The Township of Killaloe Hagarty and Richards
Peel and Replacement
Section (s) 1
Specification Version *3*

April 2, 2019

Prepared for: The Township of Killaloe, Hagarty and Richards
1 John St.
Killaloe, Ontario

Prepared by: Matt MCNEELY and Jeremy VEZINA
Garland Canada Inc.

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1 GENERAL CONDITIONS

1.1 BIDS SUBMISSION

A. Bids must be submitted on the supplied clearly labelled "THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS 2019- Replacement Project" to THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS no later than **April 26th, 2019** no later than **4:30 PM** local time.

B. Bids must be sealed and delivered to the undersigned:

The Township of Killaloe, Hagarty and Richards
1 John Street
Killaloe, Ontario
Attention:
Mr. Tyler Mask

C. Bids will be opened in a public meeting, reviewed in private by the Project Manager and the Owners representative.

1. The Owner reserves the right to reject any or all tenders. The "lowest" bid will not necessarily be accepted.

2. All information available to the owner will be used in evaluating the bids, including base, optional and unit prices, list of subcontractors, references, proposed construction period, etc.

1.2 BID SUMBISSION DEPOSIT

A. A certified cheque, made payable to THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS in the amount of 10% of the submitted total contract amount must be submitted with the proposal.
Deposit cheques of unsuccessful bidders will be returned within ten (10) business days of the proposal opening. The cheque of the successful bidder shall be retained until the municipality's acceptance of the completed work."

1.3 LUMP SUM PRICES

B. Bidders to provide lump sum prices for specific items listed in Bid Form, Schedule of Prices.

1.4 BID ACCEPTANCE PERIOD

A. Bids shall remain in force for the Owner's acceptance for a period of 60 days.

1.5 EXAMINATION

A. All contractors submitting bids must attend the on-site Bidders' meeting on **April 16th @ 1:30 PM.**

B. Examine the Drawings and Specification of the Work, and report any ambiguities, discrepancies or omissions to the Project Manager.

C. The submission of a bid shall be considered verification that the Bidder has complied with the foregoing requirements, thoroughly understands the scope of the Work in accordance with the Contract Documents, and has included for all costs in connection therewith.

D. Claims for additional costs will not be entertained in respect to visually discernible conditions, which could have been reasonably ascertained by proper inspection of the site during the bidding period.

1.6 QUESTIONS

A. Should Bidders find during examinations of Contract Documents or after visit to site, any discrepancies, omissions, ambiguities, or conflicts in or among the Contract Documents, or be in doubt as to their meaning, bring questions to the Project Manager's attention not later than two (2) days before closing of the Bids. A clarifying Addendum will be issued. The Project Manager will not be responsible for any oral instructions.

1. Address questions to:

Jeremy Vezina	Matthew McNeely
Project Manager	Project Manager
Garland Canada	Garland Canada
613-293-9978	613-889-4240
vezina@garlandcanada.com	mcneely@garlandcanada.com

1.7 ALTERNATIVES AND SUBSTITUTIONS

A. Bids shall be based on the Bid Documents. Any alternatives, substitutions or qualifications that are not requested in the bid documents may be submitted, separately from the Bid on the Bidder's letterhead, so that the Bid may be accepted with or without these alternatives, substitutions, or qualifications.

1.8 COST OF TENDERING

A. Assume responsibility for all costs, expenses, loss, damage, and liabilities incurred as a result of or arising out of Tendering or out of the invitation to Bid.

1.9 SCHEDULING

A. Time is of the essence and may be a consideration or basis of award. Therefore, the tendering contractor shall include, in his/her tender, the number of calendar days between award of contract and the commencement of work and the number of calendar days between commencement of the work and completion of the work.

1.10 INCLUDED IN BID

A. Include all costs involved in obtaining necessary permits, fees and inspection required by all authorities having jurisdiction.

B. The Contractor shall carry Public Liability Insurance for the protection of THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS himself against damage to property and loss of life or injury to the public during the execution of the work. The contractor will name as an additional insured Long-Term Warranty holder and THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS on their liability insurance policy for the amount of $5,000,000.00.

1.11 QUALITY CONTROL

A. Provide all supervision, labour, equipment and materials necessary to the orderly, competent and expeditious completion of the work. Maintain site supervision capable of acting competently on-site instructions issued by THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS or his Project Manager.

B. Retain the site, for reference as required, a copy of all specifications, addenda, drawings, written instructions and changes in the work.

C. Provide THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS with access to the site for purposes of inspecting the work.

D. Pay for any extra testing or inspection whereby the Work was found deficient.

E. Correct at no cost to THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS all deficient work in a manner acceptable to the standard of these specifications.

1.12 TERMINATION OF CONTRACT

A. Should the contractor fail to carry out the work in compliance with the requirements of this contact, THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS may notify the contractor in writing that he is in default of his contractual obligations and instruct him to make the necessary corrections within seven (7) working days of receipt of such notice. If the corrections are not completed within an acceptable time as agreed to by THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS; THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS without prejudice may:

1. Issue a stop work order and make the necessary corrections deducting the cost from any payment due to the contractor;

or

2. Terminate the contract.

B. Should THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS terminate the contract, THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS shall take possession of the completed work and finish the work, withhold further payments to the contractor and upon total completion of work, charge the contractor the amount by which finishing the work exceeds the contract price.

C. The contractor's obligation for the work performed up to the time of termination shall continue in force after such termination.

2 GENERAL REQUIREMENTS

2.1 MATERIAL STORAGE AND HANDLING

A. All materials are to be stored in original undamaged condition with manufacturer's seals and labels intact.

1. All materials shall be stored in strict accordance with the manufacturer's recommendations. Any material noted on the job site as having moisture present shall be deemed unacceptable and shall be removed from the job site.

2. Only sufficient material may be left uncovered as may be employed in a working day or prior to inclement weather.

B. No roofing material shall be installed during wet weather or when rain is imminent.

2.2 EQUIPMENT

A. Maintain all equipment in good working order.

2.3 AIR INTAKE UNITS

A. Air intake units may not be shut down for any extended period of time. The contractor shall take all necessary precautions to ensure that the units affected do not allow dust etc. to enter the building by installing filtering tarpaulins over the air intake area.

2.4 PROTECTION

A. Wherever necessary the contractor shall make provisions for the protection of all building surfaces that may be affected by the roof work in progress. Surfaces shall include buildings, walls, floors, ceilings, furnishings, equipment, plant materials, lawns, etc. Any damages to be repaired without cost to the Owner.

A. Where traffic over existing roofs is necessary for roof removal and replacement a traffic surface shall be provided and ramps over control or expansion joints provided. Traffic surfaces shall consist of 3/8" plywood or other suitable material. Any damage occurring to these roof areas shall be made good at the contractor's expense.

A. Personnel protection systems, consisting of a fixed guy wire suitable for hook-up of safety harnesses, must be installed along the perimeter of the work. All personnel must be safely secured when working within 10 feet of the roof edge.

B. Provide adequate protection to pubic and property.

C. Protect new work from damages from any cause. All finished work must be protected so that no marks or scratches mark the finished surfaces prior to acceptance of the work.

D. Protect and be responsible for all new finished and unfinished work which is exposed and susceptible to vandalism or theft.

E. Erect Hoarding 7.5' x 10' sections by Instafence and provide, install and maintain barricades, notice and warning boards and maintain protection of all kinds for the protection of the workers engages in the work, protection of adjoining property and for the protection of the public in accordance with local regulations.

2.5 INSPECTIONS

A. The Owners Project Manager shall inspect the work in progress of the roofing contractor.

B. The Owners Project Manager shall have the authority, if not satisfied with the work in progress to cause a work stoppage. He shall then cause the contractor to make such corrections as are necessary to confirm with the specifications and other contract documents. He shall, in all such cases, keep THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS fully informed.

2.6 WARRANTY

A. On all areas of total roof replacement work the contractor awarded the work agrees to give THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS a warranty stating that the roof areas completed under this contract will remain leak free for a period of two years from date of acceptance of the completed work.

B. GARLAND CANADA, Inc agrees to supply to, THE TOWNSHIP OF KILLALOE, HAGARTY AND RICHARDS a 20-year Membrane Performance Warranty on the replacement roof at 226 Water Street and 1 John Street from the date of acceptance of the completed work.

C. <u>The Owner shall have the responsibility of informing the Roof Manufacturing Company of any new roof top installations which may affect the warranted area during the warranty period in order that the new installations may be installed by the original contractor. In so doing the warranty will not be affected. The owner agrees that should the work be completed without compliance to this clause the warranty will become null and void.</u>

2.7 SUPERVISION AND WORKMANSHIP

A. Execute the work in the most efficient manner and in accordance with the directions and to the satisfaction of the owner. Employ a competent foreman who remains in charge until the work is completed. Ensure a copy of the specification is always available on site.

B. Ensure that only skilled and certified tradesmen are employed.

C. Repair, replace or otherwise make good on all unacceptable work.

2.8 CONTRACT EXECUTION

A. Work will commence on award of the Contract, carried on in a continuous manner and be completed within the time specified on the Purchase Order.

B. Time is of the essence in this contract.

2.9 USE OF SITE FACILITIES

A. Provide and install an exterior stairwell from the ground floor to the roof top. All access to the roof shall be from the exterior, either by use of portable stairwell or roof ladder.

B. Sanitary services don't need to be provided, workers can use the facilities at the office from both sites.

C. The Contractor is responsible for loss or damage to materials or equipment.

2.10 UTILITIES

A. Contractor may use the electrical service and water service at the site only as directed by the Contract Supervisor.

B. The Contractor shall supply and pay for hoses, extension cords, special wiring or boxes as required.

2.11 DAILY CLEAN UP

A. Remove all excess debris

B. Leave all areas broom clean.

2.12 FINAL CLEAN UP

A. Clean all new materials and areas of dust and debris of work to the satisfaction of the Owner's Project Manager.

2.13 EXISTING SERVICES

B. The Contractor is responsible for the protection of all exposed pipes, ducts, cables, conduits, wires and other services against damage arising from the execution of the work during the contract period.

3 SCOPE OF WORK – 1 John Street

3.1 1 John Street –Full Roof Replacement Sections 1

3.2 EXISTING Deck

A. Wood Deck, 2 Plies of Felt, 2.5" ISO, ½" Fibreboard, 4 Ply BUR, Flood & gravel

3.3 SUMMARY

A. Full replacement.

3.4 NOTE

A. Winning roofing contractor will work with chosen HVAC contractor (chosen by owner) and replace units highlighted on map

3.5 1 John Street – Full Roof Replacement Sections 1

A. Remove existing metal counter flashing and all components down to existing wood deck and dispose to authorized dumpsite.

B. Inspect metal deck with the Garland representative and repair any compromised areas.

C. All electrical, gas and mechanical disconnects to be handled by winning contractor.

D. Roofing contractor to coordinate all work.

E. Set up is near the front of building.

F. Condensate pipes to be disconnected and reconnected by roofing contractor.

G. Replace any unsafe and heavily corroded / rotten decking with same type, gauge thickness and profile and ensure adequate spanning and securement. All deck replacement to be documented by Roofing Consultant prior to covering with roofing material.

H. Check existing wall and perimeter wood blocking for damage and report to Roofing Consultant. Replace damaged wood blocking to match existing as authorized.

I. Slope parapet wall towards middle of the roof.

J. Supply and install new roof assembly to include the following:

1. Apply 2 plies of felts in hot asphalt.

2. Mechanically fasten a course of Polyisocyanurate insulation 2.5” thickness to the wood deck. Tightly brace all seams to allow no gaps in insulation.

3. A course of 1/4” thickness Mineral Fortified Protection board adhered to the base insulation with Type III asphalt.

K. Install low rise foam to seal all open areas around penetrations, walls, etc. Foam shall be used around all circular penetrations and I-beams where the insulation can’t be cut perfectly to seal the penetration.

L. Install 2-ply generic type IV glass felt, overtop of newly installed protection board, in hot asphalt (type III at EVT) at a rate of not less than 25lbs per square per ply. Ensure full adhesion of each ply and good bleed out at all seams.

M. Install one ply of 80 mil SBS modified membrane; ASTM D6162, Type III Grade S in hot asphalt (type III at proper EVT) at a rate of not less than 30-35 lbs. per square per ply. Ensure full adhesion of each ply and good bleed out at all seams. Membrane is to extend to the top of the cant.

N. Install new membrane base flashings surrounding and within area with one ply of 40 mil SBS modified membrane with woven fiberglass scrim reinforcement perimeter and projection base flashing followed by one ply of 80 mil SBS modified membrane; ASTM D6162, Type III Grade S perimeter and projection flashing in hot asphalt. Ensure base flashing ply extends 6-8” onto the field of the roof. Ensure modified flashing ply extends a minimum of 8” – 9” onto the field of the roof. Cant strips to be used at all horizontal to vertical transitions. Flashings to extend 8” above cant, and 8” onto field. Flashings at perimeter to extend above and over top of raised edge or 8” above cant and finished with termination bar. Terminate top of flashings with termination bar and cover top seam of membrane with high quality flexible elastomeric asphaltic caulk.

O. If parapet wall cannot be fully mopped use a recommended self-adhering membrane by the consultant.

P. Apply a three course with Garla Flex and GarMesh on vertical and seams of the newly installed flashing.

Q. Install new Retrofit Drain as specified by consultant.

R. Embed clean gravel in hot top pour asphalt

S. Supply and install new One-Way Vents spun aluminum over all plumbing vents and insulate.

T. Install new pre-painted 26-gauge metal counter flashing at perimeters and equipment flashings as per owner/ representatives' request.

U. Clean entire project of debris and remove all equipment.

V. Issue membrane manufacturer's 20 year No Dollar Limit leak free materials and labour warranty, non-prorated with no charge annual follow-up inspections.

4 SCOPE OF WORK – 226 Water Street

4.1 226 Water Street – Peel and Membrane & Roof Replacement Sections 1

4.2 EXISTING Deck

A. Metal Deck, ½" Gypsum, 2 Plies of Felt, 2.5" ISO, Tapered ISO, ½" Fibreboard, 4 Ply BUR, Flood & gravel

4.3 SUMMARY

A. These sections will be scanned prior to the start of the job. Any wet insulation that is determined will be replaced down to the deck. The existing membrane will be peeled and replaced.

4.4 NOTE

A. Winning roofing contractor will work with chosen HVAC contractor (chosen by owner) and replace units highlighted on map

4.5 226 Water Street – Peel and Membrane & Roof Replacement Sections 1

A. Remove existing metal counter flashing and any wet insulation determined from the thermal scan down to existing metal deck and dispose to authorized dumpsite.

B. Inspect metal deck with the Garland representative and repair any compromised areas.

C. All electrical, gas and mechanical disconnects to be handled by winning contractor.

D. Roofing contractor to coordinate all work.

E. Set up is near the front of building.

F. Condensate pipes to be disconnected and reconnected by roofing contractor.

G. Replace any unsafe and heavily corroded decking with same type, gauge thickness and profile and ensure adequate spanning and securement. All deck replacement to be documented by Roofing Consultant prior to covering with roofing material.

H. Check existing wall and perimeter wood blocking for damage and report to Roofing Consultant. Replace damaged wood blocking to match existing as authorized.

I. Slope parapet wall towards middle of the roof.

J. Any wet insulation determined to removed. Supply and install new roof assembly to include the following:

1. Lay a layer of ½" of Gypsum on exposed deck and apply 2 plies of felts in hot asphalt.

2. Mechanically fasten a course of Polyisocyanurate insulation 2.5" thickness to the metal deck. Tightly brace all seams to allow no gaps in insulation.

3. Adhere a course of Tapered Polyisocyanurate insulation to the base layer of insulation. Tightly brace all seams to allow no gaps in insulation with Type III asphalt.

4. A course of 1/2" thickness Fibreboard board adhered to the base insulation with Type III asphalt.

K. Install low rise foam to seal all open areas around penetrations, walls, etc. Foam shall be used around all circular penetrations and I-beams where the insulation can't be cut perfectly to seal the penetration.

L. Peel existing 4 Ply BUR off of the ½" Fibreboard. Once removed, hot mop a layer of ¼" Mineral Fortified Protection board to the existing ½" Fibreboard.

M. Install 2-ply generic type IV glass felt, overtop of newly installed protection board, in hot asphalt (type III at EVT) at a rate of not less than 25lbs per square per ply. Ensure full adhesion of each ply and good bleed out at all seams.

N. Install one ply of 80 mil SBS modified membrane; ASTM D6162, Type III Grade S in hot asphalt (type III at proper EVT) at a rate of not less than 30-35 lbs. per square per ply. Ensure full adhesion of each ply and good bleed out at all seams. Membrane is to extend to the top of the cant.

O. Install new membrane base flashings surrounding and within area with one ply of 40 mil SBS modified membrane with woven fiberglass scrim reinforcement perimeter and projection base flashing followed by one ply of 80 mil SBS modified membrane; ASTM D6162, Type III Grade S perimeter and projection flashing in hot asphalt. Ensure base flashing ply extends 6-8" onto the field of the roof. Ensure modified flashing ply extends a minimum of 8" – 9" onto the field of the roof. Cant strips to be used at all horizontal to vertical transitions. Flashings to extend 8" above cant, and 8" onto field. Flashings at perimeter to extend above and over top of raised edge or 8" above cant and finished with termination bar. Terminate top of flashings with termination bar and cover top seam of membrane with high quality flexible elastomeric asphaltic caulk.

P. If parapet wall cannot be fully mopped use a recommended self-adhering membrane by the consultant.

Q. Apply a three course with Garla Flex and GarMesh on vertical and seams of the newly installed flashing.

R. Install new Retrofit Drain as specified by consultant.

S. Embed clean gravel in hot top pour asphalt

T. Supply and install new One-Way Vents spun aluminum over all plumbing vents and insulate.

U. Install new pre-painted 26-gauge metal counter flashing at perimeters and equipment flashings as per owner/ representatives' request.

V. Clean entire project of debris and remove all equipment.

W. Issue membrane manufacturer's 20 year No Dollar Limit leak free materials and labour warranty, non-prorated with no charge annual follow-up inspections.

5 EXECUTION

ROOFING REPLACEMENT PART 1 — GENERAL

5.1 EXAMINATION

A. Verify that deck surfaces and project conditions are ready to receive work of this section.

B. Verify that deck is supported and secured to structural members.

C. Verify that deck is clean and smooth, free of depressions, projections or ripples, and is properly sloped to drains.

D. Are dry and free of snow or ice.

E. Confirm that moisture content does not exceed twelve (12) percent by moisture meter tests. On concrete deck pour hot asphalt on to deck if it bubbles / foams and once cooled does not adhere to the substrate, the moisture levels are too high.

F. Verify that openings, curbs, pipes, conduit, sleeves, ducts, and other items which penetrate the roof are set solidly, and that wood cant strips, wood nailing strips, and reglets are set in place.

5.2 GENERAL INSTALLATION REQUIREMENTS

A. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.

B. Insurance/Code Compliance: Where required, install and test the roofing system to comply with governing regulation and specified insurance requirements.

C. Protect other work from spillage of roofing materials and prevent materials from entering or clogging drains and conductors. Replace or restore other work damaged by installation of the modified bituminous roofing system work.

D. Coordinate installing roofing system components so that insulation and roofing plies are not exposed to precipitation or left exposed overnight. Provide cut-offs at end of each day's work to cover exposed ply sheets and insulation with two (2) plies generic type IV felts and with joints and edges sealed with roofing cement. Remove cut-offs immediately before resuming work.

E. Apply roofing materials as specified herein unless recommended otherwise by manufacturer's instructions. Keep roofing materials dry before and during application. Do not permit phased construction. Complete application of roofing plies, modified sheet and flashing in a continuous operation. Remove, begin, and apply only as much roofing in one day as can be completed that same day.

F. Cut-Offs: At end of each day's roofing installation, protect exposed edge of incomplete work, including ply sheets and insulation. Provide temporary covering of two (2) plies of type IV felts.

G. Asphalt Bitumen Heating: Heat and apply bitumen according to EVT Method as recommended by NRCA. Do not raise temperature above minimum normal fluid-holding temperature necessary to attain EVT (plus 5°F at point of application) more than 1 hour prior to time of application. Determine flash point, finished blowing temperature, EVT, and fire-safe handling temperature of bitumen either by information from manufacturer or by suitable test. Do not exceed recommended temperature limits during bitumen heating. Do not heat to a temperature higher than 25° below flash point. Discard bitumen that has been held at temperature exceeding finishing blowing temperature (FBT) for more than 3 hours. Keep kettle lid closed except when adding bitumen.

H. Bitumen Mopping Weights: For interply mopping, apply bitumen at the rate of approximately 25 lb. of bitumen per roof square. For a flood coat, apply bitumen at the rate of approximately 60-70 lb. of bitumen per square (plus or minus 25 percent on a total job average basis).

I. Substrate Joint Penetrations: Prevent bitumen from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.

5.3 VAPOR RETARDER INSTALLATION

A. 2 Ply 15# Felts: (metal deck) Install (2) plies of 15# felts. Shingle in proper direction to shed water on each area of roof.

B. Lap ply sheet ends eight inches. Stagger end laps twelve inches minimum.

C. Extend plies two inches beyond top edges of cants at wall and projection bases.

D. Install base flashing ply to all perimeter and projection details.

5.4 MODIFIED MEMBRANE APPLICATION

A. The modified membrane shall then by solidly bonded to the base layers with specified asphalt at the rate of 25 to 30 lbs. per 100 square feet.

B. The roll must push a puddle of asphalt in front of it with asphalt slightly visible at all side laps. Care should be taken to eliminate air entrapment under the membrane.

C. Apply pressure to all seams to ensure that the laps are solidly bonded to substrate.

D. Subsequent rolls of modified shall be installed across the roof as above with a minimum of 4" side laps and 8" end laps. The end laps shall be staggered. The modified membrane shall be laid in the same direction as the previous felt layers but the laps shall not coincide with the laps of the base layers.

E. Apply asphalt no more than five feet ahead of each roll being embedded.

F. Extend membrane 2" beyond top edge of all cants in full moppings of the specified asphalt as shown on the details.

5.5 FELT PLY INSTALLATION

A. Fiberglass Plies: Install (3) two fiberglass felts in 25 lb. per sq. of bitumen shingled uniformly to achieve two plies throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing. These are to be applied to the secondary layer of the board insulation (asphalt core board).

B. Lap ply sheet ends eight inches. Stagger end laps twelve inches minimum.

C. Extend plies two inches beyond top edges of cants at wall and projection bases.

D. Install base flashing ply to all perimeter and projection details.

5.6 FLASHING MEMBRANE INSTALLATION (GENERAL)

A. All curb, wall and parapet flashings shall be sealed with an application of mastic and mesh on a daily basis. No condition should exist that will permit moisture entering behind, around or under the roof or flashing membrane.

B. Prepare all walls, penetrations and expansion joints to be flashed and where shown on the drawings with asphalt primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.

C. The modified membrane will be used as the flashing membrane and will be adhered to an underlying base flashing ply with specified asphalt unless otherwise noted in these specifications and nailed off 8” O.C. at all vertical surfaces.

D. The entire sheet of flashing membrane must be solidly adhered to the substrate.

E. If parapet wall cannot be fully mopped use a recommended self-adhering membrane by the consultant.

F. Seal all vertical laps of flashing membrane with a three-inch-wide bead of one-part elastomer.

G. All metal to be discarded. New metal counter-flashing is to be used, colour to be chosen by the Owner. No bent, scratched, or irregular metal will be accepted. Metal is to be 26 gauge pre-painted.

5.7 ROOF DRAIN (see detail)

A. Plug drain to prevent debris from entering plumbing.

B. Taper insulation to drain minimum of 48” from center of drain.

C. Run roof system plies over drain. Cut out plies inside drain bowl. Set copper flashing (30” square minimum) in ¼” bed of mastic. Run copper into drain a minimum of 2”. Prime copper at a rate of 100 square feet per gallon and allow to dry.

D. Install base flashing ply (40” square minimum) in bitumen.

E. Install modified membrane (48” square minimum) in bitumen.

F. Install clamping ring and assure all plies are under the clamping ring.

G. Install Garland retro-fit drains as per manufacturer’s instructions.

H. Remove drain plug and install strainer.

5.8 SPECIFIC

A. The gas line is to receive two coats of an epoxy fortified rust coating (yellow). All wood blockings are to have 1” of extruded polystyrene placed underneath them.

5.9 CLEANING

A. Remove drippage of bitumen adhesive from all walls, windows, floors, ladders and finished surfaces.

B. In areas where finished surfaces are soiled by asphalt or any other sources of soiling caused by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their instructions.

5.10 FINAL INSPECTION

A. At completion of roofing installation and associated work, meet with Installer, installer of associated work, client’s representative, roofing system manufacturer’s representative, and other representatives directly concerned with performance of roofing system.

B. Walk roof surface areas of the building, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. List all items requiring correction or completion and furnish copy of list to each parting attending.

C. The Roofing System Manufacturer reserves the right to request a thermographic scan of the roof during final inspection to determine if any damp or wet materials have been installed. The thermographic scan shall be provided by the Roofing Contractor at a negotiated price.

D. If core cuts verify the presence of damp or wet materials, the Roofing Contractor shall be required to replace the damaged areas at his own expense.

E. Repair or replace (as required) deteriorated or defective work found at time above inspection to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

F. The Contractor is to notify the Owner upon completion of corrections.

G. Following the final inspection, acceptance will be made in writing.

5.11 MATERIALS

A. WOOD BLOCKING – Blocking to CSA 0141, utility grade, free from warps and other defects. Al timber must be pressure treated.

B. PLYWOOD – To CSA 0151 good one side ¾” thickness.

C. NAILS AND FASTENERS

1. To CSA Bill – 74. Std. Roofing Nails. Galvanized.
2. Nails employeed for use with timber shall be Ardox galvanized nails.
3. Deckfast 12 – with steel plates **FM Approved.**

D. PRIMERS – Garland Garla-prime VOC asphalt quick drying primer.

E. ROOFING FELTS

1. Organic felts to CSA A123.3M, #15 perforated asphalt saturated
2. Fibreglass Felts to ASTM D2178, Type IV asphalt impregnated fiberglass felt (#12)

F. ADHESIVES – Asphalt to CSA A123.4M, Type III for insulation, vapour retarder and roofing components.

G. S.B.S./S.I.S. MEMBRANE (Top Sheet)

1. Stressply EUC – SBS / SIS rubberized asphalt membrane with multidirectional scrim consisting of a combination polyester / fiberglass felt, 80 mil thickness.

H. RIGID INSULATION

1. Semi-rigid mineral fortified asphaltic core protection board to CSA A 247-M86 ASTM C 208, ¼" thickness.
2. Polyisocyanurate foam, ASTM C1289 rating, fiber reinforeced face two sides. 2/5" thickness.

I. FIBER CANT STRIPS – Cant strips made of asphalt impregnated compressed fibreboard, 75 mm x 75 mm

J. BALLAST – clean, dry 9/16x 1" H&H White Dolomite gravel. Standard grade roof gravel is unacceptable.

K. MASTICS – Trowel grade reinforced, asbestos free, Garland Flashing Bond.

L. SEALANTS – Garland Tuff-Stuff a one-part Thermoplastic Rubber Sealant.

M. SPUN ALUMINUM VENTS – As manufactured by Thaler to suit membrane flashing details model # SJ 31 vandal Proof Stack Jack.

N. DRAINS – Ancon RD100 Superdome, cast aluminum strainer dome.

O. METAL FLASHINGS – Metal flashing 26-gauge thickness, with flat locked seams. Bent as detailed and matching colour specified.

P. ROOF TOP SUPPORTS – Gas line pipes and conduits. Quick Block RB 01 and EKC P01 Accessory Kit as supplied by "A Better Idea Inc."

6 STRUCTURE DEMOLITION (02 41 16)

6.1 Part 1 – Section 07 52 00 – Modified Bituminous Membrane Roofing.

A. Carefully remove materials and equipment to be salvaged for reuse. Store, protect and reinstall after construction has progressed sufficiently. Conduct on-roof survey with the Owner's Representative and Agent prior to commencing demolition to establish which components are suitable for salvage and procedures for storage and reinstallation.

B. Prevent movement, settlement or damage of existing services, walks, paving, trees, landscaping, adjacent grades and parts of existing buildings to remain. Provide barricades and covers as required. Make good damage caused by demolition.

C. Take precautions to protect existing building from damage throughout the course of the work. If safety of building or services appears to be endangered, cease operations and notify the client's Representative.

D. Prevent debris from entering and blocking roof drains, downspouts, mechanical and electrical equipment and systems.

E. Take precautions to protect interior of the building from water damage while demolition is being carried out. Areas to be demolished must be capable of being made weather tight within the same working day.

6.2 PART 2 – PRODUCTS

A. None used.

6.3 PART 3 – EXECUTION

A. Disconnect or re-route electrical, mechanical, cable TV and telephone service lines traversing roof in accordance with authorities having jurisdiction. Post warning signs on electrical lines and equipment which must remain energized during period of construction.

B. Disconnect and cap mechanical equipment which must be removed to carry out the work.

C. Natural gas supply lines: to be removed by qualified tradesmen in accordance with gas company instructions. Other rooftop services and supply lines: to be disconnected and removed by qualified tradesmen

D. Remove existing equipment, services, and obstacles where required for re-roofing to take place and replace as work progresses.

E. Do not disrupt active or energized utilities traversing premises designated to remain undisturbed.

F. Arrange with the Owner's Representative to schedule shutdown of active air handling equipment in vicinity of work to prevent intake of hazardous or objectionable odors as well as construction dust and debris.

G. Completely demolish roofing system as indicated. Remove all roofing systems and products down to the structural deck.

H. Leave membrane free and clear, cleaned of all old roofing membranes and ready to receive new membranes.

I. Pack all openings, seams, cracks and joints in the deck as per the client Representative's direction to prevent air exhaust or infiltration.

J. Demolish parts of roofing to permit remedial repair work to be completed.

K. At end of each day's work, leave work in safe condition so that no part is in danger of toppling or falling. Protect interiors of building from exterior elements at all times.

L. Demolish to minimize dusting. Keep materials damp.

M. Dispose of demolished materials off site in accordance with authorities having jurisdiction. Contaminated materials shall not be taken to local land fill site. All materials disposed of at landfill must be properly sorted. Waste site tipping fees are waived for this project.

N. Remove contaminated or dangerous materials as defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal.

7 ROUGH CARPENTRY (06 10 00)

7.1 PART 1 - GENERAL

A. Section 07 52 00 – Modified Bituminous Membrane Roofing.

B. CAN/CSA-080-Series-M89. Wood Preservation.

C. CSA-B111-1974. Wire Nails, Spikes and Staples.

D. CAN/CSA-G164-M92. Hot Dip Galvanizing of Irregularly Shaped Articles.

E. CSA 0121-M1978. Douglas Fir Plywood.

F. CSA 0322-1976. Procedure for Certification of Pressure-Treated Wood Materials for Use in Preserved Wood Foundations.

G. AWPA M2-81. Inspection of Treated Timber Products.

H. AWPA M4-80. Care of Preservative Treated Wood Products.

I. NLGA Standard Grading Rules for Canadian Lumber.

J. National Building Code of Canada - 1990.

K. Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

L. Plywood identification: by grade mark in accordance with applicable CSA Standards.

M. Pressure treated materials: by CSA 0322 certified stamp.

7.2 PART 2 - PRODUCTS

A. Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers: pressure treated to CAN/CSA-080.15. Board sizes: maximum practical dimensions to suit specific applications. Maximum practical lengths. Where appropriate, sizes of new members to match size of previously installed members.

B. Plywood: pressure treated to CAN/CSA-080.15. Minimum 1/2 inch thick. Use maximum practical sizes to reduce number of joints.

C. Treat all material to CAN/CSA 080.15 using Chromated Copper Arsenate (CCA) preservative to obtain minimum net retention of 1.64 lb per cubic foot for wood and 1.97 lb per cubic foot for plywood.

D. Following preservative treatment, dry material to maximum moisture content of 19%.

E. Field applied wood preservative: copper napthenate solution as recommended by manufacturer of pressure treated materials.

F. Nails, spikes and staples: to CSA B111. Hot-dipped galvanized.

G. Bolts: 1/2-inch diameter unless indicated otherwise, complete with nuts and washers. Hot-dipped galvanized.

H. Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead plugs, explosive actuated fastening devices, recommended for purpose by manufacturer. Hot-dipped galvanized.

I. Galvanizing: to CAN/CSA-G164

7.3 PART 3 - EXECUTION

A. Comply with requirements of NBC 1990 Part 9 supplemented by following paragraphs.

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

C. Install members true to line, level and straight throughout length.

D. Use lumber of longest practical length. Keep joints and splices to a minimum.

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

F. Install nailers and linings as required to provide backing for frames and other work.

G. Install wood cants, fascia backing, nailers, curbs and other wood Backing supports as required.

H. Install sleepers below equipment as required.

I. Anchor, fasten, tie and brace members to provide necessary strength and rigidity.

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

K. Re-treat surfaces of pressure treated materials exposed by cutting, trimming or boring with liberal brush application of preservative before installation.

L. Apply preservatives by dipping, or by brush to completely saturate and maintain wet film on cut surfaces for minimum 3-minute soak on lumber and one-minute soak on plywood.

M. Comply with AWPA M4.

8 SHEET METAL FLASHING & TRIM (07 62 00)

8.1 PART 1 - GENERAL

A. Modified Bituminous Membrane Roofing.

B. CSA A123.3-M1979, Asphalt or Tar Saturated Roofing Felt.

8.2 PART 2 – PRODUCTS

A. Prefinished Steel Sheet: commercial grade, prefinished sheet steel, to ASTM A526M with Z275 zinc coating. Finish: factory precoated with silicon modified polyester (5000 series). Dry film thickness 25.4 microns minimum. Colour: selected from standard available colour range to match or accent building. A maximum of two colours will be selected. Thickness: 22-gauge base metal thickness. Length: use maximum lengths to minimize joints.

B. Underlay for metal flashings: No. 15 perforated asphalt felt to CSA A123.3.

C. Sealants: in accordance with Section 07900 - Sealants.

D. Cleats: of same material and temper as sheet metal, minimum 2 inches wide. Thickness same as sheet metal being secured.

E. Fasteners: hex head cap screws of length and thickness suitable for metal flashing application. Finish same as sheet metal, with dished steel/neoprene washers. Complete with expanding inserts for installation into concrete.

F. Touch-up Paint: as recommended by prefinished metal manufacturer.

G. Reglet bars: surface mounted extruded aluminium, mill finish. For surface attachment to concrete surfaces, with gasket and predrilled anchor holes.

H. Vent stack flashings: spun aluminium, sized to suit diameter of vent. Extend minimum 12 inches above roof membrane. Designed to accommodate minimum 1 inch of insulation, with removable aluminium cap.

I. Fabricate metal flashings and other sheet metal work in accordance with applicable CRCA 'FL' series details.

J. Form pieces in maximum practical lengths. Make allowance for expansion at joints.

K. Hem exposed edges on underside 1/2 inch. Mitre and seal corners with sealant.

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

M. Form flashings of prefinished sheet steel of sizes and profiles to suit existing roof configurations and detailing. Extend metal flashings up behind surface reglet bars minimum 1-1/2 inch. Angle flashings out from wall at 45 degrees. Terminate bottom edge of flashings 1 inch out onto membrane surface.

N. Form cap flashing of prefinished sheet steel in accordance with CRCA FL series details. Secure with surface mounted hex head cap screws and integral washers. Cover face and ends with plastic tape.

8.3 PART 3 – EXECUTION

A. Install sheet metal work in accordance with CRCA FL series details.

B. Use concealed fastenings where practical.

C. Provide underlay under sheet metal. Secure in place and lap joints 4 inches.

D. Install flashings at intersections with vertical surfaces. Flash joints using S-lock forming tight fit.

E. Lock end joints and caulk with sealants.

F. Lock end joints and caulk with sealant.

G. Install surface mounted reglets to all terminations at vertical surfaces. Mitre exterior corners. Caulk top edge and exterior corners with sealant as specified in Section 07900 - Sealants.

H. Fasten reglet bars with prefinished cap screws. Maximum spacing 36 inches oc.

I. Insert metal flashing under reglets to form weathertight junction.

J. Caulk all surface joints in flashings with sealant as specified.

K. Install vent stack flashings at plumbing penetrations. Pack with insulation and secure cap with screws.

9 PLUMBING SPECIALTIES & ACCESSORIES (22 42 01)

9.1 PART 1 - GENERAL

A. Modified Bituminous Membrane Roofing.

9.2 PART 2 – PRODUCTS

A. Type 1; retrofit drain, injection moulded PET co-polymer body, internal expanding compression ring for installation into existing drain pipe. Thermoplastic rubber drain gasket. 16-inch-wide ribbed flange, flashing clamp ring with integral gravel stop, cast aluminum strainer dome. Stainless steel screws and accessories. Sizes to suit existing plumbing lines.

1. Acceptable material: U-Flow Retro drain or equal.

B. Spun aluminum, prefabricated, insulated vent stack flashing. Sizes as required to accommodate existing vent stacks with minimum 1-inch clearance for insulation. Minimum 12 inches high. Maximum Vents, model #301 (1 vent per 1000 – 1200 sq. ft.)

9.3 PART 3 – EXECUTION

A. Install in accordance with manufacturer's instructions and as specified.

B. Install in accordance with CRCA flashing details, Canadian Plumbing Code, provincial codes, and local authority having jurisdiction.

C. Clean out roof drains.

10 APPENDIX A- BID FORM