

Quality Assurance

Welding

- Performed by certified welders in compliance with Welder's Qualification Test Certificate, AWS D1.1 and or ASME IX.
- Welders shall be duly qualified (test passed in the preceding 12 months) in the position in which they are to weld and the qualifications and specifications for workmanship shall comply with the AWS requirements "AWS Structural Welding Code – Steel"

Delivery and Storage

- Exercise Care during unloading, storage and erection to avoid damage, dumping on the ground is not permitted.
- Support material stored at the site completely free of the ground, and cover to avoid damage from the elements.

Materials

- General: Materials shall be new, of uniform quality, suitable and without defects affecting the strength or service of the structure.
- Structural Steel, Pipes, Tubes and bolts: in accordance with General Structural Notes on drawings.

Execution

Examination:

- Verify anchor bolt locations, grouting, and elevation of base and setting plates and other material set by other trades before commencing work.

Erection:

- Erect work to the proper lines and levels, plumb and true, and in correct relation to other work and maintain this condition to completion.

Connections:

• Machine Bolting:

- Fair-up holes with pins to align holes before bolting.
- Ream unfair holes to obtain alignment or drill new holes.
- Enlargement of holes with drift pins or burning of new holes is not permitted.
- Draw bolt up tight after members are aligned and leveled, and set or deformed threads to prevent loosening.

• Welding:

- Weld by shielding arc method as per AWS standard code for arc and gas welding in building construction.
- Submit certification that welders have passed Welder's qualification test.
- Certification must be dated no earlier than 3 months prior to beginning of project.
- Close joints exposed to weathering with continuous 1/8" weather welds.
- Grind smooth exposed welds, but grinding shall not reduce weld strength or required cross section.

- Connect members temporarily and align completely before making permanent connections.
- Temporary connections shall consist of bolts on no less than 1/3 of the holes and in no case less than 3 bolts in any single connections.
- Surfaces in contact shall be thoroughly clean when assembled.
- Provide necessary temporary bracing and guying to align the structure properly for permanent connections, and to safety resist erection dead load and wind stress.
- Take particular care to have the work plumb and level (maximum tolerance 1- 500 for interior members, 0- 1000 for exterior members) before making permanent connections
- Remove bracing and guys only after permanent alignment and assembly and structure area capable of completely sustaining design and temporary construction loads.

Cleaning

- During the course of the work and on completion of the work, remove excess materials equipment and debris and dispose of away from premises in a legal manner.

Division 6 – Wood & Plastic

06100 Rough Carpentry

Scaffoldings

- Provide sample for approval. Appropriate scaffoldings and related framing system shall be the contractor's account.

06200 Finish Carpentry

Description

- Work of this Section, as shown or specified, shall be provided by the Interior Contractor and shall be in accordance with the requirements of the Contract Documents and in accordance with the General Conditions of this Document.
- Works include coordination, Fabrication ,and Installation of all Interior Exposed wood members shown on drawings and specified herein, including but not necessarily limited to the following:
 - **Teacher's Platform** – 6mm thick bio-composite board on 2" x 4" wood frame (good lumber) in 450mm x 450mm x 3mm homogenous vinyl tile finish.
 - **Classroom Platform** – 6mm thick bio-composite board on 2" x 4" wood frame (good lumber) in 450mm x 450mm x 3mm homogenous vinyl tile finish with metal nosing.
 - **Base Cabinets** – MDF laminated board, white back, concealed hinge with stainless grab bar.
 - **Miscellaneous Items**

Division 8 – Doors & Windows

Doors

Scope of Work

- The work covered by this Item shall consists of furnishing all fabricated door and jambs, equipped with fixing accessories and locking devices in accordance with Plan and/or shop drawings and as herein specified.

Material Requirement

Material Requirements

- **(D-1) DOUBLE PANEL SWING TYPE**
 - Description: Existing glass door with Aluminum frame to be retained double action provides top & bottom flush bolt
 - Dim: 1.60m x 2.10m
 - Panel: 7/32" thk clear Glass view panel
 - Location: Ground Floor Main Entrance
 - Quantity: 1 set
- **(D-2) DOUBLE PANEL SWING TYPE**
 - Description: Existing Metal Door with viewing glass panel and panic device to be refurbished
 - Dim: 1.60m x 2.10m
 - Panel: 7/32" thk. Clear Glass Viewing Panel, GA. #18 Metal Facing (Painted Finish)
 - Location: Ground Floor Fire Escape
 - Quantity: 1 set
- **(MD-3) DOUBLE PANEL SWING TYPE**
 - Description: Metal Door with Viewing Glass Panel C/W Accessories
 - Dim: 1.60m x 2.10m
 - Panel: 7/32" Thk. Clear Glass Viewing Panel, GA. #18 Metal Facing (Painted Finish)
 - Location: Roof Deck Main Stair
 - Quantity: 1 set
- **(D-4) DOUBLE PANEL SWING TYPE**
 - Description: Metal Door with Viewing Glass Panel C/W Accessories
 - Dim: 1.60m x 2.10m
 - Panel: 7/32" Thk. Clear Glass Viewing Panel, GA. #18 Metal Facing (Painted Finish)
 - Location: Roof Deck Main Stair
 - Quantity: 4 sets

- **(D-5) SINGLE PANEL SWING TYPE**
 - Description: Supply and Installation of steel door with 10.8 mm. Thk. Painted galvanized steel filled with high density honey comb paper or rock wool
 - Dim: 1.00m x 2.15m
 - Panel: 6mm. Thk. Clear tempered glass viewing panel EPDM weather seal
 - Jamb: 1.5 mm. Thk. Galvanized steel door jamb
 - Door closer, dead bolt lock (one side knob)
 - Lever type door knob, ball bearing hinges
 - Location: Classroom, Laboratories, Computer classroom
 - Quantity: 46 sets
- **(D-6) SINGLE PANEL SWING TYPE**
 - Description: Existing glass door with aluminum frame to be retained
 - Dim: 0.90m x 2.10m
 - Panel: 7/32" thk. Clear glass viewing panel provides protective bars
 - Location: Ground Floor Elevator Lobby, Corridor, Third Floor Program Room
 - Quantity: 6 sets
- **(MD-7) SINGLE PANEL SWING TYPE**
 - Description: Existing metal door with clear viewing glass panel to be refurbished
 - Dim: 0.90m x 2.10m
 - Location: Fire Escape
 - Quantity: 4 sets
- **(D-8) SINGLE PANEL SWING TYPE**
 - Description: Existing wood flush door with semi-solid core to be refurbished
 - Dim: 0.80m x 2.10m
 - Location: Ground Floor Projection Room
 - Quantity: 1 set
- **(MD-9) SINGLE PANEL SWING TYPE**
 - Description: Existing metal door with clear viewing glass panel to be refurbished
 - 10.8mm thk Painted galvanized steel filled with high density honeycomb paper or rock wool.
 - Dim: 0.90m x 2.10m
 - Panel: 7/32" Thk. Clear Glass Viewing Panel
 - Location: Roof Deck
 - Quantity: 3 sets
- **(D-10) SINGLE PANEL SWING TYPE**
 - Description: Metal door with semi-solid core
 - Dim: 0.70m x 2.10m
 - Location: Janitor's room, Male/Female toilet
 - Quantity: 10 sets
- **(MD-11) SINGLE PANEL SWING TYPE**
 - Description: Existing metal door to be refurbished
 - Dim: 0.80m x 2.10m
 - GA. #18 Metal Facing (Painted Finish)
 - Location: Roof Deck

- Quantity: 2 sets
- **(MD-12) DOUBLE PANEL SWING TYPE**
 - Description: Existing metal door with clear viewing glass panel and metal louver to be refurbished
 - Dim: 1.05m x 2.10m
 - Panel: 7/32" thk Clear glass view panel
 - Metal Louvers on metal frame verify
 - Location: Electrical Room
 - Quantity: 5 sets
- **(MD-13) SINGLE PANEL SWING TYPE**
 - Description: Existing wrought iron door 3/6"x 3/4" frame around welded to 12mm. Ø square bars provide barrel bolt to be retained
 - Dim: 0.80m x 2.10m
 - Location: Ground Floor Jan. Clo.
 - Quantity: 1 set
- **(MD-14) DOUBLE PANEL SWING TYPE**
 - Description: Existing metal louver door to be refurbished
 - Dim: 1.00m x 2.10m
 - Location: Second Floor Corridor
 - Quantity: 1 set
- **(MD-15) SINGLE PANEL SWING TYPE**
 - Description: Existing metal door to be retained
 - Dim: 1.00m x 2.10m
 - Location: Second Floor Natural Products Laboratory
 - Quantity: 1 set
- **(MD-16) SINGLE PANEL SWING TYPE**
 - Description: Metal door with clear viewing glass panel and metal louver to be refurbished
 - Metal louvers on metal frame verify
 - Dim: 0.75m x 2.10m
 - Location: Second Floor Server Room, Third Floor Gab 309
 - Quantity: 2 sets
- **(D-17) SINGLE PANEL SWING TYPE**
 - Description: Existing Fixed glass door to be retained
 - Dim: 0.90m x 2.10m
 - Location: Second Floor Natural Products Laboratory
 - Quantity: 2 sets
- **(D-18) SINGLE PANEL SWING TYPE**
 - Description: Metal door with clear glass viewing panel to be retained
 - Dim: 1.00m x 2.10m
 - Location: Second Floor Natural Products Laboratory and Extension of Peptidomics
 - Panel: 7/32" thk Clear glass view panel
 - ¼" thk plywood facing
 - Quantity: 8 sets

- **(D-19) SINGLE PANEL SWING TYPE**
 - Description: Metal door with clear glass viewing panel to be retained
 - Dim: 1.35m x 2.10m
 - Location: Second Floor Extension of Peptidomics
 - Quantity: 2 sets
- **(D-20) DOUBLE PANEL SWING TYPE**
 - Description: Supply and Installation of steel door with 6mm thick. Clear tempered glass viewing panel door closer, dead bolt lock (one side knob), lever type door knob, ball bearing hinges
 - Dim: 1.70m x 2.15m
 - Location: Roof Deck
 - EPDM weather seal
 - Jamb: 1.5mm thick galvanized steel door jamb
 - 10.8mm thk painted galvanized steel filled with high density honey comb paper or rock wool
 - Quantity: 6 sets

Windows / Glass Structure

Scope of Work

- The work covered by this Item shall consists of furnishing all fabricated windows, including materials, labor, tools and equipment required in undertaking the proper installation as shown on the Plans and in accordance with this Specifications.
- **(W-1) CASEMENT WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Location: Ground, Second, Third, Fourth Floor Classrooms
 - Dim: 1.45m x 3.15m
 - Quantity: 26 sets
- **(W-2) CASEMENT WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.15m x 3.15m
 - Location: Third Floor Elevated Classrooms
 - Quantity: 2 sets
- **(W-3) CASEMENT WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.45m x 2.70m
 - Location: Ground, Second, Fourth Floor Classrooms
 - Quantity: 5 sets
- **(W-4) CASEMENT WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.45m x 0.90m
 - Location: Third and Fourth Floor Classrooms
 - Quantity: 2 sets

- **(W-5) CASEMENT WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.15m x 2.25m
 - Location: Second Floor Classrooms
 - Quantity: 1 set
- **(W-6) CASEMENT WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.20m x 2.25m
 - Location: Second Floor Classrooms
 - Quantity: 1 set
- **(W-7) AWNING WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 2.25m x 1.35m
 - Location: Ground Floor Passageway
 - Quantity: 1 set
- **(W-8) AWNING WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.45m x 1.20m
 - Location: Ground Floor Passageway
 - Quantity: 1 set
- **(W-9) CASEMENT WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.45m x 1.20m
 - Location: Ground Floor Passageway
 - Quantity: 5 sets
- **(W-10) AWNING WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.45m x 1.80m
 - Location: Roof Deck
 - Quantity: 2 sets
- **(W-11) CASEMENT WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.45m x 0.90m
 - Location: Fire escape & Elevator Lobby
 - Quantity: 7 sets

- **(W-12) CASEMENT WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.15m x 0.90m
 - Location: Ground Floor Projection Room
 - Quantity: 2 sets
- **(W-13) AWNING WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.85m x 0.45m
 - Location: Ground Floor Elevator Lobby
 - Quantity: 1 set
- **(W-14) CASEMENT WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.45m x 0.45m
 - Location: Ground Floor Classrooms, Elevator Lobby
 - Quantity: 9 sets
- **(W-15) AWNING WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 2.25m x 1.35m
 - Location: Ground Floor Main Entry
 - Quantity: 1 set
- **(W-16) AWNING WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 2.25m x 0.45m
 - Location: Ground Floor Main Entry & Main Stair
 - Quantity: 6 sets
- **(W-17) AWNING WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.85m x 1.35m
 - Location: Second, Third, Fourth Floor Elevator Lobby
 - Quantity: 3 sets
- **(W-18) AWNING WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 0.65m x 2.00m
 - Location: Male/Female Toilet
 - Quantity: 11 sets
- **(W-19) AWNING WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.

- Dim: 0.65m x 1.80m
- Location: Roof Deck Main Stair & Male/Female Toilet
- Quantity: 8 sets

- **(W-20) AWNING WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 2.16m x 1.35m
 - Location: Ground Floor up to Roof Deck Main Stair
 - Quantity: 10 sets

- **(W-21) AWNING WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.05m x 0.45m
 - Location: Roof Deck
 - Quantity: 1 set

- **(W-22) AWNING WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 0.90m x 1.35m
 - Location: Fire Escape
 - Quantity: 4 sets

- **(W-23) AWNING WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 0.45m x 1.35m
 - Location: Ground Floor Electric Room
 - Quantity: 1 set

- **(W-24) SLIDING GLASS WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.20m x 1.00m
 - Location: Fourth Floor Classroom
 - Quantity: 2 sets

- **(W-25) FIXED GLASS WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.20m x 1.15m
 - Location: Second Floor Natural Products Laboratory
 - Quantity: 1 set

- **(W-26) SLIDING GLASS WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.45m x 3.15m
 - Location: Ground Floor Main Entry & Third Floor Graduate Prog. Room
 - Quantity: 3 sets

- **(W-27) FIXED GLASS WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.20m x 0.40m
 - Location: Ground Floor Projection Room
 - Quantity: 2 sets
- **(W-28) CASEMENT WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.05m x 0.80m
 - Location: Ground Floor Elevator Lobby & Fourth Floor Classrooms
 - Quantity: 2 sets
- **(W-29) CASEMENT WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 0.65m x 3.15m
 - Location: Third Floor Elevated Classroom
 - Quantity: 2 sets
- **(W-30) FIXED GLASS WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.20m x 2.05m
 - Location: Second Floor Natural Products Laboratory
 - Quantity: 1 set
- **(W-31) FIXED GLASS WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.20m x 1.75m
 - Location: Second Floor Natural Products Laboratory
 - Quantity: 1 set
- **(W-32) SLIDING GLASS WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.45m x 1.80m
 - Location: Third Floor Graduate Program Room
 - Quantity: 1 set
- **(W-33) SLIDING GLASS WINDOW**
 - 6mm thk Tempered clear viewing glass in aluminum powder coat finish including accessories.
 - Dim: 1.45m x 1.80m
 - Location: Third Floor Graduate Program Room
 - Quantity: 1 set
- **(W-34) FIXED GLASS WINDOW**