



**LEEDS, GRENVILLE &
LANARK DISTRICT HEALTH
UNIT**

**SPECIFICATION
FOR THE
Roof Replacement at
458 Laurier Blvd.,
Brockville, Ontario**

**PROJECT NO.
SPECIFICATION NO.**

Contact: Claudette Boivin - - Purchasing Administrator
Date: May 9, 2019
Revision: 1
Issued for Tender: May 3, 2019

NOTE: This Specification is the property of LGLDHU. The information and know-how herein may not be used, nor the Specification reproduced without the written permission of LGLDHU. All authorized reproductions, in whole or in part, shall bear or refer to this note.

APPENDICES

APPENDIX A	Fees and Line Item Prices
APPENDIX B	Project Reference Form
APPENDIX C	Project Reference Photos
APPENDIX D	Sub-Contractor List
APPENDIX E	Material List

1. PROJECT OVERVIEW

Leeds, Grenville & Lanark District Health Unit is seeking the services of a roofing contractor to provide the equipment, material, labour and all permits to complete the roof replacement at 458 Laurier Blvd., Brockville, Ontario. The expected outcome is to select one contractor to provide the services as outlined in the specification.

1.1 Background

The Health Unit officially opened on July 1, 1947 to serve the municipalities of Leeds and Grenville. In 1967, Lanark District joined the organization, which then became the Leeds, Grenville and Lanark District Health Unit (LGLDHU).

The Health Unit covers a 6,329 square km area in Eastern Ontario, with a population density of 25.7 people per km. The southern part of our area borders the St. Lawrence River between Kingston and Cornwall, extending north into the Ottawa Valley. The population of Leeds, Grenville and Lanark is 170,205 people, the majority of whom live in a rural environment (58%).

1.2 Project Scope of Work

This project is intended to replace the existing roofing system with a new modified bituminous membrane roof. The scope of this project includes but is not limited to complete removal of existing metal flashing, coping, caps while leaving the existing EPDM membrane roof directly on the wood deck. New composition will include insulation layers and a new modified bituminous membrane. The total project roof area is approximately 5832 sq. ft in the field of the roof while the flashing membranes are additional to the listed square footage.

Scope of work shall include:

- Mineral surface
- 1 ply of modified bitumen cap sheet torch applied
- 1 ply of modified base sheet self adhered
- 1/4" torch board fastened to wood deck
- Parapet walls to receive new torch board along with 2 plies of mod bit flashing membranes.

1.3 Project Schedule

Project Phase	Date
Issue Tender for Bid	May 3 rd , 2019
Mandatory Site Meeting	May 8 th , 2019
Question Deadline	May 13 th , 2019
Tender Close: no later than	May 15 th , 2019
Expected Notice of Award	May 24 th , 2019
Expected Completion Date	Before end of June, 2019

2. PROJECT ROLES AND RESPONSIBILITIES

2.1 Contacts

- Ryan Kinch of Garland Canada Inc. is hired by the owner for complete tender design and project management of the roof replacement project.
- Claudette Boivin is the Purchasing Administrator and shall be the main point of contact for the entire tender process.

3. INSTRUCTIONS TO PROPONENTS

3.1 Deadline and Address for Submissions

Tenders must be received on or before the following date and time (the “Closing Time”):

2:00:00 PM, local time on May 15th, 2019

Tenders received after the Closing Time will not be considered and hard-copy *Tenders* will be returned to the *Proponent* unopened.

Hard-copy *Proposals* must be addressed and delivered in two sealed envelopes (clearly marked **Part 1 Technical** and **Part 2 Financial** to the Owner as follows:

Project Roof Replacement LGLDHU
Roofing Contractor Services for Roof Replacement
Attn. Claudette Boivin
Leeds, Grenville & Lanark District Health Unit
458 Laurier Blvd., Brockville, Ontario, K6V 7A3

Electronic *Proposals* must be addressed and delivered to the Project Manager at the following e-mail address in accordance with 4.2 Proposal Delivery and 4.3 Electronic Form of Submission below:

E-Mail: tendering@healthunit.org

3.2 Tender Delivery

- 3.2.1 Tenders are accepted in hard-copy format (three hard-copies) or electronically via e-mail.
- 3.2.2 *Proponents* are encouraged to allow at least 30 minutes for transfer of their electronic *Proposal* submissions, recognizing that large files received at the same time may overload a server.
- 3.2.3 A *Proposal* received by the *Owner's* e-mail after the Closing Time on the Closing Date may be accepted at the discretion of the *Owner* if the *Proponent* is able to demonstrate that the *Proposal* "sent time" from the *Proponent's* e-mail and subsequent "receipt time" at the *Owner's* server was before the Closing Time on the Closing Date.
- 3.2.4 The *Owner* reserves the right, at its sole discretion, to accept *Proposals* sent by e-mail that are not received before the Closing Time on the Closing Date due to an e-mail systems-failure.
- 3.2.5 Submissions delivered by fax will be rejected.
- 3.2.6 *Proposals* submitted in hard copy will be accepted if requested by a *Proponent* at least 72 hours before the Closing Time on the Closing Date and received prior to Closing Time on the Closing Date.

4.3 Electronic Form of Submission

- 4.3.1 Electronically submitted *Proposals* shall be in two parts to ensure that the price does not influence the technical evaluation as follows:
 - (a) Part 1 – Technical shall have one file name in the form of:
[project number] - Part 1 Technical - [*Proponent* name or abbreviation]
 - (b) Part 2 – Financial shall have one file name in the form of:
[project number] - Part 2 Financial - [*Proponent* name or abbreviation]
- 4.3.2 Each part of the electronically submitted *Proposal* shall be a single document attached to an e-mail message addressed as described in Section 4.1 above.
- 4.3.3 The electronically submitted *Proposal* documents shall be in PDF format compatible with Adobe Acrobat Reader.
- 4.3.4 The electronically submitted Part 1 – Technical document shall not include any financial information.

4.4 Amendments to Proposals

Hard-copy and electronically submitted early submissions may be amended by *Proponents* only by submitting a letter or e-mail request to revoke the prior submission accompanied by an attachment of a complete new submission. All amendments must be clearly marked with a revision number and date, and be received by the *Owner* prior to the Closing Date and Time in the manner set out above.

4.5 Enquiries

The *Proponent* is responsible to clarify any queries prior to submitting its *Proposal*. All enquiries related to this RFT should be directed by e-mail to the owner.

Information obtained from any source other than the Contact Person shall not form part of this RFT and should not be relied upon.

The last day for receipt of questions is: [May 13th, 2019 before 5 pm](#)

Responses to questions will be circulated to all *Proponents* in the form of Addenda within two days of receiving the questions. Queries that have not been answered will have responses given in the final addendum to be issued on [May 15th, 2019](#).

4.6 Addenda

LGLDHU may amend, supplement or otherwise modify this RFT at any time and from time to time prior to the *Tender* submission date, only by written addenda issued by LGLDHU

LGLDHU does not intend to post any addenda or other information regarding this RFT on any website. Any addenda will be sent by e-mail to the parties who have responded to this Request for Proposal. By submitting a *Proposal* under this RFT, a submitting party will be deemed to have received all addenda, or elected to submit without regard to any or all of the addenda. *Proposal* revisions will be not permitted after the *Proposal* Closing Date due to any addenda not having been received. LGLDHU reserves the right to accept or reject the *Proposal* submission from any *Proponent* that did not receive any or all addenda.

4.7 Intended RFT Process Schedule

LGLDHU estimates the schedule milestones for the Request for Proposal process will be as indicated in Section 1.5 – Project Schedule above

4.8 Site Visit

A mandatory site visit and Information Meeting will be held at [10 am on May 8th, 2019](#) at the place of the work. 485 Laurier Blvd., Brockville, Ontario.

4. SUBMISSION REQUIREMENTS

4.1 Part 1 - Section 1 - Mandatory Requirements

4.1.1 *Proponents* must satisfy the following mandatory requirements in their *Proposal* in accordance with the requirements of this RFT. *Proposals* that fail to satisfy these mandatory requirements will not be considered further. *Proponents* shall submit the following:

- (a) Proof of liability insurance up to \$5,000,000 naming LGLDHU as an additional insured.
- (b) WSIB Clearance Certificate or Letter of Exemption with an issue date of not more than 45 days before the Closing Date and Time.

4.2 Part 1 - Section 2 – Corporate Experience

4.2.1 Provide the completed Appendix D (Sub-Contractors List) – List sub-contractors to be used throughout the project to complete the desired scope of work.

4.2.2 Using the form provided as Appendix B and C (project experience, photos), provide information to illustrate 5 projects of similar type, scope and complexity completed within the last three years and other similar projects that demonstrate relevant experience in similar types of projects.

4.2.3 Provide a maximum two-page profile of the Contractor outlining its qualifications and experience with the depth of resources available to complete the project.

4.3 Part 1 - Section 3 - Work Plan and Schedule

4.3.1 Provide a schedule showing the key stages in the *Proponent's* work, number and timing of meetings with the *Owner* and project mobilization/demobilization dates.

4.3.2 Provide a statement of intended service levels including a commitment to the *Proponent's* schedule and intended completion date.

4.4 Part 2 – Financial

4.4.1 Submit a properly executed and unqualified Fixed Fee Proposal Form using the form attached as Appendix A – Roof Replacement Fees. This shall form part of the contract document to be used between the client and the *Successful Proponent*. All portions of this form must be completed including the line items which are used in the event the scope of work is determined that the designated line items are required.

5. EVALUATION

5.1 Evaluation Process

- 5.1.1** The *Owner* will appoint an *Evaluation Committee* to review and evaluate all *tender* submissions. The evaluation follows a four-step process as indicated in 5. SUBMISSION REQUIREMENTS above:
- (a) Validation of mandatory requirements – (Part 1 - Section 1);
 - (b) Technical evaluation (Part 1 – Sections 2 and 3);
 - (c) Evaluation of the Fixed Fee Proposal (Part 2)
- 5.1.2** The technical evaluation of all *Proposals* that have met the mandatory requirements will be completed before the Fixed Fee Proposal is reviewed.
- 5.1.3** The *Owner* will not be limited to the criteria listed in the RFT, and may consider other criteria that the committee identifies as relevant during the evaluation process. However, any new criteria considered will be applied evenly and fairly to all submissions that are eligible for evaluation.
- 5.1.4** The *Owner*, at its discretion, may verify and make inquiries with respect to references given by a *Proponent*, and request clarifications or additional information with respect to any submission and may make such requests to only selected *Proponents*. The *Owner* may consider such clarifications or additional information in evaluating a submission.
- 5.1.5** At the *Owner's* discretion, *Proposals* that receive a score of less than 25 points in the technical evaluation may be excluded from further evaluation.
- 5.1.6** Following the technical evaluation, for *Proposals* that have successfully passed the technical evaluation, prices will be added to the evaluation process. In the case of hard-copy submissions, the *Proponents'* second envelopes containing the Part 2 – Financial documents will be opened by the *Owner* and the price assessed. In the case of electronic submissions, the *Proponents* Part 2 Document will be opened and assessed.
- 5.1.7** The *Owner*, at its discretion, may invite some or all *Proponents* for an interview to seek clarification on any matter relating to the *Proposal*.
- 5.1.8** The *Owner* may at any time reject a submission, including a submission from a *Proponent* that complies with the Mandatory Requirements, without completing a full evaluation if, in the judgment of the *Owner* the *Proposal* would not be acceptable as the basis for a contract.

5.2 Mandatory Requirements

Proposals that do not meet the mandatory requirements as indicated in 5.1.1 above will not be considered further.

5.3 **Technical Evaluation – Total Value 40 Points**

The *Evaluation Committee* will evaluate the technical aspects of eligible *Proposals* to determine the *Proposal* which best meets the needs of the *Owner*, using the weighting criteria indicated in Table 6.3.1 below as a guideline.

5.4 **Financial Evaluation – Total Value 30 Points**

The *Evaluation Committee* will evaluate the financial aspects of eligible *Proposals* on the basis of the fixed fee proposal and the allocation of fees to stages of the project.

The points for price will be awarded as follows:

Each proponent will receive a percentage of the total possible points allocated to price by dividing that proponent's price into the lowest bid price. For example, if the lowest bid price is \$120.00, that proponent receives 100% of the possible points for that category ($120/120 = 100\%$), a proponent who bids \$150.00 receives 80% of the possible points for that category ($120/150 = 80\%$) and a proponent who bids \$240.00 receives 50% of the possible points ($120/240 = 50\%$).

5.5 **Modified Bitumen Roof Membrane Material Evaluation – Total Value 30 Points**

The *Evaluation Committee* will evaluate the materials to be used. Data sheets shall be submitted for the products proposed along with associated warranties provided by the material manufacturer. For the purpose of this project, a minimum of 15 year no dollar limit, leak free warranty is required and shall be provided by the material manufacturer. Materials manufacturer rep's methodology will also be considered such as frequency of site inspections during work in progress, pre-construction methodology, shop drawings to be submitted etc.

5.6 **Selection**

The *Evaluation Committee* will rank the short-listed *Proponents* from which it will select the *Successful Proponent*. The *Successful Proponent's Proposal* will be recommended to the client for the award of a contract for Roofing Contractor services based on the *Proponent's* standing in the evaluation review process.

5.7 **Resolution of tied final scores**

If two or more *Proponents* have the same final score for the combined technical, and fee scores, the *Proponent* with the higher technical score will be selected as the *Successful Proponent*.

Table 6.3.1 – Submission Requirements – Evaluation Score	Weighting
Mandatory Requirements (Part 1 – Section 1) <i>Pass/Fail</i>	
<p>Corporate Experience (Part 1 - Section 2) Illustrated by Reference Projects</p> <ul style="list-style-type: none"> • 5.2.2 Reference Sub-Contractor list (Appendix D) Reference projects list (Appendix B, C) Appropriate corporate experience and depth of expertise of the proponent (60%). • 5.2.5 Understanding of the project and the <i>Proponent's</i> statement outlining how it is ideally suited for the <i>project</i>, based on the reference projects list (40%). 	<p>25 points</p>
<p>Work Plan and Schedule (Part 1 - Section 3)</p> <ul style="list-style-type: none"> • 5.4.1 Well-developed project schedule providing appropriate timelines for <i>Owner</i> approval. The owners would prefer this project be complete before the end of June. Points will be considered for this timeline accommodation. 	<p>15 points</p>
Total Technical Score (Part 1)	40 points
Fixed Fee (Part 2) Appendix A	30 points
Modified Bitumen Roof Membrane Material Evaluation	30 points
<ul style="list-style-type: none"> • Proponents are to list the materials to be used for all components of the roof replacement along with the associated Manufacturer's warranty and services provided by the Manufacturer's representative. (Appendix E) 	
Total Evaluation Score	100 points

6. GENERAL CONDITIONS

6.1 Owner's Rights

The *Owner* reserves the right

to: reject any and all *Proposals*;
accept any *Proposal* in whole or in part, including the lowest priced or any *Proposal*;
waive any minor irregularities in any *Proposal*;
cancel this Request for Proposal either before or after submission deadline;
negotiate for the modification of any single *Proposal*;
and re-advertise for *Proposals* if desired.

6.2 Proposal Expenses

Proponents are solely responsible for their own expenses in preparing and submitting *Proposals*, and for any negotiations or discussions with the *Owner* or its representatives and consultants, relating to or arising from this Request for Proposal.

6.3 No Contract

By submitting a *Proposal* and participating in the process as outlined in this Request for Proposal, *Proponents* expressly agree that no contract of any kind is formed under, or arises from, this Request for Proposal, prior to the signing of a formal written contract.

6.4 No Claims

The *Owner* and its representatives, agents, consultants and advisors will not be liable to any *Proponent* for any claims, whether for costs, expenses, losses or damages, or loss of anticipated profits, or for any other matter whatsoever, incurred by the *Proponent* in preparing and submitting a *Proposal*, or participating in negotiations for a contract, or other activity related to or arising out of this Request for Proposal.

6.5 No Collusion

By submitting a *Proposal* the *Proponent*, and each firm, corporation or individual member associated with the *Proponent's Proposal* submission, represents and confirms to the *Owner*, with the knowledge and intention that the *Owner* may rely on such representation and confirmation, that its *Proposal* has been prepared without collusion or fraud, and in fair competition with *Proposals* from other *Proponents*.

6.6 Conflict of Interest

Proponents shall disclose any potential conflicts of interest and existing business relationships they may have with the LGLDHU, the client or any known participants in the *project*.

6.7 **Accuracy of Information**

While LGLDHU has used considerable efforts to ensure an accurate representation of information in the Request for Tender, the information contained in this Request for Tender is supplied solely as a guideline for *Proponents*. LGLDHU gives no representation whatsoever as to the accuracy or completeness of any of the information set out in this Request for Tender, or any other background or reference information or documents prepared by third parties and made available to *Proponents*. *Proponents* will make an independent assessment of the accuracy and completeness of such information and will have no claim whatsoever against LGLDHU or its representatives, agents, consultants and advisors, with respect to such information.

6.8 **Ownership of Submissions**

All *Proposals* submitted shall become the property of the *Owner*.

6.9 **Confidentiality**

Proponents shall treat all information received through this Request for Proposal process and subsequent contract award as confidential, and will not disclose such information to any person except with the prior written consent of the *Owner*.

6.10 **Working Language**

All *Proposals* must be written in English.

6.11 **Payment Terms**

The following payment terms shall apply upon award of a contract based on the *Successful Proponent's Proposal*.

The client will not consider payment of any costs incurred by the *Proponent* in the preparation and submission of its *Proposal*.

The terms of payment for *Roofing Contractor* services shall be in accordance with the Agreement and General Conditions.

6.12 **Insurance Coverage**

By submission of its *Proposal* the *Proponent* confirms its agreement to conform to the professional liability insurance coverage in the form of an original certificate from an insurer or insurers licensed to underwrite insurance in the jurisdiction of the *project* and stating that all required insurance coverage as specified for a minimum of \$5,000,000.00.

6.13 **WSIB Certificate**

Include with the *Proposal* submission, a copy of the *Proponent's* latest WSIB Certificate

of Clearance (failure to submit a WSIB certificate or letter of exemption from WSIB coverage with the *Proposal* may result in disqualification of the *Proposal*).

APPENDIX A- Fee Schedule

Contractor’s Fees

This schedule forms part of the contract for the Roofing Contractor Services between the Client LGLDHU and the proponent.

Dated: _____

FEES AND LINE ITEM PRICES

Price complete, including supply and installation of roofing, site preparation, all labour, equipment, machinery, tools and parts used, all work as described herein, site clean-up, removal from site of all packaging and rubbish, warranties, guarantees and all other costs:

The Bid amount shall include all costs incurred, **excluding** HST.

DESCRIPTION	TOTAL PRICE
<u>ALL ROOF WORK FOR THE ROOF REPLACEMENT</u> As described within the specification and all addendum TOTAL:	\$
<u>LINE ITEM- Wood Deck</u> Replacement during replacement of the roof – due to severe deterioration from moisture or prior damage- with similar material and thickness. This is currently unforeseen, and will be determined upon the commencement of the roof replacement Per Sq Ft:	\$
<u>LINE ITEM- Wood blocking deterioration</u> Removal and replacement of any existing deteriorated wood blocking on perimeters, curbs etc. Per Linear ft:	\$

All Line Items and Options are subject to owner’s approval. The contractor must bring the items to the owner and owner’s representative before proceeding.

APPENDIX B – Reference Project – Details

Project Name/City Located:			
Consultant/Discipline:			
Client:			
Client Phone No./ E-Mail Address:			
Description:			
Total Size (sq. ft. GFA):			
Year Completed:			
Construction Procurement Method:			
Met Total Construction Budget?			
Total Construction Cost at Completion:			
Project Relevance to Current Facility:			
Base	Building		
Total Size (sq. ft. GFA):			
Project Team Members: <i>(List only proposed current facility team members and their role on the relevant project)</i>			
Project Consultants:			

APPENDIX C – Reference Project – Photographs

Appendix D – Subcontractor Declaration

SUB-CONTRACTOR DECLARATION

If none, indicate NIL. The Contractor shall list the names of all sub-contractors to be used in the execution of this work.

SUB-TRADE	SUB-CONTRACTOR COMPANY NAME	ADDRESS

Appendix E – Modified Bitumen Roof Membrane Materials List

Please reference or attach data sheets for each product named below

Torch applied Modified Bitumen Mineral Cap Sheet: _____

Self-Adhered Base Torch Sheet: _____

1/4" Torch Board: _____

100% Solids Caulking: _____

100% Solids Pitch Pan Sealant: _____

WARRANTY PROVIDED: _____

SECTION 07550
MODIFIED BITUMINOUS MEMBRANE ROOFING

1 GENERAL

1.1 SECTION INCLUDES

1.1.1 Hot Applied 2-Ply Asphalt Roofing (2.11)(3.5)

1.1.2 Accessories. (2.19)

1.2 RELATED SECTIONS

1.2.1 Section 05300 - Metal Roof Deck.

1.2.2 Section 06100 - Rough Carpentry.

1.2.3 Section 06114 - Wood Blocking and Curbing: Wood nailers and cant strips.

1.2.4 Section 07220 - Insulation Board: Insulation and fastening.

1.2.5 Section 07620 - Sheet Metal Flashing and Trim: Weather protection for base flashings.

1.2.6 Section 07710 - Manufactured Roof Specialties: Counter flashing gravel stops, and fascia.

1.2.7 Section 07724 - Roof Hatches: Frame and integral curb; Counter flashing.

1.2.8 Section 08620 - Unit Skylights: Skylight frame and integral curb and counter flashing.

1.2.9 Section 08630 - Metal-Framed Skylights: Skylight frame and integral curb and counter flashing.

1.2.10 Section 08950 - Translucent Wall and Roof Assemblies: Counter flashing

1.2.11 Section 08960 - Sloped Glazing Assemblies: Counter flashing.

1.2.12 Section 15120 - Piping Specialties: Roof Drains, Sumps.

1.3 REFERENCES

1.3.1 ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.

1.3.2 ASTM D 312 - Standard Specification for Asphalt used in Roofing.

1.3.3 ASTM D 451 - Standard Test Method for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing Products.

1.3.4 ASTM D 1970 - Specification for Sheet Materials, Self-Adhering Polymer Modified Bituminous, Used as Steep Roofing Underlayment for Ice Dam Protection.

1.3.5 ASTM D 1079 Standard Terminology Relating to Roofing, Waterproofing and Bituminous Materials.

1.3.6 ASTM D 1227 Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing.

1.3.7 ASTM D 1863 Standard Specification for Mineral Aggregate Used as a Protective Coating

for Roofing.

- 1.3.8 ASTM D 2178 Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
 - 1.3.9 ASTM D 2824 Standard Specification for Aluminum-Pigmented Asphalt Roof Coating.
 - 1.3.10 ASTM D 4586 Standard Specification for Asphalt Roof Cement, Asbestos-Free.
 - 1.3.11 ASTM D 4601 Standard Specification for Asphalt Coated Glass Fiber Base Sheet Used in Roofing.
 - 1.3.12 ASTM D 5147 Standard Test Method for Sampling and Testing Modified Bituminous Sheet Materials.
 - 1.3.13 ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
 - 1.3.14 ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
 - 1.3.15 ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
 - 1.3.16 ASTM D 6754 - Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.
 - 1.3.17 ASTM D 6757 - Standard Specification for Underlayment Felt Containing Inorganic Fibers Used in Steep-Slope Roofing.
 - 1.3.18 ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings
 - 1.3.19 Factory Mutual Research (FM): Roof Assembly Classifications.
 - 1.3.20 National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
 - 1.3.21 Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
 - 1.3.22 Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
 - 1.3.23 Warnock Hersey (WH): Fire Hazard Classifications.
 - 1.3.24 ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.
 - 1.3.25 ASCE 7, Minimum Design Loads for Buildings and Other Structures
 - 1.3.26 UL - Fire Resistance Directory.
 - 1.3.27 FM Approvals - Roof Coverings and/or RoofNav assembly database.
- 1.4 DESIGN / PERFORMANCE REQUIREMENTS
- 1.4.1 Perform work in accordance with all federal, state and local codes.
 - 1.4.2 Exterior Fire Test Exposure: Roof system shall achieve a UL, FM or WH Class rating for roof slopes indicated on the Drawings as follows:
 - 1.4.2.1 Factory Mutual Class A Rating.

- 1.4.2.2 Underwriters Laboratory Class A Rating.
- 1.4.2.3 Warnock Hersey Class A Rating.

1.4.3 Design Requirements:

- 1.4.3.1 Live Load: 20 psf, or not to exceed original building design.
 - 1.4.3.1.1 Engineering shall be covered by the contractor if required
- 1.4.3.2 Dead Load:
 - 1.4.3.2.1 Installation of new roofing materials shall not exceed the dead load capacity of the existing roof structure.

1.5 SUBMITTALS

1.5.1 Submit under provisions of Section 01300.

1.5.2 Product Data: Manufacturer's data sheets on each product to be used, including:

- 1.5.2.1 Preparation instructions and recommendations.
- 1.5.2.2 Storage and handling requirements and recommendations.
- 1.5.2.3 Installation instructions.

1.5.3 Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation and vapor barrier, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.

1.5.4 Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work begins. Report shall be signed and sealed by a Professional Engineer registered in the Province of the Project who has provided roof system attachment analysis for not less than 5 consecutive years.

1.5.5 Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.5.6 Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.

1.5.7 Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147.

1.5.8 Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.6 QUALITY ASSURANCE

1.6.1 Perform Work in accordance with NRCA Roofing and Waterproofing Manual.

1.6.2 Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of twelve years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.

1.6.3 Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Contractor by the Manufacturer.

- 1.6.4 Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.
 - 1.6.5 Product Certification: Provide manufacturer's certification that materials conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.
 - 1.6.6 Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.
 - 1.6.7 Contractor to provide proof of liability insurance of no less than \$5,000,000 and WSIB.
- 1.7 PRE-INSTALLATION MEETINGS
- 1.7.1 Convene minimum two weeks prior to commencing Work of this section.
 - 1.7.2 Review installation procedures and coordination required with related Work.
 - 1.7.3 Inspect and make notes of job conditions prior to installation:
 - 1.7.3.1 Record minutes of the conference and provide copies to all parties present.
 - 1.7.3.2 Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
 - 1.7.3.3 Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Architect.
- 1.8 DELIVERY, STORAGE, AND HANDLING
- 1.8.1 Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.
 - 1.8.2 Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.
 - 1.8.3 Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface except store KEE-Stone FB 60 rolls flat on a clean flat surface. No wet or damaged materials will be used in the application.
 - 1.8.4 Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50 degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.
 - 1.8.5 Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.
 - 1.8.6 Adhesive storage shall be between the range of above 50 degree F (10 degree C) and below 80 degree F (27 degree C). Area of storage shall be constructed for flammable storage.
- 1.9 COORDINATION
- 1.9.1 Coordinate Work with installing associated metal flashings as work of this section proceeds.
- 1.10 PROJECT CONDITIONS

1.10.1 Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.11 WARRANTY

1.11.1 Upon completion of the work, provide the Manufacturer's written and signed NDL Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installing contractor, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition.

1.11.1.1 Warranty Period:

1.11.1.1.1 15 years from date of acceptance.

1.11.2 Installer is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.

1.11.2.1 Warranty Period:

1.11.2.1.1 2 years from date of acceptance.

2 PRODUCTS

2.1.1 Modified Bitumen sheet properties: to CGSB 37-GP-56M.

Breaking Strength: MD 4450N

Elongation: MD 6%

Low Temp. Flex.: -32 C.

3

4 TOTAL MEMBRANE CONFORMANCE

4.1.1 The membrane must consist of a minimum of two (2) roofing plies, with a total conformance to the performance characteristics listed above.

4.1.2 The modified membrane ply shall be a minimum of 195 mil in thickness with dual polyester or fiberglass combination reinforcement. The asphalt will be modified with a blend of styrene butadiene styrene (SBS) and styrene isoprene styrene (SIS) elastomers.

4.1.3 The minimum technical performance characteristics specified may be achieved by increasing the number of plies in order to achieve a total system strength for tensile and tear.

4.1.4 Modified blends of SBS/SIS modified membrane cap sheets will be accepted, provided that all plies within the membrane are fully adhered with the use of SEBS modified asphalt.

4.1.5

4.2 MANUFACTURERS

4.2.1 Requests for substitutions will be considered in accordance with provisions of Section 01600.

4.2.2 The Products specified are intended and the Standard of Quality for the products required for this project. If other products are proposed the bidder must disclose in the bid the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid may be denied.

4.2.2.1 Bidder will not be allowed to change materials after the bid opening date.

- 4.2.2.2 If alternate products are included in the bid, the products must be equal to or exceed the products specified. Supporting technical data shall be submitted to the Owner for approval prior to acceptance.
- 4.2.2.3 In making a request for substitution, the Bidder/Roofing Contractor represents that it has:
 - 4.2.2.3.1 Personally investigated the proposed product or method, and determined that it is equal or superior in all respects to that specified.
 - 4.2.2.3.2 Will provide the same guarantee for substitution as for the product and method specified.
 - 4.2.2.3.3 Will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
 - 4.2.2.3.4 Will waive all claims for additional cost related to substitution, which consequently become apparent.
 - 4.2.2.3.5 Cost data is complete and includes all related cost under his/her contract or other contracts, which may be affected by the substitution.
 - 4.2.2.3.6 Will reimburse the Owner for all redesign cost by the Architect for accommodation of the substitution.
- 4.2.2.4 Owner reserves the right to be the final authority on the acceptance or rejection of any or all bids, proposed alternate roofing systems or materials that has met ALL specified requirement criteria.
- 4.2.2.5 Failure to submit substitution package, or any portion thereof requested, will result in immediate disqualification and consideration for that particular contractors request for manufacturer substitution.

4.3 2-PLY ASPHALT ROOFING -

- 4.3.1 Base (Ply) Sheet: One ply bonded to the prepared substrate, self adhered:
 - 4.3.1.1 115 mil thickness minimum. Glass and polyester reinforcement.
- 4.3.2 Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with torch application.
 - 4.3.2.1 190 mil minimum: Dual Fiberglass reinforced, SBS modified membrane
- 4.3.3 Interply Adhesive: (1, 2 and 3)
 - 4.3.3.1 NA
- 4.3.4 Flashing Base Ply: One ply bonded to the prepared substrate:
 - 4.3.4.1 Generic self adhered torch base sheet: Minimum 115 mill thick and 125 N tear resistance
- 4.3.5 Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive except for torch applied:
 - 4.3.5.1 Modified Bitumen Mineral Cap Sheet: Dual fiberglass reinforced, mineral surfaced torch sheet
- 4.3.6 Flashing Ply Adhesive:
 - 4.3.6.1 None for torch sheets.
- 4.3.7 Surfacing:
 - 4.3.7.1 Mineral

4.4 ACCESSORIES:

- 4.4.1 Nails and Fasteners: Non-ferrous metal or galvanized steel, except that hard copper nails shall be used with copper; aluminum or stainless steel nails shall be used with aluminum; and stainless steel nails shall be used with stainless steel, Fasteners shall be self-clinching type of penetrating type as recommended by the deck manufacturer. Fasten nails and

fasteners flush-driven through flat metal discs not less than 1 inch (25 mm) diameter. Omit metal discs when one-piece composite nails or fasteners with heads not less than 1 inch (25 mm) diameter are used.

- 4.4.2 Urethane Sealant Hybrid: One part, non-sag sealant as approved and furnished by the membrane manufacturer for moving joints.
 - 4.4.2.1 Tensile Strength, ASTM D 412: 250 psi
 - 4.4.2.2 Elongation, ASTM D 412: 450%
 - 4.4.2.3 Hardness, Shore A ASTM C 920: 35
 - 4.4.2.4 Adhesion-in-Peel, ASTM C 92: 30 pli
- 4.4.3 Butyl Tape: 100% solids, asbestos free and compressive tape designed to seal as recommended and furnished by the membrane manufacturer.
- 4.4.4 Non-Shrink Grout: All weather fast setting chemical action concrete material to fill pitch pans.
 - 4.4.4.1 Flexural Strength, ASTM C 78: (modified) 7 days 1100psi
 - 4.4.4.2 High Strength, ASTM C 109: (modified) 24 days 8400lbs (3810kg)
- 4.4.5 Pitch Pocket Sealer: Two part, 100% solids, self-leveling, polyurethane sealant for filling pitch pans as recommended and furnished by the membrane manufacturer.
 - 4.4.5.1 Durometer, ASTM D 2240: 40-50 Shore
 - 4.4.5.2 Elongation, ASTM D 412: 250%
 - 4.4.5.3 Tensile Strength, ASTM D 412: 200 @ 100 mil
- 4.4.6 Glass Fiber Cant - Glass Cant: Continuous triangular cross Section made of inorganic fibrous glass used as a cant strip as recommended and furnished by the membrane manufacturer.

5 EXECUTION

5.1 EXAMINATION

- 5.1.1 Do not begin installation until substrates have been properly prepared.
- 5.1.2 Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.
- 5.1.3 Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.
- 5.1.4 If substrate preparation and other conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

5.2 PREPARATION

- 5.2.1 General: Clean surfaces thoroughly prior to installation.
 - 5.2.1.1 Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
 - 5.2.1.2 Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.
 - 5.2.1.3 Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
 - 5.2.1.4 Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
 - 5.2.1.5 Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
 - 5.2.1.6 Fasteners and plates for fastening components mechanically to the substrate

shall provide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.

5.2.1.7 Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.

5.2.2 Wood Deck:

5.2.2.1 Dimensional wood deck shall be minimum 1 inch (25 mm) thick, knotholes and cracks larger than 1/4 inch shall be covered with sheet metal. All boards shall be appropriately nailed and have adequate end bearing to the centers of beams/rafters. Lumber shall be kiln dried.

5.2.2.2 Plywood shall be a minimum 15/32 inch (11.9 mm) thick and conform to the standards and installation requirements of the American Plywood Association (APA).

5.2.2.3 Insulation is to be mechanically attached in accordance with the insulation manufacturer's recommendations unless otherwise required by the applicable Code.

5.2.3 Re-Roofing Applications:

5.2.3.1 Install new wood nailers as necessary to accommodate insulation/recovery board or new nailing patterns.

5.2.3.2 When mechanically attached, the fastening pattern for the insulation/recovery board shall be as recommended by the specific product manufacturer.

5.3 INSTALLATION - GENERAL

5.3.1 Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.

5.3.2 General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:

5.3.2.1 Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.

5.3.2.2 Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.

5.3.3 Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water

5.3.4 All slopes greater than 2:12 require back-nailing to prevent slippage of the ply sheets. Use ring or spiral-shank 1 inch cap nails, or screws and plates at a rate of 1 fastener per ply (including the membrane) at each insulation stop. Place insulation stops at 16 ft o.c. for slopes less than 3:12 and 4 feet o.c. for slopes greater than 3:12. On non-insulated systems, nail each ply directly into the deck at the rate specified above. When slope exceeds 2:12, install all plies parallel to the slope (strapping) to facilitate backnailing. Install 4 additional fasteners at the upper edge of the membrane when strapping the plies.

5.4 INSTALLATION TORCH APPLIED ROOF SYSTEM

5.4.1 Base/Felt Ply(s): Install base sheet

shingled uniformly to achieve one or more plies over the entire prepared substrate. Shingle in direction of slope of roof to shed water on each area of roof. Do not step on base rolls until asphalt has cooled, fish mouths should be cut and patched.

5.4.1.1 Lap ply sheet ends 8 inches (203 mm). Stagger end laps 2 inches (304mm) minimum.

5.4.1.2 Install base flashing ply to all perimeter and projection details after membrane application.

5.4.1.3 Extend plies 2 inches beyond top edges of cants at wall and projection bases.

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

5.4.1.5 Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.

5.4.2 Modified Cap Ply(s): Solidly bond the modified membrane to the base layers

5.4.2.1 Roll must push a puddle of hot material in front of it with material slightly visible at all side laps. Use care to eliminate air entrapment under the membrane. Exercise care during application to eliminate air entrapment under the membrane.

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

5.4.2.3 Install subsequent rolls of modified membrane as above with a minimum of 4 inch (101 mm) side laps and 8 inch (203 mm) end laps. Stagger end laps. Apply membrane in the same direction as the previous layers but stagger the laps so they do not coincide with the laps of the base layers.

5.4.2.5 Extend membrane 2 inches (50 mm) beyond top edge of all cants

5.4.3 Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.

5.4.4 Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 06114.

5.4.4.1 Provide nailers at all roof perimeters and penetrations for fastening membrane flashings and sheet metal components.

5.4.4.2 Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.

5.4.4.3 Nailer lengths should be spaced with a minimum 1/8 inch gap for expansion and contraction between each length or change of direction.

5.4.4.4 Nailers and flashings should be fastened in accordance with Factory Mutual "Loss Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.

5.4.5 Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings as specified in Section 07620 or Section 07710. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.

5.4.6 Termination Bar: Provide a metal termination bar or approved top edge securement at the

terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide suitable, sealant at the top edge if required.

5.4.7 Flashing Base Ply: Install flashing sheets by the same application method used for the base ply. Self adhered.

- 5.4.7.1 Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
- 5.4.7.2 Prepare all walls, penetrations, expansion joints and surfaces to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
- 5.4.7.3 Solidly adhere the entire sheet of flashing membrane to the substrate.
- 5.4.7.4 Coordinate counter flashing, cap flashings and similar work with modified bitumen roofing work as specified.
- 5.4.7.5 Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.

5.4.8 Flashing Cap Ply: Install flashing cap sheets by the same application method used for the cap ply.

- 5.4.8.1 Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
- 5.4.8.2 Prepare all walls, penetrations and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
- 5.4.8.3 Adhere to the underlying base flashing ply with torch cap mineral sheet. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
- 5.4.8.4 Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.
- 5.4.8.5 All stripping shall be installed prior to flashing cap sheet installation.
- 5.4.8.6 Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
- 5.4.8.7 Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.

5.4.10 Roof Walkways: Provide walkways in areas indicated on the Drawings.

5.5 SITE SPECIFIC DETAILS

5.5.1 Demolition notes:

- 5.5.1.1 Leave existing roof membrane in place.
- 5.5.1.2 Remove and replace metal vent stack flashings, square vent caps, surface mount flashings.
- 5.5.1.3 Remove and re-use coping cap metal flashing.
- 5.5.1.4 Replace foam on metal roof under coping cap at transition from parapet wall to sloped roof
- 5.5.1.5 Cut existing EPDM every 5' minimum in field of roof. Cut EPDM at all horizontal to vertical transitions.

- 5.5.1.5 Replace coping cap metal flashing on parapet wall if it is bent or damaged when removing.
- 5.5.1.6 Remove and dispose antennas off parapet wall.
- 5.5.1.7 Remove and dispose antenna ballasted in field of roof.
- 5.5.1.8 Remove and dispose all debris from roof as required.
- 5.5.1.9 All electrical and hvac work by others. Coordinate all roof work with other trades.
- 5.5.1.10 At hatch, install pitch pan for electrical to penetrate roof. Repair hole in hatch with 100% solids caulking.

5.5.2 New roof composition:

- 5.5.2.2 2 plies of mod bit applied self adhered, then torch cap with mineral surface on 1/4" torch board fastened to wood deck.
- 5.5.2.4 Parapet walls to receive new surface 1/4" torch board fastened.
- 5.5.2.5 Prime and install peel and stick torch base flashing membrane.
- 5.5.2.6 Torch apply modified bitumen mineral surface membrane over entire parapet wall.

5.5.3 Construction notes:

- 5.5.4 All new pitch pans to receive 100% solids urethane sealant
- 5.5.5 Term bars to be applied at the top of all flashings fastened 8" o.c. and covered with new 26ga pre-painted metal flashings
- 5.5.6 All metal flashings to be s-locked. No fasteners through face of metal flashing .
- 5.5.7 All drains to be retrofitted with u-flow drains
- 5.5.8 HVAC units to remain in place and operating during construction
- 5.5.9 Gas line to remain connected and contractor to work around the gas line
- 5.5.10 Supply and install new quick blocks under gas line.

5.6 CLEANING

- 5.6.1 Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.
- 5.6.2 Remove asphalt markings from finished surfaces.
- 5.6.3 Repair or replace defaced or disfigured finishes caused by Work of this section.

5.7 PROTECTION

- 5.7.1 Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.
- 5.7.2 Protect exposed surfaces of finished walls with tarps to prevent damage.
- 5.7.3 Plywood for traffic ways required for material movement over existing roofs shall be not less

than 5/8 inch (16 mm) thick.

5.7.4 In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.

5.7.5 Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

5.8 FIELD QUALITY CONTROL

5.8.1 Inspection: Provide manufacturer's field observations at start-up and at intervals of approximately 30 percent, 60 percent and 90 percent completion. Provide a final inspection upon completion of the Work.

5.8.1.1 Warranty shall be issued upon manufacturer's acceptance of the installation.

5.8.1.2 Field observations shall be performed by a Sales Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.

5.8.1.3 Provide observation reports from the Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.

5.8.1.4 Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

5.9 SCHEDULES

5.9.1 Base (Ply) Sheet: 5.9.4.1 Self Adhered Torchbase: SBS modified

5.9.4.1.1 Strain energy 7.8 / 7.2 kN/m

5.9.4.1.2 Breaking strength 15 / 13.5 kN/m

5.9.4.1.3 Ultimate elongation 60 / 65 %

5.9.5.2 Flashing Cap (Ply) Sheet:

5.9.5.2.1 Mineral Surface: 195 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced rubber modified roofing membrane with a dual fiberglass scrim. Designed for torch applications with a burn-off backer that indicates when the material is hot enough to be installed.

5.9.5.2.1.1 Tensile Strength, ASTM D 5147

5.9.5.2.1.1.1 2 in/min. @ 73.4 +/- 3.6 deg. F MD 210 lbf/in XD 210 lbf/in

5.9.5.2.1.1.2 50 mm/min. @ 23 +/- 2 deg. C MD 36.75 kN/m XD 36.75 kN/m

5.9.5.2.1.2 Tear Strength, ASTM D 5147

5.9.5.2.1.2.1 2 in/min. @ 73.4 +/- 3.6 deg. F MD 250 lbf XD 250 lbf

5.9.5.2.1.2.2 50 mm/min. @ 23 +/- 2 deg. C MD 1112 N XD 1112 N

5.9.5.2.1.3 Elongation at Maximum Tensile, ASTM D 5147

5.9.5.2.1.3.1 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6% XD 6%

5.9.5.2.1.3.2 50 mm/min. @ 23 +/- 2 deg. C MD 6% XD 6%

5.9.5.2.1.4 Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

5.9.4 Flashing Base Ply:

5.9.4.1 Self Adhered Torchbase: SBS modified

5.9.4.1.1 Strain energy 7.8 / 7.2 kN/m

5.9.4.1.2 Breaking strength 15 / 13.5 kN/m

5.9.4.1.3 Ultimate elongation 60 / 65 %

5.9.4.1.4 Tear resistance 125 N

5.9.5 Surfacing:

5.9.5.1 Mineral

5.9.5.2 Flashing Cap (Ply) Sheet:

5.9.5.2.1 Mineral Surface: 195 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced rubber modified roofing membrane with a dual fiberglass scrim. Designed for torch applications with a burn-off backer that indicates when the material is hot enough to be installed.

5.9.5.2.1.1 Tensile Strength, ASTM D 5147

5.9.5.2.1.1.1 2 in/min. @ 73.4 +/- 3.6 deg. F MD 210 lbf/in XD 210 lbf/in

5.9.5.2.1.1.2 50 mm/min. @ 23 +/- 2 deg. C MD 36.75 kN/m XD 36.75 kN/m

5.9.5.2.1.2 Tear Strength, ASTM D 5147

5.9.5.2.1.2.1 2 in/min. @ 73.4 +/- 3.6 deg. F MD 250 lbf XD 250 lbf

5.9.5.2.1.2.2 50 mm/min. @ 23 +/- 2 deg. C MD 1112 N XD 1112 N

5.9.5.2.1.3 Elongation at Maximum Tensile, ASTM D 5147

5.9.5.2.1.3.1 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6% XD 6%

5.9.5.2.1.3.2 50 mm/min. @ 23 +/- 2 deg. C MD 6% XD 6%

5.9.5.2.1.4 Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

END OF SECTION

LEEDS, GRENVILLE & LANARK DISTRICT HEALTH UNIT

ROOF REPLACEMENT PROJECT

LGLDHU2019

458 LAURIER BLVD., BROCKVILLE



INDEX

G-701 ROOF PLAN

G-702 ROOF DETAILS

G-703 CONSTRUCTION PLAN

G-704 ROOF DETAILS



CONTENT OF THIS DOCUMENT IS THE INTELLECTUAL PROPERTY OF GARLAND CANADA. PARTIAL OR TOTAL USE IS NOT ALLOWED UNLESS AUTHORIZED BY ITS DESIGNER.

ISSUED BY: R. KINCH
GARLAND CANADA INC



These drawings were prepared and submitted by Garland Canada inc. for the needs of this project. Its use is restricted to the tender process related to the mentioned project. It is forbidden to reproduce copies of these drawings without a written consent of Garland Canada or the customer that mandated the project. All measurements in the drawings must be verified by the contractor. Measurements cannot be taken from a printed copy of these drawings. Details do not follow any scale and only show a graphic illustration of the specifications.

EXISTING ROOF COMPOSITION:

EPDM MEMBRANE FULLY ADHERED TO PLYWOOD DECK

DEMOLITION NOTES:

- LEAVE EXISTING ROOF MEMBRANE IN PLACE.
- REMOVE AND REPLACE METAL VENT STACK FLASHINGS, SQUARE VENT CAPS, SURFACE MOUNT FLASHINGS.
- REMOVE AND RE-USE COPING CAP METAL FLASHING. REPLACE FOAM ON METAL ROOF UNDER COPING CAP AT TRANSITION FROM PARAPET WALL TO SLOPED ROOF.
- REPLACE COPING CAP METAL FLASHING ON PARAPET WALL IF IT IS BENT OR DAMAGED WHEN REMOVING.
- REMOVE AND DISPOSE ANTENNAS OFF PARAPET WALL.
- REMOVE AND DISPOSE ANTENNA BALLASTED IN FIELD OF ROOF.
- REMOVE AND DISPOSE ALL DEBRIS FROM ROOF AS REQUIRED.
- ALL ELECTRICAL AND HVAC WORK BY OTHERS. COORDINATE ALL ROOF WORK WITH OTHER TRADES.
- AT HATCH, INSTALL PITCH PAN FOR ELECTRICAL TO PENETRATE ROOF. REPAIR HOLE IN HATCH WITH 100% SOLIDS CAULKING.

NEW ROOF COMPOSITION:

MINERAL SURFACE

1 PLY OF MODIFIED BITUMEN MINERAL CAP SHEET
TORCH APPLICATION

1 PLY OF SELF ADHERED TORCH BASE SHEET

1/4" TORCH BOARD FASTENED TO WOOD DECK

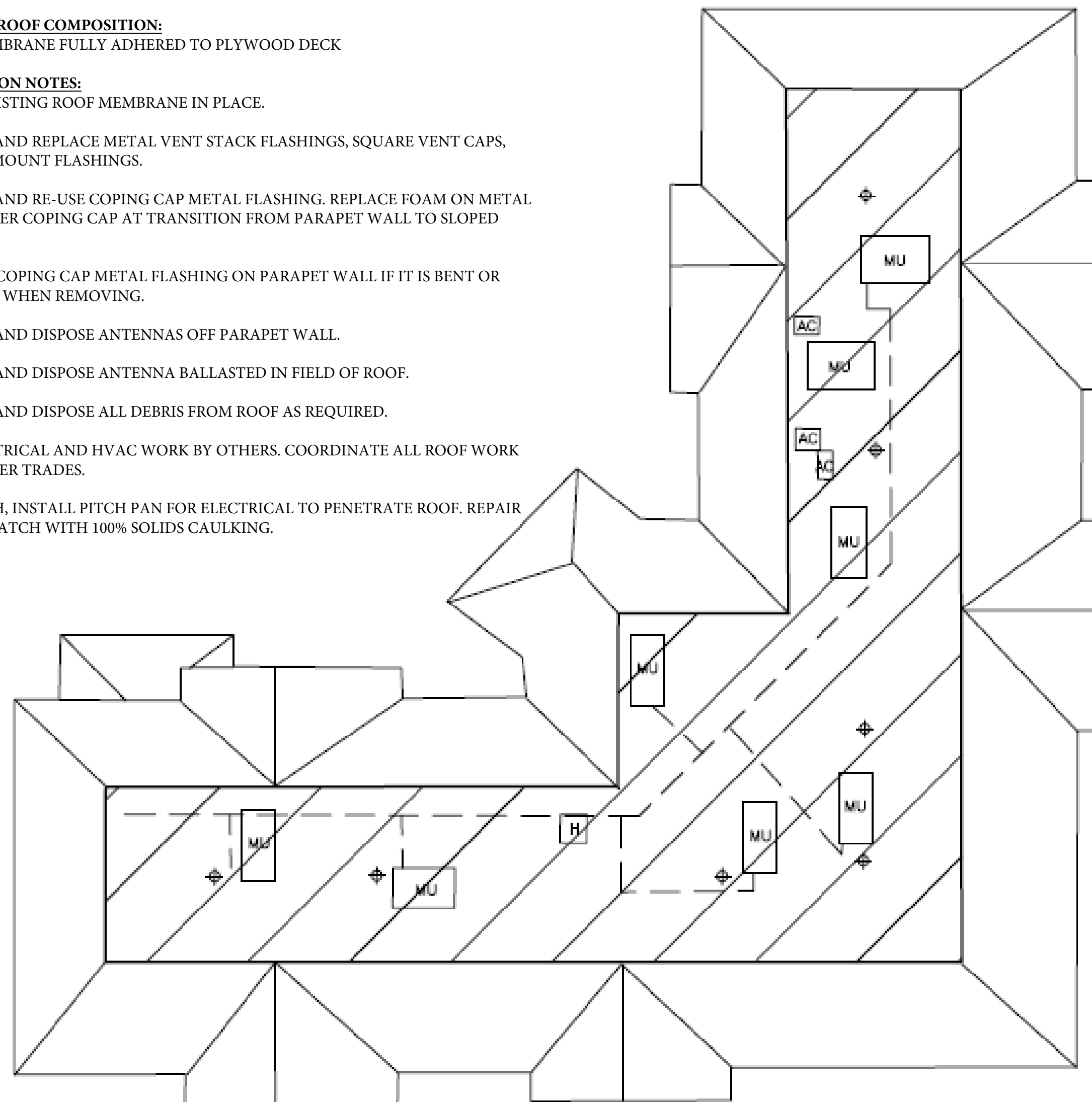
PARAPET WALLS TO RECEIVE NEW SURFACE 1/4" TORCH BOARD.

PRIME AND INSTALL SELF ADHERED TORCH BASE FLASHING MEMBRANE.

TORCH APPLY MODIFIED BITUMEN MINERAL SURFACE MEMBRANE OVER ENTIRE PARAPET WALL.






CONSTRUCTION NOTES:

- ALL NEW PITCH PANS TO RECEIVE 100% SOLIDS URETHANE SEALANT
- TERM BARS TO BE APPLIED AT THE TOP OF ALL FLASHINGS FASTENED 8" O.C. AND COVERED WITH NEW 26GA PRE-PAINTED METAL FLASHINGS
- ALL METAL FLASHINGS TO BE S-LOCKED. NO FASTENERS THROUGH FACE OF METAL FLASHING .
- ALL DRAINS TO BE RETROFITTED WITH U-FLOW DRAINS
- HVAC UNITS TO REMAIN IN PLACE AND OPERATING DURING CONSTRUCTION
- GAS LINE TO REMAIN CONNECTED AND WORK AROUND THE GAS LINE
- SUPPLY AND INSTALL NEW BARRIER BETWEEN GAS LINE AND NEW ROOF INCLUDING 1" POLYSTYRENE INSULATION OR EQUIVALENT.



 AREA INCLUDED IN TENDER

LEGEND

-  Air Conditioning
-  Mechanical Unit
-  AC on sleeper
-  Capped curb
-  Chimney
-  Drain
-  Equipment support
-  Duct Work
-  Roof Hatch
-  Pitch Pocket
-  Ladder
-  Ladder with cage
-  Gas Line



Revision 1	050319	By: RDK
Revision 2	Date:	By:
Revision 3	Date:	By:

PROJECT : LGLDHU2019

DATE : 05032019

DRAWING : G701 PAGE : 2 OF : 6

CLIENT :
**LEEDS, GRENVILLE & LANARK DISTRICT
HEALTH UNIT**

BUILDING:
458 LAURIER BLVD














CITY :
BROCKVILLE ISSUED BY: RDK

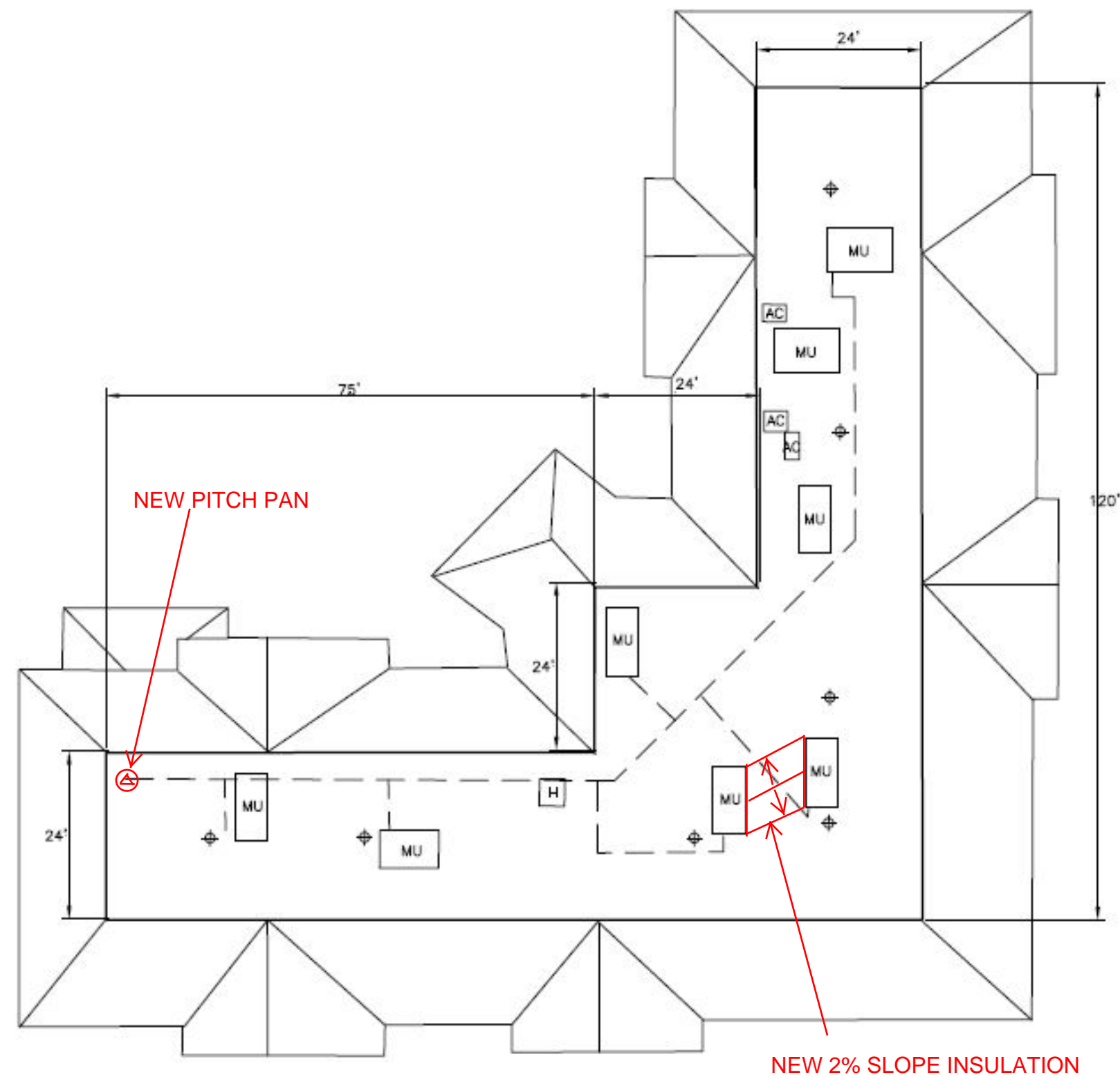
ROOF REPLACEMENT PROJECT

ISSUED FOR TENDER : 05032019

These drawings were prepared and submitted by Garland Canada inc. for the needs of this project. Its use is restricted to the tender process related to the mentioned project. It is forbidden to reproduce copies of these drawings without a written consent of Garland Canada or the customer that mandated the project. All measurements in the drawings must be verified by the contractor. Measurements cannot be taken from a printed copy of these drawings. Details do not follow any scale and only show a graphic illustration of the specifications.

LEGEND

-  Air Conditioning
-  Mechanical Unit
-  AC on sleeper
-  Capped curb
-  Chimney
-  Drain
-  Equipment support
-  Duct Work
-  Roof Hatch
-  Pitch Pocket
-  Ladder
-  Ladder with cage
-  Gas Line



EXISTING ROOF PHOTOS



REMOVE ANTENNAS



GARLAND CANADA INC.

Revision 1	050319	By: RDK
Revision 2	Date:	By:
Revision 3	Date:	By:

PROJECT : LGLDHU2019

DATE : 05032019

DRAWING : G702 PAGE : 3 OF : 6

CLIENT :
LEEDS, GRENVILLE & LANARK DISTRICT
HEALTH UNIT













BUILDING:
458 LAURIER BLVD

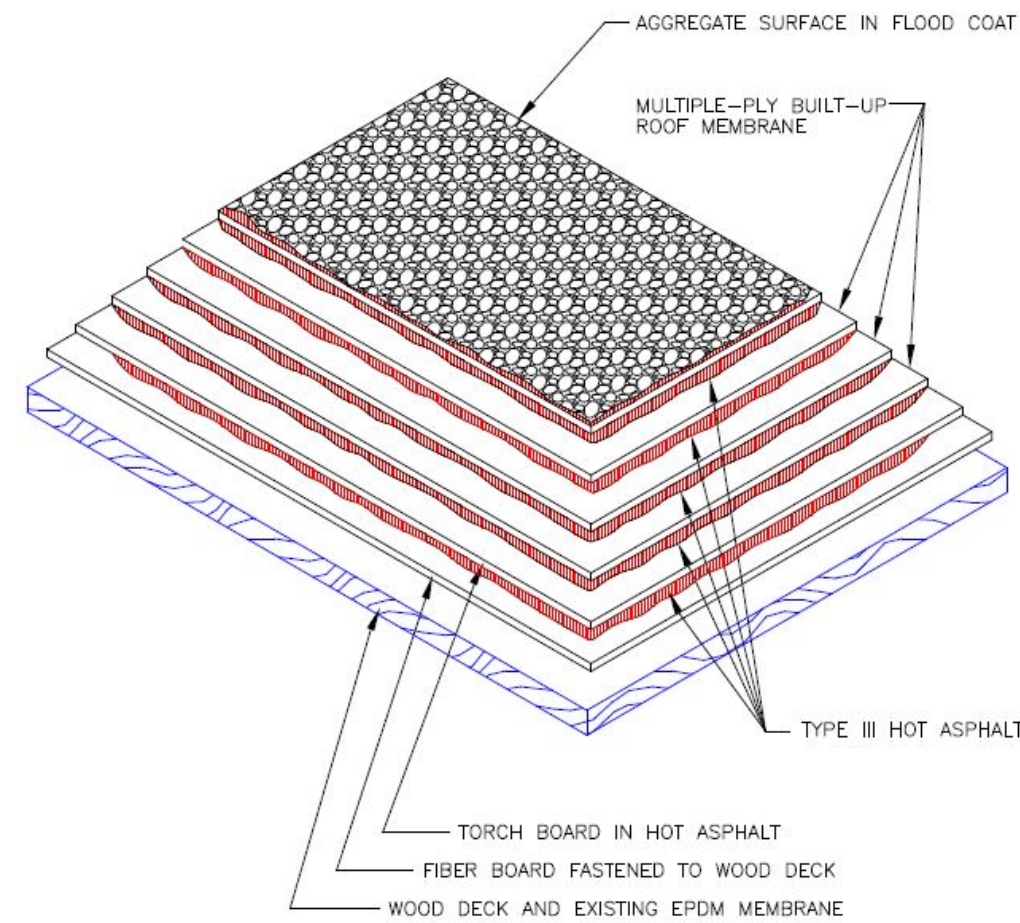
CITY :
BROCKVILLE ISSUED BY: RDK

ISSUED FOR TENDER : 05032019

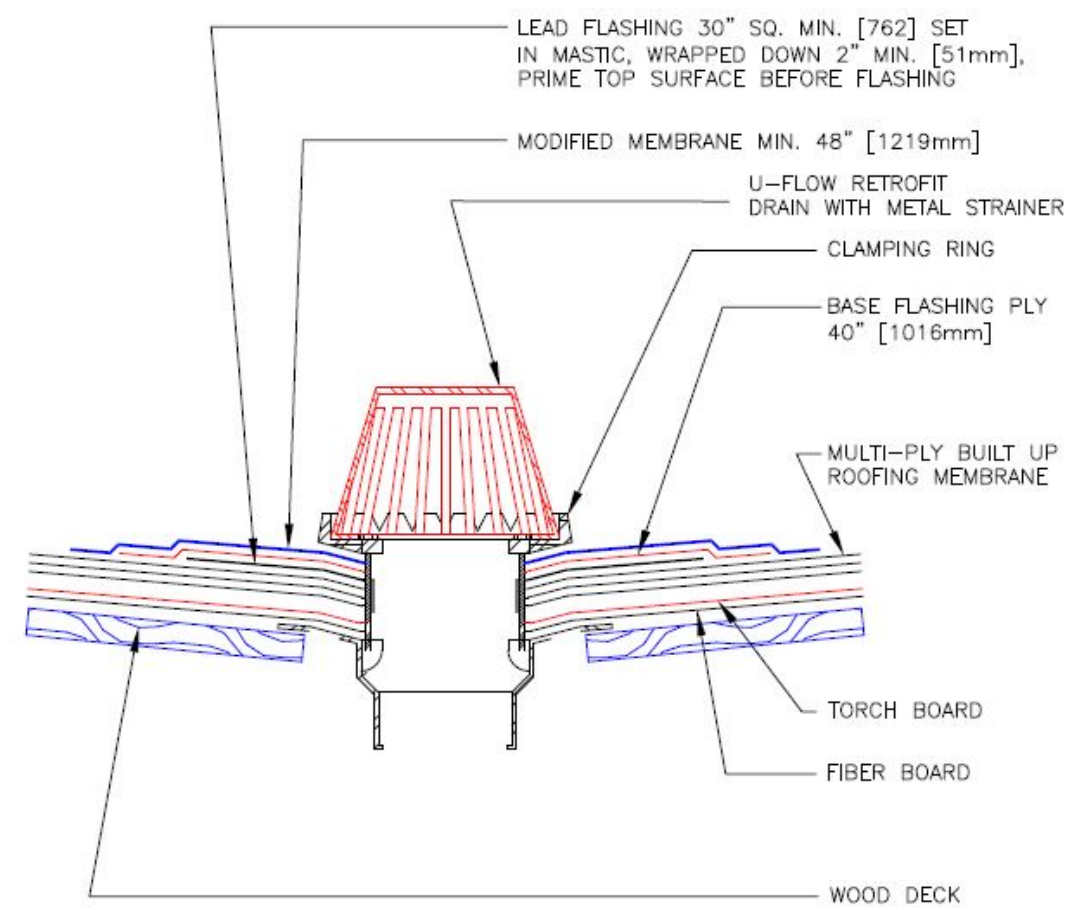
These drawings were prepared and submitted by Garland Canada inc. for the needs of this project. Its use is restricted to the tender process related to the mentioned project. It is forbidden to reproduce copies of these drawings without a written consent of Garland Canada or the customer that mandated the project. All measurements in the drawings must be verified by the contractor. Measurements cannot be taken from a printed copy of these drawings. Details do not follow any scale and only show a graphic illustration of the specifications.

LEGEND

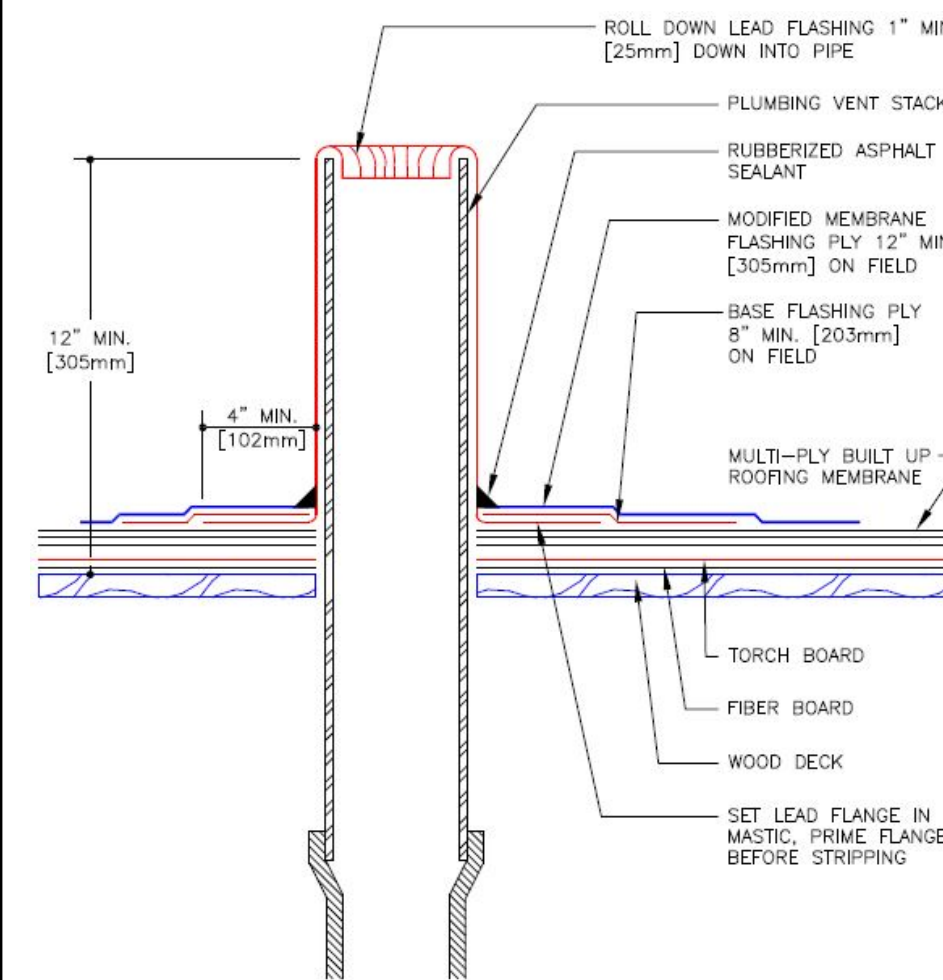
-  Air Conditioning
-  Mechanical Unit
-  AC on sleeper
-  Capped curb
-  Chimney
-  Drain
-  Equipment support
-  Duct Work
-  Roof Hatch
-  Pitch Pocket
-  Ladder
-  Ladder with cage



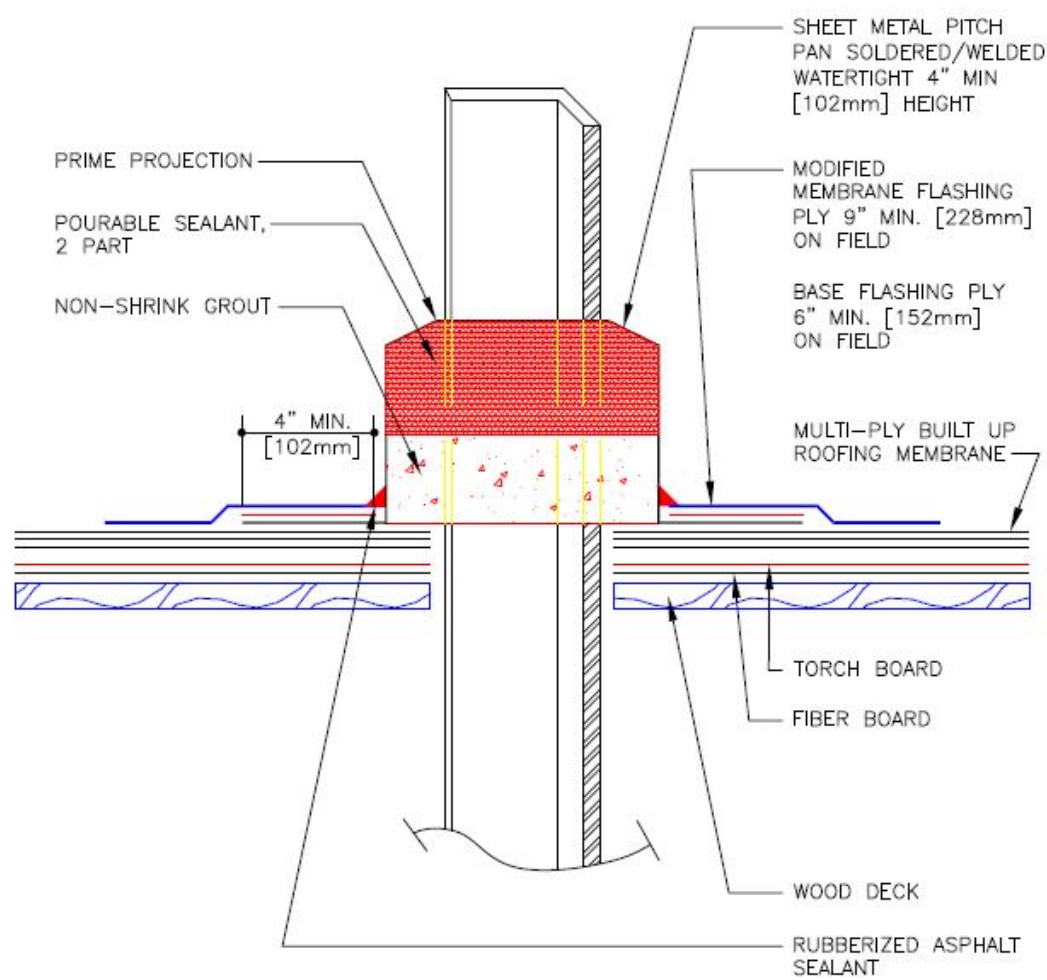
SECTION DETAIL



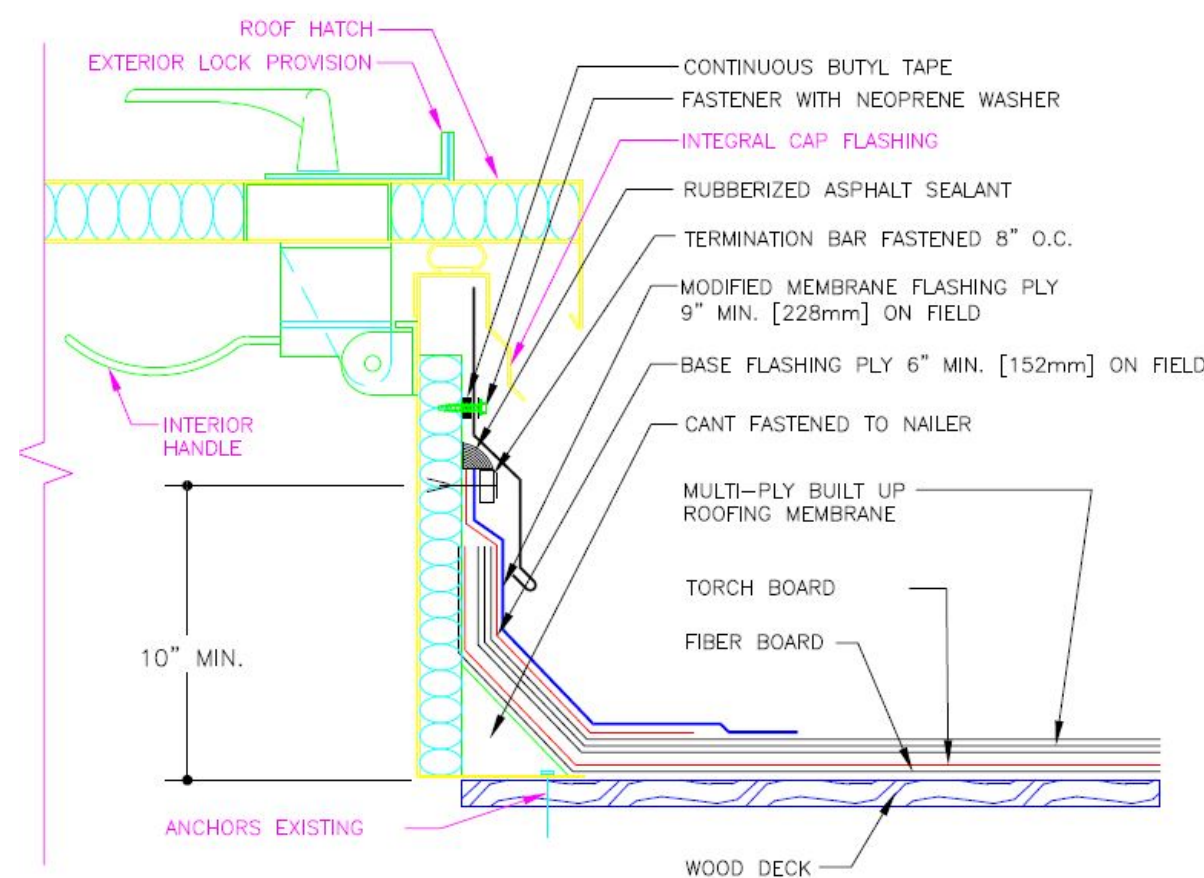
DRAIN DETAIL



PLUMBING STACK DETAIL



PITCH PAN DETAIL



ROOF HATCH DETAIL



GARLAND CANADA INC.

Revision 1	050319	By: RDK
Revision 2	Date:	By:
Revision 3	Date:	By:

PROJECT : LGLDHU2019

DATE : 05032019

DRAWING : G701 PAGE : 4 OF : 6

CLIENT :
LEEDS, GRENVILLE & LANARK DISTRICT
HEALTH UNIT

BUILDING:
458 LAURIER BLVD
CITY :

BROCKVILLE ISSUED BY: RDK