SECTION 102213 - WIRE MESH PARTITIONS

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
   * + 1. RELATED DOCUMENTS
          1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
       2. SUMMARY
          1. Section Includes:

Standard-duty wire mesh partitions.

Heavy-duty wire mesh partitions.

Wire mesh ceilings.

Wire mesh stairway partitions.

Wire mesh equipment barriers.

* + - 1. DEFINITIONS

Retain terms that remain after this Section has been edited for a project. "Intermediate crimp" is also called "intercrimped" and "triple crimped." Lock crimp has a smoother appearance than intermediate crimp.

* + - * 1. Intermediate Crimp: Wires pass over one and under the next adjacent wire in both directions, with wires crimped before weaving and with extra crimps between the intersections.
        2. Lock Crimp: Deep crimps at points of the intersection that lock wires securely in place.
      1. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Product Data: For each type of product.
         5. Sustainable Design Submittals:
         6. Shop Drawings:

Include plans, elevations, sections, details, and attachments to other work.

Retain Subparagraph below if wire mesh partitions include service windows, doors, or gates.

Indicate clearances required for operation of [**service windows**] [**doors**] [**and**] [**gates**].

Retain "Samples for Initial Selection" Paragraph below if colors are not preselected and specified or scheduled.

* + - * 1. Samples for Initial Selection: For units with factory-applied color finishes.

Retain "Samples for Verification" Paragraph below with or without "Samples for Initial Selection" Paragraph above. Omit samples unless work is extensive.

* + - * 1. Samples for Verification: 12-by-12-inch panel constructed of specified frame members and wire mesh. Show method of finishing members at intersections.

Retain "Delegated-Design Submittal" Paragraph below if design services have been delegated to Contractor.

* + - * 1. Delegated-Design Submittal: For wire mesh partitions indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

Coordinate "Qualification Data" Paragraph below with qualification requirements in "Quality Assurance" Article.

* + - * 1. Qualification Data: For Installer.

Retain "Welding certificates" Paragraph below if retaining "Welding Qualifications" Paragraph in "Quality Assurance" Article.

* + - * 1. Welding certificates.
      1. CLOSEOUT SUBMITTALS
         1. Maintenance Data: For wire mesh partition hardware to include in maintenance manuals.
      2. QUALITY ASSURANCE
         1. Installer Qualifications: Fabricator of products.

Retain "Welding Qualifications" Paragraph below if shop or field welding is required. If retaining, also retain "Welding certificates" Paragraph in "Informational Submittals" Article.

* + - * 1. Welding Qualifications: Qualify procedures and personnel according to the following:

Retain applicable Subparagraphs below.

AWS D1.1, "Structural Welding Code - Steel."

AWS D1.3, "Structural Welding Code - Sheet Steel."

* + - * 1. Woven Wire Standards: Comply with standards and specifications of the Woven Wire Product Association.
      1. DELIVERY, STORAGE, AND HANDLING

Packaging in first paragraph below may increase cost but may be required for painted items.

* + - * 1. Deliver wire mesh items with cardboard protectors on perimeters of panels and doors and with posts wrapped to provide protection during transit and Project-site storage. Use vented plastic.
        2. Inventory wire mesh partition door hardware on receipt and provide secure lockup for wire mesh partition door hardware delivered to Project site.

Tag each item or package separately with identification and include basic installation instructions with each item or package.

* + - 1. FIELD CONDITIONS

If possible, design wire mesh units so that they do not have to fit other construction, and delete this article.

* + - * 1. Field Measurements: Verify actual dimensions of construction contiguous with wire mesh units by field measurements before fabrication.

1. PRODUCTS

See Editing Instruction No. 1 in the Evaluations for cautions about named manufacturers and products.

* + - 1. MANUFACTURERS
         1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Greene Technologies Inc.

Kenco Wire & Iron Products Inc.

Newark Wire Works Inc.

Approved equivalent.

* + - 1. PERFORMANCE REQUIREMENTS

Retain "Delegated Design" Paragraph below if Contractor is required to assume responsibility for design.

* + - * 1. Delegated Design: Engage a qualified professional engineer, licensed and registered to practice in the State of New York, to design wire mesh units.
        2. Structural Performance: Wire mesh units shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated.

Consult a Structural Engineer experienced in engineering wire mesh partitions of type indicated to quantify design loads applicable to Project. Verify compliance with codes. See Evaluations.

Retain one or more of four Subparagraphs below if design loads and load combinations are not indicated on Drawings. First Subparagraph is an example based on the IBC requirement for guards.

Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft. at any location on a panel.

Total load of 200 lbf applied uniformly over each panel.

Concentrated load and total load need not be assumed to act concurrently.

* + - * 1. Seismic Performance: Wire mesh units shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

For life-safety components required to function after an earthquake, the Component Importance Factor is 1.5. For other components, the Component Importance Factor is 1.0 unless the structure is in Seismic Use Group III and component is necessary for continued operation of facility or failure of component could impair continued operation of facility, in which case the Component Importance Factor is 1.5.

Component Importance Factor: [**1.5**] [**1.0**].

* + - 1. MATERIALS
         1. Steel Wire: ASTM A510.
         2. Steel Plates, Channels, Angles, and Bars: ASTM A36.
         3. Steel Sheet: Cold-rolled steel sheet, ASTM A1008, Commercial Steel (CS), Type B.
         4. Steel Pipe: ASTM A53, Schedule 40, unless another weight is indicated or required by structural loads.

Steel tubing and pipe are sized differently. Pipe is designated by nominal pipe size and weight or schedule number. Tubing is designated by OD and wall thickness.

* + - * 1. Steel Tubing: ASTM A500, cold-formed structural-steel tubing or ASTM A513, Type 5, mandrel-drawn mechanical tubing.
        2. Metallic-Coated Steel Sheet: ASTM A653, Commercial Steel (CS), Type B; with G60 zinc (galvanized) or A60 zinc-iron-alloy (galvannealed) coating designation.
        3. Panel-to-Panel Fasteners: Manufacturer's standard steel bolts, nuts, and washers.
        4. Post-Installed Anchors: Capable of sustaining, without failure, a load equal to 6 times the load imposed when installed in unit masonry and 4 times the load imposed when installed in concrete, as determined by testing according to ASTM E488, conducted by a qualified independent testing agency.

Material in "Material for Interior Locations" Subparagraph below protects against corrosion in an indoor atmosphere.

Material for Interior Locations: Carbon-steel components are zinc plated to comply with ASTM B633 or ASTM F1941, Class Fe/Zn 5, unless otherwise indicated.

In "Material for Exterior Locations and Where Stainless Steel Is Indicated" Subparagraph below, Alloy Group 1 (A1) refers to Type 304 and similar alloys, and Alloy Group 2 (A4) refers to Type 316 and similar alloys.

Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy [**Group 1**] [**Group 2**] stainless-steel bolts, ASTM F593, and nuts, ASTM F594.

Retain "Power-Driven Fasteners" Paragraph below if power-driven fasteners are allowed.

* + - * 1. Power-Driven Fasteners: ICC-ES AC70.

"Seismic Bracing" Paragraph below is an example only. Revise to suit Project.

* + - * 1. Seismic Bracing: Angles with legs not less than 1-1/4 inch wide, formed from 0.040-inch (20 ga) - thick, metallic-coated steel sheet; with bolted connections and 1/4-inch- diameter bolts.

Retain one or more of "Shop Primers," "Universal Shop Primer," and "Zinc-Rich Primer" paragraphs below. Retain second for a typical shop primer for painted finishes that provide minimum protection to steel. Retain third for a typical primer for high-performance coating. If retaining second or third paragraph, indicate location of each primer on Drawings or in a schedule.

* + - * 1. Shop Primers: Fast-curing, lead- and chromate-free, universal modified-alkyd primer, complying with MPI#79.

Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to the following:

Benjamin Moore; Super Spec HP Alkyd Metal Primer; P06.

PPG Industries, Inc.; Speedhide Int/Ext Rust Inhibitive Steel Primer; 6-212.

Rust-Oleum Corporation; Universal Alkyd Primer; CM-08.

Sherwin-Williams; Steel Spec Universal Metal Primer; B50.

Approved equivalent.

* + - * 1. Universal Shop Primer: Manufacturer’s standard fast-curing, lead- and chromate-free, universal modified-alkyd primer.

Retain Subparagraph below if zinc-rich primer is also used.

Use primer containing pigments that make it easily distinguishable from zinc-rich primer.

* + - * 1. Zinc-Rich Primer: Compatible with topcoat, complying with SSPC-Paint 20 or SSPC-Paint 29.

Retain "Galvanizing Repair Paint" Paragraph below for galvanized fabrications.

* + - * 1. Galvanizing Repair Paint: High-zinc-dust-content paint for re-galvanizing welds in steel, complying with SSPC-Paint 20.
      1. STANDARD-DUTY WIRE MESH PARTITIONS

Mesh in "Mesh" Paragraph below is industry standard for standard-duty wire mesh. Revise to suit mesh with different wire diameter or different pattern.

* + - * 1. Mesh: 0.135-inch (10 ga) - diameter, intermediate-crimp steel wire woven into 1-1/2-inch diamond mesh.
        2. Vertical Panel Framing: 1-1/4-by-5/8-by-0.080-inch (14 ga) cold-rolled, C-shaped steel channels with holes for 1/4-inch- diameter bolts not more than 12 inches o.c.
        3. Horizontal Panel Framing: 1-by-1/2-by-1/8-inch cold-rolled steel channels.
        4. Horizontal Panel Stiffeners: Two cold-rolled steel channels, 3/4 by 3/8 by 1/8 inch, bolted or riveted toe to toe through mesh or one 1-by-1/2-by-1/8-inch cold-rolled steel channel with wire mesh woven through channel.
        5. Top Capping Bars: 2-1/4-by-1-inch cold-rolled steel channels.
        6. Posts for 90-Degree Corners: 1-1/4-by-1-1/4-by-1/8-inch steel angles or square tubes with holes for 1/4-inch- diameter bolts aligning with bolt holes in vertical framing; with floor anchor clips.

Retain "Posts for Other-Than-90-Degree Corners" or "Adjustable Corner Posts" Paragraph below if other-than-90-degree corners are required.

* + - * 1. Posts for Other-Than-90-Degree Corners: Steel pipe or tubing with holes for 1/4-inch- diameter bolts aligning with bolt holes in vertical framing; with floor anchor clips.

Partitions up to 12 Feet High: 1-1/4-inch OD by 1/8 inch.

Partitions up to 20 Feet High: 2-1/2-inch OD by 1/8 inch.

* + - * 1. Adjustable Corner Posts: Two 1-1/4-by-5/8-by-0.080-inch cold-rolled, C-shaped steel channels connected by steel hinges at 36 inches o.c., with holes for 1/4-inch- diameter bolts aligning with bolt holes in vertical framing.
        2. Line Posts: 3-inch-by-4.1-lb or 3-1/2-by-1-1/4-by-0.127-inch steel channels; with 1/4-inch steel base plates.
        3. Three-Way Intersection Posts: 1-1/4-by-1-1/4-by-1/8-inch steel tubes or channels, with holes for 1/4-inch- diameter bolts aligned for bolting to adjacent panels.
        4. Four-Way Intersection Posts: 1-1/4-by-1-1/4-by-1/8-inch steel tubes, with holes for 1/4-inch- diameter bolts aligned for bolting to adjacent panels.
        5. Floor Shoes: Metal, not less than 2 inches high; sized to suit vertical framing, drilled for attachment to floor, and with set screws for leveling adjustment.
        6. Swinging Doors: Fabricated from same mesh as partitions, with framing fabricated from 1-1/4-by-1/2-by-1/8-inch steel channels or 1-1/4-by-5/8-by-0.080-inch (14 ga) cold-rolled, C-shaped steel channels, banded with 1-1/4-by-1/8-inch flat steel bar cover plates on [**three**] [**four**] sides, and with 1/8-inch- thick angle strike bar and cover on strike jamb.

Hinges: Full-surface type, 3-by-3-inch steel, three per door; bolted, riveted, or welded to door and jamb framing.

Retain "Padlock Lug" or "Cylinder Lock" Subparagraph below. In "Cylinder Lock" Subparagraph, recessed turn knob in fourth option is prevalent but may not comply with accessibility requirements if applicable.

Padlock Lug: Mortised into door framing and enclosed with steel cover.

Cylinder Lock: Mortise type with [**manufacturer's standard cylinder**] [**cylinder specified in Section 087100 "Door Hardware"**]; operated by key outside and [**recessed turn knob**] [**knob**] [**lever**] inside.

Retain "Inactive Leaf Hardware" Subparagraph below for double doors.

Inactive Leaf Hardware: Cane bolt at bottom and chain bolt at top.

* + - * 1. Swinging Dutch Doors: Fabricated from same mesh as partitions, with framing fabricated from 1-1/4-by-1/2-by-1/8-inch steel channels or 1-1/4-by-5/8-by-0.080-inch (14 ga) cold-rolled, C-shaped steel channels, banded with 1-1/4-by-1/8-inch flat steel bar cover plates on [**three**] [**four**] sides, and with 1/8-inch- thick angle strike bar and cover on strike jamb.

Hinges: Full-surface type, 3-by-3-inch steel, two per section of door (top and bottom); bolted, riveted, or welded to door and jamb framing.

In "Cylinder Lock" Subparagraph below, recessed turn knob in fourth option is prevalent but may not comply with accessibility requirements if applicable.

Cylinder Lock: Mortise type with [**manufacturer's standard cylinder**] [**cylinder specified in Section 087100 "Door Hardware"**]; operated by key outside and [**recessed turn knob**] [**knob**] [**lever**] inside; mounted in lower section of door.

Bolt: Mounted in, securing upper section of door.

Shelf: Fabricated from 0.097-inch (12 ga) - thick, steel sheet, 12 inches deep by full width of door less 4 inches; with corners rounded and edges finished smooth; mounted on top of lower section of door and braced with manufacturer's standard brackets.

* + - * 1. Sliding Doors: Fabricated from same mesh as partitions, with framing fabricated from 1-1/2-by-3/4-by-1/8-inch steel channels, banded with 1-1/2-by-1/8-inch flat steel bar cover plates on four sides.

Hardware: Two, four-wheel roller-bearing carriers, box track, and bottom guide channel for each door.

Retain "Padlock Lug" or "Cylinder Lock" Subparagraph below. In "Cylinder Lock" Subparagraph, recessed turn knob in fourth option is prevalent but may not comply with accessibility requirements if applicable.

Padlock Lug: Mortised into door framing and enclosed with steel cover.

Cylinder Lock: Mortise type with cylinder specified in Section 087100 "Door Hardware"; operated by key outside and [**recessed turn knob**] [**knob**] [**lever**] inside.

* + - * 1. Vertically Sliding Service Windows: Fabricated from same mesh and framing as panels and equipped with [**a spring catch**] [**slide bolts**] on each jamb to lock window in open position and a padlock lug to lock window in closed position. Include opening frame in partition fabricated from 1-1/4-by-1/2-by-1/8-inch steel channels.

Size: [**24 inches wide by 18 inches high**] [**24 inches wide by 21-1/2 inches high**] [**As indicated**].

Shelf: Fabricated from 0.097-inch (12 ga) - thick, steel sheet; with corners rounded and edges finished smooth; braced with manufacturer's standard brackets.

Size: 23 inches wide by 12 inches deep [**As indicated**].

* + - * 1. Swinging Service Windows: Fabricated from same mesh and framing as panels and equipped with spring catch on strike jamb that locks window in closed position. Include opening frame in partition fabricated from 1-1/4-by-1/2-by-1/8-inch steel channels.

Size: [**24 inches wide by 18 inches high**] [**24 inches wide by 15 inches high**] [**As indicated**].

Shelf: Fabricated from 0.097-inch (12 ga) - thick, steel sheet; with corners rounded and edges finished smooth; braced with manufacturer's standard brackets.

Size: [**24 inches wide by 12 inches deep**] [**24 inches wide by 15-3/4 inches deep**] [**As indicated**].

* + - * 1. Accessories:

"Sheet Metal Base" Subparagraph below is for wainscot panels.

Sheet Metal Base: [**0.060-inch (16 ga) -**] [**0.035-inch (20 ga) -**] thick steel sheet.

Adjustable Filler Panels: 0.060-inch (16 ga) - thick steel sheet, capable of filling openings from 2 to 12 inches.

Wall Clips: Manufacturer's standard, steel sheet[**; allowing up to 1 inch of adjustment**].

* + - * 1. Finish: [**Hot-dip galvanized**] [**Hot-dip galvanized and shop primed for field painting**] [**Shop primed for field painting**] [**Enamel finish**] [**Powder-coated finish**] unless otherwise indicated.

Color: [**As indicated by manufacturer's designations**] [**Match Director’s’ samples**] [**As selected by Director’s Representative from manufacturer's full range**].

* + - 1. HEAVY-DUTY WIRE MESH PARTITIONS

Retain one of two "Mesh" paragraphs below or revise either to specify a different wire diameter or pattern.

Mesh in first paragraph below is industry standard for heavy-duty wire mesh.

* + - * 1. Mesh: 0.192-inch (6 ga) - diameter, intermediate-crimp steel wire woven into 2-inch diamond mesh.
        2. Mesh: 0.192-inch (6 ga) - diameter steel wire, resistance welded into 1-1/2-by-2-1/2-inch rectangular mesh.
        3. Vertical and Horizontal Panel Framing: 1-1/2-by-3/4-by-1/8-inch cold-rolled steel channels; with holes for 3/8-inch- diameter bolts not more than 12 inches o.c.
        4. Horizontal Panel Stiffeners: Two cold-rolled steel channels, 1 by 1/2 by 1/8 inch, bolted or riveted toe to toe through mesh.
        5. Top Capping Bars: 3-by-1-inch steel channels.

Option in "Posts for 90-Degree Corners" Paragraph below allows use of an alternative material that is standard with several manufacturers.

* + - * 1. Posts for 90-Degree Corners: 1-1/2-by-1-1/2-by-1/8-inch steel angles or tubes[**or 2-by-2-by-0.075-inch cold-rolled steel angles or tubes**], with holes for 3/8-inch- diameter bolts aligning with bolt holes in vertical framing; with 1/4-inch steel base plates.

Retain "Posts for Other-Than-90-Degree Corners" or "Adjustable Corner Posts" Paragraph below if other-than-90-degree corners are required.

* + - * 1. Posts for Other-Than-90-Degree Corners: 2-inch- OD by 1/8-inch steel pipe or round tube, with holes for 3/8-inch- diameter bolts aligning with bolt holes in vertical framing; with 1/4-inch steel base plates.
        2. Adjustable Corner Posts: Two 1-1/2-by-3/4-by-1/8-inch cold-rolled, steel channels or 2-by-2-by-0.075-inch steel tubes connected by steel hinges at 36 inches o.c. attached to posts; with 1/4-inch- diameter bolt holes aligning with bolt holes in vertical framing; with 1/4-inch steel base plates.
        3. Line Posts: 3-inch-by-4.1-lb or 3-1/2-by-1-1/4-by-1/8-inch steel channels; with 1/4-inch steel base plates.
        4. [**Three-**] [**and**] [**Four-**]Way Intersection Posts: 2-by-2-by-0.075-inch (14 ga) steel tubes, with holes for 3/8-inch- diameter bolts aligned for bolting to adjacent panels; with 1/4-inch steel base plates.
        5. Floor Shoes: Metal, not less than 2 inches high; sized to suit vertical framing, drilled for attachment to floor, and with set screws for leveling adjustment.
        6. Swinging Doors: Fabricated from same mesh as partitions, with framing fabricated from 1-1/2-by-3/4-by-1/8-inch steel channels, banded with 1-1/2-by-1/8-inch flat steel bar cover plates on four sides, and with 1/8-inch- thick angle strike bar and cover on strike jamb.

Hinges: Full-surface type, 3-1/2-by-3-1/2-inch steel, three per door; bolted, riveted, or welded to door and jamb framing.

Retain "Padlock Lug" or "Cylinder Lock" Subparagraph below. In "Cylinder Lock" Subparagraph, recessed turn knob in fourth option is prevalent but may not comply with accessibility requirements if applicable.

Padlock Lug: Mortised into door framing and enclosed with steel cover.

Cylinder Lock: Mortise type with [**manufacturer's standard cylinder**] [**cylinder specified in Section 087100 "Door Hardware"**]; operated by key outside and [**recessed turn knob**] [**knob**] [**lever**] inside; mounted in lower section of door.

Retain "Inactive Leaf Hardware" Subparagraph below for double doors.

Inactive Leaf Hardware: Cane bolt at bottom and chain bolt at top.

* + - * 1. Swinging Dutch Doors: Fabricated from same mesh as partitions, with framing fabricated from 1-1/2-by-3/4-by-1/8-inch steel channels, banded with 1-1/2-by-1/8-inch flat steel bar cover plates on [**three**] [**four**] sides, and with 1/8-inch- thick angle strike bar and cover on strike jamb.

Hinges: Full-surface type, 3-1/2-by-3-1/2-inch steel, two per section of door (top and bottom); bolted, riveted, or welded to door and jamb framing.

In "Cylinder Lock" Subparagraph below, recessed turn knob in fourth option is prevalent but may not comply with accessibility requirements if applicable.

Cylinder Lock: Mortise type with [**manufacturer's standard cylinder**] [**cylinder specified in Section 087100 "Door Hardware"**]; operated by key outside and [**recessed turn knob**] [**knob**] [**lever**] inside; mounted in lower section of door.

Bolt: Mounted in, securing upper section of door.

Shelf: Fabricated from 0.097-inch (12 ga) - thick, steel sheet, [**12 inches**] [**18 inches**] deep by full width of door less 4 inches; with corners rounded and edges finished smooth; mounted on top of lower section of door and braced with manufacturer's standard brackets.

* + - * 1. Sliding Doors: Fabricated from same mesh as partitions, with framing fabricated from 1-1/2-by-3/4-by-1/8-inch steel channels, banded with 1-1/2-by-1/8-inch flat steel bar cover plates on four sides.

Hardware: Two, four-wheel roller-bearing carriers, box track, and bottom guide channel for each door.

Retain "Padlock Lug" or "Cylinder Lock" Subparagraph below. In "Cylinder Lock" Subparagraph, recessed turn knob in fourth option is prevalent but may not comply with accessibility requirements if applicable.

Padlock Lug: Mortised into door framing and enclosed with steel cover.

Cylinder Lock: Mortise type with [**manufacturer's standard cylinder**] [**cylinder specified in Section 087100 "Door Hardware"**]; operated by key outside and [**recessed turn knob**] [**knob**] [**lever**] inside; mounted in lower section of door.

* + - * 1. Vertically Sliding Service Windows: Fabricated from same mesh and framing as panels and equipped with [**a spring catch**] [**slide bolts**] on each jamb to lock window in open and closed positions. Include opening frame in partition fabricated from 1-1/4-by-1/2-by-1/8-inch steel channels.

Size: [**24 inches wide by 18 inches high**] [**24 inches wide by 21-1/2 inches high**] [**As indicated**].

Shelf: Fabricated from 0.097-inch (12 ga) - thick, steel sheet; with corners rounded and edges finished smooth; braced with manufacturer's standard brackets.

Size: [**24 inches wide by 12 inches deep**] [**As indicated**] <**Insert dimensions**>.

* + - * 1. Swinging Service Windows: Fabricated from same mesh and framing as panels and equipped with spring catch on strike jamb that locks window in closed position. Include opening frame in partition fabricated from 1-1/4-by-1/2-by-1/8-inch steel channels.

Size: [**24 inches wide by 18 inches high**] [**24 inches wide by 15 inches high**] [**As indicated**].

Shelf: Fabricated from 0.097-inch- thick, steel sheet; with corners rounded and edges finished smooth; braced with manufacturer's standard brackets.

Size: [**24 inches wide by 12 inches deep**] [**24 inches wide by 15-3/4 inches deep**] [**As indicated**].

* + - * 1. Accessories:

"Sheet Metal Base" Subparagraph below is for wainscot panels.

Sheet Metal Base: 0.060-inch (16 ga) - thick, steel sheet.

Adjustable Filler Panels: 0.060-inch (16 ga) - thick steel sheet, capable of filling openings from 2 to 12 inches.

Wall Clips: Manufacturer's standard, cold-rolled steel sheet[**; allowing up to 1 inch of adjustment**].

* + - * 1. Finish: [**Hot-dip galvanized**] [**Hot-dip galvanized and shop primed for field painting**] [**Shop primed for field painting**] [**Enamel finish**] [**Powder-coated finish**] unless otherwise indicated.

Color: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's samples**] [**As selected by Director’s Representative from manufacturer's full range**].

* + - 1. WIRE MESH CEILINGS

Wire mesh ceilings are typically installed along with wire mesh partitions. Revise this article if wire mesh ceilings are required to suit Project but wire mesh partitions are not. Consult manufacturers for recommendations.

* + - * 1. Mesh, Framing, and Stiffeners: Fabricated from same mesh and framing as wire mesh partition panels.
        2. Perimeter Partition Supports: [**1-1/2-by-1-1/2-by-1/8-inch**] [**1-1/2-by-1-1/2-by-0.075-inch**] steel angle, with holes for 1/4-inch- diameter bolts aligned for bolting to top of wire mesh partitions and to sides of wire mesh ceiling panels.
        3. Wall Supports: [**1-1/2-by-1-1/2-by-1/8-inch**] [**1-1/2-by-1-1/2-by-0.075-inch**] steel angle punched for attachment to wall and wire mesh ceiling panels.
        4. Intermediate Supports: Steel I-beams or rectangular tubes, as recommended by manufacturer.
        5. Intermediate Support Posts: [**2-by-2-by-1/8-inch**] [**2-by-2-by-0.075-inch**] steel tubes.
        6. Finishes: Match adjacent wire mesh partitions.
      1. WIRE MESH STAIRWAY PARTITIONS
         1. Standard-Duty Stairway Partitions:

Retain "Diamond Mesh," "Square Mesh," or "Rectangular Mesh" Subparagraph below.

Diamond Mesh: 0.135-inch (10 ga) - diameter, intermediate-crimp steel wire woven into 1-1/2-inch diamond pattern and securely clinched to frames.

Square Mesh: 0.135-inch (10 ga) - diameter, [**intermediate**] [**lock**]-crimp steel wire woven into 1-1/2-inch square pattern, inserted through frame holes and welded into frame. Vertical wires are plumb, and horizontal wires are perpendicular to vertical wires.

Rectangular Mesh: 0.135-inch (10 ga) - diameter, [**intermediate**] [**lock**]-crimp steel wire woven into 2-by-1-inch rectangular pattern, inserted through frame holes and welded into frame. Vertical wires are plumb, and horizontal wires are perpendicular to vertical wires.

Vertical Panel Framing: 1-1/4-by-5/8-by-0.097-inch cold-rolled, C-shaped steel channels; with 1/4-inch- diameter bolt holes spaced not more than 18 inches o.c. along center of framing.

Horizontal Panel Framing: 1-by-1/2-by-1/8-inch cold-rolled steel channels.

Horizontal Panel Stiffeners: 1-by-1/2-by-1/8-inch cold-rolled steel channels with wire woven through, or two 1-by-1/2-by-1/8-inch cold-rolled steel channels bolted or riveted toe to toe through mesh.

* + - * 1. Heavy-Duty Stairway Partitions:

Retain "Diamond Mesh," "Square Mesh," or "Rectangular Mesh" Subparagraph below.

Diamond Mesh: 0.192-inch (11 ga) - diameter, intermediate-crimp steel wire woven into 2-inch diamond pattern and securely clinched to frames.

Square Mesh: 0.192-inch (11 ga) - diameter, [**intermediate**] [**lock**]-crimp steel wire woven into 2-inch square pattern, inserted through frame holes and welded into frame. Vertical wires are plumb, and horizontal wires are perpendicular to vertical wires.

Rectangular Mesh: 0.192-inch (11 ga) - diameter, [**intermediate**] [**lock**]-crimp steel wire woven into 2-by-1-inch rectangular pattern, inserted through frame holes and welded into frame. Vertical wires are plumb, and horizontal wires are perpendicular to vertical wires.

Vertical and Horizontal Panel Framing: 1-1/2-by-3/4-by-0.097-inch cold-rolled, C-shaped steel channels; with 3/8-inch- diameter bolt holes spaced not more than 18 inches o.c. along center of framing.

Horizontal Panel Stiffeners: 1-1/2-by-3/4-by-1/8-inch cold-rolled steel channels with wire woven through, or two 1-by-1/2-by-1/8-inch cold-rolled steel channels bolted or riveted toe to toe through mesh.

* + - * 1. Swinging Doors: Fabricated from same mesh as partitions, with framing fabricated from 1-1/2-by-3/4-by-1/8-inch steel channels, banded with 1-1/2-by-1/8-inch flat steel bar cover plates on [**three**] [**four**] sides, and with 1/8-inch- thick angle strike bar and cover on strike jamb.

Hinges: Full-surface spring type, 3-1/2-by-3-1/2-inch steel, one and a half pairs per door; bolted, riveted, or welded to door and jamb framing.

Exit Device: As specified in Section 087100 "Door Hardware."

Tamper Shield: Fabricated from 0.097-inch (11 ga) - thick, cold-rolled steel sheet; 15 inches high by width of door.

* + - * 1. Door Jamb Framing: 2-by-2-by-1/8-inch steel pipe or tubing.
        2. Floor Shoes: Steel, cast iron, or cast aluminum, not less than 2 inches high; sized to suit vertical framing, drilled for attachment to floor, and with set screws for leveling adjustment.
        3. Wall Clips: Manufacturer's standard, cold-rolled steel sheet[**; allowing up to 1 inch of adjustment**].
        4. Finish for Uncoated Ferrous Steel: [**Hot-dip galvanized**] [**Hot-dip galvanized and shop primed for field painting**] [**Shop primed for field painting**] [**Enamel finish**] [**Powder-coated finish**] unless otherwise indicated.

Color: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's samples**] [**As selected by Director’s Representative from manufacturer's full range**].

* + - 1. WIRE MESH EQUIPMENT BARRIERS

Revise "Mesh" Paragraph below to suit Project. Manufacturers offer many other sizes of wire mesh, sheet metal, and clear polycarbonate sheet as alternatives.

* + - * 1. Mesh: 0.135-inch (10 ga) - diameter, intermediate-crimp steel wire woven into [**1-1/2-inch diamond**] [**1-by-2-inch rectangular**] mesh.
        2. Panels: 1-1/4-by-1-1/4-by-1/8-inch steel angle framing on four sides, with wire mesh welded to framing.

Horizontal Panel Stiffeners: 1-1/4-by-1-1/4-by-1/8-inch steel angles or 3/4-by-1/4-inch hot-rolled steel flat bars.

Height: [**48 inches**] [**60 inches**].

* + - * 1. Line and Corner Posts: 2-by-2-by-0.068-inch (16 ga) steel tubing with steel base plates welded to bottoms, drilled for attachment to floor, and with steel caps welded to tops.

Height: Panel height plus 12-inch- high, sweep space.

* + - * 1. Swinging Gates: Fabricated from same mesh as panels, with gate framing fabricated from 1-1/4-by-1-1/4-by-3/16-inch steel angles on four sides, and with wire mesh welded to framing.

Hinges: Full-surface[**spring**] type, 3-1/2-by-3-1/2-inch steel, one pair per door; bolted, riveted, or welded to door and jamb framing.

Retain "Padlock Lug" or "Cylinder Lock" Subparagraph below. In "Cylinder Lock" Subparagraph, recessed turn knob in fourth option is prevalent but may not comply with accessibility requirements if applicable.

Padlock Lug: Mortised into door framing and enclosed with steel cover.

Cylinder Lock: Mortise type with [**manufacturer's standard cylinder**] [**cylinder specified in Section 087100 "Door Hardware"**]; operated by key outside and [**recessed turn knob**] [**knob**] [**lever**] inside.

* + - * 1. Sliding Gates: Fabricated from same mesh as panels, with framing fabricated from 1-1/4-by-1-1/4-by-3/16-inch steel angles on four sides, and with wire mesh welded to framing.

Hardware: Two, four-wheel roller-bearing carriers, box track, and bottom guide channel for each door.

Retain "Padlock Lug" or "Cylinder Lock" Subparagraph below. In "Cylinder Lock" Subparagraph, recessed turn knob in fourth option is prevalent but may not comply with accessibility requirements if applicable.

Padlock Lug: Mortised into door framing and enclosed with steel cover.

Cylinder Lock: Mortise type with [**manufacturer's standard cylinder**] [**cylinder specified in Section 087100 "Door Hardware"**]; operated by key outside and [**recessed turn knob**] [**knob**] [**lever**] inside.

If required, insert electrical interlock between gate and equipment to shut down equipment if gate is opened.

* + - * 1. Finish for Uncoated Ferrous Steel: [**Hot-dip galvanized**] [**Hot-dip galvanized and shop primed for field painting**] [**Shop primed for field painting**] [**Enamel finish**] [**Powder-coated finish**] unless otherwise indicated.

Color: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's samples**] [**As selected by Director’s Representative from manufacturer's full range**].

* + - 1. FABRICATION
         1. General: Fabricate wire mesh items from components of sizes not less than those indicated. Use larger-sized components as recommended by wire mesh item manufacturer. Furnish bolts, hardware, and accessories required for complete installation with manufacturer's standard finishes.

Fabricate wire mesh items to be readily disassembled.

Retain one of four options in "Welding" Subparagraph below; options are listed with best appearance and highest cost first.

Welding: Weld corner joints of framing and [**grind smooth, leaving no evidence of joint**] [**finish sand**] [**remove spatter**] [**leave as applied**].

* + - * 1. [**Standard-**] [**and**] [**Heavy-**]Duty Wire Mesh Partitions: Fabricate wire mesh partitions with cutouts for pipes, ducts, beams, and other items indicated. Finish edges of cutouts to provide a neat, protective edge.

Mesh: [**Securely clinch**] [**Weld**] mesh to framing.

Framing: Fabricate framing with mortise and tenon corner construction.

Provide horizontal stiffeners as indicated or, if not indicated, as required by panel height and as recommended by wire mesh partition manufacturer. Weld horizontal stiffeners to vertical framing.

Fabricate [**three-**] [**and**] [**four-**]way intersections using [**intersection posts**] [**manufacturer's standard connecting clips and fasteners**].

Fabricate partition and door framing with slotted holes for connecting adjacent panels.

Retain one of first two Subparagraphs below.

Fabricate wire mesh partitions with 3 to 4 inches of clear space between finished floor and bottom horizontal framing.

Fabricate wire mesh partitions with bottom horizontal framing flush with finished floor.

Doors: Align bottom of door with bottom of adjacent panels.

For doors that do not extend full height of partition, provide transom over door, fabricated from same mesh and framing as partition panels.

Hardware Preparation: Mortise, reinforce, drill, and tap doors and framing as required to install hardware.

* + - * 1. Wire Mesh Ceilings: Fabricate wire mesh partitions with cutouts for pipes, ducts, beams, and other items indicated. Finish edges of cutouts to provide a neat, protective edge.

Mesh: [**Securely clinch**] [**Weld**] mesh to framing.

Framing: Fabricate framing with [**mortise and tenon**] [**welded**] corner construction.

Provide stiffeners as indicated or, if not indicated, as required by panel span and as recommended by wire mesh ceiling manufacturer. Weld stiffeners to framing.

* + - * 1. Wire Mesh Stairway Partitions: Provide door jamb framing on each side of doors. Attach tamper shields centered behind exit devices.
      1. STEEL AND IRON FINISHES
         1. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A153 for steel and iron hardware and with ASTM A123 for other steel and iron products.

Retain Subparagraph below if galvanized items are painted.

Do not quench or apply post-galvanizing treatments that might interfere with paint adhesion.

* + - * 1. Preparation for Shop Priming Galvanized Items: After galvanizing, thoroughly clean items of grease, dirt, oil, flux, and other foreign matter, and treat with metallic phosphate process.
        2. Preparation for Shop Priming: Prepare surfaces to comply with SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

Retain "Shop Priming," "Enamel Finish," or "Powder-Coat Finish" Paragraph below or insert another. Paint finish options for wire mesh units vary widely. For exact finish, insert names of coating manufacturers and products.

* + - * 1. Shop Priming: Apply shop primer to uncoated surfaces of wire mesh units unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
        2. Enamel Finish: Immediately after cleaning and pretreating, apply manufacturer's standard enamel finish, suitable for use indicated, with a minimum dry film thickness of 2 mils.

Color and Gloss: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from manufacturer's full range**].

* + - * 1. Powder-Coat Finish: Immediately after cleaning and pretreating, apply manufacturer's standard baked-on powder-coat finish, suitable for use indicated, with a minimum dry film thickness of 2 mils.

Color and Gloss: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from manufacturer's full range**].

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
          2. Examine floors for suitable conditions where wire mesh items will be installed.
          3. Examine walls to which wire mesh items will be attached for properly located blocking, grounds, and other solid backing for attachment of support fasteners.
          4. Proceed with installation only after unsatisfactory conditions have been corrected.
       2. WIRE MESH PARTITIONS ERECTION

Retain one of first two Paragraphs below. Installation method in second Paragraph allows vertical adjustment.

* + - * 1. Anchor wire mesh partitions to floor with 3/8-inch- diameter postinstalled expansion anchors at 12 inches o.c. through anchor clips located at each post and corner. Shim anchor clips as required to achieve level and plumb installation.

Retain Subparagraph below if permitted.

Anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if indicated on Shop Drawings.

* + - * 1. Anchor wire mesh partitions to floor with 3/8-inch- diameter postinstalled expansion anchors at 12 inches o.c. through floor shoes located at each post and corner. Adjust wire mesh partition posts in floor shoes to achieve level and plumb installation.

Retain Subparagraph below if permitted.

Anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if indicated on Shop Drawings.

* + - * 1. Anchor wire mesh partitions to walls at 12 inches o.c. through back corner panel framing and as follows:

Retain Subparagraphs below if applicable, or revise to suit Project.

For concrete and solid masonry anchorage, use expansion anchors.

For hollow masonry anchorage, use toggle bolts.

For wood stud partitions, use lag bolts set into wood backing between studs. Coordinate with carpentry work to locate backing members.

For structural steel, use bolts.

Retain one of two Subparagraphs below if steel studs are used. Revise if plaster is used rather than gypsum board.

For steel-framed gypsum board assemblies, use lag bolts set into wood backing between studs. Coordinate with stud installation to locate backing members.

For steel-framed gypsum board assemblies, fasten brackets directly to steel framing or concealed reinforcements using self-tapping screws of size and type required to support structural loads.

* + - * 1. Secure top capping bars to top framing channels with 1/4-inch- diameter "U" bolts spaced not more than 28 inches o.c.
        2. Provide line posts at locations indicated or, if not indicated, as follows:

Revise Subparagraphs below to suit Project. Verify, with manufacturers, location and spacing for line posts, because their recommendations differ.

On each side of sliding-door openings.

For partitions that are 7 to 9 feet high, spaced at 15 to 20 feet o.c.

For partitions that are 10 to 12 feet high, located between every other panel.

For partitions that are more than 12 feet high, located between each panel.

Retain first Paragraph below if required.

* + - * 1. Provide seismic supports and bracing as indicated or, if not indicated, as recommended by manufacturer and as required for stability, extending and fastening members to supporting structure.

Retain first Paragraph below if custom-width wire mesh partition panels are not required and dimensions are not indicated on Drawings.

* + - * 1. Where standard-width wire mesh partition panels do not fill entire length of run, provide adjustable filler panels to fill openings.
        2. Install doors complete with door hardware.
        3. Install service windows complete with window hardware.
        4. Weld or bolt sheet metal bases to [**wire mesh partitions**] [**and**] [**doors**] [**where indicated**].
        5. Bolt accessories to wire mesh partition framing.
      1. WIRE MESH CEILINGS ERECTION
         1. Anchor wall support angle to walls at 12 inches o.c. and as follows:

Retain Subparagraphs below if applicable, or revise to suit Project.

For concrete and solid masonry anchorage, use expansion anchors.

For hollow masonry anchorage, use toggle bolts.

For wood stud partitions, use lag bolts set into wood backing between studs. Coordinate with carpentry work to locate backing members.

For structural steel, use bolts.

Retain one of two Subparagraphs below if steel studs are used. Revise if plaster is used rather than gypsum board.

For steel-framed gypsum board assemblies, use lag bolts set into wood backing between studs. Coordinate with stud installation to locate backing members.

For steel-framed gypsum board assemblies, fasten brackets directly to steel framing or concealed reinforcements using self-tapping screws of size and type required to support structural loads.

* + - * 1. Attach wire mesh ceiling panels to wall support angles with bolts at 12 inches o.c.
        2. Attach wire mesh ceiling panels to wire mesh partitions with slotted angles bolted to sides of ceiling panels and to top of partitions at 12 inches o.c.
        3. Attach wire mesh ceiling panels to intermediate supports as recommended by manufacturer.

Retain Paragraph below if required.

* + - * 1. Provide seismic supports and bracing as indicated or, if not indicated, as recommended by manufacturer and as required for stability, extending and fastening members to supporting structure.
      1. WIRE MESH STAIRWAY PARTITION ERECTION

Retain one of first two Paragraphs below. Installation method in second Paragraph allows vertical adjustment.

* + - * 1. Anchor wire mesh stairway partitions to floor with 3/8-inch- diameter postinstalled expansion anchors at 12 inches o.c. through floor shoes located at each post. Adjust wire mesh partition posts in floor shoes to achieve level and plumb installation.

Retain Subparagraph below if permitted.

Anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if indicated on Shop Drawings.

* + - * 1. Anchor angle clips supporting wire mesh stairway partitions at stairs and intermediate landings with 3/8-inch- diameter postinstalled expansion anchors at 12 inches o.c. Weld stairway partition framing to angle clips.

Retain Subparagraph below if permitted.

Anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if indicated on Shop Drawings.

Retain first Paragraph below if required.

* + - * 1. Provide seismic supports and bracing as indicated or, if not indicated, as recommended by manufacturer and as required for stability, extending and fastening members to supporting structure.
        2. Install doors complete with door hardware.
      1. WIRE MESH EQUIPMENT BARRIER ERECTION
         1. Anchor wire mesh equipment barriers to floor with 3/8-inch- diameter expansion anchors through post bases. Shim post bases as required to achieve level and plumb installation.

Retain first Paragraph below if permitted.

* + - * 1. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if indicated on Shop Drawings.
        2. Install gates complete with gate hardware.
      1. ADJUSTING AND CLEANING
         1. Adjust [**doors**] [**gates**] [**service windows**] to operate smoothly and easily, without binding or warping. Adjust hardware to function smoothly. Confirm that latches and locks engage accurately and securely without forcing or binding.
         2. Remove and replace defective work, including doors and framing that are warped, bowed, or otherwise unacceptable.

Retain first "Touchup Painting" Paragraph below if shop painting is required.

* + - * 1. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
        2. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas, and repair galvanizing to comply with ASTM A780.

END OF SECTION 102213