

MATERIALS

.01 DIMENSIONAL LUMBER

This shall be construction grade spruce of the dimensions as outlined under the Description of Work.

.02 PLYWOOD SHEATHING

This shall be 1/2" Standard Grade spruce plywood. Thickness is to be increased to 3/4" when installed over a concrete substrate.

.03 DRYWALL SHEATHING

This shall be 5/8" Dens-Deck as manufactured by Georgia Pacific.

.04 DRYWALL FASTENERS

These are to be #12 Dekfast screws with Sentri XP coating and 2 7/8" Hexagonal Galvalume Steel Stress Plate for all Deck Types as manufactured by SFS Stadler or approved equal. Fasteners shall penetrate STEEL DECKING a minimum of 3/4" and wood a minimum of 1".

.05 VAPOUR BARRIER

This shall be Soprema Sopralene 180 S/P 3.5mm; Siplast IREX 40 or approved equal.

.06 ROOFING INSULATION

Expanded Polystyrene Type II with a minimum slope and thickness's as indicated on the roof plan. This shall be as manufactured by Plastifab Ltd., Co-Star Innovations or approved equal.

Soprema Sopra-ISO polyisocyanurate insulation with fiberglass facer, Siplast Paratherm or approved equal. Thickness is as indicated on the roof plan.

NOTE: AVERAGE R-VALUE SHALL BE INCREASED AS REQUIRED TO MEET MANITOBA HYDRO POWERSMART R-30 REQUIREMENTS. THE CONTRACTOR IS TO BE RESPONSIBLE FOR OBTAINING AND FILLING IN ALL APPROPRIATE POWERSMART FORMS. POWERSMART APPROVAL MUST BE OBTAINED BEFORE START OF PROJECT.

.07 INSULATION SUMPS

These shall be 8' x 8' and 2"-1/2" Expanded Polystyrene Type II with thicknesses as indicated on the roof plan.

.08 INSULATION ADHESIVE

This shall be Weather-Tite One Step Foamable adhesive as manufactured by Millennium Products incorporated, Siplast Parafast Insulation Adhesive "C" or Duotack by Soprema.

.09 POURABLE SEALER

This is to be a two component pourable EPDM sealer. This is to be used to fill all pitch boxes or as otherwise specified.

.10 COVER BOARD

This shall be Soprema Sopraboard, IKO Protecto Board or approved equal. Thickness is to be 1/4".

.11 MODIFIED BITUMEN MEMBRANE

This shall be the following:

Membrane:

Siplast Paradiene 20 TG base sheet with Siplast Parafor 30 TG cap sheet or Soprema Sopraply Plus PP base sheet with Soprema Sopraply Traffic Cap 560 cap sheet.

Stripping:

Siplast Paradiene 20 SA base sheet with Siplast Parafor 30 TG cap sheet or Soprema Sopralene Flam stick with Sopraply Traffic Cap 560 cap sheet.

.12 **MODIFIED PRIMER**

This is to be the primer recommended by the membrane manufacturer being used.

.13 **CAULKING**

This shall be Tremco Dymonic FC. Color is to be chosen by the Contract Administrator from the standard range of colors.

.14 **ALUMINUM PAINT**

This shall be Tremco Double Duty.

.15 **ROOF DRAINS**

These shall be U-Flow Hercules - A (aluminum strainer dome) drains as supplied by Beacon Roofing Supply Ltd. Size is to match existing plumbing. If the existing drains being replaced are control flow, then the same manufacturers control flow inserts are to be installed. In the case of inverted roof assemblies the stainless steel ballast guard screen is to be installed.

.16 **VENT STACKS**

These shall be Insulated Stack Jack Flashing (with EPDM seals) SJ-38A, 13" (330 mm) high as manufactured by Thaler.

.17 **METAL FLASHING**

The base and cap flashing shall be a minimum of 24 gauge in thickness. Metal is to be prefinished and is to be chosen from the standard in stock range of Stelco 8000 series of colors.

.18 **SIDING**

This shall be 22 gauge AD300 as manufactured by Vicwest, FWM Panel by All Metal Supply or approved equal. Color is to be selected from the standard Stelco 8000 color series.

.19 **ACCESSORIES**

All nails, bolts, screws and other fasteners etc. shall all be as recommended by the manufacturer of the materials for which they are to be used.

.20 **GAS LINE SUPPORTS**

For a maximum gas line size of 2" use Clearline C-Port CXP series rubber gas line sleepers with a 3/4" rubber pad placed under. Pads shall extend a minimum of 2" out from under all sides of the sleeper.

For a greater than 2" gas lines use 12" x 12" Clearline C-Port CXW series rubber gas line sleepers c/w with appropriate Clearline accessories for height adjustments as required.

.21 **SPRAY FOAM INSULATION**

This shall be FROTH-PAK™ FS Portable Spray Foam as manufactured by DOW Chemical Corp.

END OF SECTION

ROOFING PROCEDURES

(BUILT UP ROOFING)

- .01 Protect all new Work and the existing building and its contents against inclement weather. Supply and install equipment and enclosures necessary to provide this protection from beginning to completion of the Work.
- .02 Do not apply any roofing whatsoever during any inclement weather including when the temperature may fall lower than twenty degrees below Celsius or when the wind-chill is equal to or greater than -20c.
- .03 Do not expose roofing materials, vulnerable to water or sun damage, in quantities greater than can be weatherproofed in one day. Use only clean and dry materials and apply only during weather that will not introduce moisture into the roof system. This would include days of excessively high relative humidity. Undertake only that amount of roofing that can be completed as specified in the same day or prior to inclement weather forcing a shutdown of the operations.
- .04 Apply roofing over clean and dry surfaces and in accordance to C.R.C.A. and /or manufacturers guidelines and as amended herein.
- .05 All materials on the roof shall be stored in such a manner as to prevent blow-offs during high winds.
- .06 Should the roofing operations be terminated during the day for unforeseen circumstances all exposed vapor barrier, felts or drywall **MUST** be fully glaze coated with bitumen prior to leaving the Site that day.
- .07 Protect the surrounding surfaces against damage from the roofing operations. Where hoisting is necessary protect the buildings by hanging tarpaulins. Should equipment be parked on the surrounding lawn, it shall be protected with 3/4" plywood. Materials nor debris shall be stored or stock piled on adjoining roof areas that are not being replaced.
- .08 Provide protection for the public using walkways, grounds, entrances, etc., by using proper warning signs, hoarding, shelters, or barricades as agreed to by the Contract Administrator.
- .09 Where Work must or will continue over the finished roofing membrane, the Contractor will protect it with plywood sheathing.
- .10 Removal of (opening up) existing roof membrane shall be done only after consultation and with agreement by the Contract Administrator. Remove only that portion that can be fully completed as specified within the same day work period.
- .11 Employ qualified mechanical tradesmen to disconnect existing roof top units and to move the units to allow complete installation of roofing membrane, insulation and vapor barrier as specified herein. The Contractor shall be responsible for any required alterations, such as extending ducts or electrical, as is required to properly reconnect of the units. The Contractor shall be held responsible for any damage to mechanical units from the roofing operations. Contact the Contract Administrator prior to any disconnection's.
- .12 Notify Contract Administrator and ensure he has proper time to appear on Site during application period. Failure to do so may result in the total rejection of all Work completed prior to notifying the Contract Administrator.
- .13 Inspect all roof decking prior to installation of roofing system and report all defects or unsuitable conditions to the Contract Administrator and correct deficiencies as directed.
- .14 The Site shall be inspected prior to commencement of Work to ensure no current anomalies are present such as lawn damage, asphalt on walls, broken windows. etc. All anomalies shall be reported to the Contract Administrator . They shall then be recorded and photographed by both parties at that time. Should no anomalies be reported prior to Work commencing it shall be assumed that none existed prior to commencement.
- .15 Use only equipment in good working order including all thermometers and gauges. Locate equipment as instructed by the Contract Administrator. Maintain continuous supervision while kettles in operation.
- .16 Propane bottles must be removed from the roof and site each night.
- .17 All applicable safety regulations as indicated by Manitoba Health and Safety must be strictly followed at all times.
- .18 Any damage to the existing lawn is to be repaired with new sod. Topsoil and seed will not be accepted.

END OF SECTION

DESCRIPTION OF WORK

Note;

The Contractor is responsible for obtaining asbestos testing documents from the Contract Administrator. The Contract Administrator is responsible for any asbestos testing.

The Contractor and the Contract Administrator are to view the work premises prior to the start of any roofing or set up. The Contractor is to document any existing interior water damage. Any existing damage is to be photographed and the locations documented. This is to minimize any conflicts between the City of Winnipeg and the Roofing Contractor should any leaks occur during construction. A copy of the report is to be submitted to the Contract Administrator prior to work starting.

The Contractor shall be responsible for preparing forms for Hydro Power Smart rebates.

Contractors must provide evidence of certification from the proposed manufacturer prior to roof system installation. Documentation thereof will be provided to the Contract Administrator in writing.

ROOF AREA A1

- .01 The existing sheet metal flashing are to be removed and discarded from site to an authorized grounds.
- .02 The existing roof assembly is to be removed to the deck and discarded from site to an authorized nuisance grounds.
- .03 The existing perimeter blocking is to remain.
- .04 Remove the existing ground access ladder.
- .05 Raise area A2 access ladder as required to accommodate the new roofing on area A1.
- .06 **ALL** loose vapor barrier is to be scraped from the deck and also discarded as above. The roof deck is to then be swept clean of all dirt and debris.

NOTE: ALL LOADS OF DEBRIS REMOVED FROM SITE SHALL BE PROPERLY TARPED

- .07 Install 3/4" plywood sheeting up the base of all adjoining walls. Sheeting is to stop 8" above the roof and membrane stripping 12" above the roof. Top edge of the plywood is to be cut at a 45 degree angle.
- .08 Install 1/2" plywood on the inside face of the existing parapets.
- .09 Temporarily disconnect and remove mechanical units as required to allow roofing operations to continue. Ensure all units are in working condition prior to removal. Should the unit be malfunctioning advise the Contract Administrator prior to removal. If this is not done the Contractor may be held responsible for the repair of the unit. Use only qualified mechanical trades people for these operations.
- .10 Install the drywall using 9 Dekfast fasteners and plates per 4' x 8' sheet. Increase fasteners to 12 on the perimeter 8' of the roof.
- .11 Apply the self-adhering modified bitumen base sheet stripping in strict accordance to manufacturers guidelines. All blocking is to first be coated with the appropriate primer. The stripping shall be terminated 1" down the outside face of the existing parapets, 12" up adjoining walls, and on top of all curbs. Torch applied corner gussets shall be installed on all inside and outside corners over top of the self-adhering stripping.
- .12 Torch adhere the new vapor barrier. Carry the vapor barrier under the new parapets. Take all appropriate precautions to prevent fire.
- .13 Install new minimum 4" gray PVC drain lines along with new specified drains. Drain line size is to meet applicable fire and plumbing codes. Drain lines are to be fully insulated with ASJ insulation. Side laps of ASJ insulation are to be stapled as well as taped. Tie new drain lines to existing. Threaded rod hangars are to be used and spaced to provide proper support for a fully filled drain line.
- .14 Convert upper portions of existing drain lines to new gray PVC as required to insure a proper fit of the new drain inserts. New lines are to be of the same minimum size as the existing lines. New extensions can be larger if required. New lines are to be securely attached with Fernco couplers or in other methods as approved by the Contract Administrator. Drain line size is to

meet applicable fire and plumbing codes. New extensions shall be fully insulated with ASJ insulation if existing lines are already insulated.

- .15 **All drain lines must extend a minimum of 1/2" above the vapor barrier to allow the vapor barrier to be sealed directly to the plumbing.**
- .16 New parapet extensions are to be constructed of the using 2x6 studs and double top plates with 1/2" plywood on both sides. The pony wall is to be fully insulated with batt insulation. The new roof vapor barrier is to extend to the outside face of the existing walls under the new parapets. Set the new parapets flush with the outside of the existing. The parapets shall be securely fastened in place with appropriate fasteners at 16" on center. New parapet extensions are to be 16" in height.
- .17 Fabricate covered curbs to replace all pitch boxes. Curbs are to be fully insulated and all lines carried out through the sides a minimum of 8" above the new roofing.
- .18 All plumbing vents are to be extended at this time. Existing cast hubs are to be removed (as required) and the appropriate length black ABS extensions securely clamped to the existing plumbing using Fernco couplers.
- .19 All existing curbs are to be replaced with new fabricated from 1 1/2" thick lumber stacked on edge. Obtain a minimum height of 8" above the top of the new roofing.
- .20 Apply the self-adhering modified bitumen base sheet stripping in strict accordance to manufacturers guidelines. All blocking is to first be coated with the appropriate primer. The stripping shall be terminated 1" down the outside face of the existing parapets, 12" up adjoining walls, and on top of all curbs. Torch applied corner gussets shall be installed on all inside and outside corners over top of the self-adhering stripping. **MEMBRANE STRIPPING IS TO BE INSTALLED PRIOR TO THE VAPOR BARRIER TO ALLOW A TORCH SEAL TO THE STRIPPING.**
- .21 Membrane stripping must be installed immediately following the installation of the new parapets to insure that all components are protected from the elements.
- .22 Adhere the layer of sloped insulation to the vapour barrier using the specified adhesive.
- .23 Adhere the layer of polyisocyanurate insulation using the specified adhesive.
- .24 Any gaps between insulation sheets wider than 1/8" are to be filled with fiberglass insulation.
- .25 Adhere the layer of recovery board using the specified adhesive.
- .26 The application of the adhesive must be done in strict accordance to the manufacturers guidelines with maximum spacing of adhesive ribbons not exceeding those listed below:
 - Outside 12' x 12' corners is not to exceed 4" on centre.
 - Perimeter 8' is not to exceed 6" on centre.
 - Remaining main field is not to exceed 12" on centre.
- .27 Install 6" Firestop along all parapet roof connections as well as around all curbed openings. The membrane is to extend 3" up the vertical and 3" onto the top of the recovery board. The Firestop membrane is to tie into the roof vapor barrier on the inside face of the parapets.
- .28 Torch the modified bitumen base sheet to the recovery board. Ensure no wrinkles are present and that all side and end laps are properly sealed.
- .29 Install an approximate 8" width of torch grade base sheet stripping and extend 4" onto the flat and 4" up the previously installed self-adhering membrane stripping.
- .30 Ring top nails are to be installed on all base sheet stripping in a 12" grid pattern with the first row being approximately 3" up off the roof.
- .31 Install new overflow scuppers in locations indicated on the roof plan.
- .32 Set the base flanges of the Thaler Stackjacks in a bed of mastic. Seal in with a single ply of torch applied base sheet membrane. The ABS riser shall extend 1/2" above the top of the base and a bead of sealant is to then be applied to the top lip of the riser and the top cap installed.
- .33 Torch adhere the cap sheet to the base sheet once again ensuring no wrinkles are present and that a minimum of 1/8" asphalt flow is present along the edges of all laps. Excessive seepage is not acceptable.

- .34 All base sheet and cap sheet rolls are to be relaxed a minimum of 4 hours prior to installation. This will help to greatly reduce any buckling in the membrane.
- .35 Torch apply the cap sheet stripping in strict accordance to the manufacturers guidelines. The stripping shall be carried to the outside face of the parapets and 12" up adjoining walls.
- .36 Install the new cap flashing on all parapets in a manner as the enclosed details. Install the new siding band complete with Tyvek underlayment. The new vertical siding band is to incorporate all appropriate corner and drip flashing.
- .37 Reinstall all roof top units. Extend all duct work, gas lines, and electrical as required to allow proper installation.
- .38 Install all new pitch boxes to replace existing. Fill with the specified pourable sealer.
- .39 Install all new specified gas line sleepers.
- .40 All caulking must be properly tooled to a neat finish.
- .41 Install new termination flashing as detailed where required. Securely fasten with appropriate fasteners spaced no more than 24" on center.
- .42 Install 4 – 2'x2' sidewalk pavers on ¾" rubber matting at the base and top of any ladder locations.
- .43 Any curbs with interior ducting are to be filled with spray foam insulation to obtain an air tight seal.
- .44 All existing vent hoods are to be replaced with new prefinished sheet metal hoods. The hoods are to face directly downwards with the opening being no less than 24" up off the roof. The hoods are to be fully insulated on the inside and incorporate appropriate bird screens. The hoods are to also incorporate an interior perimeter support angle to sit on the curb. The angles are to be fabricated from a minimum 24 gauge galvanized sheet metal and are to be set approximately 2" up from the bottom of the hood. Secure the angles to the hoods with pop rivets. Hoods are to be insulated on the interior with a minimum 1 1/2" thick insulation. Secure insulation in place with stick pins. Any existing ducts that are directly attached to hoods are to be altered to a separate curb and separate hood. New curbs shall be fabricated as required to accommodate any new hoods. Hoods are to be fabricated from minimum 24 gauge galvanized sheet metal. Extend all ducting within curbs to allow for the curb to be filled with spray foam insulation.
- .45 Install all new 26 gauge galvanized skirt flashing and storm collars on all chimneys. The skirt flashing flange is to fold a minimum of 1" down the outside face of the curbs. The connection between the skirt and base flanges are to be lock seamed. Extend chimneys as required to accommodate the height of the new roofing.
- .46 A new access ladder is to be installed to provide access to area A1 from the ground. Install in the same location as the original removed ladder. The ladder is to incorporate a protective cage if over 12' in height or as indicated by local safety regulations. The exact location for the ladder shall be decided upon on site by the Consultant. Engineer approved shop drawings are to be submitted for approval prior to fabrication and installation. The ladders are to be permanently wall mounted in a structurally sound manner. Ladders are to be fabricated in a similar manner as detailed. Ladders are to be hot dipped galvanized.

END OF SECTION