

21-1.01 Maxblock Sunshades by Tubelite Description



Description

Effectively reduce Solar Heat Gain by shading vision glass areas of the building envelope with Tubelite's Maxblock™ sun shades. Cooling costs can be significantly lowered, while still allowing natural light to fill the workspace.

Maxblock™ sun shades are designed for use with Tubelite 200 Series or 400 Series Curtain-walls.

A unique, easy to install outrigger bracket fastens at the pressure plate area, and allows removal

of individual sections of sun shade for re-glaze applications.

A variety of architectural profiles are available to compliment surrounding elements. Three outrigger types, with corresponding blade styles and fascia caps can be selected. Each type can then be extended from the building in projections of 20", 25", 30" or 35" to provide the desired performance. Blades are attached to the outriggers using simple screw spline connections.

21-1.02

Maxblock Sunshades by Tubelite Guide Specifications

General

Description

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

Maxblock Sunshades are manufactured by Tubelite Inc.. Submit substitute product technical literature, samples, drawings and performance data ten (10) days prior to bid in order to make a valid comparison of the products involved.

Performance Requirements

Structural performance shall be based on a maximum allowable deflection of L/120 of the span per IBC 2003. The system shall perform to this criteria when subjected to a combined load of (architect specify) _____ PSF.

Products

Materials

Extrusions of aluminum alloy 6063-T5 or 6063-T6 (as required), are manufactured within commercial tolerances and free from defects impairing strength and/or durability. Blade and fascia framing sections to be of .090 inch minimum wall thickness. Outriggers are cut from 0.25 inch aluminum plate.

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

Finish

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

Finish to be: (architect select)

Etched and clear anodized

(AA M12C22A31)

Class 2 Clear (OA)

(AA M12C22A41)

Class 1 Clear (2A)

Electrolytically deposited color

(AA M12C22A44),

Champagne (4K),

Light Amber (2K),

Amber (1K),
Statuary Bronze (3K),
Black (OD), or

Fluoropolymer painted color Tubelite Standard (70% PVDF):

Bone White (1P)
Hartford Green (2P)
Black (3P)
Brick Red (4P)
Sandstone (5P)
Quaker Bronze (6P)
Burnt Sun (7P)
Sage Brown (8P)
Boysenberry (9P)
Agean Blue (0P)
Ivory (AP)
Beige (BP)
Light Sea Wolf (CP)
Military Blue (DP)
Polar White (EP)

Fluoropolymer painted color (Other):

Execution

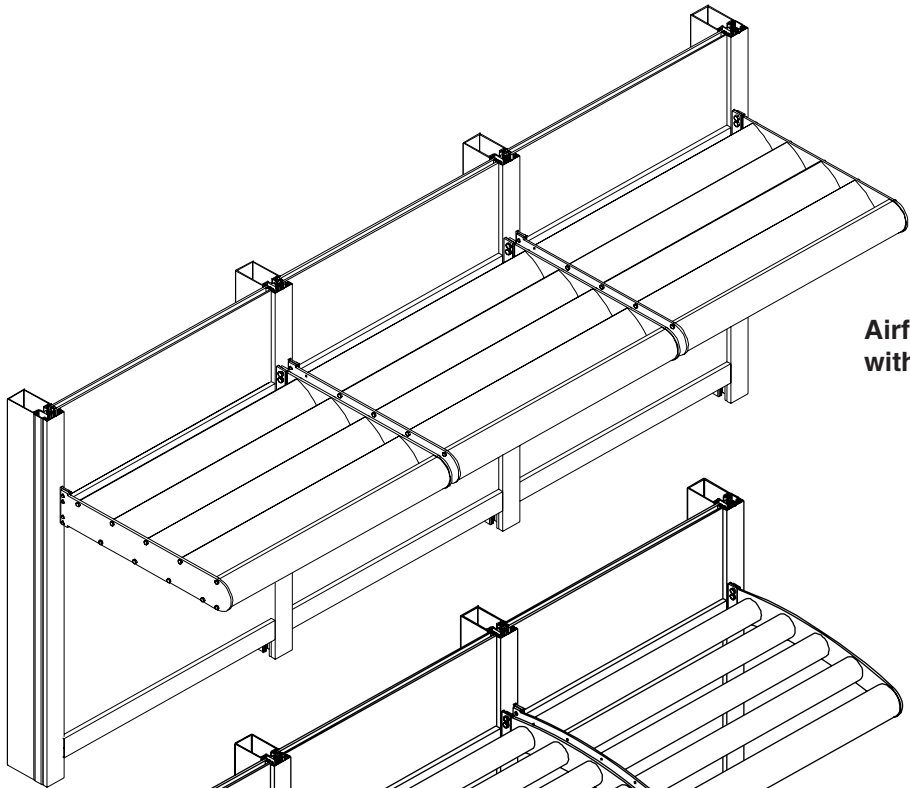
Installation

Follow the manufacturer's installation instructions and the approved shop drawings.

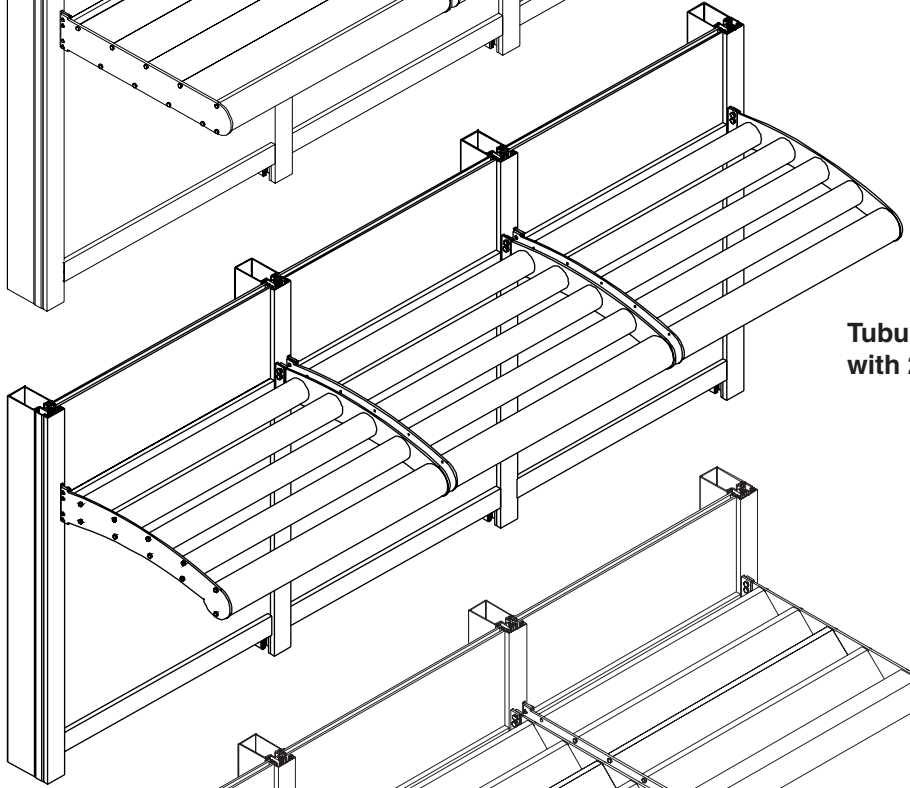
Note:

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

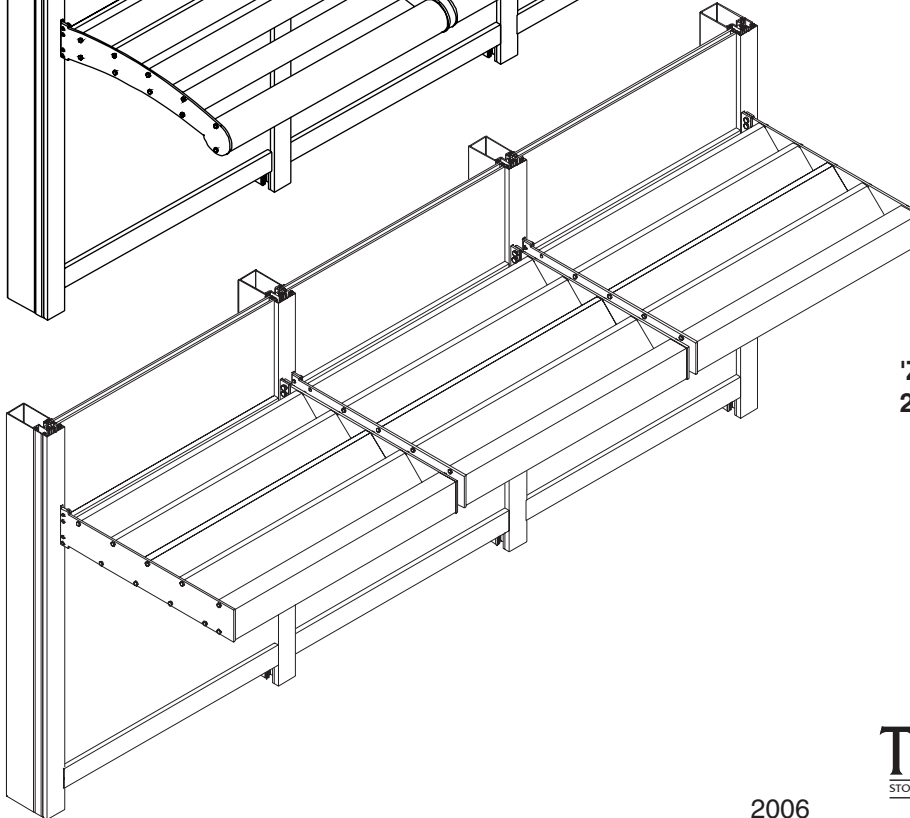
21-1.03
Maxblock Sunshades by Tubelite
Isometric Views



**Airfoil Blade
with 25" Outrigger**



**Tubular Blade
with 25" Outrigger**

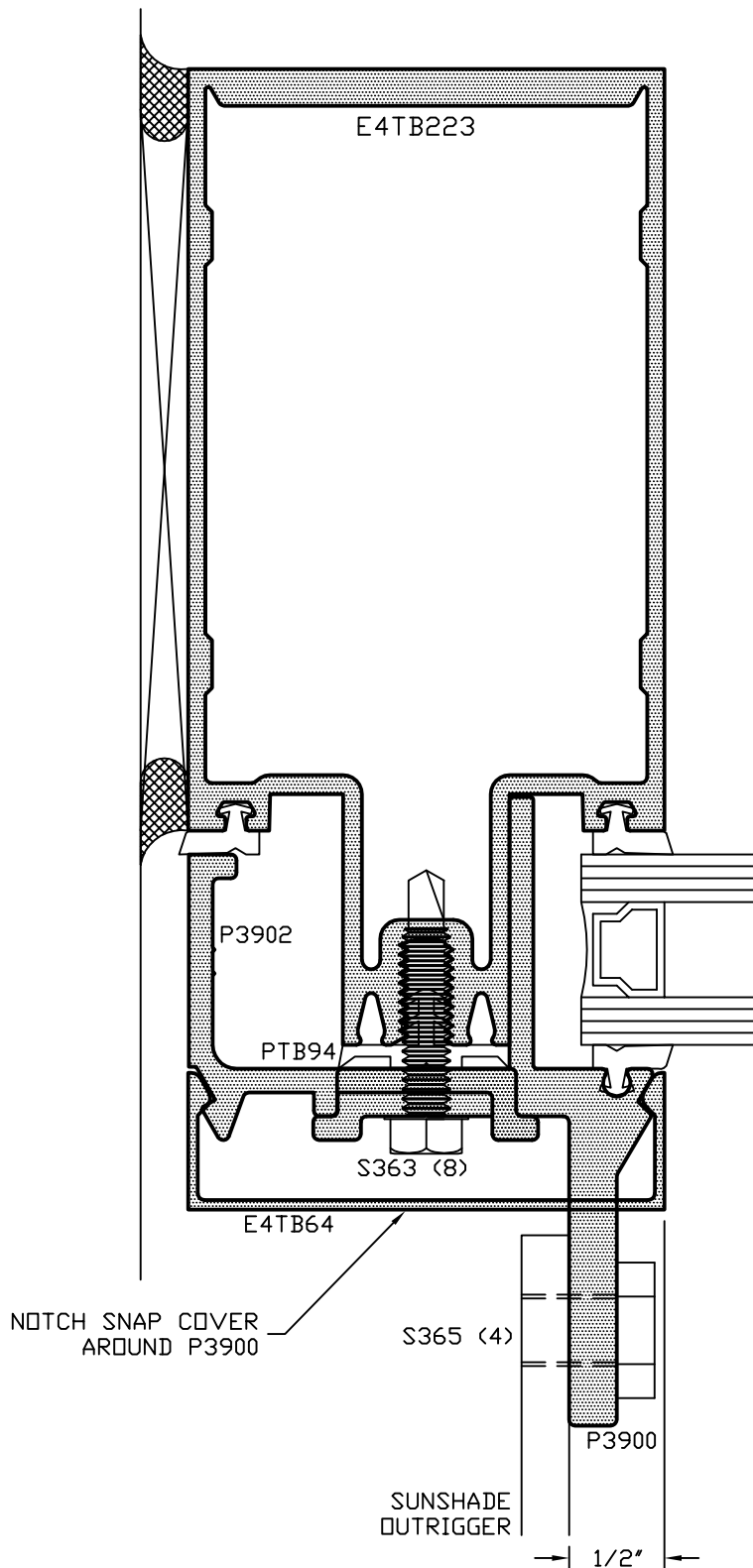


**'Z' Blade with
25" Outrigger**

21-1.05

Maxblock Sunshades by Tubelite 400 Series Curtainwall Sunshade Bracket At Jamb

CAD DETAIL FILE NO.
310VERT2



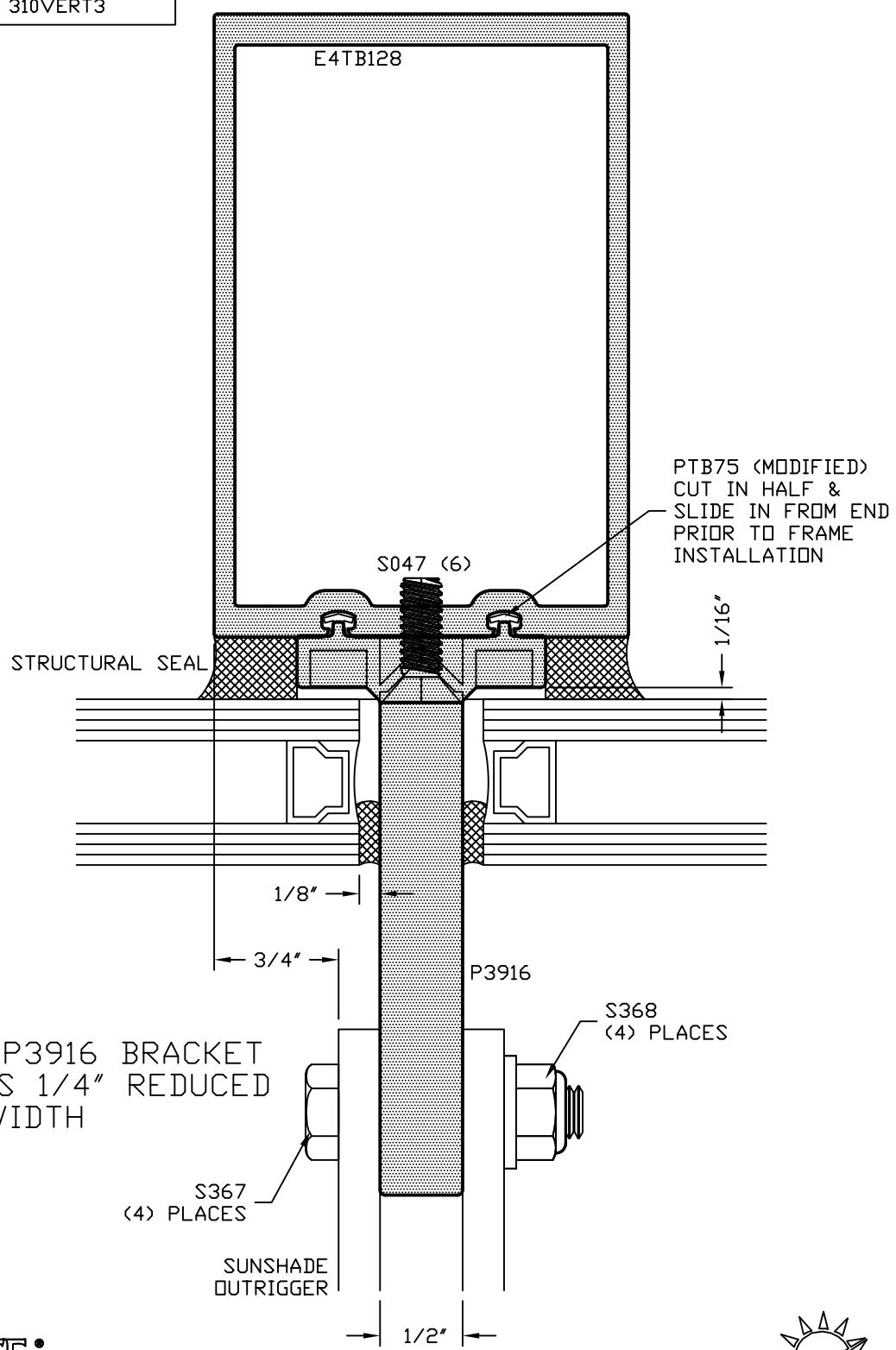
2006

21-1.06

Maxblock Sunshades by Tubelite

Curtainwall Sunshade Bracket at SSG Intermediate Vertical

CAD DETAIL FILE NO.
310VERT3



NOTE:
USE OF P3916 BRACKET
REQUIRES 1/4" REDUCED
GLASS WIDTH



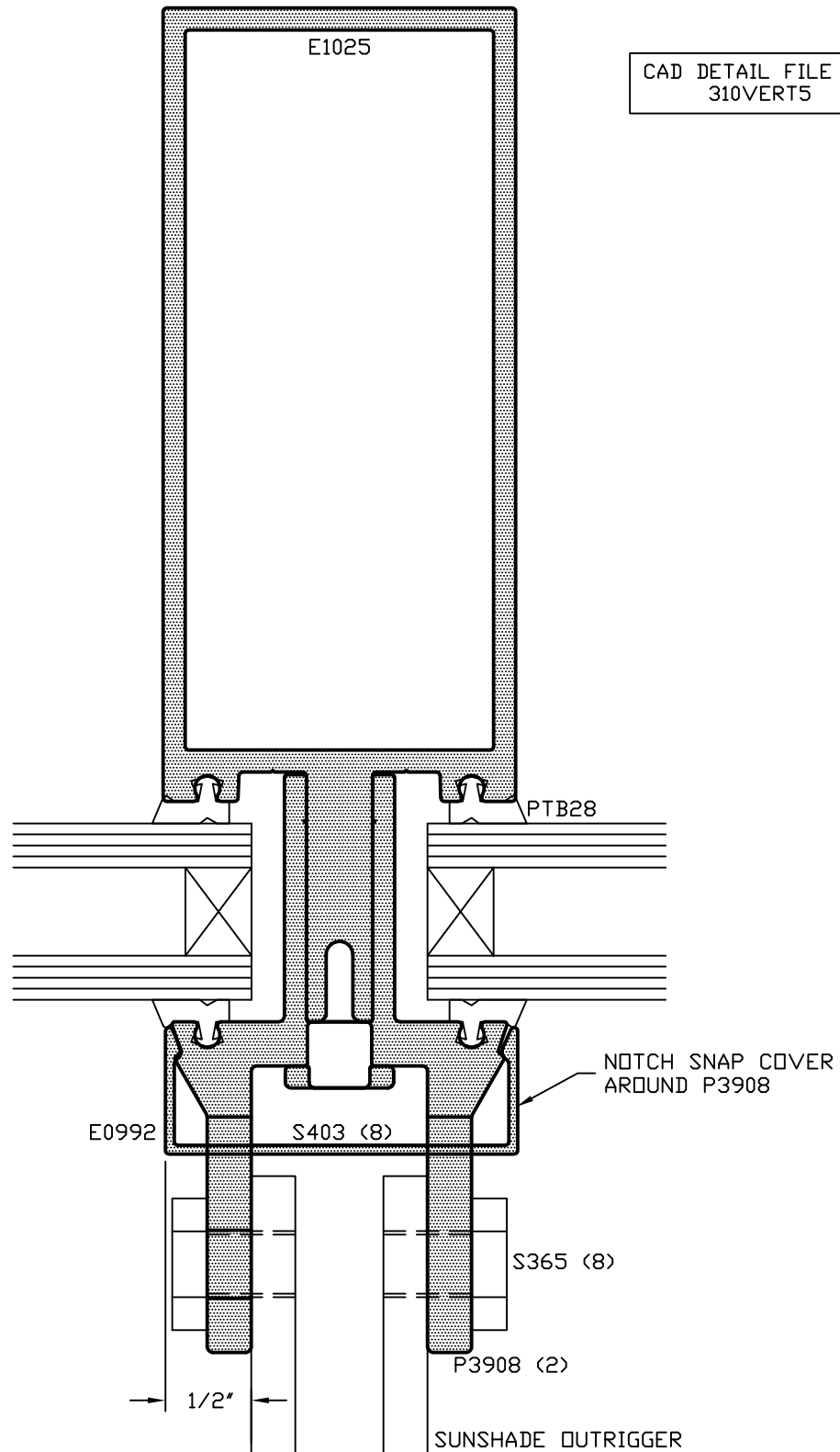
*SEALANT, ROD, & ANCHORS NOT BY TUBELITE



21-1.07

Maxblock Sunshades by Tubelite

200 Series Curtainwall Sunshade Bracket at Intermediate Vertical

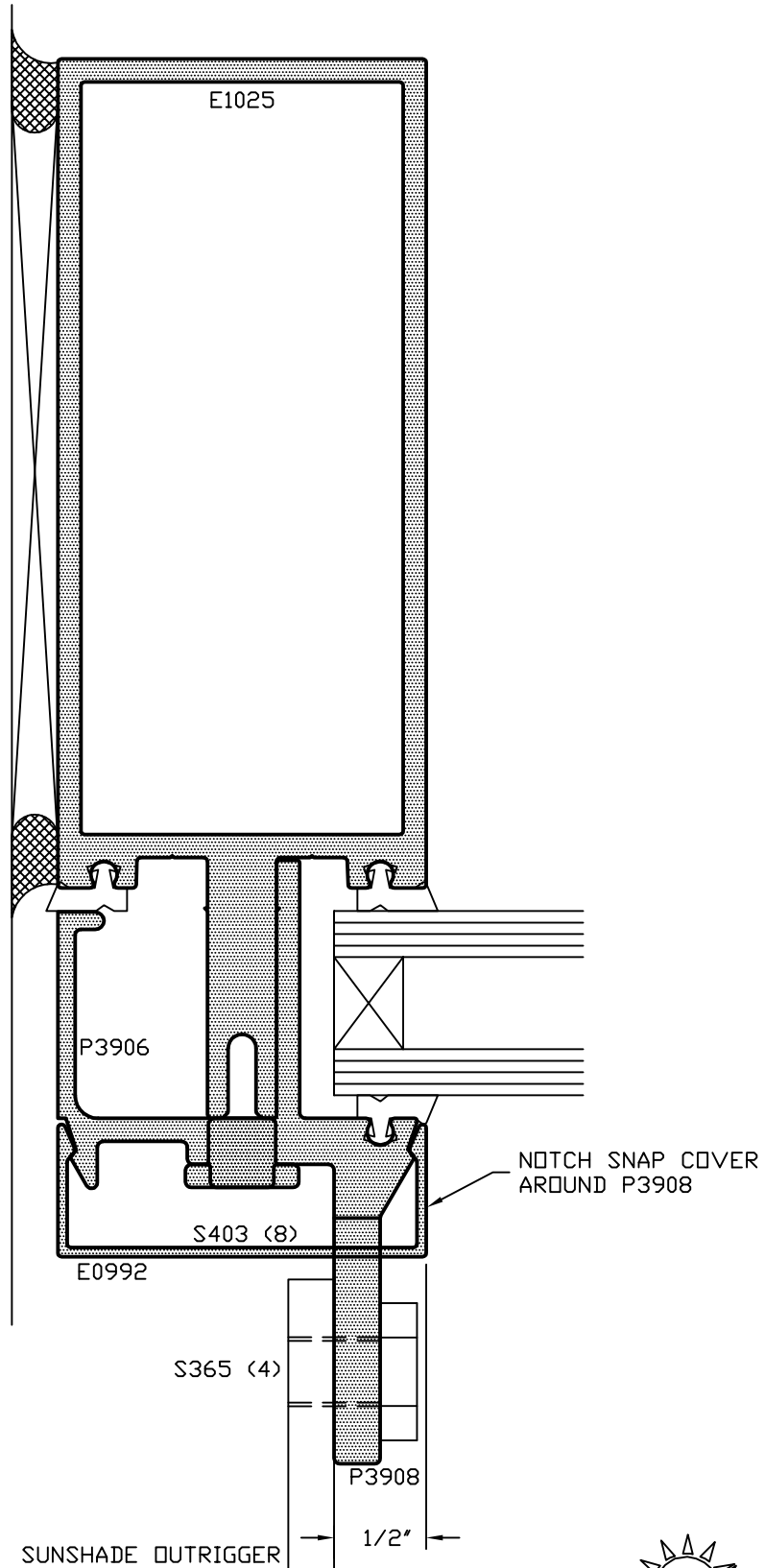


21-1.08

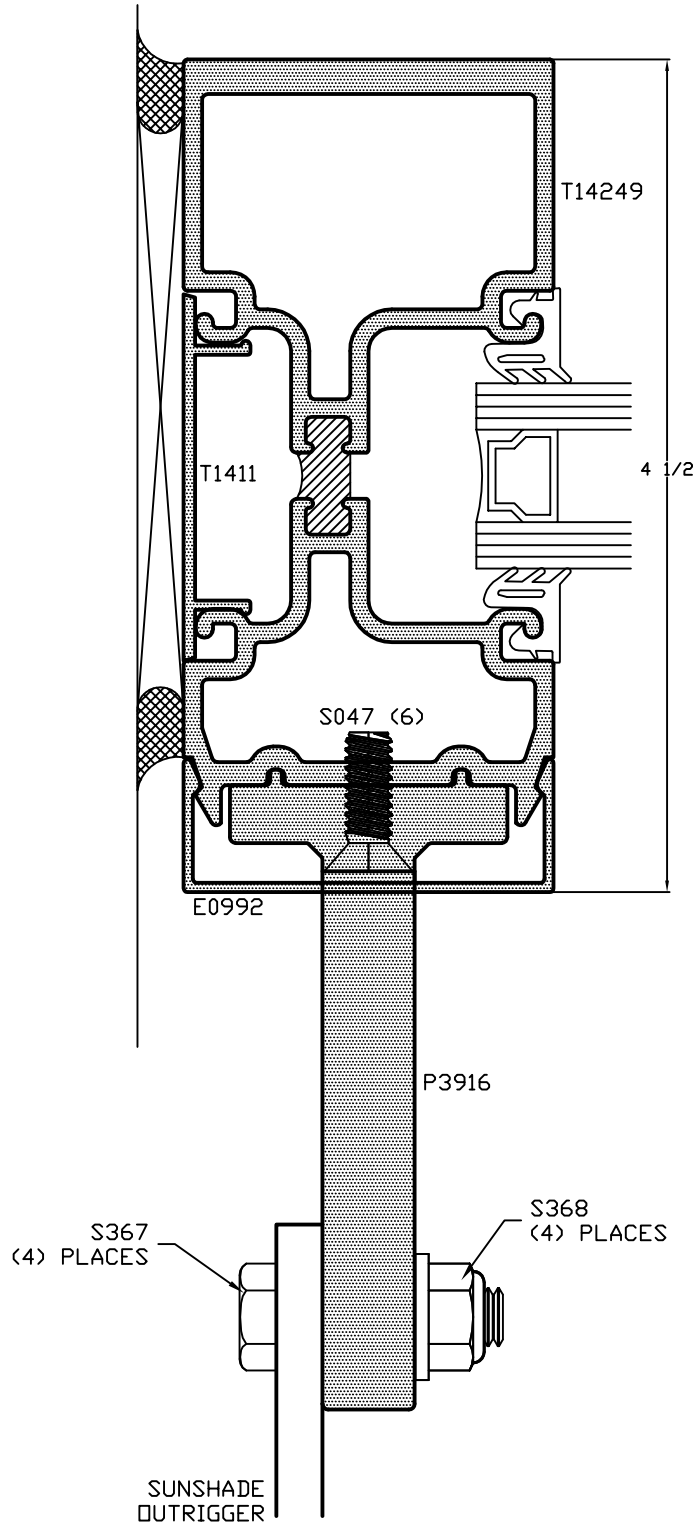
Maxblock Sunshades by Tubelite

200 Series Curtainwall Sunshade Bracket at Jamb

CAD DETAIL FILE NO.
310VERT6



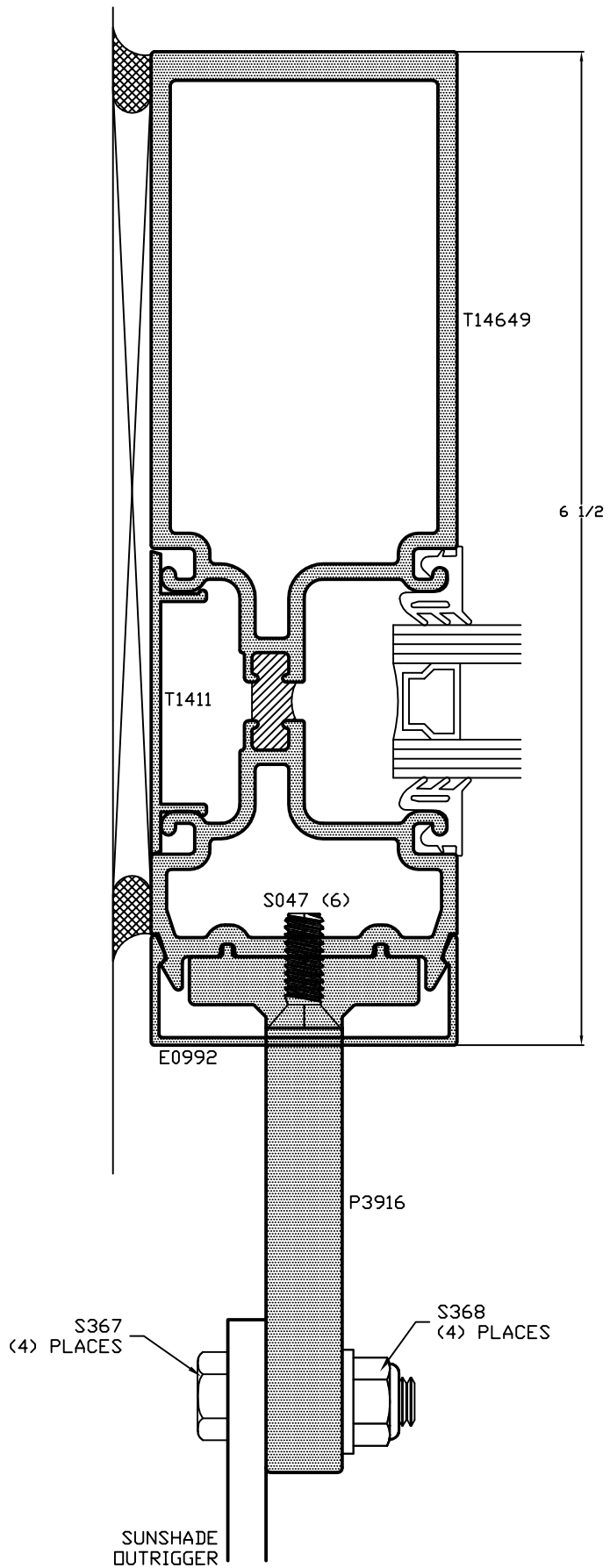
21-1.09
Maxblock Sunshades by Tubelite
14000 Series Storefront Sunshade Bracket at Jamb



CAD DETAIL FILE NO.
310VERT7

Maxblock Sunshades by Tubelite 14000 Series Storefront Sunshade Bracket at Jamb

CAD DETAIL FILE NO.
310VERT9

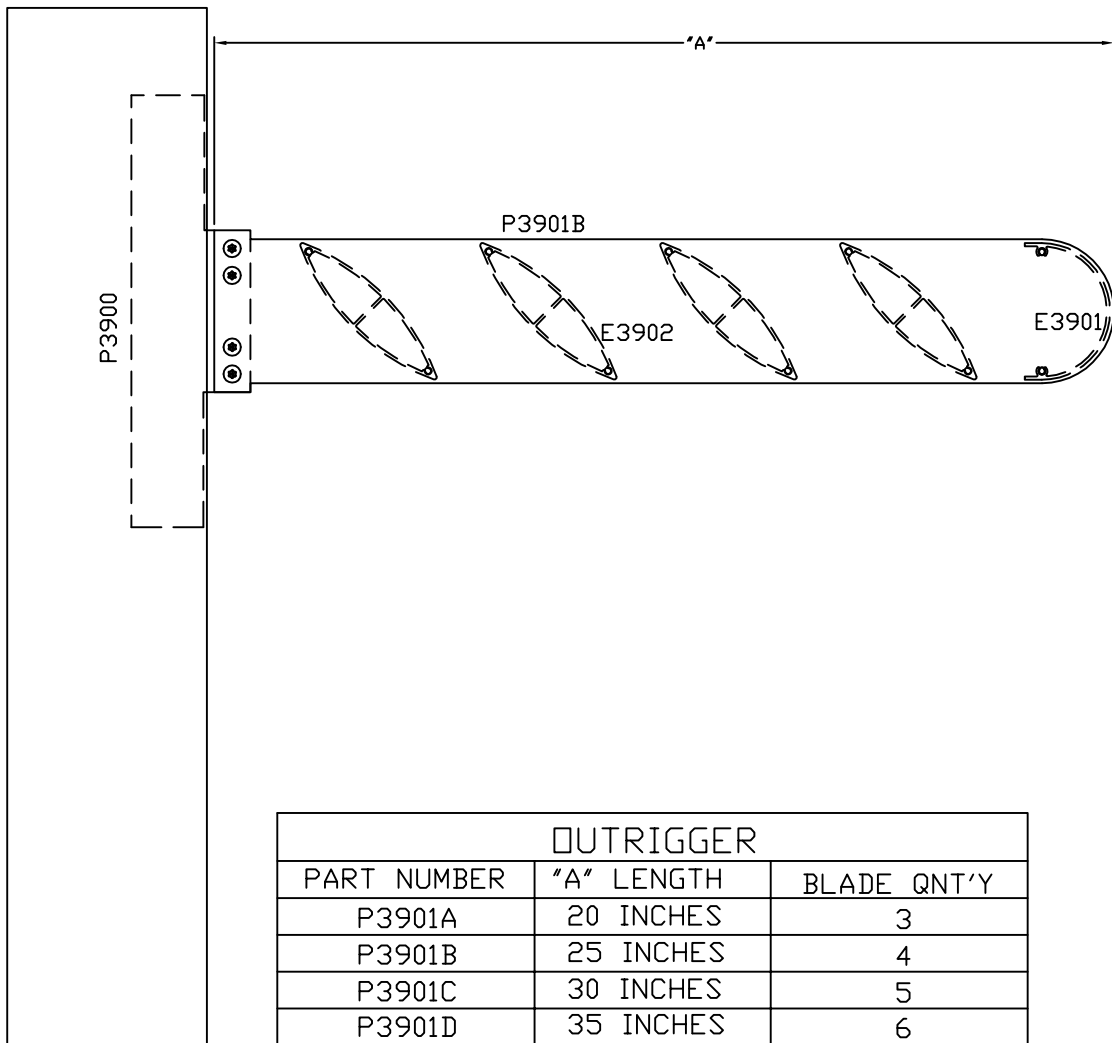


21-1.11

Maxblock Sunshades by Tubelite

Airfoil Blade/Straight Outrigger - 400 Curtainwall

CAD DETAIL FILE NO.
310AIRFOIL



*SEALANT, ROD, & ANCHORS NOT BY TUBELITE



21-1.12

Maxblock Sunshades by Tubelite

Shade Tables - Airfoil Blades

| Outrigger | # of Blades | Width of Blade | Width of Fascia | Blade Spacing |
|---------------|-------------|----------------|-----------------|---------------|
| 20" Outrigger | 3 | 3.75 | 2.375 | 5 |
| 25" Outrigger | 4 | 3.75 | 2.375 | 5 |
| 30" Outrigger | 5 | 3.75 | 2.375 | 5 |
| 35" Outrigger | 6 | 3.75 | 2.375 | 5 |

GENERAL NOTES:

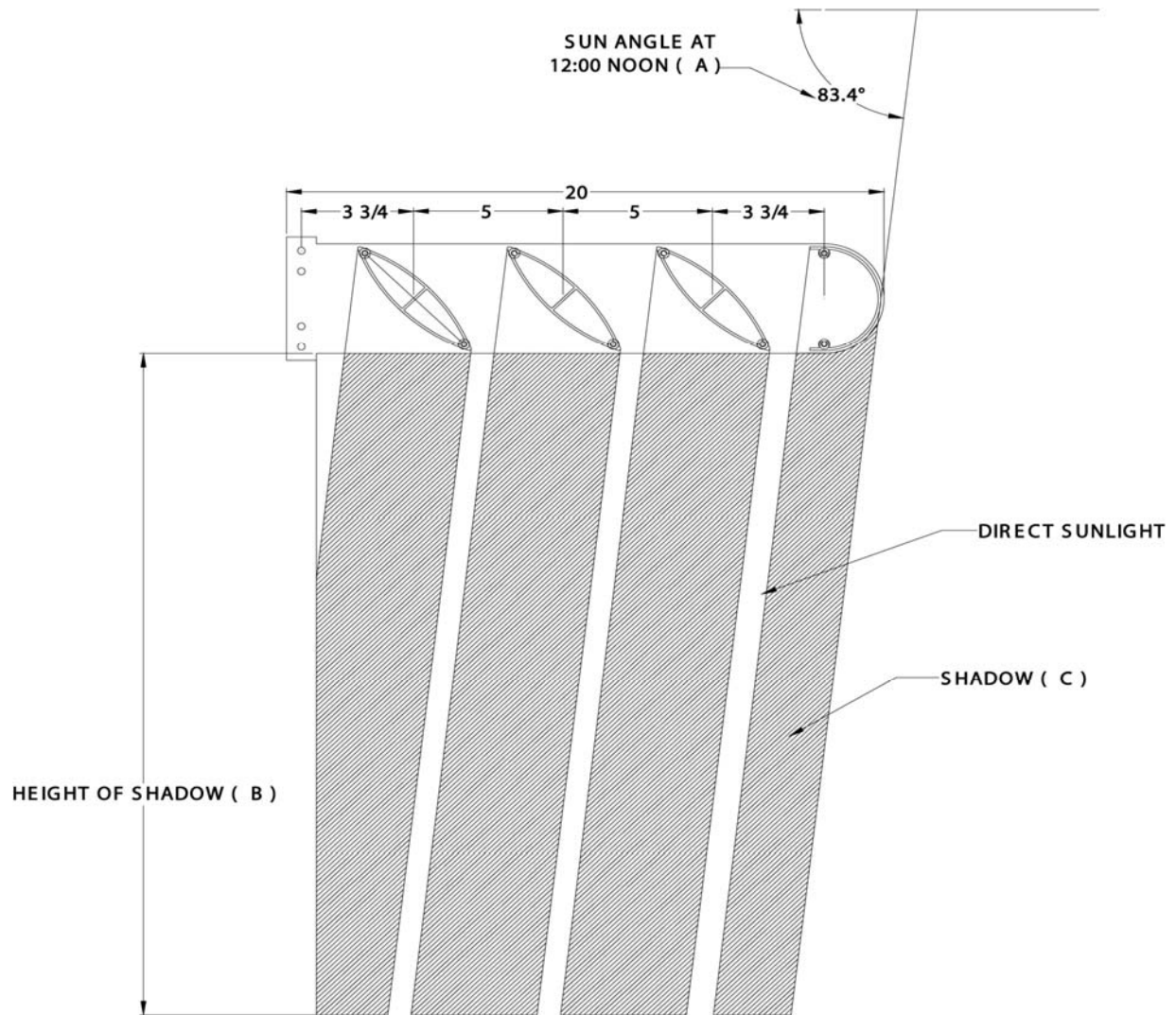
- > Items A,B,and C are referenced on the sketch shown on the following page.
- > The calculated height of shadow and percent area shades are approximate and will vary based on actual project location.
- > Summer sun angles are computed for July 22 at 12:00 noon, which corresponds with the highest sun angle of the year.
- > Winter sun angles are computed for December 22 at 12:00 noon which corresponds with the lowest sun angle.
- > Due to varied width of section based on sun angle, the following tables is necessary for asymmetrical shapes.

| | Summer Sun Angle | | | | | |
|---------------|------------------|-------|-------|-------|-------|-------|
| | 88.4 | 83.4 | 78.4 | 73.4 | 68.4 | 63.4 |
| Blade width: | 3.875 | 4.125 | 4.500 | 4.625 | 4.750 | 5.000 |
| Fascia width: | 2.375 | 2.625 | 2.750 | 2.875 | 3.000 | 3.125 |

SHADING TABLES:

| 20" Outrigger properties | | DEGREES LATITUDE (NORTH) | | | | | | | | | | | |
|--------------------------|------------------------|--------------------------|--------|------------|--------|------------|--------|------------|--------|------------|--------|------------|--------|
| | | 25 Degrees | | 30 Degrees | | 35 Degrees | | 40 Degrees | | 45 Degrees | | 50 Degrees | |
| | | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter |
| A | Sun Angle @ 12:00 noon | 88.4 | 41.6 | 83.4 | 36.6 | 78.4 | 31.6 | 73.4 | 26.6 | 68.4 | 21.6 | 63.4 | 16.6 |
| B | Height of shadow (in.) | 676 | 17 | 163 | 14 | 92 | 12 | 63 | 9 | 48 | 7 | 38 | 6 |
| C | Area Shaded (percent) | 74.2% | 100.0% | 79.5% | 100.0% | 86.1% | 100.0% | 86.1% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 25" Outrigger properties | | DEGREES LATITUDE (NORTH) | | | | | | | | | | | |
| | | 25 Degrees | | 30 Degrees | | 35 Degrees | | 40 Degrees | | 45 Degrees | | 50 Degrees | |
| | | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter |
| A | Sun Angle @ 12:00 noon | 88.4 | 41.6 | 83.4 | 36.6 | 78.4 | 31.6 | 73.4 | 26.6 | 68.4 | 21.6 | 63.4 | 16.6 |
| B | Height of shadow (in.) | 855 | 21 | 206 | 18 | 116 | 15 | 80 | 12 | 60 | 9 | 48 | 7 |
| C | Area Shaded (percent) | 74.9% | 100.0% | 80.1% | 100.0% | 86.9% | 100.0% | 86.9% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 30" Outrigger properties | | DEGREES LATITUDE (NORTH) | | | | | | | | | | | |
| | | 25 Degrees | | 30 Degrees | | 35 Degrees | | 40 Degrees | | 45 Degrees | | 50 Degrees | |
| | | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter |
| A | Sun Angle @ 12:00 noon | 88.4 | 41.6 | 83.4 | 36.6 | 78.4 | 31.6 | 73.4 | 26.6 | 68.4 | 21.6 | 63.4 | 16.6 |
| B | Height of shadow (in.) | 1034 | 26 | 250 | 21 | 141 | 18 | 97 | 14 | 73 | 11 | 58 | 9 |
| C | Area Shaded (percent) | 75.3% | 100.0% | 80.5% | 100.0% | 87.4% | 100.0% | 90.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 35" Outrigger properties | | DEGREES LATITUDE (NORTH) | | | | | | | | | | | |
| | | 25 Degrees | | 30 Degrees | | 35 Degrees | | 40 Degrees | | 45 Degrees | | 50 Degrees | |
| | | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter |
| A | Sun Angle @ 12:00 noon | 88.4 | 41.6 | 83.4 | 36.6 | 78.4 | 31.6 | 73.4 | 26.6 | 68.4 | 21.6 | 63.4 | 16.6 |
| B | Height of shadow (in.) | 1213 | 30 | 293 | 25 | 165 | 21 | 114 | 17 | 86 | 13 | 68 | 10 |
| C | Area Shaded (percent) | 75.6% | 100.0% | 80.8% | 100.0% | 87.8% | 100.0% | 90.4% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

21-1.13 Maxblock Sunshades by Tubelite Shading Diagram - Airfoil Blades

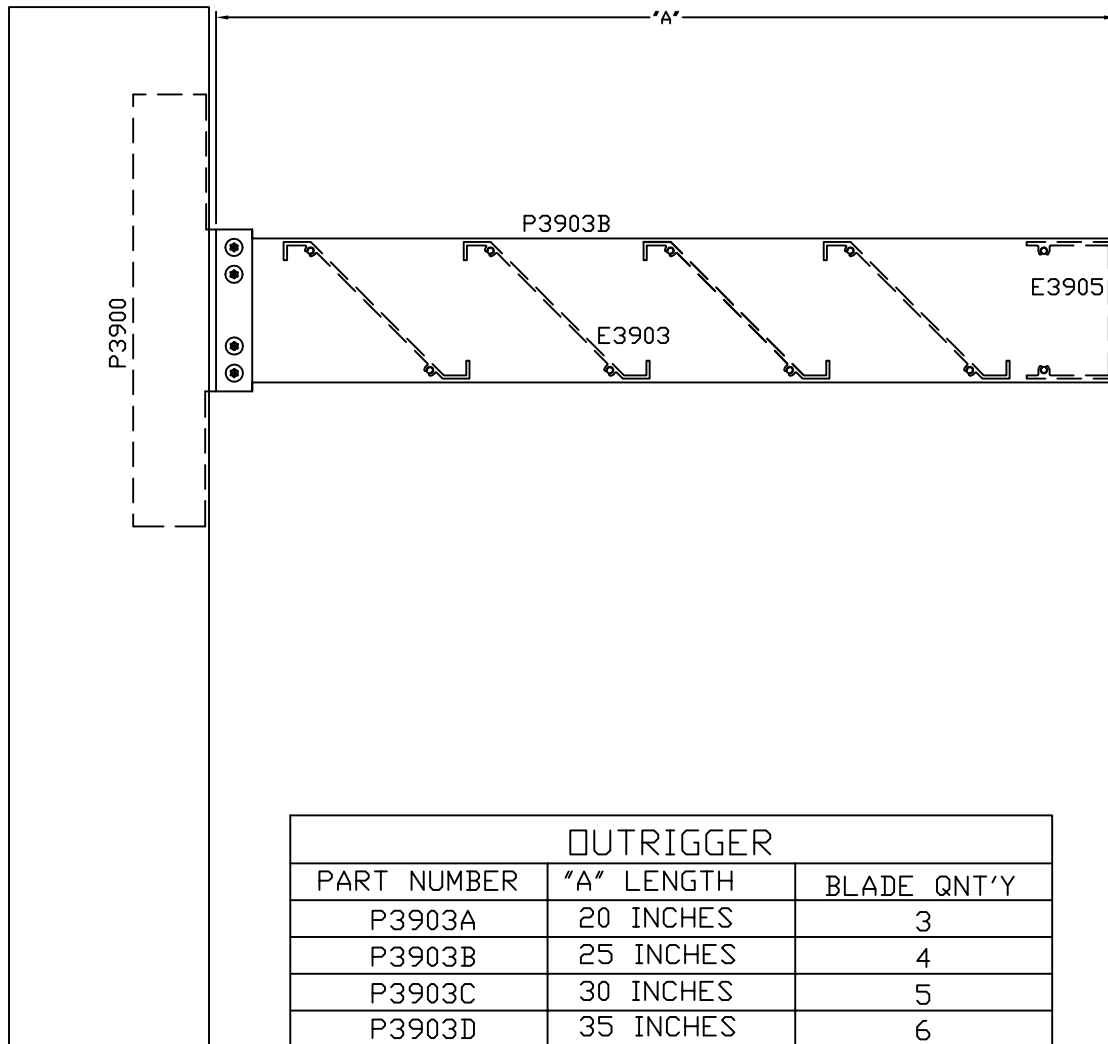


21-1.14

Maxblock Sunshades by Tubelite

Z Blade/Straight Outrigger- 400 Curtainwall

CAD DETAIL FILE NO.
310ZBLADE



| OUTRIGGER | | |
|-------------|------------|-------------|
| PART NUMBER | "A" LENGTH | BLADE QNT'Y |
| P3903A | 20 INCHES | 3 |
| P3903B | 25 INCHES | 4 |
| P3903C | 30 INCHES | 5 |
| P3903D | 35 INCHES | 6 |

Maxblock Sunshades by Tubelite

Shade Tables - 'Z' Blades

| Outrigger | # of Blades | Width of Blade | Width of Fascia | Blade Spacing |
|---------------|-------------|----------------|-----------------|---------------|
| 20" Outrigger | 3 | 4.625 | 2.375 | 5 |
| 25" Outrigger | 4 | 4.625 | 2.375 | 5 |
| 30" Outrigger | 5 | 4.625 | 2.375 | 5 |
| 35" Outrigger | 6 | 4.625 | 2.375 | 5 |

GENERAL NOTES:

- > Items A,B,and C are referenced on the sketch shown on the following page.
- > The calculated height of shadow and percent area shades are approximate and will vary based on actual project location.
- > Summer sun angles are computed for July 22 at 12:00 noon, which corresponds with the highest sun angle of the year.
- > Winter sun angles are computed for December 22 at 12:00 noon which corresponds with the lowest sun angle.
- > Due to varied width of section based on sun angle, the following tables is necessary for asymmetrical shapes.

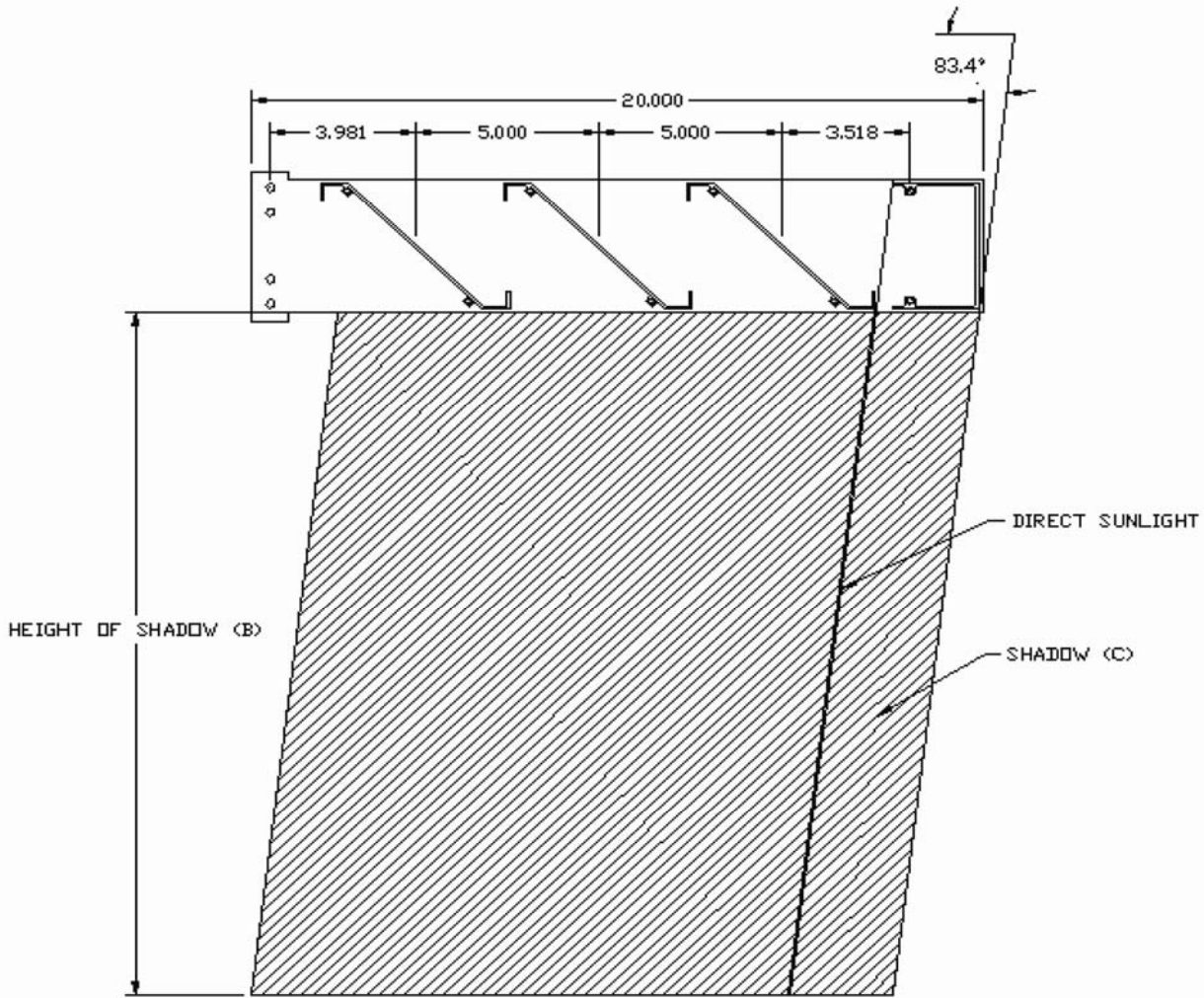
BLADE WIDTHS:

| | Summer Sun Angle | | | | | |
|---------------|------------------|-------|-------|-------|-------|-------|
| | 88.4 | 83.4 | 78.4 | 73.4 | 68.4 | 63.4 |
| Blade width: | 4.750 | 5.125 | 5.375 | 5.500 | 5.750 | 5.875 |
| Fascia width: | 2.375 | 2.625 | 2.750 | 2.875 | 3.000 | 3.125 |

SHADING TABLES:

| 20" Outrigger properties | | DEGREES LATITUDE (NORTH) | | | | | | | | | | | |
|--------------------------|------------------------|--------------------------|--------|------------|--------|------------|--------|------------|--------|------------|--------|------------|--------|
| | | 25 Degrees | | 30 Degrees | | 35 Degrees | | 40 Degrees | | 45 Degrees | | 50 Degrees | |
| | | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter |
| A | Sun Angle @ 12:00 noon | 88.4 | 41.6 | 83.4 | 36.6 | 78.4 | 31.6 | 73.4 | 26.6 | 68.4 | 21.6 | 63.4 | 16.6 |
| B | Height of shadow (in.) | 676 | 17 | 163 | 14 | 92 | 12 | 63 | 9 | 48 | 7 | 38 | 6 |
| C | Area Shaded (percent) | 88.1% | 100.0% | 95.4% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 25" Outrigger properties | | DEGREES LATITUDE (NORTH) | | | | | | | | | | | |
| | | 25 Degrees | | 30 Degrees | | 35 Degrees | | 40 Degrees | | 45 Degrees | | 50 Degrees | |
| | | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter |
| A | Sun Angle @ 12:00 noon | 88.4 | 41.6 | 83.4 | 36.6 | 78.4 | 31.6 | 73.4 | 26.6 | 68.4 | 21.6 | 63.4 | 16.6 |
| B | Height of shadow (in.) | 855 | 21 | 206 | 18 | 116 | 15 | 80 | 12 | 60 | 9 | 48 | 7 |
| C | Area Shaded (percent) | 89.5% | 100.0% | 96.9% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 30" Outrigger properties | | DEGREES LATITUDE (NORTH) | | | | | | | | | | | |
| | | 25 Degrees | | 30 Degrees | | 35 Degrees | | 40 Degrees | | 45 Degrees | | 50 Degrees | |
| | | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter |
| A | Sun Angle @ 12:00 noon | 88.4 | 41.6 | 83.4 | 36.6 | 78.4 | 31.6 | 73.4 | 26.6 | 68.4 | 21.6 | 63.4 | 16.6 |
| B | Height of shadow (in.) | 1034 | 26 | 250 | 21 | 141 | 18 | 97 | 14 | 73 | 11 | 58 | 9 |
| C | Area Shaded (percent) | 90.5% | 100.0% | 97.8% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| 35" Outrigger properties | | DEGREES LATITUDE (NORTH) | | | | | | | | | | | |
| | | 25 Degrees | | 30 Degrees | | 35 Degrees | | 40 Degrees | | 45 Degrees | | 50 Degrees | |
| | | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter |
| A | Sun Angle @ 12:00 noon | 88.4 | 41.6 | 83.4 | 36.6 | 78.4 | 31.6 | 73.4 | 26.6 | 68.4 | 21.6 | 63.4 | 16.6 |
| B | Height of shadow (in.) | 1213 | 30 | 293 | 25 | 165 | 21 | 114 | 17 | 86 | 13 | 68 | 10 |
| C | Area Shaded (percent) | 91.1% | 100.0% | 98.5% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

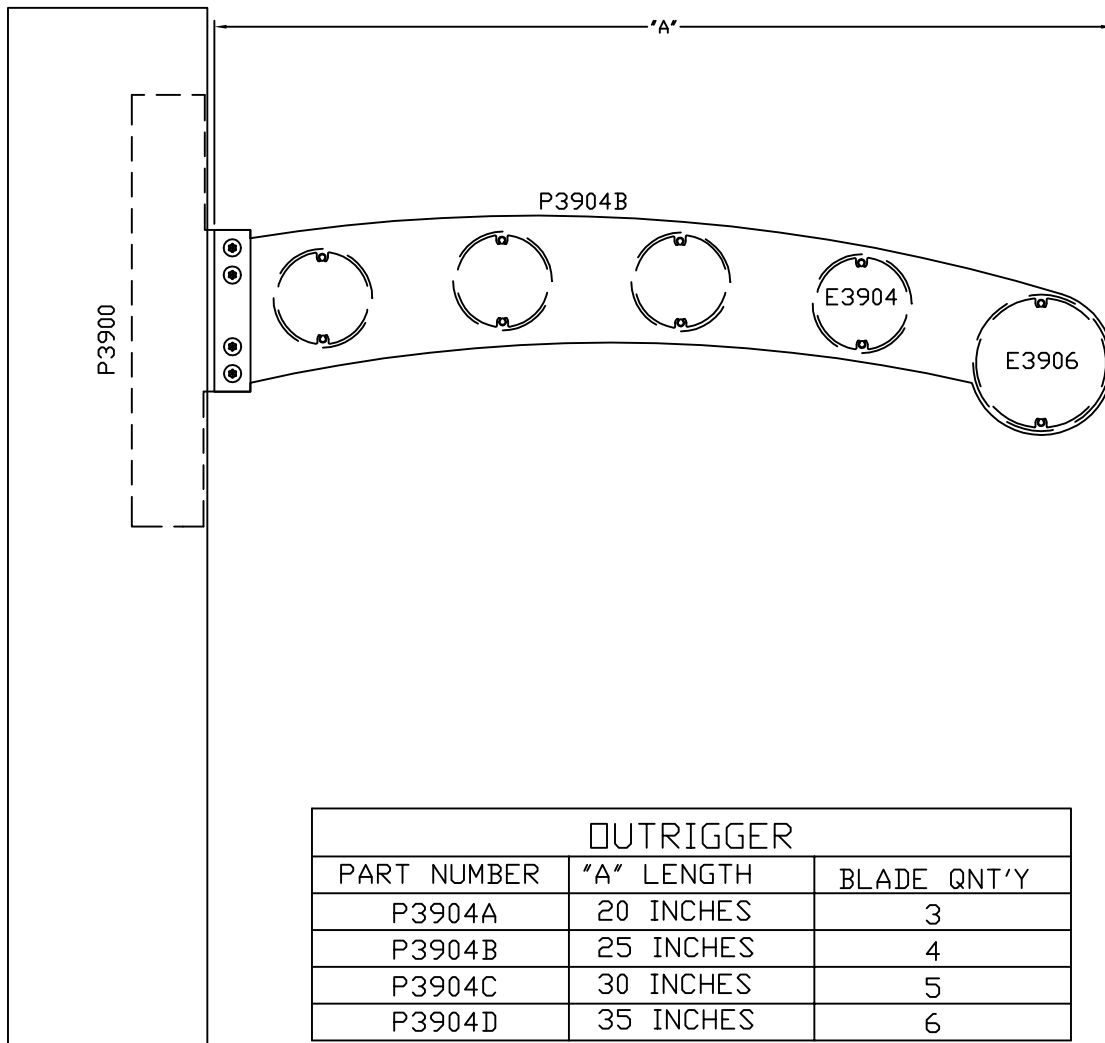
21-1.16 Maxblock Sunshades by Tubelite Shading Diagram - 'Z' Blades



21-1.17

Maxblock Sunshades by Tubelite Tubular Blade/Curved Outrigger - 400 Curtainwall

CAD DETAIL FILE NO.
310TUBULAR



| OUTRIGGER | | |
|-------------|------------|-------------|
| PART NUMBER | "A" LENGTH | BLADE QNT'Y |
| P3904A | 20 INCHES | 3 |
| P3904B | 25 INCHES | 4 |
| P3904C | 30 INCHES | 5 |
| P3904D | 35 INCHES | 6 |



*SEALANT, ROD, & ANCHORS NOT BY TUBELITE



21-1.18

Maxblock Sunshades by Tubelite

Shade Tables - Tubular Blades

| Outrigger | # of Blades | Width of Blade | Width of Fascia | Blade Spacing |
|---------------|-------------|----------------|-----------------|---------------|
| 20" Outrigger | 3 | 2.75 | 3.793 | 5 |
| 25" Outrigger | 4 | 2.75 | 3.793 | 5 |
| 30" Outrigger | 5 | 2.75 | 3.793 | 5 |
| 35" Outrigger | 6 | 2.75 | 3.793 | 5 |

GENERAL NOTES:

- > Items A,B,and C are referenced on the sketch shown on the following page.
- > The calculated height of shadow and percent area shades are approximate and will vary based on actual project location.
- > Summer sun angles are computed for July 22 at 12:00 noon, which corresponds with the highest sun angle of the year.
- > Winter sun angles are computed for December 22 at 12:00 noon which corresponds with the lowest sun angle.

SHADING TABLES:

| 20" Outrigger properties | | DEGREES LATITUDE (NORTH) | | | | | | | | | | | |
|--------------------------|------------------------|--------------------------|--------|------------|--------|------------|--------|------------|--------|------------|--------|------------|--------|
| | | 25 Degrees | | 30 Degrees | | 35 Degrees | | 40 Degrees | | 45 Degrees | | 50 Degrees | |
| | | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter |
| A | Sun Angle @ 12:00 noon | 88.4 | 41.6 | 83.4 | 36.6 | 78.4 | 31.6 | 73.4 | 26.6 | 68.4 | 21.6 | 63.4 | 16.6 |
| B | Height of shadow (in.) | 676 | 17 | 163 | 14 | 92 | 12 | 63 | 9 | 48 | 7 | 38 | 6 |
| C | Area Shaded (percent) | 64.1% | 90.9% | 65.2% | 95.9% | 66.2% | 100.0% | 67.4% | 100.0% | 68.7% | 100.0% | 70.1% | 100.0% |
| 25" Outrigger properties | | DEGREES LATITUDE (NORTH) | | | | | | | | | | | |
| | | 25 Degrees | | 30 Degrees | | 35 Degrees | | 40 Degrees | | 45 Degrees | | 50 Degrees | |
| | | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter |
| A | Sun Angle @ 12:00 noon | 88.4 | 41.6 | 83.4 | 36.6 | 78.4 | 31.6 | 73.4 | 26.6 | 68.4 | 21.6 | 63.4 | 16.6 |
| B | Height of shadow (in.) | 855 | 21 | 206 | 18 | 116 | 15 | 80 | 12 | 60 | 9 | 48 | 7 |
| C | Area Shaded (percent) | 62.2% | 89.2% | 63.0% | 95.1% | 63.8% | 100.0% | 64.7% | 100.0% | 65.6% | 100.0% | 66.7% | 100.0% |
| 30" Outrigger properties | | DEGREES LATITUDE (NORTH) | | | | | | | | | | | |
| | | 25 Degrees | | 30 Degrees | | 35 Degrees | | 40 Degrees | | 45 Degrees | | 50 Degrees | |
| | | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter |
| A | Sun Angle @ 12:00 noon | 88.4 | 41.6 | 83.4 | 36.6 | 78.4 | 31.6 | 73.4 | 26.6 | 68.4 | 21.6 | 63.4 | 16.6 |
| B | Height of shadow (in.) | 1034 | 26 | 250 | 21 | 141 | 18 | 97 | 14 | 73 | 11 | 58 | 9 |
| C | Area Shaded (percent) | 61.0% | 88.1% | 61.6% | 94.6% | 62.2% | 100.0% | 62.9% | 100.0% | 63.7% | 100.0% | 64.5% | 100.0% |
| 35" Outrigger properties | | DEGREES LATITUDE (NORTH) | | | | | | | | | | | |
| | | 25 Degrees | | 30 Degrees | | 35 Degrees | | 40 Degrees | | 45 Degrees | | 50 Degrees | |
| | | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter | summer | winter |
| A | Sun Angle @ 12:00 noon | 88.4 | 41.6 | 83.4 | 36.6 | 78.4 | 31.6 | 73.4 | 26.6 | 68.4 | 21.6 | 63.4 | 16.6 |
| B | Height of shadow (in.) | 1213 | 30 | 293 | 25 | 165 | 21 | 114 | 17 | 86 | 13 | 68 | 10 |
| C | Area Shaded (percent) | 60.1% | 87.3% | 60.6% | 94.3% | 61.2% | 100.0% | 61.7% | 100.0% | 62.4% | 100.0% | 63.1% | 100.0% |

Maxblock Sunshades by Tubelite Shading Diagram - Tubular Blades

