and depth. Depth of joint should be 1/2 joint width with a minimum depth of 6mm (0.25”) and a maximum depth of 13mm (0.5”) unless specified otherwise. For fillet joints, a minimum of 6mm (0.25”) adhesion between sealant and substrate must be achieved on both sides of joint unless specified otherwise.

.5 Defective work resulting from application to unsatisfactory joint conditions will be considered responsibility of those performing work of this section.

3.3 SURFACE PREPARATION

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

.2 Before any sealant repairs are made, type of existing sealant to be determined. If uncertain as to type, then a sealant manufacturer technical representative to be contacted to confirm type. Only sealant compatible with existing to be installed as part of repairs. Urethane based sealants are not to be applied over existing silicone sealants.

.3 Where existing, remove sealant completely. In no case shall new sealant be applied over old. In addition:

.1 Remove existing sealants, dust, oil, grease, oxidation, mill scale, coatings and all other

loose material by cutting, brushing, scrubbing, scraping and/or grinding. In no case, however, shall components be damaged during surface preparation.

.2 Clean substrates with recommended solvent cleaner. Apply solvent with a clean cloth, pad or soft paper towel. Applicator cloth or towel to not leave fiber residue on substrate surface. Surface should be wiped clean and dried with a second clean cloth to ensure removal of contaminants. If substrate surfaces is still not clean, repeat procedures as needed. Change cloths frequently to prevent depositing contaminants from cloth onto substrate surface.

.3 Use method of surface preparation suitable for substrate, as recommended by sealant manufacturer and that does not damage existing finishes.

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

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

.6 Ensure joint surfaces are dry and frost free.

.7 Remove loose particles present or resulting from routing by sweeping particles out with a dry brush, blowing out joints with oil free compressed air or by vacuuming joints prior to solvent cleaning.

3.4 PRIMING

.1 Where necessary to prevent staining or for neat appearance, mask adjacent surfaces prior to priming and caulking.

.2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

.3 Use only primer approved by sealant manufacturer for particular installation, applying in strict accordance with manufacturers printed recommendations.

.4 Always pour primers onto rag or brush, do not dip rag or brush into container.

.5 Prime only as much area that can be packed and caulked in a single day.

.6 Do not apply excess primer, and apply primer only to areas which it will be contacted by sealant.

3.5 BACKUP MATERIAL

.1 Apply bond breaker tape where installation of backer rod is not possible, three point adhesion needs to be eliminated or throat to width ratio needs to be created as per manufacturers recommendations.

.2 When using backing material comprised of tubular or rod stock, avoid lengthwise stretching of material. Do not twist or braid backer material.

.3 Provide a stiff blunt-surfaced wood or plastic installation tool, having shoulders designed to ride on finished surface and a protrusion of required dimensions to assure a uniform depth of backup material below sealant. Do not puncture exterior skin or surface of backer material. A screwdriver is prohibited for use on this project.

.4 Using approved tool, smoothly and uniformly place backup material to depth indicated on drawings or otherwise required, compressing backer material 25% to 50% and securing a positive fit.

.5 Install backing material to a depth to provide a caulked joint meeting depth requirement as set out in sealant manufacturer's specifications.

3.6 MIXING

.1 Mix materials in strict accordance with sealant manufacturer's instructions.

3.7 APPLICATION

.1 Sealant:

.1 Apply sealant in accordance with manufacturer's written instructions.

.2 Mask edges of joint where irregular surface or sensitive joint border exist to provide neat joint.

.3 Apply sealant in continuous beads.

.4 Apply sealant using gun with proper size nozzle.

.5 Ensure that new sealant is adhered to substrates a minimum of 6 to 10 mm at each side of joint.

.6 Use sufficient pressure to fill voids and joints solid.

.7 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.

.8 Tool exposed surfaces before skinning begins to give slightly concave shape. Tooling to be performed by proper metal or wood tool. Finger tooling joints will not be accepted.

.9 Remove excess compound promptly as work progresses and upon completion.

.2 Curing:

.1 Cure sealants in accordance with sealant manufacturer's instructions.

.2 Do not cover up sealants until proper curing has taken place.

3.8 CLEAN-UP

.1 Clean adjacent surfaces immediately and leave work neat and clean.

.2 Remove excess and droppings, using recommended cleaners as work progresses.

.3 Remove masking tape after initial set of sealant.

END OF SECTION