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| Version | Date | Description of Revisions |
| 1 | August 30, 2006 | Approved final document. |
| 2 | November 13, 2009 | Modified ‘Related Section’ |
| 3 | March 15, 2011 | Minor changes from Legal |
| 4 | June 5, 2012 | Added References and Replacement Parts Section |
| 5 | July 3, 2012 | Reformatted to Remove White Space |
| 6 | April 22, 2015 | General formatting |
| 7 | April 11, 2016 | Phase 1 Update (AV) |
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NOTE:

This is a CONTROLLED Document. Any documents appearing in paper form are not controlled and should be checked against the on-line file version prior to use.

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**The on-line copy is the current version of the document.**

# GEneral

## Related Sections

### [Under "Related Sections", identify other Sections that are related to, and/or dependent on, the work results or information specified elsewhere. The list should be limited to Sections with specific information that the reader might expect to find in this Section, but is specified elsewhere. For example, if hardware for aluminum entrances is specified in the aluminum entrance Section, a cross-reference would be appropriate in the finish hardware Section. The purpose of this cross-referencing is for information only, to aid in finding those other requirements—not to define the scope of the Section.

### Cross-referencing here may also be used to coordinate assemblies or systems whose components may span multiple Sections and which must meet certain performance requirements as an assembly or system.

### Contractor is responsible for coordination of the Work.

### This Section is to be completed/updated during the design development by the Consultant. If it is not applicable to the section for the specific project it may be deleted.]

### [List Sections specifying installation of products supplied but not installed under this Section and indicate specific items.]

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: Execution requirements for ...[item]... specified under this Section.

### [List Sections specifying products installed but not supplied under this Section and indicate specific items.]

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: Product requirements for ...[item]... for installation under this Section.

### [List Sections specifying related requirements.]

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: [Optional short phrase indicating relationship].

#### Section 01300 - Submittals

## References

### Comply with the latest edition of the following statutes, codes, and standards and all amendments thereto.

#### American Society for Testing and Materials (ASTM)

##### ASTM A307-14; Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

##### ASTM A325-14; Standard Specification for High Strength Bolts for Structural Steel Joints.

##### ASTM B26/B26M-14e1; Standard Specification for Aluminum Alloy Sand Castings.

##### ASTM B209-14; Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate.

##### ASTM B221-14;Standard Specification for Aluminum Alloy Extruded Bars, Rod, Wire, Shapes and Tubes.

##### ASTM B241/B241M-12e1; Standard Specification for Aluminum and Aluminum Alloy Seamless Pipe and Seamless Extruded Tube.

#### Canadian Standards Association (CSA)

##### CAN/CSA-S157-05/S157.1-05 (R2015); Strength Design in Aluminum / Commentary on CAN/CSA S157-05, Strength Design in Aluminum.

##### CAN/CSA W47.2-11; Certification of Companies for Fusion Welding of Aluminum.

##### CAN/CSA W59.2-M1991 (R2013); Welded Aluminum Construction.

#### Canadian General Standards Board (CGSB)

##### CAN/CGSB-1.108 Bituminous Solvent Type Paint.

#### Ontario Building Code

#### The Aluminum Association

## Design Requirements

### Design and detail handrail components shall be in accordance with Ontario Building Code and all applicable codes.

## Submittals

### Submit shop drawings in accordance with Section 01300 - Submittals.

### Submit shop drawings indicating handrail profiles, connections, terminations, and accessories.

### Submit shop drawings indicating project specific scale plans, elevations and details of handrails.

### Submit minimum 400 mm long sample indicating connections and finishes.

# PRODUCTS

## Materials

### Provide aluminum components conforming to the following alloy designations of The Aluminum Association:

#### Extruded Shapes - Structural 6061-T6

#### Smooth Plates 5083-H34

#### Rivets and Bolts 6061-T6

#### Checkered or Tread Plate 6061-T6

#### Castings 356-T2

#### Handrailing 6351-T6

### Finish for Aluminum components: Architectural Class I Anodic Coating, AA-C22A41 clear.

### Bolts: to ASTM A307.

### High strength bolts: to ASTM A325.

## Fabrication

### Fabricate posts and railings of 50 mm nominal size 6063-T6 Schedule 40 aluminum pipe, 48.26 mm o.d., 3.68 mm wall thickness with shop welded connections.

### Fabricate posts and railings to configuration indicated and to meet the requirement of the Ontario Building Code.

### Accurately form connections with exposed faces flush; mitres and joints tight. Make exposed connections of same material, colour and finish as base material on which they occur.

### Grind or file exposed welds smooth.

### Shop fabricate railings in sections as large and complete as practicable.

### Fabricate gates and hinged assemblies complete with all necessary hardware including but not limited to hinges, hasps, cane bolts and receivers.

### Fabricate safety chains of Type 304 stainless steel safety chain with links 34 mm long by 6 mm cross section, and stainless steel safety snap and eyebolt.

### Toe-board: 125 mm high, 6.0 mm thick aluminum plate.

# EXECUTION

## Installation

### Install fabrications plumb, level, structurally sound, securely fastened, and in correct locations and positions.

### Use welded connections wherever possible to provide rigid structure. Provide anchor rods, bolts and plates for connecting railings to structure.

### Hand items over for casting into concrete or building into masonry to appropriate trades together with setting templates.

### Perform welding work in accordance with CSA W59.2 unless specified otherwise.

### Use stainless steel anchors.

### Apply isolation coating to surfaces between dissimilar metals, and between metal and concrete, mortar, grout or masonry.

### Provide continuous toe-board at all handrails except at gates or where concrete curbs of 125mm or higher are installed.

**END OF SECTION**