Part 1 GENERAL

1.1 GENERAL REQUIREMENTS

1. The General Conditions of the Contract, Supplementary Conditions, and the General Requirements of Section 01 01 00, form part of this section, and must be read in conjunction with the requirements of this section, and all related sections.

2. The work of this section and related work specified in other sections shall comply with all requirements of Section 01 01 00 – General Requirements.

1.2 SECTION INCLUDES

1. Provision of all labour, materials, equipment and incidental services necessary to provide extensions to tempered glass balustrades, including;

   .1 Glass,
   .2 Support fittings for glass,
   .3 Stainless steel handrails, and fittings.

1.3 RELATED SECTIONS

1. Cast-in-place Concrete – Section 03 30 00

2. Structural Steel – Section 05 12 00Miscellaneous

3. Metals – Section 05 99 00

4. Resilient Flooring – Section 09 65 00

5. Painting and Finishing – Section 09 91 00

1.4 REFERENCE STANDARDS

1. ASTM-A269-01; Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.

2. ASTM-A276-00a; Specification for Stainless Steel Bars and Shapes.

3. ASTM C864-99; Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.

4. ASTM D2240-91; Test Method for Rubber Property - Durometer Hardness.

5. CAN/CGSB-12.1-M90; Tempered or Laminated Safety Glass.

6. CAN/CGSB-12.20-M89; Structural Design of Glass for Buildings.

1.5 DESIGN CRITERIA

1. Design stair balustrade and connections to OBC vertical and horizontal live load requirements. Design shall be performed by a professional engineer licensed to practice in the Province of Ontario.

1.6 QUALITY ASSURANCE

1. Manufacture & Fabrication

    1. Companies to be certified under Division 1 or 2.1 of CSA-W47.1 for fusion welding, and CSA-W55.3 for resistance welding. Provide certification that all welded joints are certified by Canadian Welding Bureau.

2. Installation

    1. Work shall be performed in strict accordance with reviewed shop drawings.

3. Pre-installation Meeting

    1. Convene a pre-installation meeting for the Products specified in this section. Attendees must include, as a minimum, representatives of the following:

        .1 Contractor (Site Superintendent & Project Manager),
        .2 Installation Subcontractor (Site Foreman & Project Manager),
        .3 Related Subcontractors
        .4 Consultant

1.7 SUBMITTALS

1. Shop Drawings

    1. Submit shop drawings in accordance with Section 01 33 00

2. Each shop drawing submitted shall bear the stamp and signature of a qualified Professional Engineer registered in the Place of the Work who has coverage of minimum $2,000,000 liability insurance.

3. Submit all necessary shop drawings, bearing the professional seal and signature of the Subcontractor' Engineer, including design calculations for review by the Consultant. Shop drawings to include all necessary shop details and erection diagrams with:

    1. member sizes, locations, thickness (exclusive of coatings), metallic coatings and mechanical properties,
    2. connection details for attaching framing to itself and to the structure,
    3. dimensions, requirements of related work, and critical installation procedures,
    4. temporary bracing required for erection purposes,
    5. design loads, and

6. welds indicated by welding symbols as defined in CSA-W59.

4. Submit copies of engineering calculations and/or certified data verifying the capacity of members, connectors, connections, and the ability of assemblies to meet the design requirements, signed and sealed by the Subcontractor's Engineer.

5. Do not fabricate until submittals are reviewed and approved by Consultant.

Part 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

1. C.R. Laurence Co. Inc. Toronto ON (905-303-7966).

2. Accent Architectural, Baie D'Urfe, PQ (800-784-5201).

3. Mogg Constructive Inc. Mississauga ON (905-696-9828).

2.2 MATERIALS

1. Stainless Steel Sections and Plates: commercial grade, Type 302/304/316, to STMA276.

2. Welding materials: to CSA W59.

3. High strength bolts: to ASTM A325.

2.3 SYSTEM COMPONENTS

1. System design based on components from CR Laurence.

2. Handrails

   1. Stainless Steel: type 302/304/316 stainless steel.

3. Handrail Brackets: CR Laurence Costal Series (no saddle).

   1. Wall Mount: type 316 stainless steel; catalogue no. HR2FWBS.
   2. Glass Mount: type 316 stainless steel; catalogue no. HR2FGBS.
   3. Post Mount: type 316 stainless steel; catalogue no. HR2FPPS

4. Glass Rail Standoff: CR Laurence

   .1 Base and Cap: type 316 stainless steel; catalogue no. RS0B2134BS

5. Glass: laminated glass to CAN/CGSB-12.1, transparent, minimum ¾" inch thick, using Kuraray SentryGlas® Interlayer; ~19mm nominal thickness to be adjusted

where spans exceed limit. Flexural strength of glass must satisfy OBC requirements for guards including OBC Supplementary Standard SB-13.

6. Shims & Spacers: Neoprene, 80 – 90 (Shore A) durometer hardness to ASTM D2240, purpose-made to suit glazing method, glass weight, and area.

7. Aluminum Base Shoe: CR Laurence B7S Series Mill Aluminum Square Base Shoe drilled for for ¾" glass; catalogue no. B7S20D.

8. Stainless Steel Cap: CR Laurence Brushed Stainless Crisp Corner 11 Gauge Cap Railing for ¾" glass; catalogue no. GRLC107BS

9. Swinging Glass Gate: CR Laurence GRS 1202 Series, Brushed 3.4 Grade Stainless Steel, wall or post mount, with bottom rail lock.

2.4 FINISHES

1. Stainless Steel

    1. Satin (Brushed) finish.

2.5 ACCESSORIES

1. Screws and fasteners:

    1. 19mm stainless steel flat-head self-drilling screws.
    2. 3/8" – 16 threaded rod, hanger bolts, concrete anchors, allen screws, grommets, gaskets, washers, etc.

2.6 FABRICATION

1. Fabricate railing and guards to configurations and details as indicated on the drawings.

2. Weld connections where possible, otherwise bolt connections. Countersink exposed fastenings. Make exposed connections of same material, colour and finish as base material on which they occur.

3. Accurately form connections with exposed faces flush; mitres and joints tight.

4. All joints in handrails shall be concealed type or shall be counter-bored and plugged flush.

5. Grind or file exposed welds and sections smooth.

6. Shop-fabricate in sections as large and complete as practicable.

Part 3 EXECUTION

3.1 INSTALLATION

1. Install plumb and true in exact locations. Provide anchor bolts, bolts and plates for connecting to structure.

2. Hand items over for casting in to concrete to appropriate trades together with setting templates.

End of Section 05 52 10