

## ROOF REPLACEMENT – MARMORA PUMP STATION TOWNSHIP OR MARMORA AND LAKES

Provide labour and materials to successfully remove existing built-up roof on concrete deck and install new inverted roof system as per the scope below and specification requirements outlined in 07 55 53.

Provide 20 year full system manufacturer warranty and two (2) year contractor workmanship warranty. Arrange for min one inspection by warranting manufacturer and one final inspection verifying and accepting completed workmanship.

Images From Site:

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### 1. Preparation/demolition:

- a. Remove existing built-up roof, insulation, wood cants, vapour retarder, metal flashings down to the bare structure.
- b. Only remove as much roofing that can be made water tight by the end of each day.
- c. Reconnect plumbing by end of each work day.
- d. Remove and dispose of roofing at licenced disposal facility and pay all tipping fees associated with the disposal.
- e. Notify owner min five working days prior to project start up.
- f. Clean grounds at end of each working day of all construction debris.
- g. Clad interior face of all parapets with 5/8" untreated plywood and secure min 12" O.C to existing parapet with concrete anchors.
- h. Terminate plywood at top of parapet.
- i. Increase curb height with two courses of 2" x 4" lumber secured to prevent movement.

### 2. Installation:

- a. Install 3" x 3" fibre cants at all vertical intersections adhered in lowrise foam.
- b. Install reinforced membrane with min 4" side laps and 6" end laps over entire field of roof.
- c. Terminate membrane at top of cant with clean cut.
- d. Install reinforced flashing sheet in waterproofing flashing adhesive to extend 6" onto field of roof, and terminate on horizontal parapet. Careful to not over trowel material to prevent drippage on facade.
- e. Install flashing sheet 6" onto field of roof and terminate to inside face of curb.
- f. Apply u-flow retro fit drain suitable for inverted roof assemblies by thaler or approved alternate.
- g. Install 36" x 36" target sheet centered over new drain and adhered in membrane adhesive.
- h. Hand press all flashings free of air pockets, blisters or other conditions that can restrict performance.

- i. Reinforce all field and vertical flashing seams with polymer modified mastic/reinforcing mesh/polymer-modified mastic.
  - j. Install all sheets so water flows with or over each seam.
  - k. Inspect membrane for compliance with specifications before applying over burden.
  - l. Apply min 6 mil poly over entire roof area.
  - m. Apply dimple drainage board over entire roof area.
  - n. Install drain guard at roof drain.
  - o. Install 3" ship lapped xps over entire roof area.
  - p. Install filter fabric to conceal insulation.
  - q. Install min 10lb/sq round river stone over filter cloth.
  - r. Install 26 gauge sheet metal flashings and 24" hook strip in strict accordance with CRCA installation manual.
  - s. Ensure all application methods are in strict compliance with warranting manufacturers installation instructions.
3. Demolition/Finish
- a. Remove all construction materials from site and leave property as found.
  - b. Request final inspection by owner/manufacturer.
  - c. Rectify any deficiencies within five working days of written notice.
  - d. Supply owner with all close out documents – warranties, owner manuals, etc.



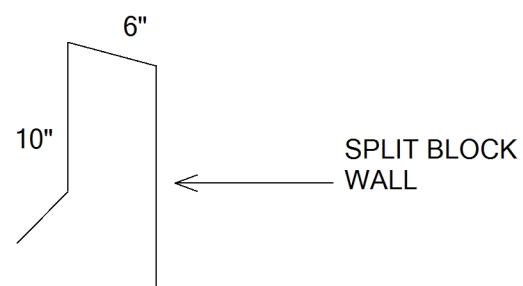
**EXISTING ROOF COMPOSITION**

- BUILT-UP ROOF
- 2" FOAM GLASS INSULATION
- TWO PLY VR
- CONCRETE DECK

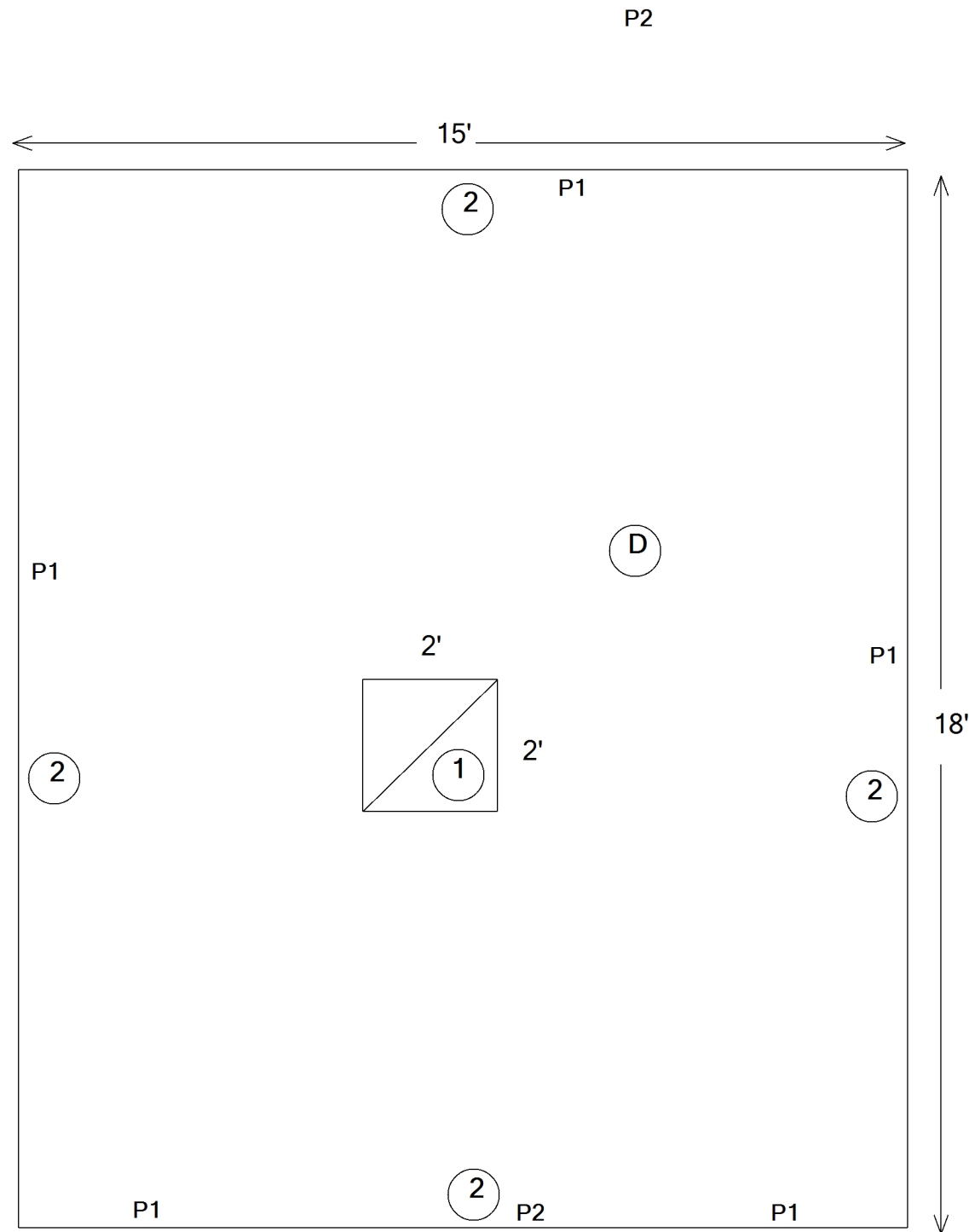
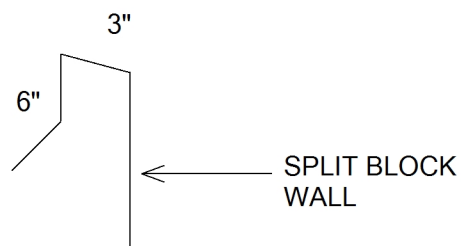
**NEW ROOF COMPOSITION**

- RIVER STONE
- FILTER CLOTH
- 3" XPS
- DIMPLE DRAINAGE BOARD
- POLY SHEET
- REINFORCED EPDM/SBR MEMBRANE
- WATERPROOFING ADHESIVE
- CONCRETE DECK


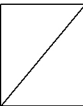
**EXISTING P1**



**EXISTING P2**



Legend

-  ROOF DRAIN
-  ROOF CURB

Notes

- 1 - INCREASE CURB HEIGHT TWO COURSES OF DIMENSIONAL LUMBER.
- 2 - CLAD EXTERIOR PARAPETS W/ 5/8" PLYWOOD SECURED WITH CONCRETE ANCHORS.

Municipality of Marmora and Lake

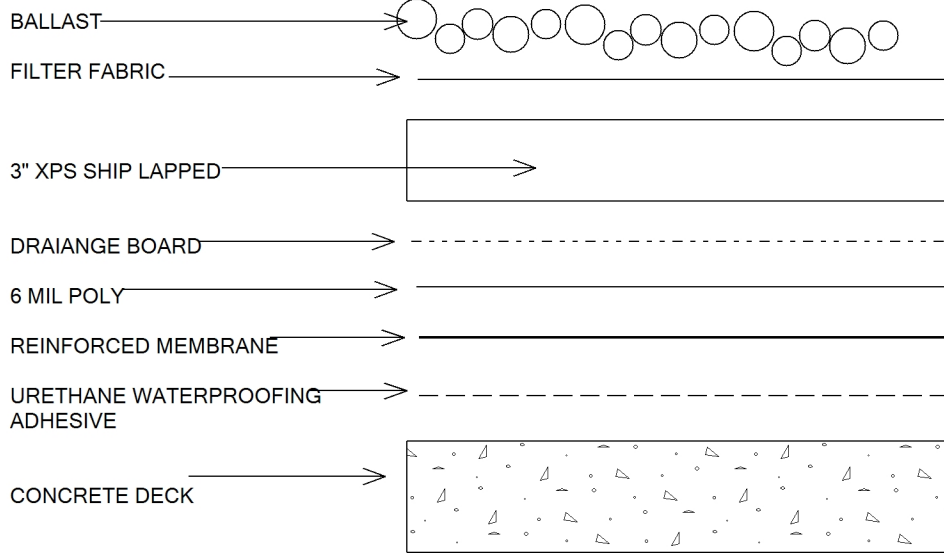
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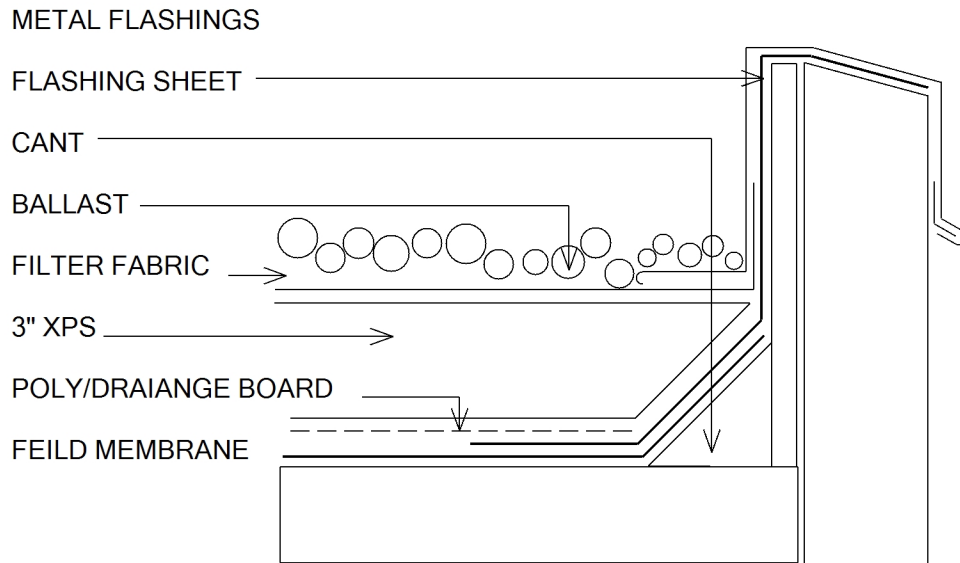
Scale N.T.S

Marmora Pump Station

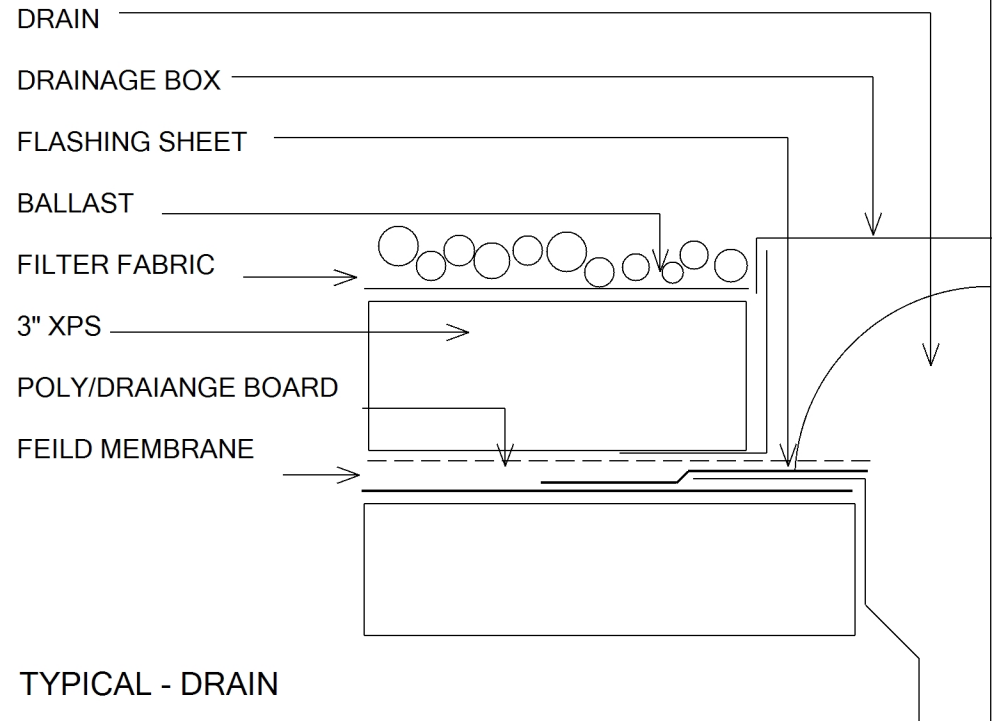
# TYPICAL DETAILS - 07 55 53



TYPICAL - CROSS SECTION - CONCRETE DECK



TYPICAL - PARAPET



TYPICAL - DRAIN

SECTION 07 55 53.13 - ELASTOMERIC PROTECTED MEMBRANE ROOFING, COLD-APPLIED

PART 1 - GENERAL

1.1 RELATED SECTIONS

- A. Section 07 62 00 – Sheet Metal Flashings and Trims
- B. Section includes elastomeric protected membrane roofing system, cold-applied.

1.2 REFERENCES

- A. References, General: The most recent adopted versions of the following references apply to the Work of this Section.
- B. Asphalt Roofing Manufacturers Association/National Roofing Contractors Association (ARMA): [www.asphaltroofing.org](http://www.asphaltroofing.org)
  - 1. Quality Control Guidelines for the Application of Built-up Roofing
- C. ASTM International (ASTM): [www.astm.org](http://www.astm.org)
- D. Canadian General Standards Board (CGSB): [www.tpsgc-pwgsc.gc.ca/ongc-cgsb](http://www.tpsgc-pwgsc.gc.ca/ongc-cgsb)
- E. Canadian Roofing Contractors Association (CRCA): [www.roofingcanada.com](http://www.roofingcanada.com)
  - 1. Roofing Specifications Manual
  - 2. Roofing Reference Manual
- F. National Roofing Contractors Association: [www.nrca.net](http://www.nrca.net)
  - 1. NRCA - The NRCA Roofing Manual
- G. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA): [www.smacna.org](http://www.smacna.org)
  - 1. Architectural Sheet Metal Manual.
- H. Underwriters Laboratories of Canada (ULC): [www.ul.com/canada/eng/pages](http://www.ul.com/canada/eng/pages)
  - 1. ULC - Fire Resistance Directory
  - 2. CAN/ULC-S102 - Surface Burning Characteristics of Building Materials and Assemblies
  - 3. CAN/ULC-S107 - Fire Tests of Roof Coverings
  - 4. CAN/ULC-S126 - Standard Method of Test for Fire Spread Under Roof-Deck Assemblies
  - 5. CAN/ULC-S701 - Thermal Insulation, Polystyrene, Boards and Pipe Covering

1.3 DEFINITIONS

- A. Roofing Terminology Definitions: ASTM D1079 and the following:
  - 1. CRCA Roofing Specifications Manual.
  - 2. CRCA Reference Manual.

#### 1.4 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Conference: Prior to commencing Work, conduct at Project site.
  - 1. Meet with Owner, testing and inspecting agency representative, roofing Installer, roofing manufacturer's representative, and installers of related work.
  - 2. Review installation methods and procedures, including manufacturer's written instructions and requirements of referenced standards.
  - 3. Review and finalize construction schedule. Verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  - 4. Review structural loading limitations of roof deck during roofing operations.
  - 5. Review base flashings, edge conditions and terminations, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing.
  - 6. Review requirements of authorities having jurisdiction and requirements for insurance and certificates if applicable.
  - 7. Review temporary protection requirements for roofing.
  - 8. Review roof observation, inspection, and repair procedures.
  - 9. Examine deck substrate conditions and finishes for compliance with requirements.

#### 1.5 ACTION SUBMITTALS

- A. Product Data: For each specified product.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
  - 1. Include original letter from Manufacturer written for this Project indicating manufacturer's approval.
- B. Contractor's Product Certificate: Notarized certificate, listing product names and numbers and manufacturers' names, indicating that products to be provided and the completed roofing system meet the requirements of the Contract Documents. Submit the following as attachments:
  - 1. Test Reports based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency.
  - 2. Evidence of compliance with performance requirements.
  - 3. Statement indicating that proposed system components are compatible.
- C. Warranties: Unexecuted copy of warranties.
- D. Inspection Reports: Daily reports of Roofing Inspector. Include weather conditions, description of work performed, tests performed, defective work observed, and corrective actions taken to correct defective work.

#### 1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data.
- B. Warranties:

1. Manufacturer's and Installer's executed warranty documents. Submit prior to acceptance of Work.

#### 1.8 QUALITY ASSURANCE

- A. Quality Standards: Perform Work of this Section in accordance with the following:
  1. CRCA Reference Manual.
  2. NRCA Roofing Manual
- B. Manufacturer Qualifications: A qualified manufacturer with minimum five years' experience in manufacture of specified products in successful use on similar projects and able to provide roofing system meeting specified requirements. Systems listed by UL and Factory Mutual.
- C. Installer Qualifications: A manufacturer-approved firm with minimum five years' experience in installation of specified products in successful use on similar projects, employing workers trained by manufacturer, including a full-time on-site supervisor with a minimum of three years' experience installing similar work, able to communicate verbally with Contractor and employees, and qualified by the manufacturer to furnish warranty of type specified.
- D. Roofing Inspector Qualifications: A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:
  1. An authorized full-time technical employee of the manufacturer.
  2. An independent party certified as a Registered Roof Observer by RCI, retained by the Contractor or the Manufacturer and approved by the Manufacturer.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in manufacturer's original containers, dry, undamaged, with manufacturer's seals and labels intact.
- B. Store products in weather protected environment, clear of ground and moisture. Protect foam insulation from direct exposure to sunlight.
- C. Handle and store roofing materials and place equipment in a manner that does not result in permanent deflection of deck.

#### 1.10 PROJECT CONDITIONS

- A. Weather Limitations: Comply with manufacturer's written instructions and warranty requirements.
- B. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is occurring.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

## 1.11 WARRANTY

- A. Roof System Warranty: Warranties specified in this Section include the following components and systems specified in other sections supplied by the roofing system Manufacturer, and installed by the roofing system Installer:
1. Sheet metal flashing and trim, including roof penetration flashings.
  2. Manufactured copings, roof edge, counterflashings, and reglets.
  3. Roof curbs, hatches, and penetration flashings.
  4. Roof and parapet expansion joint assemblies.
  5. Metal roof, wall, and soffit panels and trim.
- B. Manufacturer's Warranty: Manufacturer's standard or customized form, in which manufacturer agrees to repair or replace components of roofing that fail in materials or workmanship within specified warranty period.
1. Manufacturer's warranty includes roofing membrane, base flashings, roofing membrane accessories, roof insulation, fasteners, and other components of roofing.
  2. Manufacturer to provide inspections of roofing systems in year two (2), five (5), ten (10) and fifteen (15) of this warranty. Inspection to include visual inspection, minor repairs and limited cleaning of debris with reporting to building owner.
  3. Warranty Period: 20 years from date of Substantial Completion.
- C. Installer's Warranty: Roofing system Installer's warranty, on warranty form at end of this Section signed by Installer, covering the Work of this Section, including all components of roofing such as roofing membrane, base flashing, roof insulation, fasteners, cover boards, substrate boards, roof pavers, and walkway products, for the following warranty period:
1. Warranty Period: Two years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 SYSTEM DESCRIPTION

- A. Adhered Elastomeric Sheet Membrane Protected Roofing System: Elastomeric protected membrane rubberized asphalt on concrete deck, and including the following:
1. Concrete
  2. Roof membrane sheet and membrane base flashing sheet.
  3. Slip sheet.
  4. Dimple Drainage Board
  5. Loose-laid insulation 75mm
  6. Water pervious filter fabric.
  7. Aggregate ballast.
- B. Flashings and Fastening: Provide base flashings, perimeter flashings, detail flashings, and component materials and installation techniques that comply with requirements and recommendations of the following:
1. CRCA Roofing Manual for construction details and recommendations.
  2. SMACNA Architectural Sheet Metal Manual for construction details.



## 2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Roofing system shall remain weathertight and withstand, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, or installation.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- C. Exterior Fire-Test Exposure:
  - 1. UL 790, Class A
  - 2. CAN/ULC S107, Class A

## 2.3 PRIMER

- A. Asphalt based, bituminous primer. ASTM D 41.

## 2.4 ROOFING MEMBRANE AND FLASHING MEMBRANE

- A. Elastomeric, polyester-reinforced sheet with EPDM and SBR elastomers. Specifically designed for inverted roofing.
  - 1. Breaking Strength, minimum, CGSB 37-GP-52: machine direction (1446 N); cross machine direction (1288 N).
  - 2. Tear Strength, minimum, CGSB 37-GP-52: machine direction (313 N); cross machine direction (348 N).
  - 3. Low Temperature Flexibility, minimum, CGSB 37-GP-52: -40 deg. F (-40 deg. C).
- B. Flashing Membrane Sheet: Same as roof membrane sheet.

## 2.5 ROOFING MEMBRANE ACCESSORIES

- A. General: Auxiliary materials recommended by roofing manufacturer for intended use and compatible with roofing.
- B. Field Membrane Adhesive: Single component, squeegee grade. bitumen modified moisture curing polyurethane.
  - 1. Ultimate Tensile Strength, minimum, ASTM D412: -40C.
  - 2. Low Temperature Elongation, minimum, ASTM D412: 450%.
  - 3. VOC, maximum, ASTM D3960: 120g/l.
- C. Flashing Membrane Adhesive: Single component, trowel grade. bitumen modified moisture curing polyurethane.
  - 1. Ultimate Tensile Strength, minimum, ASTM D412: -40C.
  - 2. Low Temperature Elongation, minimum, ASTM D412: 450%.
  - 3. VOC, maximum, ASTM D3960: 120g/l.
- D. Vertical Lap and Stripping Adhesive: One-part polymer-modified roof elastomer, trowel grade.

1. Tensile Strength: ASTM D412: min 650 kPa @100% elongation
  2. Elongation at -34 deg. C (-30 deg. F), minimum, ASTM D412: 100 percent
  3. Elongation at 25 deg. C (77 deg. F), minimum, ASTM D412: 1000 percent.
  4. Flexibility at -40 deg. C (-40 deg. F), pass, ASTM D 3111
- E. Stripping Reinforcement Fabric: non-shrinking, non-rotting, vinyl coated, woven glass bonded mesh.
1. Tensile strength to ASTM D 146

## 2.6 ACCESSORIES

- A. Termination Bar: 1 mm (0.040 inch) aluminum, pre-drilled for mechanical attachment.
- B. Sealing Tape: Butyl, as recommended by manufacturer.
- C. Miscellaneous Membrane Accessories: Flexible molded boots and collars, pourable sealers, preformed corners, in-seam sealants, and other accessories.
- D. Stack Flashing: Spun aluminum pre-insulated to suit application with min 450mm integral deck flange.
- E. Scuppers: 26 gauge pre-painted steel with flange, formed to fit site conditions.
- F. Metal Flashings: As specified in section 07 62 00.
- G. Sealant: One part polyurethane as recommended by warranting manufacturer, colour to closely match metal flashings.
- H. Roof Drains: Thaler- RD-7C Vandal proof cast aluminum drain, with integral copper flange, with T-10 under deck clamping ring. Drain to be MECHANICALLY CONNECTED.
- I. Drain Inspection Box: Aluminum mil finished, with lockable lid, minimum of four (4) drainage holes at base of box per side, height 50mm above ballast.
- J. Base Ply (Concrete Joint Treatment): Polyester/glass/polyester, sand/sand composite base ply.

## 2.7 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.
- B. Extruded-Polystyrene Board Insulation: CAN/ULC-S701 Type VI, shiplap-edged, with integral high-density skin:
1. Thermal Resistance: R5 per 25mm of thickness.
  2. Compressive Strength: 241 kPa
  3. Water Vapour Permeance: Max 1.1 perms, ASTM E 96.
  4. ASTM C 578
  5. Total Thickness: 50mm
- C. Insulation Cant Strips: High density asphalt impregnated fibreboard.

- D. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.
- E. Spray Foam: Medium density, two component, polyurethane spray foam insulation.
- F. Insulation Adhesive: Two component, zero VOC, polyurethane foam insulation adhesive.

## 2.8 ROOF INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with roofing.
- B. Slip Sheet: Polyethylene slip sheet, 0.15 mm thick.
- C. Drainage Layer: High Density polyethylene dimpled drainage board. Compressive strength, minimum, 700 kPa.

## 2.9 BALLAST MATERIALS

- A. Aggregate Filter Fabric: Woven or nonwoven polypropylene, polyolefin, or polyester fabric, water permeable and resistant to UV degradation, type and weight as recommended by roofing system manufacturer for application
- B. Aggregate Ballast: Round river stone, free of fines, splinters and split stone.
  - 1. Size: ASTM D448, Size 4, 19 mm to 38 mm.
- C. Precast Pavers: 50mm tick, 600mm x 600mm, textures wear surface pattern.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine surfaces and site conditions, with Installer, for compliance with requirements, prior to commencing work.
  - 1. Verify surfaces and site conditions are ready to receive work.
  - 2. Verify deck is supported and secure.
  - 3. Verify that roof openings and penetrations are in place, curbs are set and braced, blocking, curbs, wood cants, and nailers are anchored to roof deck at penetrations and terminations, that wood nailers match insulation thickness, and roof drain bodies are properly installed.
  - 4. Verify deck surfaces are clean, dry, and free of snow or ice.
- B. Steel Decking Substrate:
  - 1. Verify installation complies with requirements in Division 05 Section "Steel Decking" for support, fastening, and surface plane flatness.
- C. Report: Provide written report to Owner indicating conditions that do not meet requirements.
- D. Proceed with installation once non-complying conditions have been corrected.

### 3.2 PREPARATION/DEMOLITION

- A. Remove all existing roof components down to the structural steel deck. Dispose of at a licensed facility.
- B. Clean substrate of substances and projections detrimental to roofing installation according to roofing manufacturer's written instructions.
- C. Prevent materials from entering roof drains and conductors and from contacting surfaces of other construction.
- D. Substrate-Joint Penetrations: Prepare joints as required to prevent asphalt and adhesives from penetrating joints, entering building, or damaging roofing components or other construction.
- E. Seal open joints in concrete to prevent bitumen from entering the facility.

### 3.3 INSTALLATION, GENERAL

- A. Install roofing membrane system components according to roofing manufacturer's written instructions, applicable referenced roofing system approval, and approved shop drawings.
- B. Cooperate with testing agencies and personnel engaged or required to perform services for installing roofing.

### 3.4 CONCRETE DECK APPLICATION

- A. Sweep concrete deck clean of sediment, dust or materials that may prevent bond of membrane to substrate.
- B. Ensure substrate is free of ice, moisture or frost.
- C. Ensure deck is sound, and bring any concerns to the immediate attention of the owner.
- D. Treat all deck joints with stripping of base ply set in full beads of sealant to prevent adhesives from entering the building.

### 3.5 CANTS

- A. Adhere cants at all vertical transitions in continuous beads of low rise foam.

### 3.6 ROOFING MEMBRANE INSTALLATION

- A. Ensure substrate is clean, free of moisture and no major defects are present.
- B. Start installation of roofing in presence of manufacturer's technical personnel.
- C. Coordinate installation of roofing to protect roofing system components and structure from exposure to precipitation.
- D. Cant Strips: Secure cant strips at junctures of roofing at vertical intersections with insulation adhesive.

- E. Membrane Sheet: Adhere to substrate according to membrane manufacturer's written instructions.
1. Adhere membrane without wrinkles, blisters or fishmouths in a solid application of membrane adhesive applied at rate 1.2 kg/m<sup>2</sup>.
  2. Overlap membrane sheet edges and ends minimum 100 mm and seal by membrane adhesive. Seal permanently waterproof.
  3. Reinforce membrane seams. Apply stripping adhesive (two courses) with reinforcing mesh, minimum 150 mm wide over seam, fully conceal reinforcing mesh with second application of stripping adhesive.
  4. Extend membrane to top of cant strips.
  5. Seal membrane around roof penetrations.
  6. Leave seams exposed until inspected.

### 3.7 FLASHING AND STRIPPING INSTALLATION

- A. Base Flashing: Install flexible flashing sheet at roof edges and at penetrations through roof. Secure to substrates according to roofing manufacturer's written instructions.
1. Prime substrates with primer if required.
  2. Flashing Sheet Application:
    - a. Embed flashing sheet in a uniform coverage of Flashing Adhesive. Apply at rate of 1.2kg/m<sup>2</sup>.
  3. Unless stated otherwise, extend base flashing up walls or parapets a minimum of 300 mm above insulation and 150 mm onto field of roofing.
  4. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.
  5. Reinforce flashing and flashing-to-membrane seams with application of stripping adhesive (two courses) and reinforcing mesh.
  6. Seal top termination of base flashing with a metal termination bar.
- B. Low Parapet Wall Flashing
1. Seal exposed joint between the wall and roof deck for airtight seal.
  2. Adhere elastomeric sheeting completely to flashing surface, cant, and roofing with flashing adhesive.
  3. Ensure complete bond and continuity without wrinkles or voids. Lap sheeting ends 100 mm and adhere with flashing adhesive.
  4. Extend elastomeric sheeting up and over parapet at least 38 mm and face nail with 38 mm common roofing nails, 200 mm OC.
- C. Wall Flashing
1. Seal exposed joint between the wall and roof deck for airtight seal.
  2. Adhere elastomeric sheeting completely to flashing surface, cant and roofing with flashing adhesive.
  3. Ensure complete bond and continuity without wrinkles or voids. Lap sheeting ends 100 mm and adhere with flashing adhesive.
  4. Elastomeric sheeting width: sufficient to extend at least 150 mm beyond toe of cant onto roof surface and 200 mm above the roof surface.

5. Secure top of elastomeric sheeting to vertical plane with termination bar. Mechanically fasten 300 mm OC. Overcoat bar with end lap stripping adhesive and membrane.

D. Curb Flashing

1. Fully adhere sheeting to horizontal and vertical blocking surfaces with flashing adhesive. Press sheeting into adhesive. Ensure complete bond and continuity without wrinkles or voids.
2. Mechanically fasten sheeting on top face of curb.
3. Lap sheeting ends 100 mm and adhere with flashing adhesive.
4. If membrane does not completely cover sleeper, secure top edge with a termination bar. Mechanically fasten 300 mm OC. Overcoat bar with end lap stripping adhesive and membrane.

E. Projection Flashing

1. Apply stripping adhesive to prepared area and Provide aluminium base over pipe and set into the stripping adhesive.
2. Install projection flashing in strict accordance with manufacturers instructions.
3. Install cap onto base collar and press edge to ensure proper seal.
4. Provide clamp around pipe and rubber cap. Prime flange.
5. Install elastomeric sheeting with stripping ply adhesive and membrane.
6. Cover flange completely.
7. Remove wrinkles and voids. Lap flashing ply ends 100 mm.
8. Do not use asphalt mastic at penetrations due to inability to cure completely.

F. Pitch Pans

1. Uniformly apply a 3 mm thick layer of stripping adhesive to surfaces designated to receive metal flange.
2. Install pre-manufactured pitch pan into adhesive. Prime flange prior to installation.
3. Ensure minimum 50 mm clearance between projection and side wall.
4. Fully adhere elastomeric sheeting to flashing surface with flashing adhesive. Cover flange completely. Ensure complete bond and continuity without wrinkles and voids. Lap sheeting ends minimum 100 mm.
5. Fill pitch pan 25 mm from top with pitch pan base filler.
6. Fill remainder with pourable sealer. Crown top of mastic to ensure water run-off.
7. Install metal cap and caulk conduit penetration.

G. Scuppers

1. Uniformly apply a 3 mm thick layer of stripping adhesive to surfaces designated to receive metal flange.
2. Install pre-manufactured scupper into adhesive. Prime flange prior to installation.
3. Prime top of scupper at area to receive flashing membrane.
4. Extend flashing membrane 150mm into scupper beyond parapet wall and 150mm onto filed of roof beyond flange in continuous spread of flashing adhesive.

H. Roof Drain

1. Install drain assembly in accordance with manufacturer's written installation guidelines.
2. Plug and seal drain to prevent water entry until service connection is completed.
3. Provide 600 x 600 mm size elastomeric sheeting reinforcement, centered over drain; and fully adhered with flashing adhesive. Remove wrinkles and entrapped air.
4. Apply mastic to exposed edge of membrane inside the drain opening.
5. Clamp flashing collar to drain in bed of flashing adhesive.
6. Trim excess sheeting within drain.
7. Arrange for plumber to make mechanical connection to exiting plumbing.
8. Apply spray foam insulation between cavity of roof deck and plumbing to complete air tight seal.
9. Install roof drain inspection boxes at all roof drains.

I. Stripping Installation:

1. Install stripping where metal flanges and edgings are set on roofing, and in sealing end laps and leading edges of flashings.
2. Ensure surfaces are clean and dry. Trowel apply stripping mastic at rate of 20 ft<sup>2</sup>/gal (0.5m<sup>2</sup>/L) per course. Set stripping fabric into freshly applied trowel course of stripping mastic. Fully cover fabric with a top course of stripping mastic.

### 3.8 ROOF SLIP SHEET, DRAINAGE BOARD, INSULATION INSTALLATION

- A. Slip Sheet: Loose lay slip sheet over completed cured membrane installation prior to installation of insulation.
- B. Install drainage board over entire field of roof.
- C. Place insulation boards; butt in close contact. Place channel cut face of first insulation layer down against slip sheet. Bevel insulation to allow snug fit at cants. Cut neatly around protrusions through roof.
- D. Install insulation in a continuous straight line with joints staggered, abutting edges and ends. Fit insulation within 6 mm of projections and penetrations.

### 3.9 BALLAST INSTALLATION

- A. Aggregate Ballast Filter Fabric Installation: Install fabric over insulation, overlapping edges and ends minimum 300 mm. Extend fabric 50 to 75 mm above ballast at perimeter and penetrations. Apply additional layer of fabric around penetrations to prevent aggregate from getting between penetration and insulation. Do not cover drains or restrict water flow to drains.
- B. Do not overload roof with ballast.
- C. To roofed area, apply aggregate ballast uniformly over filter fabric at rate required by insulation manufacturer, but not less than the following, carefully spreading aggregate to not damage roofing and base flashings:
  1. Aggregate Ballast Weight: 50 kg/sq. m.
- D. Install sealant at all exterior wall joints to prevent water infiltration into roof system.

3.10 FIELD QUALITY CONTROL

- A. Manufacturers Field Service: Arrange for manufacturer's technical representative to regularly inspect the roofing application (minimum every other production day) and confirm that roofing system application is in strict accordance with manufacturers guidelines and recommendations, provide inspection report within 24 hours of each visit.
- B. Contractor Inspections: Contractor to inspect membrane before installation of slip sheet for punctures, tears and membrane variances. Apply additional layer of waterproofing over punctures and tears extending a minimum of 150mm beyond damaged area in all directions, ensure seam treatment in continuous without voids.
- C. Repair or remove and replace non-complying components of roofing. Retest to demonstrate compliance.

3.11 PROTECTING AND CLEANING

- A. Protect roofing from damage and wear during construction according to manufacturer's instructions.
- B. Correct deficiencies in or remove roofing that does not comply with requirements, repair substrates, and repair or reinstall roofing to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction.

SECTION ENDS



SECTION 07 62 00 – Metal Flashings and Trim

PART 1 - GENERAL

1.1 SUMMARY

- A. Scope of Work: Work in this section comprises of installation of metal counter flashings in areas of roof replacement.

1.2 Related Sections:

- A. 07 55 53

1.3 References: S.M.A.C.N.A – Sheet Metal and Air Conditioning Contractors National Association, Architectural Sheet Metal Manual.

1.4 Shop Drawings

- A. Submit shop drawings of all flashings for consultant review and approval.

1.5 Inspection

- A. Roof inspection shall be carried out by an agency selected by the owner.
- B. Carry out procedures as directed by inspector.

1.6 Storage and Handling

- A. Secure materials against damage from wind, ongoing work, vandalism and/or theft.
- B. Identify and remove any damaged materials from site.
- C. Protect materials from moisture.

1.7 Warranty

- A. Provide contractors two year warranty to correct at their own expense any defects in work due to workmanship appearing within a two year period commencing from date of completion of 100%. Warranty to cover wind damage.

PART 2 - PRODUCTS

2.1 Materials

- A. Metal Counterflashing: 26 gauge pre-painted galvanized steel, Persectra series finish.
- B. Colours: From standard colours as selected by owner/consultant.
- C. Sealant: As required by manufacturer.
- D. Hook Strip: Steel, gauge 24, pre punched.

### PART 3 - EXECUTION

#### 3.1 Metal Installation

- A. Install new metal counterflashings on perimeter walls, curbs, walls, expansion joints, roof dividers, sleepers and projections.
- B. Install hook strip to outside face of wall 300mm O.C.
- C. All metal base flashings to extend to top of insulation. Only when preapproved prior to installation contractor to coat exposed flashing membrane with aluminized asphalt based coating.
- D. Counterflashings shall be applied using a s-lock type joint which will prevent buckling of metal and provide proper contraction/expansion and produce a surface free of warp, wave, buckles, dents or other defects. Corners shall be square and surface straight and true to plains. All metal shall have hemmed edges.
- E. Install metal with concealed fasteners. Exposed fasteners will only be permitted with owner/consultant approval. Metal to be installed firmly to avoid movement or stripping by wind.
- F. No fastening into canted surfaces.
- G. Finish joints at horizontal mitred joints and canted corners with standing seams.
- H. All metal flashings to terminate surface of insulation.

SECTION ENDS