1 GENERAL

1.01 Related Work

.01 Section 06100 – Rough Carpentry
.02 Section 07900 – Sealants
.03 Section 07620 – Metal Flashing

1.02 References

.01 Do roofing work to applicable standard in Canadian Roofing Contractor's Association OIRCA Roofing Specifications Manual and Manufacturer's written instructions. Contractor must have minimum 10 years experience.

1.03 Submittals

.01 Quality Assurance

.01 Roofer shall be approved by membrane manufacturer.

.02 Delivery, Storage and Handling

.01 Protect sheet metal materials from bending and scratching.
.02 Do not allow membrane and insulation materials to come in contact with any greases, oils or solvents.
.03 Deliver and store sealants and adhesives in manufacturers sealed containers. Protect from heat and open flames.
.04 Protect roofing materials from inclement weather. Keep insulation absolutely dry and remove only as much from storage as can be applied, and located on same day. Reject damaged materials including those showing signs of having been damp or exposed to moisture.

.03 Manufacturer's Guaranty

.01 Provide membrane manufacturer's guaranty naming Lakehead University as beneficiary and covering defects and deficiencies and weather tightness of complete membrane and flashings for **25, (twenty five) years** from date Work is certified as substantially performed.
.02 Guaranty shall cover **labour and materials** and include repair or replacement at manufacturer's expense, to extent required, of all work of this Section in the event of leaks or other failure if such a failure results from defects and deficiencies of membrane and flashings or their installation.

.04 Warranty

.01 Warrant work of this Section against defects and deficiencies in accordance with General Conditions of the Contract. Promptly correct any defects or deficiencies which become apparent within warranty period, to satisfaction of Lakehead University representative and at no expense to Lakehead University. Defects include but are not limited to actual leakage and blow off.

2 PRODUCTS

Materials

.01 Vapour Barrier: V-Force, by Firestone.
.02 Rigid Insulation: “ISO 95+GL : two layers: 3” polyisocyanurate foam, minimum R36 at drain locations.
.03 Adhesive: I.S.O. Twin Pack Insulation Adhesive, by Firestone, item #W56RCINTA.
.04 ½” HD board, by Firestone. Adhered with Twin Pack.
.05 Membrane: not less than 1.5mm, (60 guage), thick,**BLACK,** fully adhered EPDM in sheets, to CGSB 37-GP-52M, Type 1, Class A.
.06 Seam Tape: 3 inch self-adhesive curable tape; and coverstrip seams, over all seams beneath PV panels; quantity: 200’ lft. Layout sketch will be supplied to success bidder.
.07 Reinforced perimeter securement strips, by Firestone, with fasteners as per manufacturer’s specifications to all perimeter edges and details.
.08 Membrane flashing: EPDM sheet recommended by membrane manufacturers.
.09 Flashing adhesive and membrane lap adhesive: as supplied by membrane manufacturer.
.10 Parapet: 2x6 Standard construction lumber, SPF; complete with insulation.
.11 Sheet Metal: minimum 0.46 mm core thickness; zinc coating Z275, ASTM A526M, (22 gauge overall thickness), commercial quality sheet, stretcher leveled or temper rolled to stretch level standard of flatness, pre-painted.
.12 Reset existing drains, to match new insulation height. Use Platinum spun, aluminum drain insert, c/w Uflow.
.13 Quick seam walkway pads, (adhere as per manufacturer’s instructions). To be located at the top and bottom of the ladder, which accesses higher roof; and two rows in front of each row of PV panels: total quantity: 214.
.14 Flashing required to modify the louvres, on existing, vented ‘*dog house*’.

3 PREPARATION

3.01 Removal & Preparation

.01 Remove existing roofing and insulation to top of existing vapour barrier.
.02 Remove existing flashing, then discard.
.03 Before commencing roofing work, dry and sweep surfaces clean of debris and adhering materials which would impair the work.

4 EXECUTION

4.01 Adhesive
.01 Apply Firestone primer to vapour barrier, as per manufacturer’s instructions.

4.02 Vapour Barrier
.01 Cover entire roof area with Firestone, V-Force vapour barrier. Run vapour barrier up parapets and other protrusions.
.02 Seal all joints to form a continuous vapour tight barrier.

4.03 Rigid Insulation

.01 Lay insulation to form a continuous layer over vapour barrier. Stagger all joints between layers minimum 6".

.02 Cut pieces of insulation to fit snugly at edges and around penetrations.

.03 Insulation shall be well adhered to adhesive.

.04 Install ½" HD board, by Firestone to top of sloped insulation, (adhere with Twin Pack).

4.04 Adhesive

.01 App ly I.S.O. Twin Pack Insulation Adhesive to vapour barrier, as per manufacturer's instructions.

4.05 Membrane

.01 Position membrane over adhesive without stretching, lapping 3 inches minimum over adjacent sheets and over edges.

.02 Allow membrane to relax at least one half hour before splicing and fastening.

.03 Splice all joints to manufacturer's written instructions.

.04 Mechanically fasten all edges as shown and in accordance with membrane manufacturer's details and shop drawings.

.05 Apply seam tape.

.06 Apply coverstrip on all seams, under PV panel area, as per layout sketch.

4.06 Membrane Flashing

.01 Install membrane flashing at all vertical surfaces and around all roof penetrations.

.02 Run flashing up vertical surfaces terminating in manufacturer's recommended mechanical flashing system at parapets and curbs run flashing over top and 2 inches down outside face.

4.07 Parapet Flashing

.01 Install 22 gauge prepainted steel cap flashing to all perimeter edges complete with "s" lock joints. Colour shall match existing, as approved by Owner.

4.09 Sheet Metal Work

.01 Do no metal flashing before membrane flashing has been reviewed by Lakehead University representative.

.02 Double back exposed edges at least 13mm for appearance and stiffness.

.03 Provide continuous starter strips to present true, leading edge. Anchor to backup to provide rigid, secure installation.

.04 In general, use slip expansion seams. Make joints to permit thermal movement. Make surfaces free from buckling, warp, wave, dents, oil canning or other defects. Make corners square and surfaces straight and in true plane. Equally space joints in any 1 run of flashing to suit. Space seams not farther apart than 2.4m.

END OF SECTION