

ANN ARBOR HISTORIC DISTRICT COMMISSION**Staff Report****ADDRESS:** 312 South State, Application Number HDC17-011**DISTRICT:** State Street Historic District**REPORT DATE:** February 9, 2017**REPORT PREPARED BY:** Jill Thacher, Historic Preservation Coordinator**REVIEW COMMITTEE DATE:** Monday, February 6, 2017

	OWNER	APPLICANT
Name:	312 S State Street, LLC	Norr – Scott Robach
Address:	210 S Fifth Avenue Ann Arbor, MI 48104	150 W Jefferson, Suite 1300 Detroit, MI 48226
Phone:	(734) 548-6935	(313) 324-3111

BACKGROUND: The two storefronts at 312 and 314 South State were built in 1886 as the College Block. The slightly larger but matching buildings at 316-322, built at the same time and rebuilt in 1888 after a fire, are known as the University Block. Until the 1940s, all six featured matching pressed metal facades.

The current Art Deco façade on 312 dates to 1931. The two-story building features a limestone stone façade, multi-paned windows in the upper story, and round carved medallions above the upper windows. Fluted stone pilasters originally flanked the two front doors and display window. It is unknown whether they remain under the current wood storefront or were removed.

The storefront was home to Amer's until the summer of 2016, when they downsized the restaurant. Amer's moved in around 1997, and before that Jacobson's home store occupied 312 and 314.

LOCATION: The site is on the west side of South State Street, south of East Liberty Street and north of North University.

APPLICATION: The applicant seeks HDC approval to replace the storefront display windows with an accordion window system, install a new business sign and two canopies on the front façade, and install mechanical equipment (a heat pump, exhausts, and vents) on the roof.

APPLICABLE REGULATIONS:**From the Secretary of the Interior's Standards for Rehabilitation:**

- (2) The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

- (5) Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
- (9) New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

From the Secretary of the Interior's Guidelines for Rehabilitating Historic Buildings (other SOI Guidelines may also apply):

Storefronts

Recommended: Designing and constructing a new storefront when the historic storefront is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building.

Not Recommended: Introducing a new design that is incompatible in size, scale, material, and color.

Windows

Not Recommended: Installing new windows, including frames, sash, and muntin configuration that are incompatible with the building's historic appearance or obscure, damage, or destroy character-defining features.

Building Site

Not Recommended: Removing or radically changing buildings and their features or site features which are important in defining the overall historic character of the property so that, as a result, the character is diminished.

Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the building or site features or that is physically or chemically incompatible.

From the Ann Arbor Historic District Design Guidelines:

Design Guidelines for Storefronts

Appropriate: Designing and constructing a new storefront when the historic storefront is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation; or may be a new design that is compatible with the size, scale, and material of the historic building. New designs should be flush with the façade and be kept as simple as possible.

Signs

Appropriate: Installing signage in the historic sign band area of the building, typically the area above the transoms or just above the storefront.

Attaching signage through masonry joints or through materials that can be easily repaired, such as wood, when signage is removed.

Installing signage that is compatible in size, style, material, and appearance to the historic resource and district.

Placing signs to align with others along the commercial block face.

Installing signage that is subordinate to the overall building composition.

Not Appropriate: Installing signs that are too large or that are made from a material that is incompatible with the historic building or district.

Installing signs that have interior illumination or are backlit.

Installing signs that are overly complex, use more than three or four colors or use fluorescent colors.

STAFF FINDINGS:

1. *Storefront windows.* The current storefront was installed in 1997 for Amer's. The display window is two large pieces of glass with a low kickplate. The applicant proposes to replace the glazing with a folding accordion window system. The windows are wood that slide on a top and bottom track. Per the applicant, there is a 12" wood kneewall below the new windows, which matches what is there now (see color rendering and email with clarifications, in attachments). Staff believes that the change from two sashes to four is not in conflict with any historic precedent, and will allow the windows to operate during warm weather.
2. *Signage.* The sign proposed is 9' wide by 22" tall, designed to fit within the sign band area of the storefront. Each letter is 10" tall and backlit. It hasn't been determined whether the letters will be mounted on a rail, or each letter attached to the wood signband. Staff prefers a rail since it would mean fewer penetrations for electrical wiring, i.e., one for the rail v. one for each letter. The design and style of the sign are simple and appropriate.

The applicants would prefer to install a backlit sign like the one labeled "Detroit" on the signage examples page in the attachments. Staff has advised that the *Design Guidelines* state clearly that internal illumination is not appropriate and that there is no variance process. If the HDC wishes to consider the style of the Detroit Roasting Plant for a certificate of appropriateness, they may do so at the meeting.

3. *Awnings.* The two small awnings help distinguish this storefront from the nearly identical storefront to the south. The awning is 2' deep and 20" tall, leaving room for the sign in the signband above.
4. *Rooftop equipment.* The equipment shown is completely out of sight on a lower, rear section of the roof. This could also be approved at the staff level.
5. Staff believes that all of the work proposed is appropriate and meets the *Ann Arbor*

Historic District Design Guidelines. The work should be conditioned on the removal of two gooseneck lamps near the upper story windows, which are unnecessary with a halo-lit sign and visually detract from the limestone façade.

POSSIBLE MOTIONS: (Note that the motions are only a suggestion. The Review Committee, consisting of staff and at least two Commissioners, will meet with the applicant on site and then make a recommendation at the meeting.)

I move that the Commission issue a certificate of appropriateness for the application at 312 S. State Street, a contributing property in the State Street Historic District, to: replace the storefront display windows with an accordion window system; install a new business sign and two fabric awnings on the front façade, and install mechanical equipment on the roof, on the condition that two gooseneck lamps on the upper story are remove. The work as conditioned is compatible in exterior design, arrangement, texture, material and relationship to the rest of the building and the surrounding area and meets the *Ann Arbor Historic District Design Guidelines* for storefronts and signs, and *The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*, in particular standards 2, 5, and 9 and the guidelines for storefronts, windows, and building site.

MOTION WORKSHEET:

I move that the Commission issue a Certificate of Appropriateness for the work at 312 S State Street in the State Street Historic District

_____ Provided the following condition(S) is (ARE) met: 1) STATE CONDITION(s)

The work is generally compatible with the size, scale, massing, and materials and meets the Secretary of the Interior's Standards for Rehabilitation, standard(S) number(S) (*circle all that apply*): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

ATTACHMENTS: application, drawings, photos.

South State Street, 1893 (Bentley Historical Library)



1915 (Wystan Stevens, via Flickr)



310-312-314 S State, 1949 (copyright Ann Arbor News, via AADL)



Paving over the bricks on State Street, 1951

312 S State, Chester Roberts Gifts at right (copyright Ann Arbor News, via AADL)



312-314 S State, 1958
(Copyright Ann Arbor News, via AADL)





HDC17-011

1-31-17

(BLDG16-2008)

City of Ann Arbor
PLANNING & DEVELOPMENT SERVICES — PLANNING SERVICES

301 E. Huron Street | P.O. Box 8647 | Ann Arbor, Michigan 48107-8647
p. 734.794.6265 | f. 734.994.8312 | planning@a2gov.org

ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION

Section 1: Property Being Reviewed and Ownership Information
Address of Property: 312 S. State Street
Historic District: State Street
Name of Property Owner: 312 S State Street, LLC
Address of Property Owner: 210 S. 5th Avenue
Daytime Phone and E-mail of Property Owner: 734-548-6935
Signature of Property Owner: [Signature] Date: 1/23/17
Section 2: Applicant Information
Name of Applicant: NARR - Scott Robach
Address of Applicant: 150 W. Jefferson Suite 1300, Detroit MI 48226
Daytime Phone: (313) 324 3136 Fax: (313) 324 3111
E-mail: scott.robach@narr.com
Applicant's Relationship to Property: [X] architect
Signature of applicant: [Signature] Date: 1.20.17
Section 3: Building Use (check all that apply)
Residential Single Family Multiple Family Rental
[X] Commercial Institutional
Section 4: Stille-DeRossett-Hale Single State Construction Code Act
Public Act 169, Michigan's Local Historic Districts Act, was amended April 2004 to include the following language: "...the applicant has certified in the application that the property where the work will be undertaken has, or will have before the proposed completion date, a fire alarm or smoke alarm complying with the requirements of the Stille-DeRossett-Hale Single State Construction Code Act, 1972 PA 230, MCL 125.1501 to 125.1531."
Please initial here: [Signature]

Section 5: Description of Proposed Changes (attach additional sheets as necessary)

1. Provide a brief summary of proposed changes. adding canopies,
Reworking storefront glazing, install new signage

2. Provide a description of existing conditions. Existing storefront is wood
with glazing sections

3. What are the reasons for the proposed changes? New tenant

4. Attach any additional information that will further explain or clarify the proposal, and indicate these attachments here.
see Attached Renderings (sent via email also)

5. Attach photographs of the existing property, including at least one general photo and detailed photos of proposed work area.

STAFF USE ONLY

Date Submitted: _____ Application to _____ Staff or _____ HDC

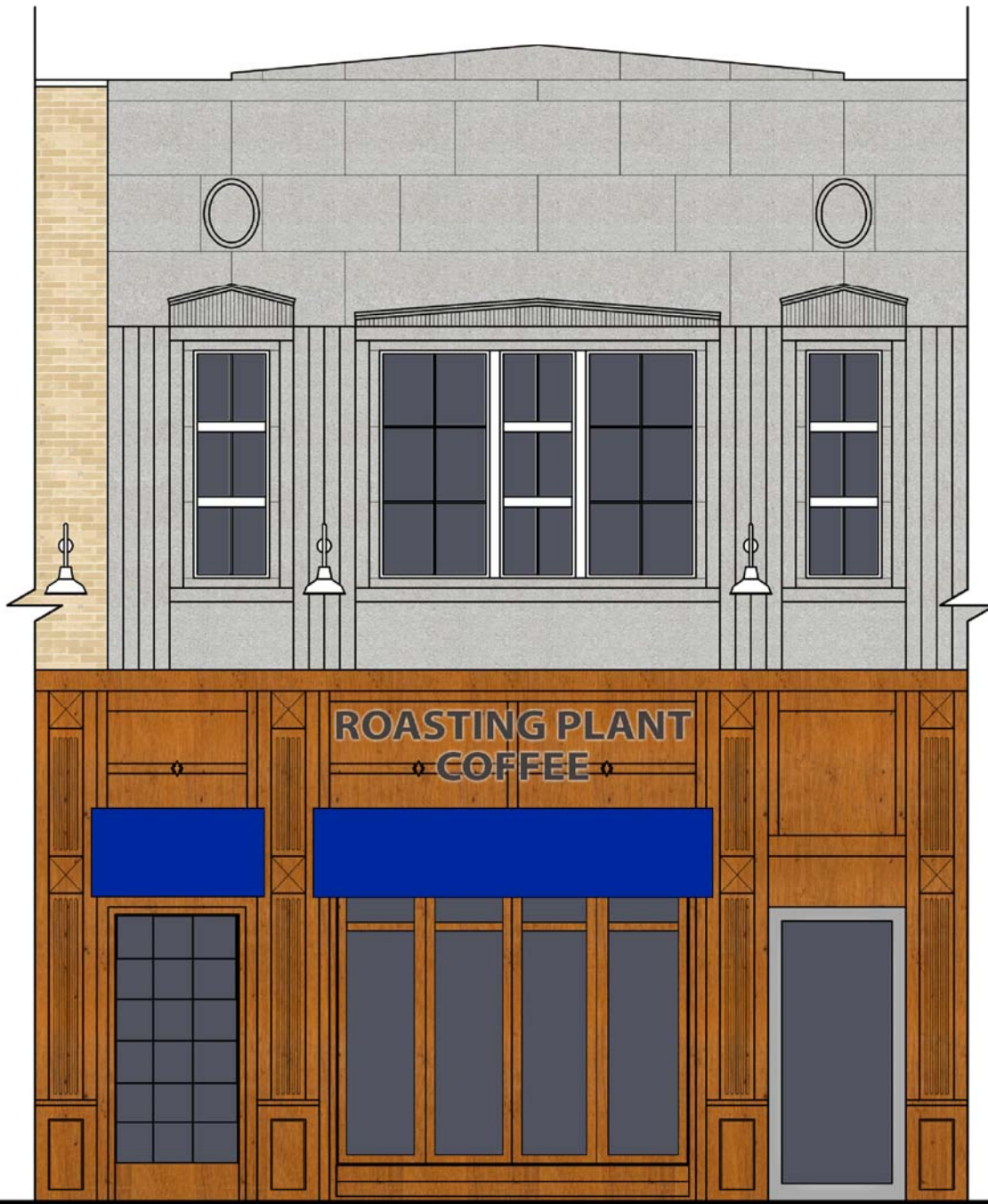
Project No.: HDC Fee Paid: _____

Pre-filing Staff Reviewer & Date: _____ Date of Public Hearing: _____

Application Filing Date: _____ Action: _____ HDC COA _____ HDC Denial

Staff signature: _____ _____ HDC NTP _____ Staff COA

Comments:



1

EXTERIOR ELEVATION - COLOR

SCALE: 1/4" = 1'-0"

01.24.2017

NORR
ARCHITECTS ENGINEERS PLANNERS

ROASTING PLANT COFFEE

312 S. STATE ST | ANN ARBOR, MI | 48104

SHEET 1



2

EXISTING CONDITIONS

SCALE: 1/4" = 1'-0"

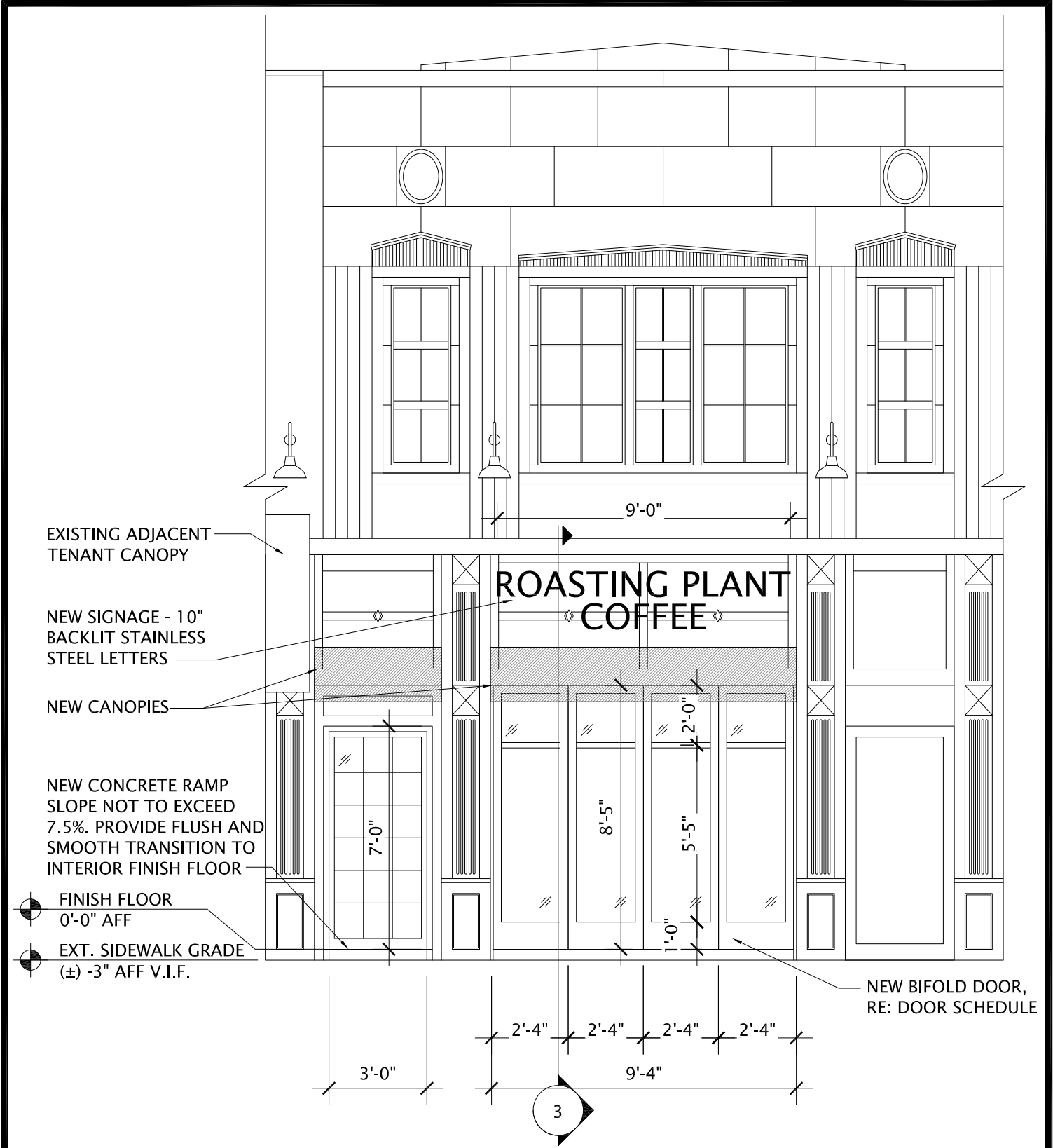
01.24.2017

NORR
ARCHITECTS ENGINEERS PLANNERS

ROASTING PLANT COFFEE

312 S. STATE ST | ANN ARBOR, MI | 48104

SHEET 2



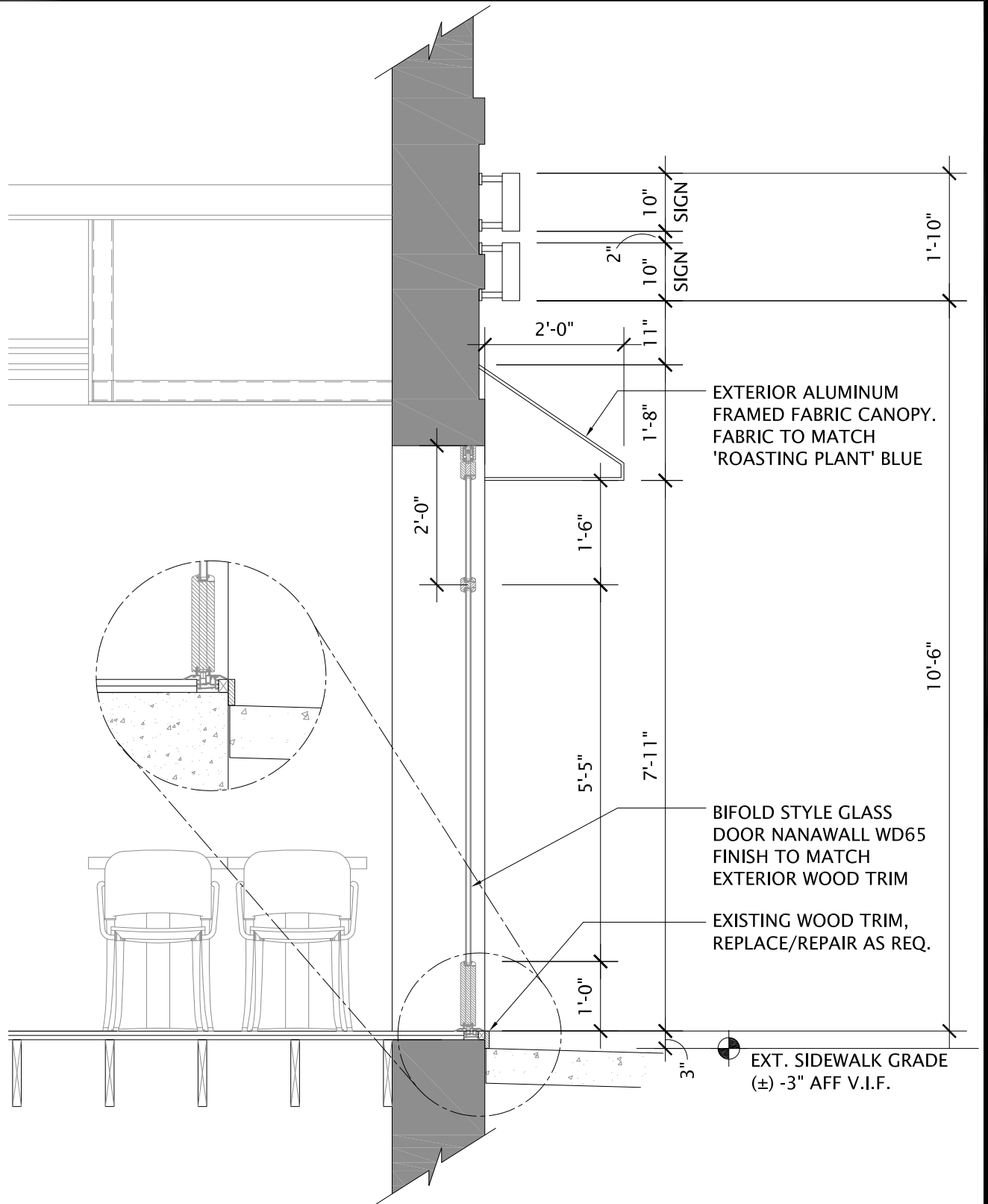
3

EXTERIOR ELEVATION

SCALE: 1/4" = 1'-0"

01.24.2017

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ARCHITECTS ENGINEERS PLANNERS



4

FRONT WALL SECTION

SCALE: 1/2" = 1'-0"

01.24.2017

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ROASTING PLANT COFFEE

312 S. STATE ST | ANN ARBOR, MI | 48104

SHEET 4

MINNEAPOLIS



BLADE SIGN



DETROIT



WINDOW GRAPHIC



NEW YORK

01.24.2017

5

SIGNAGE EXAMPLES

SCALE: 1/4" = 1'-0"

NORR
ARCHITECTS ENGINEERS PLANNERS

ROASTING PLANT COFFEE

312 S. STATE ST | ANN ARBOR, MI | 48104

SHEET 5

From: Scott Robach <Scott.Robach@norr.com>
Sent: Tuesday, January 24, 2017 3:26 PM
To: Thacher, Jill; Mike Shehadi; Kelly Keith
Cc: Douglas Woessner; Anthony Ricciuti; Julia Gankin; Jason Cooper; Gale, Mia; Thomas Hartocollis
Subject: RE: 312 S State Street - Roasting Plant
Attachments: 2017-01-24 Roasting Plant HDC.pdf; Nanawall.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good afternoon, Jill. Please see the attached updated and reformatted application. See below in red for our responses to your concerns;

Scott Robach, M.Arch
Senior Project Manager

Tel: 313 324 3136 | Fax: 313 324 3111 | Cell: 734 634 7180 | Email: Scott.Robach@norr.com | Web: norr.com
150 W. Jefferson Avenue, Suite 1300, Detroit, MI, 48226, United States


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Any unauthorized use, copying, review or disclosure is prohibited. If received in error, please notify us immediately by return e-mail.

 Please consider the impact on our environment before printing this e-mail.

From: Thacher, Jill [<mailto:JThacher@a2gov.org>]
Sent: Monday, January 23, 2017 2:21 PM
To: Scott Robach; Mike Shehadi; Kelly Keith
Cc: Douglas Woessner; Anthony Ricciuti; Julia Gankin; Jason Cooper; Gale, Mia
Subject: RE: 312 S State Street - Roasting Plant

Thanks Scott. The color rendering still shows a low kneewall below the windows instead of full-length doors shown on the b/w. Would you correct one or the other, please?

The color rendering is shown correctly. There is a 12" sill and then a +/- 3" difference between the interior floor level and the exterior sidewalk grade. There is a small ramp in the alcove leading into the space. There is currently wood trim in this step area, we would either keep this existing trim or (if it is somehow damaged in demolition) replace/repair it to match the existing façade.

Also, since these are being printed on 8 ½ x 11" paper, I'd recommend you not put all the images on one page or they might end up too small to read

Submission has been reformatted.

For the Nanawall attachment, please remove all pages that aren't applicable to the configuration that you intend to install, and resend the PDF. Pick your sill style, and the cross sections that correspond, and delete the rest.

See updated attachment

Also, the sign shown is ignoring the detail of the area above the awning. While there's nothing historic about the wood on the storefront, I would strongly recommend you keep it within the 9'3" wide sign band area and not attach through the vertical wood trim pilaster detail. More detail on the sign is needed: would the letters float on different lengths of spacers, since the wood panels step inward? What's the lighting level of the halo lighting? The HDC is looking for soft, low lighting and trying to avoid the appearance of a spaceship landing on S State Street. Will you have to drill through the wood panel to wire each letter?

Revised to show sign in between pilasters. We propose 10" stacked letters. We would ask for a variance if at all possible to be allowed to have internally illuminated signs as shown in the Detroit example. If not, back-lit signs as shown in the Minneapolis. The Minneapolis sign's photo was taken prior to having diffusers installed on the back which softens the light effect against the wall behind. The letters would either be set on rails behind the letters or individual posts depending on the sign company details (or how the HDC approves the concept.) Power would come through the façade at each letter if they are individually posted or once if they are on rails.

Or are you intending this sign only as a placeholder, with a separate, detailed application to staff later if the general size and location are approved by the HDC?

Yes, we are looking for the HDC to approve a concept only and then we will develop a sign package and get it detailed by a sign company.

The Detroit sign is, indeed, awesome. See how it fits between the two vertical elements on the storefront? That's what I'm looking for. It can't be internally illuminated, but could you achieve this with new exterior lighting and a shiny white finish?

Again, we believe the internally illuminated sign is done so tastefully that we would ask for a variance if possible. The letters will be stainless steel if it is not internally illuminated.

Finally, I also still need an application signed by the building owner and the \$150 fee. You may call Mia Gale with a credit card today, her number is 734-794-6265 x42665.

Understood

Thank you,
Jill

- ### Key Notes
- ① 6"Ø EXHAUST FROM BELOW. PENETRATE ROOF AND PROVIDE ROOF CAP WITH BUILT-IN BIRDSCREEN. REFER TO ARCHITECTURAL DETAILS FOR FLASHING.
 - ② 4" CONCENTRIC AIR INTAKE/EXHAUST THROUGH ROOF. REFER TO CONCENTRIC ROOF TERMINATION DETAIL.
 - ③ HEAT PUMP PROVIDED WITH VIBRATION ISOLATION. MAINTAIN MANUFACTURER'S CLEARANCE REQUIREMENTS.
 - ④ LIQUID/SUCTION REFRIGERANT LINES DOWN. SEE SCHEDULE FOR SIZES.
 - ⑤ INTAKE GRAVITY VENTILATOR. PROVIDE WITH GRAVITY DAMPER AND INTEGRAL BIRDSCREEN. TRANSITION DOWN FROM 24.5"Ø THROAT DIAMETER TO 20"x14" DUCT. REFER TO SCHEDULE FOR ADDITIONAL INFORMATION.
 - ⑥ EXHAUST CURB CAP. PROVIDE WITH INTEGRAL BIRDSCREEN. TRANSITION DOWN FROM 10-1/2" THROAT DIAMETER TO 10"Ø DUCT. REFER TO SCHEDULE FOR ADDITIONAL INFORMATION.
 - ⑦ EXHAUST CURB CAP. PROVIDE WITH INTEGRAL BIRDSCREEN. TRANSITION DOWN FROM 16-1/2" THROAT DIAMETER TO 16"x16" EXHAUST DUCT. REFER TO SCHEDULE FOR ADDITIONAL INFORMATION.

- ### Legend
- EXIST PARTITION TO REMAIN
 - FULL HEIGHT PARTITION
 - WALL TYPE TAG (RE: 3/A101)
 - LOW WALL PARTITION
 - NEW DOOR TAG (RE: A901)
ANY DOORS SHOWN W/OUT DOOR TAG ARE EXISTING TO REMAIN

- ### General Notes
1. GENERAL NOTES ARE APPLICABLE TO ALL HVAC DRAWINGS.
 2. PERFORM WORK IN ACCORDANCE WITH THE LATEST EDITIONS, REVISIONS, AMENDMENTS, OR SUPPLEMENTS OF APPLICABLE STATUTES, ORDINANCES, CODES OR REGULATIONS OF FEDERAL, STATE, AND LOCAL AUTHORITIES HAVING JURISDICTION IN EFFECT ON THE DATE BIDS ARE RECEIVED.
 3. WHERE APPROVED STANDARDS HAVE BEEN ESTABLISHED BY OSHA, UNDERWRITERS LABORATORIES, AMERICAN CODES, ASA, ASHRAE, ARI, NEC, STATE FIRE INSURANCE REGULATION BODY, NFPA OR OTHERS. THESE STANDARDS SHALL BE FOLLOWED WHETHER OR NOT INDICATED ON THE DRAWING AND SPECIFICATIONS.
 4. ALL DUCT TO BE OF 2" PRESSURE CLASS, UNLESS NOTED OTHERWISE.
 5. REFER TO STRUCTURAL DRAWINGS FOR EXACT LOCATION OF ROOF-TOP EQUIPMENT.
 6. LIGHT FIXTURE LOCATIONS TAKE PRECEDENCE OVER DIFFUSER AND GRILLE LOCATIONS. LOCATE DIFFUSERS AND GRILLES TO ACCOMMODATE LIGHTING LAYOUT.
 7. PROVIDE TURNING VANES IN SUPPLY DUCT ELBOWS. PROVIDE TURNING VANES IN RETURN AND EXHAUST ELBOWS ONLY WHERE INDICATED ON PLANS.
 8. DUCT SIZES SHOWN ARE NET FREE AREA.
 9. PROVIDE FLEXIBLE DUCT CONNECTION BETWEEN AIR CONDITIONING UNIT AND DUCTWORK.
 10. WHERE SINGLE SUPPLY DUCTS SPLIT INTO TWO DUCTS MAINTAIN EACH BRANCH DUCT SIZE THROUGH SPLITTER FITTING AND PROVIDE SINGLE TRANSITION ON UPSTREAM SIDE OF SPLITTER FITTING.

DATE	ISSUED FOR	REV
2016.12.23	OWNER REVIEW	1
2017.01.20	BID / PERMIT	2

This drawing has been prepared solely for the use of Roasting Plant and there are no representations of any kind made by NORR LLC to any party with whom NORR LLC has not entered into a contract.

This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer.

North Arrow

Detail Symbol

Seal(s)

NORR

NORR LLC
An Ingenium Group Company

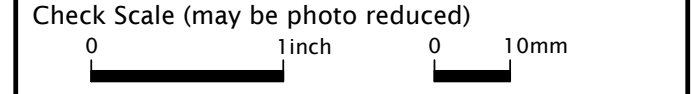
150 West Jefferson suite 1300
Detroit, Michigan, 48226 USA
www.norr.com

Project Manager S. ROBACH	Drawn C. PARKHURST
Project Leader J. GANKIN	Checked H. MONTAGUE

Client
Mike Shehadi
Roasting Plant of Ann Arbor LLC.
37484 Interchange
Farmington Hills, MI 48335

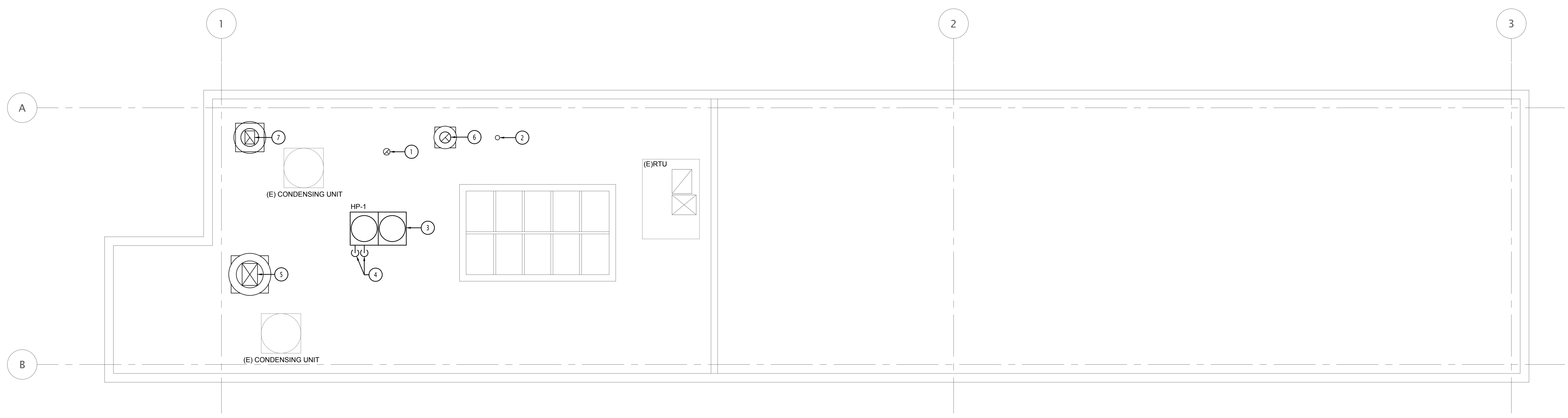
Project
Roasting Plant Coffee
312 S. State St
Ann Arbor, MI 48104

Drawing Title
HVAC PLAN - ROOF



Project No. JCDT16.0378.00

Drawing No. **M502**



2 HVAC PLAN - ROOF



TRANE

HIGH EFFICIENCY
AIR CONDITIONER **XE 1000**

WD65 — Wood Framed Folding/Paired Panel System for Special Applications

The WD65 is the folding or paired-panel wood framed system for special applications designed to provide an opening glass wall or storefront for widths up to 43' (13 m) with 12 panels. With additional paired panels, virtually unlimited widths are possible. It is a top hung system.

For benefits of all NanaWall® systems, see the “General Introduction” section. For features common to wood folding systems, see the “Wood Folding Systems” Introduction.

NFRC-Approved Thermal Performance

The WD65 has been rated, certified and labeled in accordance with NFRC 100 and 200; see the “Performance and Testing Results” section for more details. Energy Star values can be met with select glazing.

Acoustical Performance

A WD65 unit has been tested by an independent acoustic lab for acoustical performance. The WD65 with STC 38 laminated glass achieved STC and Rw values of 36.

Stacking Configurations for Special Applications

In addition to all inward-opening panels or all outward-opening panels, FoldFlat® option where the panels can be stacked completely out of the opening, options for combinations and center-pivoted panels are also available. Unhinged paired panel options are offered for maximum stacking flexibility. In addition to 90° or 135°, segmented units are possible to create large bay or “curved” openings. To see these operable wall concepts in action, visit www.nanawall.com and click on the “Animations” link.

Monumental Sized Systems

The system features monumental-sized panels made of cross-grained, solid wood construction; panel frame heights up to 10' (3050 mm) and panel widths up to 3'7" (1100 mm) are possible. Heavier and/or thicker glass, such as bullet-resistant laminated glazing, can also be used (note that sizes will be restricted with heavier glass)



General Description

The WD65 is the folding/paired-panel wood framed system for special applications designed to provide an opening glass wall or storefront for unlimited widths; see Maximum Size Chart. It is available in various configurations utilizing one to twelve panels or more with unhinged pairs of panels; see elevation drawings. The option exists for a swing entry/exit panel(s); note, however, the further panel size constraints with a swing panel not hinged to a side jamb. Units can be either all inward-opening, all outward-opening, a combination of some panels opening inward and others opening outward, or center pivoted – all panels stacking within the opening at 90 degrees – or the panels stacked out of the opening with the FoldFlat® option (shown in section drawings).

Frame and Panels

The nominal, three-layer cross grained solid wood frame and panel thickness is 2 5/8" (66 mm); see profiles in section drawings. The aluminum head jamb is clad with matching wood fascia pieces on both sides. Standard woods are Douglas Fir, European Pine, or Meranti. Other woods are also available. Frames and panels have a sanding sealer or a base coat applied for field finishing by others; see "Wood Finish Options" in General Introduction. Panels are pre-assembled. On a folding pair of panels hinged to a side jamb, the panel hinged to the side jamb is 2 3/8" (62 mm) narrower in nominal width than other panels. All pins and screws to assemble the frame are provided. All the available sills can be provided in a clear or dark anodized aluminum finish.

Glazing

Units can be supplied glazed with: 15/16" (24 mm) double insulating safety, 1 1/8" (28 mm) triple insulating Low-E safety, insulating Low-E safety glass, 1/4" (6 mm) single tempered or laminated, other high performing safety glass such as Heat Mirror, special tint, etc., or other glass on request.

Weatherstripping

Double APTK weatherstripping is provided for vertical sealing between panels and between panels and frames; brush seals with flexible plastic web are provided for all horizontal sealing; see section drawings.

Sliding/Folding Hardware

For sliding and folding of each pair of panels, a patented, load-bearing, upper-running carriage is attached to the upper corner of a panel (shown in the section drawings); attached to the lower corner is a lower-running carriage as a guide. The double pair, twin-tandem, upper-running carriage is constructed to ensure even distribution of pressure on all four rollers. Rollers have sealed bearings and are coated with toughened Polyamide to ensure running and optimal resistance to extreme temperature. Two to five patented clear or dark bronze anodized hinges per connection are provided to connect panels together and to connect panels to the frame.

Locking Hardware and Handle Options

Provided with each pair of folding panels (except for the pair to be opened first in a unit with no swing panel), is two point locking hardware, consisting of top and bottom Polyamide capped locking rods operated by a 180° turn of a flat handle on the inside only.

If there is a **swing panel**, there are the following hardware options on the primary swing panel:

1. Multi-point Locking. Consisting of lever handles on both sides, a lockset, lockable latch, deadbolt and rods at the top and the bottom. After turn of key or thumbturn, depression of handles withdraws latch, lifting of handles engages rods and turn of key or thumbturn engages deadbolt and locks. For a unit with a secondary swing panel, available are matching dummy lever handles on both sides and a concealed flush bolt that operates the rods at the top and the bottom. Available with profile cylinder or SFIC adapter.

2. Deadbolt Lock. Consisting of push/pull handles on both sides with deadbolt(s) operated by a lockset. Turn of key or thumb turn operates lock. Available is a lockset option of having key operation on both sides. To keep the panel closed, a door closer should be field installed, but please note that a door closer can only be installed for a swing panel that is attached to the side jamb.

3. No Hardware. For panic hardware to be installed by others, the main entry panel can be supplied with no locking hardware.

For a unit with **no swing panel**, on the folding pair to be opened first provided is two point locking hardware consisting of top and bottom Polyamide capped locking rods operated by a 180° turn of an L-shaped handle for an inward opening unit and a flat handle for an outward opening unit on the inside. In both cases, there will be a flat handle on the outside. Lockable with a lockset. Turn of key or thumb turn operates lock. Please note that for an outward opening unit, locking from the inside will need to be with a key that may not meet egress requirements.

For a unit where locking/handles on the inside only is desired, like in window applications, on all swing panels or pair of folding panels to be opened first, provided is two point locking with a flat handle on the inside only.






Handle Finish Schemes:

Standard-Stainless steel lever, flat, and L-shaped handles in brushed satin or black titanium finish.

Optional-Brass lever handles in oil rubbed or satin nickel and flat handles powdercoated dark brown or silver gray.

Push/pull handles are available in in brushed stainless steel.

Standard Sill WD65

TYPE OF TEST	INWARD OPENING UNITS	OUTWARD OPENING UNITS
 Air Infiltration ^① ASTM E-283, cfm/ft ²	@ 1.57 psf (75 Pa): 0.15	@ 1.57 psf (75 Pa): 0.12
	@ 6.24 psf (300 Pa): 0.23	@ 6.24 psf (300 Pa): 0.38
 Water Penetration ^① ASTM E-547	Pending	Pending
 Structural Load Deflection ^① ASTM E-330: pass See design windload charts for other sized panels <i>Note that the structural test pressures were 50% higher than the design pressures.</i>	DESIGN PRESSURE Positive @ 25 psf (1200 Pa)	DESIGN PRESSURE Negative @ 25 psf (1200 Pa)
	Positive @ 25 psf (1200 Pa)	Negative @ 25 psf (1200 Pa)
 Forced Entry Resistance ^①	In accordance with CAWM 300 requirements	
 Acoustical Performance ^②	The WD65 with STC 38 laminated glass achieved STC and RW values of 36.	

① Excerpts of results of 10'9" W x 8'2" H three panel unit with Standard (Raised) sill tested by Architectural Testing, Inc., Fresno, CA, an independent testing laboratory in February 2000 per AAMA/NWDA 101/I.S.2 standards.

② Excerpts of results of a unit tested by Nusing Mobile Trennwandtechnik, Munster, Germany, an independent testing laboratory in November 2003.

Standard Sill

WD65

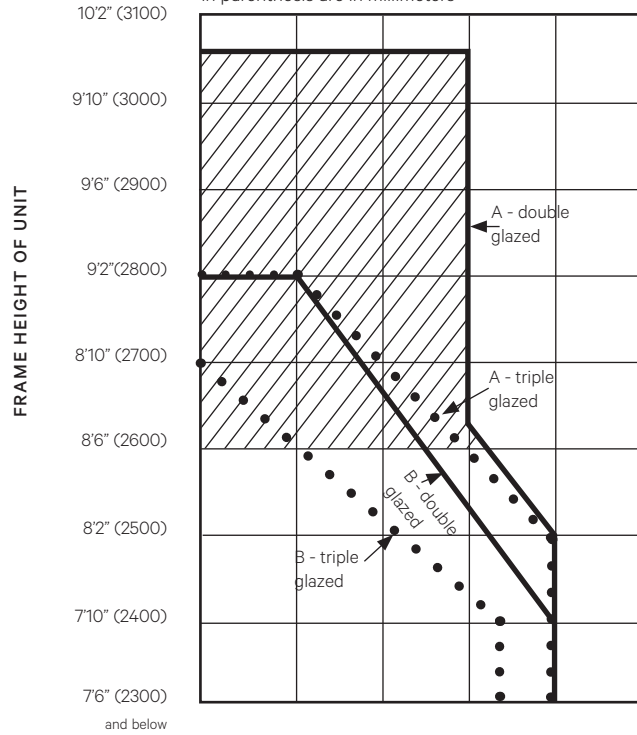


Thermal Performance

Rated, certified and labeled in accordance with NFRC 100 + 200

			INWARD OR OUTWARD OPENING UNITS			
TYPE OF GLASS (1 LITE) ^③	CENTER OF GLASS U-FACTOR	IG GLASS THICKNESS	UNIT U-FACTOR	UNIT SHGC ^④	UNIT VT ^⑤	2015 ENERGY STAR
Double IG Clear (air filled)	.48	15/16" (24 mm)	.43	.46	.49	-
Double IG Standard Low E (argon filled)	.26	15/16" (24 mm)	.28	.23	.41	*
Double IG Standard Low E (air filled)	.30	15/16" (24 mm)	.31	.24	.41	-
Triple IG Low E x 2 (argon filled)	.12	1 1/8" (28 mm)	.23	.20	.32	*
Triple IG Low E x 2 (air filled)	.15	1 1/8" (28 mm)	.26	.20	.32	*
Triple IG Low E x 2 (hard coat, argon filled)	.10	1 1/8" (28 mm)	.20	.20	.32	*
NOTES						
③ U-Factor Results with one Horizontal mullion will be .01 to .02 higher than the above results					④ SHGC = Solar Heat Gain Coefficient ⑤ VT = Visible Transmittance	
* 2015 Energy Star Qualification Criteria: U-Factor for doors in all climate zones ≤.30, SHGC ≤.25 in South/South Central zones and ≤.40 in North/North Central zones. (For guidance only. NanaWall is not a participant of the Energy Star program.)						
Call NanaWall for U-Factor & SHGC for other glass types						

NOTE: English Dimensions are approximate. Dimensions in parenthesis are in millimeters



NUMBER OF PANELS IN UNIT	FRAME WIDTH OF UNIT				
	1	2	3	4	5
1	1'11" (600)	2'3" (700)	2'7" (800)	2'11" (900)	3'3" (1000)
2	3'11" (1200)	4'7" (1400)	5'3" (1600)	5'10" (1800)	6'6" (2000)
3	5'10" (1800)	6'10" (2100)	7'10" (2400)	8'10" (2700)	9'10" (3000)
4	7'10" (2400)	9'2" (2800)	10'6" (3200)	11'9" (3600)	13'1" (4000)
5	9'10" (3000)	11'5" (3500)	13'1" (4000)	14'9" (4500)	16'4" (5000)
6	11'9" (3600)	13'10" (4200)	15'8" (4800)	17'8" (5400)	19'8" (6000)
7	13'10" (4200)	16' (4900)	18'4" (5600)	20'7" (6300)	22'10" (7000)
8	15'8" (4800)	18'4" (5600)	20'11" (6400)	23'6" (7200)	26'1" (8000)
9	17'9" (5400)	20'7" (6300)	23'6" (7200)	26'5" (8100)	29'4" (9000)
10	19'8" (6000)	22'10" (7000)	26'1" (8000)	29'4" (9000)	32'9" (10000)
11	21'7" (6600)	25'1" (7700)	28'8" (8800)	32'5" (9900)	36'1" (11000)
12	23'6" (7200)	27'4" (8400)	31'5" (9600)	35'5" (10800)	39'4" (12000)

Double and Triple Glazed

Units with up to twelve panels are shown on the graph below. With additional unhinged paired panels, virtually unlimited unit widths are possible. Any custom panel size is possible up to the maximum size shown.

Solid dark line on chart indicates maximum frame height possible for a given maximum frame width for a unit with double glazing.

Dotted line on chart indicates maximum frame height possible for a given maximum frame width for a unit with triple glazing.

On chart indicates that heights above 8'6", a horizontal mullion is needed and for heights above 9'2", 3 3/4" (95 mm) stiles and rails are also needed.

A. Either for configurations with folding panels only or for configurations with folding panels and a swing door hinged to a side jamb - includes Models 1L, 1R, 1L1R, 2R, 1L2R, 4R, 2L2R, 1L4R, 2L4R, 6R, 1L6R, 2L6R, 4L4R, 4L6R, 2L, 2L1R, 4L, 4L1R, 4L2R, 6L, 6L1R, 6L2R, 6L4R and 6L6R.

B. For all configurations

The maximum size limits for double glazed units are based on the maximum weight of a panel that has a net glass thickness of 5/16" (8 mm) or 5/32" (4 mm) for each glass pane. The maximum size limits for triple glazed units are based on the maximum weight of a panel that has a net glass thickness of 1/2" (12 mm) or 5/32" (4 mm) for each glass pane. For net thicker glass, this maximum size limit chart will not apply.

For configurations with no swing panels, the minimum panel width needed is 1'8" (510 mm).

Dimensions in millimeters unless noted. Calculation applies to the standard stiles and rails.

Glass dimensions of all panels in a unit are equal, except for glass width of panel(s) that is hinged to either side jamb that has at least one other panel hinged to it. This glass width is 60 mm (2 3/8") less than the glass width of the other panels.

Nominal Panel Height (PH) is defined as Glass Daylight Opening Height +156 = (6 1/8")

Nominal Panel Width (PW) is defined as Glass Daylight Opening Width + 156 = (6 1/8")

Panel Height is as seen from the inside on an inward opening unit and is as seen from the outside on an outward opening unit.

See Cross-Section Details of both stiles of each panel to determine actual Panel Width. With astragals, overlapping, etc., the actual Panel Width not only varies with position of panel in a configuration, but the inside and outside surface widths of each stile may be different.

For each configuration, the Frame Width (FW) is the sum of the nominal Panel Width (PW) x the number of panels - 60 mm x number of panels hinged to side jamb with at least one other panel hinged to it plus a number (N) which is the sum of the side jamb dimensions and dimensions of space between panels in excess of the nominal Panel Width as shown in the Cross-Section Details.

Frame Height (FH)

WD65 System

Standard Sill:

Frame Height = Panel Height + 108 (4 1/4") = Clear Opening Height + 94 (3 11/16")

Flush/Low Profile Sill:

Frame Height = Panel Height + 118 (4 11/16") = Clear Opening Height + 104 (4 1/8")

Surface Mounted Interior Sill:

Frame Height = Panel Height + 104 (4 1/8") = Clear Opening Height + 87 (3 7/16")

Frame Widths for Different Configurations with Majority of Panels Folding to Right (and their Mirror Image Configurations with Majority of Panels Folding to Left). See Maximum Size Charts for size limits. These numbers can be used as a guideline only. Contact NanaWall for the exact calculations for a particular unit.

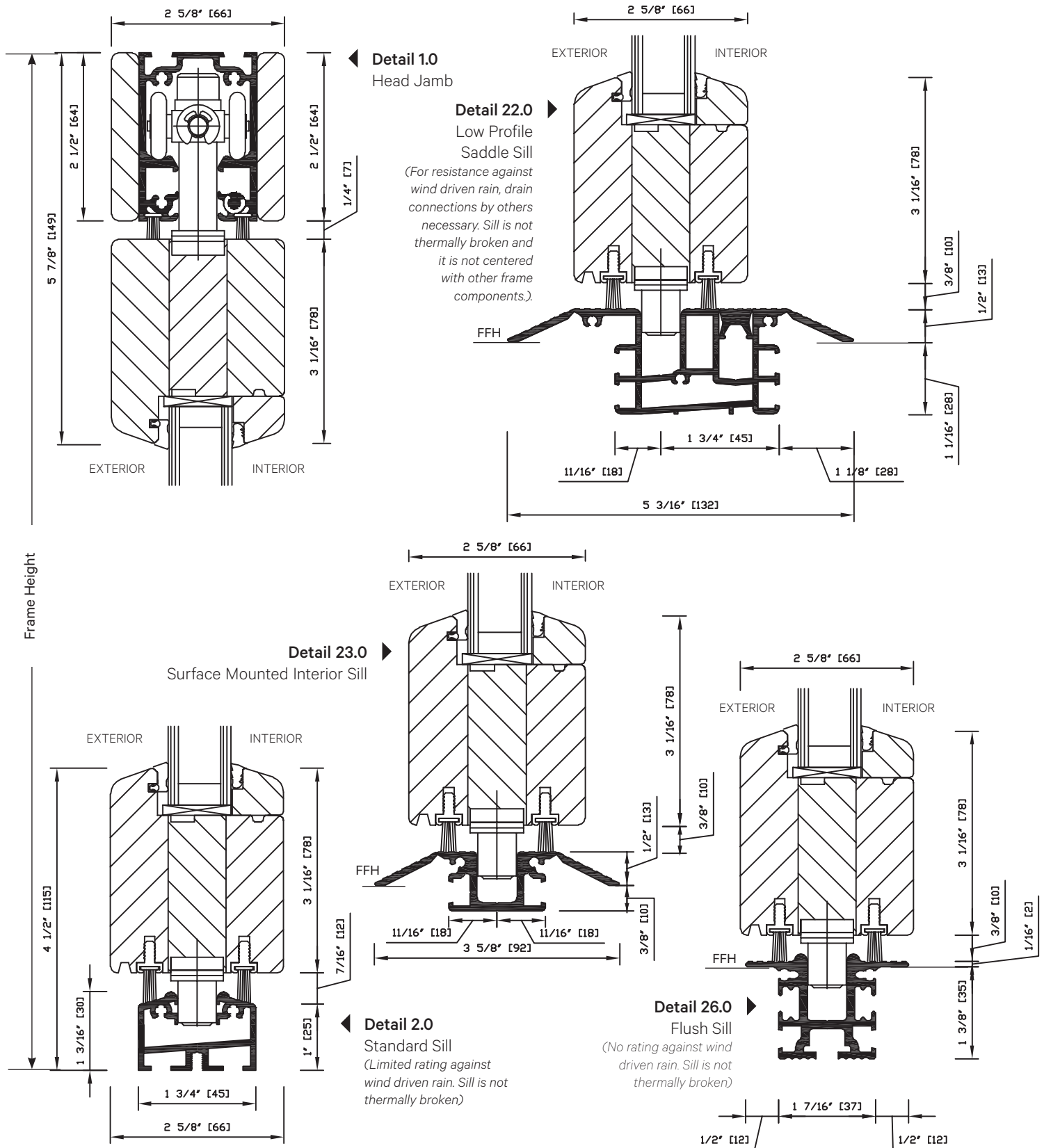
Please note that widths for units with unhinged panels or angle turns will be different.

Model 1R	Frame Width = 1 x Panel Width + 133 = 1 x Panel Width + 5 1/4"
Model 1L1R	Frame Width = 2 x Panel Width + 143 = 2 x Panel Width + 5 5/8"
Model 2R*	Frame Width = 2 x Panel Width -60 + 145 = 2 x Panel Width + 3 3/8"
Model 3R*, Model 1L2R*	Frame Width = 3 x Panel Width -60 + 153 = 3 x Panel Width + 3 11/16"
Model 4R*	Frame Width = 4 x Panel Width -60 + 160 = 4 x Panel Width + 3 15/16"
Model 1L3R*	Frame Width = 4 x Panel Width -60 + 163 = 4 x Panel Width + 4 1/16"
Model 2L2R**	Frame Width = 4 x Panel Width -120 + 165 = 4 x Panel Width + 1 3/4"
Model 5R*, Model 1L4R*	Frame Width = 5 x Panel Width -60 + 173 = 5 x Panel Width + 4 7/16"
Model 2L3R**	Frame Width = 5 x Panel Width -120 + 173 = 5 x Panel Width + 2 1/16"
Model 3L3R**	Frame Width = 6 x Panel Width -120 + 183 = 6 x Panel Width + 2 1/2"
Model 2L4R**	Frame Width = 6 x Panel Width -120 + 185 = 6 x Panel Width + 2 9/16"
Model 1L5R*	Frame Width = 6 x Panel Width -60 + 183 = 6 x Panel Width + 4 13/16"
Model 6R*	Frame Width = 6 x Panel Width -60 + 185 = 6 x Panel Width + 4 15/16"
Model 1L6R*	Frame Width = 7 x Panel Width -60 + 193 = 7 x Panel Width + 5 1/4"
Model 2L5R**, Model 3L4R**	Frame Width = 7 x Panel Width -120 + 193 = 7 x Panel Width + 2 7/8"
Model 4L4R**, Model 2L6R**	Frame Width = 8 x Panel Width -120 + 205 = 8 x Panel Width + 3 3/8"
Model 3L5R**	Frame Width = 8 x Panel Width -120 + 203 = 8 x Panel Width + 3 1/4"
Model 4L5R**, Model 3L6R**	Frame Width = 9 x Panel Width -120 + 213 = 9 x Panel Width + 3 11/16"
Model 4L6R**	Frame Width = 10 x Panel Width -120 + 225 = 10 x Panel Width + 4 1/8"
Model 5L5R**	Frame Width = 10 x Panel Width -120 + 223 = 10 x Panel Width + 4 13/16"
Model 5L6R**	Frame Width = 11 x Panel Width -120 + 233 = 11 x Panel Width + 4 7/16"
Model 6L6R**	Frame Width = 12 x Panel Width -120 + 245 = 12 x Panel Width + 4 15/16"

* One panel that is 60 mm (2 3/8") narrower than other panels

** Two panels that are 60 mm (2 3/8") narrower than other panels

Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.

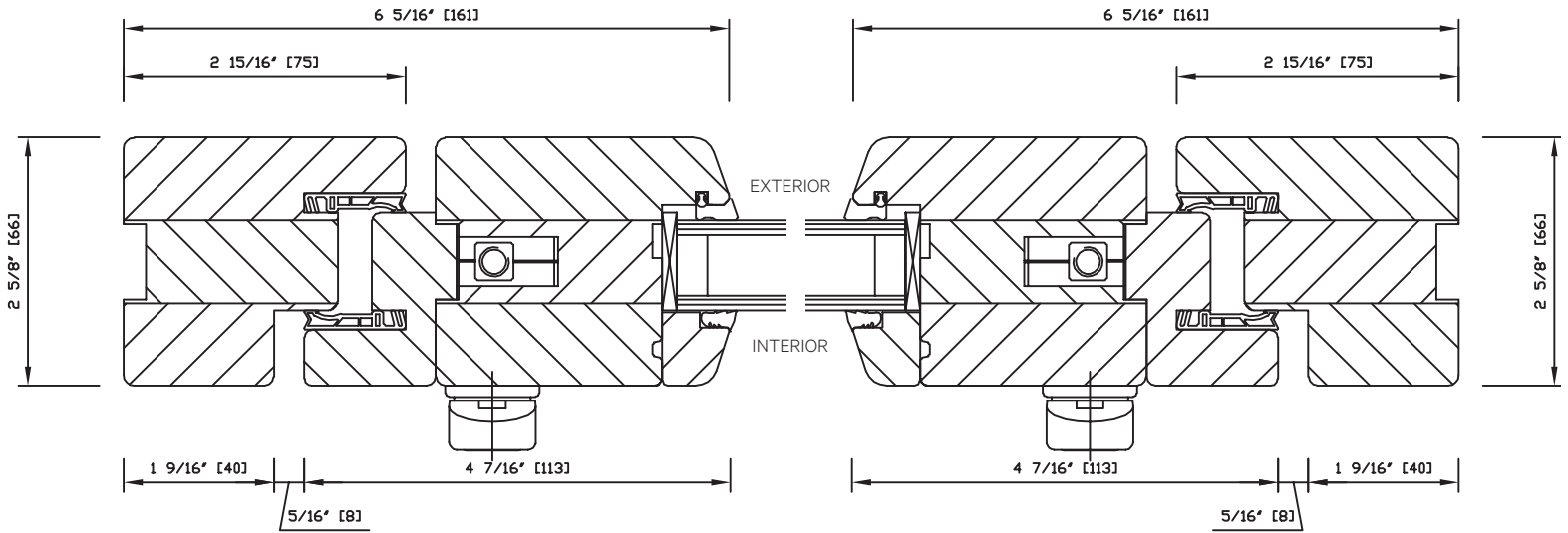


Note: For ADA compliance in commercial projects, a gasket to cover the channel in the sill at swing panels is provided for the saddle sill, surface mounted sill and flush sill

Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.

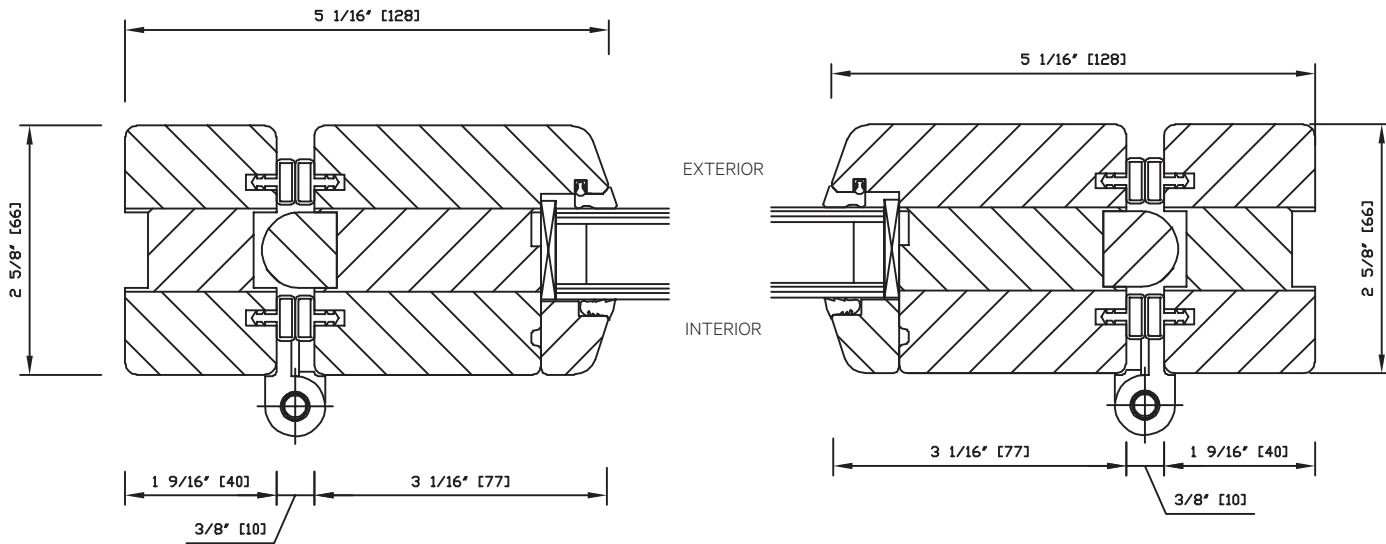
Detail 4.0 Swing panel with locking at left side jamb

Detail 4R.0 Swing panel with locking at right side jamb

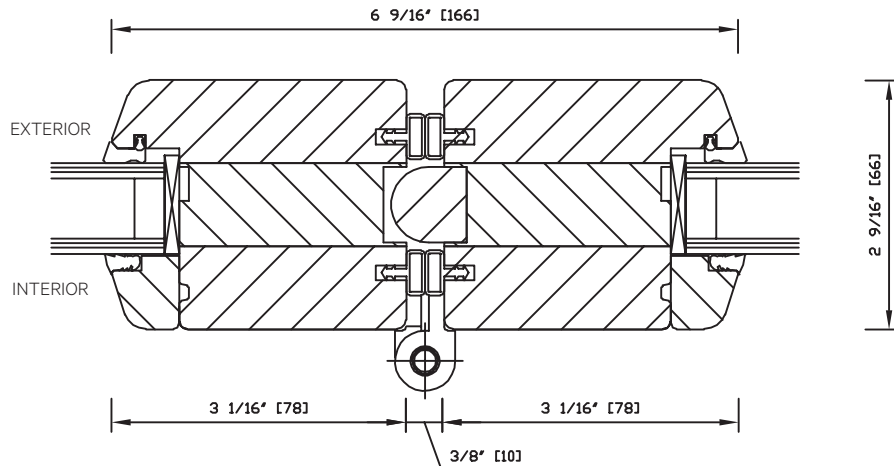


Detail 3R.0 Panel hinged at left side jamb

Detail 3.0 Panel hinged at right side jamb

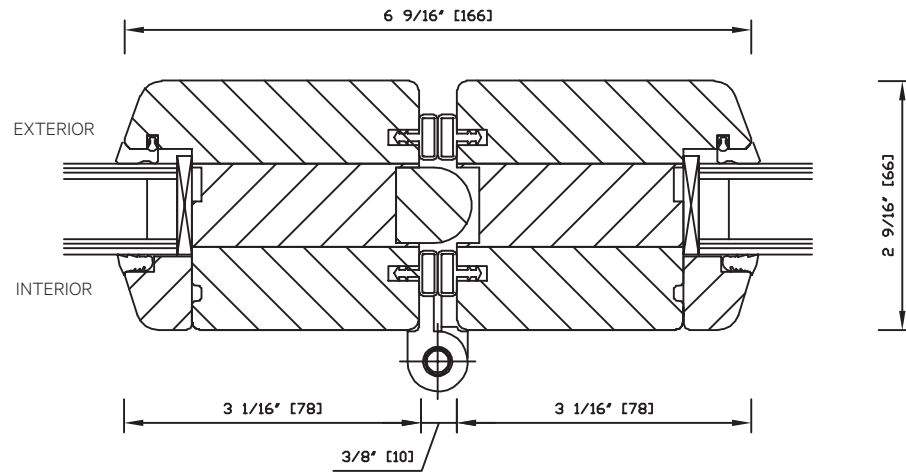


Detail 7C.0 ▶
Right folding panel with running carriage set

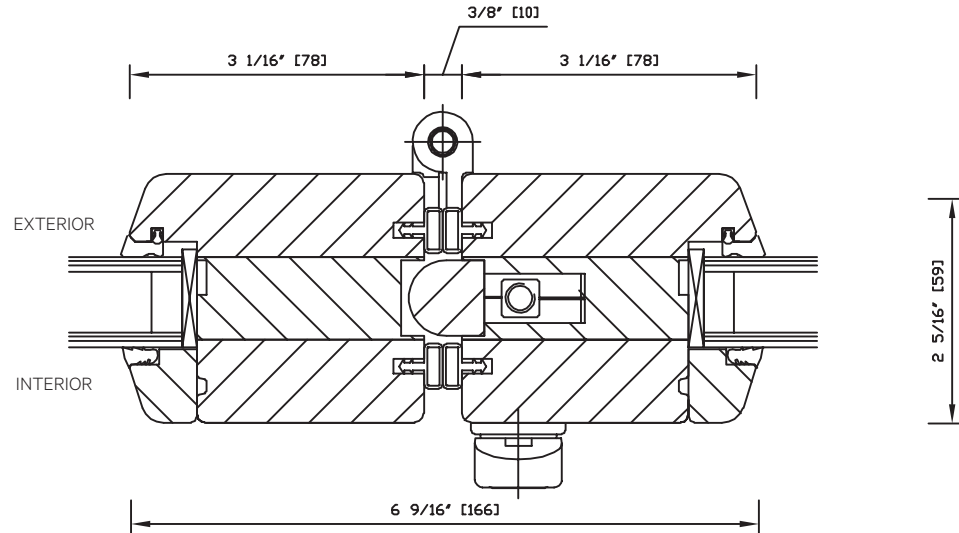


Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.

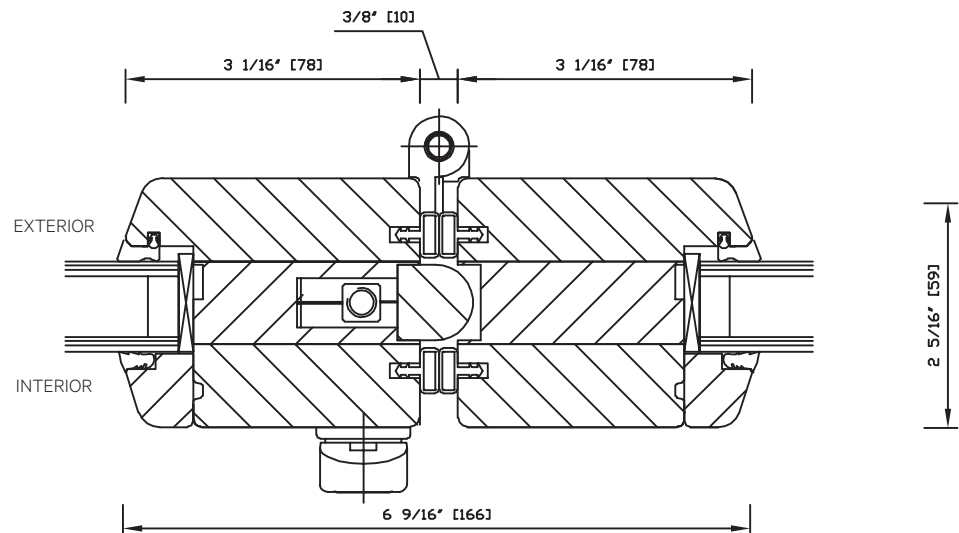
Detail 7RC.0
Left folding panels with running carriage set



Detail 7.0
Right folding panel with locking

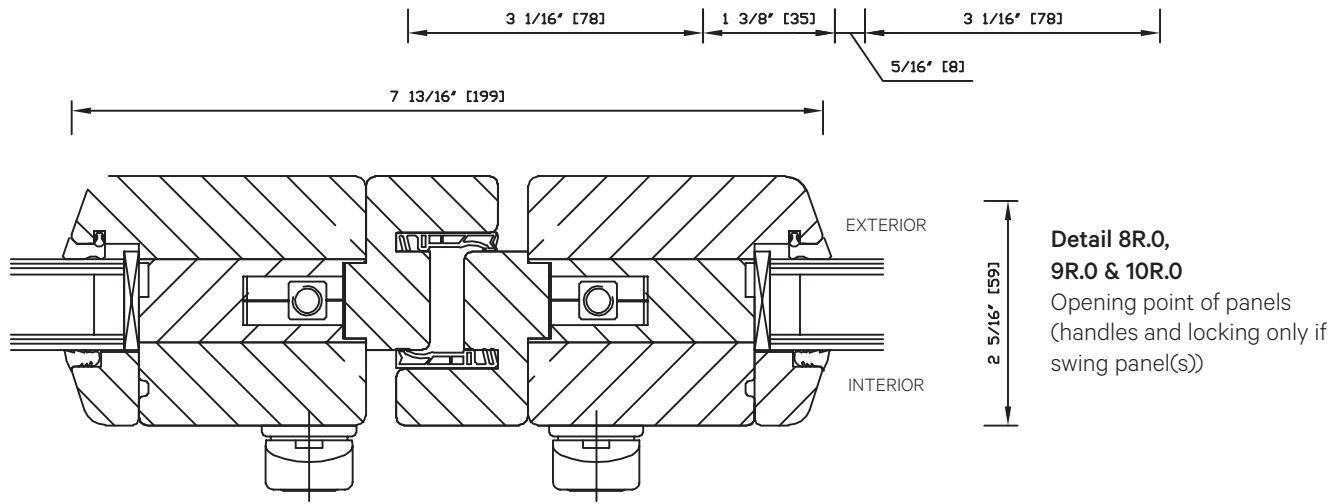
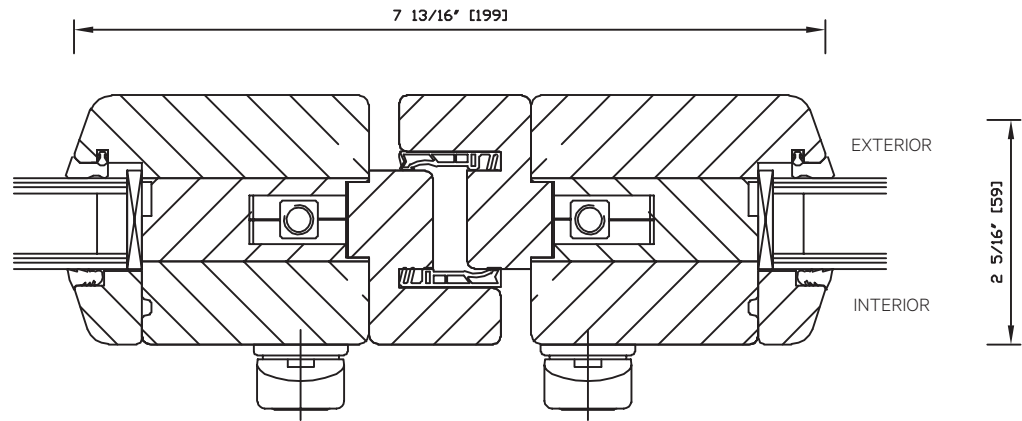


Detail 7R.0
Left folding panel with locking



Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.

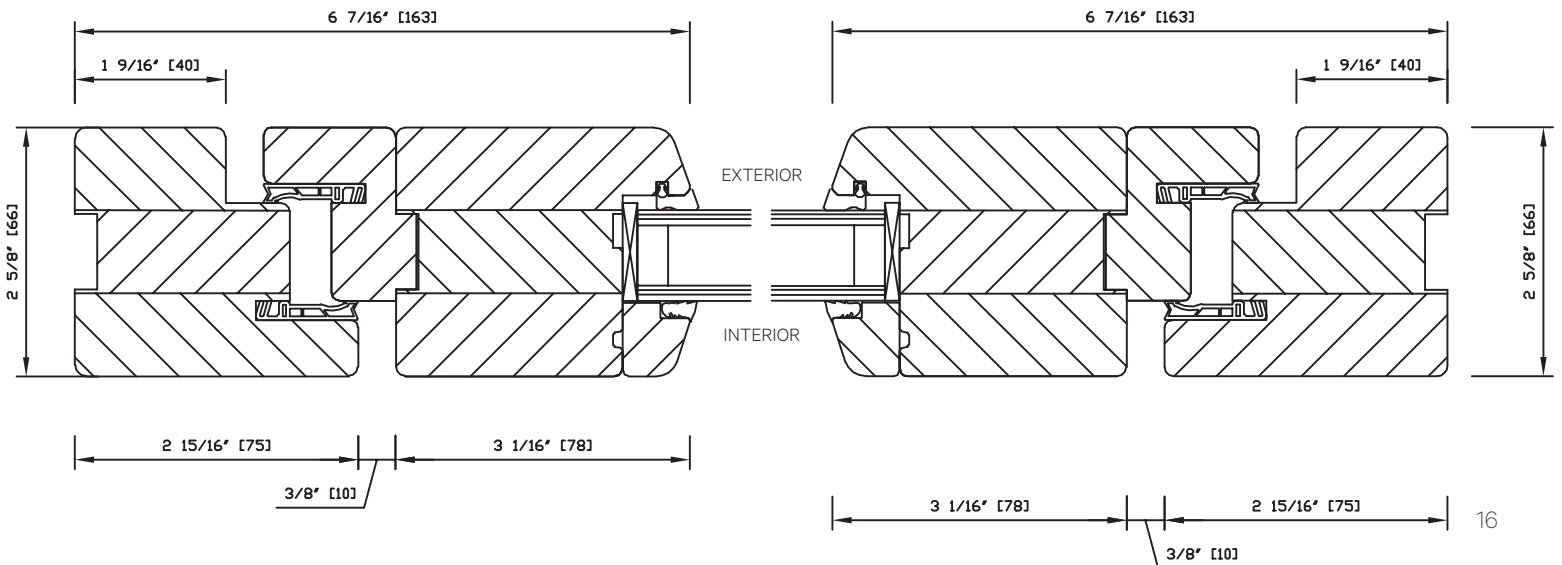
Detail 8.0, 9.0 & 10.0
Opening point of panels
(handles and locking only
if swing panel(s))



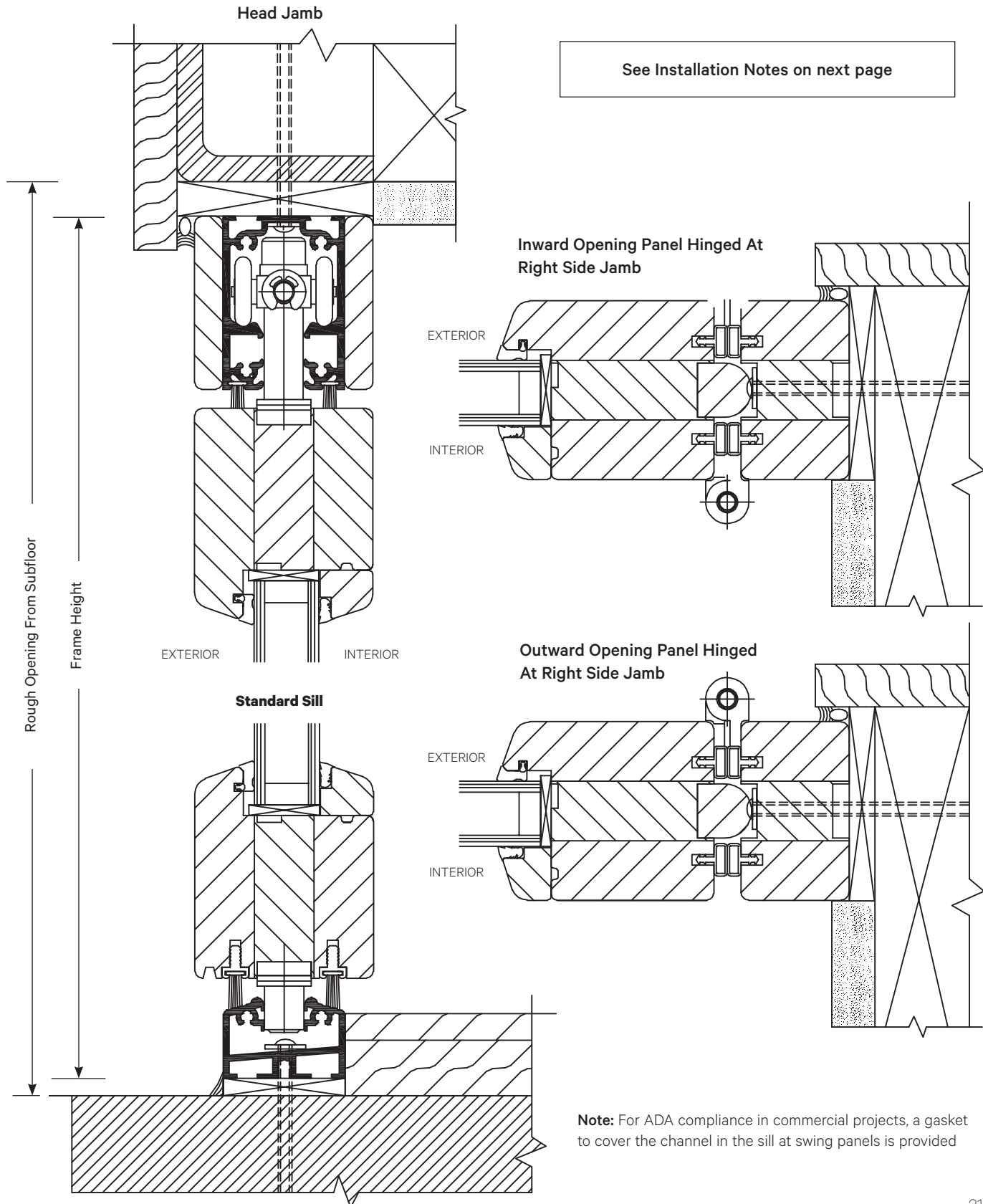
**Detail 8R.0,
9R.0 & 10R.0**
Opening point of panels
(handles and locking only
if swing panel(s))

Detail 5.0
Panel with running carriage set meeting left side jamb

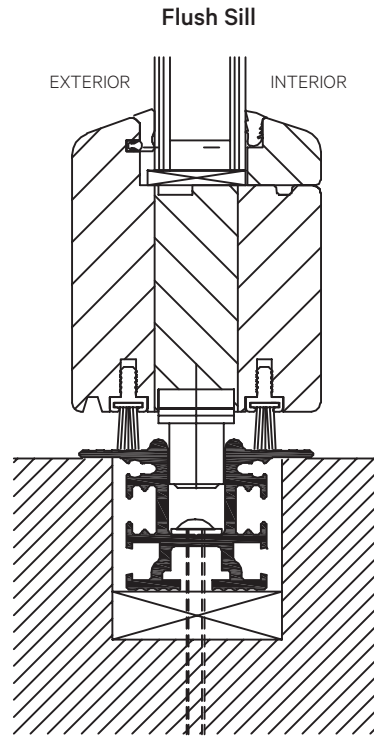
Detail 5R.0
Panel with running carriage set meeting right side jamb



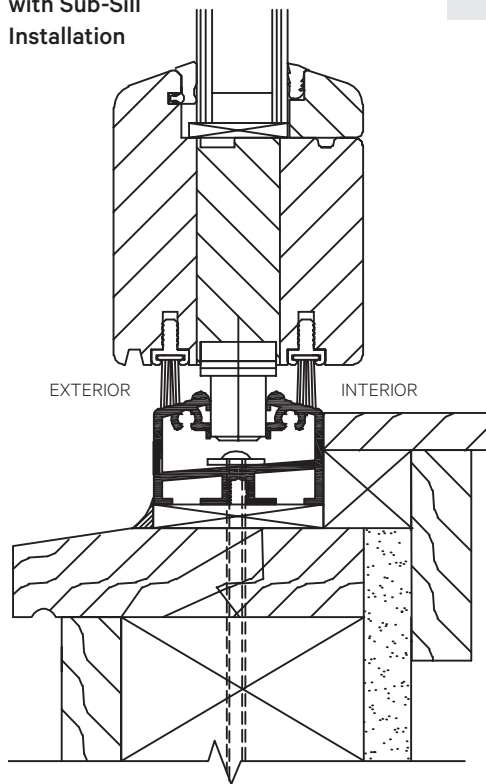
Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option as well as 2 5/8" (66 mm) for units without a swing door.



Shown are 3 1/16" (78 mm), nominal stile and rail widths. Nominal 3 3/4" (95 mm) stile and rail widths are available as an option.



Standard Sill with Sub-Sill Installation



INSTALLATION NOTES

Suggested Typical Installation drawings shown are very general and may not be suitable for any particular installation. Product placement, fasteners, flashing, waterproofing, sealant, trim and other details for specific surrounding conditions must be properly designed and provided by others.

INSTALLATION CONSIDERATIONS

The approximate weight of a panel with standard insulated double-glazing is 5.5 lbs/ft² (27 kg/m²). The vertical structural deflection of the header should be the lesser of L/720 of the span and 1/4" (6 mm) under full loads. Although for floor supported systems, there is no vertical load on the header from the panels, structural support for lateral loads (both windload and when the panels are stacked open) must be provided. See "Pre-Installation Preparation and Installation Guidelines" in the General Introduction. An owner's manual with installation instructions is available upon request.

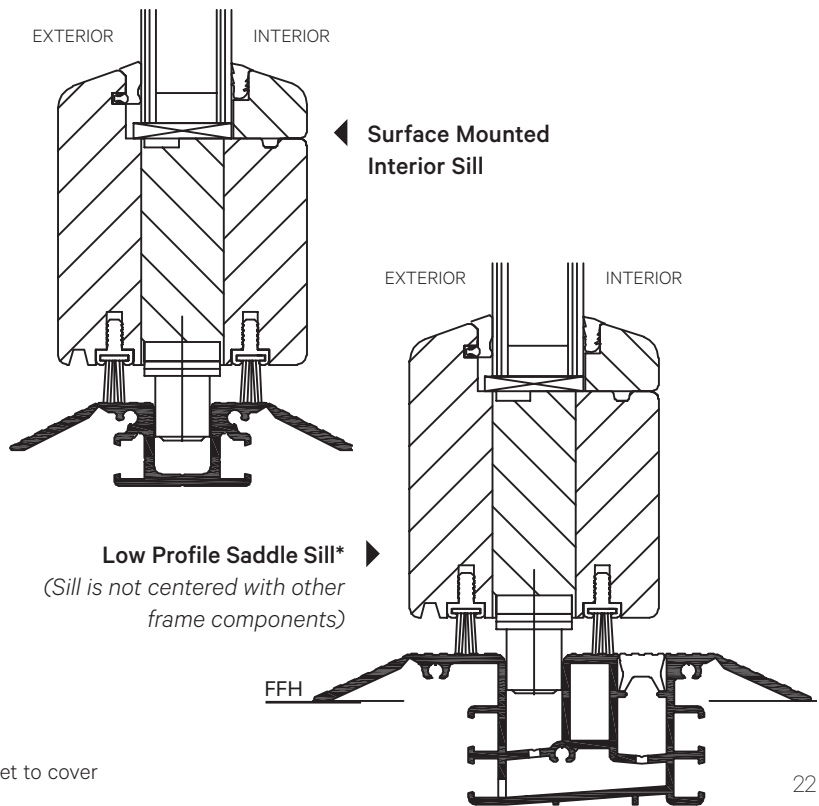
It is recommended that all building dead loads be applied to the header prior to installing the NanaWall. If so and if a reasonable amount of time has been allowed for the effect of this dead load on the header, then only the building's live load can be used to meet the above requirements of L/720 or 1/4" (6 mm). If not, both the dead and live loads need to be considered.

***FOR LOW PROFILE SADDLE SILL**

For resistance against wind driven rain, the following is recommended by others

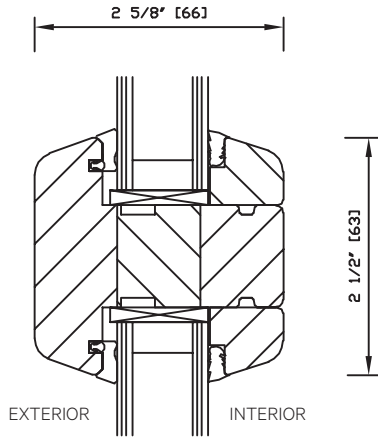
1. Remove the gasket covering the inner channel.
2. Provide necessary weepholes at the bottom of the channels and on the outside face of the sill.
3. Make necessary drain connections.

Ask NanaWall for a detailed drawing..

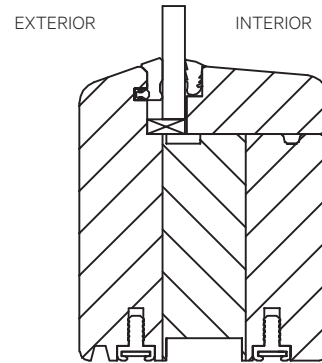


Note: For ADA compliance in commercial projects, a gasket to cover the channel in the sill at swing panels is provided

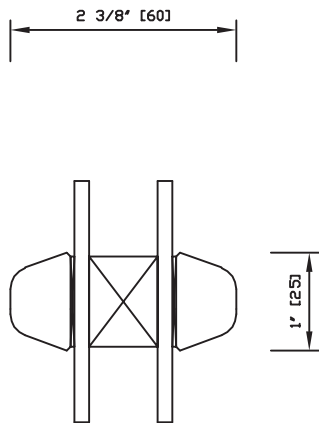
Typical Mullion Profile (Note that different mullion widths are available)



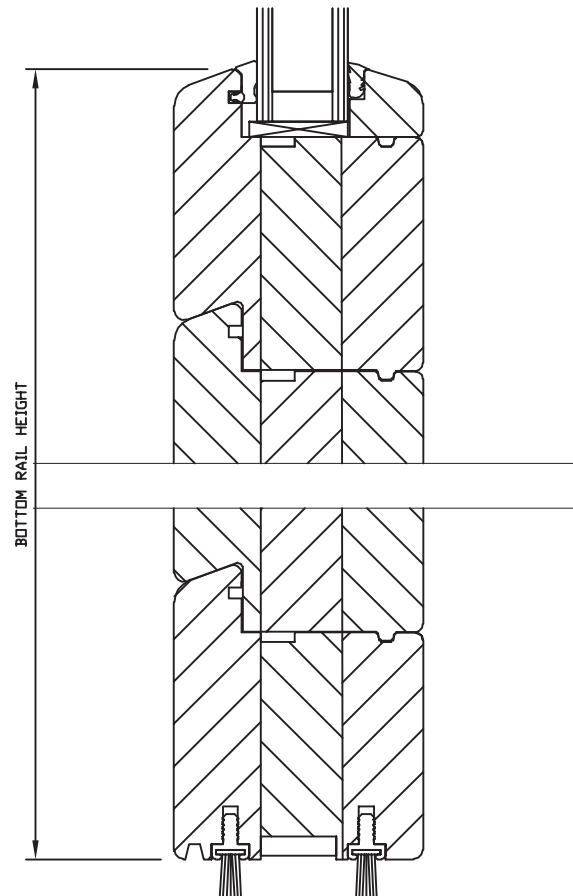
Typical Stile and Rail with Single 1/4" Glass



Typical Simulated Divided Lites Muntins with Spacers Between Insulated Glass (SDL)



Typical Higher Bottom Rail



Unit with Reinforced Locking

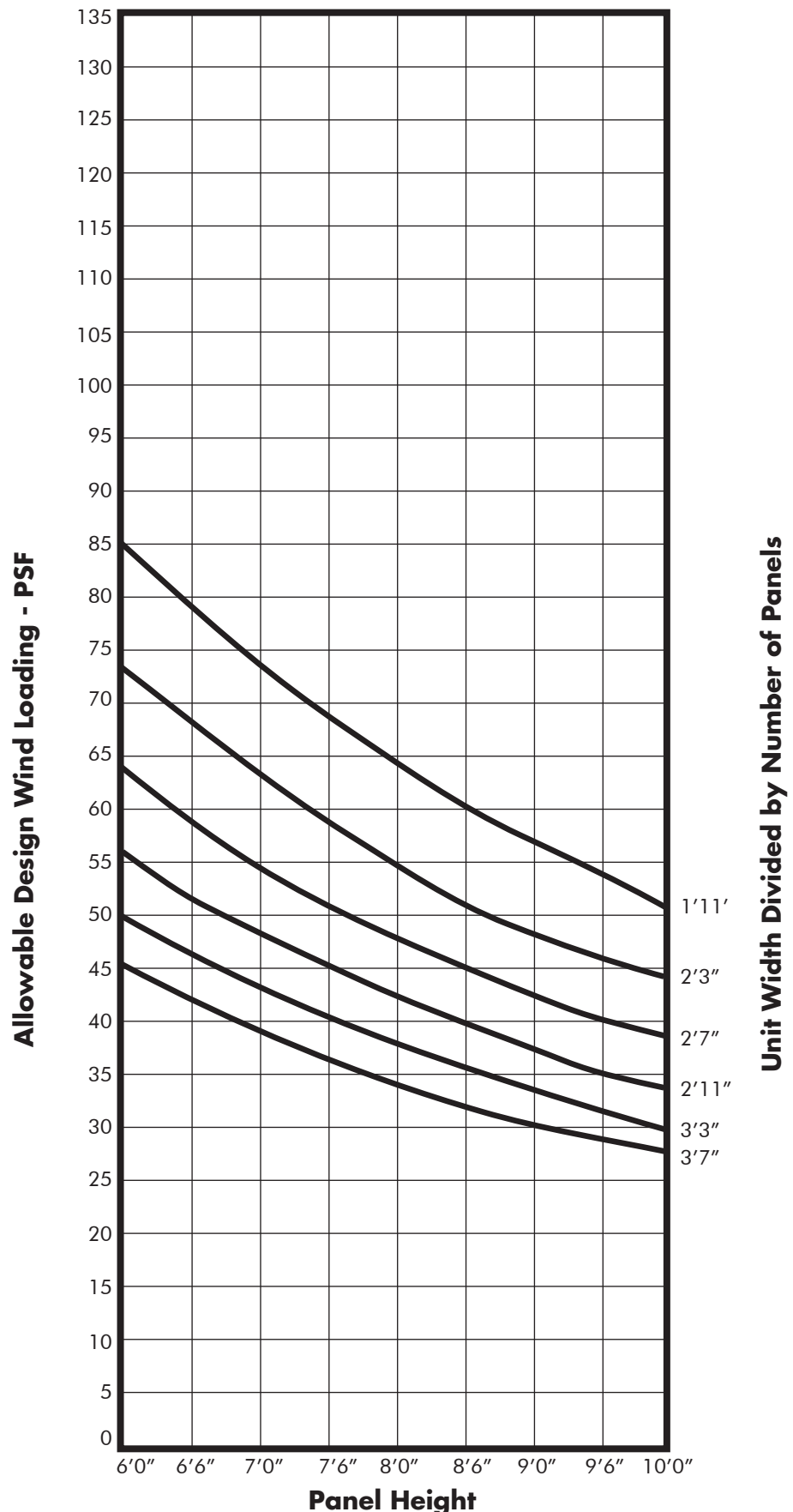
(Not for unit with standard locking)
 Derived From Comparative Analysis
 Based on unit tested in February
 2000.

Test Unit Size: 10'9"W x 8'2"H
 (3 panels).

Positive and negative design pressures for both inward and outward opening units.

Please note that some jurisdictions may limit the use of these charts or may not accept them at all. Design pressures and/or sizes may be restricted to what was tested. For Florida approved products, please see detailed FL Evaluation Report for restrictions.

Please also note that chart is only applicable for units with referenced Nana Wall supplied locking.



See Maximum Frame Size Chart for Possible Sizes