



NS-250

Heavy-Duty

Aluminum Stile & Rail Door Entrances

Product Details

Details:

- NS-250 narrow stile has 2-1/2 inch vertical stiles with 1/8" thick walls with .140" top rail wall thickness for closer and header stop mounting.
- Doors are 1-3/4" thick.
- True mortise and tenon construction, maximizing joint strength and eliminating any chance of daylight through stile and rail intersections.
- Unlimited hardware options.
- Infills range from 1/4" to 1-5/16".
- Custom and standard anodized, painted, and wood grain finishes.
- UltraFab's UltraFin weatherseals for meeting stiles and framing door stops.
- Can be thermally insulated with 1-1/2" polyisocyanurate rigid foam insulation. "R" value 11.23 and "u" factor .089.
- Unlimited rail sizes and configurations available.
- Numerous muntin details available.
- Continuous non-removable exterior glazing leg for ultimate security.
- Glazed door panels available.
- Concealed card readers available.
- Hurricane, historical, and "blinds in glass" glazing kits available

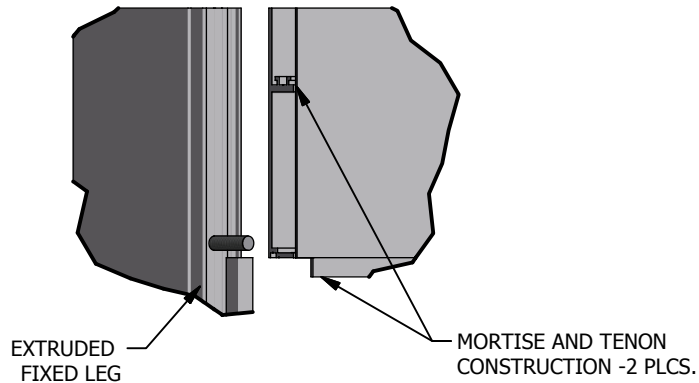
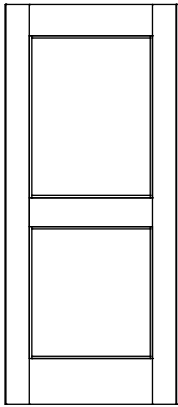
Product Uses

- NS-250 doors are designed to maximize daylight opening without sacrificing heavy-duty functionality. Limited on hardware applications. Used on offices, stores, and restaurants.

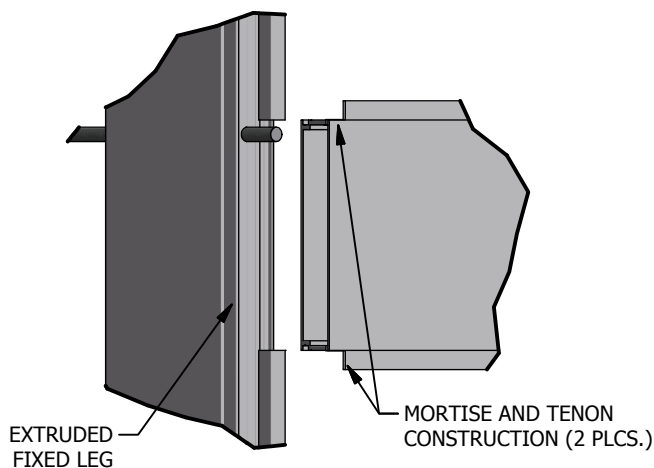
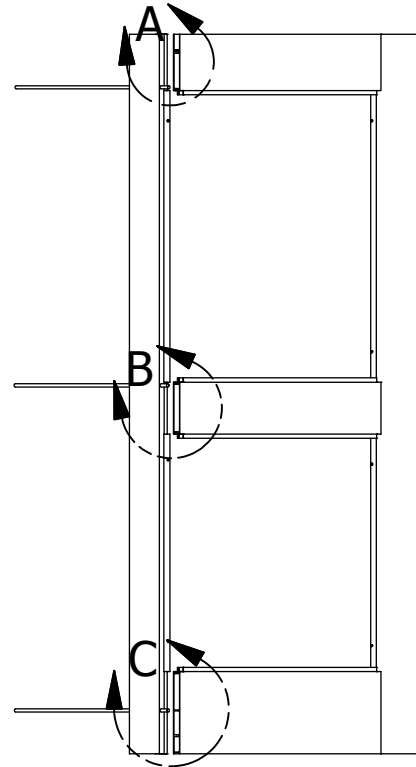
WS500 / MS400 / NS250

Stile and Rail Door Construction

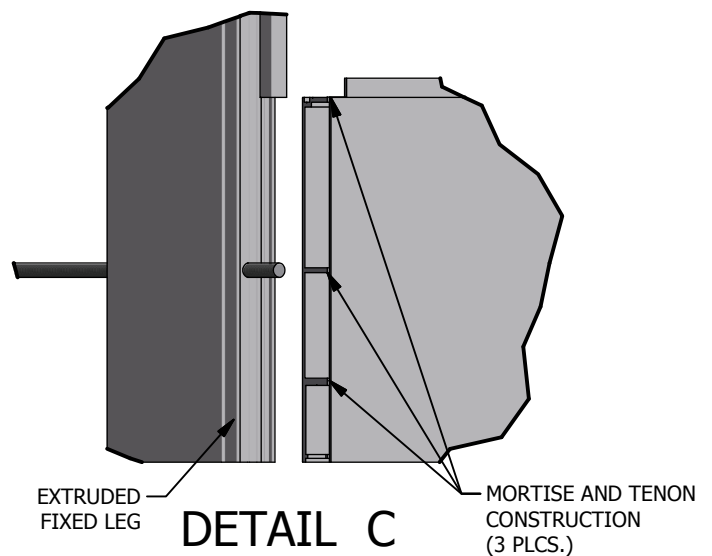
Cross Aluminum's stile and rail doors use an extruded mortise and tenon construction, which provide the door with unmatched strength, security, and weatherability. No worries about daylight and weather penetrating the intersecting joints between the stiles and rails like conventional stile and rail doors. The exterior tenon leg is actually part of the stile extrusion allowing no penetration points for weather and light, while maximizing the joint strength because of its continuous extruded construction. The same uninterrupted extruded leg is also used as the non-removable exterior glazing stop.



DETAIL A
SCALE 1 / 5



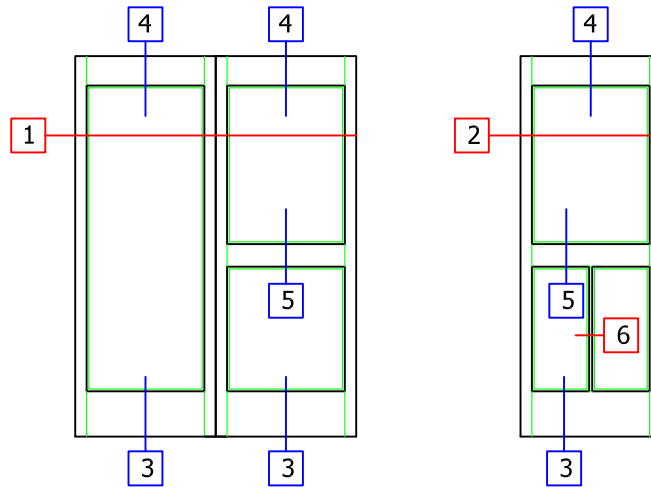
DETAIL B
SCALE 1 / 5



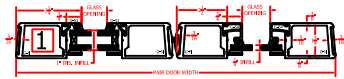
DETAIL C
SCALE 1 / 5

NS-250

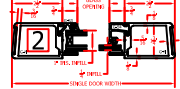
Door Series



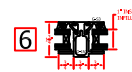
NS-250 STILE DETAIL-PAIR DOORS



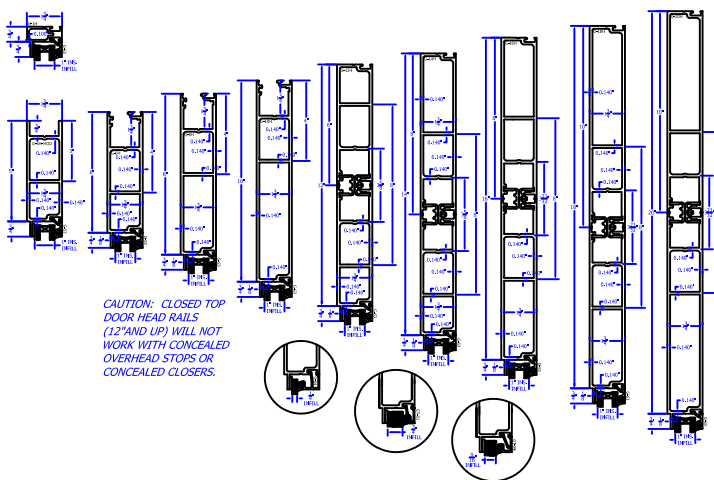
NS-250 STILE DETAIL-SINGLE DOOR



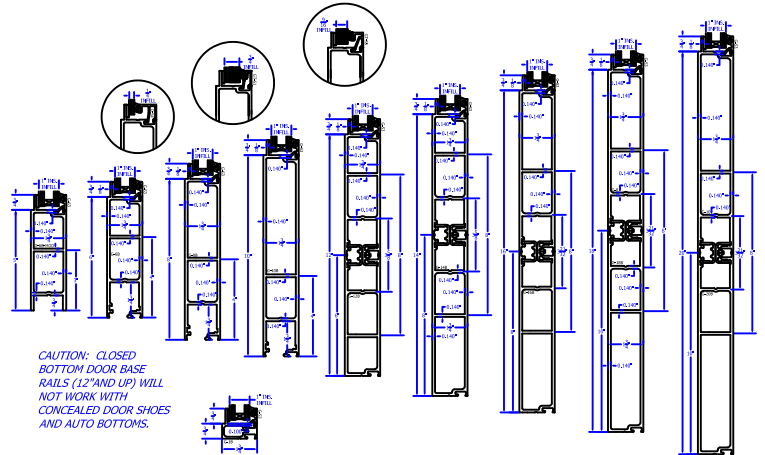
INTERMEDIATE VERTICAL



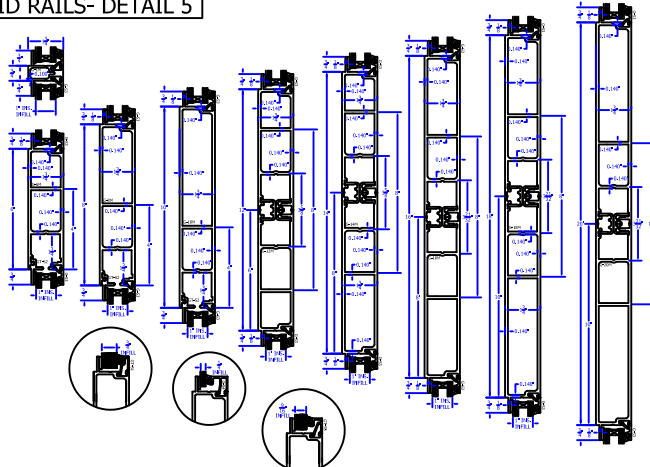
HEAD RAILS - DETAIL 4



BASE RAILS - DETAIL 3



MID RAILS- DETAIL 5

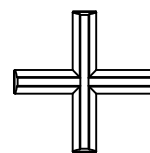


GENERAL NOTES:

- Muntins inside glass also available.
- Insulated fluted and smooth panel inlets available.

DOOR MUNTINE AL305

INTERSECTION POINTS

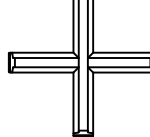


CROSS SECTION DETAIL
OF ALUMINUM MUNTINE AL305

1 1/2\"/>

DOOR MUNTINE AL207

INTERSECTION POINTS

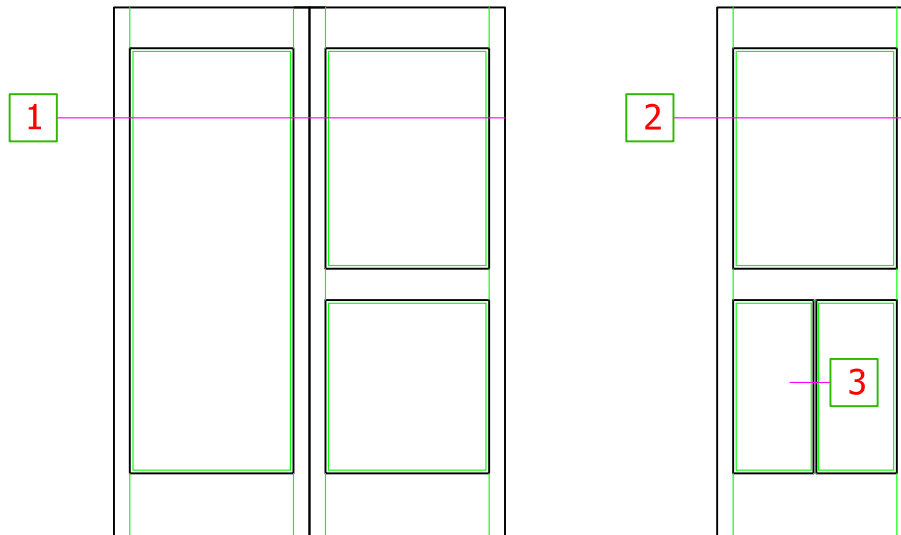


CROSS SECTION DETAIL
OF ALUMINUM MUNTINE AL207

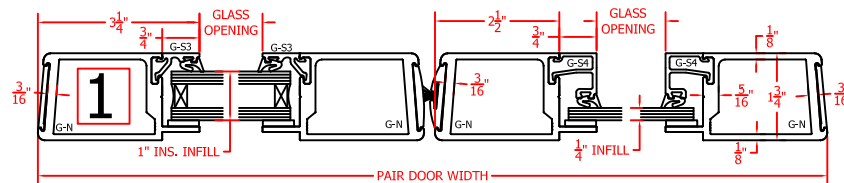
1 1/2\"/>

NS-250-SERIES

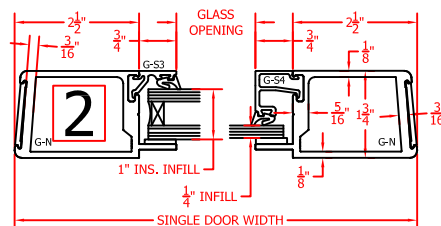
Stiles



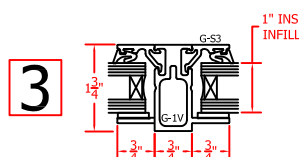
NS-250 STILE DETAIL-PAIR DOORS



NS-250 STILE DETAIL-SINGLE DOOR

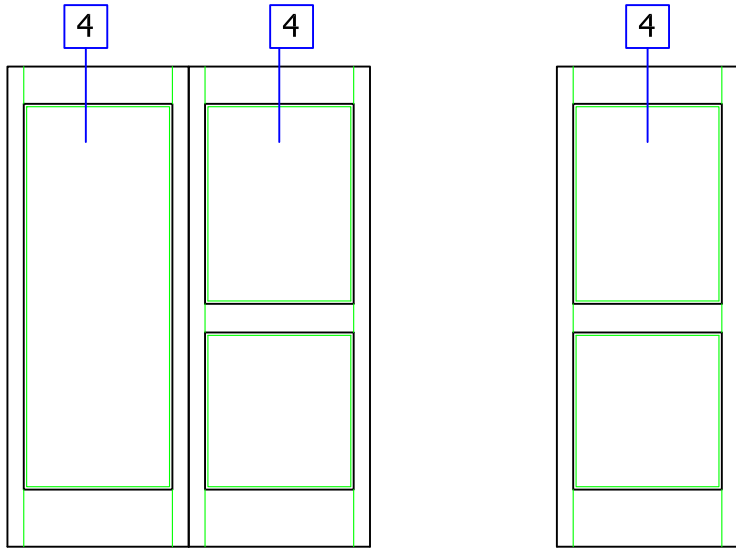


INTERMEDIATE VERTICAL

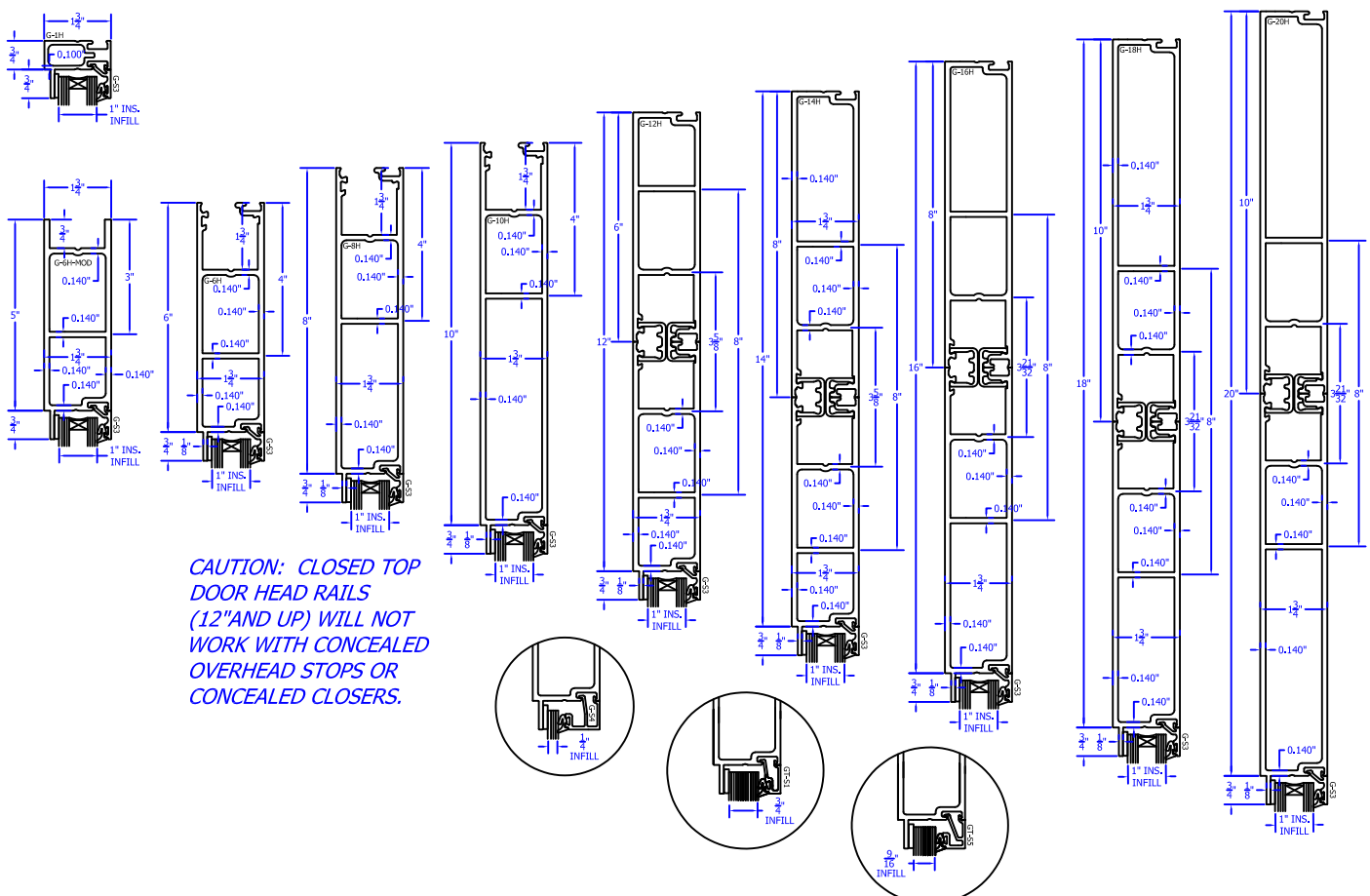


NS-250-SERIES

Head Rails

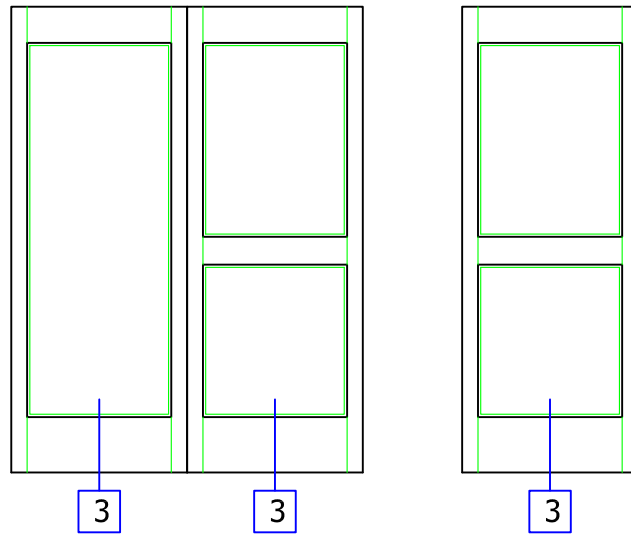


HEAD RAILS - DETAIL 4

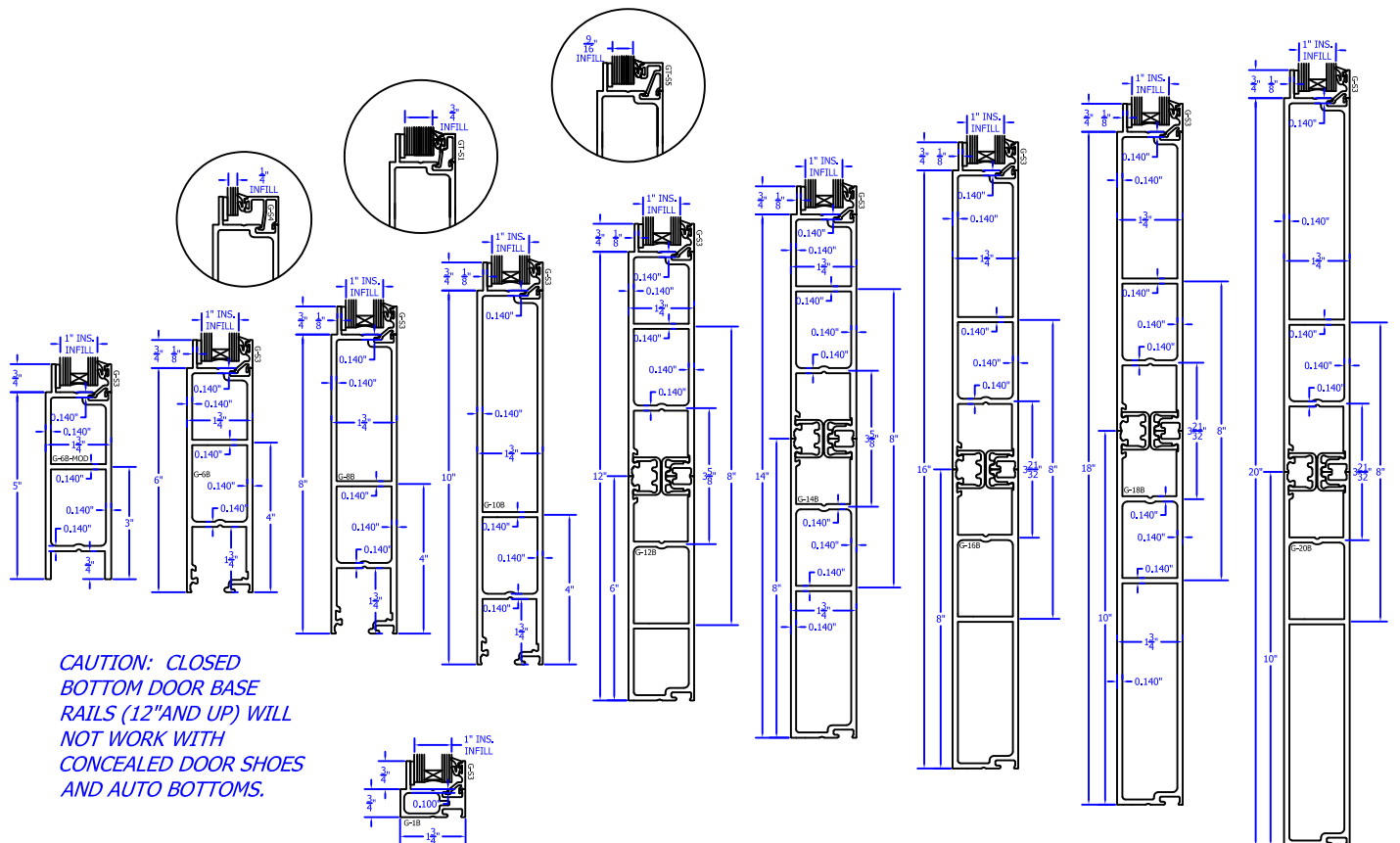


NS-250-SERIES

Base Rails

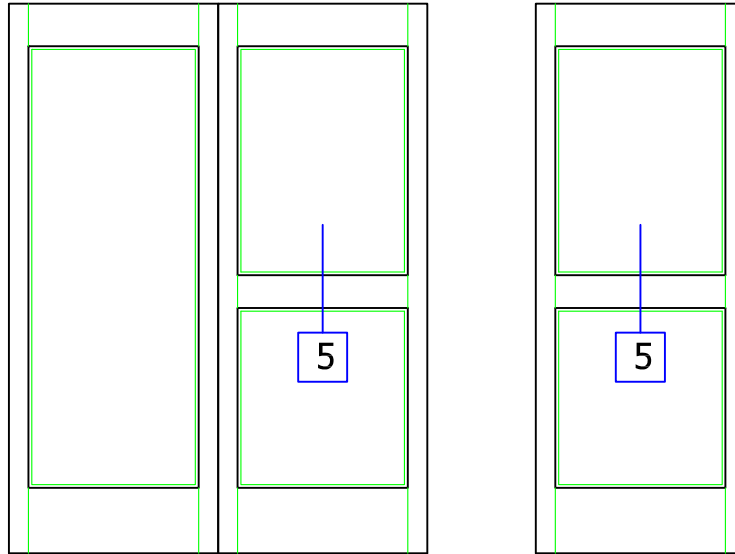


BASE RAILS - DETAIL 3

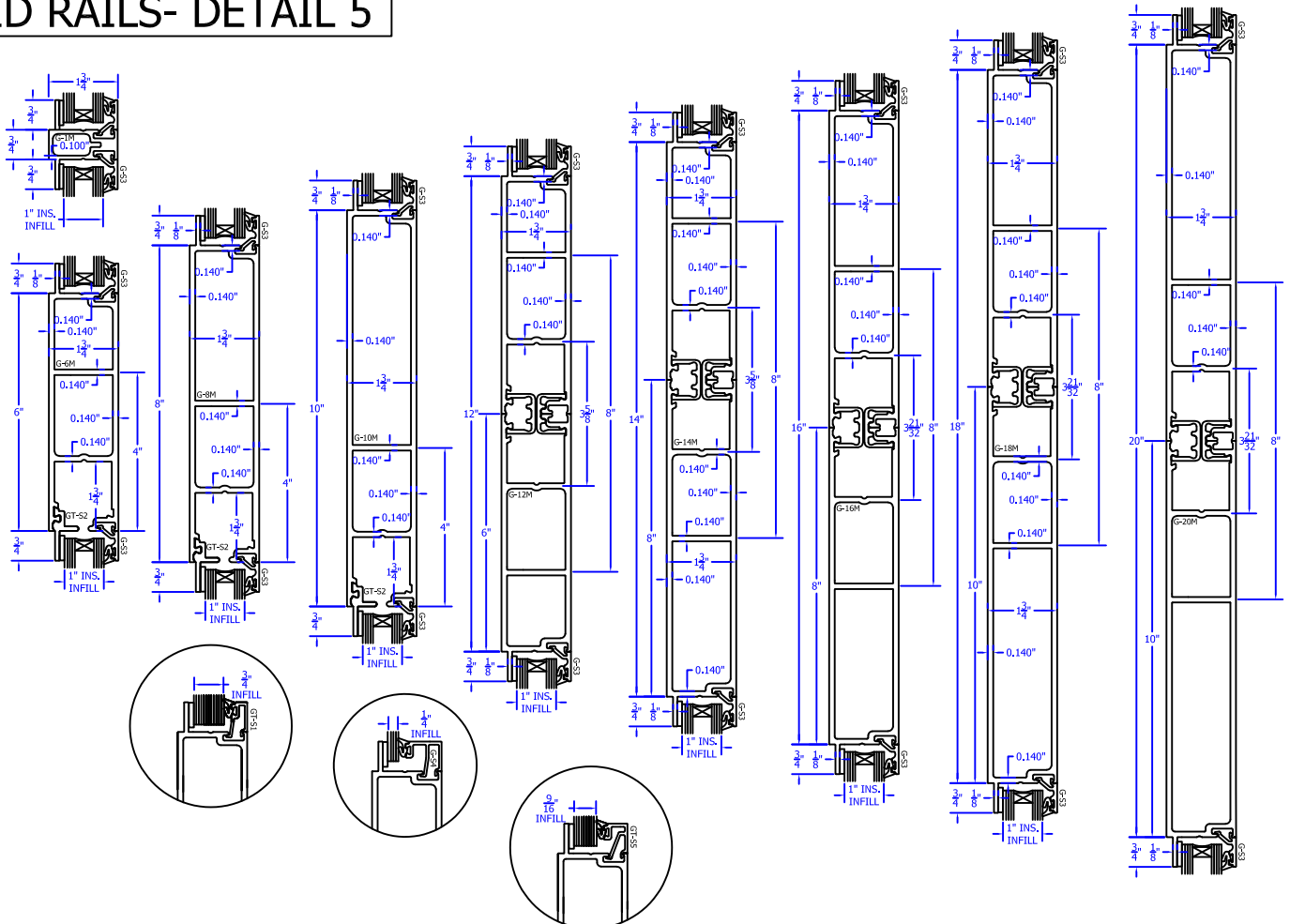


NS-250-SERIES

Mid Rails



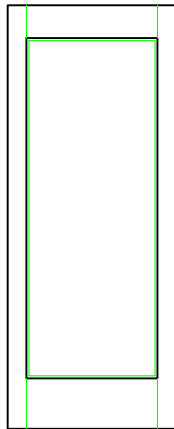
MID RAILS- DETAIL 5



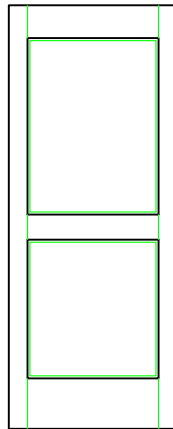
MS-400-SERIES

Door Configurations

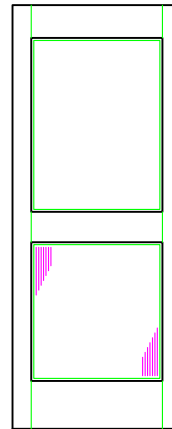
STANDARD CONFIGURATIONS



NS-250-FG

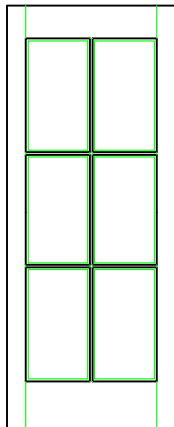


NS-250-DG

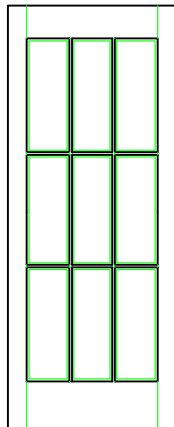


*NS-250-DG-LOWER PANEL

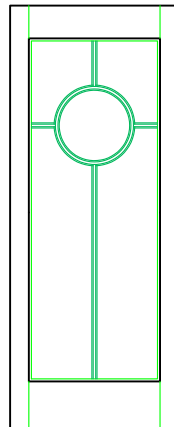
CONCEPT CONFIGURATIONS



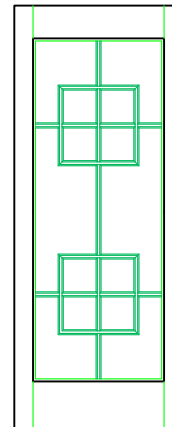
NS-250-G6
TRUE MUNTINS



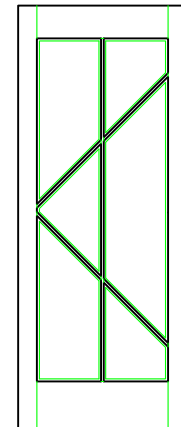
NS-250-G9
TRUE MUNTINS



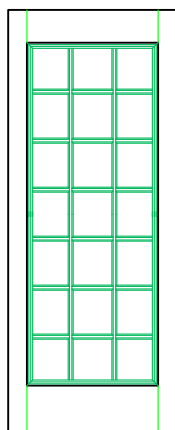
*NS-250-FG-MC



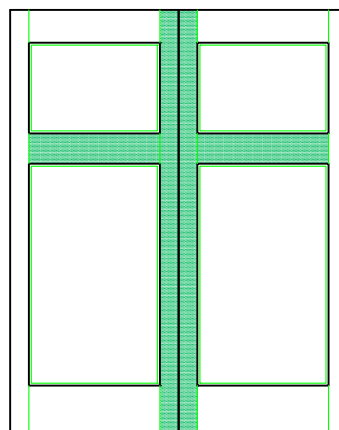
*NS-250-FG-M2S



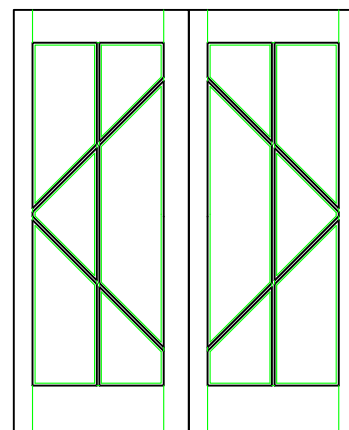
NS-250-ARROWHEAD
TRUE MUNTINS



*NS-250-M21



NS-250-CROSS_2



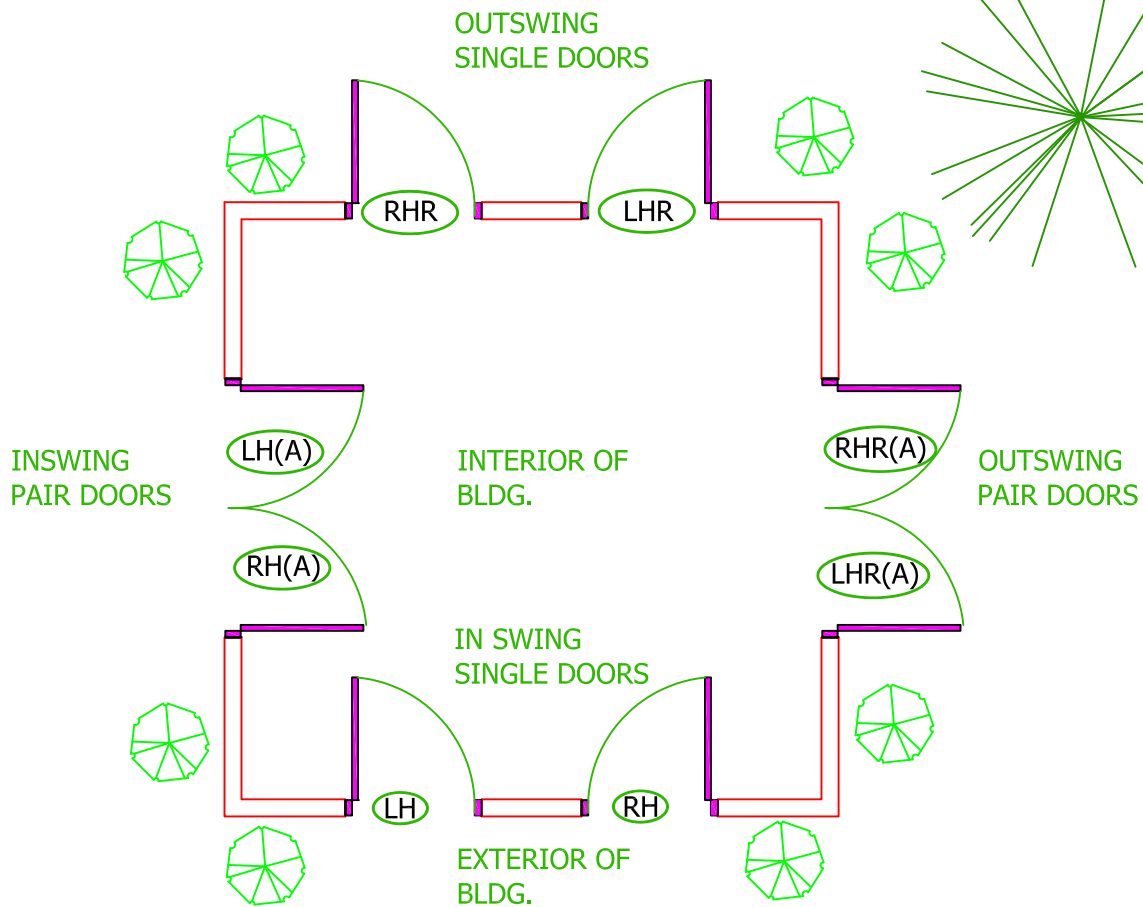
NS-250-BOXED
TRUE MUNTINS

NOTE: *INSULATED PANELS AVAILABLE IN FLUTED AND SMOOTH PATTERNS.

*DOORS WITH *M* IN LAST SERIES OF DIGITS HAVE SURFACE APPLIED MUNTINS OR MUNTINS INSIDE GLASS. CUSTOM MUNTIN PATTERNS ARE AVAILABLE.

NS-250-SERIES

General Helps



FINDING DOOR SWINGS USING A FLOOR PLAN.

NOTE: ON PAIR DOORS, ONE DOOR LEAF IS USUALLY SELECTED AS THE ACTIVE LEAF. THIS IS DONE BY ATTACHING A LETTER A AT THE END OF THE ACTIVE DOORS HANDING.

OTHER IMPORTANT FACTORS FOR ALUMINUM DOOR AND FRAME SPECS.

- *IF NOT NOTED IN SHOP DRAWINGS, IT IS IMPORTANT TO REQUIRE FIELD MEASUREMENTS BEFORE FABRICATION.
- *REQUIRE COLOR SAMPLES FOR CUSTOM COLORS.
- *REQUIRE DOOR MANUFACTURER TO PROVIDE AT LEAST IMMEDIATE DOOR FRAMING TO GUARANTEE DOOR HARDWARE PREP LINES UP WITH FRAMING HARDWARE PREP.
- *DOOR MANUFACTURER NEEDS FINAL APPROVED HARDWARE SCHEDULE BEFORE FABRICATION.
- *IF POSSIBLE, REQUIRE DOOR AND FRAME MANUFACTURER TO FACTORY INSTALL LOCKING, HINGING, TOP REMOVABLE HARDWARE MULLION, AND CONCEALED HARDWARE.
- *FOR ANY DOOR AND STOREFRONT OPENING CONCERNS OR QUESTIONS, FEEL FREE TO CONTACT OUR ARCHITECTURAL AND CUSTOMER SUPPORT LINE AT 1-800-806-DOOR.



NS-250-Series-Narrow Stile and Rail Doors Specifications

Word File Version Available at our Website:

www.crossaluminum.com

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door@crossaluminum.com

Guide Specification

SECTION 08 11 16

ALUMINUM GLASS DOORS

Editor Comments: All contents of this product specification have been written using the Construction Specifications Institute (CSI) Master Format 2004 Edition. This specification has been edited and formatted to meet the CSI 3-Part Format. Page Format, Section Format, and the CSI Manual of Practice were used in the arrangement of this specification.

This specification is written by Cross Aluminum Products Inc. and includes the NS-250 Narrow Stile and Rail Doors.

If necessary, apply sections for Glass and Glazing (section - 08 81 00), Sealants (section – 07 90 00).

Hardware may be specified in this section or in section – 08 71 00.

This specification was intended to assist in distinct job specifications. It must be reviewed and revised by the Architect or job specifier to meet project requirements and local building codes. Anything which appears in brackets [_____] reveals an option for a particular item or statement to be either omitted, included, or inserted to meet job specific requirements.

Editor comments have been provided throughout this section to help the Architect or job specifier make any necessary changes.

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cross Aluminum Narrow Stile and Rail Doors.
- B. Aluminum Door Frames.

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Editor notes: Delete or Add any sections that may need to be included on this project.
.....

1.02 RELATED SECTIONS

- A. Section 04 20 00: Masonry (Frame Installation)
- B. Section 07 90 00: Joint Sealers
- C. Section 08 71 00: Door Hardware
- D. Section 08 80 00: Glazing
- E. Section 09 90 00: Field Painting

.....
Edit listing of standards that apply to the project, including titles and descriptions.
Refer to contracting requirements in section - 01 42 00.
The standards are just a listing of those used and may not require compliance.
.....

1.03 REFERENCES

- A. ASTM B 209 - Aluminum and Aluminum-Alloy Sheet and Plate.
- B. ASTM B 221 - Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- C. ASTM B 308 - Aluminum-Alloy 6061-T6 Standard Structural Profiles.
- D. ASTM E 283 - Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- E. ASTM E 330 - Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- F. ASTM E 331 - Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

1.04 SYSTEM DESCRIPTION

- A. System Performance Requirements:
 - 1. Air infiltration: When tested in accordance with ASTM E 283, the air infiltration should not exceed .04 cfm per square foot of fixed area.

2. Uniform Load Deflection: Entry system shall be tested in accordance with ASTM E 330: 3840 Pa or 80.0 psf positive and negative pressure for a minimum of 60 seconds.

1.05 SUBMITTALS

- A. General: Refer to Submittal Procedures – Section 01 33 00
- B. Product Data: Include manufacturer's product information, including material, elemental construction, fabrication, and finishes.
- C. Shop Drawings: Include shop drawings relating to fabrication, finish and installation.
 1. Drawings should include the following:
 - a. Elevations with necessary detail keys
 - b. Entry system reinforcements (if applicable)
 - c. Fabrication and Finish
- D. Samples:
 1. Color: Provide manufacturer's samples of standard and non-standard finishes.
 2. Door: Supply manufacturer's door sample presenting finish, interior insulation, and standard reinforcement components.
- E. Test Results: Offer any required test results for particular jobs. Accredited test reports will be available upon request.
- F. Manufacturer's Instructions: Provide all necessary instructions for installation including glazing, anchoring, reinforcement (if applicable), and optimum performance installation.

1.06 QUALITY ASSURANCE

- A. Manufacturer's Qualifications:
 1. Manufacturing process with contemporary inspection using neoteric checklist for optimum field performance.
 2. Manufacturing similar product specified for over 25 years.
- B. Pre-Installation Meetings: Plan initial pre-installation meetings for job details and regional regulations.

1.07 DELIVERY, STORAGE, HANDLING

- A. Packing: Finished products shall be packaged securely with appropriate labeling for protection and product identification visible on packaging.
- B. Shipping and Handling: Deliver materials to site in original condition and packaging without any damage to packaging or materials.

- C. Unloading: Individually packaged products to be unloaded by hand truck or 2-person team lift (or more if needed) to avoid unnecessary damage.
- D. Storage and Protection:
 - 1. Store items indoors away from excessive amounts of moisture.
 - 2. Protect entry doors against damage from outdoor hazards and during the entire installation
- E. Waste Management: Refer to contact information apparent on packaging for appropriate recycling opportunities.

.....
 Longer warranties available. Confer with Cross Aluminum Products Inc. about additional warranty information.

1.08 WARRANTY

- A. Warrant doors and frames to be free from defects which include factory applied hardware, and premature degradation of finish and door structure.
- B. Warranty period will be ten years from the date of manufacture.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Cross Aluminum Products Inc.,
 Address: 1770 Mayflower Rd., Niles, Michigan 49120.
 Phone: (800) 806-3667 or (269) 697-8340
 Fax: (269) 697-8348
 Web: www.crossaluminum.com
 Email: door@crossaluminum.com

2.02 NARROW STILE AND RAIL ALUMINUM DOORS

- A. Product: NS-250 Entry Series with required aluminum frames.

.....
 Editor notes: Indicate door opening size according to drawings.

- B. Door Opening Size: [_____ x _____] [refer to drawings]
- C. Door Assembly:
 - 1. Door Stile: To be aluminum alloy 6063; temper to be T5 with a minimum 1/8" wall thickness.

2. Stile and Rail Thickness: To be 1 3/4" thick tubular extrusion.
3. Stile Width: 2-1/2"

*Editor notes: Stile and rail widths are given excluding 1/2" exterior glazing leg.
Indicate appropriate rail widths for top, middle, and bottom of door. Delete all others.
ADA may require minimum 10" bottom rail.
Base and top horizontal rails can vary from 4-1/2" to any desired widths.*

4. Rail Widths:
 - a. Top Rail [2"] [4"] [6 1/2"] [_____]
 - b. Mid Rail [2"] [4"] [8"] [12"] [_____]
 - c. Bottom Rail: [4"] [8"] [10"] [12"] [16"]

Editor's Notes: Smooth pattern standard. Fluted pattern is not available.

- D. Pattern: To be smooth.

2.03 MATERIALS & ACCESSORIES

- A. Aluminum:
 1. ASTM B 221, alloy and temper to be 6063 T-5 or similar alloy and temper recommended by manufacturer for optimum finish results and consistency.

Editor notes: Specify necessary reinforcement other than manufacturer's standard in the space provided. If no reinforcement is needed, delete nonessential items.

- B. Internal Reinforcement
 1. ASTM B 308, for structural aluminum.
 2. []
- C. Fasteners
 1. Material: Aluminum, 18-8 Stainless Steel, or other non-corrosive materials compatible with items being screw applied.
 2. Exposed:
 - a. Type: Fasteners exposed will be Philips flathead fasteners unless provided by other supplier.
 - b. Finish: Fasteners to match appropriate finish on standard doors and frames.
 3. Concealed: To be standard according to manufacturer's standards.
- D. Weather stripping:
 1. Wool pile:
 - a. Material: Solid Propylene Base with resilient fibers and center fin strip.
 - b. Color: Manufacturer's standard black color.

- E. Glazing:
 - 1. Door Glazing: Interlocking door glazing to be screw fastened and removable from interior with NORSEAL® V710 and/or V740 moisture seal foam tape applied to both interior and exterior sides of door. Exterior glazing to be non-removable.
 - a. Material: To be 1/8" thick extruded channels-6063-T5.
 - b. Color: To match finish of door.
 - 2. Frame Glazing: Exterior side Snap-in glazing. Frame gasket to be flush glaze extruded rubber compound; EPDM.
 - a. Material: To be aluminum extruded channels-6063-T5.
 - b. Color: To match finish of frame.

 Editor notes: Hardware may be supplied by Cross Aluminum, the contractor, or others.

Most Hardware will be factory-applied, if the hardware is received in a timely manner that doesn't interfere with job completion schedule. Hardware should have no damage or have any missing parts.

2.04 HARDWARE

- A. Hardware Preparation: To be fabricated at factory according to hardware templates provided.
- B. Hardware Installation: To factory install all applicable and supplied hardware to doors and frames.
- C. Hardware Reinforcement: To provide necessary reinforcement for proper longevity and hardware function; ASTM B 209 and/or ASTM 308.

 Editor notes: Provide necessary hardware items required for the job. Indicate hardware manufacturer name, product number, finish, size, quantity, and other specialized data. Refer to section 08 71 00.
 Edit the following hardware list accordingly: adding, deleting, and editing as required.

- D. Hardware types:
 - 1. Butt Hinges [_____]
 - 2. Continuous Gear Hinges [_____]
 - 3. Pivot Hinges [_____]
 - 4. Closers [_____]
 - 5. Surface-Mounted Stops [_____]
 - 6. Concealed Overhead Stops [_____]
 - 7. Push Bars [_____]
 - 8. Panic Exit Devices [_____]
 - 9. Pull Handles [_____]

10. Mortise Locks [_____]
11. Manual Flush Bolts [_____]
12. Cylindrical Locks [_____]
13. Dead Locks [_____]
14. Electric Power Transfer [_____]
15. Electric Strikes [_____]
16. Position Switches [_____]
17. Kick Plates [_____]
18. Door Sweeps [_____]
19. Thresholds [_____]
20. Other [_____]

E. Hardware Finish: [Clear] [Dark Bronze] or [_____]

Editor notes: Provide hardware set if possible. Provide all necessary information for each hardware set including; quantity, product description, product number, size, finish, and manufacturer name. Rough example (with details excluded) provided below:

[F. Single acting RHR door(s) shall have:

1. 1 each continuous hinge
2. 1 each mortise cylinder
3. 1 each mortise lock
4. 1 each closer
5. 1 each threshold
6. 1 each door sweep]

2.05 FABRICATION

A. Processes:

1. Job Preparation:
 - a. Preliminary Analysis: Job drawings to indicate door types, sizes, vision lite configuration(s), and finishes.
 - b. Fulfill Custom Requirements: Follow through on any specific deviations from standard requirements.
2. Assembly:
 - a. Product Operation: Measure, cut, and fabricate required materials for designated job.
 - b. Product Refinement: Smooth rough cut edges.
 - c. Arrangement: Place prepared structural fasteners inside door to conceal from view.
 - d. Reinforcement Preparation: To apply necessary structural and hardware reinforcement in beneficial areas of doors and frames where needed.
3. Door Joinery: Mortise and Tenon application with screw applied internal slide-fit clips for horizontal rails. 3/8" tie rods bolted to door stiles through horizontal rail spline creating hairline joinery.

4. Fitting:
 - a. Placement: Product materials to fit accurately in appropriate locations.
 - b. Alignment: Doors to be in proper alignment with intended elevations.

- B. Tolerances: Doors and/or frame elevations will not deviate from last revised and approved drawings.

Editor notes: Indicate 1 3/4" or 2" tube framing profiles relative to rough opening sizes on drawings. Indicate required header sizes. If using frame systems other than Manufacturer's standard, delete and specify frame changes below. Delete sizes that are non-essential for the project.

2.06 FRAMING SYSTEMS

- A. Framing Members: Manufacturer's standard aluminum extruded profiles with required thickness for load support.
 1. Vertical Jamb Sizes: [1 3/4" x 4 1/2"] [2" x 4 1/2"] [2" x 6 1/2"]
 2. Header Sizes: [1 3/4" x 4 1/2"] [2" x 4 1/2"] or [4" x 4 1/2"]
- B. Clips and Reinforcements: Manufacturer's standard high strength aluminum: ASTM B 221 and/or ASTM B 308.
- C. Fasteners and Accessories: Manufacturer's standard non-bleeding and non-corrosive material congruent to adjacent material.
 1. Exposed Fasteners: To be stainless steel Philips flathead screws with appropriate finish: ASME B 18.6.4
 2. Concealed Fasteners: To be manufacturer's standard.
- D. Assembly:
 1. Framing members are separate aluminum pieces cut to length and mechanically fastened from either spline or clip systems.
 2. Joinery to be hairline.
 3. Sommer and Maca Silicone 88R or Dow Corning® 795 Sealants applied on applicable areas.
 4. Framing elevations to be identified according to final approved drawings.
- E. Anchoring:
 1. Appropriate anchoring fasteners to be secured no more than 18" apart on entire frame opening.
 2. Frame headers to receive no less than 2 anchoring fasteners.
 3. Add extra fasteners where hardware and hinge may require more.

Editor notes: If not using Cross Aluminum's CDM-32 doorstop delete below and specify alternate doorstop with applicable specifications for that doorstop.

- F. Doorstop:
 - 1. To be #CDM-32.
 - a. Wall Thickness: To be 3/16" thick for receiving applicable hardware.
 - b. Profile Height: To be no less than 5/8" high.
 - 2. Snap-in: Fits standard manufacturer's door jamb profiles.
 - 3. To receive weather strip around acting door leafs.
 - a. Wool pile: Solid Propylene Base with resilient fibers in a standard black color.
- G. Hardware Preparation:
 - 1. Intramural Work: Hardware preparation according to hardware suppliers' templates.
 - 2. Field Work: Refer to manufacturers' installation instructions.
- H. Glazing: Exterior side Snap-in glazing. Frame gasket to be flush glaze extruded rubber compound; EPDM.
- I. Side lites and Transoms:
 - 1. Factory-assembled to largest allowable shipping size.
 - 2. Identified in concealed locations according to final approved elevation numbers.

Editor notes: Indicate glass sizes below.

Confer with Cross Aluminum for any custom glass size inquiries. Glazing instructions and tape provided.

2.07 GLAZING

- A. Reference section Glazing accessories (08 85 00)
- B. Door Glass Stops:
1. Profile: 1/8" thick interlocking flush fit screw-applied extruded aluminum-stops with color matching door finish and removable from interior. Exterior glass stops to be non-removable.

Provide dimensions and finish requirements for louver below. Delete nonessential items.

Editor's Note: Louver finish may vary slightly from door finish.

2.08 LOUVERS

- A. Style: Extruded Aluminum, mitered corners secured with reinforcing clips, inverted-Y design.
- B. Dimension: [x] [Refer to drawings]
- C. Finish: [Clear] [Dark Bronze] []
- D. Installation: Louvers to be factory installed and removable from interior only.

Editor Notes: Paints and other non-standard finishes will have price adjustments. Select applicable finishes and delete all others.

2.09 FINISHES

- A. Standard Anodic Finishes:
 - 1. Clear 204 R1: Architectural Class 11, AA-M12C22A31, 0.4 mils.
 - 2. Dark Bronze: Architectural Class 1, AA-M12C22A44, 0.7 mils.
- B. Available Anodic Finishes:
 - 1. Clear 215 R1: Architectural Class 1, AA-M12C22A41, 0.7 mils.
 - 2. Champagne: Architectural Class 1, AA-M12C22A44, 0.7 mils.
 - 3. Light Bronze: Architectural Class 1, AA-M12C22A44, 0.7 mils.
 - 4. Medium Bronze: Architectural Class 1, AA-M12C22A44, 0.7 mils.
 - 5. Black: Architectural Class 1, AA-M12C22A44, 0.7 mils.
- C. Paint Finishes:
 - 1. 70% Fluoropolymer (PVDF): AAMA 2605, ASCA 96, Kynar 500® or Hylar 5000®.
 - a. Fluropon®: 2 or more coat systems.
 - b. Trinar®, Trinar® Exotic Clear, Trinar® Metallic Clear: 2, 3, or 4 coat systems.
 - c. Duranar®: 2, 3, or 4-coat systems.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine conditions for compliance with requirements for installation tolerances and other conditions affecting proper installation.

3.02 INSTALLATION

- A. Comply with manufacturer's instructions.
- B. Do not install damaged components.
- C. Install doors plumb, level, and square, with no warp or rack in frame.

Required clearances for bottom clearance (from threshold) may change according to ADA requirements.

- D. Hang doors with the following required clearances:
 - 1. Lock Stiles: 0.125"
 - 2. Between Meeting Stiles: 0.187" - 0.25"
 - 3. At Top Rails: 0.125"
 - 4. Between Bottom Rail and Threshold: 0.125" - 0.187"
- E. Fit joints to produce hairline joints free of burrs and distortion.
- F. Apply bituminous coatings to keep Aluminum free from contacting other metals.
- G. Rigidly secure non movement joints.
- H. Install recommended anchors with separators to prevent metal corrosion and electrolytic deterioration.
- I. Seal joints watertight, unless otherwise indicated.
- J. Glazers to provide necessary glazing shims for proper glass installation on vision lites and side lites. Reference section Glazing Accessories (08 85 00).
- K. Place thresholds in bed of proper weather sealant.

For more on sealants refer to Section 07 90 00 Joint Treatment (sealants) and glass refer to related (Section 08 80 00) Glazing.

3.03 ADJUSTING

- A. Fine-tune doors and hinges to operate properly without bind or sag.
- B. Adjust pressure settings on closers.
 - 1. For doors accessible to people with disabilities, adjust closers to provide a 3-second closer sweep period for doors to move from a 70-degree open position to 3 inches from the latch measured to the leading door edge.

3.04 CLEANING

- A. Immediately clean doors after installation.

- B. Avoid any harsh cleaners not specified on manufacturer's cleaning and care guide.

3.05 PROTECTION

- A. Follow Manufacturer's guide to cleaning and care for proper treatment on entrances for optimum longevity, function, and performance.

END OF SECTION