PART E

SPECIFICATIONS

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS, STANDARD DETAILS AND DRAWINGS

E1.1 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.

E1.1.1 *The City of Winnipeg Standard Construction Specifications* is available in Adobe Acrobat (.pdf) format on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division internet site at http://www.winnipeg.ca/matmgt.

E1.1.2 Further to GC:2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.

E1.2 The following Drawings are applicable to the Work:

Drawing No.	Drawing
R1	Roof Plan
D1	Details

MATERIALS

E2. DIMENSIONAL LUMBER

E2.1 This shall be construction grade spruce of the dimensions as outlined under the Description of Work.

E3. PLYWOOD SHEATHING

E3.1 This shall be 1/2" spruce plywood

E4. INSULATION FASTENERS

E4.1 These shall be #12 Insul-Fix screws and 3” galvanized plates as manufactured by SFS Stadler or approved equal such as manufactured by Deck Fast.

E5. VAPOUR BARRIER

E5.1 This shall be 1 ply Soprema Sopravap’r or approved equal.

E6. ROOFING INSULATION

E6.1 Expanded Polystyrene Type II with a minimum slope of 3/16" per foot and a minimum thickness of 2". This shall be as manufactured by Plastifab Ltd. or Insulation Industries Ltd. Slopes shall be as per the attached Drawings.

E6.2 1 1/2” Soprema Colgrip A polyisocyanurate insulation with acrylic facer or approved equal. Paper facers will not be accepted.

E7. POURABLE SEALER

E7.1 This shall be Lexcan 2 part Pourable Sealer or approved equal. This shall be used to fill all pitch boxes or as otherwise specified.

E8. MODIFIED BITUMEN MEMBRANE

E8.1 This shall be the following:

ROOF AREA A1

Membrane:

Soprema Colvent 810 self adhering base sheet membrane with a Sopraply Cap-560 cap sheet (heavy traffic) or approved equal.

Stripping:

Soprema Sopraflash Flam Stick self adhering base sheet with a Sopraply Cap-550 cap sheet or approved equal.

ROOF AREA B1

This shall be the following:

Membrane:

Soprema Sopralene Flam 250 granules cap sheet or approved equal.

Stripping:

Soprema Sopraflash Flam Stick self adhering base sheet with a Sopraply Cap-550 cap sheet or approved equal.

E9. MODIFIED PRIMER

E9.1 This shall be Soprema Elastocol 700 for use with the self adhesive membranes and Elastocol 500 for the torch applied membranes.

E10. CAULKING

E10.1 This shall be Tremco Vulkem 931 or approved equal.

E11. ALUMINUM PAINT

E11.1 This shall be Tremco Double Duty or approved equal.

E12. ROOF DRAINS

E12.1 These shall be Ancon RD-100-BE standard drains with optional deck clamp, and cast dome. Size is to match existing plumbing. If the existing drains being replaced are control flow, then Ancon RD-100-BE control flow drains with optional deck clamp, and cast dome shall be used. Size shall match existing plumbing. Zurn Z-100 with same options will also be accepted.

E13. VENT STACKS

E13.1 These shall be Insulated Stack Jack Flashings (with metal cap not neoprene seal) SJ-20 as manufactured by Thaler.

E14. METAL FLASHING

E14.1 The base and cap flashing shall be a minimum of 24 gauge in thickness. Finishes shall be chosen from the standard in stock range of Stelco 8000 series of colors.

E15. SIDING

E15.1 This shall be 24 gauge Vicwest CL7015 or approved equal. Finish shall be chosen from the standard in stock range of Stelco 8000 series of colors.

E16. ACCESSORIES

E16.1 All nails, bolts, screws and other fasteners etc. shall all be as recommended by the manufacturer of the materials for which they shall be used.

E17. SPLASH PADS

E17.1 Splash Pads shall be 51" natural # 45-41001 as manufactured by Barkman Concrete LTD.

ROOFING PROCEDURES

E18. ROOFING PROCEDURES

E18.1 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.

E18.2 Do not apply any roofing whatsoever during any inclement weather including when the temperature may fall lower than +5 degrees Celsius.

E18.3 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.

E18.4 Apply roofing over clean and dry surfaces and in accordance to C.R.C.A. and /or manufacturers guidelines and as amended herein.

E18.5 All materials on the roof shall be stored in such a manner as to prevent blow-offs during high winds.

E18.6 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.

E18.7 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.

E18.8 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.

E18.9 Where Work must or will continue over the finished roofing membrane, the Contractor will protect it with plywood sheathing.

E18.10 Removal of (opening up) existing roof membrane shall be done only after consultation with and agreement by the Contract Administrator. Remove only that portion that can be fully completed as specified within the same day work period.

E18.11 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 Contract Administrator prior to any disconnections.

E18.12 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.

E18.13 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.

E18.14 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.

E18.15 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.

E18.16 All materials being used in the roofing assembly shall be fully bonded together. No sprinkle mopping of any adhesives or bitumen will be accepted. Layers of fiberboard shall be fully back mopped to ensure 100% adhesion.

E18.17 All applicable safety regulations as indicated by Manitoba Health and Safety must be strictly followed at all times.

DESCRIPTION OF WORK

E19. ROOF AREA A1

E19.1 The existing sheet metal flashing shall be removed and discarded from Site to an authorized grounds.

E19.2 The existing roof assembly shall be removed to the deck and discarded from Site to an authorized nuisance grounds.

E19.3 **ALL** loose vapor barrier shall be scraped from the deck and also discarded as above. The roof deck shall then be swept clean of all dirt and debris.

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

E19.4 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.

E19.5 All plumbing vents shall be extended at this time. Existing cast hubs shall be removed (as required) and the appropriate length black ABS extensions securely clamped to the existing plumbing using Fernco couplers.

E19.6 All existing parapet blocking shall be removed and discarded. New parapets shall be constructed using 2x6 studs and plates with 1/2" plywood on both sides as detailed. The pony wall shall be fully insulated with batt insulation. The new roof vapor barrier shall extend to the outside face of the existing walls under the new parapets. The parapets shall be securely fastened in place with appropriate fasteners. The new parapets shall be a minimum of 6” above the top of the new roofing.

E19.7 Raise the small section of west parapet to ensure it is the same height as the new parapets.

E19.8 A 10" wide overflow scupper shall be installed in the approximate location indicated on the roof plan.

E19.9 All wood blocking on all curbs shall be raised with solid wood blocking to maintain a minimum height of 12" above the top of the new roof assembly. All blocking shall be of the same width as the existing blocking.

E19.10 All pitch boxes shall be replaced with wood curbs. These shall be constructed as detailed. All items entering the curbs shall do so through the sides. The curbs shall be designed so as to ensure any entry points are a minimum of 8" off the roof. The curbs shall be fully insulated and a plywood and metal cover installed.

E19.11 Install the new roof drain(s) and maintain a height 1/2" below the top of the insulation. Hand pluming lines with appropriate threaded rod hangars. Insulate the drain lines. Box in all drain lines down the inside face of walls. This shall be done with appropriate steel studs and drywall. Tape drywall, prime drywall, and paint to match existing wall finish. The plumbing penetrating exterior walls shall be a minimum of 6” diameter.

E19.12 Remove the stucco from the base of the west wall to a height no less than 12” above the elevation of the finished roofing.

E19.13 Prior to applying the vapor barrier all decking shall be coated with specified primer. Install the self adhering vapour barrier in strict accordance to manufacturers guidelines. Install base sheet membrane to extend the vapour barrier up curbs and adjoining walls to allow the roof membrane stripping to tie into it. Carry down overtop of the existing stripping on the north side.

E19.14 A bead of mastic shall be applied around the base of all plumbing stacks so as to ensure a continuous seal to the vapor barrier. This shall be done at both the vapor barrier level and at the membrane.

E19.15 Loose lay the layer of sloped foam insulation

E19.16 Loose lay the layer of Colgrip insulation. Stagger the rows from one another and offset this layer from the underlying layer.

E19.17 Mechanically fasten the insulation. This shall be a minimum of 5 screws and plates per 4’ x 4’ sheet of insulation. The perimeter edges shall have the number of fasteners increased by 50% and the outside corners shall be increased by 75%. The perimeter edge distance is defined as the lesser of:

i. 10% of the building width or,
ii. 40% of the eave height, with a minimum of 4’.

E19.18 Adhere the modified bitumen base sheet to the insulation. Ensure no wrinkles are present and that all side and end laps are properly sealed. Install screws and plates spaced 12” on centre around the perimeter edge of the roof as well as 12” on centre around all curbed openings, sleepers and other such projections. The membrane stripping is to cover all plates.

E19.19 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 parapets, 12” up the adjoining west wall, 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.

E19.20 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.

E19.21 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.

E19.22 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 the adjoining west wall.

E19.23 Extend the membrane stripping from the adjoining north roof. The stripping is to extend a minimum of 12” up the new parapet.

E19.24 Install the new cap flashing and metal siding on all parapets in a manner as the enclosed details.

E19.25 Install the fastening bar flashing with gum cup (as detailed) along the base of the stucco walls. Fasten through the flashing and membrane a maximum of 12" on center with TEK screws. Fill the gum cup with the approved caulking. Repair stucco as required. Ensure flashing is done in such a manner so as to not allow any water from behind the stucco to work it’s way behind the new flashing.

E19.26 Reinstall all roof top units. Extend all duct work, gas lines, and electrical as required to allow proper installation.

E19.27 Install new C-Port CX series rubber gas line sleepers with a proper size base for to provide proper bearing on the new roofing.

E20. ROOF AREA B1

E20.1 Remove and discard the existing eave trough, down pipes and related metal flashing on the perimeter edges of the roof.

E20.2 Fabricate and install new 2x6 pony wall parapets with ½” plywood on both sides. The parapets need not be insulated. A double top plate shall be incorporated to ensure the parapets remain straight. The new parapets shall be a minimum of 6” above the top of the new roofing. The parapet on the east side shall be built with 1 step to reduce the height. The step shall be installed at the half way point. The top of the east parapet shall be level from north to south and shall NOT follow the slope of the roof.

E20.3 Remove the existing stucco from the bottom 12” of the adjacent west wall to allow a proper water tight connection.

E20.4 Install a minimum 24” wide ¾” plywood back slope. The back slope shall be wide enough to ensure that the new drains and associated plumbing can drop into the building interior. The back slope shall be supported down to the deck at the inside of the parapet and at the half way point of the width of the back slope. The half way point blocking will allow the plywood to be run with the face grain parallel to the parapets. Install appropriate blocking at the elevation changes of the portion of the roof that is slightly raised.

E20.5 Install the new roof drain(s) and maintain a height 1/2" below the top of the insulation. Hand pluming lines with appropriate threaded rod hangars. Insulate the drain lines. Box in all drain lines down the inside face of walls. This shall be done with appropriate steel studs and drywall. Tape drywall, prime drywall, and paint to match existing wall finish. The plumbing penetrating exterior walls shall be a minimum of 6” diameter. Drains shall be installed in such a manner so as to ensure minimal ponding in the valleys at the drains.

E20.6 Install a 22 gauge sheet metal flashing at the leading edge of the plywood back slope to ensure a smooth transition to the existing roofing. Securely fasten in place with roofing nails spaced no more than 6” on centre.

E20.7 Fabricate and install a total of 6 curbs complete with prefinished sheet metal goose neck vent hoods complete with bird screen. The curbed openings shall be 12” square on the inside. Cut open the underlying roofing and decking to create proper air flow in the attic. The exact location of the vent hoods shall be determined on Site by the Contract Administrator. The vent hood openings shall face directly down to eliminate wind driven snow or rain from entering. The height of the opening to the roof shall be no more than 12”.

E20.8 Coat all exposed plywood and blocking with the appropriate primer.

E20.9 Apply the self adhering modified bitumen base sheet stripping in strict accordance to manufacturers guidelines. All blocking shall first be coated with the appropriate primer. The stripping shall be terminated 1" down the outside face of the parapets, 12” up the adjoining west wall, 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. The granules of the adjoining membrane shall be embedded.

E20.10 Coat all existing membrane with the specified primer.

E20.11 Install the torch applied cap sheet membrane over top of the existing membrane. Any blisters or other anomalies shall be first repaired and patched. Install with no bitumen seepage.

E20.12 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 the adjoining west wall.

E20.13 Install the fastening bar flashing with gum cup (as detailed) along the base of the stucco walls. Fasten through the flashing and membrane a maximum of 12" on center with TEK screws. Fill the gum cup with the approved caulking. Repair stucco as required. Ensure flashing is done in such a manner so as to not allow any water from behind the stucco to work it’s way behind the new flashing.

E20.14 Install the new cap flashing and metal siding on all parapets in a manner as the enclosed details.