

## CRESCENT DRIVE PARK PAVILION CRESCENT DRIVE PARK, WINNIPEG, MANITOBA

### GENERAL CONDITIONS

#### GENERAL PROVISIONS

.1 Notwithstanding the terms of the Contract between the City of Winnipeg and the Contractor, the general terms, definitions, conditions of that Contract are read in conjunction with these Specifications and the Drawings listed on A-00 these are, in their entirety, the Contract Documents.

.2 The Specifications include all the written instructions herein and on the drawings.

.3 General Notes and Specifications on one drawing apply to all drawings unless specifically noted otherwise.

.4 In the Contract Documents, "supply" means: deliver to the site and place as directed by the Contractor. "Install" means: accommodate in the Work, receive, store, assemble, adjust, trim, and fit as necessary to make fully operational. "Provide" means: supply and install.

#### ADMINISTRATION OF THE CONTRACT

.1 The Contract Administrator will be the first interpreter of the Contract Documents and give findings to all parties. The findings shall not be partial to the Contractor or the City of Winnipeg.

.2 The General Conditions of the Contract apply to the Drawings and Specifications included here.

#### 00 31 00 AVAILABLE PROJECT INFORMATION

#### SOILS INVESTIGATION

.1 Any information pertaining to soils and all borehole logs are furnished by the Consultant as a matter of general information only and borehole descriptions or logs are not to be interpreted as descriptive of conditions at locations other than those described by the boreholes themselves.

.2 Included within the Bid Opportunity is the geotechnical investigation report titled "Crescent Drive Park Pavilion Geotechnical Investigation", prepared by DYREGROV ROBINSON INC. (dated May 27, 2016, Project: 163939).

.3 The purpose of these reports is to provide geotechnical information of the site, and recommendations for the design of the permanent foundation engineering work.

.4 The report may not reveal all conditions that exist or can occur on the site. The Contractor should conduct further investigation, as deemed necessary.

#### TOPOGRAPHICAL SURVEY

.1 The Topographical Survey prepared by Pollock & Wright Land Surveying and Geomatics (dated 20 November, 2015, Pollock & Wright File No. 269M/15).

#### 01 93 00 FACILITY MAINTENANCE

#### MAINTENANCE & COMMISSIONING

.1 System Start-up and First Year Winterization:

A. Contractor to perform the system start-up with training for City staff in accordance with the information contained in the Operation and Maintenance Manuals in order to have the Work fully operational for public use by the date of Substantial Performance.

B. After the operation of the Work for the season, the Contractor shall perform the first year winterization of the Work with training for City staff.

C. The Contractor shall provide the Contract Administrator with 48 hours notice prior to commencing the start-up and winterization procedures in order that the City staff may attend.

.2 Operation and Maintenance Manuals:

A. The Contractor shall provide, in a format acceptable to the Contract Administrator, three (3) bound copies as well as one electronic copy (in pdf format) detailing the operation and maintenance instructions for all elements of the Construction including:

(i) Manufacturers' written instructions, warranties, shop drawings, schedules, wire diagram and a listing of persons to contact for repairs during the warranty period.

(ii) Descriptions of day to day operations, preventative maintenance, annual and periodic maintenance, and procedures for seasonal shut down and start-up.

.3 Staff Training:

A. Provide On-Site training to City staff and maintenance personnel in proper operation and maintenance procedures for the system.

B. Trainers shall be qualified trades persons or consultants knowledgeable of the equipment and familiar with the installation at Crescent Drive Park Pavilion.

C. Legible documentation shall be provided to City staff during the training.

### MATERIALS AND METHODS

#### 03 35 00 CONCRETE FINISHING

.1 Structural slab concrete floor to be machine paddle float polished.

.2 Concrete to be protected during construction against chipping, staining, marring or any other damage to effect final finish.

.3 Refer to Structural and Landscape Specification for further instruction on concrete work.

#### 05 50 00 METAL FABRICATIONS

#### PRODUCTS

.1 Miscellaneous Steel Sections: Supply all miscellaneous steel angles, plates, brackets, lintels, etc., as indicated and noted on the drawings. Size according to loads, set plumb and true and securely fix. Continuously weld and grind smooth exposed connections. Refer to structural drawings and specifications for connections.

.2 Stainless Steel Trough Sinks (L-1, L-2, L-3): To be fabricated by Kustom Metal Kraft Manufacturing Inc., or approved equal in accordance with B7 Substitutes.

.3 Mirrors: To be 1/16" non-directional mirrored stainless steel adhered to 3/4" plywood. Manufacturer: Excelsior Steel Processing Ltd., or approved equal in accordance with B7 Substitutes. Finish: X-L Buff. Bend and wrap stainless steel around sides of plywood. Adhere to GWB substrate behind.

.4 Aluminum facade panels to be custom fabricated with light sandblast finish.

#### EXECUTION

.1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.

.2 Use self-tapping shake-proof round headed screws on items requiring assembly by screws or as indicated.

.3 Where possible, fit and shop assemble work, ready for erection.

.4 Ensure exposed welds are continuously sealed for length of each joint. File or grind exposed welds smooth and flush with adjacent finish surface. Ease exposed edges to small uniform radius.

.5 Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where noted otherwise.

.6 Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

.7 Site confirm field dimensions prior to fabrication.

.8 Fabrication Tolerances:  
Squareness: 3 mm (1/8 inch) maximum difference in diagonal measurements.  
Maximum Offset Between Faces: 1.6 mm (1/16 inch).  
Maximum Misalignment of Adjacent Members: 1.6 mm (1/16 inch).  
Maximum Bow: 3 mm in 1.2 m (1/8 inch in 4 ft).  
Maximum Deviation From Plane: 1.6 mm in 1.2 m (1/16 inch in 4 ft).

.9 Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.

.10 Do not prime surfaces in direct contact bond with concrete or where field welding is required.

.11 Apply coatings in shop and before assembly. Where size permits, galvanize components after assembly.

.12 Prime paint items with one coat. Apply two coats of primer to areas inaccessible after final installation.

.13 Hot dip galvanize components where indicated after fabrication in accord with requirements of CSA Standard G164-M1981.

.14 Apply one coat of bituminous enamel to contact surfaces of metal components in contact with cementitious materials and dissimilar metals.

.15 Isolate aluminum from following components, by means of bituminous paint: (A) Dissimilar metals except stainless steel, zinc, or white bronze of small area., (B) Concrete, mortar and masonry, (C) Wood.

.16 Shop Painting:

A. Apply one shop coat of primer to metal items, with exception of aluminum, galvanized or concrete encased items.

B. Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7°C.

C. Clean surfaces to be field welded; do not paint.

D. Non-ferrous metals shall be finished as specified by item.

#### 06 10 00 ROUGH CARPENTRY

.1 Include in this Section all rough carpentry work as required to complete the project, including but not limited to: (A) Walls, partitions, floors and ceilings, (B) Roof framing, roof sheathing, fascias and soffits. (C) All nails, screws, staples, blocking, furring, shims, fasteners, hardware, anchors and straps as required.

.2 Store and install wood materials that must maintain dimensional stability for successful installation of later work in dry areas and where further work will not contribute to high humidity conditions.

.3 Framing and rough carpentry shall be carried out using S.P.F No. 1 & 2 grade wood, unless otherwise specifically required by the Drawings or Specifications.

.4 All new stud walls, furring blocking, structural framing, door and window frames and rough carpentry as well as all nails, screws, bolts, metal joist hangers and other connectors shall be provided as required to carry out the work of this Bid Opportunity.

.5 All exterior materials shall be installed with hot dipped galvanized or aluminum nails or fasteners in compliance with wood type.

.6 Install work plumb, square, level, permanently secured, accurately and closely fitted, and aligned in locations required by other Work.

.7 Install permanent bracing and bridging prior to application of any loads.

.8 Install reinforced plastic sheet damp proof membrane between wood members and concrete or masonry. Protect all wood from wetting and moisture gain. Receive and store all products with care, preventing damage. Store indoors in secure, dry area off the floor, under wrap.

.9 Install all door hardware in strict conformance with manufacturer's instructions and as dictated by hardware schedule.

.10 Make provisions in all cabinetry and millwork for electrical, water services and electrical outlets and provide concealment of service lines in the work except where service must be exposed.

.11 All framing and furring exposed to weathering to be pressure treated green.

#### 06 20 00 FINISH CARPENTRY

#### PRODUCTS

.1 Softwood lumber: unless specified otherwise, S4S, moisture content 19% or less in accordance with following standards:

A. CAN/CSA O141.

B. NLGA Standard Grading Rules for Canadian Lumber.

C. AWMAC custom grade, moisture content as specified.

D. Machine stress-rated lumber is acceptable for all purposes.

.2 Hardwood lumber: moisture content 6 % or less in accordance with following standards:

A. National Hardwood Lumber Association (NHLA).

B. AWMAC custom grade, moisture content as specified.

.3 Lumber manufacturing process must adhere to Lifecycle Assessment (LCA) Standards as per ISO 14040/14041 LCA Standards.

.4 All panel materials to be SFI Certified wood products. All panel materials to be certified under Sustainable Forest Initiative.

.5 Douglas fir plywood (DFP): to CSA O121, standard construction or latest.

.6 Canadian softwood plywood (CSP): to CSA O151, standard construction or latest.

.7 Hardwood plywood: to CSA O115 or latest.

.8 Particleboard: to ANSI A208.1-99 or latest.

.9 Manufacturing process must adhere to Lifecycle Assessment Standards as ISO 14040/14041 LCA Standards

.10 Nails and staples: to CSA B111 or latest; galvanized to CAN/CSA-G164 or latest for exterior work, interior humid areas and for treated lumber; plain finish elsewhere.

.11 Wood screws: to CSA B35.4 or latest plain, type and size to suit application.

.12 Splines: wood.

.13 Adhesive: recommended by manufacturer such that formaldehyde emissions do not exceed 0.05 ppm 180\_g/m3.

.14 Vertical rainscreen slats to be formed from 2" x 3" rough, clear mixed grain douglas fir lumber. Three (3) sides to remain rough. Fabricators to create knife and rip profile on one 2.5" side. All vertical rainscreen pieces to be machined and prefinished by Yarrow Sash & Door (or approved equal in accordance with B7 Substitutes).

#### EXECUTION

.1 Do finish carpentry to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise.

.2 Scribe and cut as required, fit to abutting walls, and surfaces, fit properly into recesses and to accommodate piping, columns, fixtures, outlets, or other projecting, intersecting or penetrating objects.

.3 Form joints to conceal shrinkage.

.4 Design and select fasteners to suit size and nature of components being joined. Use proprietary devices as recommended by manufacturer.

.5 Set finishing nails to receive filler. Where screws are used to secure members, countersink screw in round cleanly cut hole and plug with wood plug to match material being secured.

.6 Replace items of finish carpentry with damage to wood surfaces.

.7 Butt and cope internal joints to make snug, tight joints. Cut right angle joints of trim, casing, and base with mitred joints.

.8 Fit backs of trims and casings snugly to wall surfaces to eliminate cracks at junction with walls.

.9 Make joints in casing and trims where necessary using a 45° scarf type joint.

.10 Install trims in single lengths without splicing.

#### 06 64 00 PLASTIC PANELING

.1 3 mm ACRYLITE Resist corrugated sheets, high impact acrylic, wave profile. Colour and finish to be selected by Contract Administrator from manufacturer's full range.

.2 Provide manufacturer recommended gaskets and fasteners for installation.

#### 07 17 13 WATERPROOFING

.1 Include all waterproofing work as required to properly complete the work of the project.

.2 Ensure that surfaces to receive membrane have been smoothed and are firm, dry and free of dew frost, voids, projections, loose material, oil, grease, asphalt, curing compounds, and other foreign matter.

#### 07 21 00 THERMAL INSULATION

#### BLANKET INSULATION

.1 Batt and blanket mineral fibre: to ASTM C 665, Type 1, CFC and formaldehyde free to R-Value/thickness and locations indicated on drawings.

.2 Mineral fibre thermal/acoustic:

A. Unfaced, friction fit, rolls, to CAN/ULC-S702: Johns Manville, Roxul and Ottawa Fibre Inc. or approved alternative with 3rd party testing data to support and confirm.

.3 Mineral fibre fire-resistant:

A. "RXL Safe n' Sound" non-combustible mineral wool fibre insulation made from basalt rock and slag, by Roxul Inc.  
B. "Paroc Safing Insulation" by Partek Insulation, as distributed by Steels Industrial Products, basaltic rock fibres bonded into semi-rigid board.

#### RIGID INSULATION

.1 Exterior walls above grade: Extruded Polystyrene to CAN/ULC-S701, Type 3, RSI = 0.87/25mm (R5/in.), butt edges, staggered joints and taped. Standard of acceptance: Styrospan, or Styrofoam CavityMate by Dow Chemical Inc., or CelFort 200 by Owen's Corning Celfortec Inc. Total thickness as per drawings.

.2 Exterior walls below grade: Extruded Polystyrene to CAN/ULC-S701, Type 4, RSI = 0.87/25mm (R5/in.), butt edges. Refer to Section 07 50 10 - CFI (Concrete Faced Insulated) Wall Panels.

.3 Underslab (interior & exterior): Extruded polystyrene to ASTM C578, Type 7, RSI = 0.87/25mm (R5/in.), butt edges, compressive strength of 60psi min. Standard of acceptance: Styrofoam Highload 60 by Dow Chemical Inc., or Foamular 600 XPS. Total thickness as per drawings.

.4 Roof:

A. Glass fibre reinforced polyisocyanurate foam insulation sloped as required, and mechanically fastened to the roof deck. Provide tapered insulation where indicated and where required to maintain a minimum 2% slope to roof drains, unless noted otherwise. Total thickness as per drawings.

B. TOP layer to be Soprema Sopra-ISO Plus with glass filament facer: thermal resistance allowable of RSI - 1.00/25mm (R=5.7/in.), or acceptable "as Equal". Min. 3" (75mm) thick Type 2 polystyrene, tapered for back slopes, and positive drainage.

C. BOTTOM layer to be Soprema Sopra-ISO polyisocyanurate insulation with fibre reinforced facer: thermal resistance allowable of RSI - 1.00/25mm (R=5.7/in.), or acceptable "as Equal". Primer: as recommended by the manufacturer for the specific product and application.

D. 2 layers of polyisocyanurate insulation to be staggered if called for on drawings. Primer: as recommended by the manufacturer for the specific product and application.

.5 Insulation clips: impale type, perforated 50 x 50 mm cold rolled carbon steel 0.8 mm thick, adhesive back, spindle of 2.5 mm diameter annealed steel, length to suit insulation, 25 mm diameter washers of self locking type.

.6 Performance requirements for installed insulation fasteners: (A) Pullout Resistance: minimum 200N, perpendicular to applicable substrates and within temperature range of -30C to +40C. (B) Corrosion Resistance: carbon steel components shall show not more than 15% of the surface rusted, and coatings shall not blister, peel or crack, when tested to Corrosion Test Procedure of Factory Mutual Research Approval Standard, Class I Roof Covers (4470)

#### FOAMED-IN-PLACE INSULATION

.1 Spray-foam insulation: spray polyethylene to CAN/ULC-S705.1

.2 Primer: in accordance with manufacturer's recommendations for surface conditions.

#### 07 25 00 VAPOUR AND AIR BARRIER

.1 Waterproofing membrane components and accessories to be obtained as a single-source from the membrane manufacturer to ensure total system compatibility and integrity.

.2 Membranes

A. Primary sheet air/vapour barrier shall be Blueskin TG manufactured by Henry - Bakor, a SBS modified bitumen, reinforced thermofusible membrane. Thickness: 2.5 mm (10 mils) min.

B. Self-adhered air/vapour barrier transition membrane shall be Blueskin SA manufactured by Henry - Bakor, a SBS modified bitumen, self-adhering sheet membrane complete with a cross-laminated polyethylene film. Thickness: 1.0 mm (40 mils) min.

C. Through-wall flashing membrane and dampproof course (Self-Adhering) shall be Blueskin TWF manufactured by Henry-Bakor, a SBS modified bitumen, self-adhering sheet membrane complete with a cross-laminated polyethylene film. Thickness: 1.0 mm (40 mils).

.3 Use adhesive and primers in accordance with Manufacturer's recommendations.

.4 Refer to Section 07 53 50 Modified Bituminous Membrane Roofing for roof air/vapour barrier membrane.

#### 07 42 13 METAL WALL PANELS

.1 Exterior panel: Aluminum, 3/16 inch thick, ASTM B209, 5052-H32 alloy. Panel size: Varies, not to exceed standard plate dimensions. Exterior finish: **Sandblasted**. Contract Administrator to approve sample finish prior to fabrication.

.2 Fasteners: Aluminum facade to be fastened with stainless steel #10 wood screws countersunk flush with face of aluminum.

.3 Form sections true to shape, accurate in size, square, and free from distortion or defects. Form pieces in longest practicable lengths.

.4 Return seams on panels are bent using press brake machine.

.5 Verify dimensions, tolerances, and interfaces with other work are acceptable for metal wall panel installation.

.6 Verify substrate on-site to determine that conditions are acceptable for product installation in accordance with manufacturers written instructions.

.7 Verify support system has been installed perpendicular to panel length, securely fastened to substrates and shimmed and leveled to uniform plane. Space at intervals indicated.

.8 Separate dissimilar metals; use gasket fasteners, isolation shims, or isolation tape where needed to eliminate possibility of electrolytic action between metals.

.9 Clean aluminum surfaces in accordance with recommendations found in AAMA 609 and 610. Do not use aggressive alkaline, TSP, acid cleaners, or abrasive cleaners on aluminum surfaces.

#### 07 50 10 CFI (CONCRETE FACED INSULATED) WALL PANELS

.1 CFI@Wall Panel, in modular sections, Manufacturer: Tech-Crete Processors Ltd., Panel size: Width: 610 mm (24 inches), Length: 1220 mm (48 inches)

.2 Wall Panel Attachment: Galvanized Steel: ASTM A123/A123M-08 - Zinc-Coated (Galvanized), Z275 to G90 coating designation, preformed as supplied by manufacturer, complete with corrosion proof masonry fasteners.

.3 Insulation: STYROFOAM™ Tech-Crete Blanks by DOW Chemical, extruded polystyrene, conforming to code requirements, in accordance with CAN/ULC S701 type 4

.4 Insulation Thickness: 4 inches

.5 Concrete: Latex modified concrete mix, 8 mm (5/16") thick, with control joint score at mid-length.

.6 Edge Treatment: Tongue and groove along longitudinal foam edges, butt joints on lateral edges.

.7 Surface Finish and colour to be selected by Contract Administrator from manufacturer's standard range.

.8 Gaskets to Adjacent Substrates: Standard type suitable for use with system, permanently resilient; ultraviolet and ozone resistant; colour to match adjacent colour.

.9 Sealants to Adjacent Substrates: Standard type suitable for use with installation of system; non-staining, non-skinning, non-shrinking and non-sagging; ultraviolet and ozone resistant; colour as selected.

.10 Clips and Fasteners: Manufacturer's standard type to suit application; as supplied.

.11 Field Repair and Touch-up: As recommended by panel manufacturer.

.12 Perimeter Insulation Flashings 24 gauge minimum: Coordinate supply of end closures and flashings for perimeter insulation system with Section 07 62 00.

.13 Internal and External Corners: Follow manufacturers installation guidelines provide corner details. Metal profiles to suit assembly, brake formed to required profiles. Trim, Closure Pieces, Caps, Flashings, Facias, Soffits and Infills: Brake formed to required profiles.

#### FABRICATION

.1 Form sections true to shape, accurate in size, square, and free from distortion or defects.

.2 Form custom pieces in longest practicable lengths.

.3 Fabricate corners in one continuous piece.

#### INSTALLATION

.1 Remove substrate surface irregularities before installing wall panels. Sweep and clear debris clear of surfaces to receive panels.

.2 Ensure water proofing below grade is cured and dry.

.3 If the lowest substrate surface is not level to receive panels, create a level surface with a galvanized steel ledger angle, and secure level.

.4 Weather lap barriers, stagger vertical joints of each course. Repair incidental tears.

.5 Seal securely to achieve air and moisture tightness.

.6 Ensure snug fit between panel tongue and grooves, and lateral butt joints.

.7 Install panels with vertical joints and panel control joints in alignment.

.8 Cover exposed insulation at corners and top of perimeter insulation with prefinished flashing as specified in Section 07 62 00 - Sheet Metal Flashing and Trim.

.9 Where concrete flatwork or asphalt is to be laid adjacent to CFI Wall Panels, an isolation joint should be provided to protect the CFI mortar surface from differential movement.

#### 07 53 50 MODIFIED BITUMINOUS MEMBRANE ROOFING

.1 System: 2-ply modified bitumen roof assembly

.2 Air/vapour barrier membrane (AVB): thermo-fusible membrane composed of glass reinforcement, styrene-butadiene-styrene (SBS 110) modified bitumen and thermo-fusible plastic film, to CGSB 37-GP-56M, "Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing".

A. Elastophene Flam 2.2 S/P, as manufactured by Soprema. Prime with Elastocool 500.

B. Torchflex TF-95-FF-Base 2.2, as manufactured by IKO

.3 Roofing insulation: Refer to Section 07 21 00 - Thermal Insulation

.4 Plywood: Refer to Section 06 10 00 - Rough Carpentry. Thickness as per drawings.

.5 Membrane roofing:

A. Base sheet: SBS 180 torch-on modified bituminous membrane, conforming to CAN/CGSB 37.56-M. Acceptable products: Sopralene Flam 180 by Soprema, equivalent by IKO, or approved equal in accordance with B7 Substitutes.

B. Cap sheet: SBS 250 torch-on modified bituminous membrane, conforming to CAN/CGSB 37.56-M. Acceptable products: Sopralene Flam 250 GR by Soprema, equivalent by IKO, or approved equal in accordance with B7 Substitutes. Colour to be selected by Contract Administrator.

C. Traffic Cap sheet: SBS 250 torch-on modified bituminous membrane, conforming to CAN/CGSB 37.56-M. Sizes and locations as per drawings. Colour to be distinct from cap sheet.

.6 Membrane flashings:

A. Base sheet: self-adhesive SBS elastomeric modified bitumen membrane, conforming to CAN/CGSB 37.56-M. Acceptable products: Sopralash Flam Stick by Soprema, or approved equal in accordance with B7 Substitutes.

B. Cap sheet: SBS modified bitumen membrane, conforming to CAN/CGSB 37.56- M. Acceptable products: Sopralene Flam 250 GR by Soprema, or approved equal in accordance with B7 Substitutes.

.7 Flame-stop membrane: self-adhesive membrane composed of SBS modified bitumen and a glass mat reinforcement, designed to prevent flames from penetrating into voids, cavities and openings before installing heat-welded membranes. Acceptable products: Sopraguard tape by Soprema, IKO equivalent.

.8 Pourable sealer: Sonolastic SL 2, two part self levelling pourable polyurethane, complete with Sonneborn Primer 733, as manufactured by Sonneborn and Distributed by Brock White.

.9 Modified primer: primer as recommended by manufacturer for the specific product and application. Specific attention to be paid to required laps over existing cap sheets.

.10 Waterproofing mastic: multi-purpose mastic composed of SBS modified bitumen, fibres, mineral fillers and solvents. Acceptable products: Sopramastic by Soprema, equivalent by IKO, Bakor or approved equal in accordance with B7 Substitutes.

.11 Sealant: Tremco Dymonic FC, equivalent by Bakor, or approved equal in accordance with B7 Substitutes.

.12 Accessories:

A. Roofing nails: type and size as required to suit application, conforming to CSA B111, "Wire Nails, Spikes and Staples".

B. Screws: