Part 1 General

1.1 SUMMARY

.1 *****This Section includes requirements for supply and installation of exterior factory fabricated prefinished metal wall panels with a plank profile [and soffit panel assemblies] with related flashings and accessory components [and support framing].

1.2 RELATED REQUIREMENTS

.1 ***** [Section 05 41 00 – Structural Metal Lightweight Framing: Steel stud wall framing]

.2 ***** [Section 06 10 00 – Rough Carpentry: Wood framed exterior walls supporting metal wall panels/siding]

.3 ***** [Section 07 21 16 - Blanket Insulation: Semi-rigid insulation installed between metal panels/siding and exterior sheathing]

.4 ***** [Section 07 26 00 - Vapour Retarders: Perimeter vapour seal between [curtain wall] system and adjacent construction]

.5 ***** [Section 07 27 00 - Air Barriers: Perimeter air seal between curtain wall system and adjacent construction]

.6 Section 07 92 00 - Joint Sealants

1.3 REFERENCE STANDARDS

.1 ***** [American Architectural Manufacturers Association (AAMA):]

.1 ***** [AAMA ___.]

.2 American Society for Testing and Materials (ASTM):

.1 ***** [ASTM A653/A653M-13 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.]

.2 ***** [ASTM A792/A792M-10 Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.]

1.4 ADMINISTRATIVE REQUIREMENTS

.1 *****Coordination: Coordinate work of other trades having a direct bearing on work of this Section in accordance with Section [01 31 00], and as follows:

.1 *****Coordinate the Work for installation of [air barrier] [vapour retarder].

.2 *****Coordinate the Work with installation of [windows] [doors] [louvres] and other components penetrating metal siding assemblies.

.2 *****Pre-Installation Meeting: Before starting work of this Section, arrange a meeting in accordance with Section [01 31 19], with Contractor, siding Subcontractor, Subcontractors responsible for adjacent work, and Subcontractors responsible for work that penetrates siding assemblies.

.1 Review construction schedule, material availability, personnel, equipment, facilities and other relevant issues to avoid unnecessary delays.

.2 Review methods and procedures related to panel installation, including manufacturer's instructions.

1.5 SUBMITTALS

.1 Submit information in accordance with Section 01 33 00 - Submission Procedures.

.2 Action Submittals: Before starting work of this Section, submit the following:

.1 Shop Drawings: Indicate arrangement of siding system, include dimensions, location of joints, profiles of panels, types and locations of supports, fasteners, flashing, closures and all metal components related to panel installation.

.2 Samples:

.1 *****[Samples for Initial Selection: Submit [color chart] [physical samples on actual substrate] showing manufacturer’s full range of standard colors for Consultant’s selection.]

.2 Samples for Verification: When requested by the Consultant, submit a sample in manufacturer’s standard size for each panel illustrating colour, finish and texture.

.3 Informational Submittals: During the course of the work, submit the following:

.1 Installation Data: Submit manufacturer's installation instructions, special handling criteria, installation sequence, and cleaning procedures.

.2 Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.

.4 *****Sustainable Design Submittals: Submit project sustainable design requirements with Section [01 35 18] [01 35 63], and as follows:

.1 *****During the course of the work, submit manufacturer’s documentation indicating [percentages weight of post-consumer and pre-consumer recycled content, total weight of products and costs for each product with recycled content] [and local/regional materials].

.5 Closeout Submittals:

.1 *****Operations and Maintenance Data: Submit maintenance data for cleaning and maintenance of panel finishes for incorporation into Operation and Maintenance manuals specified in Section [01 78 10] [01 78 23]

.2 Warranty Documentation: Submit manufacturer's finish warranty information.

1.6 QUALITY ASSURANCE

.1 *****Manufacturer Qualifications:

.1 Company specializing in manufacturing the Products specified in this section with minimum [three (3)] years documented experience.

.2 Provide siding assemblies and accessories from a single manufacturer.

.2 *****Installer Qualifications: Company specializing in performing the work of this Section with minimum [three (3)] years documented experience [and approved by the manufacturer].

.3 *****Mock-Ups: Provide mock-up in accordance with Section [01 43 00] [01 45 00], [[___] m [___] ft] long by [[___] m [___] ft.] wide mock-up of siding [and soffit system], attachments to building [frame], associated vapour retarder and air barrier materials, weep drainage system, sealants and seals, and related insulation.

.1 *****Locate [where jointly agreed between Consultant and Contractor] [where directed by Consultant].

.2 Approved mock-up may remain as part of the Work.

1.7 DELIVERY, STORAGE, AND HANDLING

.1 Transport, handle, store, and protect products in accordance with Section 01 61 00, and as follows:

.1 Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.

.2 Store prefinished material off ground protected from weather, to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

.3 Prevent contact with materials which may cause discolouration or staining.

1.8 WARRANTY

.1 *****Provide a manufacturer's warranty with coverage for finish failure, including peeling, cracking, checking, blistering, chipping and excessive colour fading.

.1 ***** [Twenty (20) year for SMP standard colour finishes]

.2 ***** [Twenty five (25) year for PVDF Premium Printech finishes]

.3 ***** [Twenty five (25) year for PVDF premium 12,000 series finishes]

.4 ***** [Forty (40) year for PVDF NaturClad™ finishes]

Part 2 Products

2.1 MANUFACTURERS

.1 Basis-of-Design Materials: Products named in this Section were used as the basis-of-design for the Project.

.1 ***** [Additional manufacturers offering similar Products may be incorporated into the work of this Section when they meet the performance requirements established by the named Products, and when substitution requests are submitted in accordance with [01 25 00] [01 62 00].]

.2 ***** [Substitutions: Not permitted]

.2 Basis-of-Design Materials: Lenmak Exterior Innovations Inc., Plank™ panel series siding

2.2 DESCRIPTION

.1 *****Wall System: Preformed and factory finished single skin metal siding [and soffit] panels with horizontal plank profile; fastened to [steel] [wood] framing system with concealed fastening [and sub-girt system].

.2 ***** [Soffit System: Preformed [and prefinished] single skin profiled metal panels; fastened to [steel][wood] framing system with concealed fastening system.]

2.3 PERFORMANCE CRITERIA

.1 *****Components: Design and size components to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of wall [as calculated in accordance with the applicable building code] [to a design pressure of [___] kPa [___] lb/sq ft].

.2 *****Maximum Allowable Deflection of Steel Panel: [L/90] [L/180] [L/240] of span

.3 *****Thermal Movement: Design assemblies for expansion and contraction within system components caused by a cycling ambient temperature range of [-40 to +35] degrees Celsius seasonally without overstressing components causing buckling, failure of connections, or other permanent detrimental effects.

.4 Provide expansion joints to accommodate movement within cladding components, and between cladding and structure to prevent permanent distortion or damage to cladding.

.5 Seismic Loads: Design and size components to withstand seismic loads and sway displacement as calculated in accordance with applicable code.

.6 Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.

.7 *****Vapour Retarder: Provide continuity to the building vapour retarder systems at building envelope, in conjunction with vapour retarders specified in Section [07 26 00].

.8 *****Air Seal: Provide continuity to the building air barrier systems at building envelope, in conjunction with air seal materials specified in Section [07 27 00].

2.4 STEEL SHEET MATERIALS

.1 *****Steel: [Galvanized G90 (Z275), to ASTM A653/A653M] [Galvalume AZ150 (AZ50), to ASTM A792/A792M]

.1 *****Thickness: [0.61 mm (24 ga.)] [0.76 mm (22 ga.)] core steel thickness

2.5 ACCESSORIES

.1 *****Fasteners: [Galvanized] [Long-term corrosion resistant coating] [Stainless steel], as recommended by manufacturer.

.2 *****Sealant and Backing Materials: [Polyurethane type] [Silicone type] [As specified in Section 07 92 00].

.3 Foam Glazing Tape: Self-adhered closed-cell polyethylene foam tape, as recommended by manufacturer.

.1 Basis-of-Design Material: Cascade Aqua-tech 2021 Series

2.6 COMPONENTS

.1 *****Cladding [and Soffit] Panels: [Factory coated Galvalume steel], interlocking edges with concealed fasteners and fixed clip for thermal expansion.

.1 Configuration: Horizontal planks [with recessed reveal plates] [with splice plates for appearance of continuous horizontal lengths]

.2 *****Panel Coverage: [152 mm coverage (6 inches)] [213 mm coverage (8.375 inches)] with integrated 19mm (0.75 inch) horizontal reveal.

.2 Clip and Starter Strip: Manufacturer’s recommended nailing clip and starter strip.

.1 *****Thickness: [0.61 mm (24 ga)] [0.84 mm (22 ga)]

.3 Drip Flashing: Manufacturer’s standard profile; thickness and finish to match wall panel.

.4 *****Corner Trim: [Manufacturer’s standard profile] [Custom profile as indicated on Drawings]; thickness and finish to match wall panel.

.5 *****Splice Cover Trim: [Horizontal grain] [Vertical grain] [Reveal type]; thickness and finish to match wall panel.

.6 *****Metal Framing: Galvanized steel [18 gauge framing, hat channels, adjustable Z-girts; [gauge as required by engineered design,] [sizes and profiles as indicated on Drawings] [As indicated in Section 05 41 00]

.7 *****Wood Framing: [To Section 06 10 00] [Framing, furring, strapping; softwood lumber SPF species, [pressure-preservative treated,] sizes and profiles indicated.

2.7 FABRICATION

.1 Form metal profiles true to shape, accurate in size, square, and free from distortions.

.2 Factory fabricate components ready for site installation, in longest practical lengths.

2.8 FINISHES

.1 Steel Finishes:

.1 ****Lenmak NaturClad™ Finish: PVDF coating, nominal 1.1 mil dry film thickness, low gloss, with wood-grain appearance.

.1 **** Colour: [Selected by Consultant from manufacturer's standard range] [Acorn finish] [Autumn finish] [Espresso finish] [Frontier finish] [Gunstock finish] [Wagon Wood finish] [Knotty Pine finish] [Saddle finish] [Barn Board finish]

****OR****

.1 Factory Painted SMP Coating: Two-coat, silicone-modified polyester paint system, 0.90-1.15 mil dry film thickness to ASTM D1005-95, and as follows:

.1 ****Colour: [Selected by Consultant from manufacturer's standard range] [Antique Linen QC3696] [Black QC8262] [Bone White QC8273] [Briarwood Tan QC8331] [Bright Red QC8386] [Cambridge White QC3695] [Charcoal QC8306] [Coffee Brown QC8326] [Dark Brown QC8229] [Dark Red QC8250] [Deep Water Green QC3684] [Forest Green QC8329] [Gold QC8276] [Heron Blue QC8330] [Labrador Blue QC3688] [Melchers Green QC8307] [Metro Brown QC8228] [Mist Green QC8256] [Pacific Turquoise QC8258] [Polar White QC1820-R] [Regent Grey QC1730] [Royal Blue QC8790] [Sage Green QC6089] [Sapphire Blue QC8261] [Slate Blue QC8260] [Spruce Green QC3697] [Stone Grey QC8305] [Surf White QC8316] [Tan QC8315] [Tile Red QC8259] [Turquoise QC8310] [White-White QC8317] [Dark Green]

****OR****

.2 Factory Painted PVDF Standard 12,000 series Coating: Two-coat, 70 percent by weight fluoropolymer resin (Hylar 5000 or Kynar 500), nominal 1.0 mil dry film thickness, and as follows:

.1 ****Colour: [Selected by Consultant from manufacturer's standard colour range] [Bronze] [Champagne Metallic CM12-2007] [Colonial Red CM12-2020] [Copper Penny CM12-2005] [Dark Bronze CM12-2004] [Forest Green CM12-2018] [Hartford Green CM12-2002] [Hemlock Green CM12-2016] [Old Town Grey CM12-2019] [Old Zinc Grey CM12-2003] [Parchment CM12-2015] [Regal Blue CM12-2012] [Regal White CM12-2011] [Retro Red CM12-2010] [Sierra Slate Grey CM12-2009] [Silver Metallic CM12-2008] [Tan CM12-2017] [Terra Cotta CM12-2014] [Twilight Blue CM12-2004] [Weathered Copper CM12-2013] [Weathered Zinc CM12-2006]

****OR****

.1 Factory Painted PVDF Printech Coating: Three-coat, 70 percent by weight fluoropolymer resin (Hylar 5000 or Kynar 500), nominal 1.0 mil dry film thickness, and as follows:

.1 ****Colour: [Selected by Consultant from manufacturer's standard colour range] [Aged Copper] [Dark Zinc] [Light Zinc] [Rustic Red]

2.9 SOURCE QUALITY CONTROL

.1 Non-Conforming Work: Pre-finished post-formed metal panel assemblies may exhibit certain behaviors common to all fabricators. Oil canning is a moderate deformation of sheet metal surfaces, typically caused by uneven stresses at fastening points. Metal forming during panel fabrication may result fine cracks in finishes (crazing) at outer edges or bends. Take reasonable steps to prevent and mitigate these effects. Mild "oil canning" or “crazing” are not deficiencies.

Part 3 Execution

3.1 EXAMINATION

.1 Verify existing conditions before starting work in accordance with Section **** [01 70 00] [01 71 00] [01 73 00], and as follows:

.1 Verify dimensions, tolerances, and method of attachment with other work.

.2 Verify wall openings and adjoining air barrier and vapour retarder materials are ready to receive work of this section.

.3 *****Verify that site measurements are as [indicated on Drawings] [indicated on Shop Drawings] [instructed by the manufacturer].

.4 Report unsatisfactory conditions to Consultant in writing; do not start Work until unsatisfactory conditions are corrected.

3.2 INSTALLATION

.1 Install supporting **** [furring] [framing] secured to [structural framing members] [structural concrete] [structural concrete unit masonry].

.2 Flashing: Install starter flashing, drip and other flashing, corners, edgings, and window and door flashings, and as shown on Drawings.

.3 Install wall cladding **** [and soffit material] to manufacturer's standard installation procedures, providing proper laps true to line, and tight fitting to ensure a weather-tight face.

.4 Secure attachment clips **** [to structural wall faming] as indicated on approved Shop Drawings.

.5 Install finishing flashing, cap flashing, trims and closures.

.6 Attach components in manner not restricting thermal movement.

.7 Attach assembly to ***** [supporting substructure] [structural sheathing].

.8 Align assembly plumb and level, free of twist. Maintain assembly dimensional tolerances, ***** [aligning with adjacent work].

.9 Metal Corrosion Protection: Provide permanent separation material where dissimilar metals contact each other, at cementitious substrates, and corrosive substrates.

.10 Install sealants at junctions with adjoining work and where shown on Drawings, in accordance with Section 07 92 00.

3.3 TOLERANCES

.1 Install assemblies in accordance with Section **** [01 73 00], and as follows:

.1 Maximum Offset from Alignment between Adjacent Members Butting or In-Line: **** [1.6 mm (1/16 inch)]

.2 Maximum Variation from Plane: ***** [6 mm (1/4 inch)]

3.4 ADJUSTING

.1 Replace damaged materials that cannot be satisfactorily repaired.

.2 Remove site cuttings from surfaces without damaging finishes.

.3 Repair and touch up very minor surface damage with colour-matching high quality paint recommended by manufacturer.

3.5 CLEANING

.1 Perform general cleaning requirements for installed work in accordance with Section ***** [01 74 00] [01 74 23], and as follows:

.1 Clear weep holes and drainage pathways of obstructions, dirt, and sealants.

.2 If siding panels show evidence of soiling, clean and wash visible surfaces with mild soap and water. Rinse with clean water.

END OF SECTION