One55™ Series

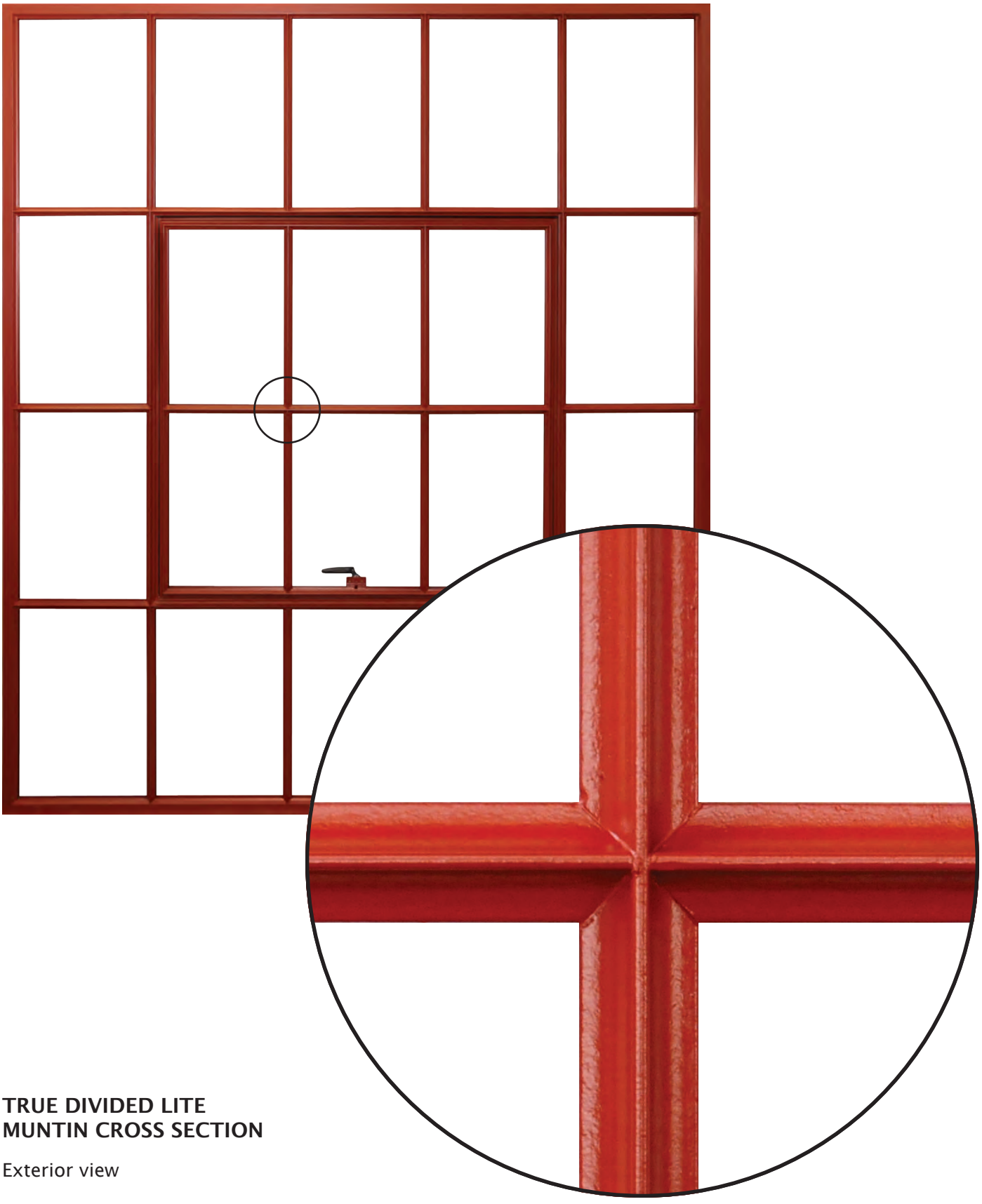
Steel Windows and Doors

HOPE'S®

CUSTOM CRAFTED WINDOWS & DOORS

Hope's One55™ Series

Fixed, Projected, Casement and Horizontally Pivoted Steel Windows

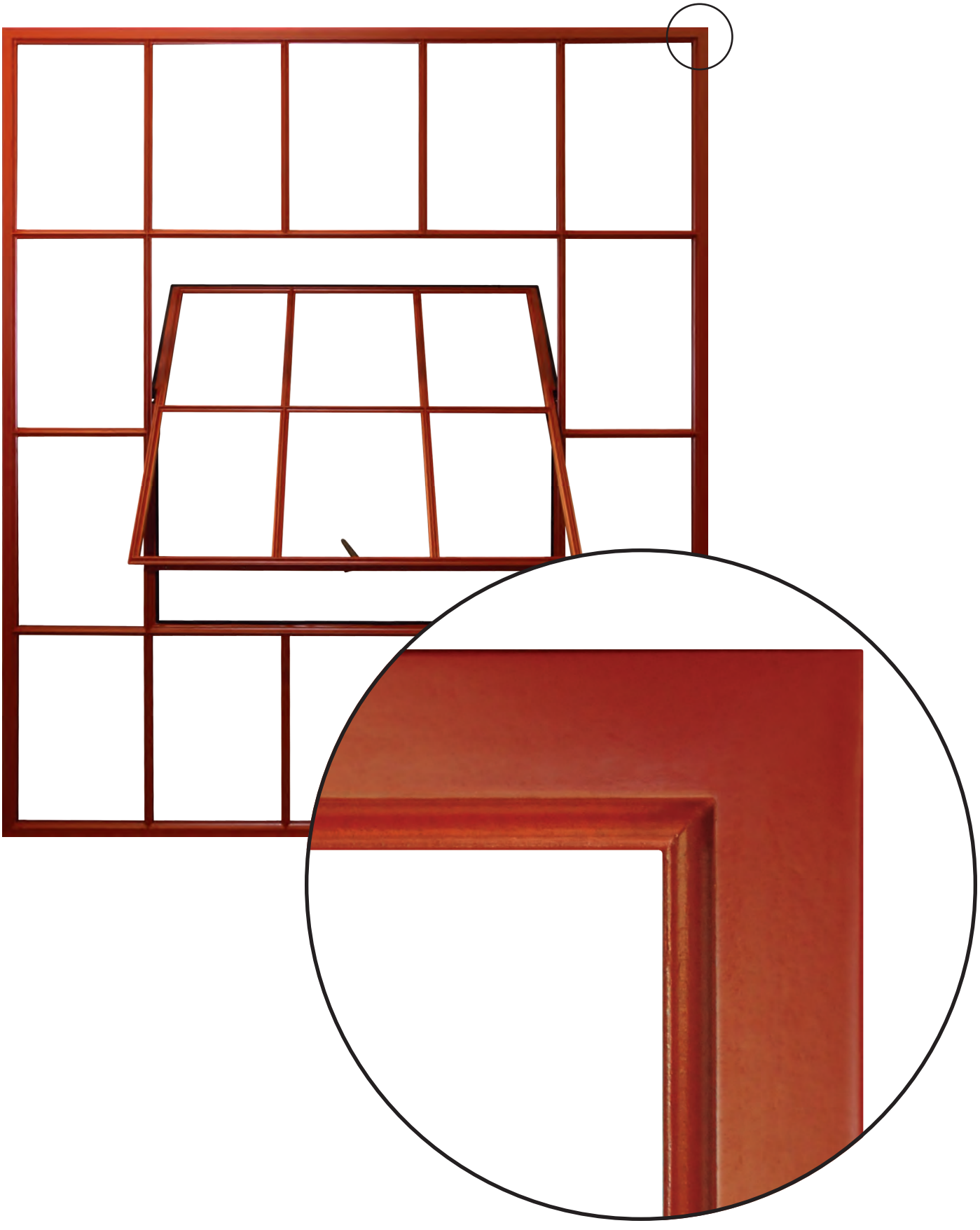


TRUE DIVIDED LITE
MUNTIN CROSS SECTION

Exterior view

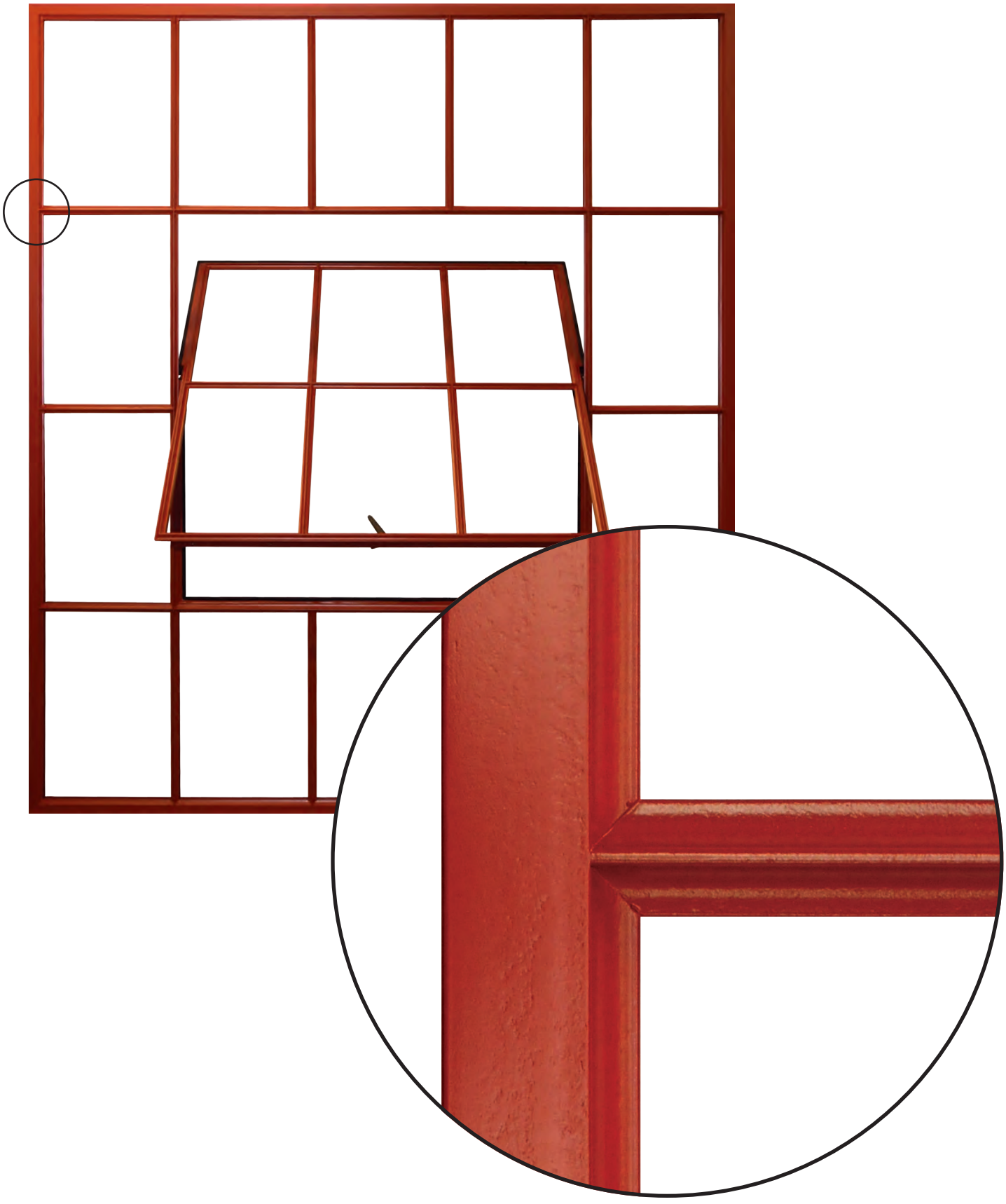
Hope's One55™ Series

Fixed, Projected, Casement and Horizontally Pivoted Steel Windows



Hope's One55™ Series

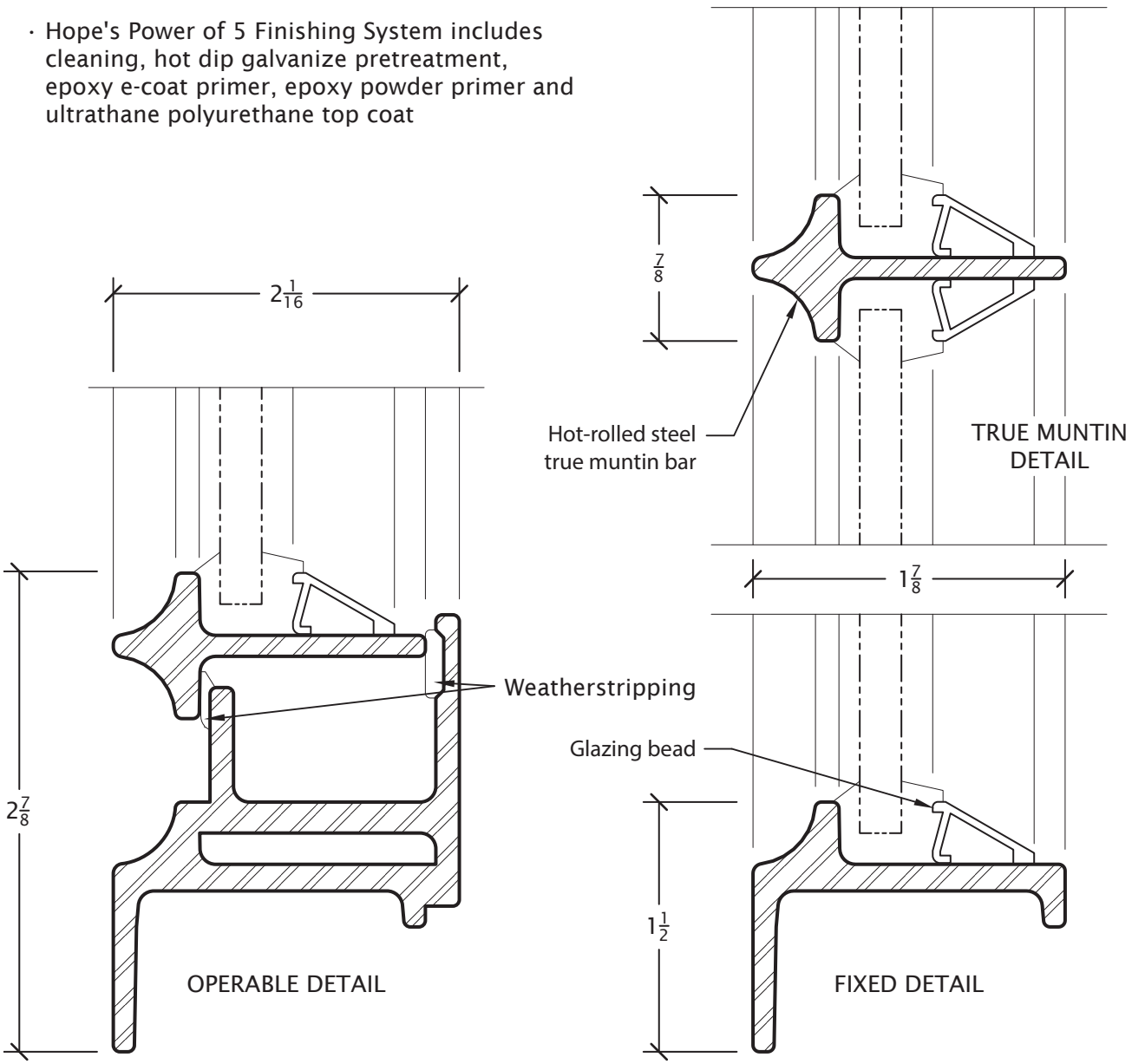
Fixed, Projected, Casement and Horizontally Pivoted Steel Windows



Hope's One55 Series hot-rolled steel window and door profiles are specifically designed for projects requiring replication of historic steel windows with arrow shaped profiles. The fixed and operable configurations can be glazed with monolithic or insulated glass for energy efficiency. The unique window and door profiles and very narrow sightlines are ideal for new buildings as well as replacement projects.

PRODUCT FEATURES

- Historically accurate true divided lite muntins and sightlines
- Unsurpassed strength of hot-rolled steel sections
- Accepts up to 5/8" thick insulating glass
- ASTM compliance for air infiltration and water penetration
- Hope's Power of 5 Finishing System includes cleaning, hot dip galvanize pretreatment, epoxy e-coat primer, epoxy powder primer and ultrathane polyurethane top coat



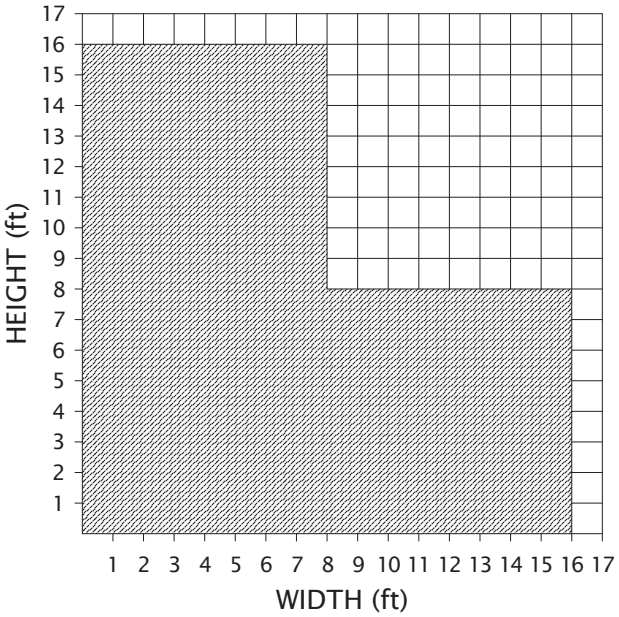
Details are full scale.

HOPE'S®

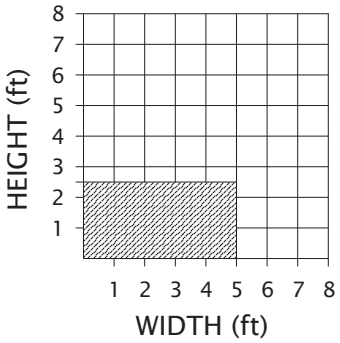
ONE55™ SERIES

Fixed, Projected, Casement and Horizontally Pivoted
Recommended Sizes

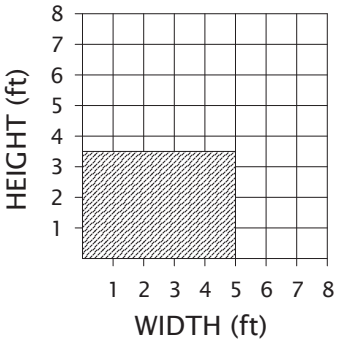
FIXED WINDOWS



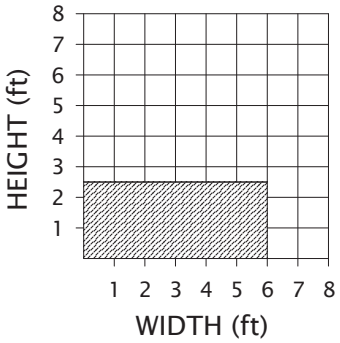
PROJECT-IN VENTILATORS



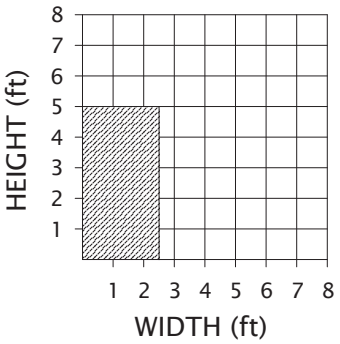
PROJECT-OUT VENTILATORS



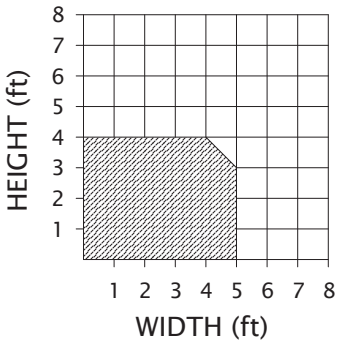
MOTORIZED OPERATOR



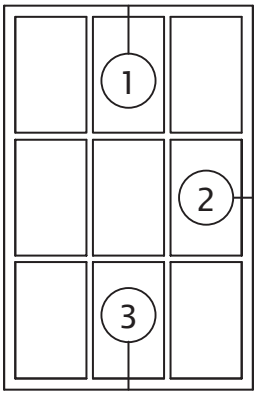
CASEMENT VENTILATORS

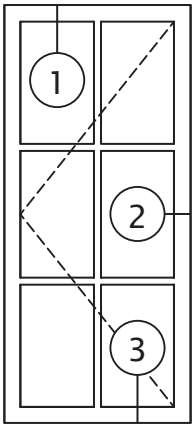


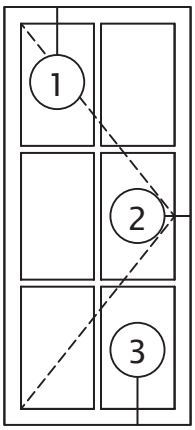
HORIZONTAL PIVOT VENTILATORS



Sizes based on 5/8" insulating glass with 1/8" panes.
For requirements exceeding the sizes shown, consult Hope's for design alternatives.







1 HEAD

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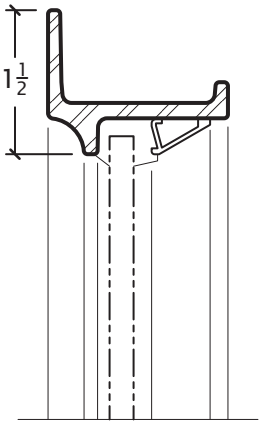
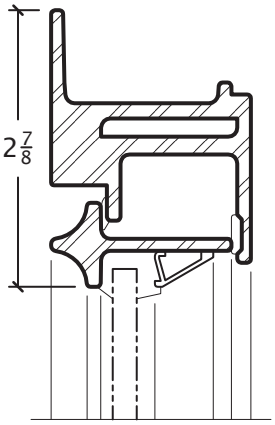


SWING-OUT



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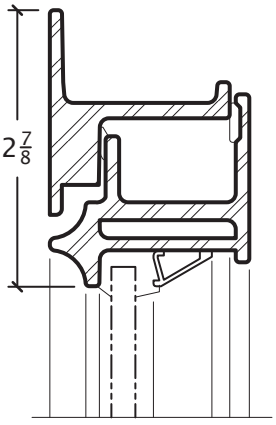

2 JAMB

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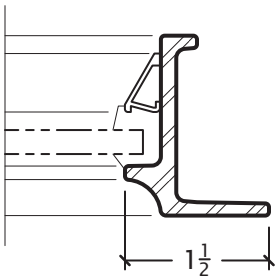

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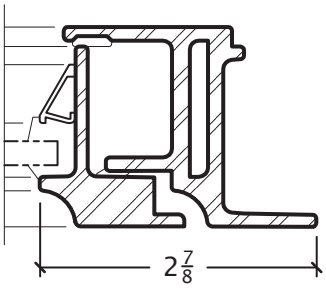

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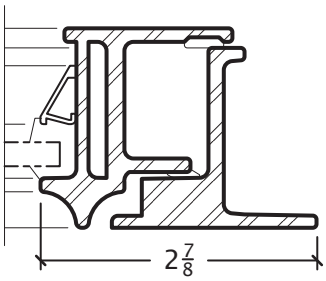

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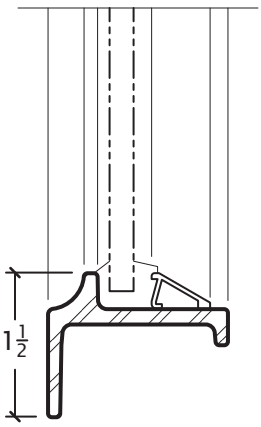

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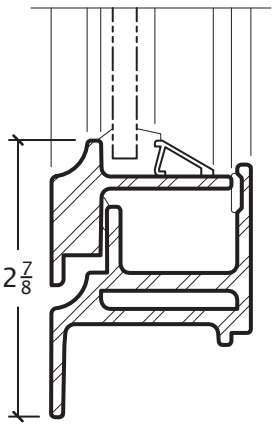

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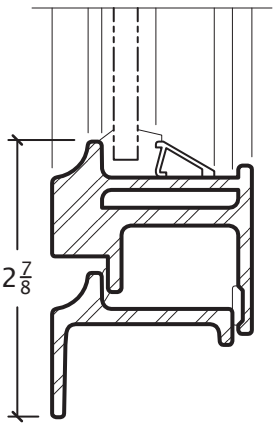

Details are half scale.
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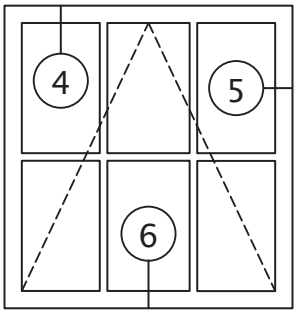

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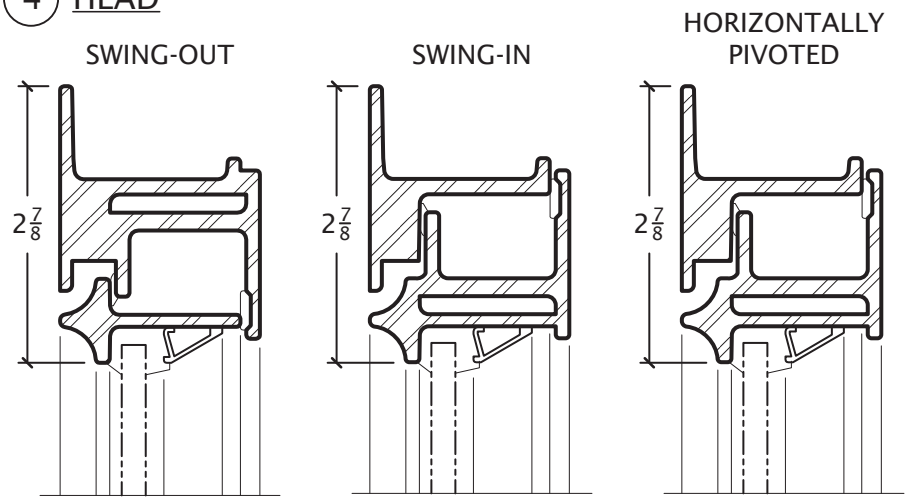

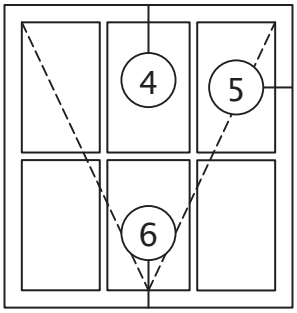

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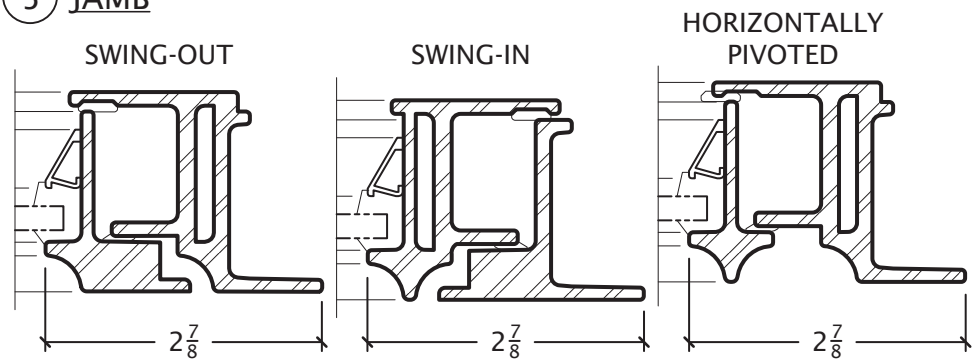

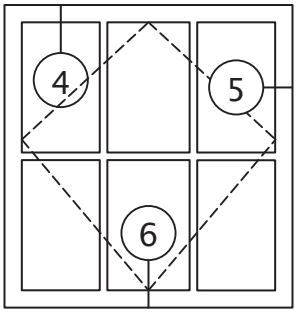

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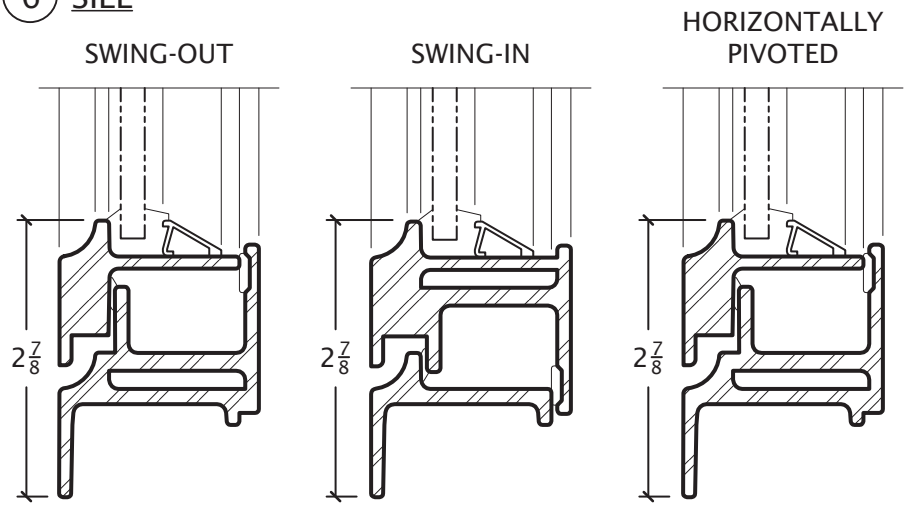

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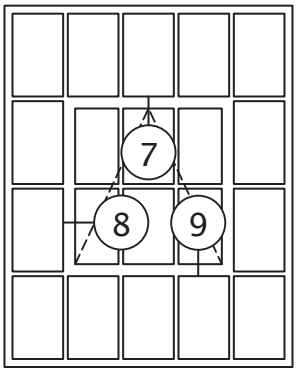

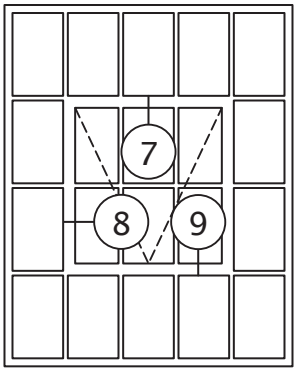

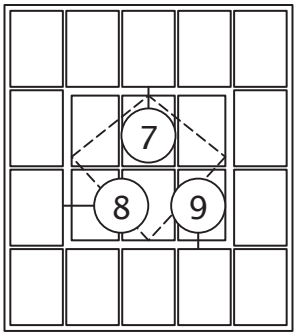

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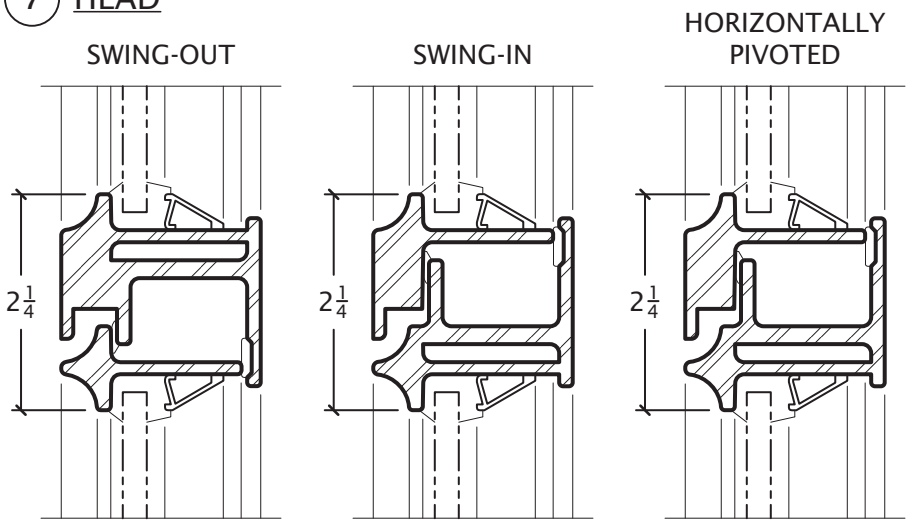

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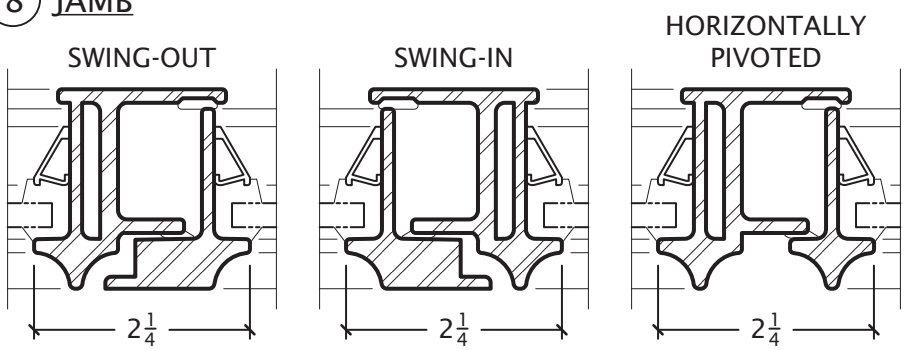

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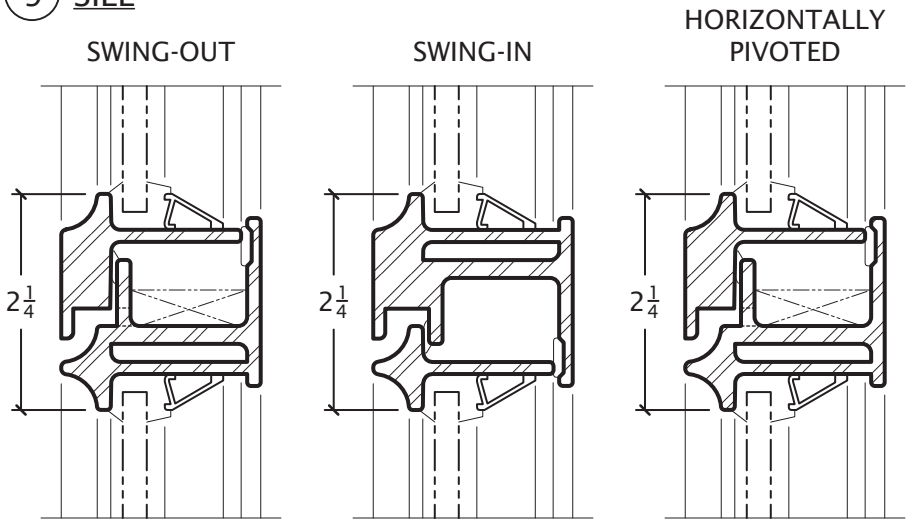

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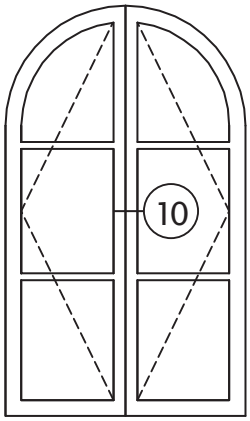
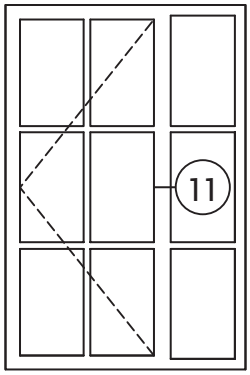
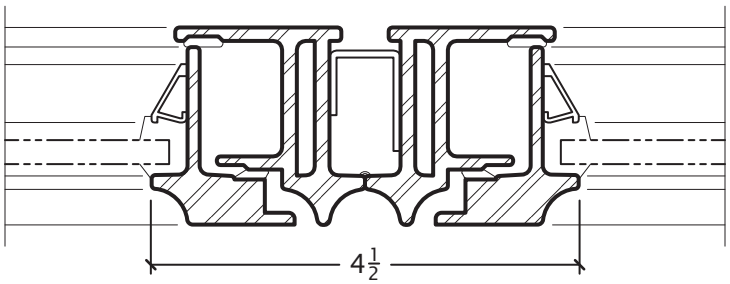




(10) DOUBLE CASEMENT

SWING-OUT



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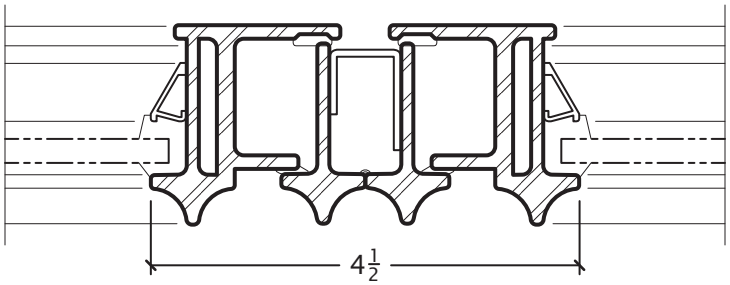
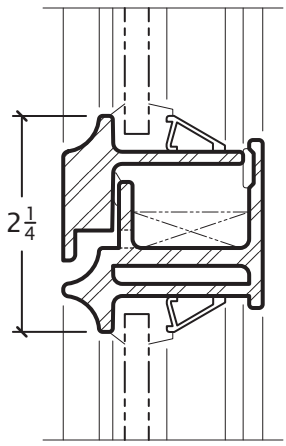


(11) OPERABLE NEXT TO FIXED RAIL

SWING-OUT



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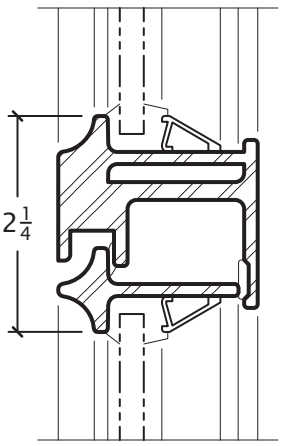

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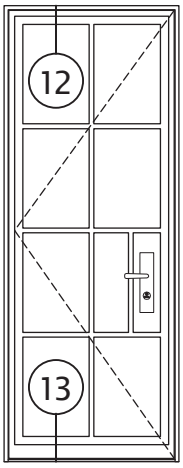
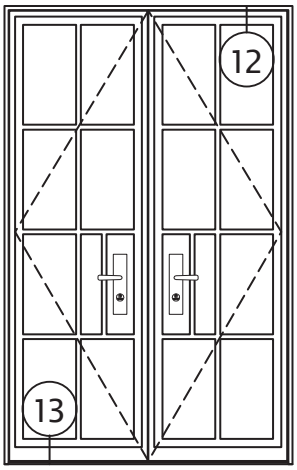
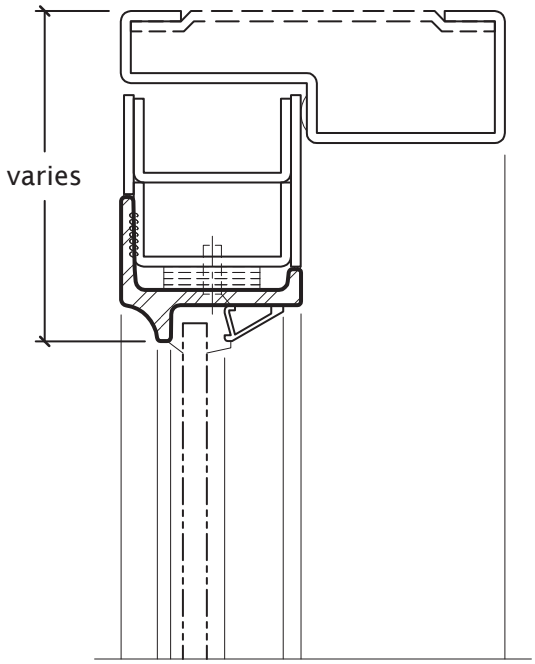
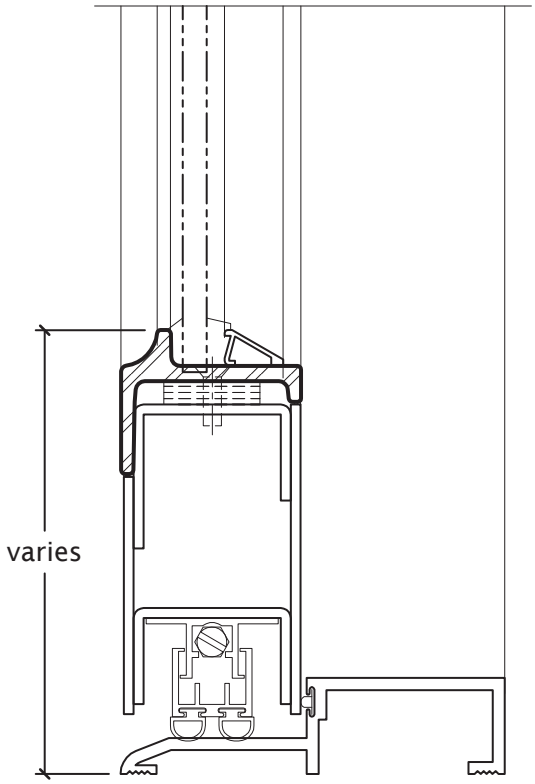




12 HEAD



13 THRESHOLD



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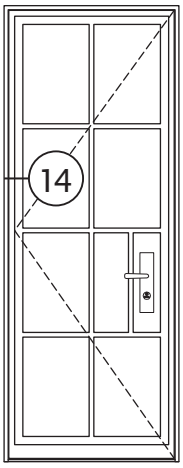
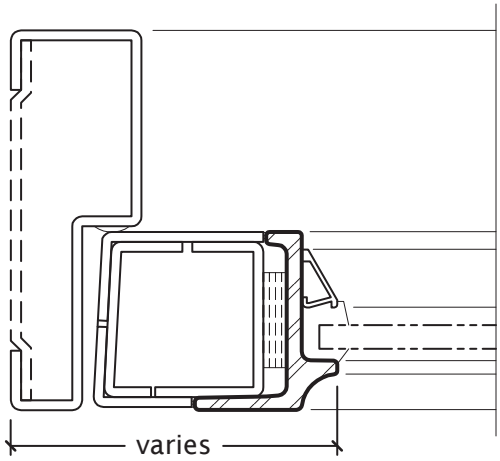
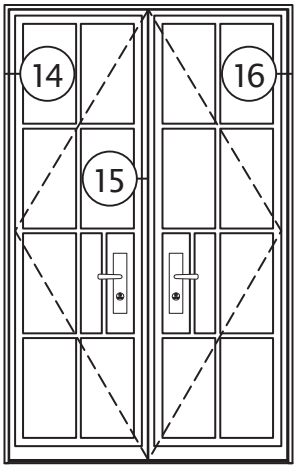
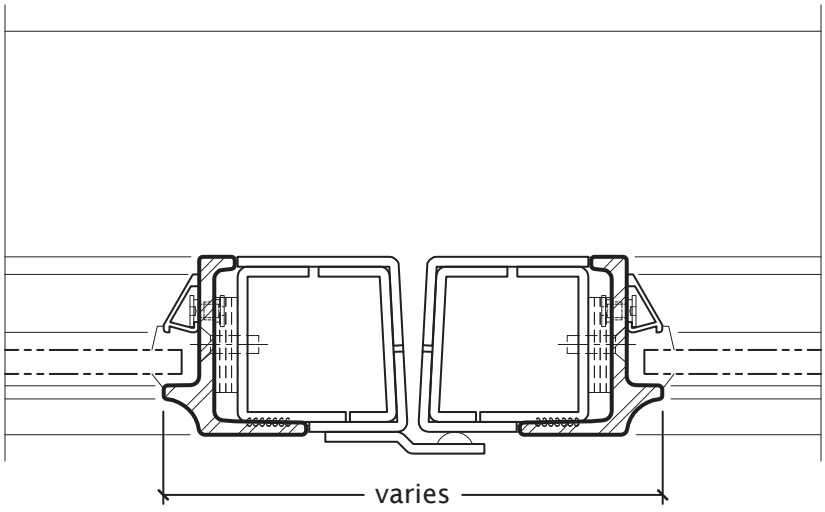


14 JAMB

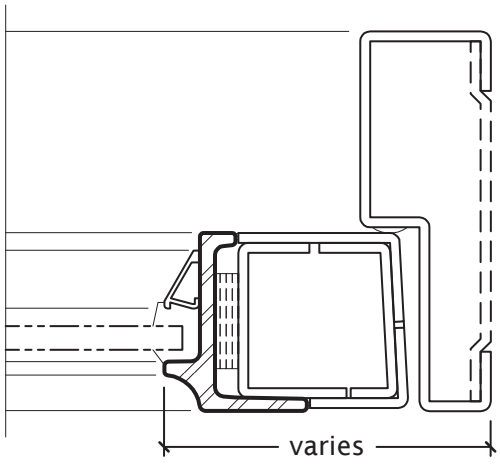




15 DOUBLE FOLDING MEETING RAIL



16 JAMB



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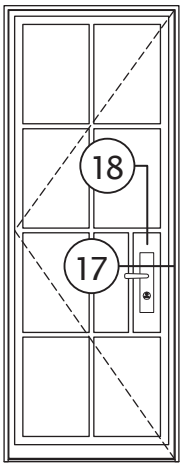
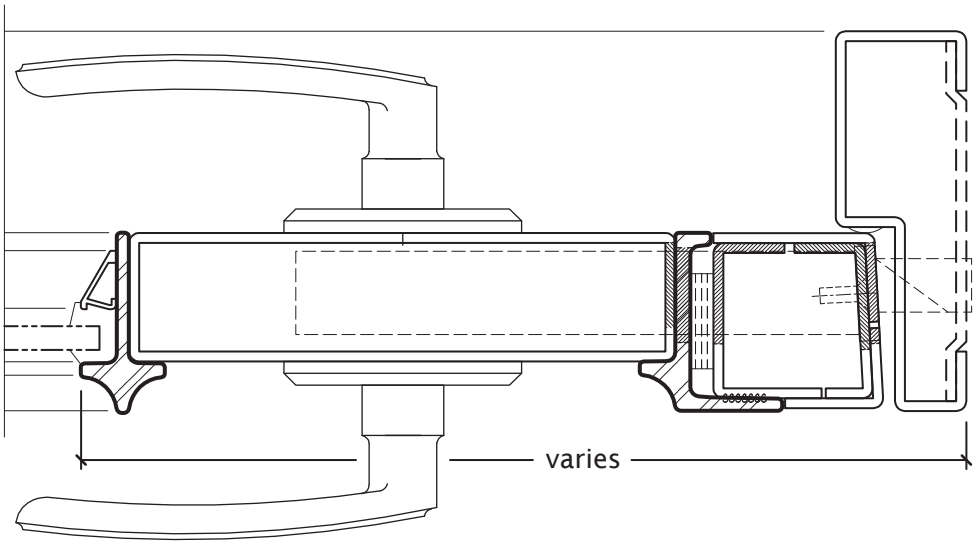
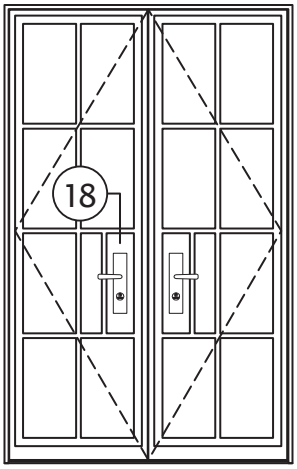
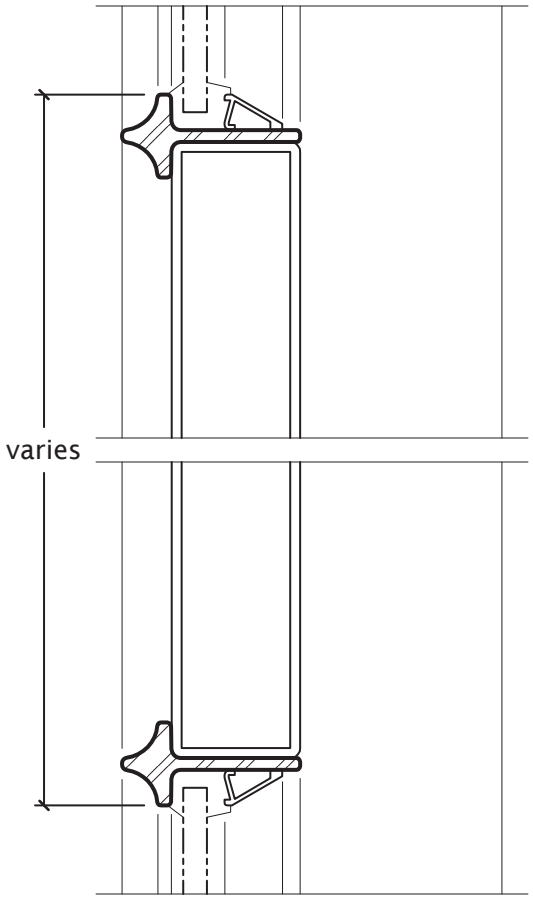


17 LOCKBOX AT JAMB





18 LOCKBOX



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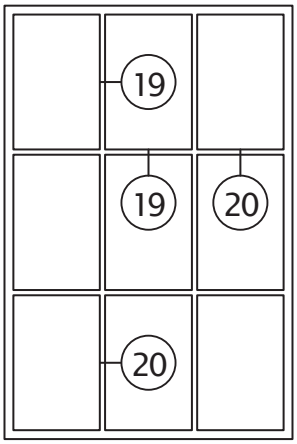
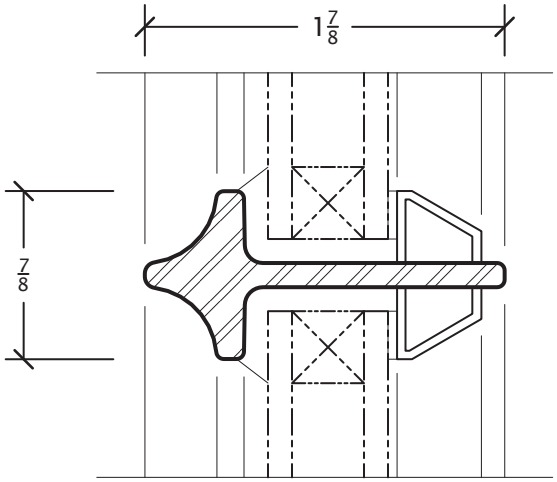
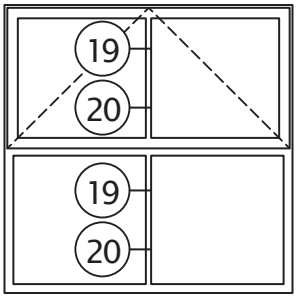
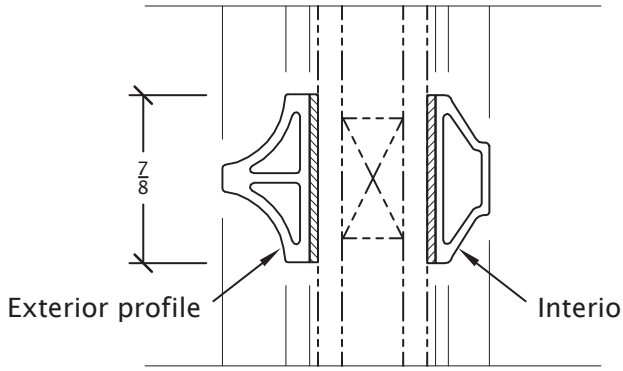


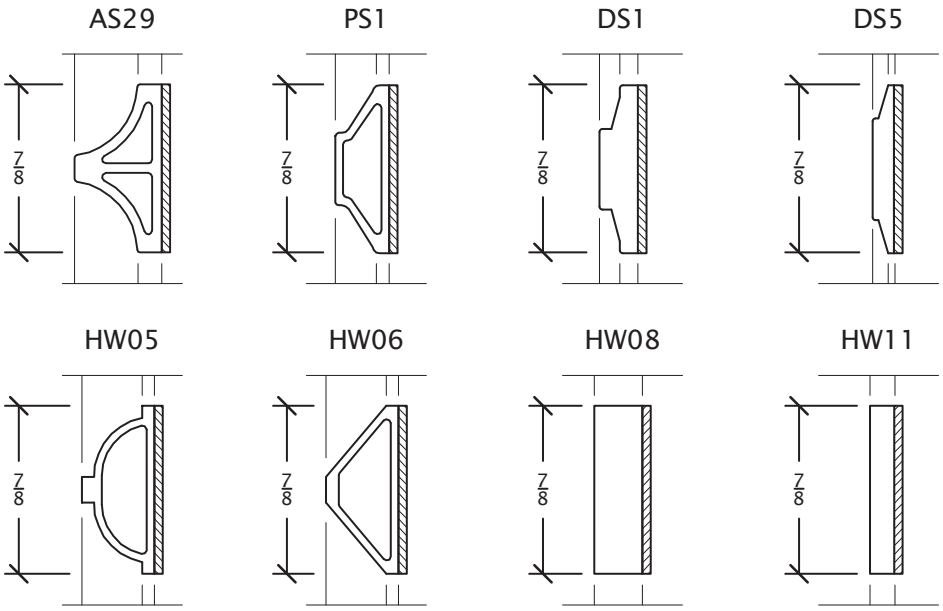
19 TRUE DIVIDED LITE MUNTIN PROFILE



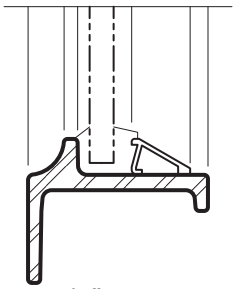


20 SIMULATED DIVIDED LITE MUNTIN PROFILES

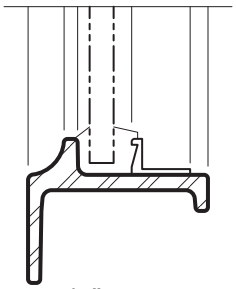




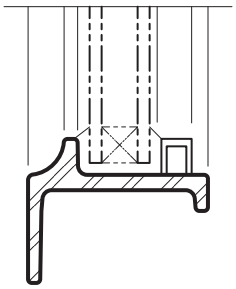
Details are full scale.
All Hope's products are custom manufactured to your specific project requirements.



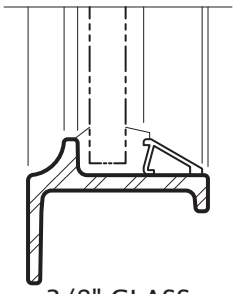
1/4" GLASS
#285 BEAD



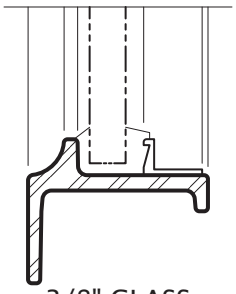
1/4" GLASS
#286 BEAD



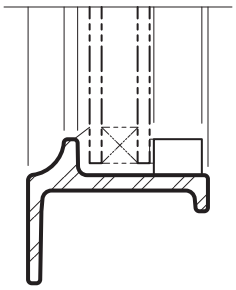
5/8" GLASS
#50 BEAD



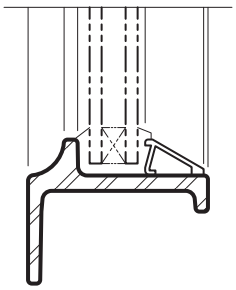
3/8" GLASS
#285 BEAD



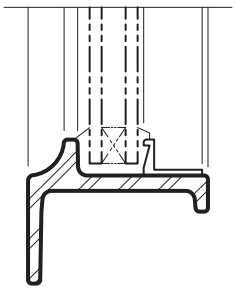
3/8" GLASS
#286 BEAD



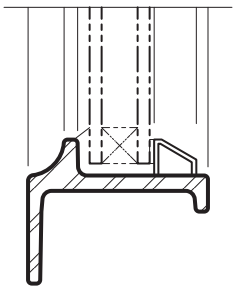
5/8" GLASS
SQUARE BEAD



1/2" GLASS
#285 BEAD



1/2" GLASS
#286 BEAD



5/8" GLASS
SLOPED BEAD

Details are half scale and shown inside glazed.

HOPE'S®

ONE55™ SERIES FIXED, PROJECTED, AND CASEMENT STEEL WINDOWS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included:

1. Hot-rolled steel double weatherstripped windows with fixed, project-in, project-out configurations.
2. All window anchors, mullions, covers and trim.
3. Stainless steel insect screens for all operating ventilators (optional).
4. Factory applied Hope's Power of 5 finishing system.

B. Related work specified elsewhere:

1. Glass, glazing and glazing materials, Section 08810.
2. Perimeter caulking, Section 07915.
3. Miscellaneous structural items, Section 05100.

1.2 QUALITY ASSURANCE

A. Manufacturer shall have not less than 10 years experience in the fabrication of heavy custom steel windows and be a member of The Steel Window Institute (SWI).

B. Installation of windows shall be done by experienced window installers.

C. Allowable tolerances: Size dimensions + 1/16 inch.

D. Source quality control:

1. Air infiltration test:
   a. Meets or exceeds ASTM E283.
   b. Maximum air infiltration 0.50 CFM/Ft. of crack length with differential pressure across window unit of 6.24 PSF.
2. Water penetration test:
   a. Meets or exceeds ASTM E331.
   b. No water penetration for 15 minutes when window is subjected to a rate of flow of 5 gal./hr./sq. ft. with differential pressure across window unit of 4.50 PSF.
3. Field test:
   a. Field testing criteria (when applicable) shall be in accordance with AAMA 502.
4. Structural test:
   a. Meets or exceeds ASTM E330.
   b. No damage at 60 psf.
5. Forced entry test:
   a. Meets or exceeds ASTM F588.
   b. Grade 40 @ 300 pounds.

6. Quality of Power of 5 finishing process shall meet or exceed the following ASTM designations:
    a. ASTM D714- Paint Blistering Test
    b. ASTM D4585 – Humidity Test
    c. ASTM B117 – Salt Spray (Fog) Test
    d. ASTM D1654 – Painted Products in Corrosive Environments
    e. ASTM G85 – Cyclic Fog/Dry Test (Prohesion)
    f. ASTM D5894 – Salt Fog/UV Painted Metal
    g. ASTM D4541 – Pull off Strength of Coating Test
7. Upon request, the window manufacturer shall provide a test report from a qualified independent U.S. testing laboratory regularly engaged in testing windows to verify that products conform to these test requirements.

1.3 SUBMITTALS

A. Samples (as requested by architect):
    1. Typical corner sample of specified window profile with glazing beads.
    2. Sample of specified muntin (6″ long), showing welded intersections and glazing beads.
    3. Color sample of finish.
    4. Hardware.

B. Shop drawings and manufacturer's literature:
    1. Submit for approval shop drawings showing window and installation details, including anchorage, fastening and recommended sealing methods.
    2. Dimensioned elevations showing window opening and window sizes.
    3. The manufacturer shall not commence any work until shop drawings have been approved.
    4. Color charts for finishes.

1.4 PRODUCT, STORAGE AND HANDLING

A. The General Contractor shall be responsible for the protection and storage of the windows after delivery to the site.

B. Store in designated areas in an upright position on wood slats or on a dry floor in a manner that will prevent damage. Ventilate canvas or plastic coverings to prevent humidity buildup.

1.5 WARRANTY

A. Provide Hope's 10-year Limited Warranty.

PART 2 - PRODUCT AND FABRICATION

2.1 Manufacturers:

A. Furnish all labor and materials to complete the fabrication of windows as shown on architect's drawings and as specified herein. All windows covered by this specification shall be domestically manufactured in the U.S.A.

B. Manufacturers: Subject to compliance with requirements covered in this specification, provide products by Hope's Windows, Inc. – Jamestown, NY (phone: 716-665-5124, e-mail; sales@hopeswindows.com) whose name and products are used to establish the standard of workmanship.

C. Substitutions: Written approval necessary 10 days prior to bid through submission of the following:

1. Full-size window/door samples matching required scope.
2. Applicable test reports as outlined in Quality Assurance Section 1.2.
3. List of five recently completed projects of similar size and scope.

2.2 MATERIALS

A. Heavy custom double weatherstripped windows shall be manufactured from solid hot-rolled steel shapes.

1. Profiles made from steel with flanges rolled integrally at the mill.
2. Perimeter frames and ventilator sections shall have glazing rebates providing an unobstructed glazing surface of at least 3/8".
3. The exterior side of the glazing rebate shall have a coved recess integrally rolled in the profile. Applied tapered adapters will not be acceptable.
4. Combined weight of frame and ventilator profiles shall be a minimum of 4.68 pounds per lineal foot. Frame profile alone shall not weigh less than 1.85 pounds per lineal foot.
5. The frame profiles shall have integral grooves located on the interior bedding contacts for the reception of weatherstripping.

B. Muntins:

1. True divided lite muntins:
   a. Hot-rolled steel muntins shall have a 7/8" sightline with integral coves to match perimeter frame and ventilator profiles.

C. Glazing beads shall be extruded aluminum Alloy 6063-T5 with a minimum thickness of .045 inches.

D. Weatherstripping shall be extruded EPDM closed cell sponge, closed cell neoprene, or flexible silicone.

E. Operable Hardware (Select from the following):

1. Project-Out ventilators:
   a. Fastener: Brass or bronze cam fastener.
   b. Ventilators shall be hung on heavy-duty stainless steel four bar hinges with brass friction shoes.
2. Project-In ventilators:
   a. Fastener: Brass or bronze cam fastener; or bronze spring catch for ventilators beyond reach.
   b. Ventilators shall be hung on heavy-duty stainless steel four bar hinges with brass friction shoes.
3. Side Hung-Out ventilators:
   a. Fastener: Brass or bronze cam fastener.
   b. Hinges: Butt hinge or 4-bar hinge.
   c. Friction limit device: Stainless steel with sliding brass shoe and screw adjusted friction.

4. Side Hung-In ventilators:
    a. Fastener: Brass or bronze cam fastener.
    b. Hinges: Butt hinge or 4-bar hinge.
    c. Friction limit device: Stainless steel with sliding brass shoe and screw adjusted friction.

F. All screws that are furnished by Hope's for hardware, trim, covers, anchoring, weather bars, water dams, screens, etc. shall be non-ferrous brass or stainless steel. Glazing bead retainer screws are plated steel.

G. Stainless Steel Insect Screens (Optional):
    1. Frames shall be roll-formed 20 gauge stainless steel.
    2. Stainless steel screens shall be .011 diameter wire, woven to 14 x 18 mesh count. Mesh is available in several types of material; see screen section for type of mesh (specify) and further screen specifications.

H. Power of 5 Finishing:
    1. Cleaning
    2. Pretreatment
    3. Epoxy E-Coat primer
    4. Epoxy powder primer
    5. Ultrathane polyurethane top coat

2.3 FABRICATION

A. Fabricate steel windows in accordance with approved shop drawings.

B. Corners of frame and ventilator shall be mitered or coped then solidly welded. Exposed and contact surfaces shall be finished smooth flush with the adjacent surfaces. All interior and exterior rail bar and muntin joints shall be welded and ground smooth.

C. Muntins:
    1. True divided lite muntins shall be welded to the perimeter frame. Muntin intersections shall be slotted, cross notched and welded.

D. Glazing:
    1. All windows shall be designed for inside glazing.
    2. Provide replaceable continuous snap-in glazing beads to suit the glass as specified.
    3. Glazing beads shall be cut and shop fitted to each glass lite prior to shipment.

E. Weatherstrip:
    1. All ventilators shall receive continuous EPDM weatherstripping that shall be applied to the integral weatherstrip grooves on the interior. Exterior shall have adhesive backed silicone bulb EPS on sealing leg contact surfaces between the frame and ventilator sections.

F. Operable Hardware (Select from the following):

1. Project-Out ventilators:

   a. Ventilators shall be hung on heavy-duty stainless steel four bar hinges, having friction maintained by a sliding brass shoe with screw adjustment.

   b. Provide two fasteners per ventilator where sash width exceeds 48".

2. Project-In ventilators:

   a. Ventilators shall be hung on heavy-duty stainless steel four bar hinges, having friction maintained by a sliding brass shoe with screw adjustment.

   b. Provide two fasteners per ventilator where sash width exceeds 48".

3. Side Hung-Out ventilators:

   a. Ventilators shall be hung on hinges.

   b. Provide friction device at head of the ventilator (as required).

   c. Provide solid brass or bronze cam fasteners.

4. Side Hung-In ventilators:

   a. Ventilators shall be hung on hinges.

   b. Provide friction device at head of the ventilator (as required).

   c. Provide solid brass or bronze cam fasteners.

G. Stainless Steel Insect Screens (Optional):

1. Stainless steel screen frames shall be finished to match the windows.

2. Stainless steel screens shall be rewire able to allow for mesh replacement.

3. Stainless steel screen fastenings shall permit easy attachment and removal from the interior. See screen section for further specifications.

2.4 FACTORY FINISHING

A. Cleaning

All hot-rolled steel profiles must be acid pickled to white metal as defined by SSPC – SP8 creating a pristine, white metal substrate which is paramount to achieving ultimate finish performance.

B. Pretreatment

Following welding and all machining operations, hot-rolled products and accessories are subjected to a 13-stage pretreatment process.

1. Hot Dip Galvanize

   Parts are cleaned and immersed in a molten pool of pure zinc per ASTM A123 to create a minimum coating of 2.5 mils of cathodic protection.

2. Alkaline cleaning spray

3. Alkaline cleaning submersion

4. Water immersion rinse combo

5. Water immersion rinse clean
6. Acid immersion
7. Neutralizing rinse
8. Water immersion rinse clean
9. Conditioner immersion
10. Zinc phosphate immersion
11. Rinse immersion
12. Sealer immersion
13. Water reverse osmosis rinse immersion

C. Epoxy E-coat Primer

All pretreated frames and accessories are immersed into an electrostatic (E-coat) bath of PPG epoxy primer. Electrostatic application ensures all substrates are encapsulated evenly. Epoxy ensures superior adhesion for secondary coating.

1. Permeate spray
2. Permeate rinse
3. Paint immersion and electrostatic encapsulation
4. Water reverse osmosis rinse
5. Oven-cure, 45 minutes @ 350º F

D. Epoxy Powder Primer

In addition to pristine substrate and cutting-edge pretreatment and the E-coat system, Hope's incorporates an abrasion resistant coating that ensures ultimate substrate protection. Powder coat is intended as an intermediate finish applied prior to the final finish top coat.

1. Following pretreatments and the E-coat priming system, all frames and accessories are factory coated with an epoxy powder coat abrasion resistant layer.
2. Powder is applied electrostatically over cured E-coat to a dry film thickness (DFT) of 2.0-3.0 mils.
3. Parts are oven baked at 325º F to completely cure prior to final top coat.

E. Ultrathane Polyurethane Top Coat

The final top coat defines the final stage to the overall aesthetics and performance of the finished product. Hope's ultrathane polyurethane finish is a polyurethane blend that offers outstanding UV stability, superior touch-up capability, low chalking and fading characteristics, unlimited color matching, and 70,000+ standard colors including metallics.

F. Power of 5 Overview

1. Combined overall dry film thickness shall be a minimum of 7.1 mils.
2. Overall process shall provide full documented compliance with the following criteria:
    a. SSCP-SP8 for Acid Pickling
    b. ASTM A123 for Hot Dip Galvanize

c. ASTM D714-02 Paint Blistering Test

d. ASTM D4585 Humidity

e. ASTM D1654-05 Painted Products in Corrosive Environment

f. ASTM B117-03 Salt Spray (Fog) Test

g. ASTM G85 Cyclic Fog/Dry Test (Prohesion)

h. ASTM D5894-96 Salt Fog/V Painted Metal

i. ASTM D4541 Pull Off Strength of Coating Test

PART 3 - EXECUTION

3.1 INSPECTION

A. Window openings shall conform to details, dimensions and tolerances shown on the window manufacturer's approved shop drawings.

B. Conditions which may adversely affect the window installation must be corrected before installation commences.

C. The wash down of the adjacent masonry must be completed before erection commences to prevent damage to the finish by the cleaning materials.

3.3 INSTALLATION

A. Windows specified under this section shall be installed by experienced personnel.

B. Install windows in openings in strict accordance with approved shop drawings.

1. Set units plumb, level and true to line, without warp or rack of frames.

2. Anchor units securely to surrounding construction with approved fasteners.

3. The exterior joints between the windows, trim and mullions shall be properly sealed watertight with an approved sealant and neatly pointed.

C. Attach ventilator hardware, as required, and adjust ventilators to operate smoothly free from twist and to be weathertight when closed.

D. Attach loose muntin grids per approved shop drawings, if applicable.

E. Repair any abraded areas of the factory finish.

3.3 CLEANING

A. Window installer shall leave window surfaces clean after installation and ready to receive glass and glazing. The window installer will not be responsible for final cleaning.

HOPE'S®

ONE55™ SERIES HORIZONTALLY PIVOTED STEEL WINDOWS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included:

1. Hot-rolled steel double weatherstripped windows with horizontally pivoted configuration.
2. All window anchors, mullions, covers and trim.
3. Factory applied Hope's Power of 5 Finishing System.

B. Related work specified elsewhere:

1. Glass, glazing and glazing materials, Section 08810.
2. Perimeter caulking, Section 07915.
3. Miscellaneous structural items, Section 05100.

1.2 QUALITY ASSURANCE

A. Manufacturer shall have not less than 10 years experience in the fabrication of heavy custom steel windows and be a member of The Steel Window Institute (SWI).

B. Installation of windows shall be done by experienced window installers.

C. Allowable tolerances: Size dimensions + 1/16 inch.

D. Source quality control:

1. Air infiltration test:
   a. Meets or exceeds ASTM E283.
   b. Maximum air infiltration 0.50 CFM/Ft. of crack length with differential pressure across window unit of 6.24 PSF.
2. Water penetration test:
   a. Meets or exceeds ASTM E331.
   b. No water penetration for 15 minutes when window is subjected to a rate of flow of 5 gal./hr./sq. ft. with differential pressure across window unit of 4.50 PSF.
3. Field test:
   a. Field testing criteria (when applicable) shall be in accordance with AAMA 502-12.
4. Structural test:
   a. Meets or exceeds ASTM E330.
5. Forced entry test:
   a. Meets or exceeds ASTM F588.
   b. Grade 40 @ 300 pounds.

6. Quality of Power of 5 finishing process shall meet or exceed the following ASTM designations:
    a. ASTM D714- Paint Blistering Test
    b. ASTM D4585 – Humidity Test
    c. ASTM B117 – Salt Spray (Fog) Test
    d. ASTM D1654 – Painted Products in Corrosive Environments
    e. ASTM G85 – Cyclic Fog/Dry Test (Prohesion)
    f. ASTM D5894 – Salt Fog/UV Painted Metal
    g. ASTM D4541 – Pull off Strength of Coating Test
7. Upon request, the window manufacturer shall provide a test report from a qualified independent U.S. testing laboratory regularly engaged in testing windows to verify that products conform to test requirement as outlined.

1.3 SUBMITTALS

A. Samples (as requested by architect):
    1. Typical 6" long window profile with glazing beads.
    2. Sample of specified muntin, showing welded intersections and glazing beads.
    3. Color sample of finish.
    4. Hardware.
B. Shop drawings and manufacturer's literature:
    1. Submit for approval shop drawings showing window and installation details, including anchorage, fastening and recommended sealing methods.
    2. Dimensioned elevations showing window opening and window sizes.
    3. The manufacturer shall not commence any work until shop drawings have been approved.
    4. Color charts for finishes.

1.4 PRODUCT, STORAGE AND HANDLING

A. The General Contractor shall be responsible for the protection and storage of the windows after delivery to the site.
B. Store in designated areas in an upright position on wood slats or on a dry floor in a manner that will prevent damage. Ventilate canvas or plastic coverings to prevent humidity buildup.

1.5 WARRANTY

A. Provide Hope’s 10-year Limited Warranty.

PART 2 - PRODUCT AND FABRICATION

2.1 Manufacturers:

A. Furnish all labor and materials to complete the fabrication of windows as shown on architect's drawings and as specified herein. All windows covered by this specification shall be domestically manufactured in the U.S.A.

B. Manufacturers: Subject to compliance with requirements covered in this specification, provide products by Hope's Windows, Inc. – Jamestown, NY (phone: 716-665-5124, e-mail: sales@hopeswindows.com) whose name and products are used to establish the standard of workmanship.

C. Substitutions: Written approval necessary 10 days prior to bid through submission of the following:

1. Full-size window/door samples matching required scope.
2. Applicable test reports as outlined in Quality Assurance Section 1.2.
3. List of five recently completed projects of similar size and scope.

2.2 MATERIALS

A. Heavy custom double weatherstripped windows shall be manufactured from solid hot-rolled steel shapes.

1. Profiles made from steel with flanges rolled integrally at the mill.
2. Perimeter frames and ventilator profiles shall have glazing rebates providing an unobstructed glazing surface of at least 3/8".
3. The exterior side of the glazing rebate shall have a coved recess integrally rolled in the profile. Applied tapered adapters will not be acceptable.
4. Combined weight of frame and ventilator profiles shall be a minimum of 4.68 pounds per lineal foot. Frame profile alone shall not weigh less than 1.85 pounds per lineal foot.
5. All steel profiles must be a minimum of 1-7/8″ in depth.
6. The frame profiles shall have integral grooves located on the interior bedding contacts for the reception of weatherstripping.

B. Muntins:

1. True divided lite muntins:
   a. Hot-rolled steel muntins shall have a 7/8" sightline with integral coves to match perimeter frame and ventilator profiles.

C. Glazing beads shall be extruded aluminum Alloy 6063-T5 with a minimum thickness of .045 inches.

D. Weatherstripping shall be extruded EPDM closed cell sponge, closed cell neoprene, flexible silicone, or polyethylene clad urethane foam.

E. Operable Hardware:

1. Surface applied brass pivots
2. Fastener: Brass or bronze cam fastener
3. Limit stop: Stainless steel arms

F. All screws that are furnished by Hope's for hardware, trim, covers, anchoring, weather bars, water dams, screens, etc. shall be non-ferrous brass or stainless steel. Glazing bead retainer screws are plated steel.

G. Power of 5 Finishing:

1. Cleaning
2. Pretreatment
3. Epoxy E-Coat primer
4. Epoxy powder primer
5. Ultrathane polyurethane top coat

2.3 FABRICATION

A. Fabricate steel windows in accordance with approved shop drawings.

B. Corners of frame and ventilator shall be mitered or coped then solidly welded. Exposed and contact surfaces shall be finished smooth flush with the adjacent surfaces. All interior and exterior rail bar and muntin joints shall be welded and ground smooth.

C. Muntins:

1. True divided lite muntins shall be welded to the perimeter frame. Muntin intersections shall be slotted, cross notched and welded.

D. Glazing:

1. All windows shall be designed for inside glazing.
2. Provide replaceable continuous glazing beads to suit the glass as specified.
3. Glazing beads shall be cut and shop fitted to each glass lite prior to shipment, or factory cut, labeled, and shipped loose for field installation.
4. Manufacturer to provide correct glazing wedge and tape in accordance with the tested assembly.

E. Weatherstrip:

1. All ventilators shall receive continuous EPDM weatherstripping that shall be applied to the integral weatherstrip grooves on the interior. Exterior shall have adhesive backed silicone bulb EPS on sealing leg contact surfaces between the frame and ventilator sections.

F. Operable Hardware:

1. Ventilators shall be hung on surface applied solid brass pivots located at the jambs of the ventilator and frame.
2. Provide one fastener at the head and one at the sill of each ventilator.
3. Provide two fasteners per ventilator where sash width exceeds 48".
4. Provide a limit stop at each jamb.

2.4 FACTORY FINISHING

A. Cleaning

1. All hot-rolled steel profiles must be acid pickled as defined by SSPC – SP8 to ensure a pristine, white metal substrate prior to fabrication.

B. Pretreatment

Following welding and all machining operations, hot-rolled products and accessories are subjected to a 13-stage pretreatment process.

1. Hot Dip Galvanize

Parts are cleaned and immersed in a molten pool of pure zinc per ASTM A123 to create a minimum coating of 2.5 mils of cathodic protection.

a. Alkaline cleaning spray

b. Alkaline cleaning – submersion

c. Water immersion rinse combo

d. Water immersion rinse clean

e. Acid immersion

f. Neutralizing rinse

g. Water immersion rinse clean

h. Conditioner immersion

i. Zinc phosphate immersion

j. Rinse immersion

k. Sealer immersion

l. Water reverse osmosis rinse immersion

C. Epoxy E-coat Primer

All pickled and pretreated frames and accessories are immersed into an electrostatic (E-coat) bath of PPG epoxy primer to ensure all substrates are encapsulated evenly and completely. Use of spray primers only will not be an acceptable alternative to this process due to benefits from additional cleaning and frame submersion.

1. Permeate spray

2. Permeate rinse

3. Epoxy primer immersion and electrostatic encapsulation

4. Water reverse osmosis rinse

5. Oven-cure, 45 minutes @ 350° F

D. Epoxy Powder Primer

Following pretreatments and E-coat system, all frames and accessories shall receive an abrasion resistant powder coating prior to final top-coat. Powder coat is intended as an intermediate finish applied prior to the final finish top coat.

1. Powder is applied electrostatically over cured E-coat to a dry film thickness (DFT) of 2.0-3.0 mils.
2. Parts oven baked at 325° F to completely cure prior to final top coat.

E. Ultrathane Polyurethane Top Coat

Following all pretreatments, e-coat and powder abrasion layer, all products shall receive Hope's ultrathane polyurethane finish with touch-up capability, low chalking and fading characteristics, unlimited color matching, and 70,000+ standard colors, including metallics.

F. POWER OF 5 OVERVIEW

1. Combined overall dry film thickness shall be a minimum of 7.1 mils.
2. Overall process shall provide full documented compliance with the following criteria:
   a. SSPC-SP8 for Acid Pickling
   b. ASTM D714-02 Paint Blistering Test
   c. ASTM D4585 Humidity
   d. ASTM D1654-05 Painted Products in Corrosive Environment
   e. ASTM B117-03 Salt Spray (Fog) Test
   f. ASTM G85 Cyclic Fog/ Dry Test (Prohesion)
   g. ASTM D5894-96 Salt Fog/ UV Painted Metal
   h. ASTM D4541 Pull Off Strength of Coating Test

PART 3 - EXECUTION

3.1 INSPECTION

A. Window openings shall conform to details, dimensions and tolerances shown on the window manufacturer's approved shop drawings.

B. Conditions which may adversely affect the window installation must be corrected before installation commences.

C. The wash down of the adjacent masonry must be completed before erection commences to prevent damage to the finish by the cleaning materials.

3.2 INSTALLATION

A. Windows specified under this section shall be installed by experienced personnel.

B. Install windows in openings in strict accordance with approved shop drawings:

1. Set units plumb, level and true to line, without warp or rack of frames.
2. Anchor units securely to surrounding construction with approved fasteners.
3. The exterior joints between the windows, trim and mullions shall be properly sealed watertight with an approved sealant and neatly pointed.

C. Attach ventilator hardware, as required, and adjust ventilators to operate smoothly free from twist and to be weathertight when closed.

D. Attach loose muntin grids per approved shop drawings, if applicable.

E. Repair any abraded areas of the factory finish.

3.3 CLEANING

A. Window installer shall leave window surfaces clean after installation and ready to receive glass and glazing. The window installer will not be responsible for final cleaning.

HOPE'S®

ONE55™ SERIES SWING STEEL DOORS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included:

1. Steel doors and frames with weatherstripped doors in single or double, swing-in or swing-out configurations.
2. All door anchors, mullions, covers and trim.
3. Factory applied Hope's Power of 5 Finishing System.

B. Related work specified elsewhere:

1. Glass, glazing and glazing materials, Section 08810.
2. Perimeter caulking, Section 07915.
3. Miscellaneous structural items, Section 05100.

1.2 QUALITY ASSURANCE

A. Manufacturer shall have not less than 10 years experience in the fabrication of custom formed steel doors.

B. Installation of doors shall be done by experienced door installers.

C. Allowable tolerances: Size dimensions + 1/16 inch.

D. Quality of Power of 5 finishing process shall meet or exceed the following ASTM designations:

1. ASTM D714- Paint Blistering Test
2. ASTM D4585 – Humidity Test
3. ASTM B117 – Salt Spray (Fog) Test
4. ASTM D1654 – Painted Products in Corrosive Environments
5. ASTM G85 – Cyclic Fog/Dry Test (Prohesion)
6. ASTM D5894 – Salt Fog/UV Painted Metal
7. ASTM D4541 – Pull off Strength of Coating Test

E. Upon request, the door manufacturer shall provide a test report from a qualified independent U.S. testing laboratory regularly engaged in testing doors to verify that products conform to test requirement as outlined.

1.3 SUBMITTALS

A. Samples (as requested by architect):

1. Typical 6" door profile with glazing beads.
2. Sample of specified muntin, showing welded intersections and glazing beads.
3. Color sample of finish.
4. Hardware.

B. Shop drawings and manufacturer's literature:

1. Submit for approval shop drawings showing door and installation details, including anchorage, fastening and recommended sealing methods.

2. Dimensioned elevations showing door opening and door sizes.

3. The manufacturer shall not commence any work until shop drawings have been approved.

4. Color charts for finishes.

1.4 PRODUCT, STORAGE AND HANDLING

A. The General Contractor shall be responsible for the protection and storage of the doors after delivery to the site.

B. Store in designated areas in an upright position on wood slats or on a dry floor in a manner that will prevent damage. Ventilate canvas or plastic coverings to prevent humidity buildup.

1.5 WARRANTY

A. Provide Hope's standard 10-year Limited Warranty.

PART 2 - PRODUCT AND FABRICATION

2.1 Manufacturers:

A. Furnish all labor and materials to complete the fabrication of doors as shown on architect's drawings and as specified herein. All doors covered by this specification shall be domestically manufactured in the U.S.A.

B. Manufacturers: Subject to compliance with requirements covered in this specification, provide products by Hope's Windows, Inc. – Jamestown, NY (phone: 716-665-5124, e-mail: sales@hopeswindows.com) whose name and products are used to establish the standard of workmanship.

C. Substitutions: Written approval necessary 10 days prior to bid through submission of the following:

1. Full-size window/door samples matching required scope.

2. Applicable test reports as outlined in Quality Assurance Section 1.2.

3. List of five recently completed projects of similar size and scope.

2.2 MATERIALS

A. Door and frames shall be manufactured from 12 gauge galvanized steel with heavy custom hot-rolled steel inserts.

B. Heavy custom inserts shall be manufactured from solid hot-rolled steel shapes.

1. Profile made from steel with flanges rolled integrally at the mill.

2. Perimeter frames and ventilator profiles shall have glazing rebates providing an unobstructed glazing surface of at least 3/8".

3. The exterior side of the glazing rebate shall have a coved recess integrally rolled in the profile. Applied tapered adapters will not be acceptable.

4. Combined weight of frame and ventilator profiles shall be a minimum of 4.68 pounds per lineal foot. Frame profile alone shall not weigh less than 1.85 pounds per lineal foot.

5. All steel profiles must be a minimum of 1-7/8″ in depth.

C. Muntins:

1. True divided lite muntins:

a. Hot-rolled steel muntins shall have a 7/8” sightline with integral coves to match perimeter frame and ventilator profiles.

D. Glazing beads shall be extruded aluminum Alloy 6063-T5 with a minimum thickness of .045 inches.

E. Hardware reinforcements shall be 7, 10 or 12 gauge galvanized steel to suit specified hardware.

F. All screws that are furnished by Hope’s for hardware, trim, covers, anchoring, weather bars, water dams, screens, etc. shall be non-ferrous brass or stainless steel. Glazing bead screws are plated steel.

G. Power of 5 Finishing:

1. Cleaning

2. Pretreatment

3. Epoxy E-Coat primer

4. Epoxy powder primer

5. Ultrathane polyurethane top coat

2.3 FABRICATION

A. Fabricate steel doors and inserts in accordance with approved shop drawings.

B. Perimeter frame corners shall be coped and fully welded for maximum strength and weather tightness with face welds dressed smooth.

C. Head and jamb door stops shall be an integral portion of the frame with a 5/8" high rebate.

D. Door leaves shall have inside and outside skins laser cut from single sheet and joined at the door style.

E. Doors and door frames shall be mortised, reinforced, drilled and tapped to receive specified hardware.

F. Corners of inserts shall be mitered or coped then solidly welded. Exposed and contact surfaces shall be finished smooth flush with the adjacent surfaces. All interior and exterior rail bar and muntin joints shall be welded and ground smooth.

G. Muntins:

1. True divided lite muntins shall be welded to the perimeter frame. Muntin intersections shall be slotted, cross notched and welded.

H. Glazing

1. All doors shall be designed for inside glazing.

2. Provide replaceable continuous snap-in glazing beads to suit the glass as specified.

3. Glazing beads shall be cut and shop fitted to each glass lite prior to shipment.

4. Manufacturer to provide correct glazing wedge and tape in accordance with the tested assembly.

I. Anchoring shall be located at each hinge for maximum support.

2.4 FACTORY FINISHING

A. Cleaning

1. All hot-rolled steel profiles must be acid pickled as defined by SSPC – SP8 to ensure a pristine, white metal substrate prior to fabrication.

B. Pretreatment

1. Following welding and all machining operations, hot-rolled products and accessories are subjected to the following pretreatments. Cold-rolled, formed sheet steel components are manufactured from A60 galvannealed sheet and subjected to applicable processes outlined below.
2. 13-Stage Pretreatment Process:
    a. Zinc metal deposition (Hot-dip galvanizing of hot-rolled steel inserts)
    b. Alkaline cleaning spray
    c. Alkaline cleaning – submersion
    d. Water immersion rinse combo
    e. Water immersion rinse clean
    f. Acid immersion
    g. Neutralizing rinse
    h. Water immersion rinse clean
    i. Conditioner immersion
    j. Zinc phosphate immersion
    k. Rinse immersion
    l. Sealer immersion
    m. Water reverse osmosis rinse immersion

C. Epoxy E-coat Primer

All pickled and pretreated frames and accessories are immersed into an electrostatic (E-coat) bath of PPG epoxy primer to ensure all substrates are encapsulated evenly and completely. Use of spray primers only will not be an acceptable alternative to this process due to benefits from additional cleaning and frame submersion.

1. Permeate spray
2. Permeate rinse
3. Epoxy primer immersion and electrostatic encapsulation
4. Water reverse osmosis rinse
5. Oven-cure, 45 minutes @ 350° F

D. Epoxy Powder Primer

Following pretreatments and E-coat system, all frames and accessories shall receive an abrasion resistant powder coating prior to final top-coat.

1. Powder is applied electrostatically over cured E-coat to a dry film thickness (DFT) of 2.0-3.0 mils.

2. Parts oven baked at 325° F to completely cure prior to final top coat.
3. Powder coat is intended as an intermediate finish applied prior to the final finish top coat.

E. Ultrathane Polyurethane Top Coat

Following all pretreatments, e-coat and powder abrasion layer, all products shall receive Hope's ultrathane polyurethane finish with touch-up capability, low chalking and fading characteristics, unlimited color matching, and 70,000+ standard colors, including metallics.

F. POWER OF 5 OVERVIEW

1. Combined overall dry film thickness shall be a minimum of 4.6 mils (inland locations) and 7.1 mils (coastal locations).
2. Overall process shall provide full documented compliance with the following criteria:
   a. SSPC-SP8 for Acid Pickling
   b. ASTM D714-02 Paint Blistering Test
   c. ASTM D4585 Humidity
   d. ASTM D1654-05 Painted Products in Corrosive Environment
   e. ASTM B117-03 Salt Spray (Fog) Test
   f. ASTM G85 Cyclic Fog/ Dry Test (Prohesion)
   g. ASTM D5894-96 Salt Fog/ UV Painted Metal
   h. ASTM D4541 Pull Off Strength of Coating Test

2.5 OPERABLE HARDWARE

A. Hinges shall be full mortise, heavy duty bronze ball-bearing 4 1/2 x 4 1/2 x .180 or heavier as required.

B. Latching hardware systems (select from the following):

1. Mortise lock set
   a. #L9453 mortise lock with #12 lever handles, thumb turn, and key cylinder.
   b. #FB6 top and bottom flush bolts on inactive leaf.
2. Panic hardware
   a. #33 Series rim device (touch bar).
   b. #3327 Series exposed vertical rod device (touch bar).
   c. #3347 Series concealed vertical rod device (touch bar).
3. Push/pull hardware

C. Closers

1. Overhead: #4040 Series.

D. Door holder/stop

1. Concealed: #100 Series.

E. Thresholds

1. Threshold shall be as shown (select material from items a or b)

a. Aluminum (anodized)

b. Bronze (toned)

F. Weatherstripping

1. Polyprene at head and jamb frame rebates.

2. Silicone at the door sill.

PART 3 - EXECUTION

3.1 INSPECTION

A. Door openings shall conform to details, dimensions and tolerances shown on the door manufacturer's approved shop drawings.

B. Conditions which may adversely affect the door installation must be corrected before installation commences.

C. The wash down of the adjacent masonry or surrounding substrate must be completed before erection commences to prevent damage to the finish by the cleaning materials.

3.2 INSTALLATION

A. Doors specified under this section shall be installed by experienced personnel.

B. Install doors in openings in strict accordance with approved shop drawings.

1. Set units plumb, level and true to line, without warp or rack of frames.

2. Anchor units securely to surrounding construction with approved fasteners.

3. The exterior joints between the doors, trim and mullions shall be properly sealed watertight with an approved sealant and neatly pointed.

C. Attach door hardware, as required, and adjust doors to operate smoothly free from twist and to be weathertight when closed.

D. Attach loose muntin grids per approved shop drawings, if applicable.

E. Repair any abraded areas of the factory finish.

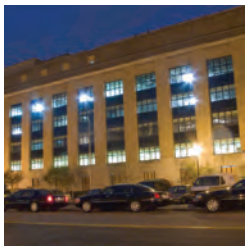
3.3 CLEANING

A. Door installer shall leave door surfaces clean after installation and ready to receive glass and glazing. The door installer will not be responsible for final cleaning.

HOPE'S®















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