



I N V I Z I J

## TENDER ADDENDUM

<b>PROJECT:</b>	YWCA Carole Anne's Place Renovations, Hamilton ON	<b>NO. 02</b>
<b>PROJECT NO.:</b>	21-004	<b>ISSUE DATE:</b> June 14, 2022

<b>1.1</b>	<b>Architectural Specifications Added:</b> 01 21 00 Allowances Division 08
<b>1.2</b>	<b>Bidder Questions</b>
Q1	It looks as if there is a window or it is possibly just an opening in the kitchen, please confirm and provide material and size for this window if part of contract.
A1	Specification added for a counter shutter in the kitchen where opening shown. Size to be 1220mm high and 1320mm wide, at 915mm sill height.
Q2	Q/ Will the Fire Alarm system be a complete system by the owner? I.e. Does their vendor, Niagara Fire Alarm, perform all conduit work and the installation of the devices?
A2	The GC will perform all conduit work. Niagara Fire Alarm will be supplying and installing the devices.

<b>DISTRIBUTION</b> (via email only):	
CLIENT	YWCA Hamilton
PROJECT MANAGER	Sarah Borde
CONTRACTORS	Per bidder's list
CONSULTANT TEAM	Kalos, DEI
OTHER	

1 SECTION INCLUDES

1. Cash Allowances

1.2 CASH ALLOWANCES

1. Refer to GC 4.1.
2. Include, in the Contract Price, Cash Allowances stated herein.
3. Cash Allowances shall be expended only on specific written instructions from the Consultant.
4. Include all applicable Taxes, except the Harmonized Sales Tax (HST), in each authorized expenditure from Cash Allowances.
5. Cash Allowances, unless otherwise specified, cover the net cost to the Contractor of services, products, construction machinery and equipment, freight, handling, unloading, storage, installation and other authorized expenses incurred in performing the Work.
6. The Contract Price, and not the Cash Allowances, includes the Contractor's overhead and profit in connection with such Cash Allowances.
7. The Contract Price will be adjusted by written Change Order to provide for an excess or deficit to the Cash Allowances.
8. Where costs under a Cash Allowance exceed the amount of the Allowance, the Contractor will be compensated for any excess incurred and substantiated, plus overhead and profit as set out in the Contract Documents.
9. The Contractor shall carry and administer any Cash Allowances specified in various Sections of the Specifications. Cash Allowances shall not be included by a Subcontractor in the amount for Subcontract Work.
10. Direct labour shall mean the hourly wages paid to the employees and shall exclude all other charges. Direct material shall mean list price less all trade discounts; do not credit cash discounts given to Contractor made before invoice due date.
11. Progress payments on account of work authorized under Cash Allowances shall be included in the Contractor's monthly application for payment.
12. A schedule shall be prepared jointly by the Consultant and Contractor to show when items called for under the Cash Allowances must be authorized by the Consultant for ordering purposes so that the progress of the Work will not be delayed.
13. Include in the Contract Price the following Cash Allowances which exclude the Harmonized Sales Tax (HST):
  1. Supply of Finishing Hardware. Includes the supply and installation of Automatic Door Operators. Finishing hardware for millwork and card readers/fobs are not included in this allowance. Provide conduit and rough-ins for electronic door hardware as per Div. 26, 28.  
**\$50,000.00** (excluding HST)

## **PART 1 - GENERAL**

### 1.1 GENERAL REQUIREMENTS

- 1.1.1 Division One, General Requirements is part of this Section and shall apply as if repeated here.

### 1.2 REFERENCED STANDARDS

- 1.2.1 ANSI A115.1G Installation Guide for Doors and Hardware
- 1.2.2 ANSI A224.1 Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames
- 1.2.3 ANSI A250.4 Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings
- 1.2.4 ASTM A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
- 1.2.5 ASTM A924/A924M Standard Specification for General Requirements for Sheet Steel, Metallic-Coated by the Hot-Dip Process
- 1.2.6 ASTM B117 Method of Salt Spray (Fog) Testing
- 1.2.7 ASTM C177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
- 1.2.8 ASTM C518 Test Method for Steady State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- 1.2.9 ASTM C578 Specification for Rigid, Cellular Polystyrene Thermal Insulation
- 1.2.10 ASTM C665 Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing
- 1.2.11 ASTM C1289 Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
- 1.2.12 ASTM D1735 Practice for Testing Water Resistance of Coating Using Water Fog Apparatus
- 1.2.13 ASTM E 90 Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions
- 1.2.14 Not used
- 1.2.15 Not used
- 1.2.16 ASTM E 413 Classification for Rating Sound Insulation
- 1.2.17 CAN4-S104-M80 Fire Tests of Door Assemblies
- 1.2.18 CAN4-S105-M85 Standard Specification for Fire Door Frames Meeting the Performance Required by CAN4-S104
- 1.2.19 CAN4-S106-M80 Standard Method for Fire Tests of Window and Glass Block Assemblies
- 1.2.20 CGSB 41-Gp-19Ma Rigid Vinyl Extrusions for Windows and Doors
- 1.2.21 CGSB 82.5-M88 Insulated Steel Doors
- 1.2.22 CSA A101-M83 Mineral Fiber Thermal Insulation for Buildings
- 1.2.23 CSA W59-M89 Welded Steel Construction (Metal Arc Welding)
- 1.2.24 ISO 9001 Quality Systems - Model for Quality Assurance
- 1.2.25 NAAMM-HMMA 840 Installation Guide for Commercial Steel Doors and Frames
- 1.2.26 NFPA-80 Fire Doors and Windows
- 1.2.27 NFPA-252 Fire Tests of Door Assemblies
- 1.2.28 CSDMA Dimensional Standards for Commercial Steel Doors and Frames
- 1.2.29 Fleming Fire Labeling Specifications
- 1.2.30 Manufacturers Standard and Galvanized Sheet Gages
- 1.2.31 ULC List of Equipment and Materials, Volume 2
- 1.2.32 WH Certification Listings

### 1.3 REQUIREMENTS OF REGULATORY AGENCIES

1.3.1 Install fire labeled steel door and frame product in accordance with NFPA-80, current edition, unless specified otherwise.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

1.4.1 Brace frame units to prevent distortion in shipment, and protect finished surfaces by sturdy protective wrappings.

1.4.2 Store doors in protective wrappings in a secure dry location, to ensure that they are not damaged until hung. Install them only when work has progressed to a stage when no damage will occur to them in place.

1.5 SUBMITTALS

1.5.1 Product Data: Submit manufacturer's Product data in accordance with section 01001 indicating door and frame construction.

1.5.2 Shop Drawings: Submit shop drawings in accordance with Section 01001 for each type of door and frame indicating:

- .1 Thickness and type of steel
- .2 Thickness and type of core.
- .3 Thickness and type of steel stiffeners and location of them within the door.
- .4 Thickness and type of metal facing on edges of door and method of fastening.
- .5 Location of mortises, reinforcement, anchorages, joining, welding, sleeving, exposed fasteners, openings and arrangement for hardware.

1.5.3 Include schedule identifying each unit with door marks and numbers relating to numbering on Contract Drawings and in door schedule. Indicate doors and frames to be fire rated.

1.6 QUALITY ASSURANCE

1.6.1 Perform Work in accordance with requirements by a member of the Canadian Steel Door and Frame Manufacturers Association.

1.6.2 Label and list fire rated doors and frames by an organization acceptable to authorities having jurisdiction and accredited by the Standards Council of Canada. Labelling is to be in accordance with NFPA 80.

1.6.3 Design exterior frame assemblies to accommodate expansion and contraction when subjected to minimum and maximum surface temperature of -35o C to 35o C.

**PART 2 - PRODUCTS**

2.1 ACCEPTABLE MANUFACTURERS

2.1.1 Baron Metal Industries Inc.

2.1.2 Daybar Industries Limited.

2.1.3 Fleming Steel Doors and Frames.

2.2 MATERIALS

- 2.2.1 Steel: ASTM A568/A568M, Class 1; Commercial grade steel, hot dip galvanized to ASTM A653/A653M, SF075 satin coat finish. Minimum base steel thickness:
- |     |                            |        |
|-----|----------------------------|--------|
| .1  | Frames                     | 1.6 mm |
| .2  | Typical doors              | 1.6 mm |
| .3  | Acoustic doors             | 1.6 mm |
| .4  | Interior Stiffeners        | 0.9 mm |
| .5  | Lock/strike reinforcements | 3.0 mm |
| .6  | Hinge reinforcements       | 3.0 mm |
| .7  | All other reinforcement    | 3.0 mm |
| .8  | Top and bottom channels    | 1.2 mm |
| .9  | Guard boxes                | 0.9 mm |
| .10 | Jamb spreaders             | 0.9 mm |
- 2.2.2 Top caps and thermal breaks: CGSB 41-GP-19Ma; Rigid PVC extrusions.
- 2.2.3 Primer: CAN/CGSB 1.198.
- 2.2.4 Core material:
- |    |   |
|----|---|
| .1 | Interior Doors: Solid Core Wood (SCWD)  |
| .2 | Honeycomb: Structural small cell (1" (25.4mm) maximum) kraft paper "honeycomb". Weight: 80 lb. (36.3kg) per ream (minimum), density: 1.03 pcf (16.5kg/m <sup>3</sup> ) (minimum), sanded to the required thickness.     |
| .3 | Insulated & Fire Rated - Polystyrene: Rigid extruded, fire retardant, closed cell board, Type 1, density: 1 to 2 pcf (16 to 32 kg/m <sup>3</sup> ), thermal values: R 6.0 (RSI 1.06) (minimum), conforming to ASTM C578 |
| .4 | Insulated - Polyisocyanurate: Rigid foam, closed cell, faced board, thermal value: R12.3 (RSI 2.17) (minimum), conforming to ASTM C1289   |
- 2.2.5 Screws: Stainless steel screws with countersunk flat head.
- 2.2.6 Door silencers: Type 6-180, black neoprene.
- 2.2.7 Frame anchors:
- |    |  |
|----|--|
| .1 | Frames in masonry: 1.2 mm minimum, adjustable T-strap jamb anchors.  |
| .2 | Frames in steel stud partitions: 0.9 mm minimum steel anchors of suitable design securely welded inside each jamb. |
| .3 | Frames in existing masonry/concrete walls: 0.9 mm minimum frame anchors to suit design                             |
| .4 | Labelled frames: In accordance with ULC requirements.  |
- 2.2.8 Floor anchors: 3.0mm min. adjustable floor clip angles c/w 2 holes for anchorage to floor.
- 2.2.9 Tempered glass: CAN/CGSB 12.11-M, Type 2, Class B, Category II, clear, minimum 6 mm and 12 mm thick for use at door vision panels and screens as required.
- 2.2.10 Glazing Stops: 1.6 mm base steel thickness, formed, drilled and countersunk for fasteners.
- 2.2.11 Galvanizing:
- |    |  |
|----|--|
| .1 | <u>Interior units</u> : steel sheet wipe coated with zinc-iron alloy to a total mass coating both sides of 75 g/m <sup>2</sup> to conform to ASTM A525M, ZF75 coating designation. |
|----|--|

2.3 FABRICATION - GENERALLY

- 2.3.1 Fit and assemble work in the shop, where possible. Make trial assembly in shop when not possible.
- 2.3.2 Fabricate, reinforce and anchor component parts and assemblies to support loads that usage will impose without deflection detrimental to function, appearance or safety. For interior doors either the use of metal stiffeners with the spaces between stiffeners filled with insulation, or honeycomb structural core will be acceptable. For exterior doors the core is to be completely filled with insulation.
- 2.3.3 Reinforce components to resist in-use stresses imposed by finishing and security hardware.
- 2.3.4 Prepare frames and doors for finish hardware with mortises and reinforcement. Drill and tap to template information. Reinforce for surface-mounted hardware and for door closer brackets. Provide for concealed door closers where specified. Install mortar guards at cut-outs and reinforcing plates in frame. For cylindrical locks install reinforcing units to lock manufacturer's specification. For mortise locks provide a suitable internal bracket to hold the lock case rigidly in the centre of the door. Preparations shall include, but not be limited to, those required for over-weight oversize hinges, continuous hinges, mortise locks, mortise and concealed vertical rod exit devices, surface and concealed door closers, concealed overhead stops and slides.
- 2.3.5 Provide for anticipated expansion and contraction of frames and supports.
- 2.3.6 Fit elements at intersections and joints accurately together in true planes, plumb and level.
- 2.3.7 Weld frame and door assemblies. Weld continuously at joints exposed to view including door edge seams, or at joints through which air or water could penetrate from the exterior of the building to the interior.
- 2.3.8 Where welding is impossible, connections may be bolted. Ream drilled holes and leave exposed edges clean and smooth.
- 2.3.9 Isolate from each other dissimilar metals and metal from concrete or masonry, to prevent electrolysis.

2.4 DOOR AND SCREEN FRAMES

- 2.4.1 Fabricate frames to details shown on Drawings using welded construction.
- 2.4.2 Fabricate steel frames in minimum base steel thickness specified. Minimum frame material thickness applies only to work which does not otherwise require heavier gauges to meet specified fire-rated construction.
- 2.4.3 Touch up frames in the factory where coating has been removed.
- 2.4.4 Where members join at corners, cut mitres and weld continuously along inside welding.
- 2.4.5 Attach two channel spreaders at bottom of door frames to maintain square alignment. Provide removable attachment for spreaders on frames that to not extend below finished floor, and remove them after frames are built in.

- 2.4.6 Incorporate structural stiffeners for frame members where required to withstand loadings. Securely anchor them at bottom and top. Where they extend above ceiling, anchor them to concrete or structural framing to suit site conditions and in such a way that load from the concrete is not transferred to the frames.
- 2.4.7 Install three rubber bumpers in latch side stops of each interior door frame. Locate lowest bumper 225 mm above bottom of door.

## 2.5 DOORS AND PANELS

- 2.5.1 Fabricate interior and exterior doors and panels with sheet steel in specified base steel thickness.
- 2.5.2 Minimum panel thickness applies only to doors not otherwise requiring heavier gauges to meet specified fire-rated construction.
- 2.5.3 Fabricate doors with faces true and smooth, and with no dimples or welds visible.
- 2.5.4 Bevel edges of stiles to suit door swing.
- 2.5.5 Locate hardware to Canadian Steel Door & Frame Manufacturer's Association Standard, unless shown otherwise on Drawings, Door Schedule or Finishing Hardware Schedule.
- 2.5.6 Fill solid all voids within doors and panels with insulation, or honeycomb core. For exterior doors and panels, fill voids with insulation.
- 2.5.7 Fabricate muntins, removable stops, and glass mouldings of minimum 1.2 mm steel.
- 2.5.8 Prepare doors to receive glass and grilles. Install grilles. Secure removable stops with countersunk Phillips oval head screws symmetrically spaced on stop lengths.
- 2.5.9 Close top and bottom edges of exterior doors to make a weathertight seal, and doors to which the tops can be seen from stair landings or other high elevations, so that they are flush with face edges.

## 2.6 ANCHORS

- 2.6.1 Provide frames for installation in masonry walls with the following number of anchors:
  - .1 Frames up to 2296 mm height, 3 anchors
  - .2 Frames 2296 mm to 2438 mm, 4 anchors
  - .3 Frames over 2438 mm, 1 anchor for each 600 mm or fraction thereof in height.
- 2.6.2 Provide frames for installation in stud partitions with the following number of anchors:
  - .1 Frames up to 2296 mm height, 4 anchors
  - .2 Frames 2296 mm to 2438 mm, 5 anchors
  - .3 Frames over 2438 mm, 5 anchors, plus 1 additional for each 600 mm or fraction thereof over 2438 mm.
- 2.6.3 Provide frames to be anchored to previously-placed concrete, masonry, or structural steel, with anchors of suitable design, as shown on reviewed shop drawings.
- 2.6.4 Securely weld adjustable floor anchors to inside of each jamb profile, with two holes provided at each jamb for floor anchorage.
- 2.6.5 Anchors shall have minimum gauges: "T" strap type, 1.6 mm "L" type, 1.2 mm; wire type, 3.9 mm diameter; stirrup type, 1.6 mm; stud type, 1.2 mm; jamb spreaders; 1.2mm.

2.7 FINISHING

- 2.7.1 Carbon Steel: Clean and smooth work at welds which has been ground. Fill if necessary, and prime all areas from which zinc has been removed.

**PART 3 - EXECUTION**

3.1 INSTALLATION

- 3.1.1 Installation of the work of this Section is specified in Sections 04 20 00 and 06 20 10.

3.2 PREPARATION

- 3.2.1 Door and frames shall be prepared for, but not limited to preparations for heavy weight oversize butt hinges, continuous hinges, cylindrical locksets, rim exit devices, surface door closers and concealed overhead stops.

– END OF SECTION –



**THIS PAGE INTENTIONALLY LEFT BLANK**

- 1 General
- 1.1 SECTION INCLUDES
  - .1 Counter shutters, non-rated.
- 1.2 RELATED SECTIONS
  - .3 Section 05 55 00 - Metal Fabrications: miscellaneous metal brackets, shrouds, etc.
  - .4 Section 09 91 00 - Painting and Finishing: site finishing.
- 1.3 REFERENCES
  - .1 ASTM B209M-06: Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric).
  - .2 ASTM B221/B221M-05: Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
  - .3 CSA G40.20-04: General Requirements for Rolled or Welded Structural Quality Steel.
  - .4 CSA G40.21-04: Structural Quality Steels.
  - .5 CAN/CSA-G164-M92 (R2003): Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .6 CSA W47.1-03: Certification of Companies for Fusion Welding of Steel Structures.
  - .7 CSA W55.3-1965 (R2003): Resistance Welding Qualification Code for Fabricators of Structural Members Used In Buildings.
  - .8 CSA W59-03: Welded Steel Construction (Metal Arc Welding).
- 1.4 SYSTEM DESCRIPTION
  - .1 Non-Rated Counter Shutter: metal construction, manual push-up operation.
- 1.5 SUBMITTALS
  - .1 Submit Shop Drawings as specified in Section 01 33 00.
  - .2 Shop Drawings: Indicate sizes, closure type, arrangement of hardware, required clearances, fabrication methods, and anchorage details.
- 1.6 CLOSEOUT SUBMITTALS
  - .1 Maintenance Data: duplicate copies of manufacturer's printed maintenance instructions.
- 1.7 QUALITY ASSURANCE
  - .1 Fabricator: company specializing in fabricating coiling doors and grille assemblies, with three years documented experience and approved under CSA W47.1 and CSA W55.3.
- 1.8 PROJECT CONDITIONS
  - .1 Prior to fabrication, verify all existing conditions and take any field measurements necessary to ensure a perfect fit of all fabricated metal items.
  - .2 Report deficiencies and misalignments to Consultant for correction.
- 1.9 MAINTENANCE

Substantial Performance of the Work.

2 Products

2.1 MANUFACTURERS

.1 Manufacturers of counter shutters having Product considered acceptable for use:

- .1 Amstel.
- .2 Atlas Door.
- .3 Cookson Company.
- .4 Overhead Door Corporation.
- .5 Wayne-Dalton Kinnear.
- .6 McKeon Door Company.
- .7 Security Rollo Ltd.

.2 Substitutions: refer to Section 01 62 00.

2.2 MATERIALS

- .1 Sheet Steel: to CSA G40.20.
- .2 Sections and Plates: sheet steel to CSA G40.21.
- .3 Extruded Aluminum: to ASTM B221/B221M, 6063 alloy, T5 temper.
- .4 Sheet Aluminum: to ASTM B209M, 5005 alloy, H14 temper.
- .5 Fasteners: Series 300 stainless steel.
- .6 Welding Materials: to CSA W59.
- .7 Primer: to CGSB 85-GP-10M, red; for shop application and field touch-up.

2.3 COMPONENTS

- .1 Curtain Slat: 3.0 mm thick extruded aluminum construction; 10 mm deep, 32 mm wide flat profile.
- .2 Bottom Slat: galvanized steel construction; tubular shape with slide bolts.
- .3 Counterbalance Assembly: helical springs with spring barrel.
- .4 Curtain Hood: maximum 174 x 174 mm custom size, fabricated using 0.46 mm thick galvanized steel.
- .5 Brackets: galvanized steel construction; sizes and profiles recommended by shutter manufacturer.
- .6 Guides: galvanized steel construction; box type.
- .7 Seals: flexible vinyl type.
- .8 Latches: heavy duty type.

2.4 FABRICATION

- .1 Provide counter balance assembly with torsion spring for easy manual operation.
- .2 Store curtain in metal hood.

- .3 Provide heavy duty latches to secure counter shutters in both the open and closed positions.

2.5

SHOP FINISHING

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

- .2 Steel: Prime paint items with two coats.
- .3 Galvanizing: to CAN/CSA-G164-M; hot dipped method, minimum 380 g/m2 zinc coating.
- .4 Aluminum: Anodized to Aluminum Association Specification AA-M12C22A31, Class II Clear

3

Execution

3.1

EXAMINATION

- .1 Site measure existing openings to ensure suitability of existing conditions.
- .2 Beginning of installation implies acceptance of existing conditions.

3.2

INSTALLATION

- .1 Securely install unit c/w all necessary fitments and trim, plumb and square in accordance with accepted Shop Drawings.
- .2 Comply with manufacturer's installation guidelines.
- .3 Adjust counter shutters to operate correctly in accordance with manufacturer's submitted product data.

END OF SECTION

**PART 1 - GENERAL**

1.1 GENERAL REQUIREMENTS

1.1.1 The General Conditions and Supplementary General Conditions, and all other requirements of Divisions 01, shall apply to this Section of the Work.

1.2 SUPPLY OF HARDWARE

1.2.1 Supply and delivery, to the Place of Work, of all finish hardware for this project including, but not limited to, all new & (E) swing doors, millwork locks, mag locks and key switches and the supply, delivery and installation of the following: automatic door operators, barrier free door operator column switches, and the following items in the Single Use washrooms: Illuminated push plates, Dome light & sounder "assistance required", electric strikes, push to locks with annunciator, annunciator assistance required, press for assistance tape switches. The cost of all the finish hardware is to be paid for out of the Cash Allowance in Section 01 21 00 of these Specifications.

1.2.2 Doors & Frames are to be prepared for, but not limited to preparations for heavy weight oversize butt hinges, continuous hinges, cylindrical locksets, rim exit devices, surface door closers and concealed overhead stops.

1.2.3 The installation of all millwork related finish hardware is to be by the Millwork Contractor and be included in their base bid price. Refer to Division 06 40 00.

1.2.4 The Electro-Mechanical Security Hardware is not included in the allowance.

1.2.5 Division 26, 28 is to supply and install conduit, junction boxes and wiring (low voltage) for and make electrical power connections to Automatic Door Operators, Magnetic Locking Systems and Electrical Locking Systems.

1.3 SUPPLY AND INSTALLATION OF AUTOMATIC DOOR OPERATORS

1.3.1 The supply and installation of Automatic Door Operators & Magnetic Locking Systems is to be by the Finishing Hardware Supplier and the cost is to be included in the Contract Price. paid for out of the Cash Allowance in Section 01 21 00 of these Specifications.

1.3.2 Division 26, 28 is to supply and install conduit, junction boxes and wiring for and make electrical power connections to Automatic Door Operators & Magnetic Locking Systems.

1.4 RELATED SECTIONS

1.4.1 Section 06 20 10 Installation of Doors and Finish Hardware

1.4.2 Section 06 40 00 Architectural Woodwork

1.4.3 Section 08 11 00 Hollow Metal Doors, Frames, Panels and Screens.

1.4.4 Division 26, 28 Electrical

1.5 EXTENT OF WORK

1.5.1 Supply direct from the distributor, off-load and place in designated storage space at the Place of Work, all finish hardware specified, including necessary fastening devices.

1.5.2 Store finishing hardware in locked, clean and dry area.

1.5.3 Give on-site assistance as required.

1.6 CODES

1.6.1 Hardware provided shall comply with codes and requirements of all governing authorities, and be as specified.

1.6.2 Provide hardware items with characteristics, which will provide specified fire ratings and conform to exit requirements of all governing authorities.

1.7 SUBMITTALS

1.7.1 Finishing Hardware Schedule: Furnish one (1) digital copy, for reproduction, of schedule to trades for field construction.

1.7.2 Maintenance Instructions: Instruct the Owner's representative in proper care and preventative maintenance of all hardware to assure longevity of operation.

1.7.3 Operations and Maintenance Manual: Provide one copy of the final Finishing Hardware Schedule and Maintenance Instructions in the Operations and Maintenance manual required under Section 01 33 00.

1.7.4 Samples: Further to requirements of Section 01 33 00, submit for review 1 catalogue cut sample of each latchset, lockset, combination push/pulls, closer(s), wall stops, butt hinges, continuous hinges, door bottoms and weatherstripping.

1.8 PRODUCT HANDLING

1.8.1 It shall be the responsibility of the door/frame manufacturer to library complete and up to date template literature for manufactured hardware.

1.8.2 Package each item of hardware individually complete with all trim and necessary fastenings and accessories including wrenches, keys, and other appurtenances required to ensure correct installation. Mark each item as to contents and appropriate use in specified groups.

1.8.3 Provide kickplates with an easily removable covering to protect against scratches, abrasions and tarnishing.

1.9 TEMPLATES

1.9.1 It shall be the responsibility of the door/frame manufacturer to library complete and up to date template literature for manufactured hardware.

1.10 SCHEDULES

1.10.1 Finishing Hardware Supplier will prepare a separate Hardware Schedule for use on the Work, which will list the type, selected manufacturer's name and product number, location and finish of all hardware, and complete cross reference to the Door and Frame Schedules and the architectural woodwork details.

1.10.2 Finishing Hardware Supplier will prepare a Keying Schedule recognizing Owner requirements.

1.10.3 These Schedules will be determined within four weeks after award of Contract.

1.11 KEY CONTROL SECURITY

1.11.1 Change key for all locks will be placed in key cabinet by Owner.

1.11.2 Supplier shall forward all keys and cylinders to Owner. Contractor shall request use of temporary cylinders and keys from Owner.

1.12 COORDINATION

1.12.1 Co-ordinate Work of this Section to ensure all information and materials are promptly provided, to ensure orderly and expeditious progress of Work, and to comply with schedule for completion of all phases of the Work.

1.11.2 Within three (3) weeks of finish hardware contract award, submit to Consultant confirmation of orders to suppliers. Finish hardware supplier shall be designated by the Owner.

1.11.3 Provide qualified staff to correctly categorize, mark, and arrange each item in groups to enable efficient dispensing, in specified hardware sections for each door, to installation trades.

1.11.4 Provide qualified staff on site, promptly, to assist installation trades, subsequent to being requested and to ensure that all hardware is being installed correctly.

1.13 WARRANTY

1.13.1 Contractor hereby warrants that the Work of this Section is to remain free of defects in materials, quality of work, and operation in accordance with the requirements of the General and Supplementary General Conditions, but for a period of minimum one (1), and up to 10 years for door closers. Warranty will vary depending on product.

1.13.2 Contractor further agrees to promptly remove, replace and reinstall material, upon verification that defects in material, quality of work, or operation are in evidence.

**PART 2 - PRODUCTS**

2.1 MATERIALS

2.1.1 Material provided as listed in the Finishing Hardware Schedule.

2.1.2 Provide all items complete with fastening devices necessary to ensure a neat, secure and complete installation.

2.2 KEYING INSTRUCTIONS

2.2.1 All locksets, exit devices and cylinders, on this project, shall be registered with the lock manufacturer for either additions to an existing system or the establishment of a new keying system, as established by the Owner.

2.2.2 Provide two (2) change keys per lock.

2.2.3 Hardware supplier shall coordinate with Owner for final keying schedule.

2.2.4 Contractor to provide construction cores when a construction key system has been requested by the Owner.

2.2.5 Provide all permanent cores and keys to Owner.

2.3 FASTENINGS

2.3.1 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.

2.3.2 Exposed fastening devices to match finish of hardware.

2.4.3 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to cover fasteners.

2.3.4 Use fasteners compatible with material through which they pass.

**PART 3 - EXECUTION**

3.1 EXAMINATION

3.1.1 Before furnishing any hardware, carefully check drawings of Work requiring hardware, verify door swings, check door and frame materials and review operating conditions, and assure that hardware will fit Work to be attached.

3.1.2 Point out special requirements to installer. Make final adjustment of hardware, in particular closer arms, valves and locksets; all to work properly.

3.2 FIELD QUALITY CONTROL

3.2.1 General contractor is to advise, in writing of any, and all, Work being performed which will prejudice the installation or correct operation of items of hardware.

3.2.2 Where door stop contacts door pulls, mount stop to strike bottom of pull.

3.2.3 Installation of a key control cabinet, where identified, shall be by the general contractor, in a location determined with the owner.

3.2.4 The general contractor is to remove all construction cores when directed by Consultant then install all permanent cores & check operation of all locks.

3.2.5 Upon completion of installation of hardware, hardware supplier shall arrange and conduct, in company of Consultant and Contractor, inspections to verify that all hardware is installed, adjusted and functioning satisfactorily and is complete with all required trim and accessories, and fastenings are adequately secured and accepted. Where necessary, recommend adjustments of such items as closer arms, valves, door holders and latch and locksets. Report all comments in writing to Consultant and Contractor.

3.2.6 Any and all substitutions of specified products, which do not meet conditions of this Specification, shall be removed from Site and replaced with those products specified in the Finishing Hardware Schedule at no additional cost to the Owner.

3.3 MOUNTING LOCATIONS



3.3.1 Allow for mounting of all items at standard heights given in Hardware Schedule. For architectural woodwork mounting locations, refer to Drawings.

3.3.2 Conform to requirements of Section 3.8 of the Ontario Building Code (OBC) 2012, including latest amendments, and the City of Hamilton Barrier-Free Design Guidelines, for mounting locations of hardware for barrier-free access.

3.4 SETUP KEYING SYSTEM AND CABINET

3.4.1 The general contract shall, under the owner's direction, set up the key control system with file key tags, duplicate key tags, numerical index, alphabetical index and key change index, label shields, control book and key receipt cards.

3.4.2 The general contract shall, place file keys and duplicate keys in key cabinet on their respective hooks.

3.4.3 The general contract shall, lock key cabinet and turn over key to Owner.

– END OF SECTION –

**PART 1 - GENERAL**

1.1 GENERAL REQUIREMENTS

- 1.1.1 Division One, General Requirements is part of this Section and shall apply as if repeated here.

1.2 INCLUDES BUT NOT LIMITED TO

- 1.2.1 Glazing of Hollow Metal Doors and Screens.  
1.2.2 Glazing of Flush Wood Doors.  
1.2.3 Unframed and Framed Mirrors.

1.3 RELATED WORK SPECIFIED ELSEWHERE – NOT USED

1.4 SHOP DRAWINGS

- 1.4.1 Submit shop drawings in accordance with Section 01 33 23.  
1.4.2 Indicate proposed mirror joint locations. Note joints over sinks will not be acceptable. Coordinate location with Consultant.

1.5 REFERENCED STANDARDS

1.5.1 ASTM International

- .1 ASTM C 542-[05], Standard Specification for Lock-Strip Gaskets.  
.2 ASTM D 790-[07e1], Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.  
.3 ASTM D 1003-[07e1], Standard Test Method for Haze and Luminous Transmittance of Plastics.  
.4 ASTM D 1929-[96(R2001)e1], Standard Test Method for Determining Ignition Temperature of Plastics.  
.5 ASTM D 2240-[05], Standard Test Method for Rubber Property - Durometer Hardness.  
.6 ASTM E 84-[10], Standard Test Method for Surface Burning Characteristics of Building Materials.  
.7 ASTM E 330-[02], Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.  
.8 ASTM F 1233-[08], Standard Test Method for Security Glazing Materials and Systems.

1.5.2 Canadian General Standards Board (CGSB)

- .1 CAN/CGSB-12.1-[M90], Tempered or Laminated Safety Glass.  
.2 CAN/CGSB-12.2-[M91], Flat, Clear Sheet Glass.  
.3 CAN/CGSB-12.3-[M91], Flat, Clear Float Glass.  
.4 CAN/CGSB-12.4-[M91], Heat Absorbing Glass.  
.5 CAN/CGSB-12.5-M86, Mirrors, Silvered.  
.6 CAN/CGSB-12.6-[M91], Transparent (One-Way) Mirrors.  
.7 CAN/CGSB-12.8-[97], Insulating Glass Units.  
.8 CAN/CGSB-12.8-[97] (Amendment), Insulating Glass Units.  
.9 CAN/CGSB-12.9-[M91], Spandrel Glass.  
.10 CAN/CGSB-12.10-[M76], Glass, Light and Heat Reflecting.  
.11 CAN/CGSB-12.11-[M90], Wired Safety Glass.  
.12 CAN/CGSB-12.12-[M90], Plastic Safety Glazing Sheets.  
.13 CAN/CGSB-12.13-[M91], Patterned Glass.

- 1.5.3 Environmental Choice Program (ECP)
  - .1 CCD-045-[95(R2005)], Sealants and Caulking Compounds.
- 1.5.4 Glass Association of North American (GANA)
  - .1 GANA Glazing Manual - [2008].
  - .2 GANA Laminated Glazing Reference Manual - [2009].
- 1.5.5 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
  - .1 SCAQMD Rule 1168-[A2005], Adhesives and Sealants Applications.
- 1.6 EXTENDED WARRANTY
  - 1.6.1 Submit a warranty for mirrors in accordance with Section 01 33 00, covering the repair or replacement of defective work for a period of 4 years from the expiration of the one-year warranty stated in the General Conditions.
  - 1.6.2 Warranty shall apply against defects in workmanship and materials and, against silver deterioration and loosening of fastenings.
  - 1.6.3 Total warranty period shall be 5 years.
- 1.7 SAMPLES
  - 1.7.1 On request, submit samples of glass, unframed mirror and framed mirror in accordance with Section 01 33 00 for Consultant's approval.

## **PART 2 - PRODUCTS**

- 2.1 MATERIALS
  - 2.1.1 Unframed Mirrors: Best quality, 6 mm thick float glass, conforming to CAN/CGSB-12.5-M86, Type 3A-tempered, and backed in an approved manner. Grind and polish exposed edges.
    - .1 Mirror Cushioning: PVC pressure-sensitive foamed tape, 6 mm thick with adhesive one side.
    - .2 Concealed Mirror Clips: Type 302 or 304 No. 4 finish stainless steel.
    - .3 Mirror Adhesive: LePage PL 610 adhesive by Henkel Canada Corporation.
  - 2.1.2 Tempered Glass: to thickness indicated on Drawings and conforming to CAN/CGSB-12.1-M90, Type 2.
- 2.2 MIRROR WITH STAINLESS STEEL CHANNEL FRAME – TYPES M1 AND M2
  - 2.2.1 General Description: Fixed type with 12 mm x 12 mm x 12 mm bright finished type 304 stainless steel one piece frame with 90° mitred corners.
  - 2.2.2 Acceptable Products
    - .1 For M1 - Bobrick B-165-1830, or ASI Group Watrous or Bradley equivalent.
    - .2 For M2 - Bobrick B-165-2436, or ASI Group Watrous or Bradley equivalent.

2.3 MULLIONLESS GLAZING FRAMING

- 2.3.1 Top and Bottom Rails: 80 mm high x 45 mm wide tapered aluminum rails suitable for 13 mm glazing and 6 mm high aluminum saddles as manufactured by Inkan Limited, AA A41 clear anodized to NAAMM AMP-505.
- 2.3.2 Glass Joint Sealant: Dow '795' in colour to be selected by Consultant from manufacturer's full range.

2.4 ACCESSORIES

- 2.4.1 Setting blocks: Neoprene, 80 - 90 Shore 'A' durometer hardness to ASTM D2240, 100 mm long x 6 mm high x width to suit glass thickness.
- 2.4.2 Spacer shims: Neoprene, 50 - 60 Shore 'A' durometer hardness to ASTM D2240, 75 mm long x one half height of glazing stop x thickness to suit application. Self adhesive on one face.
- 2.4.3 Glazing tape:  
.1 Pre-formed butyl compound, 10 - 15 Shore A durometer hardness to ASTM D2240; coiled on release paper; 3 mm thick x 13 mm wide; black colour.
- 2.4.4 Glazing clips: manufacturer's standard type.
- 2.4.5 Lock-strip gaskets: to ASTM C542.

**PART 3 - EXECUTION**

3.1 EXAMINATION

- 3.1.1 Verify that openings for glazing are correctly sized and within tolerance.
- 3.1.2 Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

3.2 PREPARATION

- 3.2.1 Take critical site dimensions to ensure that adjustments in fabrication or installation are provided for, and that clearances to other constructions have been maintained.
- 3.2.2 Follow manufacturer's installation recommendations.
- 3.2.3 Clean contact surfaces with solvent and wipe dry.
- 3.2.4 Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- 3.2.5 Prime surfaces scheduled to receive sealant.

3.3 MIRROR INSTALLATION

- 3.3.1 Install mirrors by means of concealed clips, or by means of 100% back-paint and adhesive method. If clips are used, install cushioning tape completely around perimeter

of mirror back, set in concealed location within 25 mm of edge. Apply adhesive in strict accordance with manufacturer's printed instructions.

3.3.2 Use one piece mirrors wherever possible.

3.4 GLAZING INSTALLATION

3.4.1 Cut glazing tape to length and set against permanent stops, projecting 1.6 mm above sight line.

3.4.2 Place setting blocks at 1/4 points, with edge block maximum 150 mm from corners.

3.4.3 Rest glazing on setting blocks and push against tape for full contact at perimeter of light or unit.

3.4.4 Place glazing tape on free perimeter of glazing in same manner described in 3.4.1.

3.4.5 Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.

3.4.6 Knife trim protruding tape.

3.5 MULLIONLESS GLAZING INSTALLATION

3.5.1 Vertical joints between glass units to be uniform and 6mm in width.

3.5.2 Place setting blocks at 1/4 points, with edge block maximum 150 mm from corners.

3.5.3 Clean, prime and seal glass joints in accordance with sealant manufacturer's written instructions.

3.6 CLEANING

3.6.1 Remove glazing materials from finish surfaces.

3.6.2 Remove labels after work is complete.

3.6.3 Clean all glass and mirrors on completion.

3.6.4 Use clean water, or water and mild detergent, as recommended by the glass manufacturer.

3.6.5 Rinse on completion of wash.

- END OF SECTION -

**THIS PAGE INTENTIONALLY LEFT BLANK**