
City of Parksville – Operations Yard
Roof Repairs – UNIT A & B

1116 Herring Gull Way
Parksville BC, V9P 1R2
Project # C04072025G2
April 2025

Site Visit: April 24, 2025 - 10AM PST

Submission Deadline: May 2, 2025 -1PM PST

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

Bid Closing: Friday, May 2, 2025 at 1pm 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. UNIT A & UNIT B: Replace fasteners. Seal overlapping seams with metal waterproofing material. Seal penetrations.

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:
 - .1 City of Parksville, Operations Yard, UNIT A & B, repairs on designated roof areas located at 1116 Herring Gull Way, Parksville, BC V9P 1R2.
- .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

- .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 September 1, 2025. Full completion must be reached by September 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 Determine nature and extent of all site services above and below grade prior to commencement of Work.
- .4 There will be no interior access to the roof.
- .5 No public access to Work area to be allowed. Ensure access to fire exits are maintained and hoarded through Work area. No areas of access to or around building are to be restricted without approval of Owner.
- .6 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.
- .7 Provide temporary support to existing structural and cladding components during performance of work if required.
- .8 Install temporary protection for all materials and building components, which have been exposed during demolition/removals as specified.
- .9 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.
- .2 Protect existing roof systems to remain against damage from traffic generated by new Work.

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 (with latest revisions and Part 8 Construction Safety Measures), 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 RCABC Roofing Practices Manual, 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 manufacturers install 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

Operations Yard: UNIT A and UNIT B – Metal Roof Hangers Repairs/Maintenance

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 Fluid Applied Metal Coating: Flash Point ADTM D93, Solids (by weight) ADTM D7282, Density ADTM D1476, ADTM D2870 Elongation 600% min, ADTM D2870 Tensile Strength 600 pci, Water Vapour Permeability ADTM E96.
- .2 Polyester-faced Adhesive Tape: Tensile Strength 4500 psi, Elongation 500%, Low Temp Flexibility (-56.6 C), Permeance ASTM E 96B, Adhesion > 20 lbs./in, Nominal Thickness 30 mils

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.

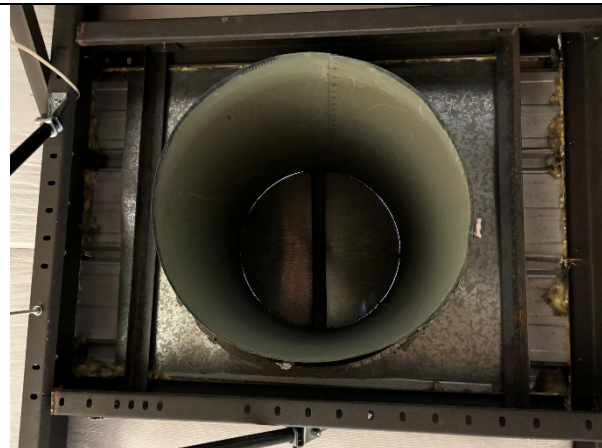
3.2 SCOPE OF WORK

- .1 Perform roof repairs to metal roofs.
- .2 Remove all existing deteriorated waterproofing around all roof penetrations
- .3 Where surface rust is found, remove all rust and prime using high-quality, fast drying alkyd primer specifically designed as a rust inhibitive primer at a coverage rate of 1.0gallon per 100SQF
- .4 Allow rust proofing to cure for 20 minutes
- .5 Replace all backed out or missing fasteners using oversized fasteners with neoprene washers
- .6 All fasteners to receive a generous dollop of a using a moisture-curing, single component, no-sag sealant that contains no solvents
- .7 Install a base coat of a synthetic liquid rubber, brush grade mastic that was specifically designed for application to metal roofs around all roof penetrations
- .8 Embed base coat using lightweight polyester-reinforcing fabric which is unaffected by water immersion and UV radiation when covered with roof coatings or aggregate.
- .9 Apply top coat of specified fluid applied system
- .11 Seal all rain collars, and replace any other areas of deteriorated caulking with specified sealant
- .12 Seal problematic panel overlap seams using a high-performance, polyester-faced, fatigue resistant, 100% solids adhesive tape designed to seal and reinforce seams
- .13 Coat problematic seams using specified fluid applied system.
- .14 UNIT B: South transition step down to lower roof section - Mechanically attach engineered exterior gypsum sheathing to vertical.
- .15 Prime sheathing using specified self-adhesive primer at manufacturer's recommended coverage rate.
- .16 Cover vertical with 24ga metal counter-flashing.

3.3 REFERENCE IMAGES



UNIT A: Hanger



UNIT B: Hanger





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.

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 (with latest revisions and Part 8 Construction Safety Measures), 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 BC Building Code 2018, Roofing Practices Manual and 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 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

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 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.

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 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

1.5 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.

1.6 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.

1.7 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.

1.8 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.

1.9 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 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