GLASS SOLUTIONS
COMMERCIAL & RESIDENTIAL GLASS SPECIALISTS

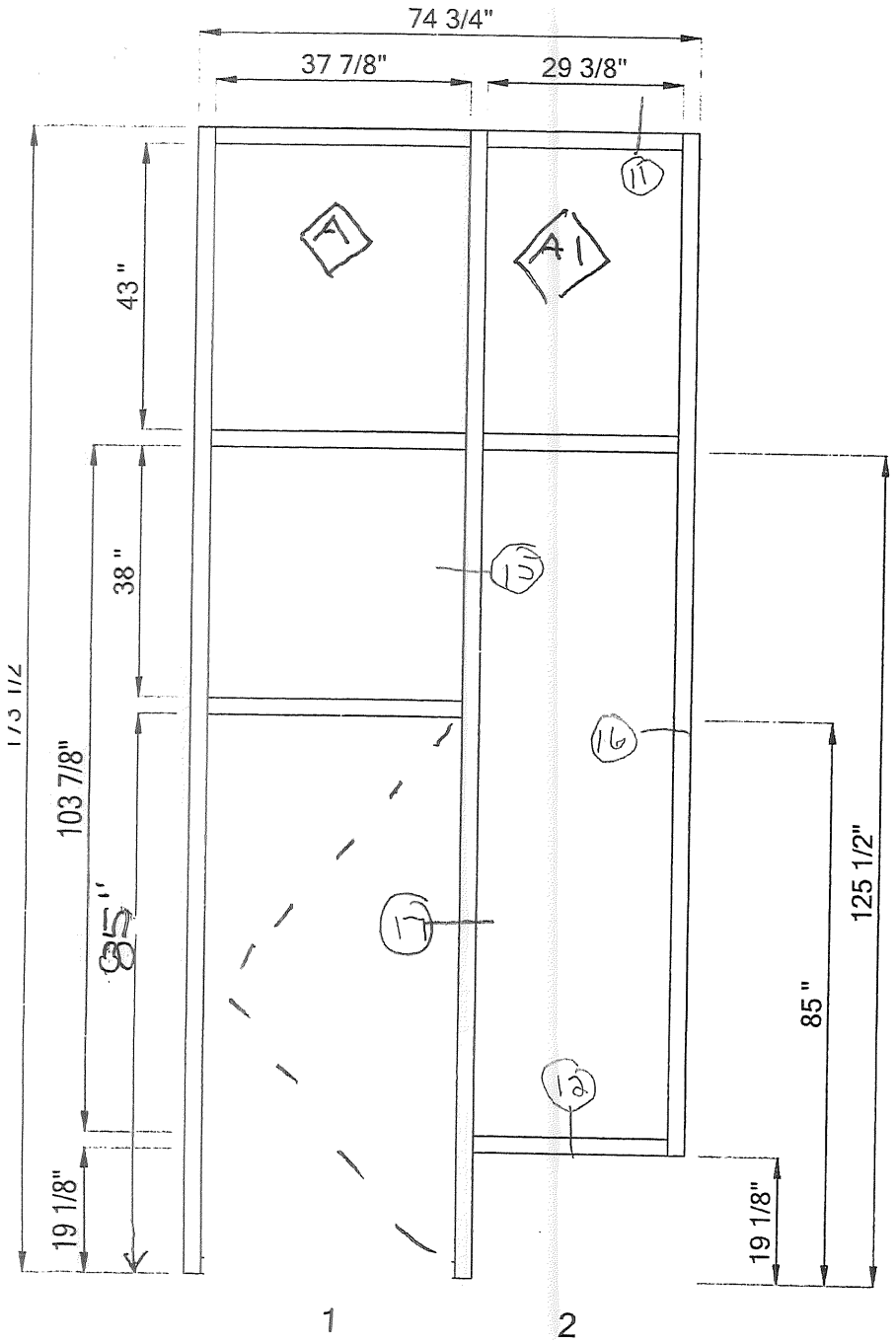
SHWARTZ BUILDING RENOVATIONS

Tubelite: 400 series curtain wall (2 ½" x 6")

Glazing: 1" clear insulated tempered and annealed glass where required.

Hardware: Butt hinges, closers, PANIC BAR, push/pull, cylinder, threshold and bottom sweep.

David Christopher, Owner ■ GlassSolutions811@yahoo.com
207-210-6685 OFFICE ■ 207-252-5691 MOBILE ■ 207-210-6686 FAX ■ 26 Bridgton St., Ste. 8, Westbrook, ME 04092



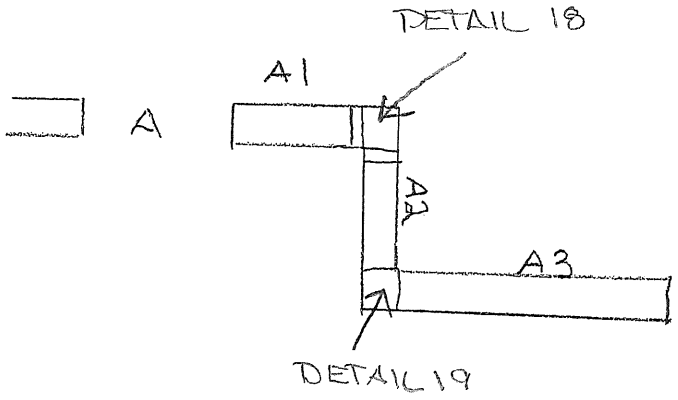
swharts building - 011 - K.dwg (1 Thus)
Frame: (C1/DB/1P) 400 Series : Curtainwall
: 6 inch System : Open Back Perm/Roll-over Horz

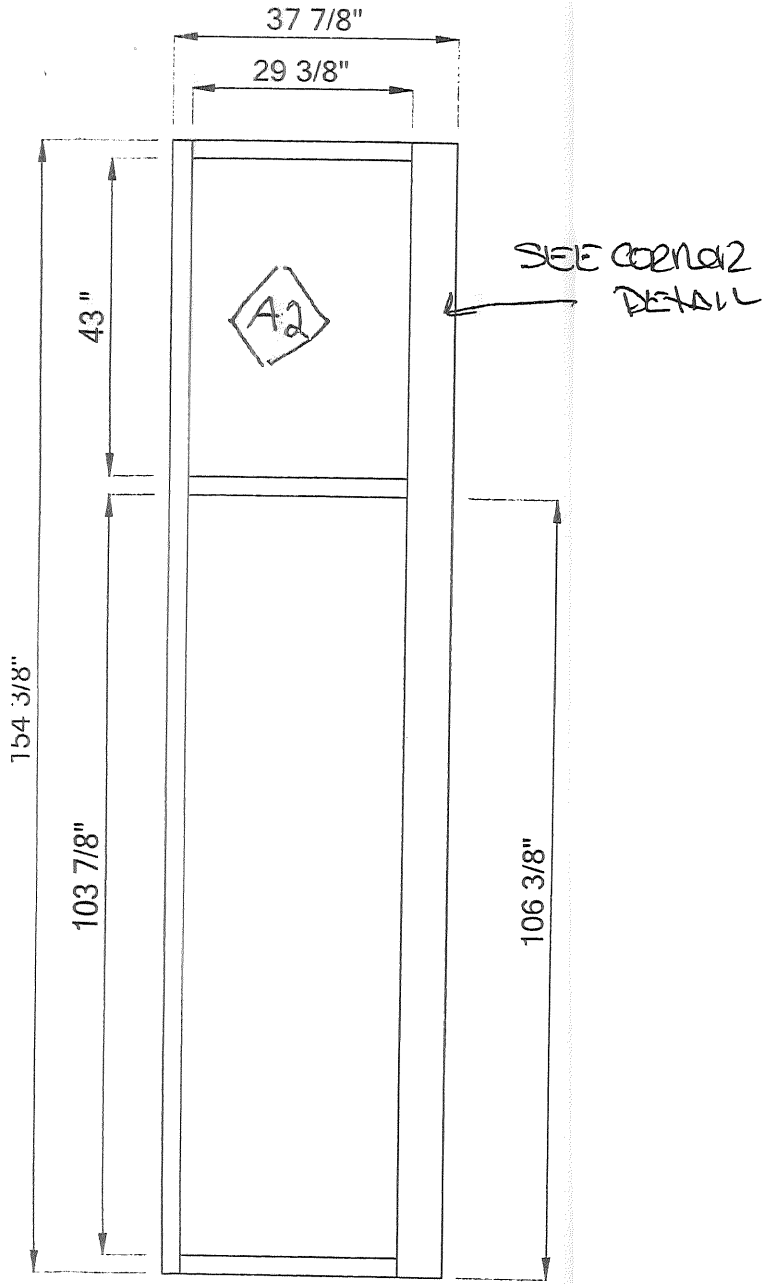
For FAB

GLASS

1) 38 7/8 x 44
1) 38 7/8 x 39
1) 30 3/8 x 44
1) 30 3/8 x 104 7/8

DOOR LITE





1

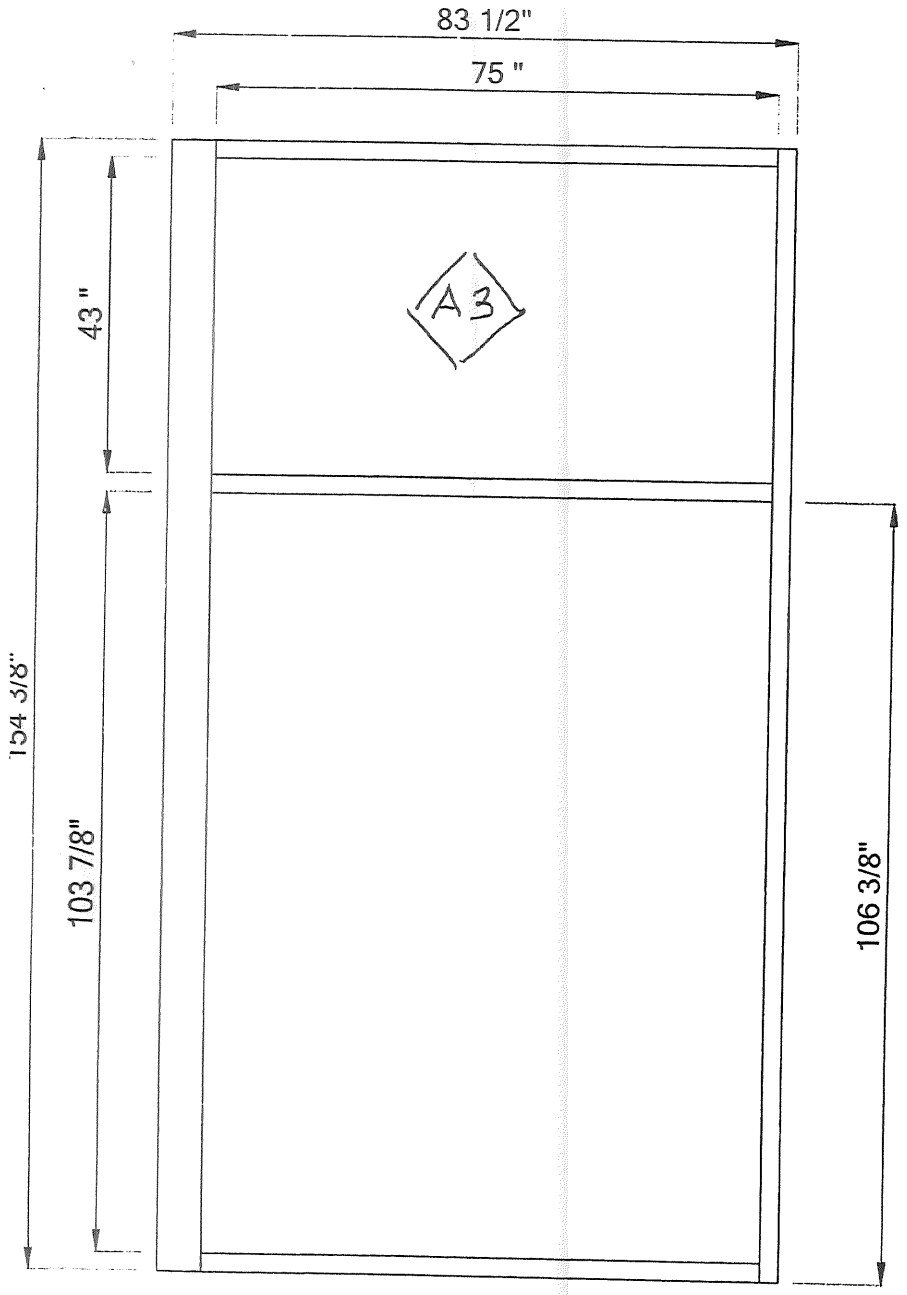
FOR FAB

GLASS

1) 30 3/8 x 44

1) 30 3/8 x 104 7/8

swharts building - 012 - L.dwg (1 Thus)
Frame: (C1/DB/1P) 400 Series : Curtainwall
: 6 inch System : Open Back Perm/Roll-over Horz



1

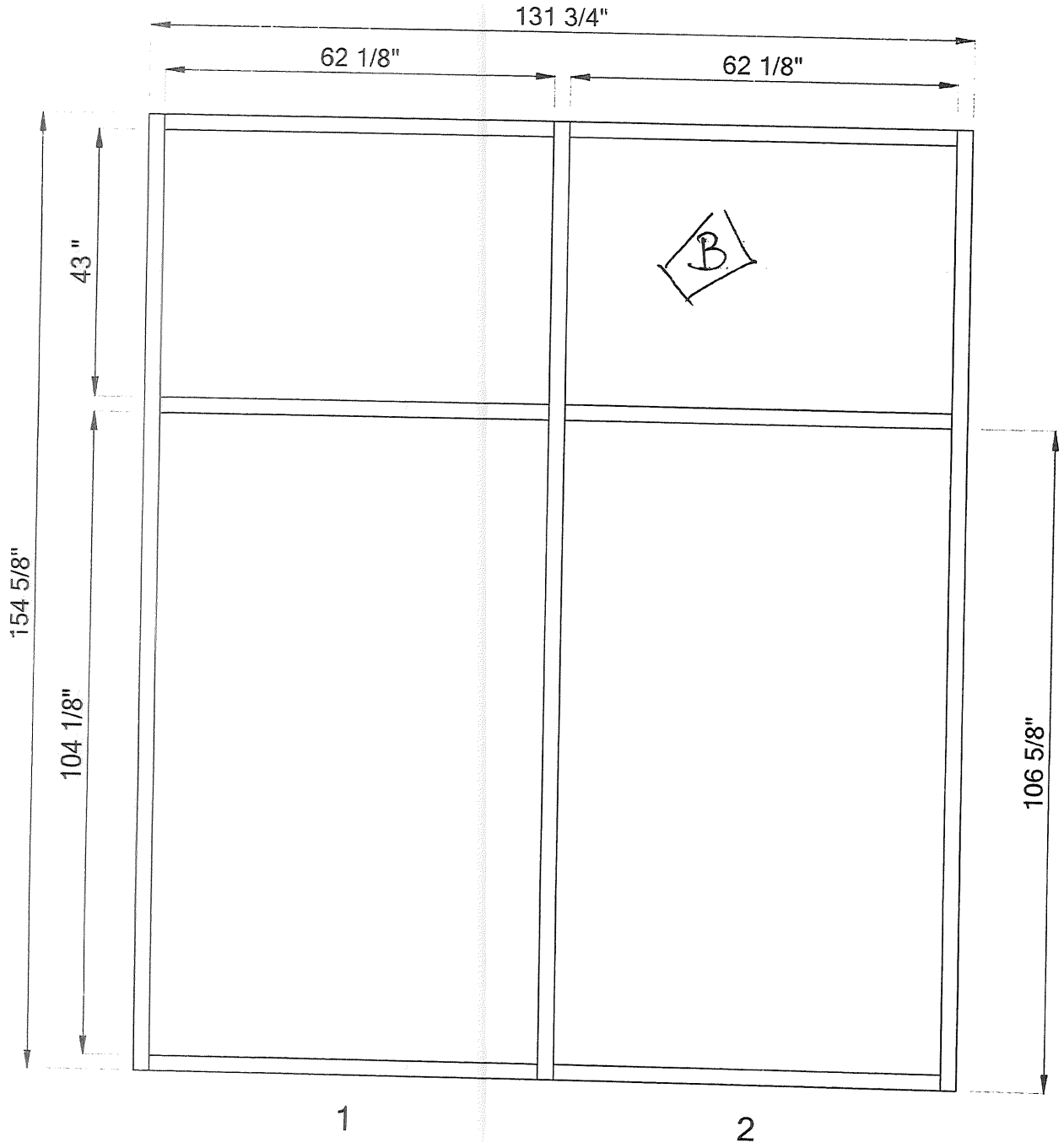
swharts building - 013 - M.dwg (1 Thus)
Frame: (C1/DB/1P) 400 Series : Curtainwall
: 6 inch System : Open Back Perm/Roll-over Horz

For FAB

GLASS

1) 76 x 44

1) 76 x 104 7/8



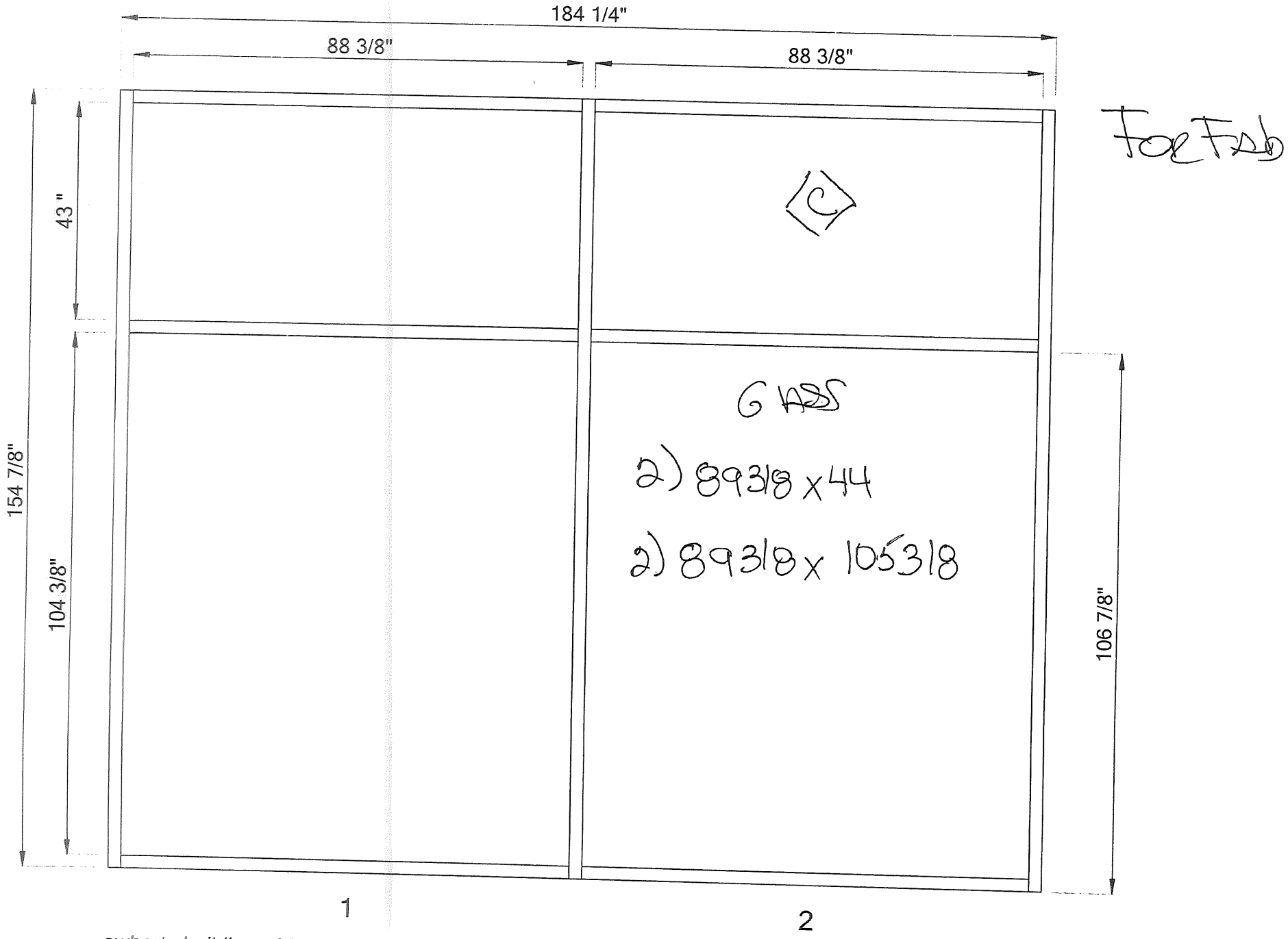
swharts building - 010 - J.dwg (1 Thus)
Frame: (C1/DB/1P) 400 Series : Curtainwall
: 6 inch System : Open Back Perm/Roll-over Horz

For Fab

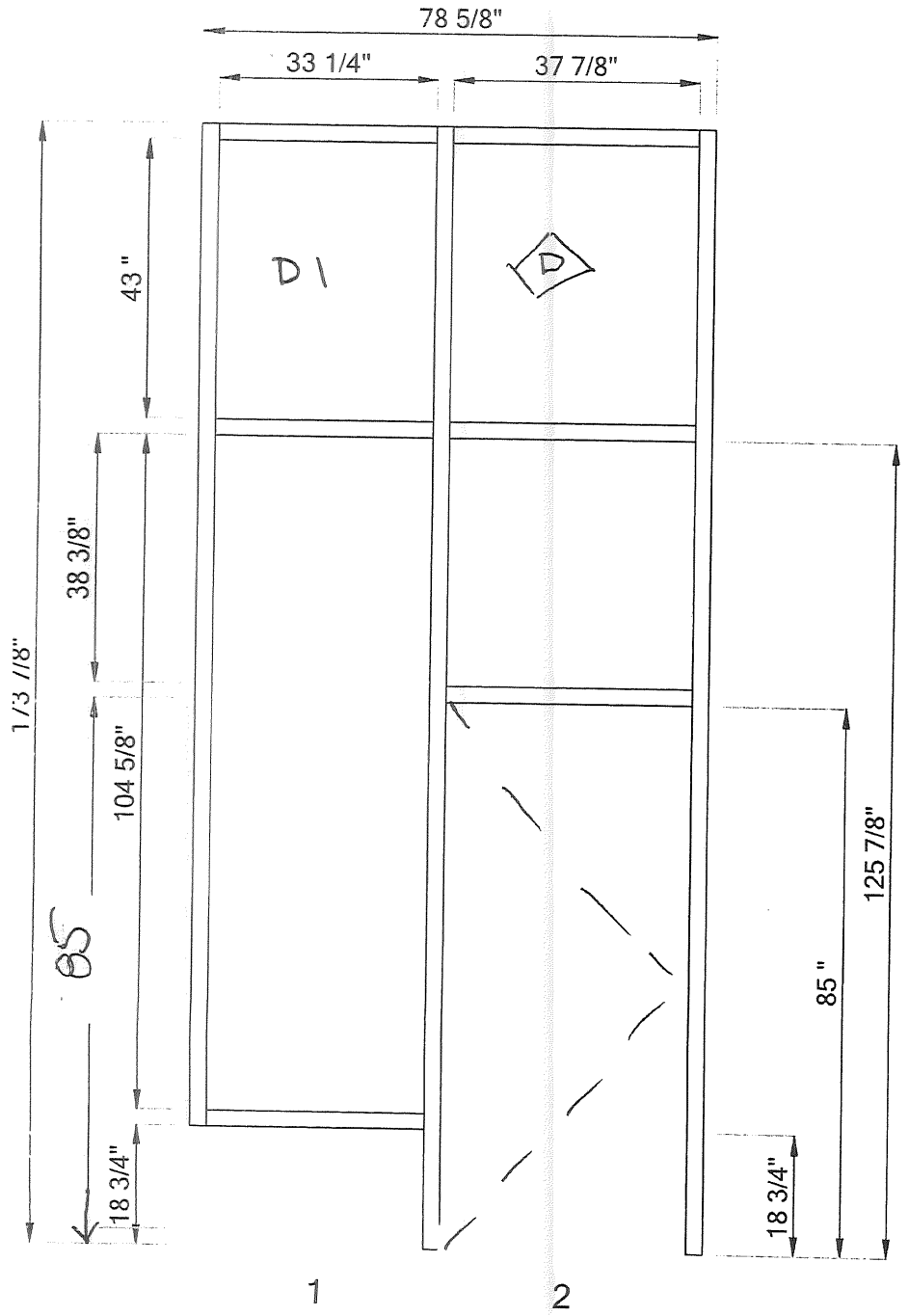
GLASS

2) 63 1/8 x 44

2) 63 1/8 x 105 1/8



swharts building - 009 - l.dwg (1 Thus)
Frame: (C1/DB/1P) 400 Series : Curtainwall
: 6 inch System : Open Back Perm/Roll-over Horz



swharts building - 014 - n.dwg (1 Thus)
Frame: (C1/DB/1P) 400 Series : Curtainwall
: 6 inch System : Open Back Perm/Roll-over Horz

FOR FAB

GLASS

1) 34 1/4 x 44
1) 34 1/4 x 105 5/8
1) 38 7/8 x 44
1) 38 7/8 x 39 3/8

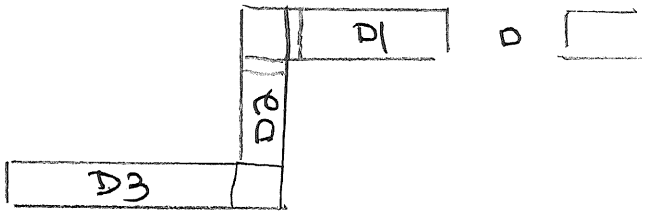
DOOR LITE

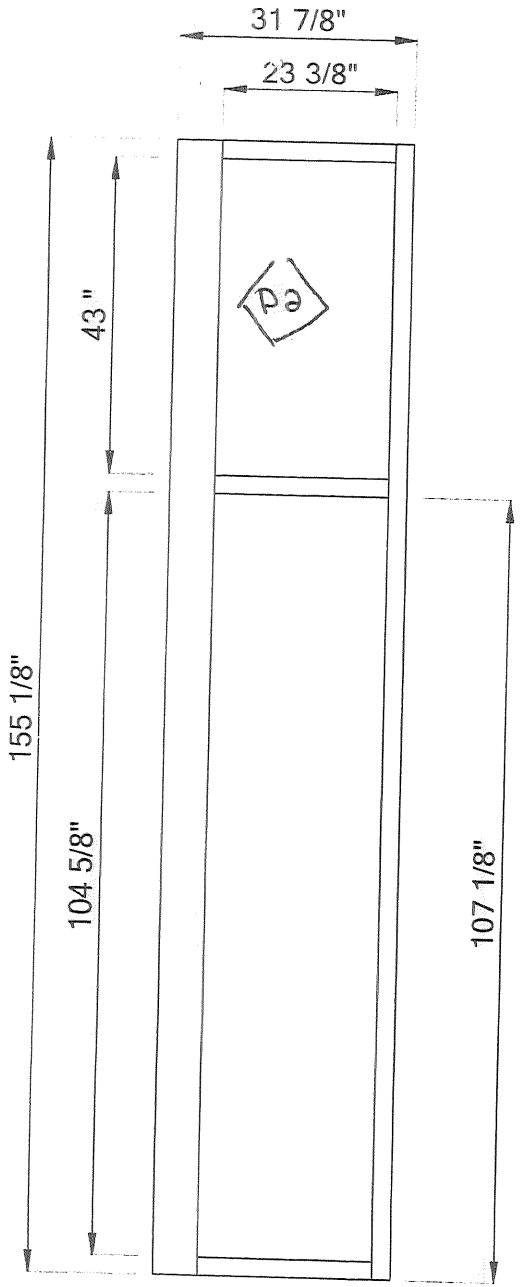
HEAD
1) 33 1/4
1) 37 7/8

JAMB
1) 155/8
2) 173 7/8

SILL
1) 33 1/4

HORIZ
1) 3 3 1/4
2) 37 7/8





1

swharts building - 015 - o.dwg (1 Thus)
Frame: (C1/DB/1P) 400 Series : Curtainwall
: 6 inch System : Open Back Perm/Roll-over Horz

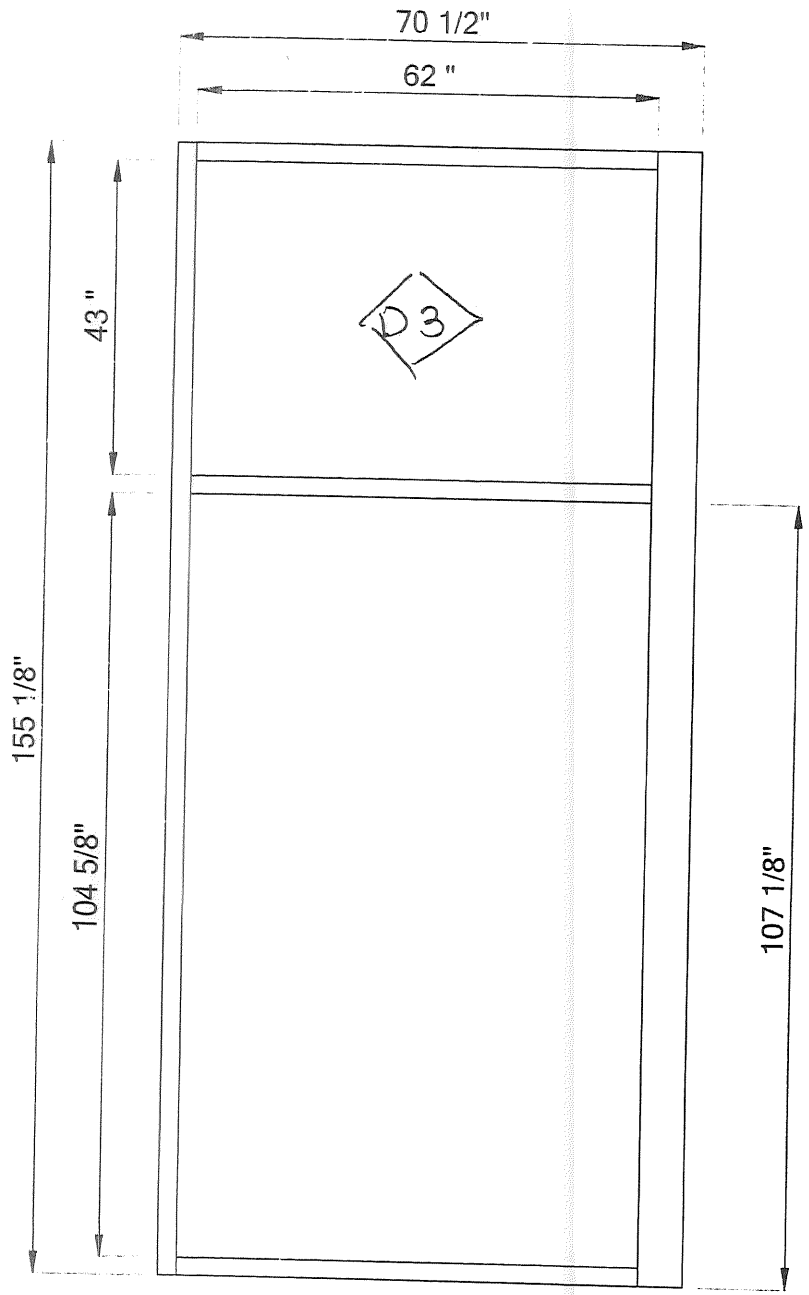
FOR FAB

GLASS

1) 24 3/8 x 44

1) 24 3/8 x 105 5/8

HEAD	JAMB	SILL	HORZ
23 3/8	2) 155 1/8	23 3/8	23 3/8



1

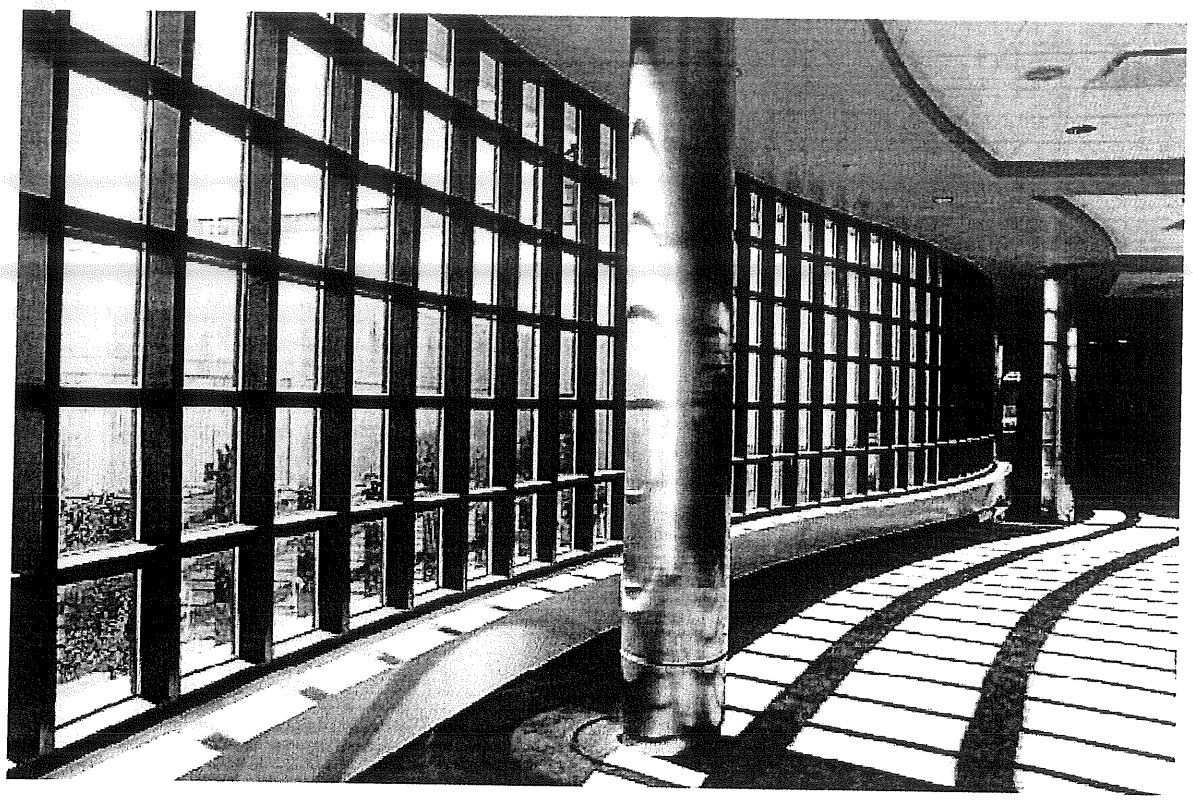
swharts building - 016 - p.dwg (1 Thus)
Frame: (C1/DB/1P) 400 Series : Curtainwall
: 6 inch System : Open Back Perm/Roll-over Horz

For FAB

GLASS
1) 63 x 44
1) 63 x 105 5/8

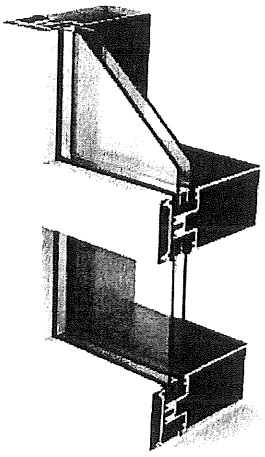
HEAD	JAMB	SILL	HORIZ
62	(2) 155 1/8	62	62

21.01
400 Series Curtainwall
Description



Description

Tubelite® 400 Series Curtainwall is an exterior glazed, thermally improved frame designed for use as a total curtainwall system. This gasket glazed, weeped system will accept infill material up to 1" thick positioned at the frame exterior for a minimum of metal exposure. A screw-applied pressure plate secures the infill material and snap-fits with a cover plate to conceal fasteners and allow different finishes on interior and exterior exposed surfaces. 400 Series has a profile of 2 ½" x variable depths from 2 ¾" to 8" and is recommended for use on low to medium rise structures.



21.02
400 Series Curtainwall
Guide Specifications

General

Description

Furnish all necessary materials, labor and equipment for the complete installation of aluminum curtainwall framing as shown on the drawings and specified herein.

Curtainwall framing shall be 400 Series Curtainwall as manufactured by Tubelite Inc., Walker, Michigan. Whenever substitute products are to be considered, supporting technical literature, samples drawings and performance data must be submitted ten (10) days prior to bid in order to make a valid comparison of the products involved.

Test reports certified by an independent laboratory will be submitted upon request.

Performance Requirements

Air infiltration shall not exceed 0.06 CFM/Ft^2 when tested in accordance with ASTM E-283 "Rate of Air Leakage Through Exterior Windows" at a test pressure of 6.24 PSF.

There shall be no uncontrolled water entry when tested in accordance with ASTM E-331 "Water Penetration of Exterior Windows, Curtainwalls and Doors by Uniform Static Air Pressure Difference" at a test pressure of 15 PSF.

There shall be no uncontrolled water entry when tested in accordance with AAMA 501.1-83 "Standard Test Method for Metal Curtainwalls Using Dynamic Pressure" at a dynamic pressure equivalent of 15 PSF.

There shall be no buckling, stress on glass, edge seal failure, excess stress on curtainwall structure, anchors and fasteners or reduction in performance when tested in accordance with AAMA 501.5-98 at a temperature range of 0^0 to 180^0 F.

There shall be no "Life/Safety" type failures (glass breakage, anchor failures, or structural damage) when tested in accordance with AAMA 501.4, seismic test (lateral cycling.)

Structural performance shall be based on a maximum allowable deflection of L/175 of the span or 3/4" maximum. The system shall perform to this criteria when subjected to a wind load of (architect specify) _____ PSF.

Thermal transmittance due to conduction (U_c) shall not be greater than 0.66 BTU/Hr/Ft^2/F^0 when tested in accordance with AAMA 1503.1-98, and the Condensation Resistance Factor of the framing (CRF) shall not be less than 68 when tested in accordance with AAMA 1503.1-98.

The system shall have a Sound Transmission Class (STC) rating of 32 and an Outdoor-Indoor Transmission Class (OITC) rating of 26 when tested in accordance with ASTM E90-97, ASTM E413-87 (reapproved 1994) and ASTM E1332-90.

Products

Materials

Extrusions shall be of aluminum alloy 6063-T5 or 6063-T6 (as required), manufactured within commercial tolerances and free from defects impairing strength and/or durability.

Screws, bolts and all other accessories to be compatible with the aluminum under normal service conditions.

Thermal barrier shall be by means of a flexible 55-60 durometer EPDM isolator located at the exterior side of the glass plane preventing continuous contact between exterior and interior metal.

Finish

All exposed framing surfaces shall be free of scratches and other serious blemishes.

Finish to be: (architect select)

- Etched and clear anodized
  - (AAM12C22A31)
    - Clear - Class 2 (C2)
  - (AAM12C22A41)
    - Clear - Class 1 (C1)
- Electrolytically deposited color
  - (AAM12C22A44) Class 1
    - Champagne (CH)
    - Light Amber (MB)
    - Amber (DB)
    - Statuary Bronze (EB)
    - Black (BL)
- Fluoropolymer painted color_____.

Execution

Installation

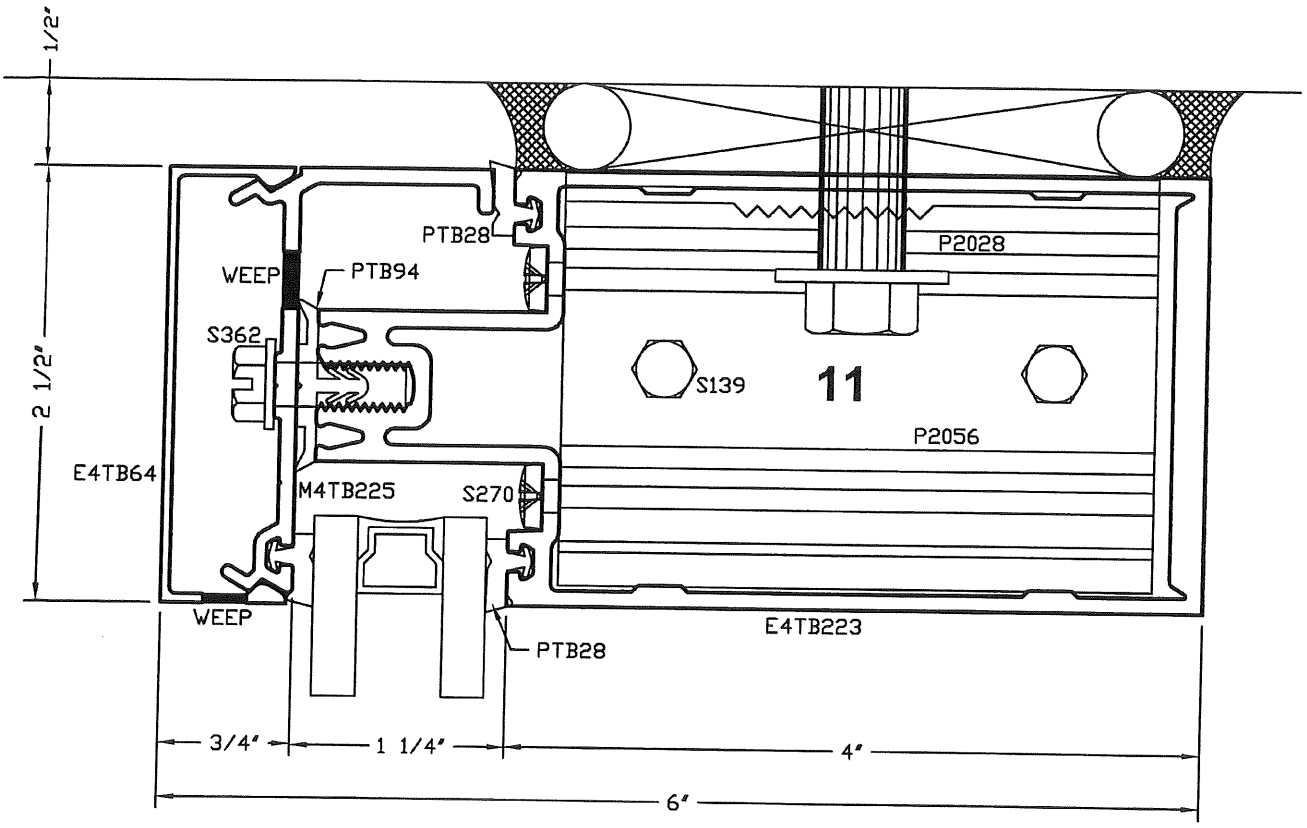
Shall be in accordance with the manufacturer's installation instructions and the approved shop drawings.

Note:

In keeping with Tubelite's policy of continuing product improvements, all specifications are subject to change without written notice by the manufacturer.

21.07
400 Series Curtainwall
Tubular Head

CAD DETAIL FILE NO.
290HEAD



*SEALANT, ROD, & ANCHORS NOT BY TUBELITE

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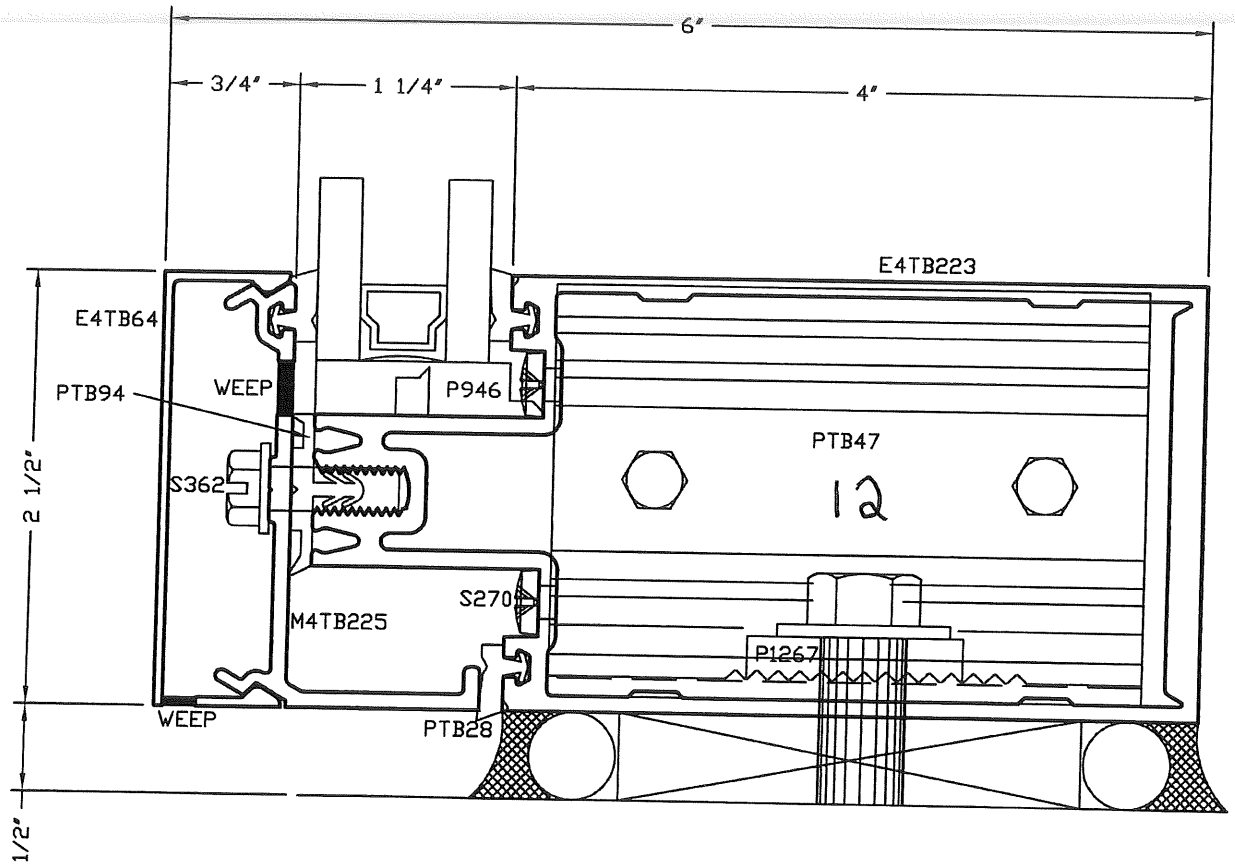
2010

21.09
400 Series Curtainwall
Tubular Sill

CAD DETAIL FILE NO.
290SILL4



*SEALANT, ROD, & ANCHORS NOT BY TUBELITE

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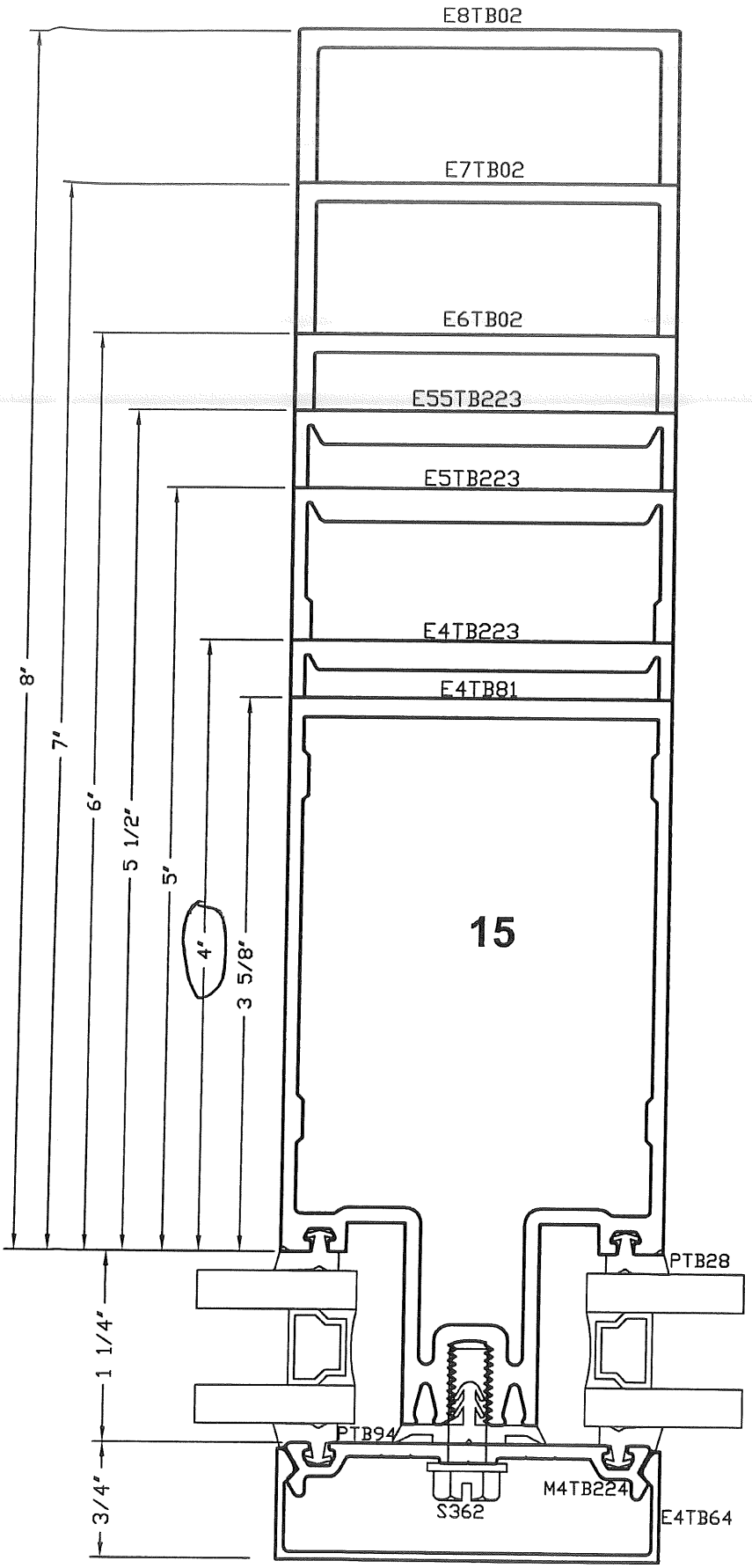
2013

21.11
400 Series Curtainwall
Intermediate Verticals

CAD DETAIL FILE NO.
290VERT10



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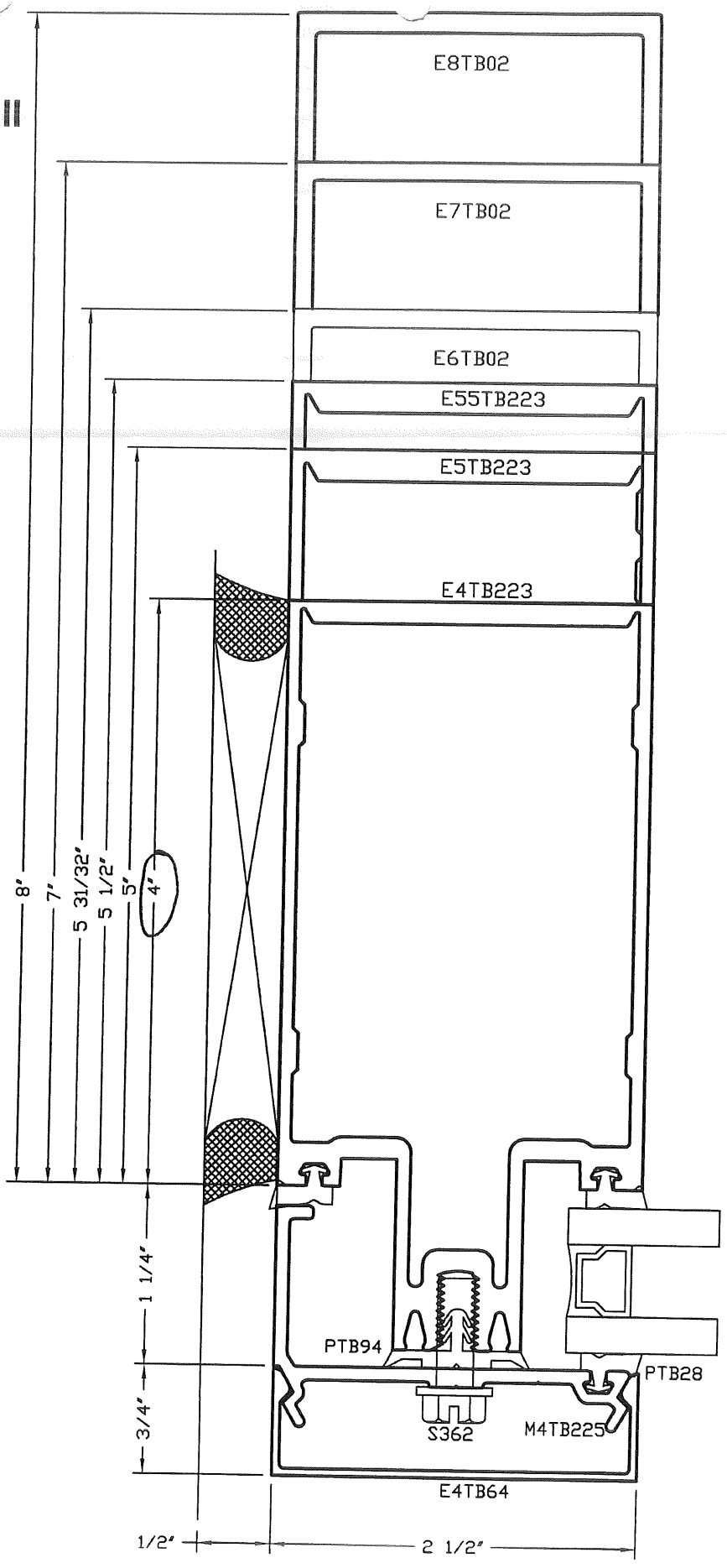
LEADERS IN ECO-EFFICIENT STOREFRONT, CURTAINWALL AND ENTRANCE SYSTEMS
2010

21.08
400 Series Curtainwall
Tubular Jamb

CAD DETAIL FILE NO.
290JAMB



*SEALANT, ROD, & ANCHORS
NOT BY TUBELITE

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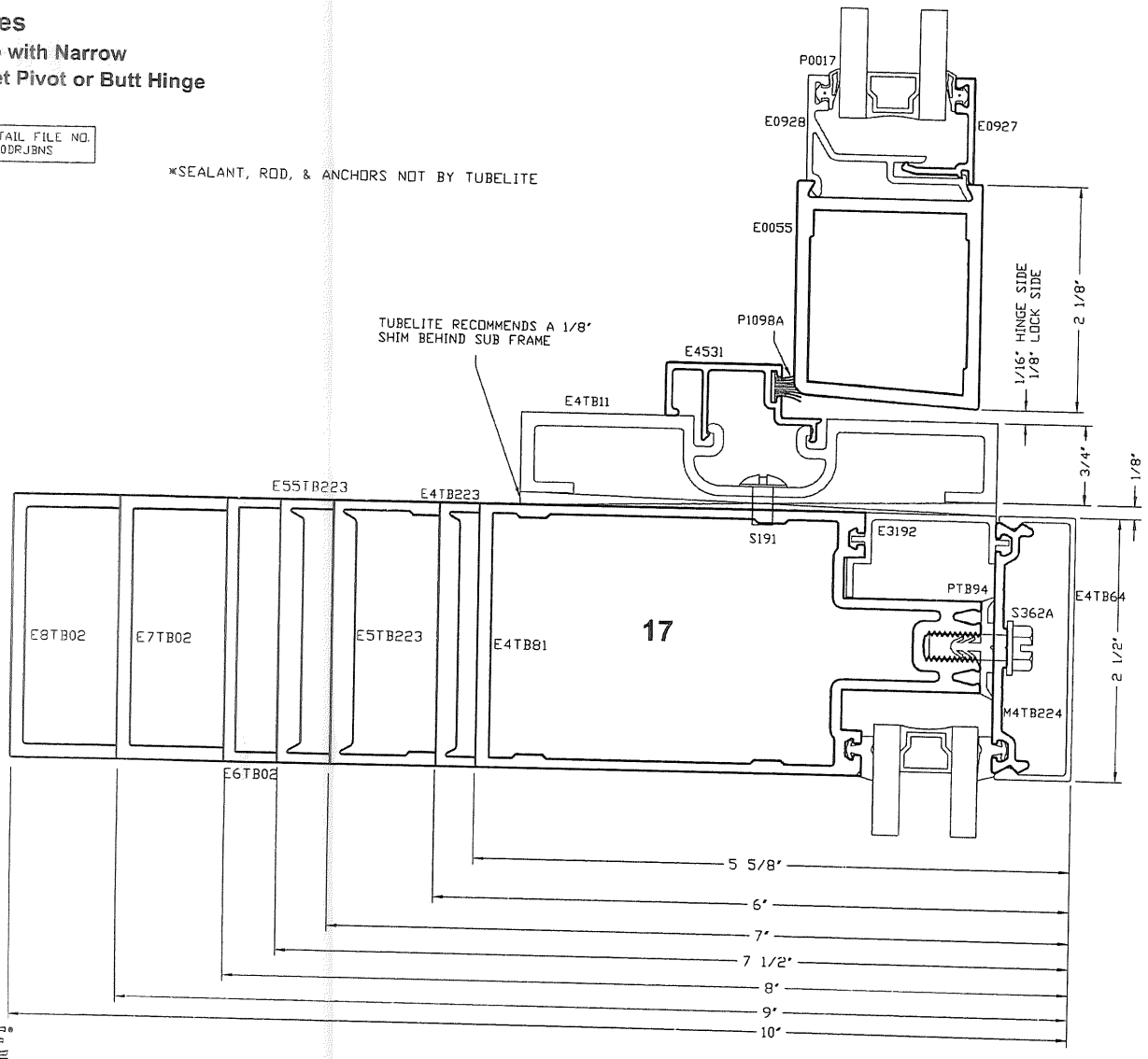
LEADERS IN ECO-EFFICIENT STOREFRONT, CURTAINWALL AND ENTRANCE SYSTEMS
2010

21.12
400 Series
Door Jamb with Narrow Stile- Offset Pivot or Butt Hinge

CAD DETAIL FILE NO.
290DRJBNS

*SEALANT, ROD, & ANCHORS NOT BY TUBELITE



TUBELITE
DEPENDABLE
LEADERS IN ECO-EFFICIENT STOREFRONT CURTAINWALL AND ENTRANCE SYSTEMS
2014

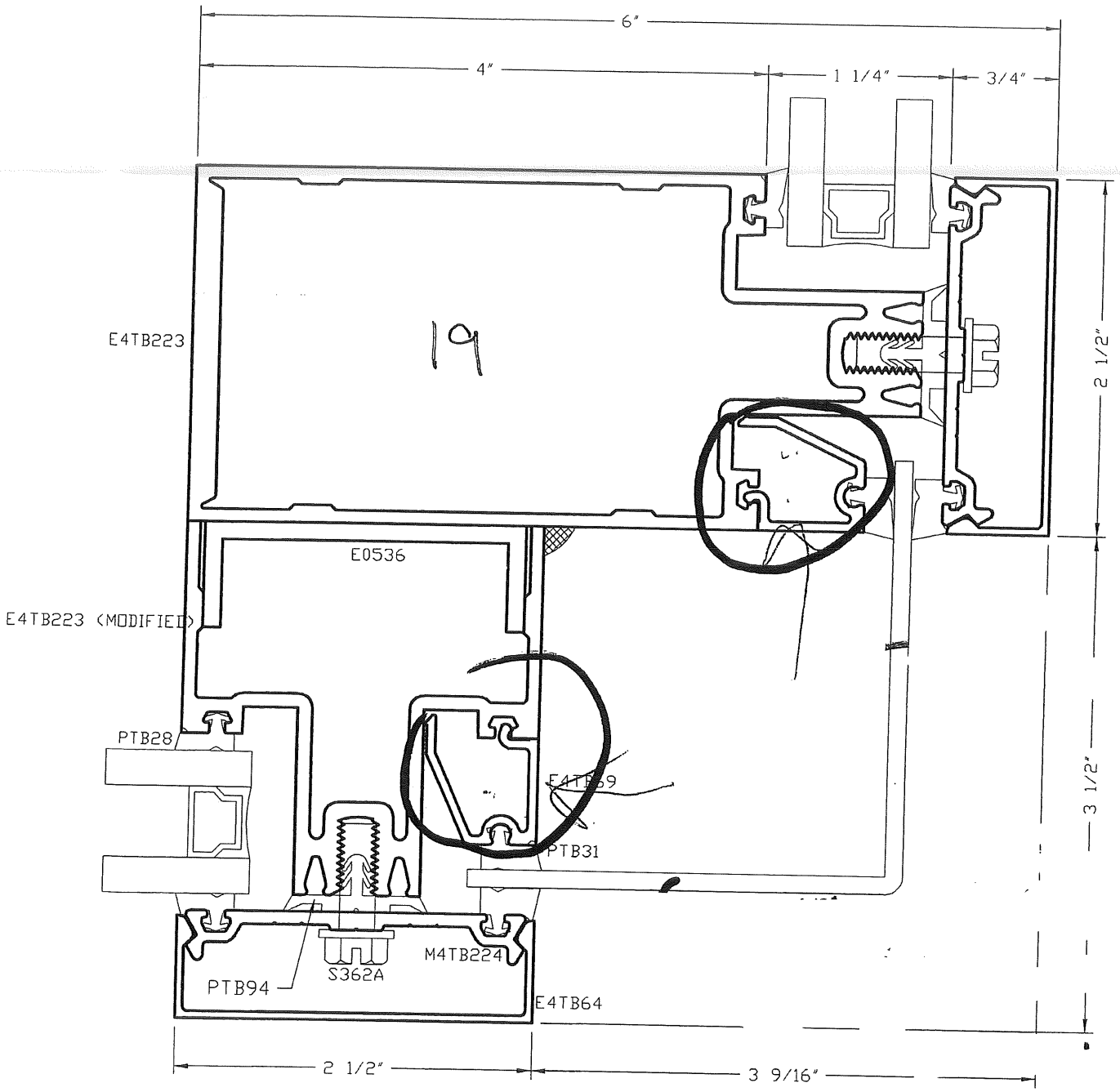
FRAME- 4 7/8" WIDTH

DD 43114

37 11116 DOOR W/ FRAMES

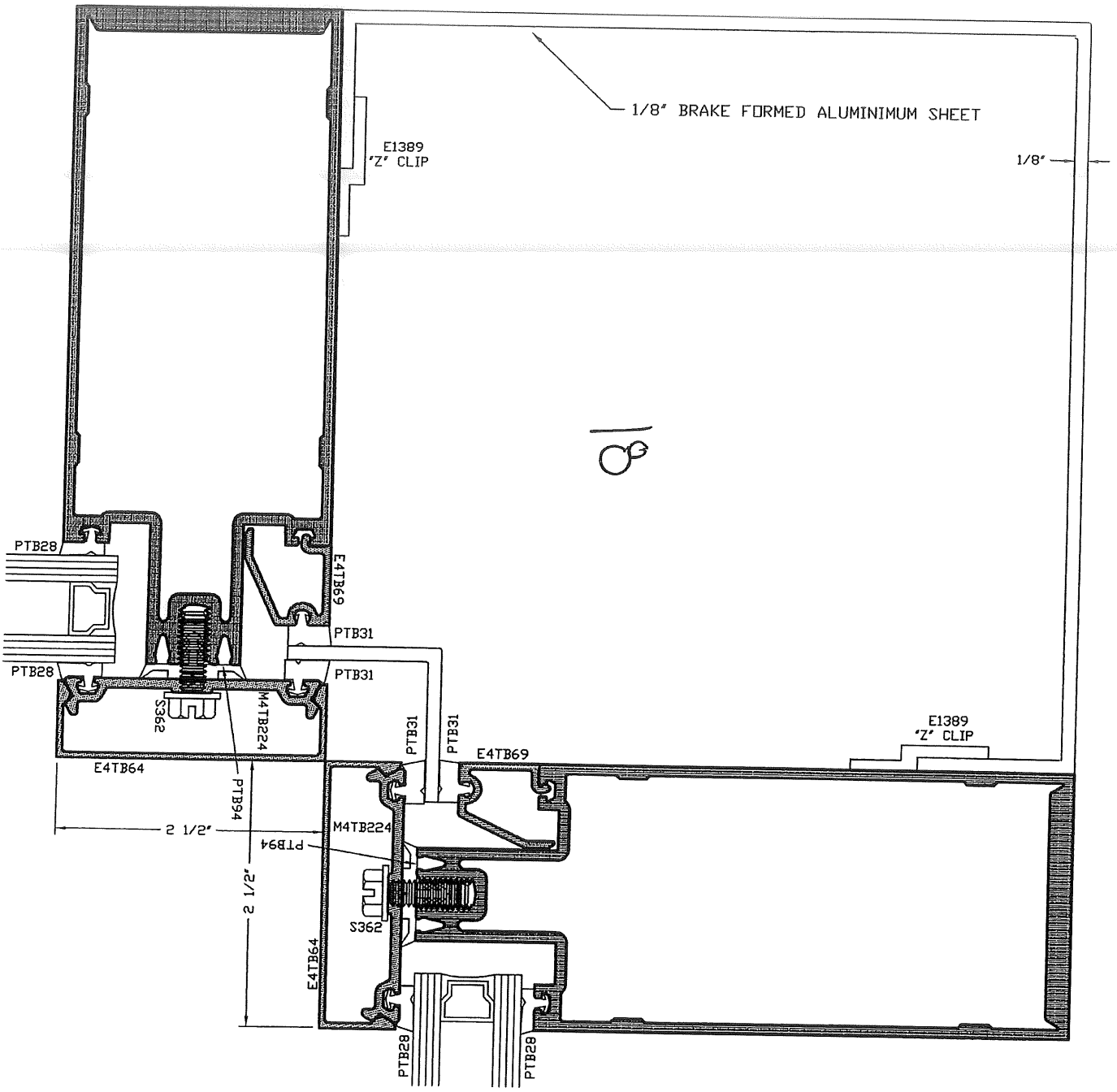
21.13
400 Series Curtainwall
Outside Corner

CAD DETAIL FILE NO.
290CORN



*SEALANT, ROD, & ANCHORS NOT BY TUBELITE

TUBELITE®
DEPENDABLE
LEADERS IN ECO-EFFICIENT STOREFRONT, CURTAINWALL AND ENTRANCE SYSTEMS
2014


1/8" BRAKE FORMED ALUMINIMUM SHEET
E1389
"Z" CLIP
1/8"
PTB28
E4TB69
PTB31
PTB28
PTB31
M4TB224
S362
PTB31
PTB31
E4TB69
E1389
"Z" CLIP
E4TB64
PTB94
2 1/2"
M4TB224
PTB94
2 1/2"
S362
E4TB64
PTB28
PTB28

2.01
Standard Entrances
Description

Description

Tubelite Standard Entrances have an outstanding reputation for craftsmanship and strength. The Narrow Stile Door has a face dimension of 2 1/8" and is designed for average commercial use. Medium Stile (4") and Wide Stile (5") Doors provide extra durability for heavier usage and a greater variety of hardware options. Optional bottom rail heights of 7 1/2" and 10" are available for accessibility requirements. Snap-in glass stops provide for 1/4" or 1" glazing thicknesses.

Standard Entrances are furnished with mortised butt hinges, offset pivots or center pivots as specified. Standard deadbolt locks, concealed vertical rod or rim panic exit devices may also be selected. Standard pull handles have been designed for ADA access and have matching push bars.

The standard door frame has snap-in door stops to conceal frame anchors and provide an excellent weatherseal. Open-back vertical door jambs allow easy, fast assembly with the screw-spline head member. Snap-in vertical frame closures easily accommodate addition of sidelights and incorporation

2.02
Standard Entrances
Guide Specifications

General

Description

Furnish all necessary materials, labor and equipment for the complete installation of aluminum entrance doors, door frames and hardware as shown on the drawings and specified herein.

Doors and frames shall be as manufactured by Tubelite Inc., Walker, Michigan. Whenever substitute products are to be considered, supporting technical literature, samples, drawings and performance data must be submitted ten (10) days prior to bid in order to make a valid comparison of the products involved.

Test reports certified by an independent laboratory must be made available upon request.

Product

Materials

Extrusions shall be of aluminum alloy 6063-T5 extruded within commercial tolerance and free from defects impairing strength and/or durability. Door stile and rail sections to be a minimum of .125 inch wall thickness. Door frame sections to be of .080 inch minimum wall thickness, with glazing and door moldings a minimum of .050 inch.

Steel tension rods of .375 inch diameter shall run the full width of the top and bottom rails and shall be fixed with steel plates and lock nuts.

Door glazing shall be by means of an interior and exterior fixed gasket of high quality extruded elastomeric material. Door frame members shall have a continuous wool pile/vinyl fin weatherstripping at the head and jamb members. Bottom rail weatherstrip at threshold optional (architect specify). Door stops shall be of snap-in design on butt hinge and offset pivot applications, eliminating use of exposed screws.

All door and frame members shall be accurately fitted to flush hairline joints.

All Stock (Narrow Stile) Doors shall have an adjustable setting block in the top rail.

Hardware

Stock Entrance Doors and Frames shall have standard hardware as furnished by Tubelite® as follows:

Butt Hinged Doors

P 092	Mortised Ball Bearing Hinges
P 1565	Push Bar
P 1564	Pull Handle
E 0019	1/2" x 4" Threshold
P 1420	Deadbolt MS Lock
P 1409	Lock Faceplate, or
P 1408	Lock Faceplate (pairs of doors)
* P 2100	Tubelite/LCN Surface Closer
P 059	Flush Bolts (pairs of doors)

Offset Pivot Doors

P 695	Top and Bottom Pivots
P 1565	Push Bar
P 1564	Pull Handle
E 0019	1/2" x 4" Threshold
P 1420	Deadbolt MS lock
P 1409	Lock Faceplate, or
P 1408	Lock Faceplate (pairs of doors)
* P 2100	Tubelite/LCN Surface Closer
P 059	Flush Bolts (pairs of doors)

Center Pivot Doors

* P 970	Concealed Overhead Closer with Bottom Pivot
P 1565	Push Bars
E 0019	1/2" x 4" Threshold
P 1420	Deadbolt Lock
P 1409	Lock Faceplate, or
P 1408	Lock Faceplate (pairs of doors)
P 059	Flush Bolts (pairs of doors)

Special hardware for custom doors and entrances shall be specified by the architect. Hardware furnished by others shall be sent to the door manufacturer for application.

Finish

All exposed framing surfaces shall be free of scratches and other serious blemishes.

Finish to be: (architect select)

Etched and clear anodized
(AAM12C22A31) Class 2
Clear (OA)
(AAM12C22A41) Class 1
Clear (2A)

Electrolytically deposited color
(AAM12C22A44) Class 1
Champagne (4K)
Light Amber (2K)
Amber (1K)
Statuary Bronze (3K)
Black (OD)

Fluoropolymer painted color _____.

*Door closers are not included in standard door pricing. See Section 7 for door closer information.

Execution

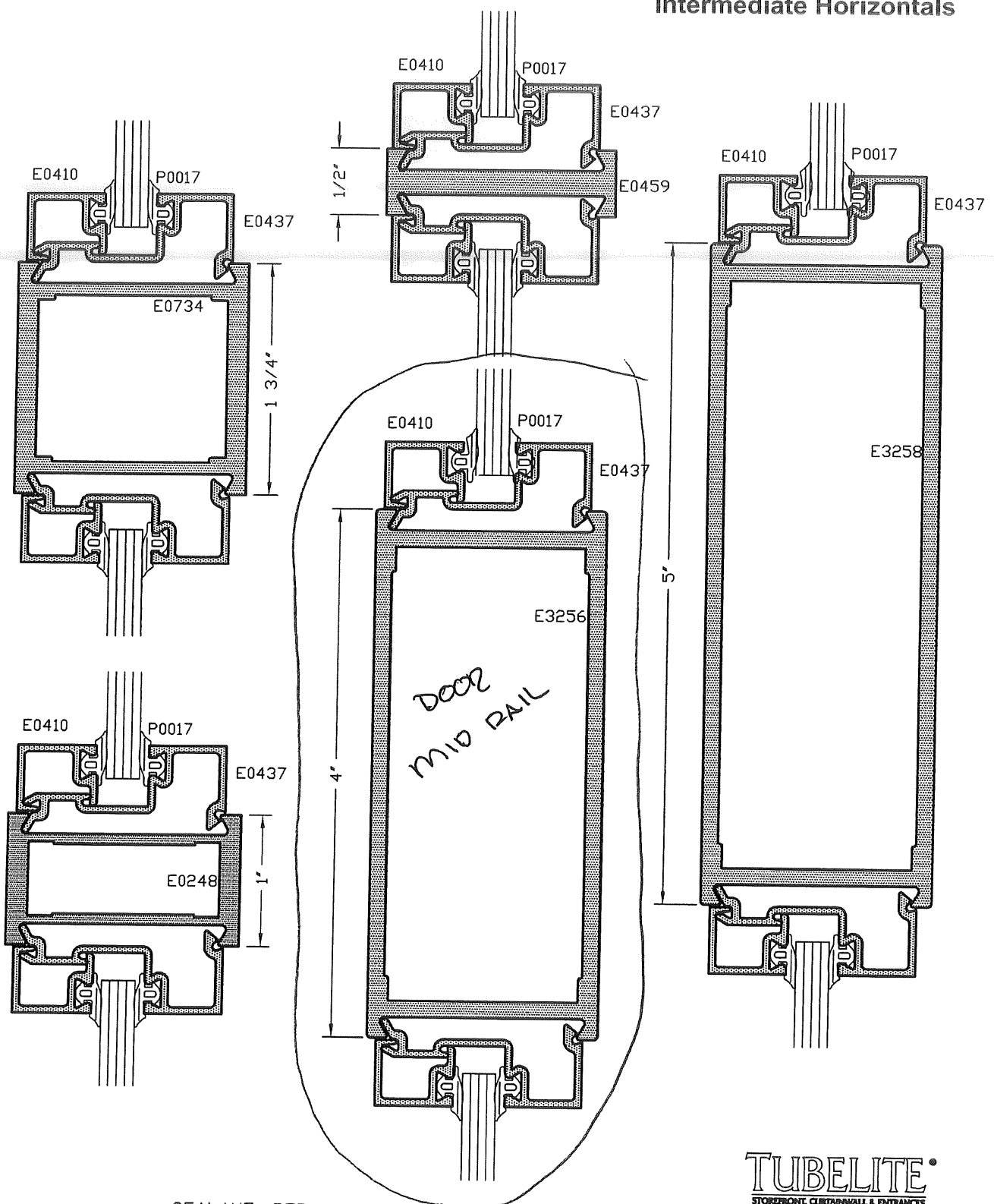
Installation

Shall be in accordance with the manufacturer's installation instructions and the approved shop drawings.

Note: In keeping with Tubelite's policy of continuing product improvements, all specifications are subject to change without written notice by the manufacturer.

2.21
Standard Entrances
Intermediate Horizontals

CAD DETAIL FILE NO.
090HORZ



*SEALANT, ROD, & ANCHORS NOT BY TUBELITE

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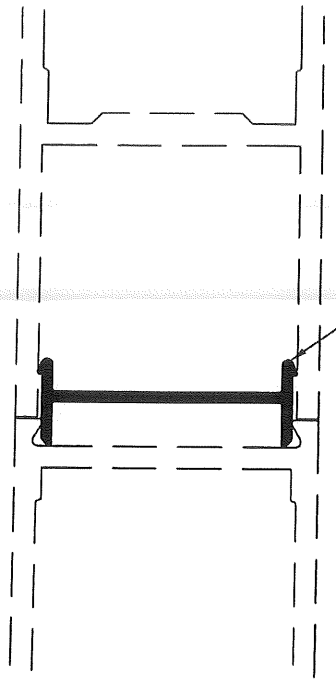
STOREFRONT, CURTAINWALL & ENTRANCES
DEPENDABLE
MAY 2010

2.18
Standard Entrances

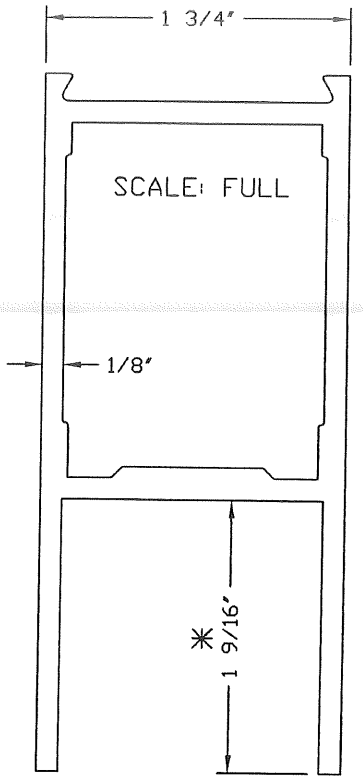
ALL RAILS CAN BE USED AS A TOP OR BOTTOM RAIL

Top and Bottom Rails



CAD DETAIL FILE NO.
090RAILS

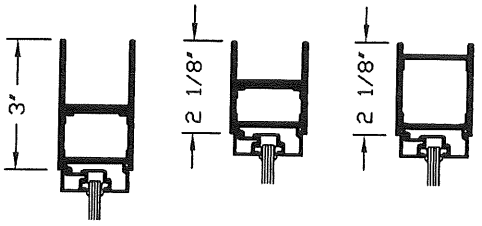
E3021
MAY BE USED WITH ANY
COMBINATION OF BOTTOM RAILS
FOR DESIRED HEIGHT



✳ TYPICAL POCKET DEPTH IS
1 9/16" EXCEPT THE FOLLOWING.

E0148 = 1 1/2"
E1375 = 1/4"
E1376 = 3/8"
E0255 = 7/8"

Door Bottom Rail



DETAIL SCALE - 1/4 SIZE

TUBELITE®
STOREFRONT, CURTAINWALL & ENTRANCES
DEPENDABLE

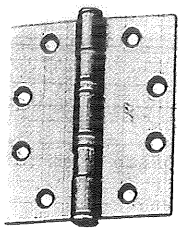
GLASS SOLUTIONS
COMMERCIAL & RESIDENTIAL GLASS SPECIALISTS

HARDWARE

David Christopher, Owner ■ GlassSolutions811@yahoo.com
207-210-6685 OFFICE ■ 207-252-5691 MOBILE ■ 207-210-6686 FAX ■ 26 Bridgton St., Ste. 8, Westbrook, ME 04092

Hardware & Accessories

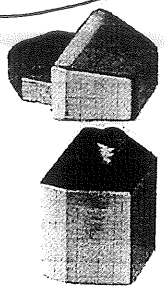
Hinges & Pivots



P 092
Mortised Butt Hinge

Both leaves of this hinge are punched and countersunk so they can be mortised into the door stile and frame. They are specially swaged to provide 1/16" clearance between leaves when parallel. Overall dimension is 4" x 4 1/2" when open. Button tips and plugs are standard. Five knuckle ball bearings are packed with grease to assure a quiet long life hinge. US26D or Bronze finish.

Offset Pivots



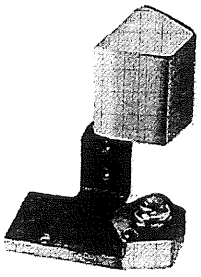
P 695A - Top Frame Pivot for 3/16" backset doors
P 1186A - Top Frame Pivot for flush mount doors

Cast aluminum body has oilite bronze bushing and is mortised into the door header and fastened with 3 countersunk screws

P 695B - Top Door Pivot for 3/16" backset doors

Cast aluminum body is securely attached to the door with 2 hex head bolts. A spring loaded hardened-steel pin permits easy installation of the door.

Offset Pivots



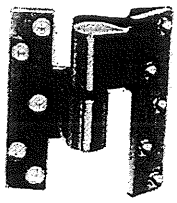
P 695C - Bottom Door Pivot for 3/16" backset doors

Cast aluminum body is securely fastened to the door with 2 hex head bolts. A full race bearing accepts the pivot pin on the floor portion.

P 695 - Floor Pivot for 3/16" backset doors
P 1186 - Floor Pivot for flush mount doors

Cast aluminum body has a hardened steel pivot pin and is screw attached to the floor and door frame for complete rigidity. A vertical adjustment of 1/8" is possible without removing the door.

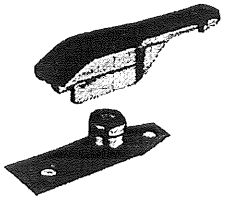
P 751
Intermediate Pivot



Use of intermediate pivots is recommeneded for offset hung doors over 3'-0" in width or over 7'-0" in height with 1/4" glass, and on all doors with glazing over 1/4" in thickness.

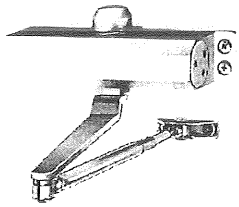
The P 751 is also used in heavy traffic areas or as a substitute for top pivot in concealed closer applications. Cast aluminum leaves are fully mortised into frame and door stile (requires reinforcing). Available in clear or bronze finish to match doors.

P 2087
Center Pivot - Floor Portion



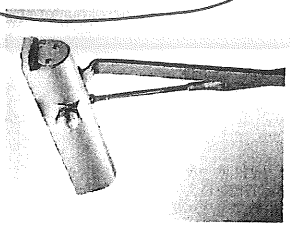
For use at the floor on center pivot doors with or without a threshold. Bottom arm door portion is cast aluminum and sits on the pivot bearing mounted to the floor or threshold with a plated steel bracket and countersunk screws. Vertical adjustment of 1/4" is possible without removing door. Mill finish only.

7.04
Hardware & Accessories
Door Closers



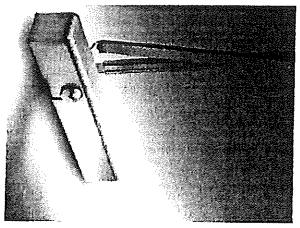
P 1784
Overhead Surface Closer
International Series 780

P 1784 door closers are furnished standard with regular arms and mounting screws in finishes to match doors. All closers feature field adjustable backchecks and individual closing and latching speed adjustments. P 1784 closers are non-handed and preset with a size 4 spring power to meet average entrance conditions. They are generally not recommended for handicap entrances.



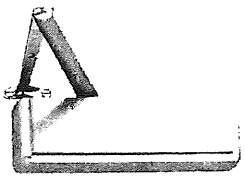
P2200
Overhead Surface Closer
Dorma 7414

Tubelite/DORMA door closers are non-handed and furnished standard for regular, top jamb or parallel arm applications. Slim plastic covers, adjustable backcheck, self tapping fasteners and individual valves to adjust sweep and latch speed are standard features. Finishes available are Clear aluminum (689) and Bronze (695) Hold open versions are available on request.



P2201
Overhead Surface Closer
Dorma 8616

Tubelite/DORMA door closers are non-handed and furnished standard for regular, top jamb or parallel arm applications. Slim plastic covers, adjustable backcheck, self tapping fasteners and individual valves to adjust sweep and latch speed are standard features. Finishes available are Clear aluminum (689) and Bronze (695) Hold open versions are available on request.



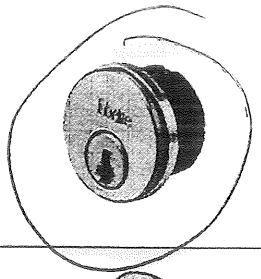
P 4040
Surface Overhead Closer
LCN 4040/4041 Super Smoothee

This heavy duty non-handed closer package includes Parallel arm shoe #4040 62PA. Adapter plate for mounting must be specified.

P 4040 closers feature field adjustable spring power from size 2 through size 6 for exterior handicap doors with opening widths between 36" and 48". P 4041 closers have field adjustable spring power from size 1 through size 4 to provide the right amount of control for interior handicap doors with opening widths between 36" and 48".

P 2120
Concealed Overhead Closer

P2120 closers are non-handed and are furnished standard with clips and mounting screws for single or double acting Center Pivoted, Offset Pivoted and Butt Hinge applications. They are available in three spring tensions, with 90° or 105° swing, and hold-open or non hold-open models to meet various requirements.

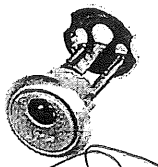


P 572
Standard Mortised Cylinder

For use on all of our doors without panic exit devices. 1 5/32" diameter cylinder, plug and five-pin tumblers are made of brass. Face of lock cylinder is made of anodized aluminum to match door. Use 1 per door with P 023 thumb turn for finger operation from the interior side of the door.

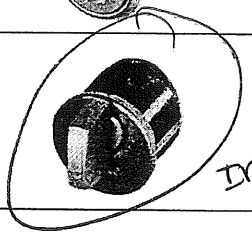
P 009
Dummy Mortised Cylinder

Use on doors in lieu of P 572 or P 023 where restricted access to lock is desired. 1 5/32" diameter cylinder, and plug are made of zinc. Face of dummy cylinder is made of anodized aluminum to match door. Specify interior or exterior location.



P 573
Standard Rim Cylinder

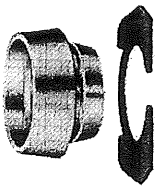
Use on all panic exit device doors.



P 023
Thumb Turn

Use on interior lock stile of all doors without a panic exit device. The thumb turn allows operation of the door lock without using a key.

INTERIOR

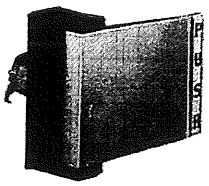


P 716
Cylinder Guard

Adams Rite MS 4043

Protects lock cylinder from removal by wrenches, prying or sawing to gain unauthorized entry. Security ring on exterior of door is made of hardened steel and turns freely when properly snap-fit with retainer plate on interior of stile wall. Painted finish to match door. Order cylinder separately.

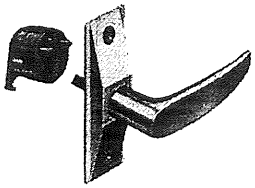
Panic Exit Devices



P 1008
Latch Paddle Exit Device

Adams Rite 4590

Alternate deadlatch operator for P 1421 lock may be used in lieu of lever handle or knob, and may be ordered for push or pull applications. Zinc alloy housing with black finish houses the operating mechanism and is secured to the door stile to resist pressure from any direction. Extruded 5 3/8" x 3" aluminum paddle in clear anodized finish extends 2 15/16" from face of door stile.

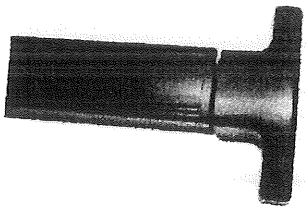


P 348a
Lever Handle

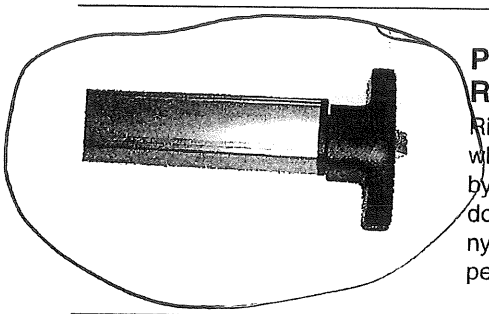
Adams Rite 4568

Operator handle for P 1421 deadlatch is 3 1/2" long and shaped for easy grip while keeping thumb and knuckles safely away from door and jamb. Handles are available in black Delrin® nylon. Cam plug is secure in latch body by cylinder set screw and rigidly tied to the handle escutcheon by hardened steel pins. Finish of escutcheon matches the door.

Hardware & Accessories
Panic Exit Devices

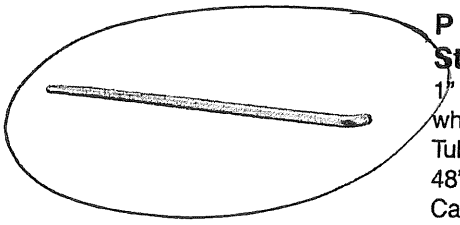


P 3692
Concealed Rod Panic Touchbar
Concealed vertical rod type panic exit device provides two latching points, one each at the top and bottom of the door, except when the crash bar is activated or when "dogged" open by the lock cylinder or by concealed retracting screws. Passage of large objects through pairs of doors is not obstructed by a vertical mullion between the doors. Bar projects 1½" from face of door and has heavy duty springs with nylon button type silencers for durable, quiet operation. Anodized high performance finish to match doors. Order cylinders separately.

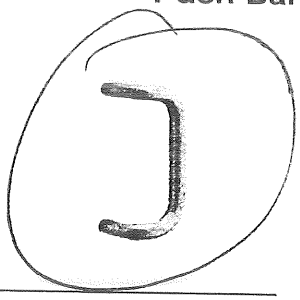


P 3792
Rim Mounted Panic Touchbar
Rim type panic devices provide one latch point at the lock stile of a door, except when the crash bar is activated, or when "dogged" open by the lock cylinder or by concealed retracting screws. A vertical mullion is required between pairs of doors. Crash bar projects 1½" from face of door and has heavy duty springs with nylon button type silencers for durable, quiet operation. Anodized high performance finish to match doors. Order cylinders separately.

Push Bars



P 1565
Standard Push Bar
1" diameter aluminum push bar has 2¾" projection from the face of the lock stile, which tapers to fasten flush to the face of the hinge stile. It is designed to match Tubelites's P 1564 standard pull handle. P 1565 is available in sizes for 36", 42" and 48" doors and can be cut down for custom sizes. Anodized finishes are available. Can be used on center pivoted doors, as well as butt hinges and offset pivots.



P 1564

Standard Pull Handle

1" diameter offset aluminum pull handle features "Barrier Free Design" with 3 1/2" projection from face of door. P 1564 measures 8" from center-to-center of thru-bolt mounting. Anodized Clear and Bronze finishes are available. Use with our P 1565 standard push bar.

P 1567

Wire Pull Handle

1" diameter offset aluminum pull handle features "Barrier Free Design" with 3 1/2" projection from face of door. P 1567 measures 8" from center-to-center of stud mounting, for surface application. Anodized Clear and Bronze finishes are available.

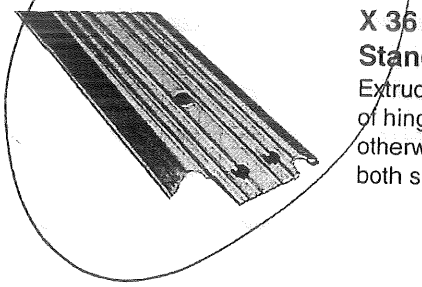
P 1568

Wire Pull (P-005 Replacement)

1" diameter offset aluminum pull handle features "Barrier Free Design" with 3 1/2" projection from face of door. P 1568 measures 7" from center-to-center of stud mounting to allow replacement of obsolete P-005 pull handle. Anodized Clear and Bronze finishes are available.

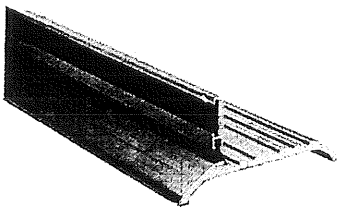
Hardware & Accessories

Thresholds



X 36 through 72
Standard Door Threshold

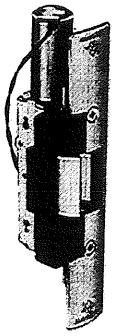
Extruded aluminum thresholds are machined to fit the type of door, size and type of hinge or pivot. They are furnished standard with the door unless specified otherwise.Standard thresholds are 1/2" in height and are beveled to the floor on both sides to provide easy access for wheelchairs and strollers.



P 1275, 1276, & 1277
Weathersweep

Vinyl weathersweep is screw applied to the bottom of the door with concealed fasteners on the mounting strip. Cut to fit doors up to 4'-0" in width. Finish to match door. Complementary threshold E 2058 may be ordered separately.

Miscellaneous



P 1580
Electric Strike

Provides remote electrical control for doors equipped with P 1421 latchlocks, and lever or knob-set operators. Electrical actuation unlocks the strike jaw, releasing the latchbolt, and allowing the door to be opened without operating the latch.

Requires 24 volt AC current. Transformer and related wiring are not included. See our P1421 latchlock and accessories.

GLASS SOLUTIONS
COMMERCIAL & RESIDENTIAL GLASS SPECIALISTS

GLAZING

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GUARDIAN SUNGUARD
ADVANCED ARCHITECTURAL GLASS

PERFORMANCE CALCULATOR

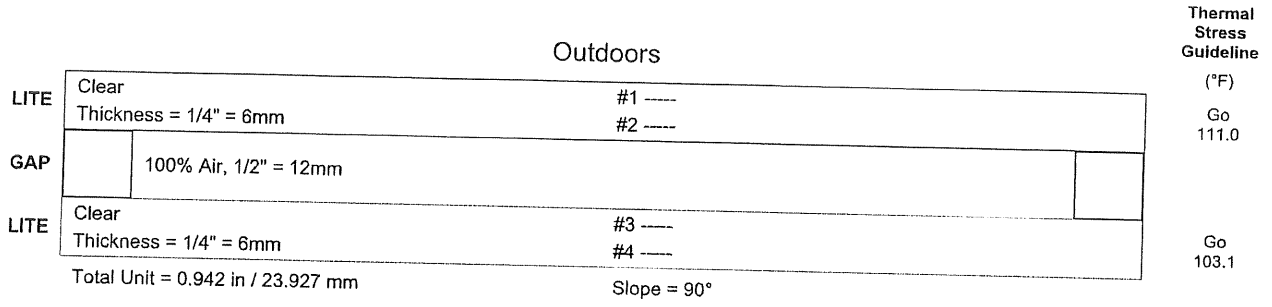
May 30, 2012
By Williams, Taylor
twilliams@sigcoinc.com

SIGCO™

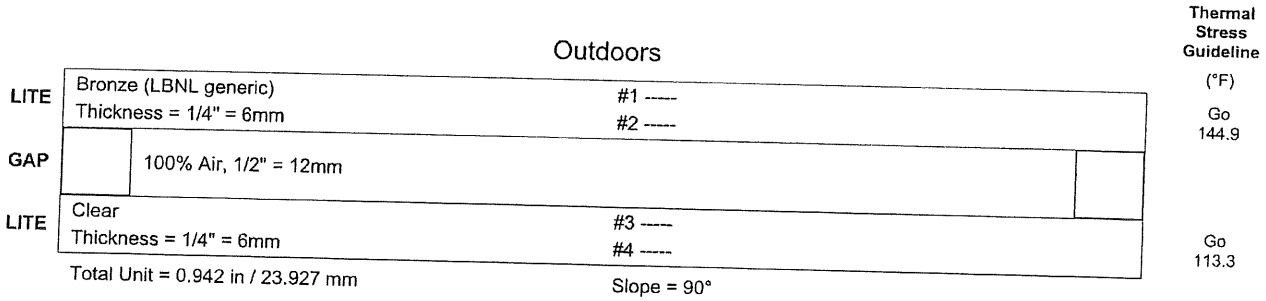
Make-up Name	Make-up	Outboard Substrate & Coating	Transmission			Reflectance			U-Value		RHG (Btu/hr-ft²)	SC	SHGC	LSG
			Visible Light %	UV %	Solar Energy %	Visible Out %	Visible In %	Solar Energy Out %	Winter Night (Btu/hr-ft²-F)	Summer Day (Btu/hr-ft²-F)				
Default Make-up 01	-	Clear	80	49	66	15	15	12	0.47	0.50	176	0.84	0.73	1.09
Default Make-up 02	-	Bronze (LBNL generic)	48	20	40	8	13	7	0.47	0.50	124	0.59	0.51	0.94

Calculation Standard: NFRC 2004

Default Make-up 01



Default Make-up 02



Important Notes

Calculations and terms in this report are based on NFRC 2004. The performance values shown above represent **NOMINAL VALUES** for the center of glass with no spacer system or framing. Slight variations may occur due to manufacturing tolerances, point of manufacture, and type of instrumentation used to measure the optical properties.

For configurations which include ceramic frit coating, the actual values may vary significantly based upon the thickness and composition of the frit. For configurations with diffuse optical properties the solar transmission is per ASTM 1084-86. For configurations with coatings laminated facing the PVB, there may be a noticeable color change. Guardian recommends that a full size mock-up be approved.

Please note that the **THERMAL STRESS GUIDELINE** is only a rough reference to the thermal safety of a glazing. Other factors such as the size of glass areas, shapes and patterns, glass thickness, glass damaged during shipping, handling or installation, orientation of the building, exterior shading, overhangs/fins that reduce wind speed, and areas with high daily temperature fluctuations can all increase the probability of thermal breakage. The results shown are not for any specific glazing installation and do not constitute a warranty against glass breakage.

Explanation of Terms

% Transmittance Visible is the percentage of visible light at normal incidence (90° to surface) directly transmitted through the glass. Visible Light is defined as radiant energy in the wavelength range of 380 nm to 780 nm with Ill. D65 and CIE 2° observer

% Ultraviolet (UV) Transmittance is the percentage of ultraviolet light at normal incidence (90° to surface) directly transmitted through the glass. Ultraviolet Light is defined as radiant energy from the sun having a wavelength range of 300 nm to 380 nm at ASTM air mass of 1.5

% Solar Energy Direct Transmittance is the percentage of solar energy at normal incidence (90° to surface) directly transmitted through the glass. Solar Energy is the radiant energy from the sun having a wavelength range of 300 nm to 2500 nm at ASTM air mass of 1.5.

% Reflectance Visible Outdoors is the percentage of visible light at normal incidence directly reflected from the glass back outdoors

% Reflectance Visible Indoors is the percentage of visible light at normal incidence directly reflected from the glass back indoors

% Solar Energy Reflected Outdoors is the percentage of solar energy at normal incidence directly reflected from the glass back outdoors

U-Factor (also called U-Value) is the air-to-air thermal conductance of 39" high glazing and associated air films. Units are Btu/hr.ft².F. Winter-night = 12.3 mph wind at -0.4°F outdoors and 69.8°F still (no forced convection) indoor air. Summer = 0 sun, 6.15 mph wind at 89.6°F outdoors and 75.2°F still (no forced convection) indoor air.

Relative Heat Gain (RHG) is the total net heat gain to the indoors due to both the air-to-air thermal conductance and the solar heat gain. The units are Btu/hr.ft². RHG = [(Summer U-Value)(89.6°F - 75.2°F) + (Shading Coefficient)(200 Btu/hr-ft²)]

Shading Coefficient (SC) is the fraction of solar heat, direct (300 to 2500 nm) plus indirect (5 to 40 μm), transferred indoors through the glass. For reference, 1/8" (3.1 mm) clear glass has a value of 1.00 (SC is an older term being replaced by the SHGC).

Solar Heat Gain Coefficient (SHGC) is the fraction of solar energy incident on the glazing that is transferred indoors both directly and indirectly through the glazing. The direct gain portion equals the direct solar transmittance, while the indirect is the fraction of the solar energy absorbed to the energy reradiated and convected indoors. No heat gain from warmer outdoor air is included. SHGC = (Direct Solar Trans) + {[(Indirect Solar Heat Gain) - (Summer U-Value)(89.6°F - 75.2°F)] / (248.209 Btu/hr-ft²)}

Light-to-Solar Gain (LSG) is the ratio of visible light gain to solar gain. LSG = (Visible Transmittance) / (SHGC)

This performance analysis is provided under license by Guardian Industries Corp. It is designed to assist the user in evaluating the performance of the glass products identified on this report. Many factors may affect glass performance including glass size, building orientation, shading, wind speed, type of installation, and other factors. With respect to non-Guardian products, this performance analysis may be based on published information from the manufacturer that has not been independently verified by Guardian for accuracy. The applicability and results of the analysis are directly related to user inputs and any changes in actual conditions can have a significant affect on the results.

While Guardian has made a good faith effort to verify the reliability of this program, it may contain unknown programming errors that could result in incorrect results. GUARDIAN DOES NOT PROVIDE ANY WARRANTY OR GUARANTEE REGARDING THE ACCURACY OF THE INFORMATION IN THIS REPORT OR AGAINST GLASS BREAKAGE OR FOR ANY DIRECT OR INDIRECT DAMAGES THAT MAY BE DUE TO THE USE OF THE PROGRAM.

SIGCO™

IGMA

INSULATING GLASS IGCC® CERTIFICATION COUNCIL

LIMITED WARRANTY

SUBJECT TO THE FOLLOWING TERMS AND CONDITIONS, SIGCO, INC. ("SIGCO") WARRANTS TO ITS ORIGINAL PURCHASER ("CUSTOMER") THAT ITS INSULATING GLASS UNITS WILL NOT DEVELOP MATERIAL OBSTRUCTION OF VISION AS A RESULT OF DUST OR FILM FORMATION ON THE INTERNAL GLASS SURFACES CAUSED BY FAILURE OF THE HERMETIC SEAL DUE TO FAULTY MANUFACTURE OF THE UNIT BY SIGCO, FOR A PERIOD OF FIVE (5) YEARS FROM THE MANUFACTURE OF THE UNIT.

This warranty excludes units, which have been improperly handled or installed contrary to our specific recommendations. Warranty coverage does not extend to units installed in high moisture environments such as greenhouses, swimming pool enclosures or salt water environments or to units installed in sloped glazing, units with muntins and/or units not paid for by the Customer.

All warranty claims must be presented in writing to SIGCO, Inc. at 48 Spiller Drive, Westbrook, Maine 04092, within five (5) years of the date of manufacture of the unit to which the warranty applies, accompanied by proof of purchase. Upon validation of the warranty claim, SIGCO's liability for breach of any warranty shall be limited to the replacement of the defective unit (F.O.B. SIGCO's nearest location), or at SIGCO's sole option, a refund of the original unit's purchase price. In no case shall SIGCO be liable for any other damages or expenses, including but not limited to incidental or consequential damages. Replacement labor costs are not covered under this warranty. The warranty on all replacement units will extend only for the balance of the five (5) year warranty period remaining on the original unit.

THE PARTIES INTEND THIS WRITTEN AGREEMENT AS A FINAL EXPRESSION OF THEIR AGREEMENT WITH RESPECT TO SUCH TERMS AS ARE INCLUDED HEREIN.

ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXCLUDED. THERE ARE NO WARRANTIES, WHICH EXTEND BEYOND THOSE PROVIDED HEREIN.

No person has the authority to: 1) provide any warranties in addition to those set forth herein; or 2) expand, change or modify this warranty in any respect, except for the five (5) year duration period. The duration of the warranty provided herein may be extended to a maximum of ten (10) years, on a per unit basis, if in writing and signed by an officer of SIGCO, Inc.

SIGCO, INC. – 48 SPILLER DRIVE - WESTBROOK, MAINE 04092
PHONE: 207-775-2691 * FAX: 207-775-0291

SIGCO™

CERTIFICATIONS
HEAT TREATED PRODUCTS

All heat treated glass manufactured by SIGCO shall be constructed with float glass which meets the requirements of both ASTM C-1036 and ASTM C-1048; the standard specifications for flat and heat treated glass. All fully tempered glass shall meet the test requirements of ANSI Z97.1 and the CSPC standard for architectural glazing materials, 16 CFR 1201, categories I and II. Fully tempered glass complying with the performance characteristics specified in these standards shall be permanently identified with Safety Glazing Certification Council (SGCC) label indicating certification of the product through independent third party testing.

SIGCO, Inc. • 48 Spiller Drive • Westbrook, ME 04092 • TEL (207) 775-2676 • NE (800) 876-3338 • FAX (207) 775-0291

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