PART 1 GENERAL

1.1 SUMMARY OF WORK

.1 Title and description of Work: Louis Riel Library, replacement of asphalt shingle roofing.

.2 Contract method: stipulated price contract.

.3 The City's occupancy: public library building, occupied during regular business/operating hours.

1.2 RELATED SECTIONS:

.1 Section 070135 – Shingle Roof Replacement

1.3 CODES AND STANDARDS

.1 Perform Work in accordance with National Building Code of Canada (NBC) 2005 and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

.2 Meet or exceed requirements of:

.1 Contract documents.

.2 Specified standards, codes, and reference documents.

.3 Workers'/Workmens' Compensation Board and municipal authority

.4 Requirements of FCC No. 30.1-Standard for Construction Operations, June 1982, issued by Fire Commissioner of Canada.

.5 Falsework design and construction in accordance with CSA S269.1-1975.

.6 Workplace Hazardous Materials Information System (WHMIS).

1.4 WORK RESTRICTIONS

.1 Special Requirements

.1 The library facilities will be in operation during the Work. While the Work may proceed during regular hours of operation, it shall not unduly interfere with the normal operation of the facility.

1.5 CUTTING AND PATCHING

.1 Approvals

.1 Submit written request in advance of cutting or alteration which affects:

.1 Structural integrity of any element of Project.

.2 Integrity of weather-exposed or moisture-resistant elements.

.3 Efficiency, maintenance, or safety of any operational element.

.4 Visual qualities of sight-exposed elements.

.2 Inspection

.1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

.2 After uncovering, inspect conditions affecting performance of Work.

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

.3 Execution

.1 Perform cutting, fitting, and patching to complete the Work.

.2 Remove and replace defective and nonconforming Work.

.3 Perform Work to avoid damage to other Work.

.4 Prepare proper surfaces to receive patching and finishing.

.5 Cut rigid materials using power saw or core drill. Pneumatic or impact tools not allowed.

.6 Restore Work with new products in accordance with Contract Documents.

.7 Refinish surfaces to match adjacent finishes; for continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.

1.6 PROJECT MEETINGS

.1 Preconstruction Meeting

.1 A preconstruction meeting will be held with the Contractor and the City. The meeting will be scheduled by the Contract Administrator after Contract Award and prior to commencement of construction.

.2 Construction Meetings

.1 Contract Administrator will schedule and administer project progress meetings as required throughout progress of Work.

1.7 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

.1 Installation/Removal

.1 Provide construction facilities and temporary controls in order to execute Work expeditiously.

.2 Remove from site all such facilities after use.

.2 Hoarding

.1 Erect hoarding as required to protect public, workers, public, and private property from injury or damage.

.3 Scaffolding

.1 Provide and maintain scaffolding, ramps, ladders, and platforms.

.2 Design and construct scaffolding in accordance with CSA S269.2-M87(R1998).

.4 Sanitary Facilities

.1 Provide sufficient sanitary facilities for workers in accordance with local health authorities.

.2 Maintain in clean condition.

.5 Temporary Power and Lighting

.1 The City will provide temporary power required during construction for operating of power tools, to maximum supply of 120 volts 15 amps.

.2 Pay for damage to existing plant if caused by Contractor negligence.

.3 The City assumes no responsibility for inconvenience or costs incurred due to loss of power or interruptions.

.6 Construction Parking

.1 Parking as directed by Contract Administrator will be permitted on site provided it does not disrupt the performance of Work and access to building by employees and public.

.7 Project Cleanliness

.1 Maintain the Work in tidy condition, free from accumulation of waste products and debris.

.2 Remove waste material and debris from site at end of each working day.

1.8 MATERIAL AND EQUIPMENT

.1 Product and Material Quality

.1 Products, materials, equipment and articles (referred to as Products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.

.2 Defective Products, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

.3 Should any dispute arise as to quality or fitness of Products, decision rests strictly with Contract Administrator based upon requirements of Contract Documents.

.2 Storage, Handling and Protection

.1 Handle and store Products in manner to prevent damage, adulteration, deterioration, and soiling and in accordance with manufacturer's instructions when applicable.

.2 Store packaged or bundled Products in original and undamaged condition with manufacturer's seals and labels intact.

.3 Store Products subject to damage from weather in weatherproof enclosures.

.3 Protection of Building Finishes and Equipment

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

.2 Provide necessary screens, covers, hoardings as required.

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

.4 Manufacturer's Instructions

.1 Unless otherwise indicated in the specifications, install or erect Products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.

.2 Notify Contract Administrator in writing, of conflicts between specifications and manufacturer's instructions, so that Contract Administrator may establish course of action.

.3 Improper installation or erection of Products, due to failure in complying with these requirements, authorizes Contract Administrator to require removal and reinstallation at no increase in Contract Price.

.5 Workmanship

.1 Workmanship shall be best quality, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Contract

Administrator if required Work is such as to make it impractical to produce required results.

.2 Do not employ any unfit person or anyone unskilled in their required duties.

.3 Decisions as to quality or fitness of workmanship in cases of dispute rest solely with Contract Administrator, whose decision is final.

1.9 PROJECT CLOSEOUT

.1 Final Cleaning

.1 Remove all construction debris and extra materials from site.

.2 Use magnetic broom to ensure the removal of all metallic debris and nails from around entire perimeter of building.

.2 Documents

.1 Provide warranties fully executed and notarized.

.3 Inspection/Takeover Procedures

.1 Prior to application for certificate of Substantial Performance, carefully inspect the Work and ensure it is complete, that major and minor construction deficiencies are complete, defects are corrected and building is clean and in condition for occupancy. Notify Contract Administrator in writing, of satisfactory completion of the Work and request an inspection.

.2 During Contract Administrator's inspection, a list of deficiencies and defects will be tabulated. Contractor shall correct all deficiencies and defects.

.3 When the Contract Administrator considers deficiencies and defects have been corrected and it appears the requirements of the Contract have been performed, make application for certificate of Substantial Performance. Refer to Supplemental Conditions D12 for specifics to application.

PART 2 PRODUCTS

.1 Not Used

PART 3 EXECUTION

.1 Not Used

PART 1 GENERAL

1.1 SCOPE OF WORK

.1 Total roof area approximately 1,312 m^2. The Work includes, but is not limited to:

- .1 Removal and disposal of existing asphalt shingles and 2-ply felt underlayment.
- .2 Partial removal of existing plywood roof sheathing.
- .3 Clearing of vent paths and installation of insulation baffles to maintain clear vent space.
- .4 Install new 12.7mm exterior plywood sheathing (thickness to match existing).
- .5 Installation of roof vents as indicated.
- .6 Installation of new drip edge flashing and valley sheet metal bridging.
- .7 Installation of perimeter and valley ice and water shield.
- .8 Installation of new asphalt paper and 30yr. asphalt shingles.
- .9 Provision of warranty for all Work.

.2 Refer to drawings for full extent and details of the above Work.

1.2 RELATED SECTIONS

.1 Section 010010 – General Requirements

1.3 UNIT PRICES

.1 Provide Unit Price for the following:

- .1 Unit Price 1 – replacement of damaged/wet blown fibreglass insulation (300mm) with new. Provide price per m^2 to an estimated quantity of 100m^2.
- .2 Unit Price 2 – supply and installation of additional 12.7mm (1/2") exterior grade plywood roof sheathing (in excess of extents shown on drawings). Provide price per m^2 to an estimated quantity of 30m^2.

1.4 PROTECTION OF OCCUPIED SPACE

.1 The library must remain fully functional during the Work.

.2 Safe access to the building by employees and visitors must be maintained at all times.

.3 Contractor shall ensure that areas under construction are properly protected from the environmental elements to prevent water penetration from the roof to the interior of the facility.

1.5 REFERENCE

.1 Canadian Standards Association (CSA International).

- .1 CAN/CSA-A123.1/A123.5-98, Asphalt Shingles Made From Organic Felt and Surfaced With Mineral Granules/Asphalt Shingles Made From Glass Felt and Surfaced With Mineral Granules.

.2 CSA A123.2-M1979 (R2001), Asphalt-Coated Roofing Sheets.

.3 CAN/CSA-A123.3-98, Asphalt Saturated Organic Roofing Felt.

.4 CAN3-A123.51-M85 (R2001), Asphalt Shingle Application on Roof Slopes 1:3 and Steeper.

.5 CAN3-A123.52-M85 (R2001), Asphalt Shingle Application on Roof Slopes 1:6 to Less Than 1:3.

.6 CSA B111-1974 (R1998), Wire Nails, Spikes and Staples.

.2 Canadian Roofing Contractors Association (CRCA).

1.6 STORAGE AND HANDLING

.1 Provide and maintain dry, off-ground weatherproof storage.

.2 Load shingles onto roof in such a way as to avoid overloading the roof structure.

.3 Remove only in quantities required for same day use.

.4 Store caulking at +5ºC minimum.

.5 Store insulation protected from daylight and weather and deleterious materials.

1.7 ENVIRONMENTAL REQUIREMENTS

.1 Install roofing on dry deck, free of snow and ice, use only dry materials and apply only during weather that will not introduce moisture into roofing system.

1.8 COMPATIBILITY

.1 Compatibility between components of roofing system is essential. Provide written declaration to Contract Administrator, within three days prior to the commencement of Work stating that materials and components, as assembled in system, meet this requirement.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Asphalt shingles: to CSA A123.1/A123.5.

.1 Type: self-seal, heavy weight, glass fibre reinforced, laminated, “shake-look” design.

.2 Mass: minimum 122 kg/10m^2.

.3 Colours: as selected by Contract Administrator.

.4 Texture: as selected by Contract Administrator.

.5 Acceptable product: IKO “Cambridge 30”, or approved substitution.

.2 Perimeter and valley roll roofing: to ASTM D1970.

.1 Self-adhesive rolled membrane.

.2 Acceptable product: Grace “Ice and Water Shield”; IKO “ArmourGard Ice and Water Protector”; or acceptable substitution.

.3 Roofing felt (underlayment): to CSA A123.3, Type 2 organic felt No.15.

.4 Asphaltic Cement:

.1 Plastic cement: to CAN/CGSB-37.5.

.2 Lap cement: to CAN/CGSB-37.4.

.5 Bridging and Flashing

.1 Valley bridging: galvanized sheet metal, minimum base metal thickness of 0.61mm (24 ga).

.2 Drip edge and ridge flashing: prefinished metal flashing, minimum base metal thickness of 0.61mm (24 ga).

.6 Nails: to CSA B111 of galvanized steel, sufficient length to penetrate 19 mm into deck (for shingles) and 51 mm into roof framing (for sheathing).

.7 Staples: chisel point galvanized steel 2.5mm crown 1.5 mm thick, sufficient length to penetrate 19 mm into deck.

2.1 ROOF SHEATHING

.1 To match existing – 12.7mm (1/2") exterior grade plywood.

2.2 ROOF VENTS

.1 To CSA, heavy duty, injection-molded polypropylene, modified for impact and UV resistance.

.2 Net free area: 325 cm^2 (50 sq.in.).

.3 Colour: as selected by Contract Administrator.

.4 Acceptable product: Duraflo "Weatherpro"; or acceptable substitution.

PART 3 EXECUTION

3.1 WORKMANSHIP

.1 Do Work in accordance with applicable, standard in Canadian Roofing Contractors Association (CRCA) Roofing Specifications Manual.

3.2 PROTECTION

.1 Cover walls and adjacent Work where materials hoisted or used.

.2 Use warning signs and barriers. Maintain in good order until completion of Work.

.3 Clean off drips and smears of bituminous material immediately.

.4 Protect roof from traffic and damage. Comply with precautions deemed necessary by Contract Administrator.

.5 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.

3.3 REMOVAL OF EXISTING ROOFING

.1 Remove existing roofing, underlay, and expose sheathing of roof.

.2 Withdraw existing shingle and flashing nails, set those which break off. Leave surfaces free from dirt and loose material.

.3 Examine roof sheathing and immediately inform Contract Administrator of defects.

.4 Remove portions of roof sheathing as indicated on drawings to access vent spaces.

.5 Remove additional portions of sheathing affected by fungal or insect attack as directed on site by Contract Administrator.

.6 Remove portions of existing insulation damaged by water penetration as directed on site by Contract Administrator.

3.4 VENT PATH WORK

.1 Remove existing insulation as required to clear vent paths.

.2 Install insulation baffles as indicated to maintain vent space.

3.5 NEW SHEATHING

.1 Replace cut out portions of sheathing with sheathing of equal sectional dimensions, and specified grade. Seat each end on rafter, with 25 mm bearing, and secure to rafter.

.2 Secure using 65 mm common galvanized nails at 150 o.c. around edges of sheets and at 300 o.c. on interior or sheets.

.3 Provide galvanized H-Clips at all unsupported edges.

3.6 EXAMINATION OF ROOF SHEATHING

.1 Prior to commencement of roofing installation ensure:

.1 Sheathing is firm, straight, smooth, dry, free of snow, ice or frost, and swept clean of dust and debris.

.2 Flashings are installed.

3.7 SHINGLE APPLICATION

.1 Do asphalt shingle Work in accordance with CAN3-A123.51; CAN3-A123.52 and CRCA Specification except where specified otherwise.

.2 Install drip edge along eaves, overhanging 12 mm, with minimum 50 mm flange extending onto roof decking. Nail to deck at 400 mm on centre.

.3 Install valley bridging. Nail to deck at 400 mm on centre.

.4 Install perimeter and valley ice and water shield to extents indicated.

.5 Install roof vents where indicated using galvanized roofing nails. Follow manufacturer's written installation instructions and ensure proper flashing and sealing of shingles to vent flanges.

.6 Install two layers of roofing felt (underlayment) beginning at bottom edge of roof and applying subsequent courses overlapping lower course. Ensure minimum 150mm side laps (between courses) and 300mm end laps. Use of staples for installing underlayment is acceptable.

.7 Install asphalt shingles on roof slopes 1:3 and steeper in accordance with CAN3-A123.51 using galvanized roofing nails. Use of staples for installing shingles is not acceptable.

.8 Install asphalt shingles on roof slopes 1:6 to less than 1:3 in accordance with CAN3-A123.52 using galvanized roofing nails. Use of staples for installing shingles is not acceptable.

3.8 FINAL CLEANING

.1 Remove all construction debris and extra materials from site.

.2 Use magnetic broom to ensure the removal of all metallic debris and nails from around entire perimeter of building.

END OF SECTION