



AGS INC
Architectural Grilles & Sunshades



Setting the Standard for Modern Architectural Design

- Grilles
- Trellis
- Light Shelves
- Sunshades
- Attachments
- Span Tables

22442 Fey Drive, Frankfort, IL 60423
708.479.9458 | agsshade.com



ACHIEVE LEED™ WITH AGS, INC.

“100% of owners of commercial office buildings are expected to engage in Energy-Efficient Lighting/Daylighting as part of future retrofit activity.”

(Source: Green Retrofit and Renovation SmartMarket Report, McGraw-Hill Construction, 2010)



Benefits of Earning U.S.G.B.C. LEED™ Certification

- Lower operating costs up to 25% and increase asset value
- Receive prestigious *LEED 2009* or *LEED NCv2.2* Certification
- Reduce waste sent to landfills
- Conserve energy
- Healthier and safer for occupants
- Reduce harmful greenhouse gas emissions
- Qualify for tax rebates, zoning allowances and other incentives in numerous cities
- Demonstrate an owner's commitment to environmental stewardship and social responsibility



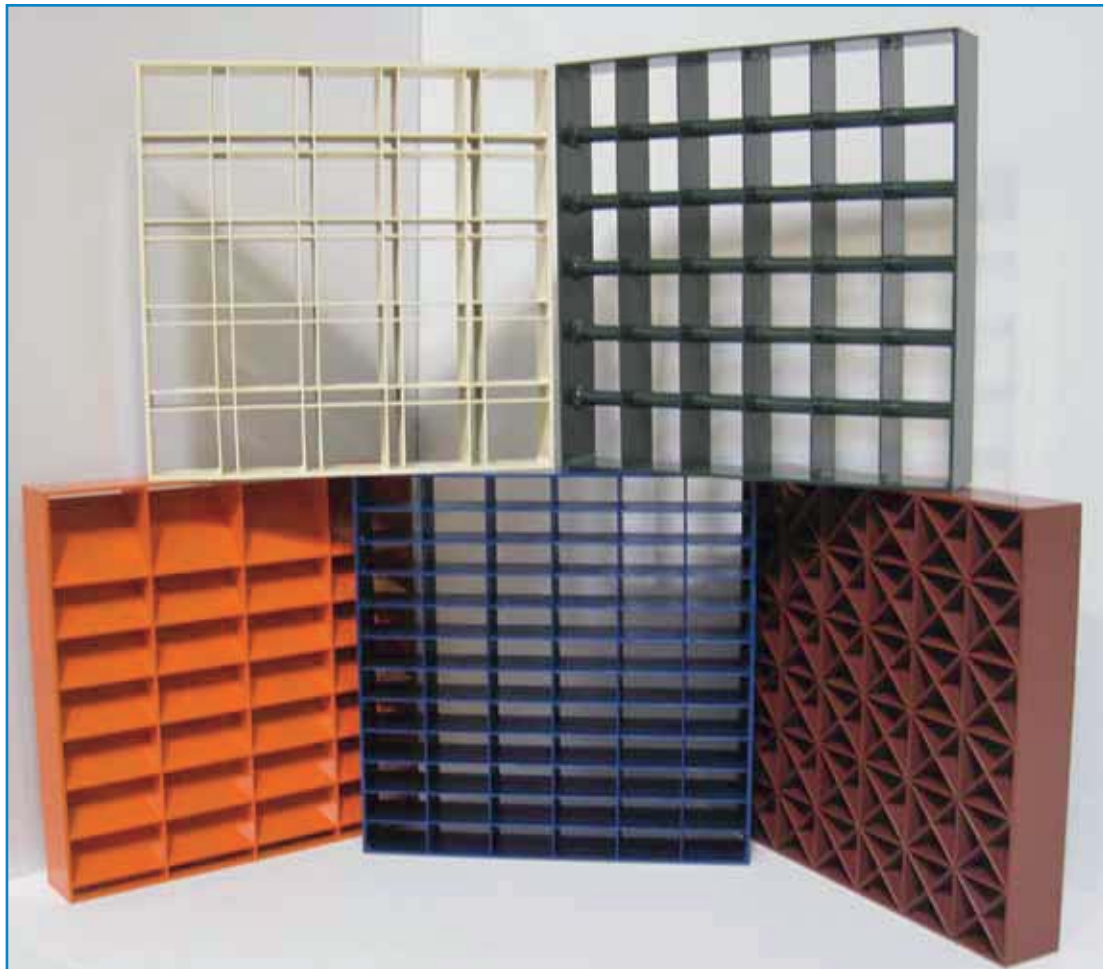
AGS, Inc. has been a loyal member of U.S. Green Building Council since 2006.

AGS, Inc.	Category	Description	Potential Credit Points	Products
Energy and Atmosphere	EA Credit 1	Achieve increasing levels of energy performance above the prerequisite standard to reduce environmental impact associated with excessive energy use.	19	Aluminum Sunshades Interior Light Shelves
Materials and Resources	MR Credit 4	Increase demand for building products that incorporate recycled content materials thereby reducing impacts resulting from extraction and processing of virgin materials.	2	Aluminum Sunshades Grilles Interior/Exterior Light Shelves Trellis Systems
Materials and Resources	MR Credit 5	Increase demand for building materials and products that are extracted and manufactured within the region thereby supporting the regional economy and reducing the environmental impact resulting from transportation.	2	Aluminum Sunshades Grilles Interior/Exterior Light Shelves Trellis Systems
Indoor Environmental Air Quality	IEQ Credit 8.1	Provide for the building occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.	1	Interior Light Shelves

AGS, Inc, as a company, practices Green Awareness by taking the initiative to recycle all used aluminum and paper.



AGS INC
Architectural Grilles & Sunshades



Aluminum Ornamental Grilles

Functions:

- Architectural Signature
- Limit Visibility
- Add Security
- Decorative Accents
- Conceal Equipment

Specialties:

- 108200



City Creek, Salt Lake City, UT



Aluminum Ornamental Grilles

Applications:

- Balcony Railing
- Parking Garages
- Building Facades
- Sunshades
- Screen Walls
- Canopy
- Custom Designs



1st Street Redevelopment, St. Charles, IL



CSU Stanislaus, Turlock, CA



UT San Antonio, San Antonio, TX



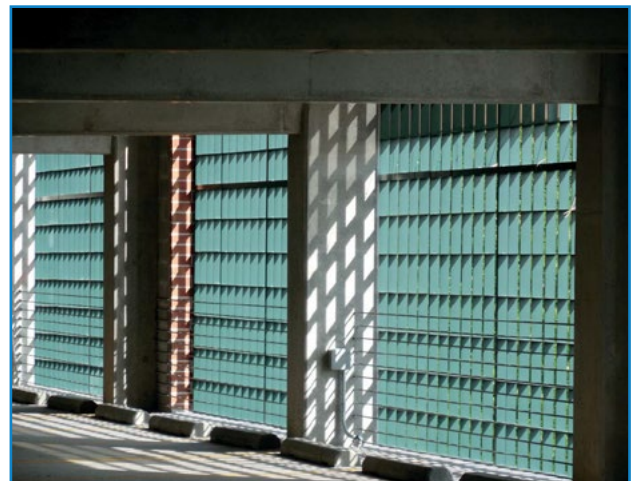
Aluminum Ornamental Grilles



Metro Centre Parking Garage, Owings Mills, MD



Metro Centre Parking Garage, Owings Mills, MD



Metro Centre Parking Garage, Owings Mills, MD



Aluminum Ornamental Grilles



100 Grand, Oakland, CA



American University, Washington D.C.



Chase Bank, Frankfort, IL



Decorative Grille Models



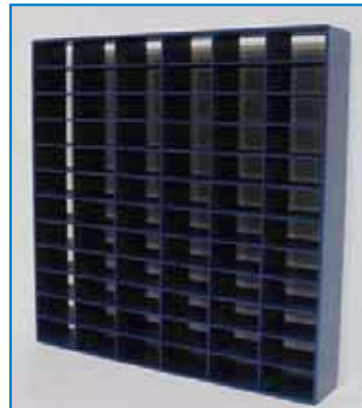
Commander Grille



Admiral Grille



Lieutenant Grille



Colonial Grille



Sergeant Major Grille



Fleet Admiral Grille

Custom grilles are also available.



Aluminum Grilles • Guide Specifications #108200

Part 1 – General

1.1 Summary

- A. Related work specified elsewhere
 - 1. Concrete Section
 - 2. Sheet Metal Work Section
 - 3. Glazed Aluminum Curtain wall Section
- B. Work included in this section.

The extent of the extruded aluminum grille system is shown on the contract drawings and hereby defined to include all ornamental grille devices of the type shown and specified herein.

1.2 Quality Assurance

- A. Comply with SMACNA “Architectural Sheet Metal Manual” recommendations for fabrication, construction details and installation procedures, except as otherwise indicated.
- B. Field Measurements:

Verify size, location, placement of grille units prior to fabrication, whenever possible.
- C. Shop Assembly:

Coordinate field measurements and shop drawings with fabrication and shop assembly to minimize field changes, mechanical attachment and field fabrication of units. Pre-assemble units in shop to greatest extent possible, and clearly mark units for field coordination and installation.

1.3 Qualifications

- A. Acceptable Manufacturers:

Architectural Grilles and Sunshades, Inc. (AGS, Inc.).
Address: 9950 W. 190th Street • Mokena, IL 60448
Phone: (708) 479-9458 • Fax: (708) 479-9478
Contact: Eric Niemeyer (e-mail: eric@agsshade.com)

Other manufacturers may bid only after written approval of the architect, obtained 10 days prior to bid opening and issued addendum. Interested manufacturers must furnish full details of proposed product, engineering calculations on all sections involved, physical samples of all shapes and finishes, a list of installations similar in size and design, and must have a minimum of five years experience in manufacturing and installing extruded aluminum grilles.



1.4 Submittals

- A. Shop Drawings:
Submit for architect's approval prior to commencement of any work or fabrication under this section, _____ sets of detail shop drawings showing all areas of work profiles and sections of all components, finishes and fastening details.
- B. Warranties:
The work in this section shall be guaranteed against defects in material and workmanship for a period of one (1) year from date of acceptance of the building. Contractor shall replace and repair any defects at no cost to the owner.

1.5 Product Handling

- A. Shipping and Handling:
Deliver materials to the job site ready for erection. Assembled units to be packaged and shipped to prevent damage during freight and storage on site.

Part 2 – Products

2.1 Materials

- A. General: Metal shall be free from defects impairing strength, durability or appearance.
 - 1. Aluminum – ASTM B 221, alloys 6063-T5 and 6063-T6 for extrusions. ASTM B 209, alloys 5052-H32 or greater.
 - 2. Fasteners – Unless otherwise noted, fasteners shall be 300 series non-magnetic stainless steel. ASTM A-307, grade A or better.

2.2 Fabrication, General

- A. Provide Modular Screen and accessories of design, materials, sizes, depth arrangement, and metal thickness as indicated or as required for optimum performance with respect to strength; durability; and uniform appearance.
- B. Include anchorages and accessories required for complete assembly.

2.3 Screen Construction

- A. AGS, Inc. Aluminum Screen shall be AGS, Inc. Grille Pattern
 - 1. Model Name _____, as manufactured by Architectural Grilles and Sunshades, Inc.
- B. Bars to be fabricated from extruded aluminum in 6063 T52 alloy and to be minimum .125" thick. Blade connections within the grille shall be accomplished by cross lap joints tack welded where required. Grille to be mechanically secured to horizontal or vertical steel supports (not by AGS, Inc.) with extruded aluminum clip angles. All fasteners to be stainless steel or aluminum.

2.4 Aluminum Finish

- A. General:
Finish on exposed aluminum shall be compliant with the performance standards set forth in AAMA Specifications 2605-98, "Superior Performing Organic Coatings on Aluminum."



- B. Type:
Factory-applied, high performance, 70% Polyvinylidene Fluoride (PVDF) coating based on Elf Atochem Inc. Kynar 500 or Ausimont USA Inc. Hylar 5000 resin, formulated by a licensed paint manufacturer, and applied by paint manufacturer's warranty-approved applicator.
- C. Pretreatment:
Applicator to pretreat the aluminum with solutions to remove organic and inorganic surface soils, remove residual oxides, followed by a chrome phosphate conversion coating- at minimum 40 mg/square foot – to ensure adhesion of paint to the aluminum.
- D. Application:
One primer coat, one color coat, for a minimum of 1.2 mils of dry film thickness.
- E. Color:
Architect to choose standard color.

OR

- A. Class I, clear anodic finish: AA-M12C22A41 (Mechanical Finish: Chemical finished: etched, medium matte; anodic coating: Architectural class I, clear coating 0.018 mm or thicker) complying with AAMA 607.1.

Part 3 – Execution

3.1 Installation

- A. Verify conditions: Examine areas where work is to be performed and identify any conditions that could be detrimental to proper or timely completion.
- B. General Contractor shall field confirm openings and elevations as shown on shop drawings prior to fabrication.
- C. Installation should not proceed until all conditions are satisfactory.

3.2 Erection

- A. Qualified installer needs to comply with manufacturer's installation instructions.
- B. Verify all dimensions and the supporting structure and provide accurate field measurements, so that the grilles will be properly designed, fabricated and fitted to the structure.
- C. Anchor grille to the building per the architectural drawings.
- D. A maximum of +/- 1/8" tolerance between any column to column spacing is acceptable.
- E. Do not cut or trim any grille components without written approval by AGS, Inc.
- F. Do not erect any damaged or deformed members. Remove or replace any damaged members in the erection process as directed by AGS, Inc.
- G. Set grille units level, plumb, with uniform joints.



Architectural Trellis & Decorative System



Pioneer Care Center, Fergus Falls, MN

Functions:

- Canopies
- Solar Barriers
- Decorative Walls
- Room Divider
- Limit Heat from Direct Sunlight
- Provide a Focal Point of Interest
- Privacy Screen

Specialties:

- 107300



900 S. Clark, Chicago, IL



AGS INC
Architectural Grilles & Sunshades

Trellis

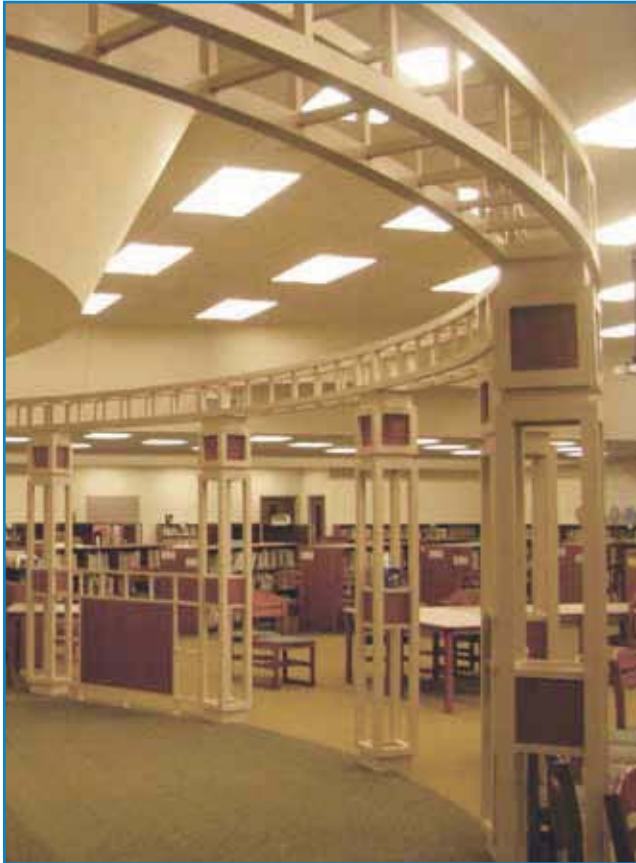
9950 West 190th Street, Mokena, IL 60448

ph: 708.479.9458 fx: 708.479.9478

agsshade.com



Architectural Trellis & Decorative System



Butterfield Elementary School, Libertyville, IL



900 S. Clark, Chicago, IL



Iowa Western Community College, Shenandoah, IA



Trellis



3601 Market Street, Philadelphia, Pennsylvania



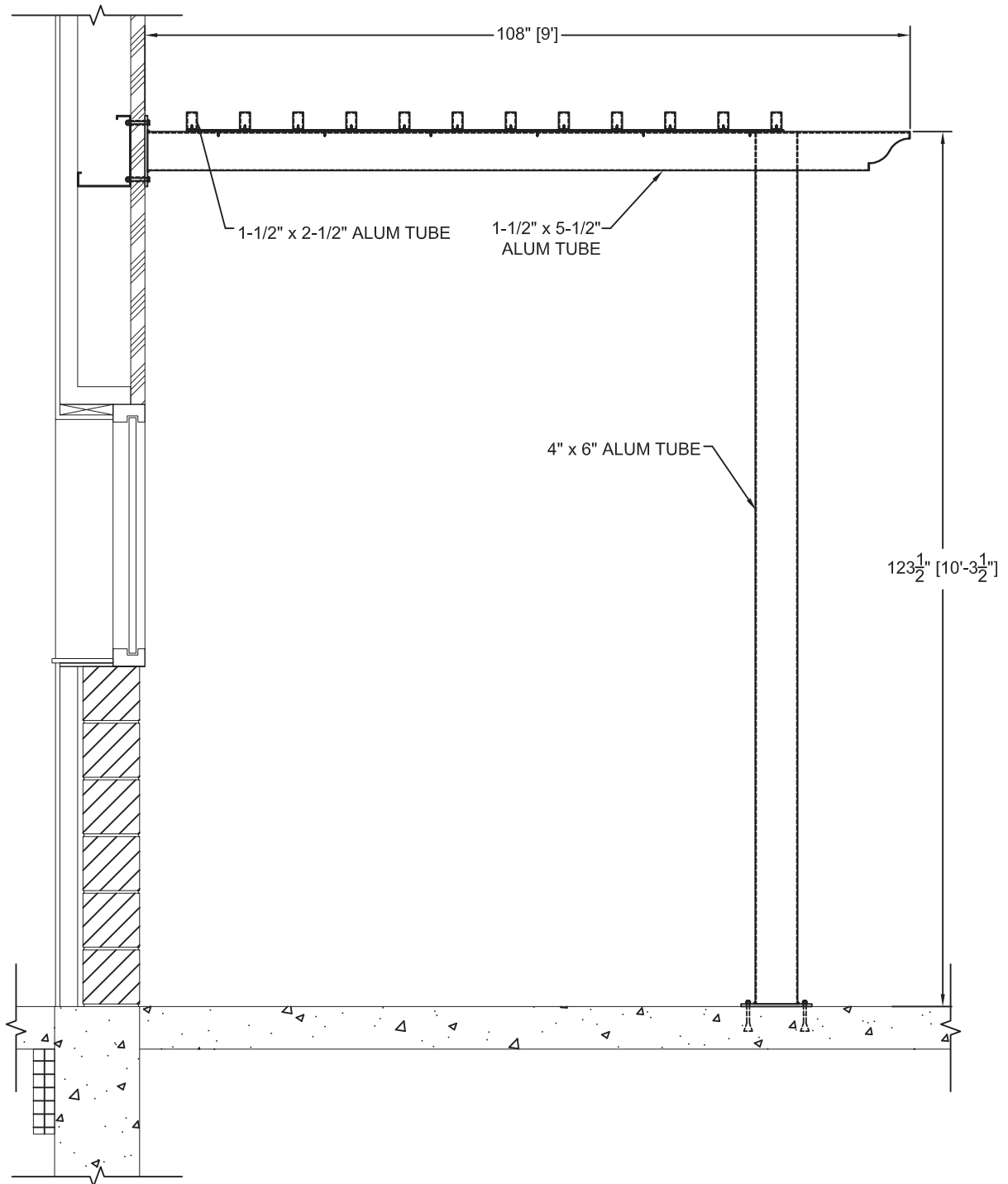
*Indiana University,
Bloomington, Indiana*



UCCS Lane Center, Colorado Springs, Colorado

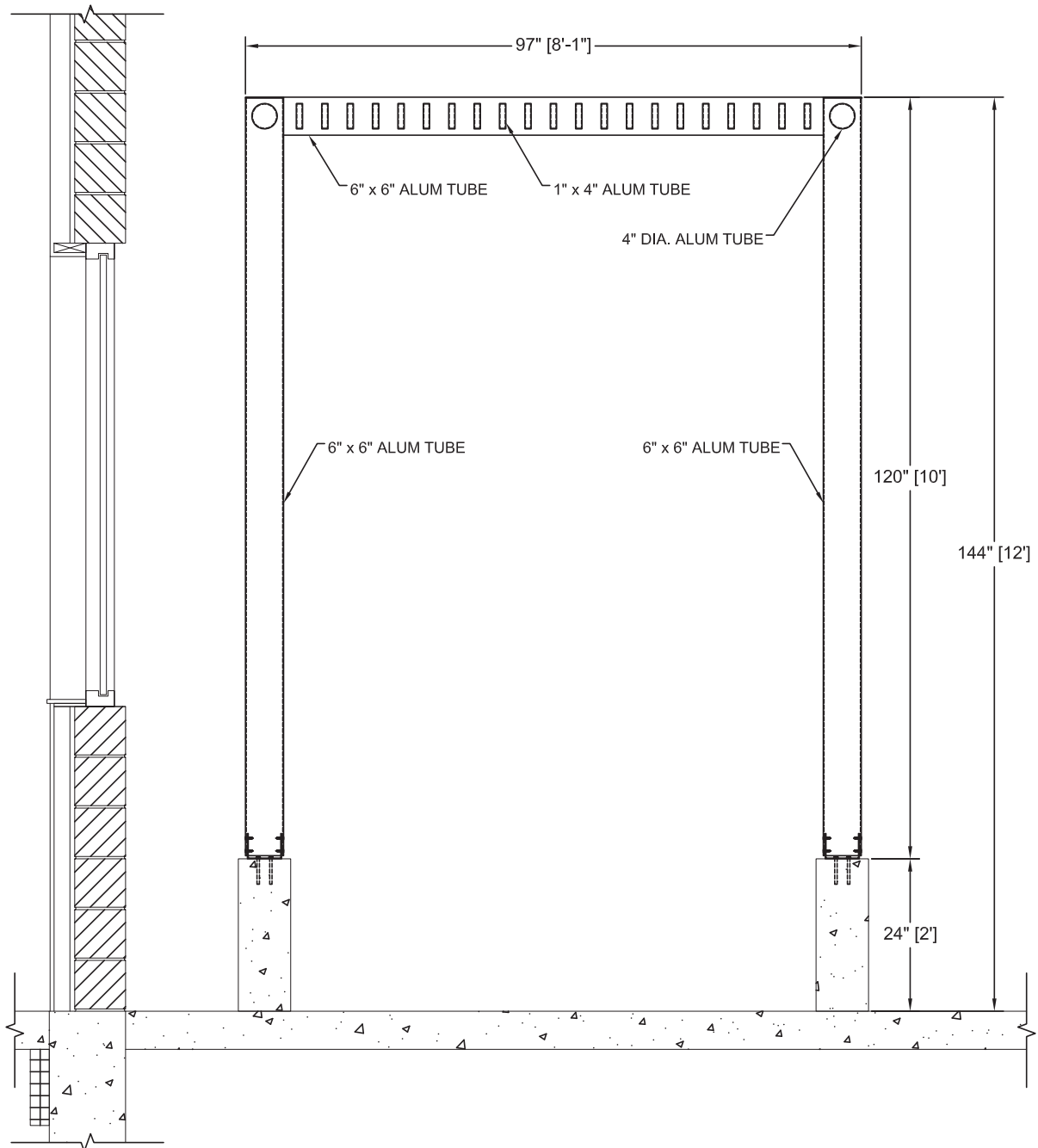


Architectural Trellis & Decorative System



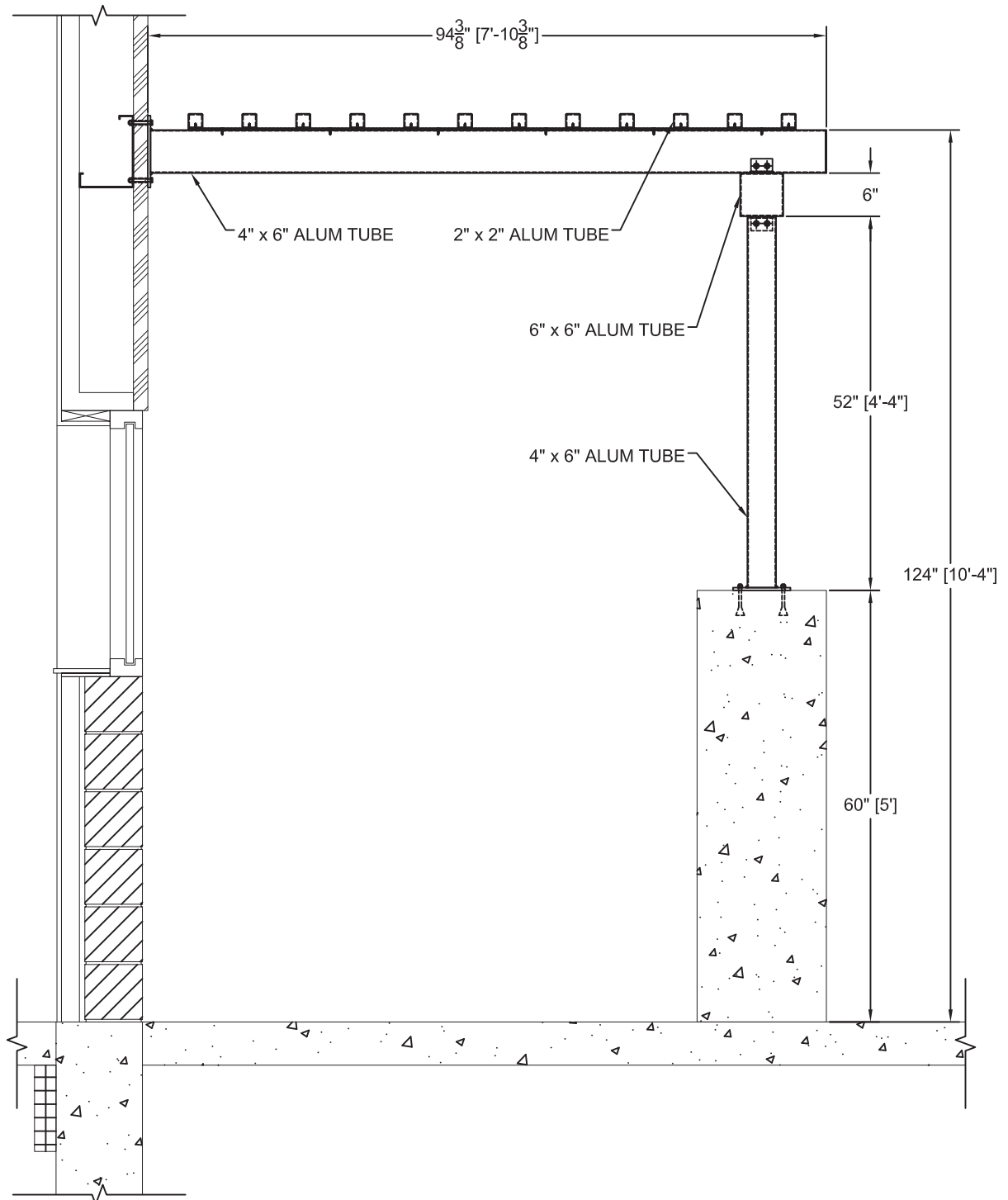


Architectural Trellis & Decorative System





Architectural Trellis & Decorative System

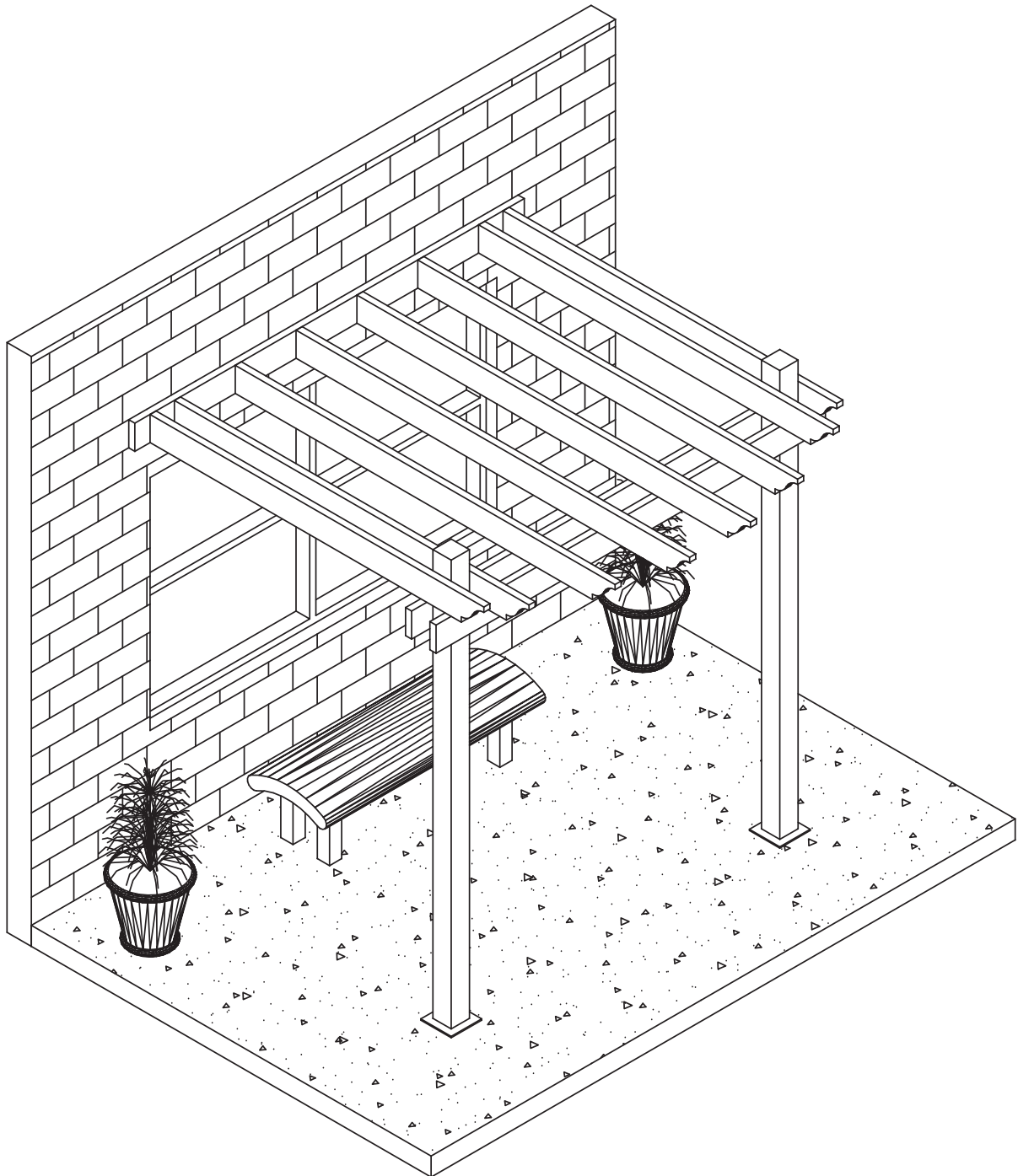




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Architectural Grilles & Sunshades

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708.479.9458 | agsshade.com

Architectural Trellis & Decorative System





Aluminum Trellis • Guide Specifications #107300

Part 1 – General

1.1 Summary

- A. This section includes products to assist in controlling the effects of the sun.
- B. Related work specified elsewhere
 - 1. Concrete Section
 - 2. Sheet Metal Work Section
 - 3. Glazed Aluminum Curtain wall Section
- C. Work included in this section.
The extent of the extruded aluminum trellis system is shown on the contract drawings and hereby defined to include all trellis devices of the type shown and specified herein.

1.2 Industry Standard

- A. Reference: Products and executions are specified in this section by reference to the following industry and/or trade specifications or standards of the following:
- B. National Association of Architectural Metal Manufacturers (NAAMM), the Aluminum Association (AA), American Architectural Manufacturers Association (AAMA).

1.3 Qualifications

- A. Manufacturers:
 - 1. Standard
 - 2. For the purpose of designation type and quality for the work under this section, drawings and specifications are based on the products manufactured by:
Architectural Grilles and Sunshades, Inc. (AGS, Inc.)
Address: 9950 W. 190th Street • Mokena, IL 60448
Phone: (708) 479-9458 • Fax: (708) 479-9478
Contact: Eric Niemeyer (e-mail: eric@agsshade.com)
- B. Acceptable Manufacturers:
Subject to compliance with these specifications, products as manufactured by:



1.4 Submittals

- A. Product data:
Manufacturer's technical and descriptive data.
- B. Shop Drawings:
Submit for architect's approval prior to commencement of any work or fabrication under this section, _____ sets of detail shop drawings showing all areas of work profiles and sections of all components, finishes and fastening details.
- C. Structural Calculations:
Submit comprehensive analysis of design loads, dead, live, snow, wind and thermal movements. Calculations shall be stamped and signed by a professional engineer registered in the jurisdiction where the project is located.
- D. Warranties:
The work in this section shall be guaranteed against defects in material and workmanship for a period of one (1) year from date of acceptance of the building. Contractor shall replace and repair any defects at no cost to the owner.

1.5 Components

- A. Shipping and Handling:
Deliver materials to the job site ready for erection. Assembled units to be packaged and shipped to prevent damage during freight and storage on site.

Part 2 – Products

2.1 Materials

- A. General: Metal shall be free from defects impairing strength, durability or appearance.
 - 1. Aluminum – ASTM B 221, alloys 6063-T5 and 6063-T6 for extrusions. ASTM B 209, alloys 5052-H32 or greater.
 - 2. Fasteners – Unless otherwise noted, fasteners shall be 300 series non-magnetic stainless steel. ASTM A-307, grade A or better

2.2 Components

- A. Trellis component shall be – 6063 T5 extruded aluminum AGS, Inc.
- B. Trellis Vertical Supports shall be – 6063 T5 extruded aluminum AGS, Inc.
- C. Trellis Horizontal Supports shall be – 6063 T5 extruded aluminum AGS, Inc.
- D. Components shall be shop assembled in large practical sections to allow for immediate erection.



2.3 Aluminum Finish

A. General:

Finish on exposed aluminum shall be compliant with the performance standards set forth in AAMA Specifications 2605-98, "Superior Performing Organic Coatings on Aluminum."

B. Type:

Factory-applied, high performance, 70% Polyvinylidene Fluoride (PVDF) coating based on Elf Atochem Inc. Kynar 500 or Ausimont USA Inc. Hylar 5000 resin, formulated by a licensed paint manufacturer, and applied by paint manufacturer's warranty-approved applicator.

C. Pretreatment:

Applicator to pretreat the aluminum with solutions to remove organic and inorganic surface soils, remove residual oxides, followed by a chrome phosphate conversion coating- at minimum 40 mg/square foot – to ensure adhesion of paint to the aluminum.

D. Application:

One primer coat, one color coat, for a minimum of 1.2 mils of dry film thickness.

E. Color:

Architect to choose standard color.

OR

- A. Class I, clear anodic finish: AA-M12C22A41 (Mechanical Finish: Chemical finished: etched, medium matte; anodic coating: Architectural class I, clear coating 0.018 mm or thicker) complying with AAMA 607.1.

Part 3 – Execution

3.1 Field Dimensions

- A. Verify conditions: Examine areas where work is to be performed and identify any conditions that could be detrimental to proper or timely completion.
- B. General Contractor shall field confirm openings and elevations as shown on shop drawings prior to fabrication.
- C. Installation should not proceed until all conditions are satisfactory.

3.2 Erection

- A. Qualified installer needs to comply with manufacturer's installation instructions.
- B. Verify all dimensions and the supporting structure and provide accurate field measurements, so that the trellis will be properly designed, fabricated and fitted to the structure.
- C. Anchor trellis to the building/ concrete slab per the architectural drawings.
- D. A maximum of +/- 1/8" tolerance between any column to column spacing is acceptable.



- E. Do not cut or trim any trellis components without written approval by AGS, Inc.
- F. Do not erect any damaged or deformed members. Remove or replace any damaged members in the erection process as directed by AGS, Inc.
- G. Set trellis units level, plumb, with uniform joints.
- H. Qualified installer to erect after all adjacent painting, roofing and masonry had been completed.

3.3 **Cleaning**

- A. Clean trellis surfaces to prevent buildup of dust and debris, refer to AGS, Inc. cleaning instructions based on the finish of the material

3.4 **Protection**

- A. Protect trellis materials after installation to prevent damage by other tradespersons.



AGS INC
Architectural Grilles & Sunshades

Light Shelves

9950 West 190th Street, Mokena, IL 60448

ph: 708.479.9458 fx: 708.479.9478

agsshade.com



Aluminum Light Shelves



Madison Engineering, Madison, WI

Functions:

- Distribute natural light to inner core of building
- Reduce Brightness and Glare
- Limit Heat Gain
- Re-direct and deflect sunlight
- Maximize Daylighting and Views
- Serve as a Shading Device
- Potentially contribute points to USGBC LEED projects
- Increase Energy Efficiency

Specialties:

- 107100, 107113 & 10705



American Technical Publishers, Orland Park, IL



Aluminum Light Shelves

- Interior
- Exterior
- Operable



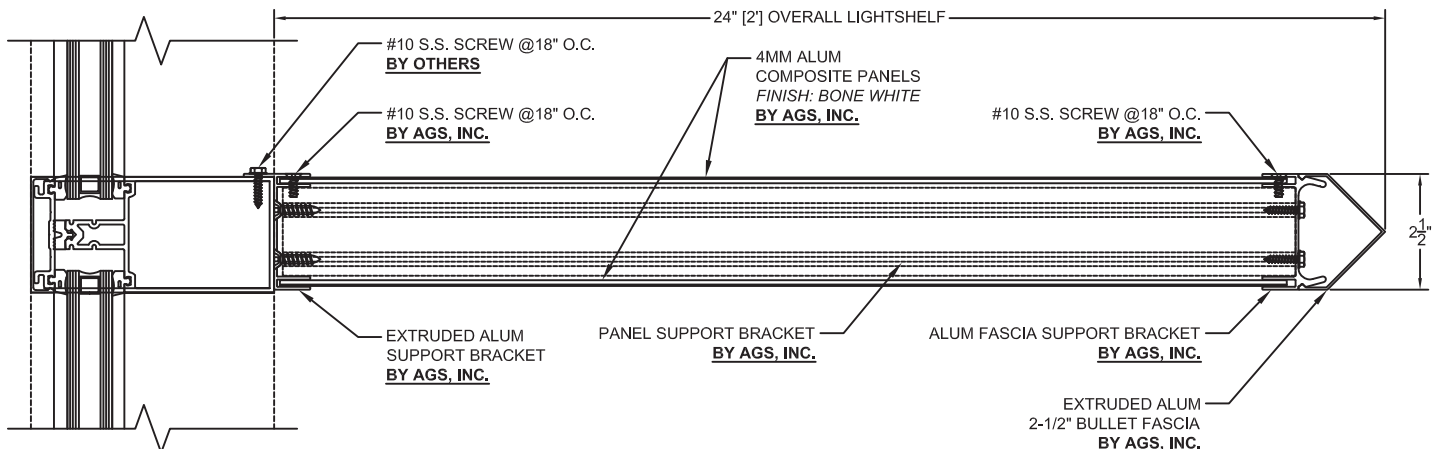
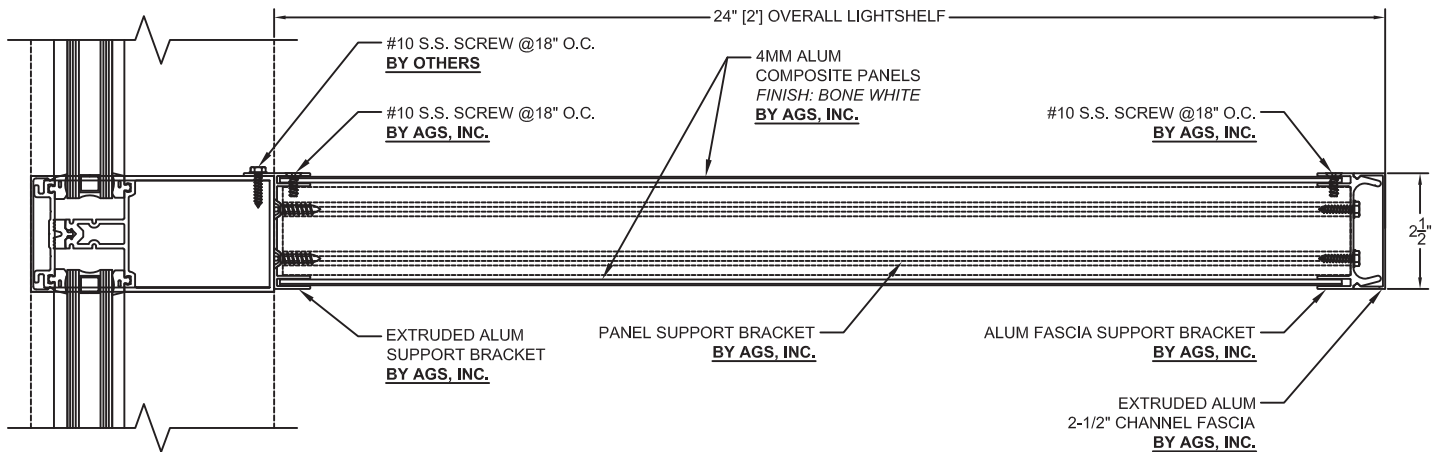
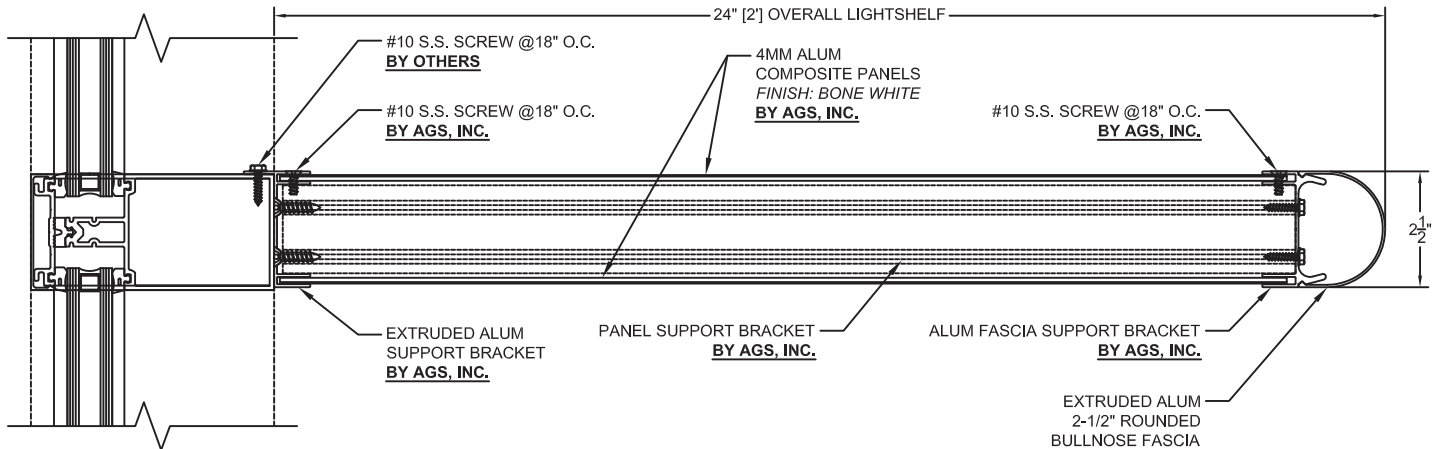
AGS, Inc., Mokena, IL



Madison Engineering, Madison, WI



Aluminum Light Shelves





Aluminum Light Shelves • Guide Specifications #107100

Part 1 – General

1.1 Summary

- A. Aluminum light shelf including support beams, anchor channels, fascia trims, and Aluminum Composite Material (ACM) panels anchored directly to the Curtain Wall intermediate horizontal members.
- B. As detailed on architectural drawings.

1.2 Qualifications

- A. Manufacturers:
 - 1. Standard
 - 2. For the purpose of designation type and quality for the work under this section, drawings and specifications are based on the products manufactured by:
Architectural Grilles and Sunshades, Inc. (AGS, Inc.)
Address: 9950 W. 190th Street • Mokena, IL 60448
Phone: (708) 479-9458 • Fax: (708) 479-9478
Contact: Eric Niemeyer (e-mail: eric@agsshade.com)
- B. Acceptable Manufacturers:
Subject to compliance with these specifications, products as manufactured by:

1.3 Submittals

- A. Shop Drawings:
Submit for architect's approval prior to commencement of any work or fabrication under this section, _____ sets of detail shop drawings showing all areas of work profiles and sections of all components, finishes and fastening details.
- B. Warranties:
The work in this section shall be guaranteed against defects in material and workmanship for a period of one (1) year from date of acceptance of the building. Contractor shall replace and repair any defects at no cost to the owner.

Part 2 – Products

2.1 Standards

- A. Standard design = bullnose fascia cap
- B. Consists of top and bottom ACM panel surfaces with separate interior extruded aluminum bullnose fascia (custom fascias available upon request).



2.2 Dimensions

- A. Light shelf assembly dimensions
 - 1. Overall light shelf assembly nominal thickness shall be 2-1/2".
 - 2. Overall projection depth (30" maximum) shall be as detailed on the architectural drawings.
 - 3. ACM panels shall be 4 mm thick.

2.3 Paint

- A. Anchor Channels and fascia trims shall be painted bone white (custom colors available upon request).
- B. Aluminum Composite Material (ACM) panels shall be painted bone white (custom colors available upon request).

Part 3 – Execution

3.1 Field Dimensions

- A. General Contractor shall field confirm openings and elevations as shown on shop drawings prior to fabrication.

3.2 Erection

- A. Qualified installer to erect after all adjacent painting, roofing, and masonry has been completed.



Gantt Center, Charlotte, NC

Aluminum Sunshades - Sun Control Devices

Functions:

- Limit Heat Gain
- Prevent Glare
- Daylighting
- Distinguish Buildings
- Architectural Signature

Specialties:

- 107100, 107113 & 10705



CSU Stanislaus, Turlock, CA



Aluminum Sunshades - Sun Control Devices

- Horizontal
- Cantilevered
- Suspended
- Vertical
- Custom Design



Dickinson High School, Dickinson, TX



Courtyards Woodfield, Schaumburg, IL



Sears Centre, Hoffman Estates, IL



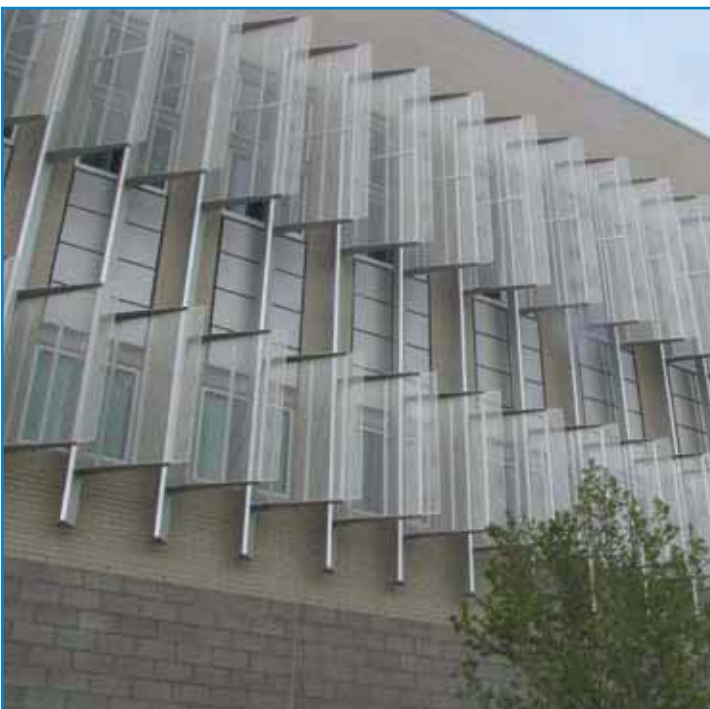
Aluminum Sunshades - Sun Control Devices



Joe Crowley, Reno, NV



Open Road Tolling, Oak Brook, IL



Houston Community College, Houston, TX



Roseland Medical Center, Chicago, IL



Aluminum Sunshades - Sun Control Devices



Denver Children's Hospital, Denver, CO



Wasatch Junior High School, Salt Lake City, Utah



Tidewater Community College, Norfolk, VA



Conant High School, Hoffman Estates, IL



AGSINC
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Sunshades

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agsshade.com



Aluminum Sunshades - Sun Control Devices



Homewood Hilton, Las Vegas, NV



Schwans, Lino Lakes, MN



Hidden Oaks Nature Center, Bolingbrook, IL



Cincinnati Fire Station, Cincinnati, OH



Aluminum Sunshades - Sun Control Devices



Fire Department 34, El Paso, TX



Stanford Medical Center, Redwood City, CA



Sebert Landscaping, Bartlett, IL



Ruth's Chris, Mishawaka, IN



Aluminum Sunshades - Sun Control Devices



901 Jefferson, Oakland, CA



Coover Hall, Ames, IA



Frontier Park, Naperville, IL



CCCC, Commerce City, CO



Dayton Daily News, Dayton, OH



Aluminum Sunshades - Sun Control Devices



Half Moon Brew Pub, Kokomo, IN



*Lincoln Lancaster County
Health Department, Lincoln, NE*



American Technical Publishers, Orland Park, IL



*Courtyard Marriot,
Columbia, SC*



Joyce Ellington Library, San Jose, CA



Sunshades



Cottonwood, Cottonwood Heights, Utah



Cottonwood, Cottonwood Heights, Utah



Sunshades



NEIU, Chicago, Illinois

NEIU, Chicago, Illinois



NEIU, Chicago, Illinois



Sunshades



Clemson, Clemson, South Carolina



Utah Capital Building, Salt Lake City, Utah



Sunshades



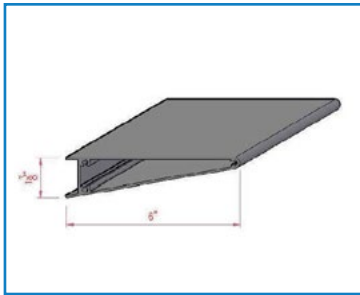
Chicago Public Library Chinatown, Chicago, Illinois



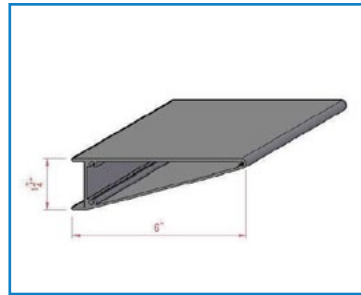
Valencia College, Orlando, Florida



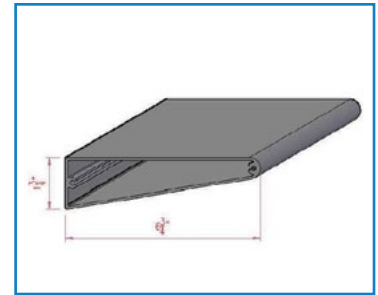
Custom Aluminum Fascias



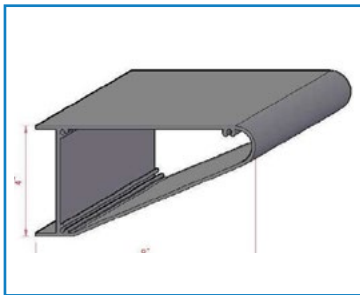
1.375"x6" Bullnose Fascia



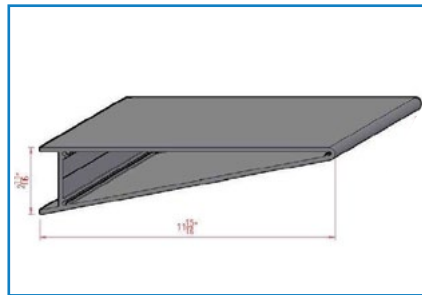
1.75"x6" Bullnose Fascia



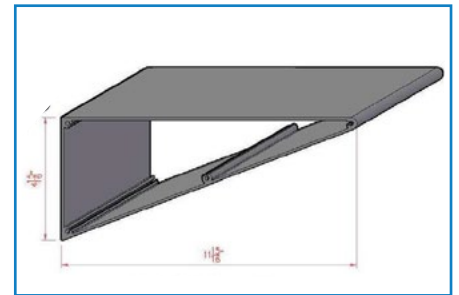
1.75"x6.75" Bullnose Fascia



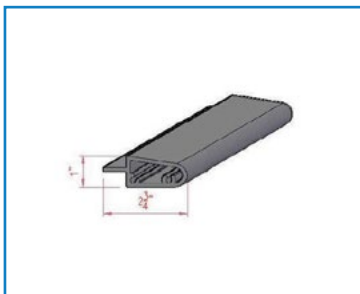
4"x8" Bullnose Fascia



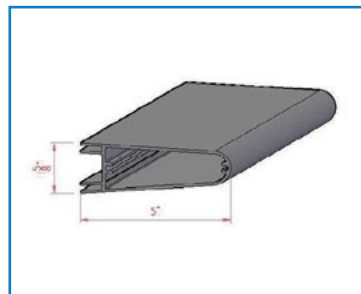
2.5"x12" Bullnose Fascia



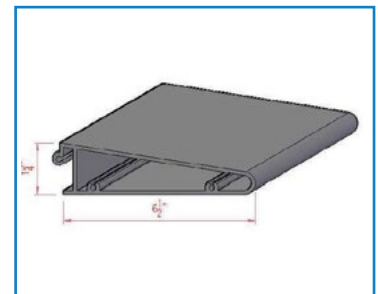
5"x12" Bullnose Fascia



1"x2.75" Bullnose Fascia



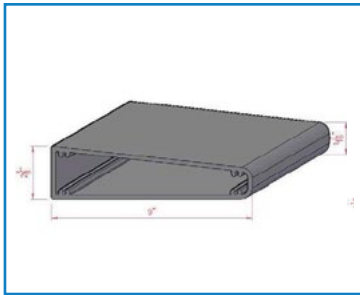
1.625"x5" Bullnose Fascia



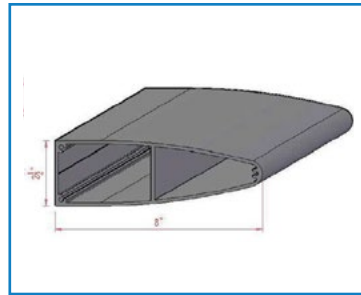
1.625"x5" Bullnose Fascia



Custom Aluminum Fascias



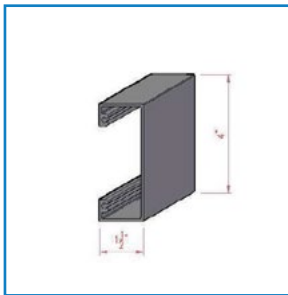
2.375"x9" Bullnose Fascia



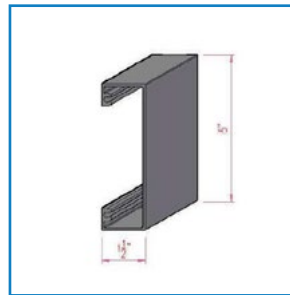
2.5"x8" Bullnose Fascia



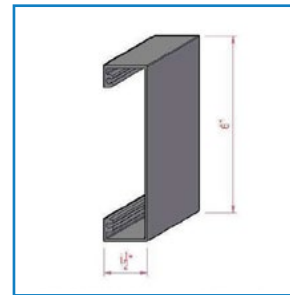
2.5"x12" Bullnose Fascia



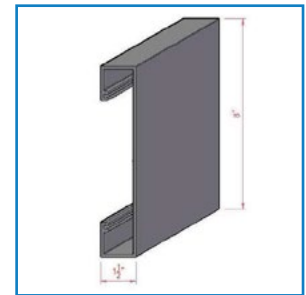
**4"x1.5"
C-Channel Fascia**



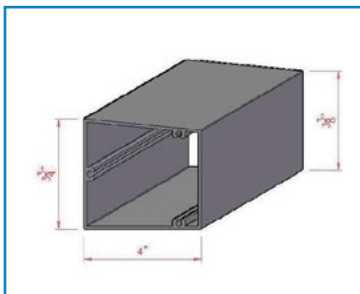
**5"x1.5"
C-Channel Fascia**



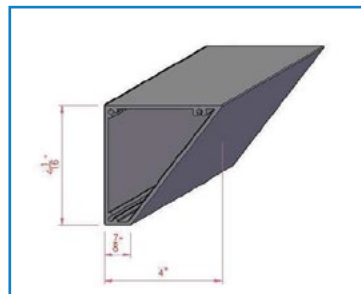
**6"x1.5"
C-Channel Fascia**



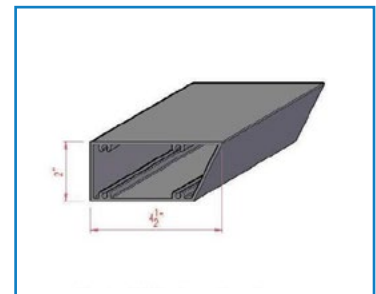
**8"x1.5"
C-Channel Fascia**



3.75"x4" Wedge Fascia



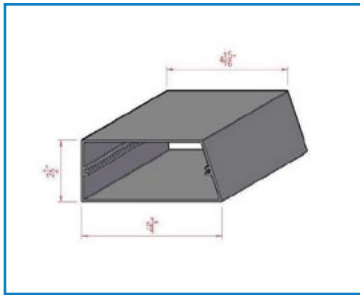
4.0625"x4" Wedge Fascia



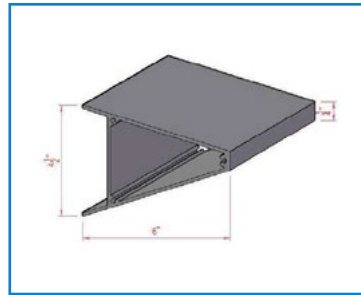
2"x4.5" Wedge Fascia



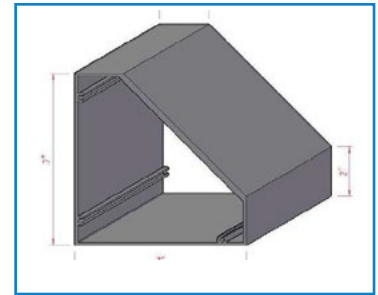
Custom Aluminum Fascias



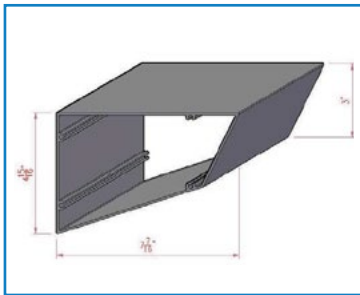
2.5"x5.75" Wedge Fascia



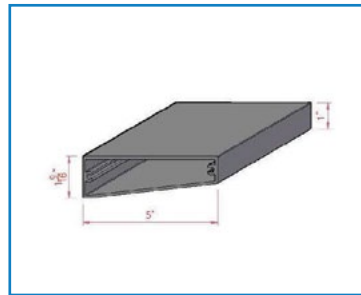
4.5"x6" Wedge Fascia



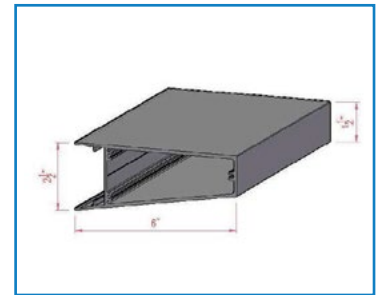
7"x7" Diamond Fascia



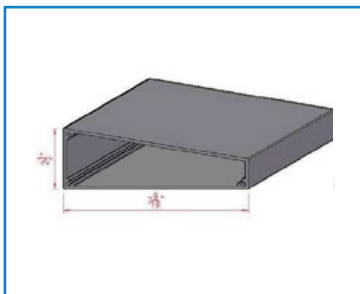
5"x7" Wedge Fascia



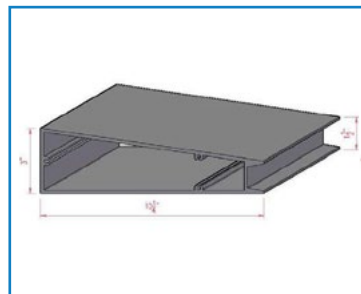
1.5"x5" Wedge Fascia



2.5"x6" Wedge Fascia



2.5"x8" Wedge Fascia



3"x10.25" Wedge Fascia



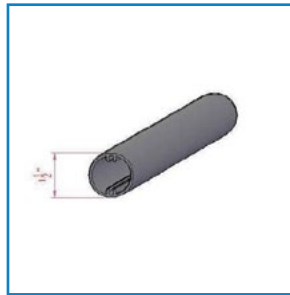
1.375"x12" Wedge Fascia



Custom Aluminum Fascias



1" \emptyset Round Tube



1.5" \emptyset Round Tube



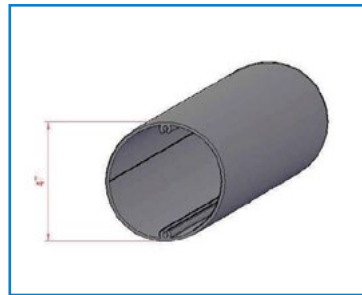
2" \emptyset Round Tube



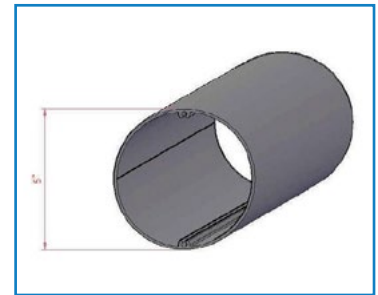
2.5" \emptyset Round Tube



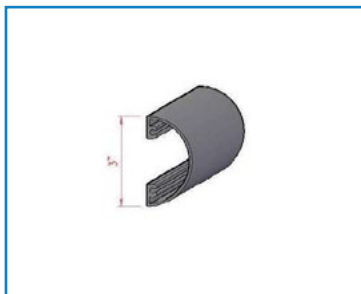
3" \emptyset Round Tube



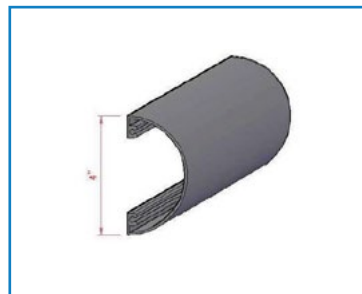
4" \emptyset Round Tube



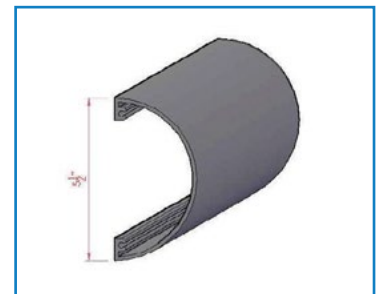
5" \emptyset Round Tube



3" Half-Round Channel Fascia



4" Half-Round Channel Fascia



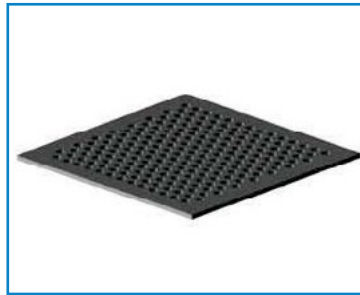
5.5" Half-Round Channel Fascia



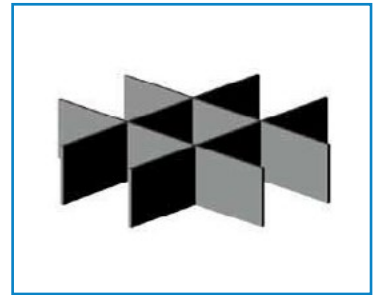
Aluminum Infill



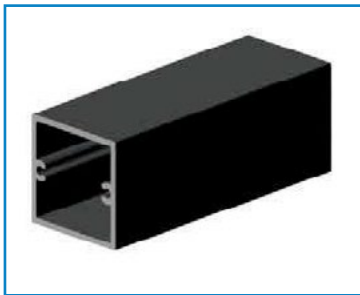
Airfoil



Aluminum Perf



Grille



Square Tube



Rectangle Tube



Round Tube



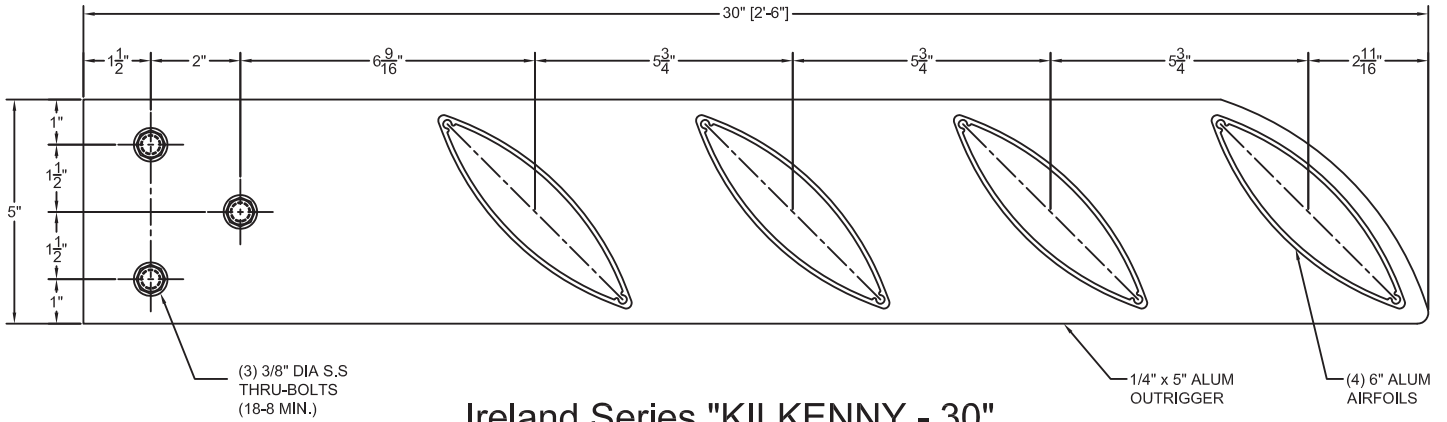
Z-Blade



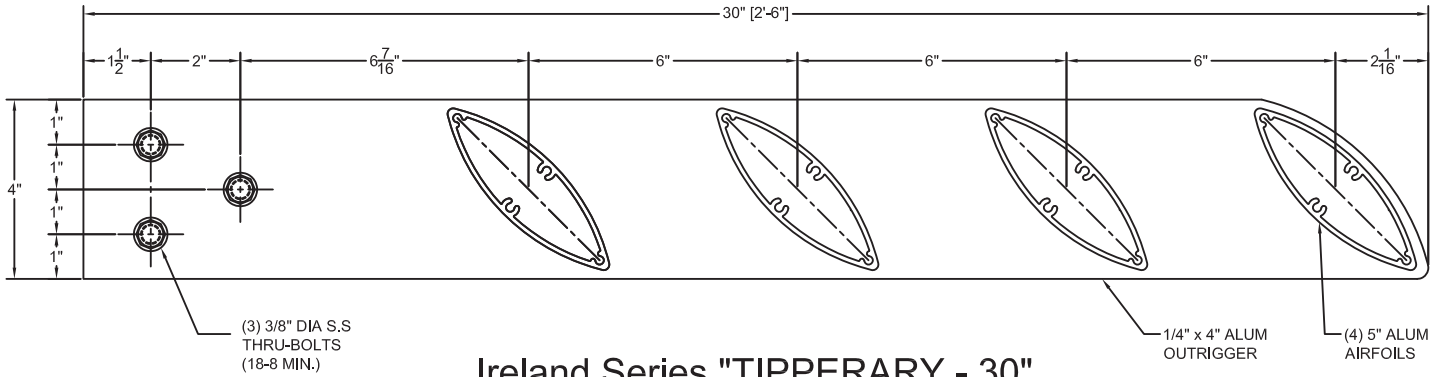
Angle



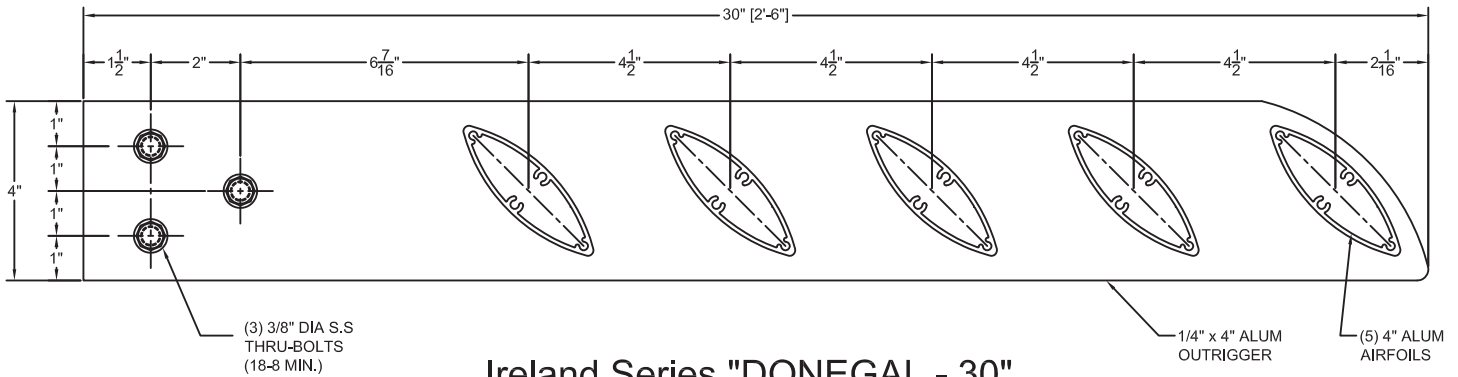
Arch



Ireland Series "KILKENNY - 30"

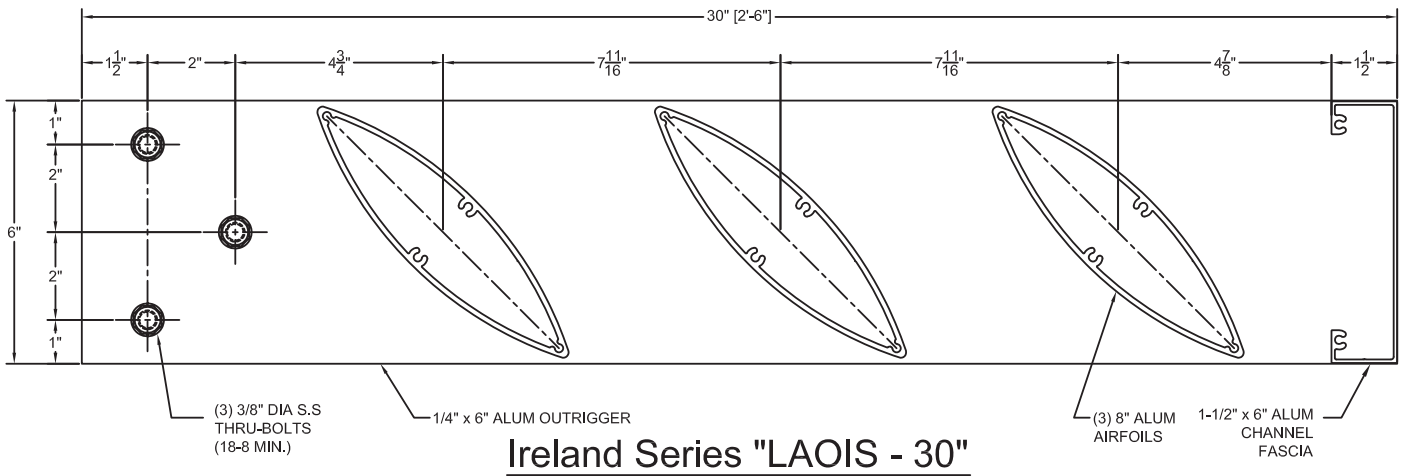
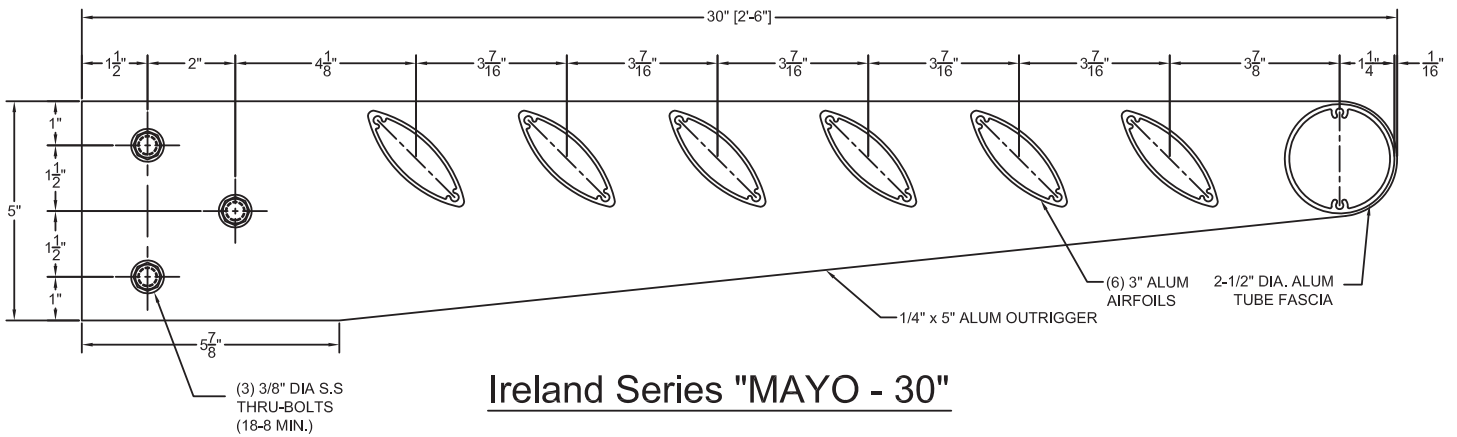
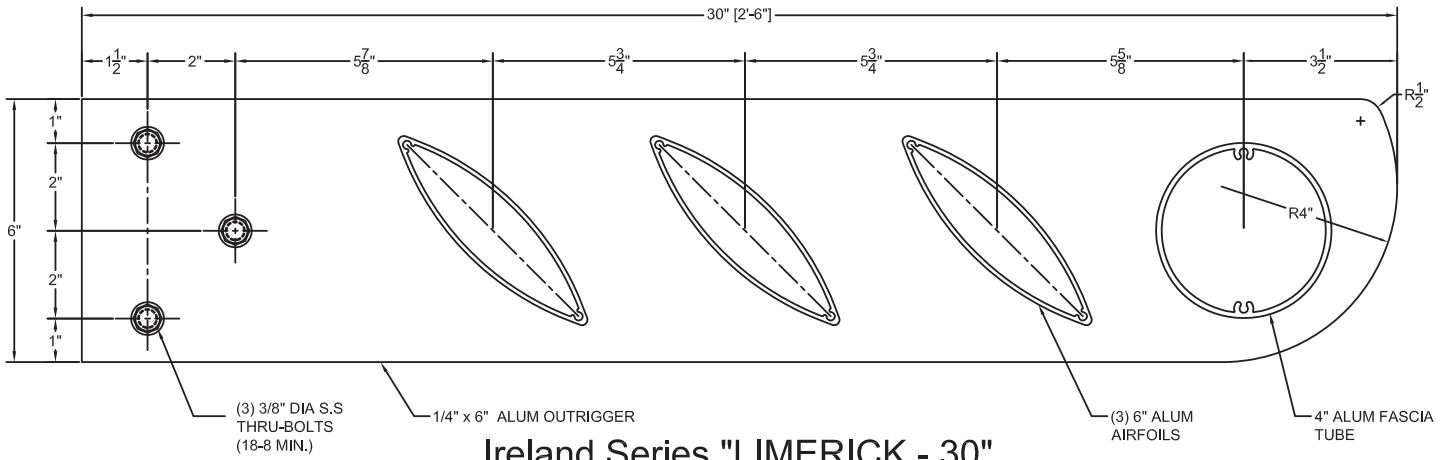


Ireland Series "TIPPERARY - 30"

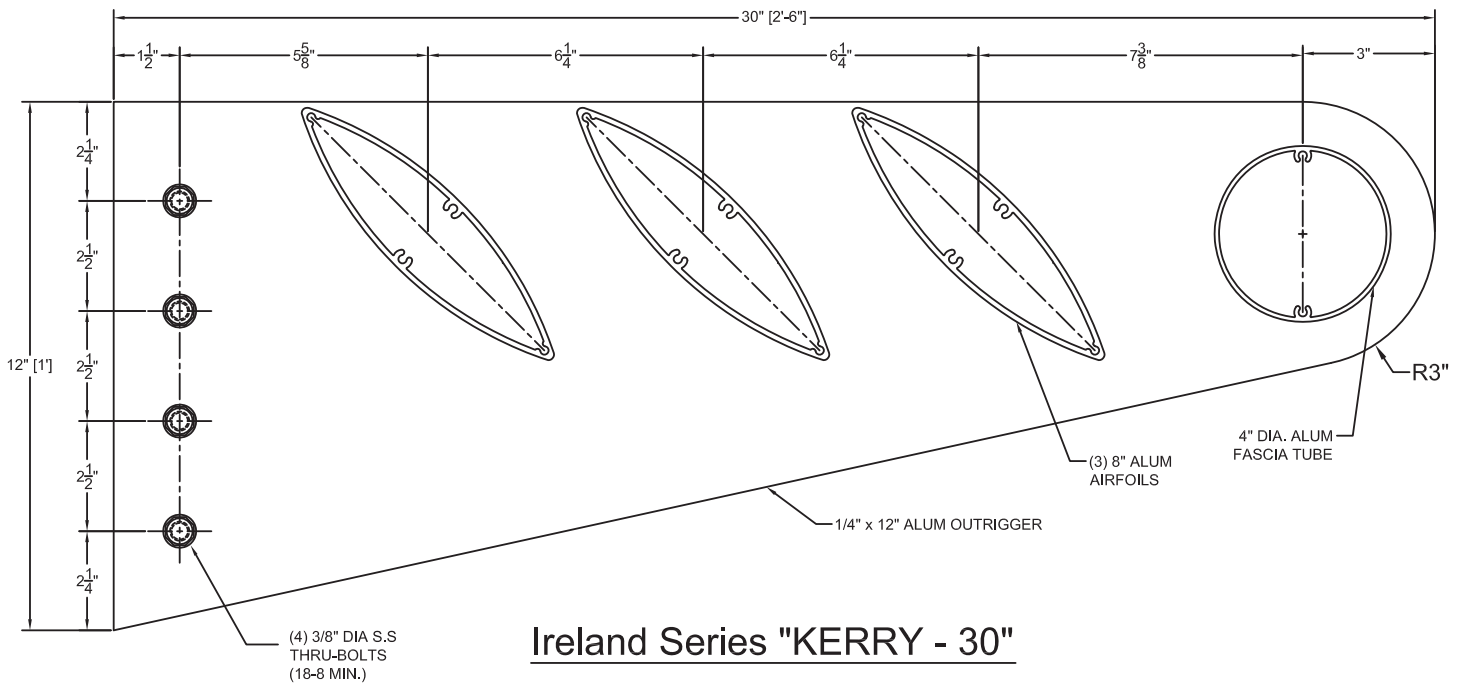
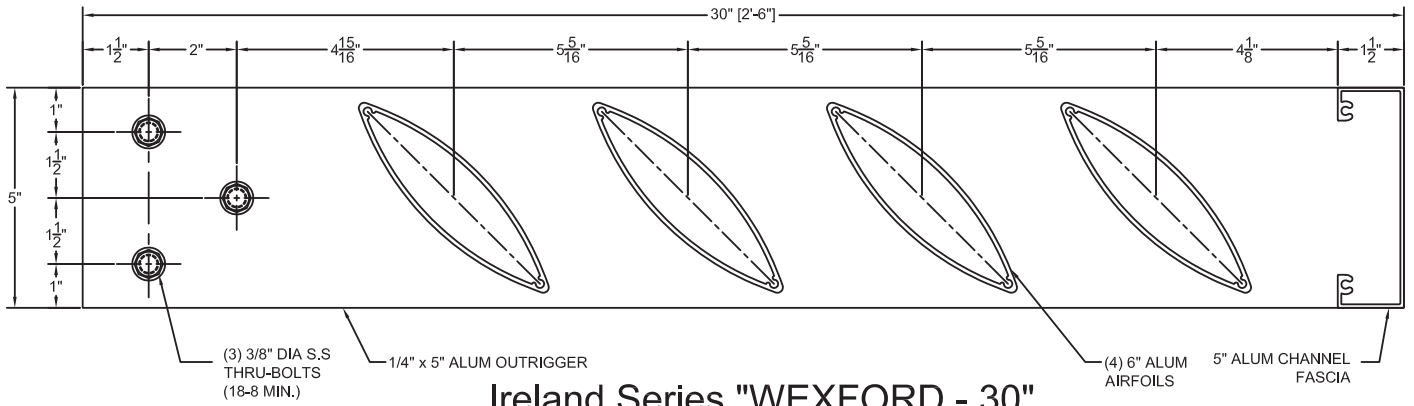
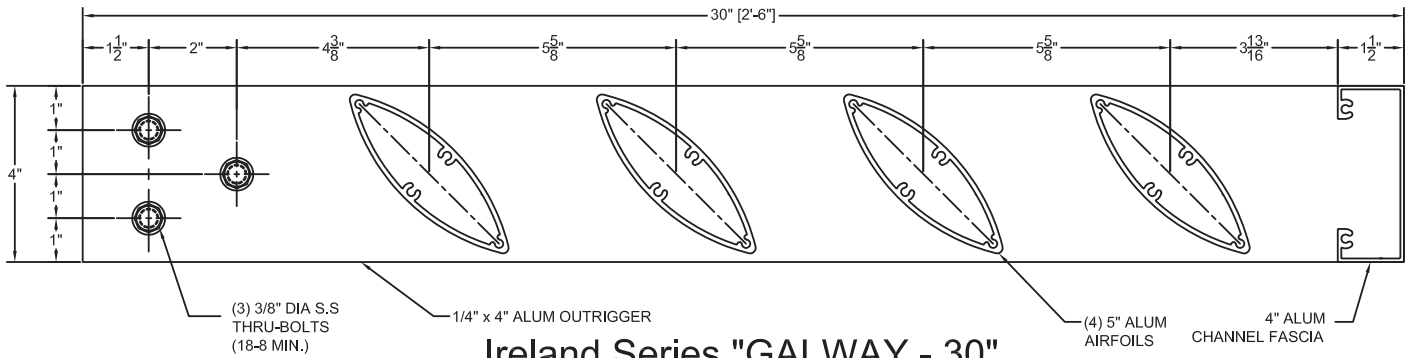


Ireland Series "DONEGAL - 30"

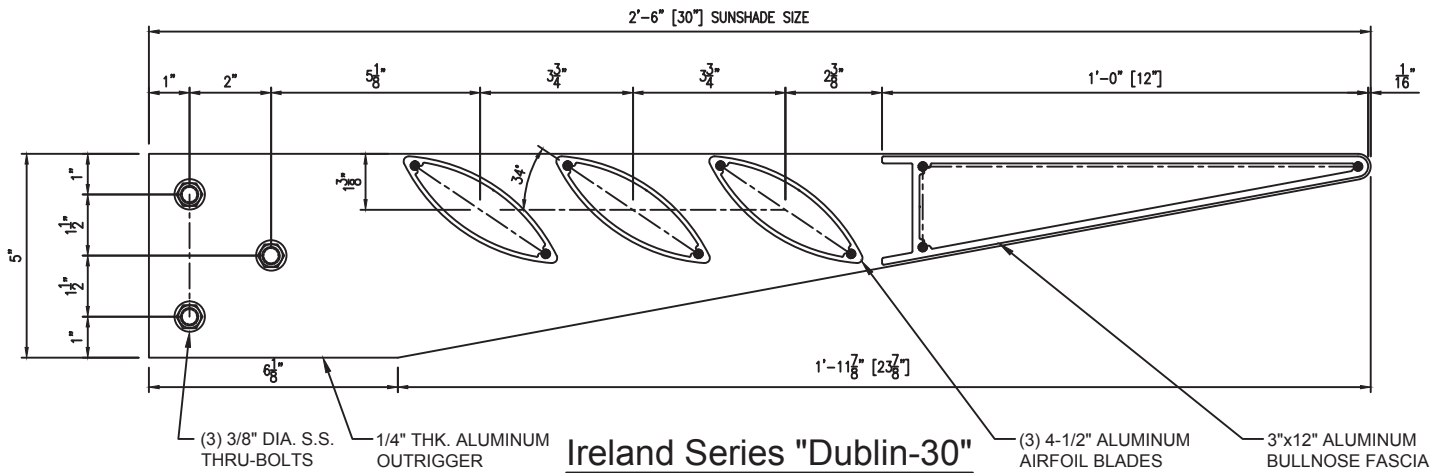
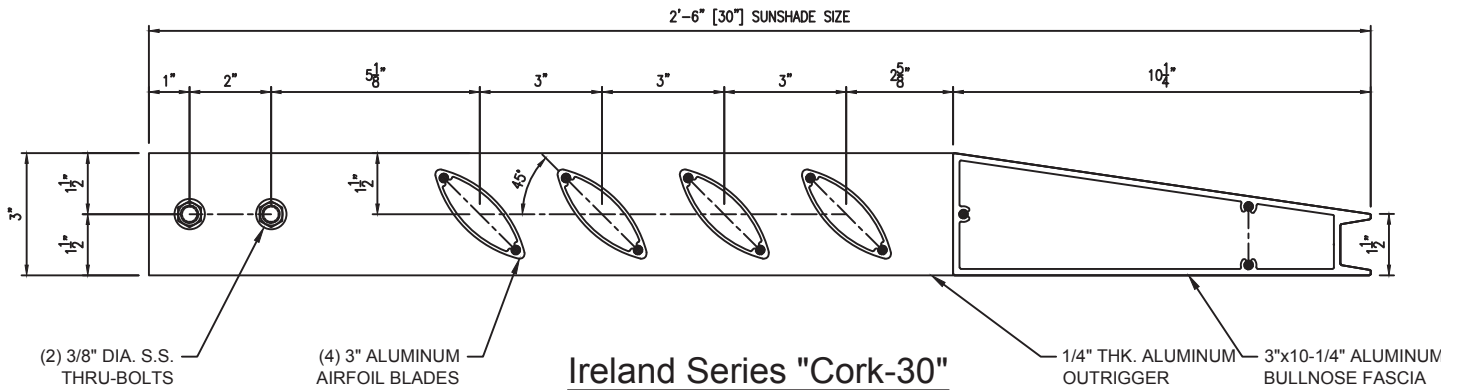
All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.



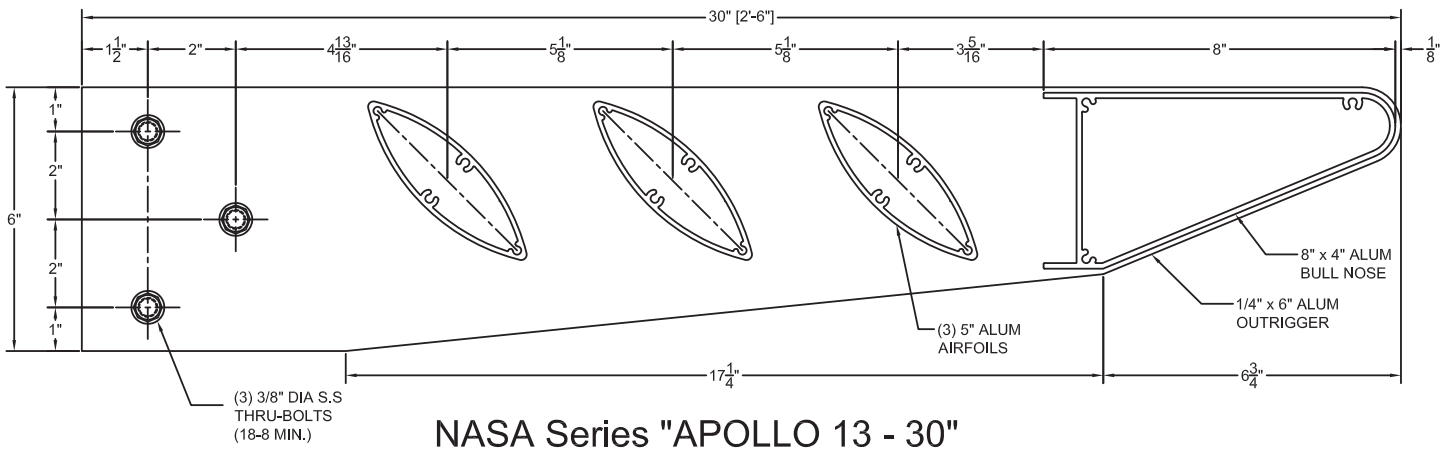
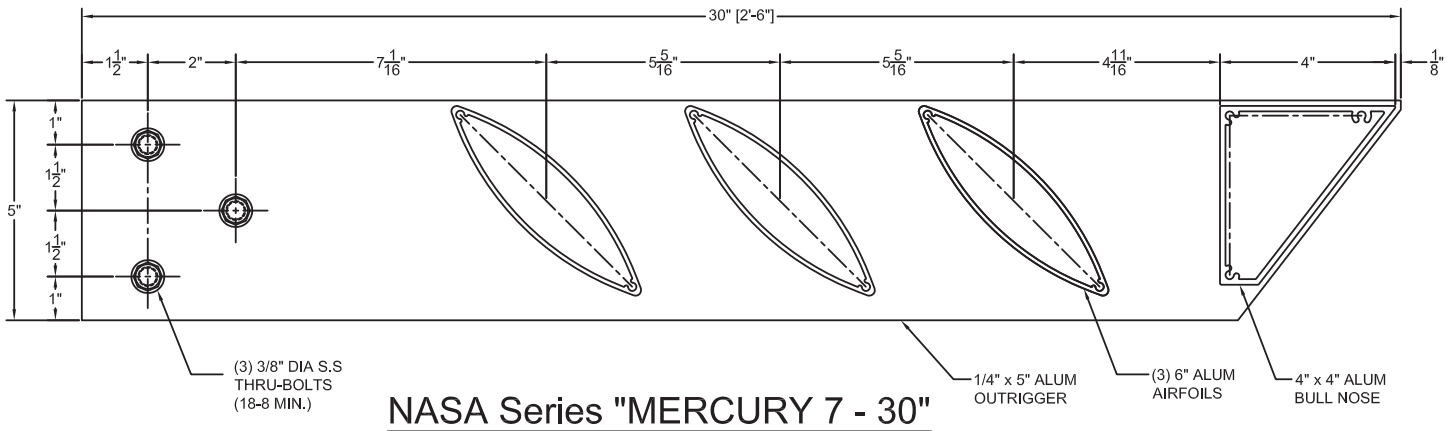
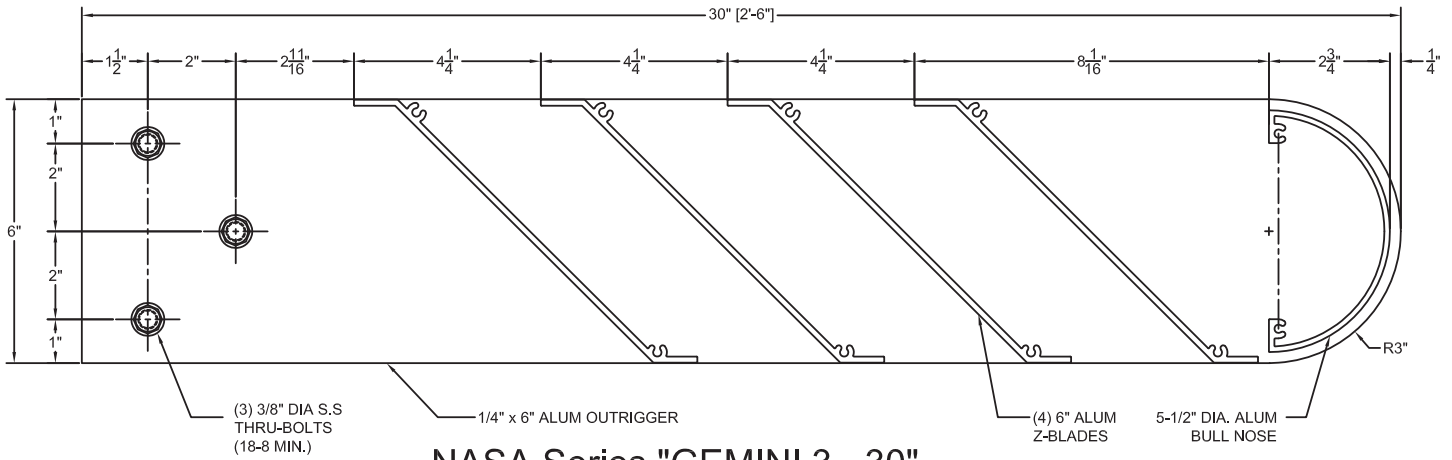
All the above models are available "as is" or "as a basis of design".
 Qualified Engineering Modifications to the above sizes and shapes are available.



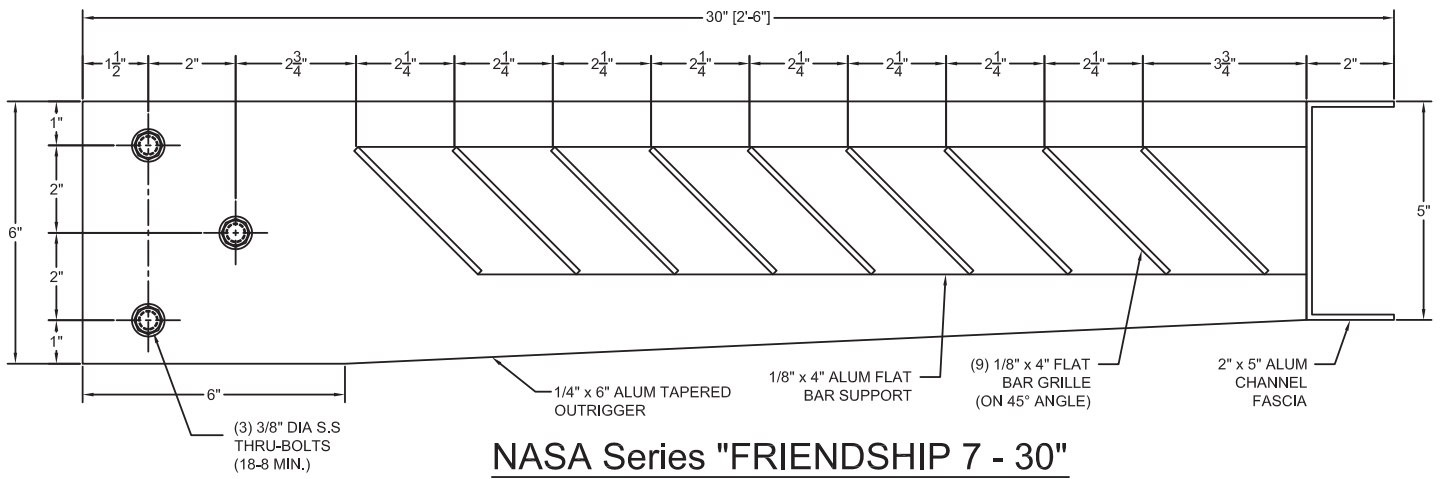
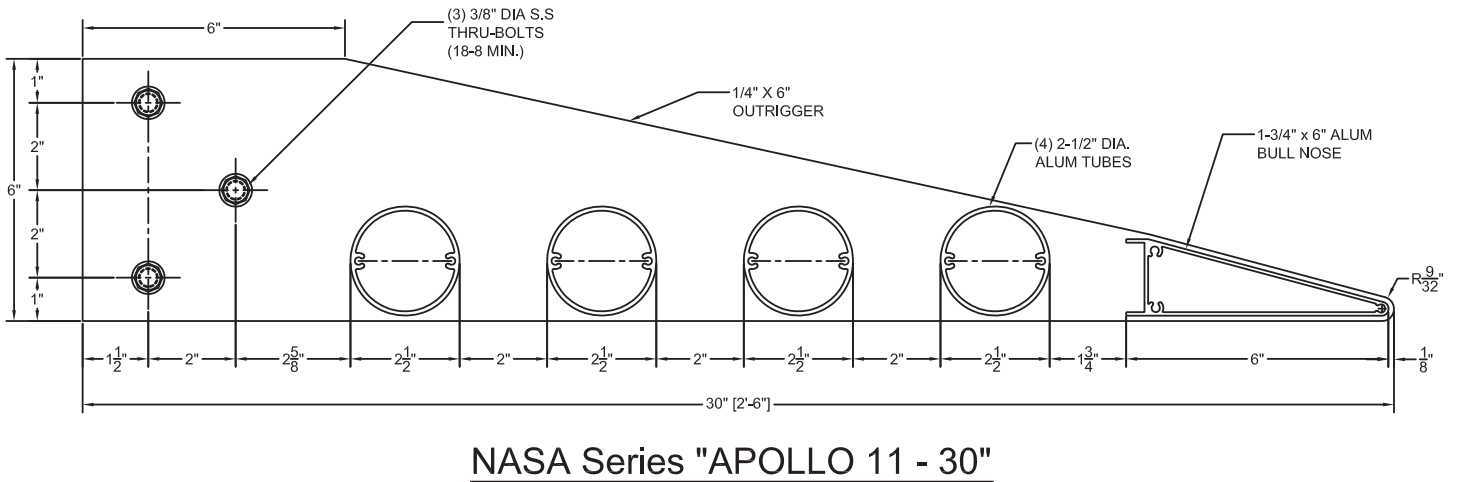
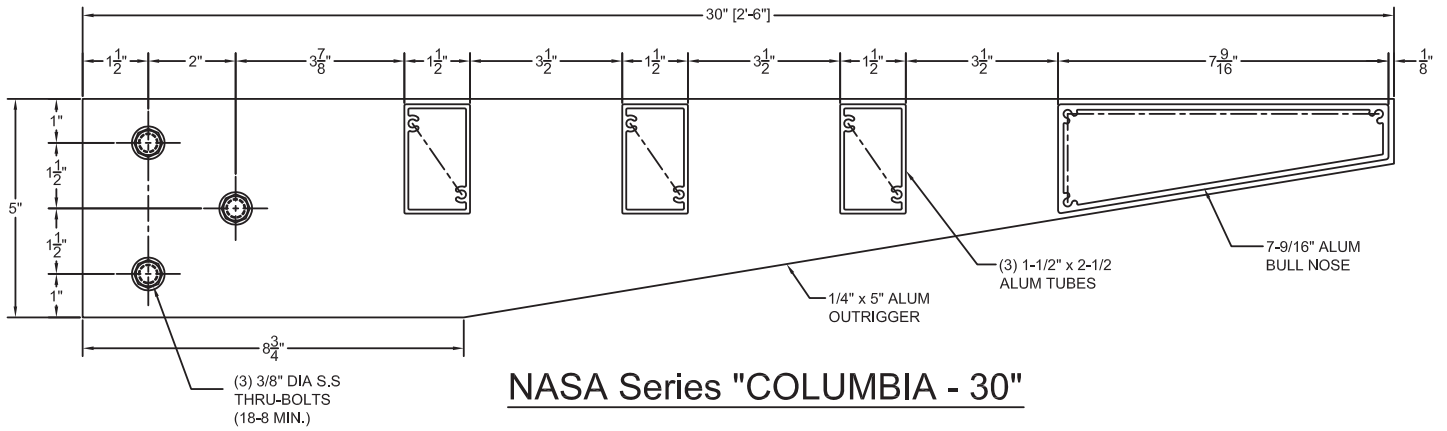
All the above models are available "as is" or "as a basis of design".
 Qualified Engineering Modifications to the above sizes and shapes are available.



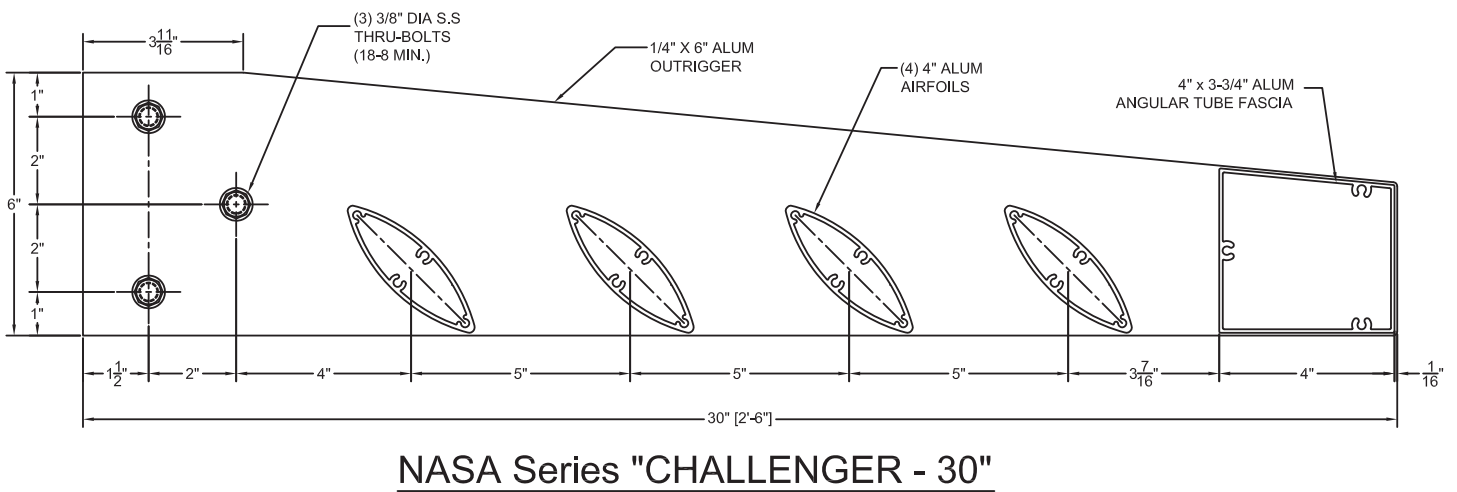
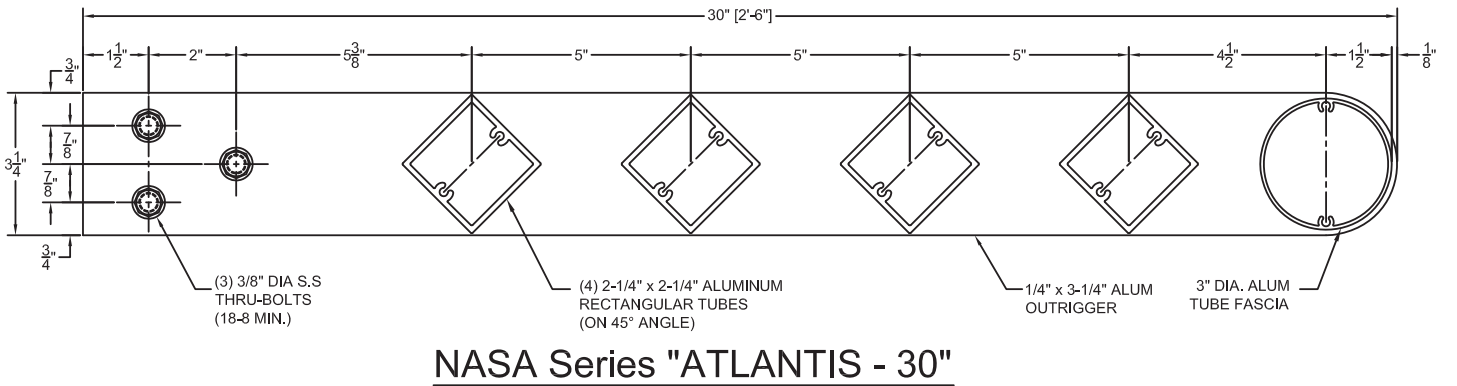
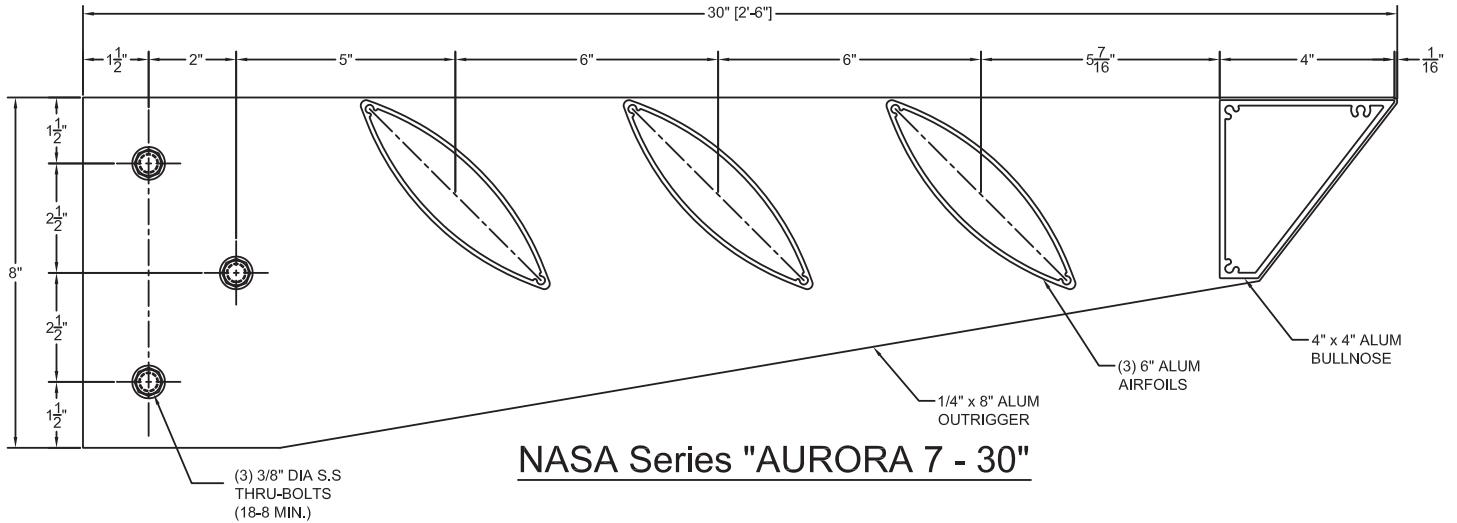
All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.



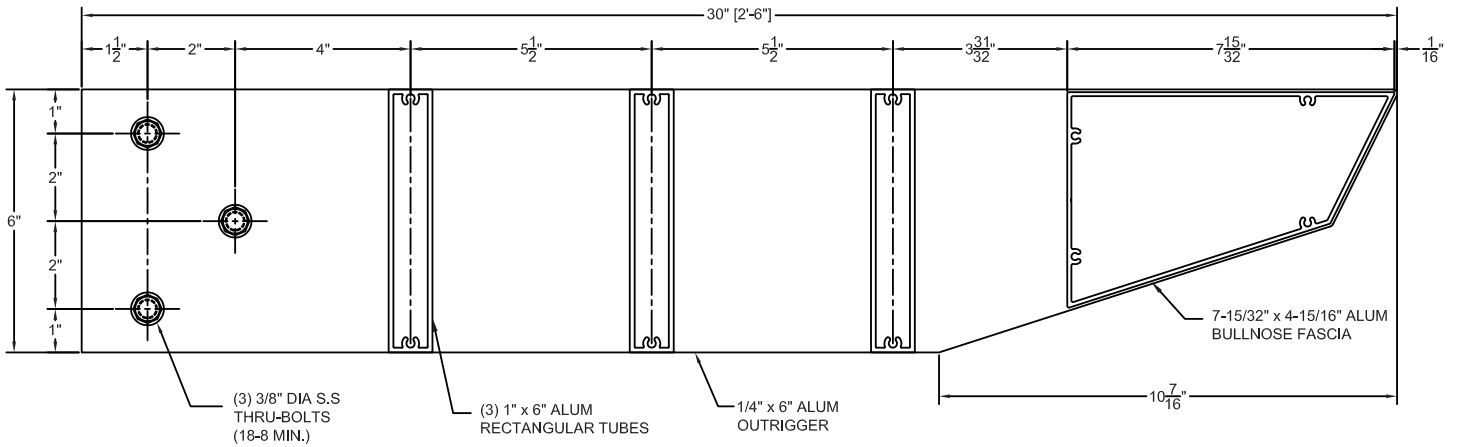
All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.



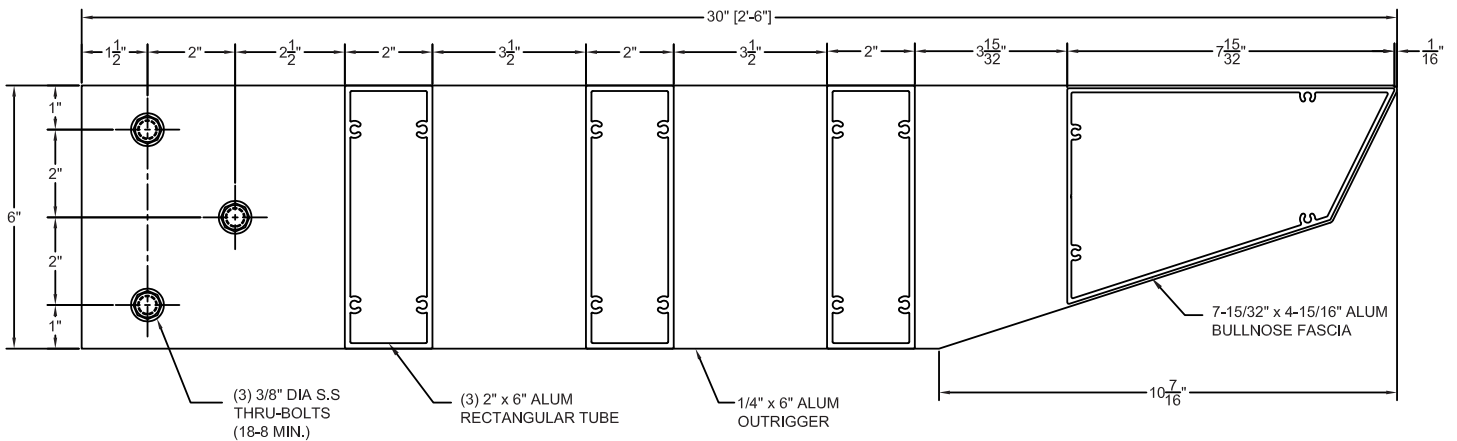
All the above models are available "as is" or "as a basis of design".
 Qualified Engineering Modifications to the above sizes and shapes are available.



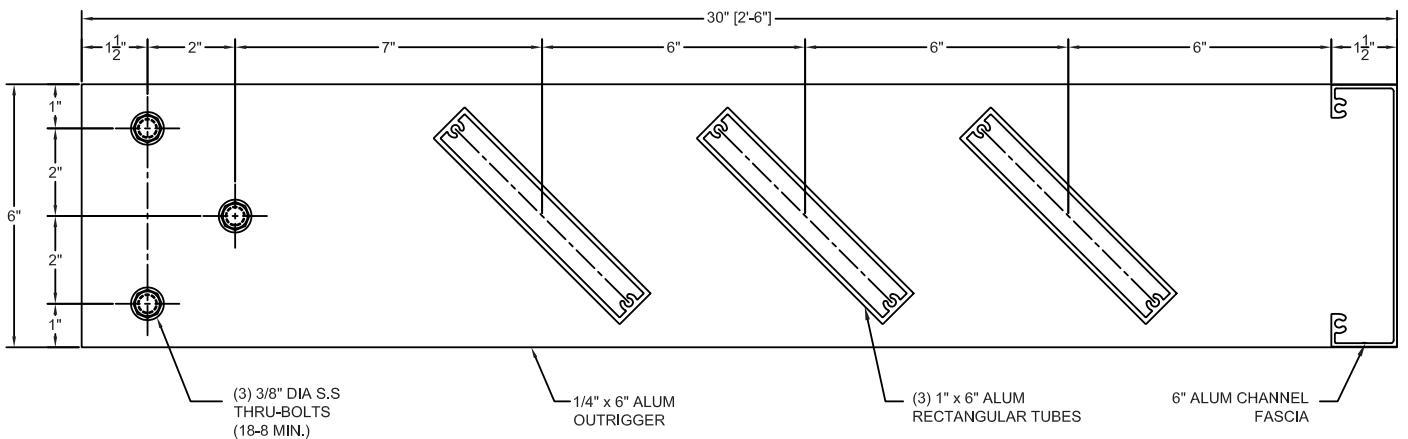
All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.



NASA Series "ENTERPRISE 1 - 30"

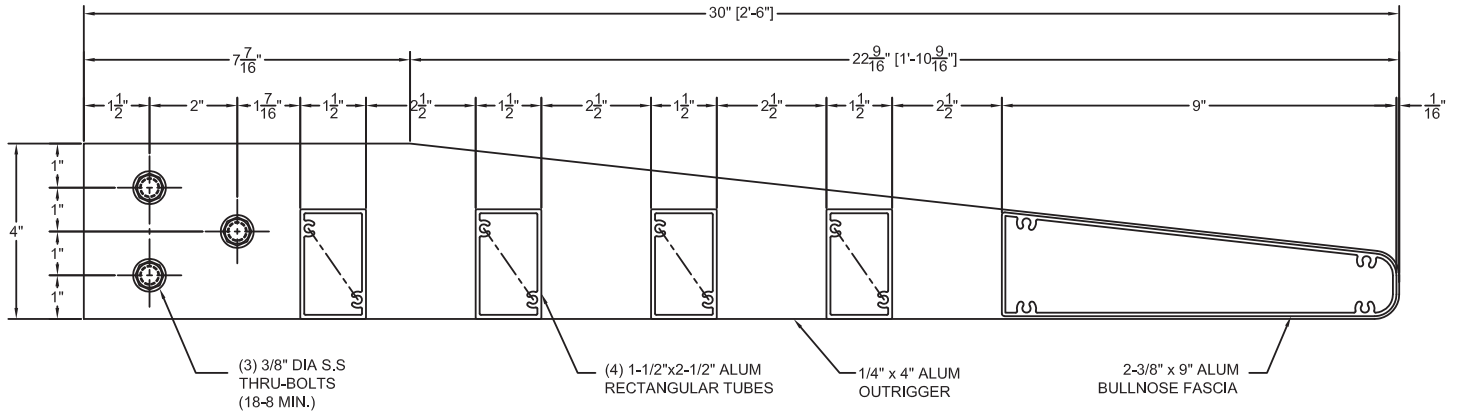


NASA Series "ENTERPRISE 2 - 30"

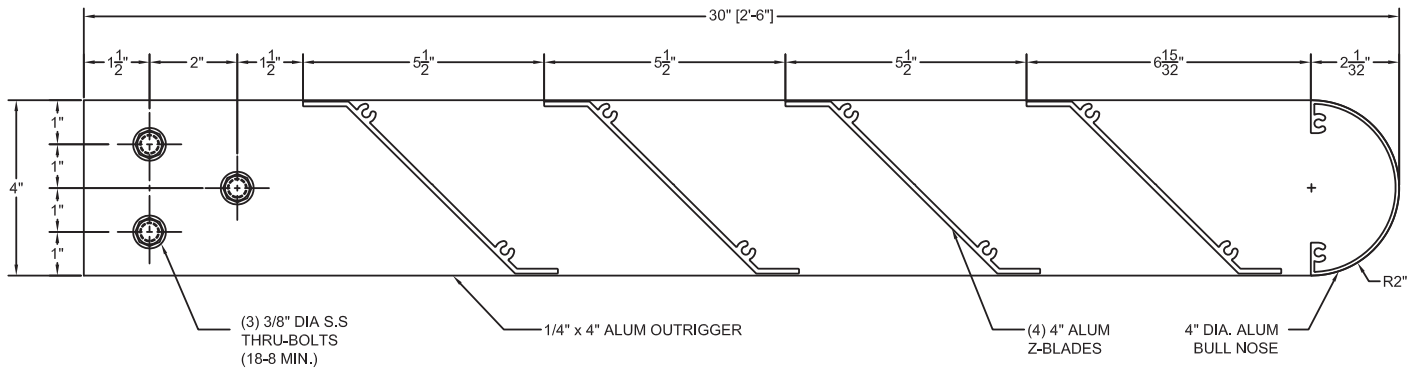


NASA Series "ENTERPRISE 3 - 30"

All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.

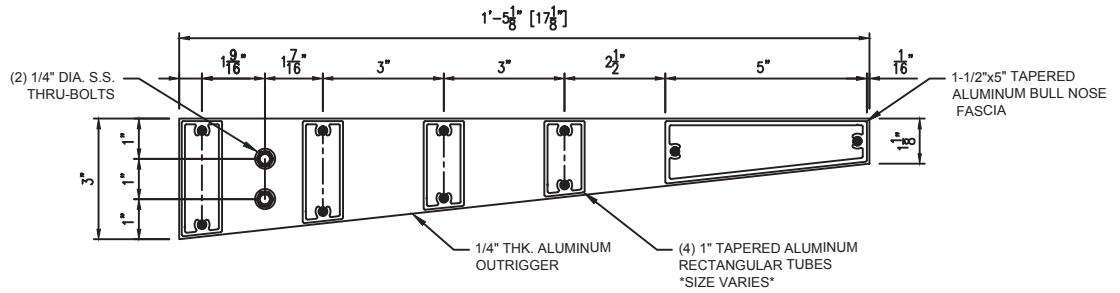


NASA Series "ENDEAVOUR - 30"

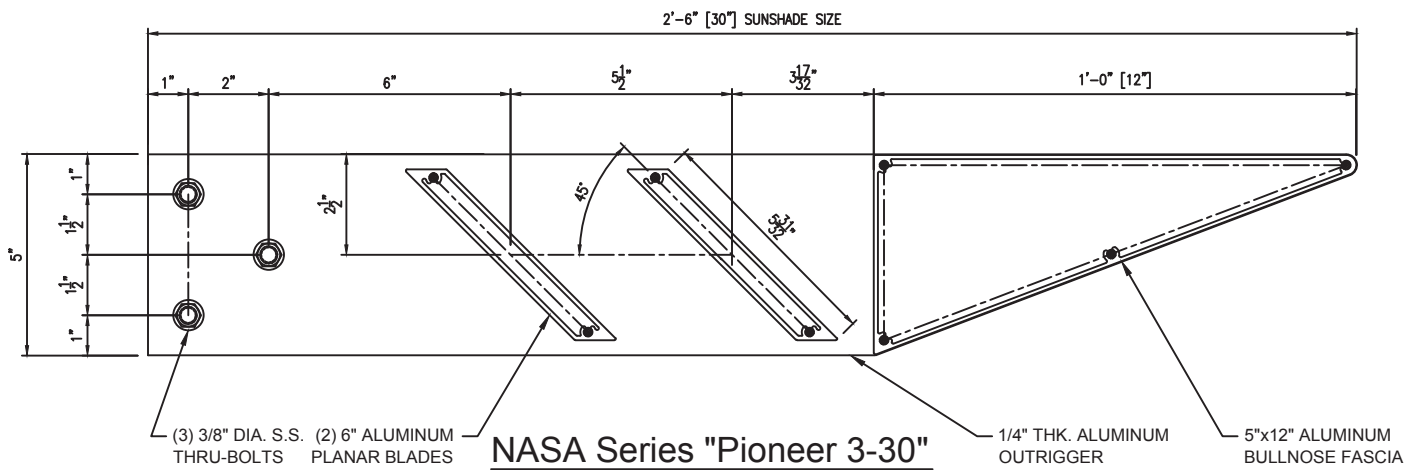


NASA Series "GEMINI 4 - 30"

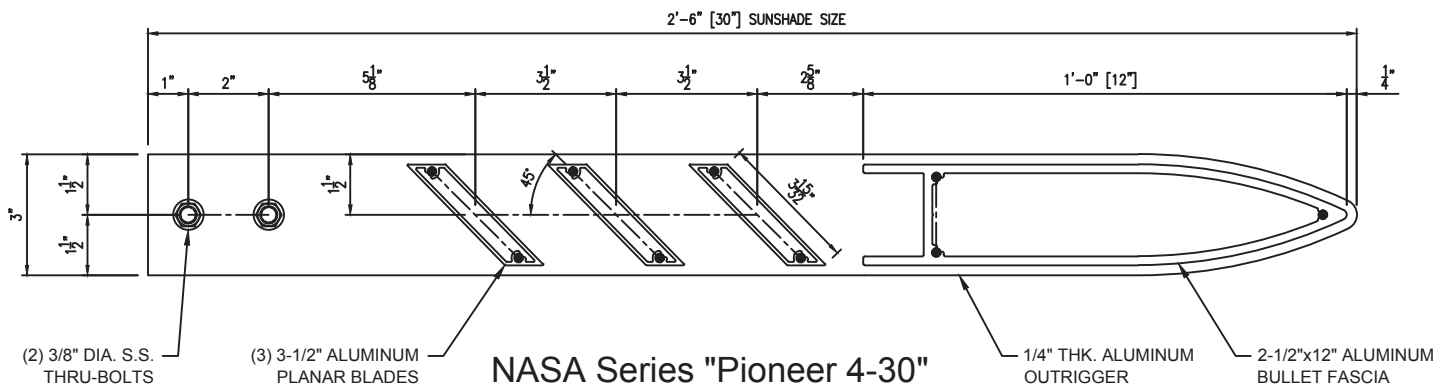
All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.



NASA Series "Phoenix-17-1/8"

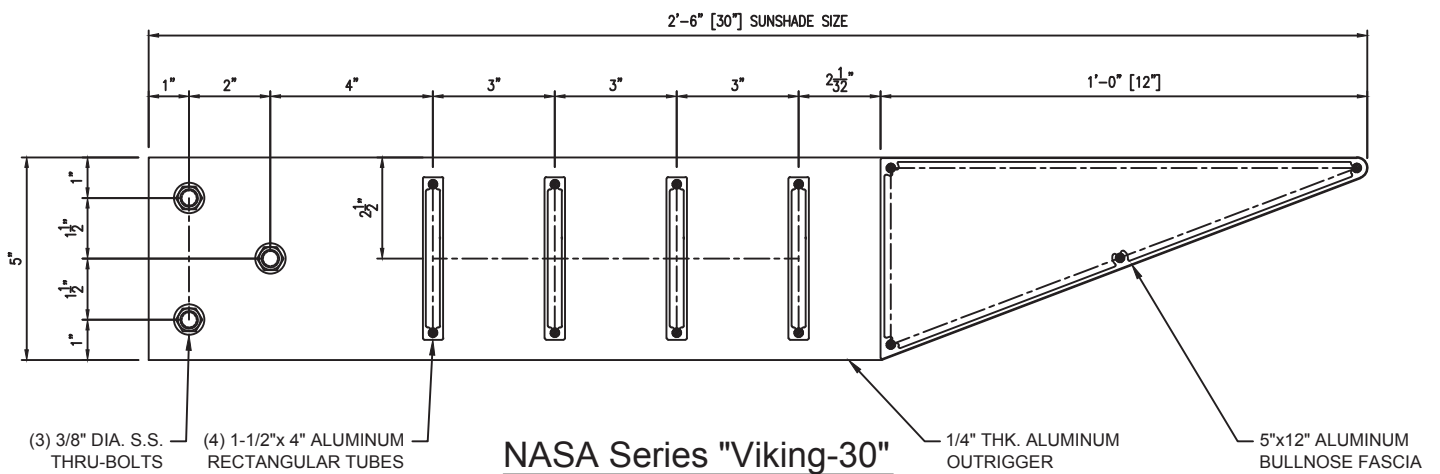
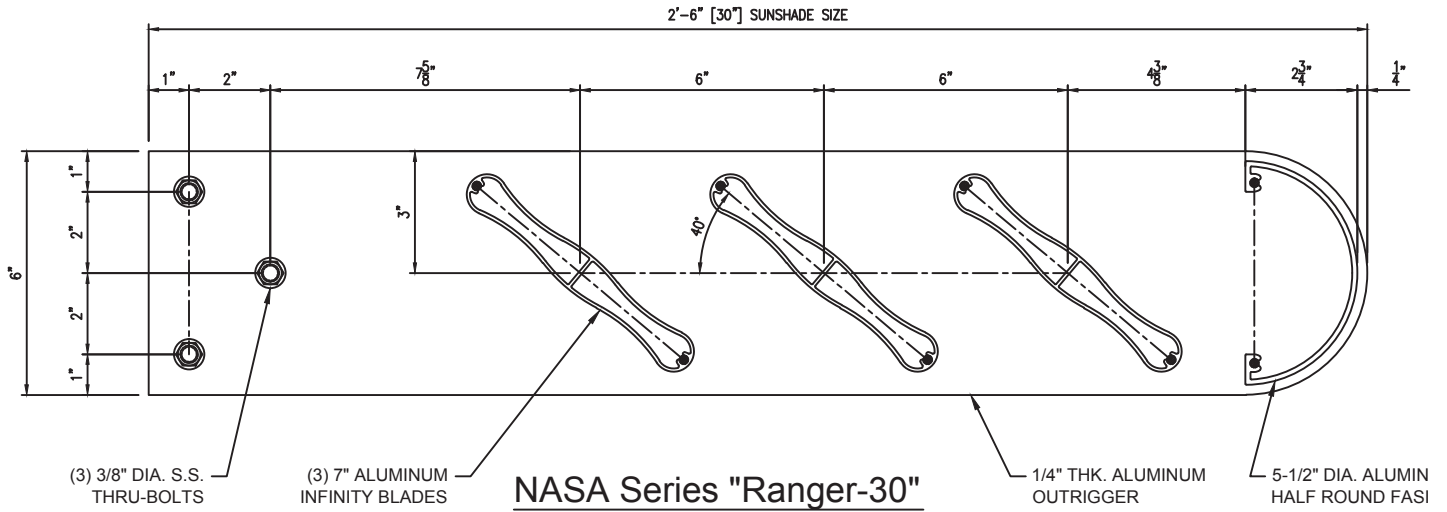


NASA Series "Pioneer 3-30"

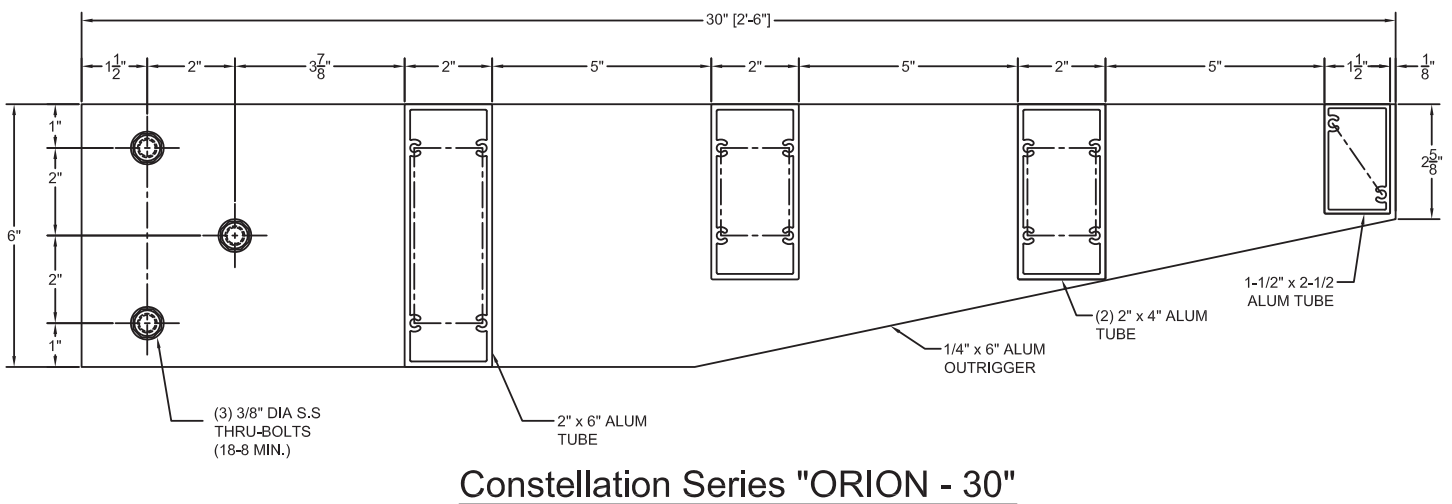
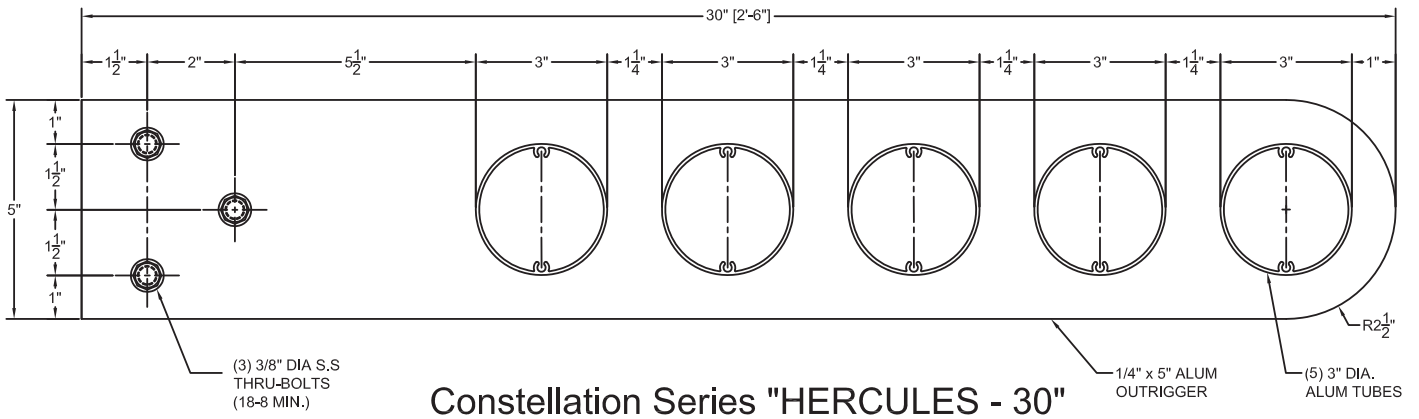
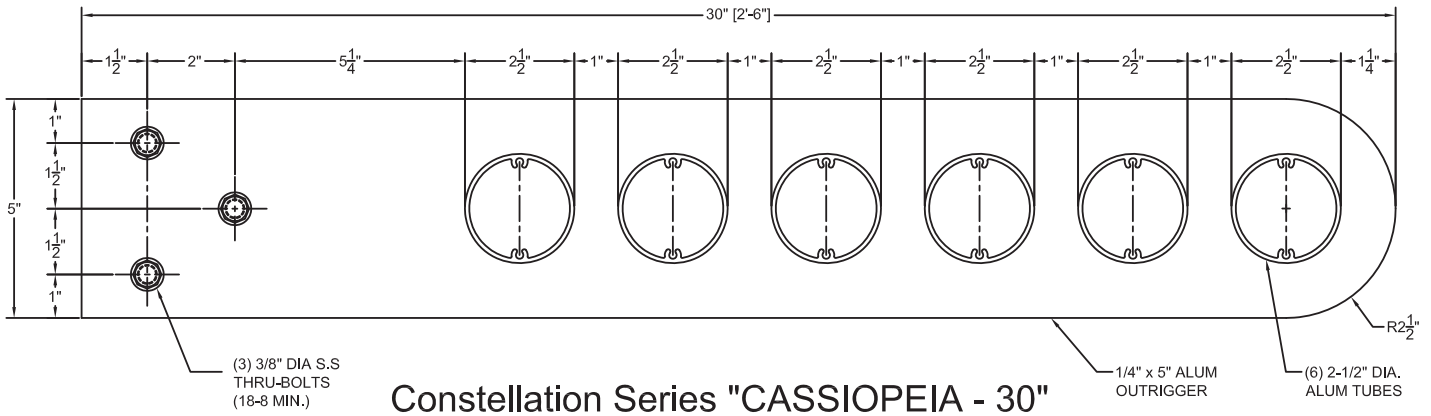


NASA Series "Pioneer 4-30"

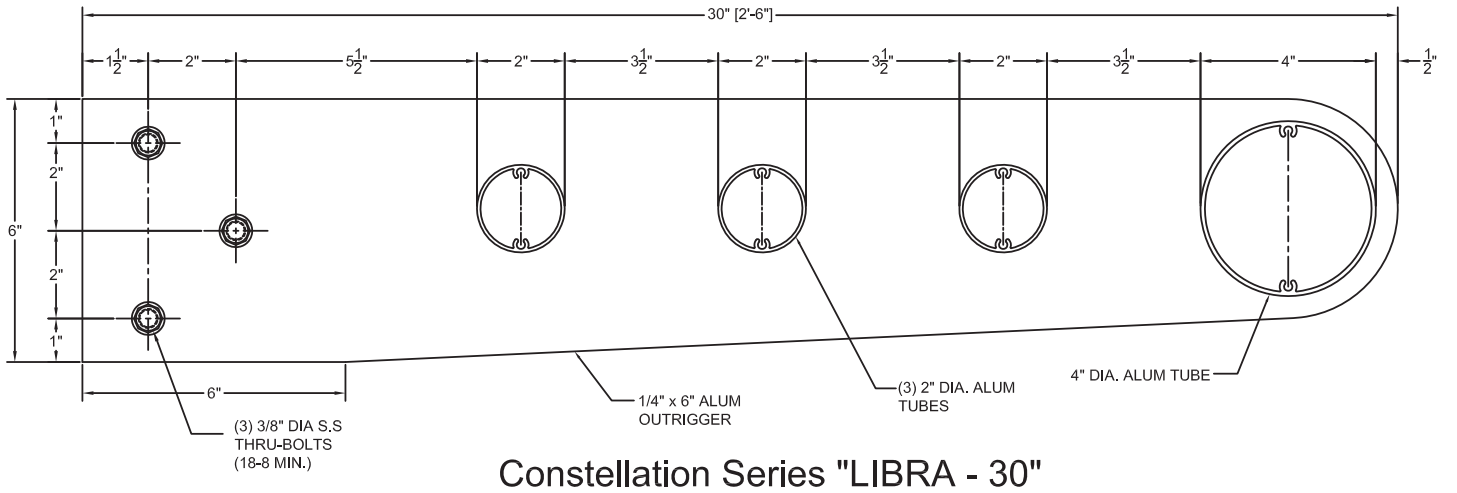
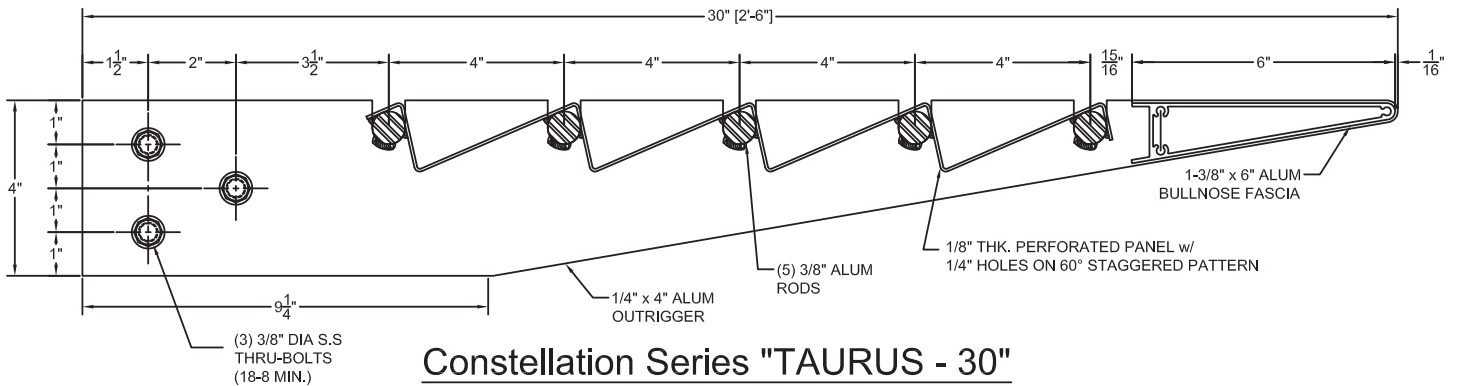
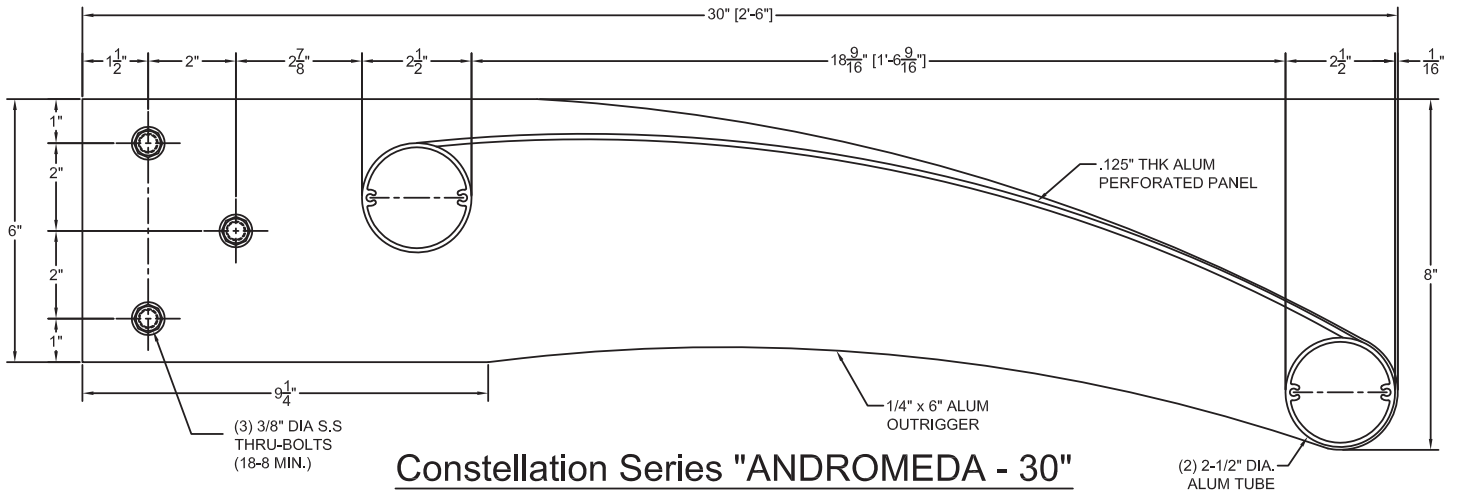
All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.



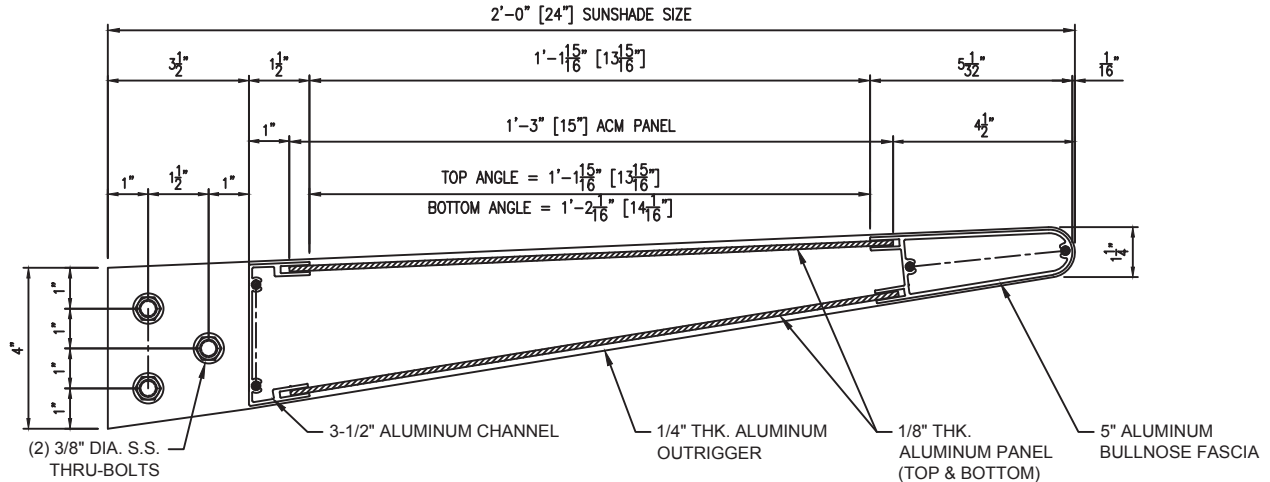
All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.



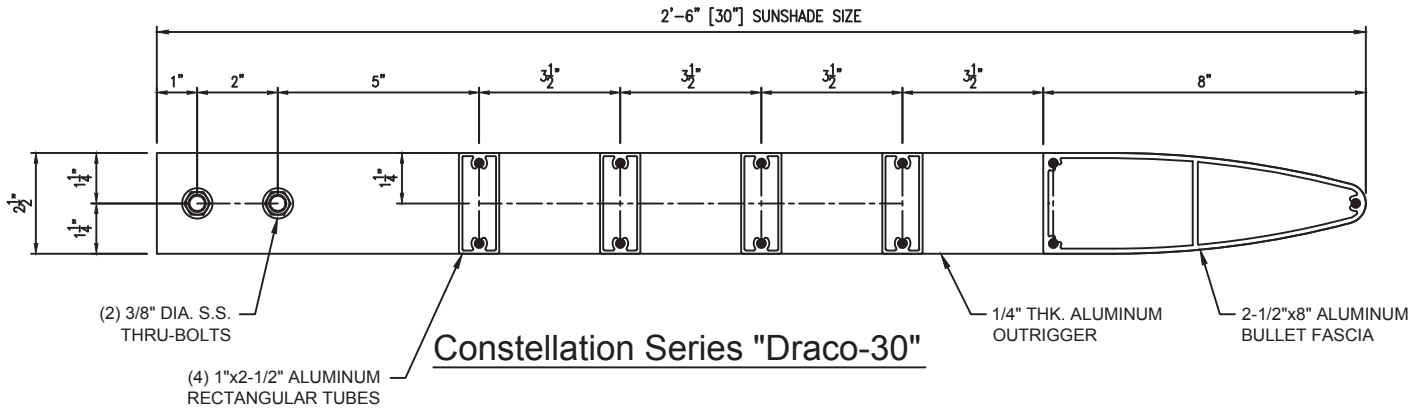
All the above models are available "as is" or "as a basis of design".
 Qualified Engineering Modifications to the above sizes and shapes are available.



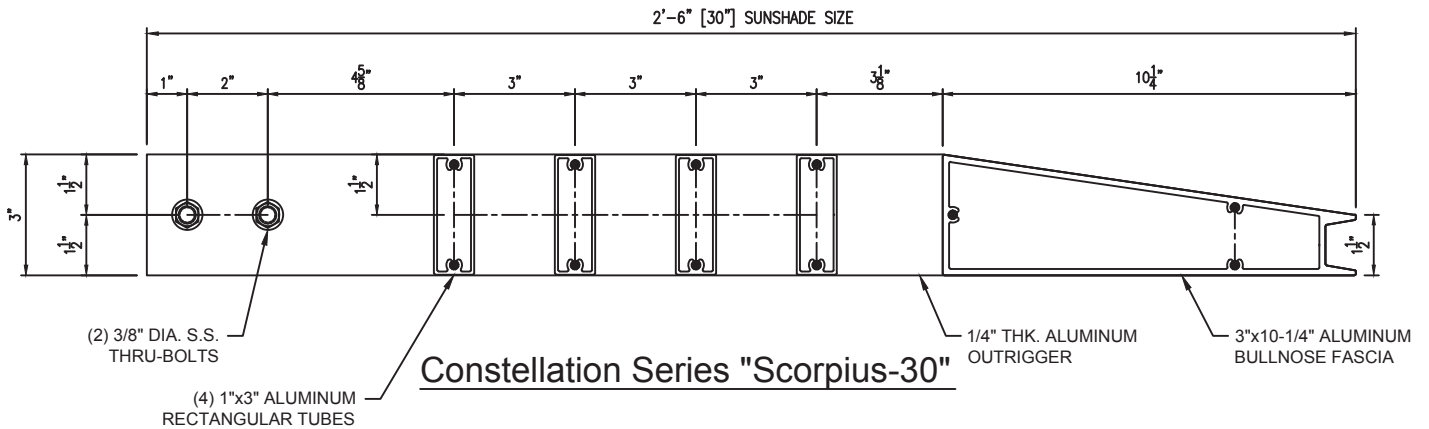
All the above models are available "as is" or "as a basis of design".
 Qualified Engineering Modifications to the above sizes and shapes are available.



Constellation Series "Leo-24"

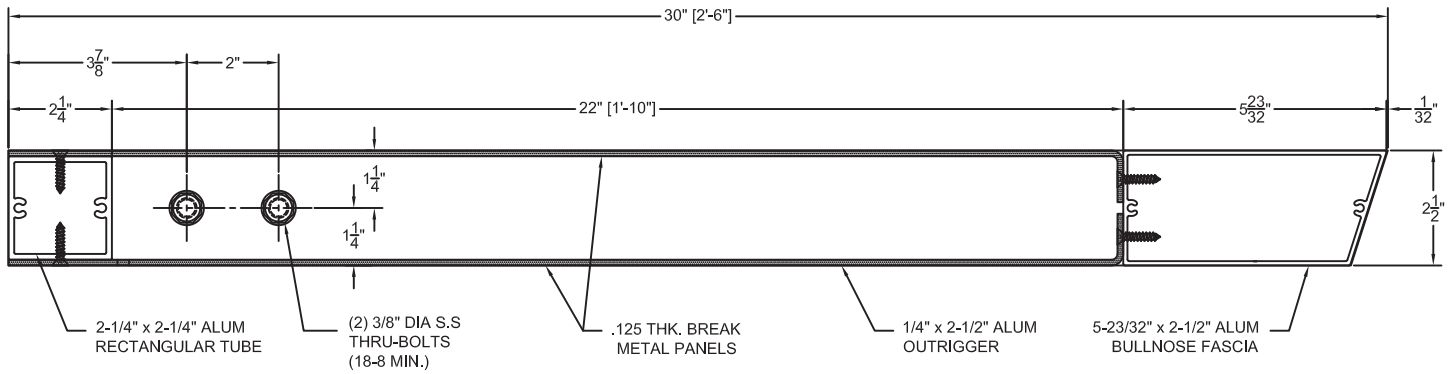


Constellation Series "Draco-30"



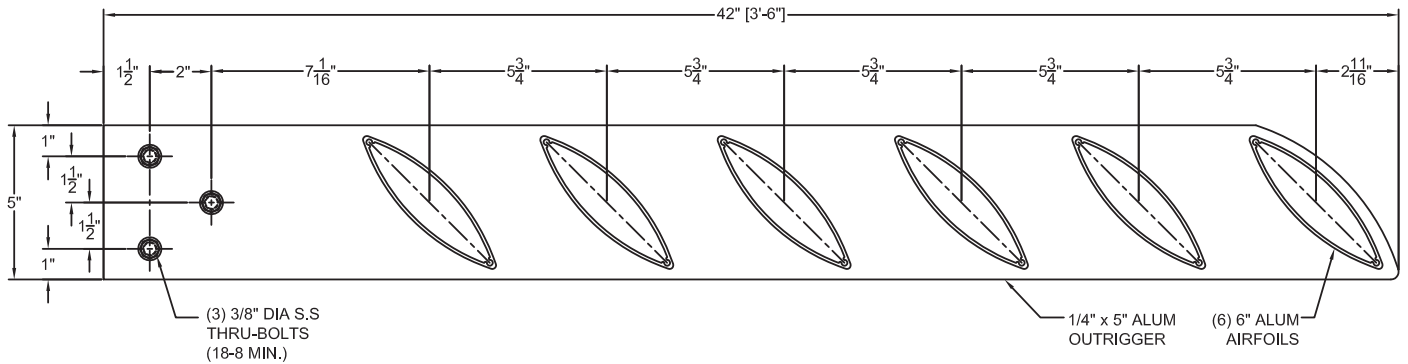
Constellation Series "Scorpius-30"

All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.

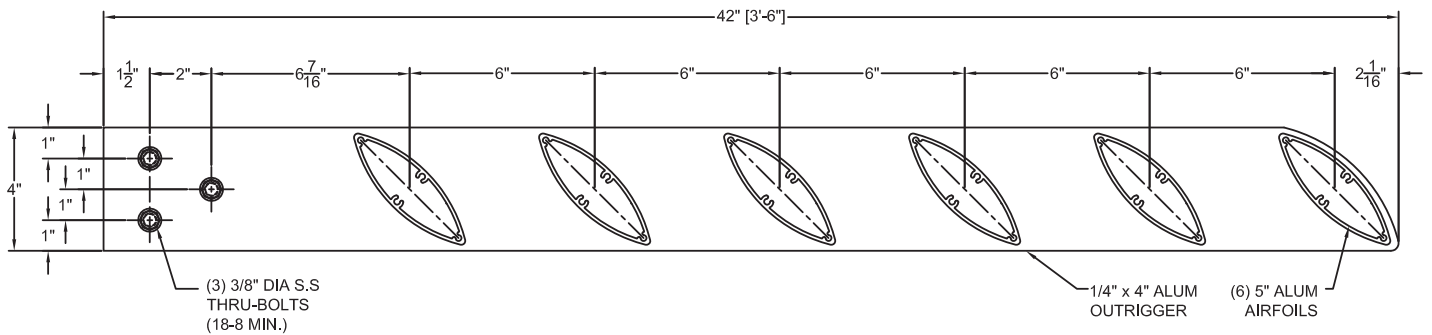


Constellation Series "ARA - 30"

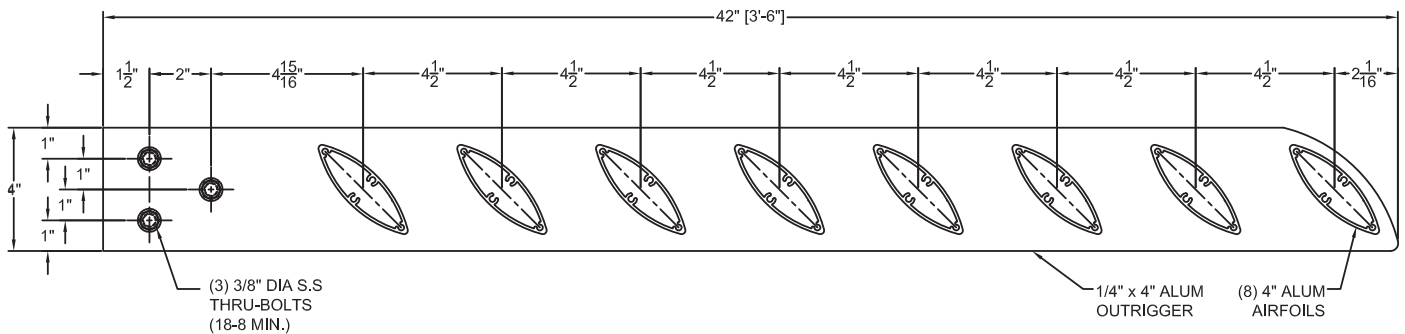
All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.



Ireland Series "KILKENNY - 42"

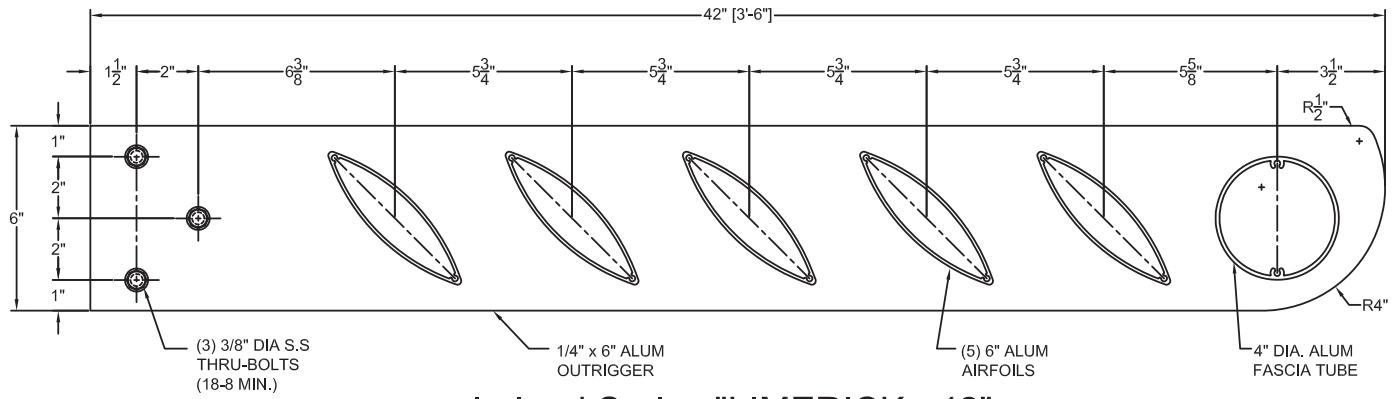


Ireland Series "TIPPERARY - 42"

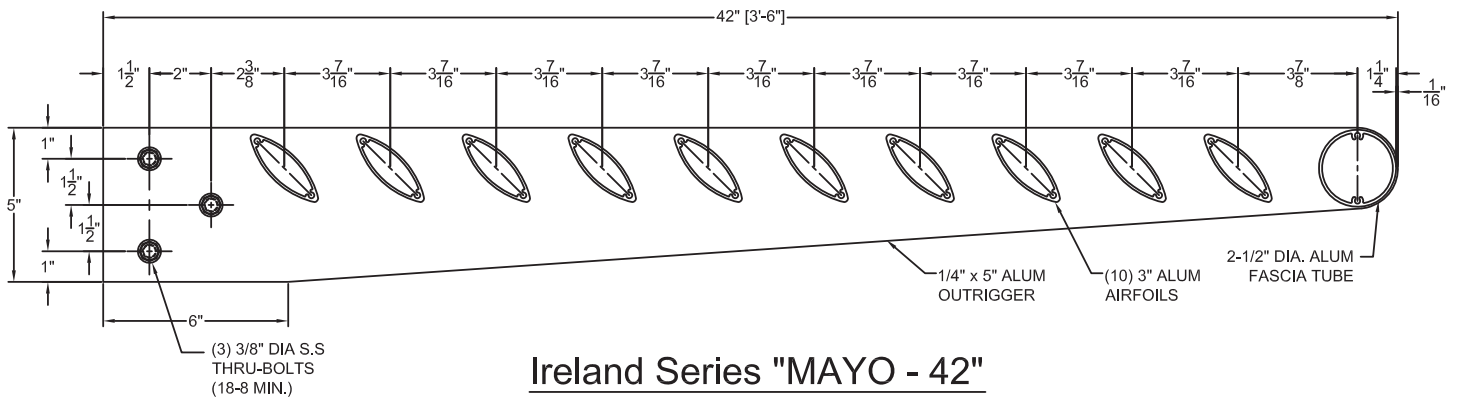


Ireland Series "DONEGAL - 42"

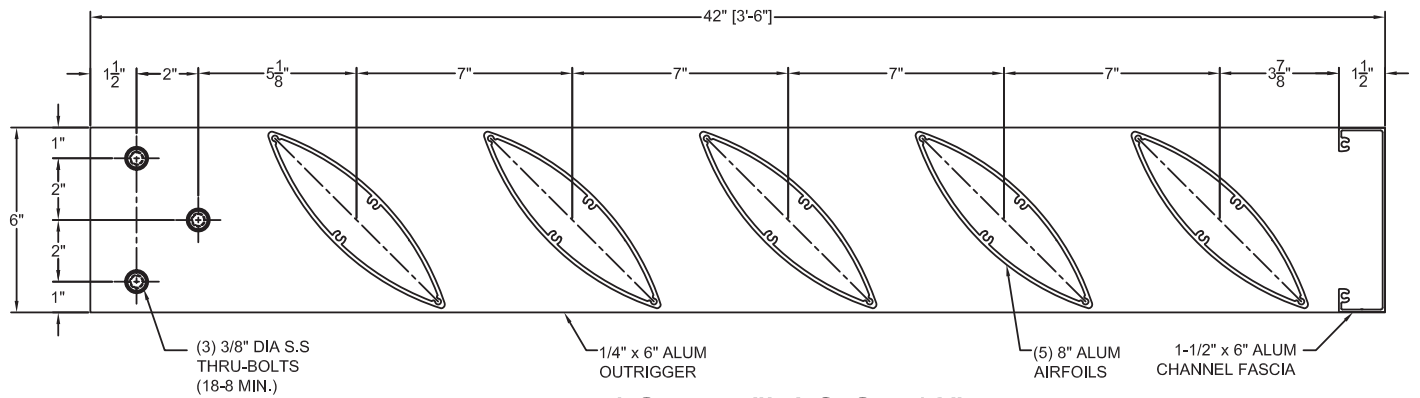
All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.



Ireland Series "LIMERICK - 42"

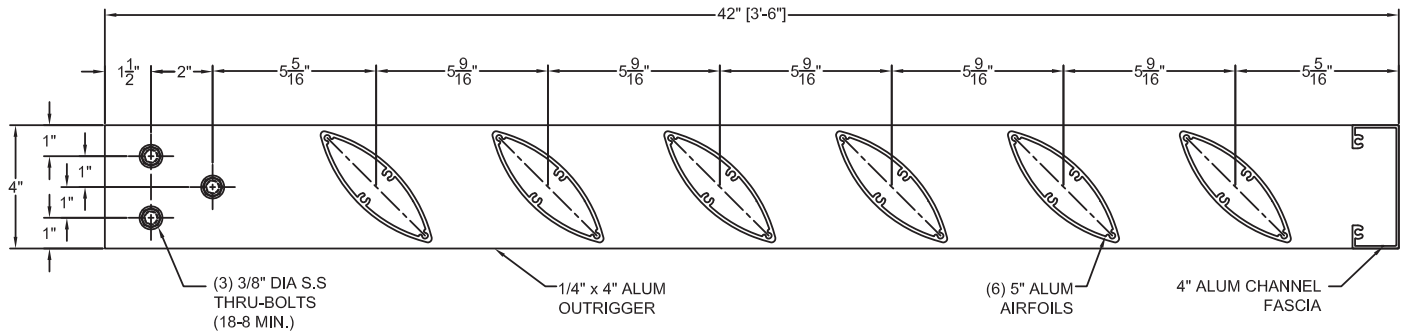


Ireland Series "MAYO - 42"

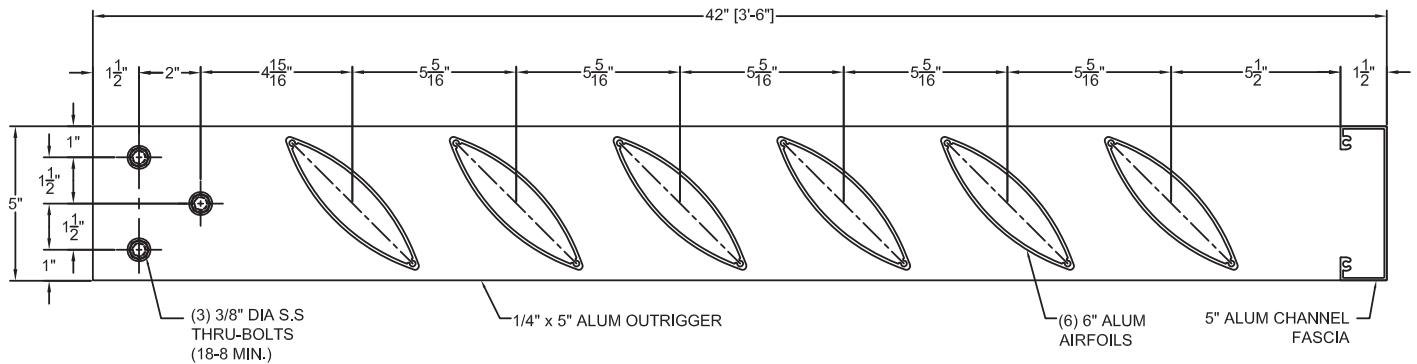


Ireland Series "LAOIS - 42"

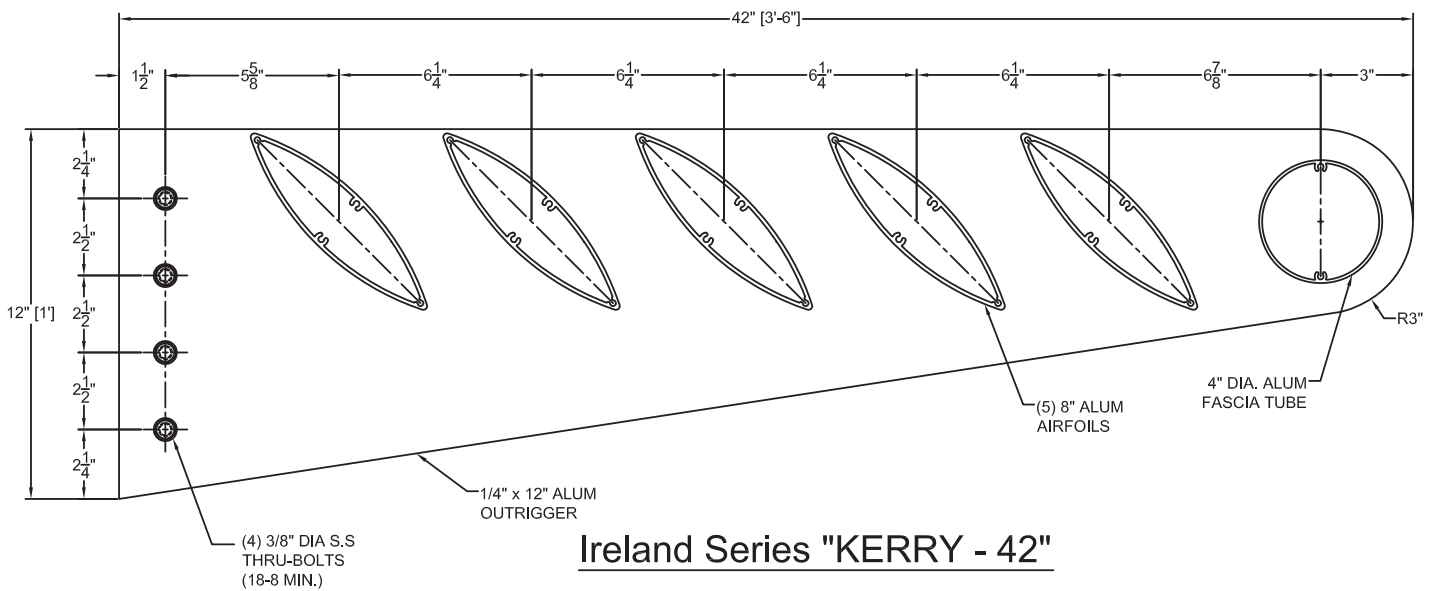
All the above models are available "as is" or "as a basis of design".
 Qualified Engineering Modifications to the above sizes and shapes are available.



Ireland Series "GALWAY - 42"

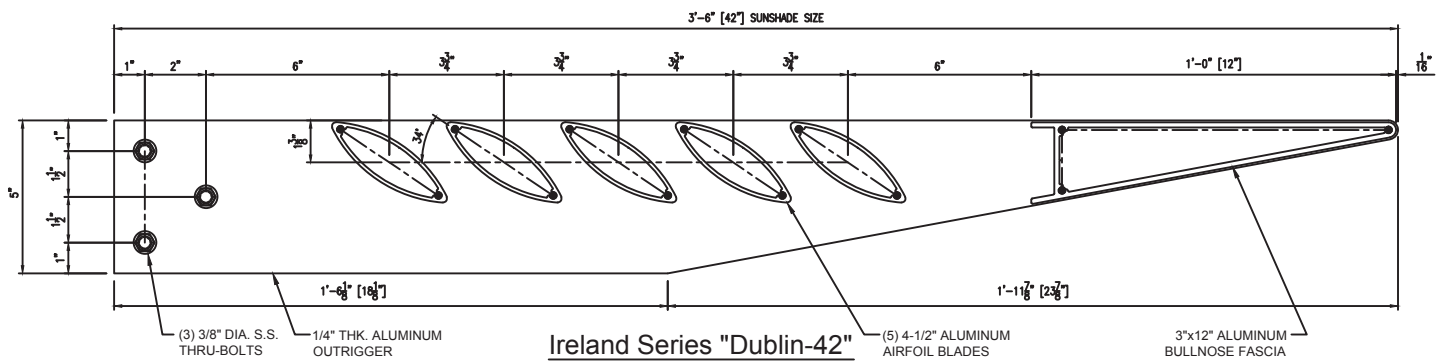
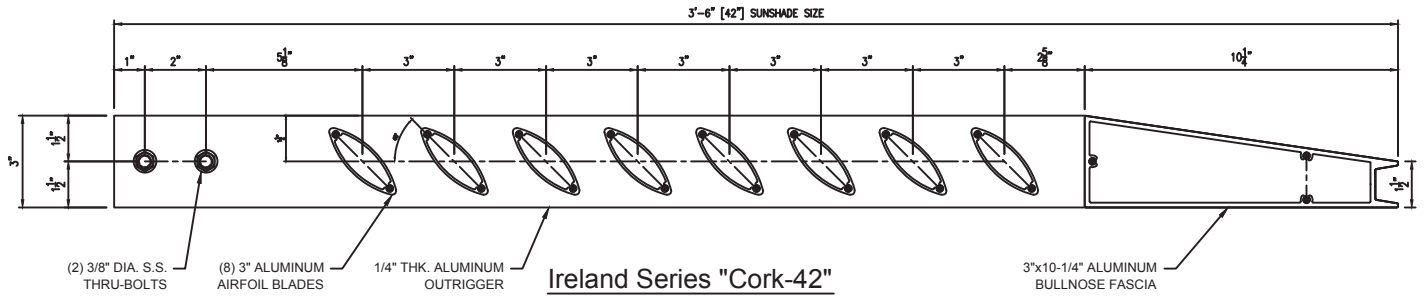


Ireland Series "WEXFORD - 42"

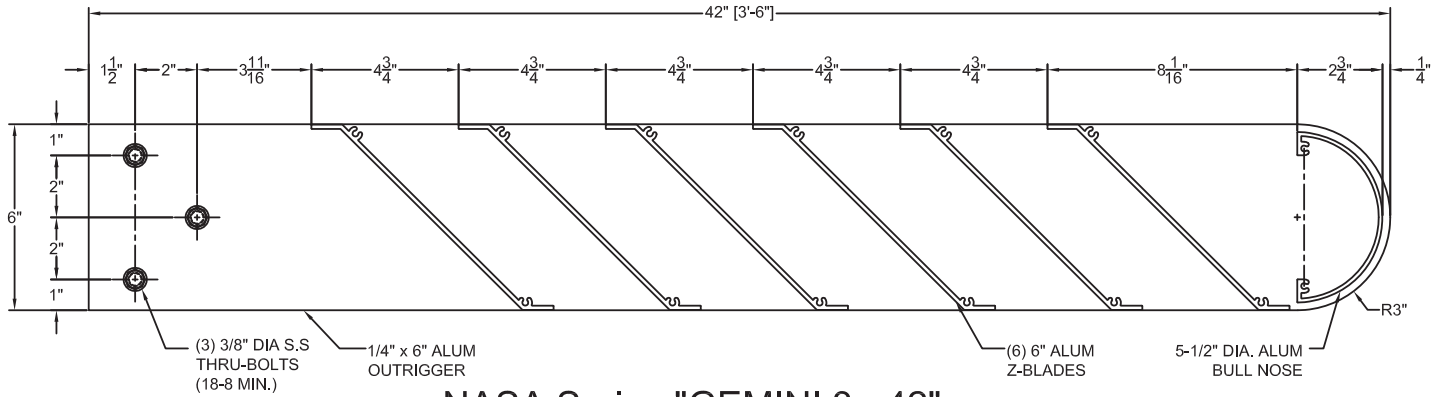


Ireland Series "KERRY - 42"

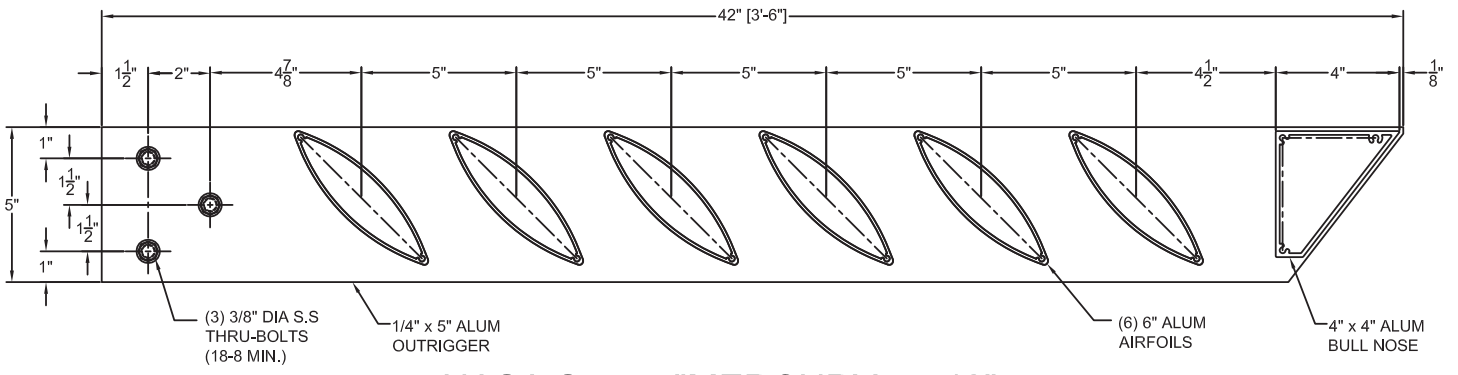
All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.



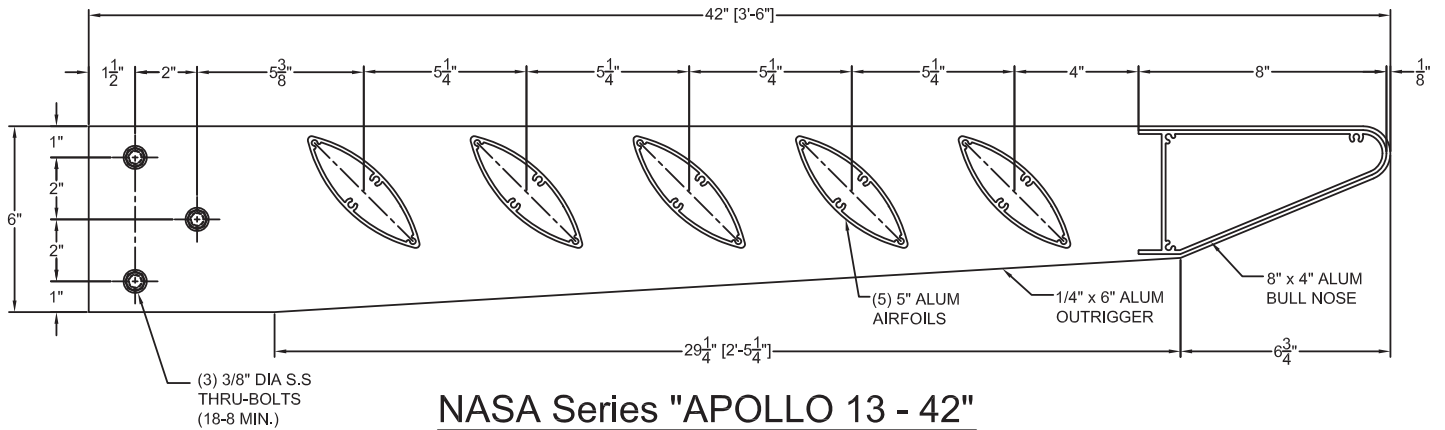
All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.



NASA Series "GEMINI 3 - 42"

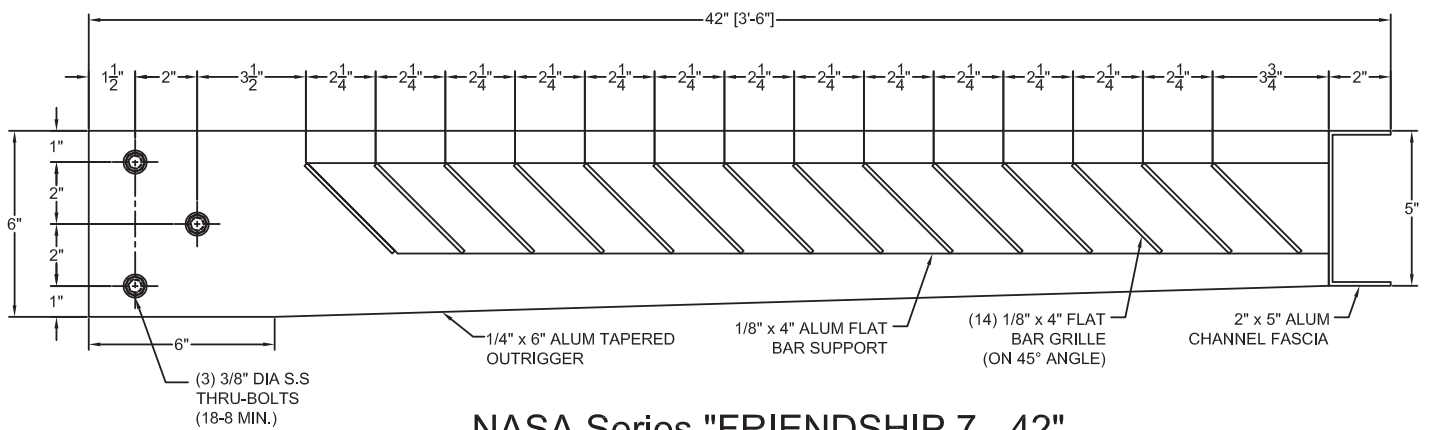
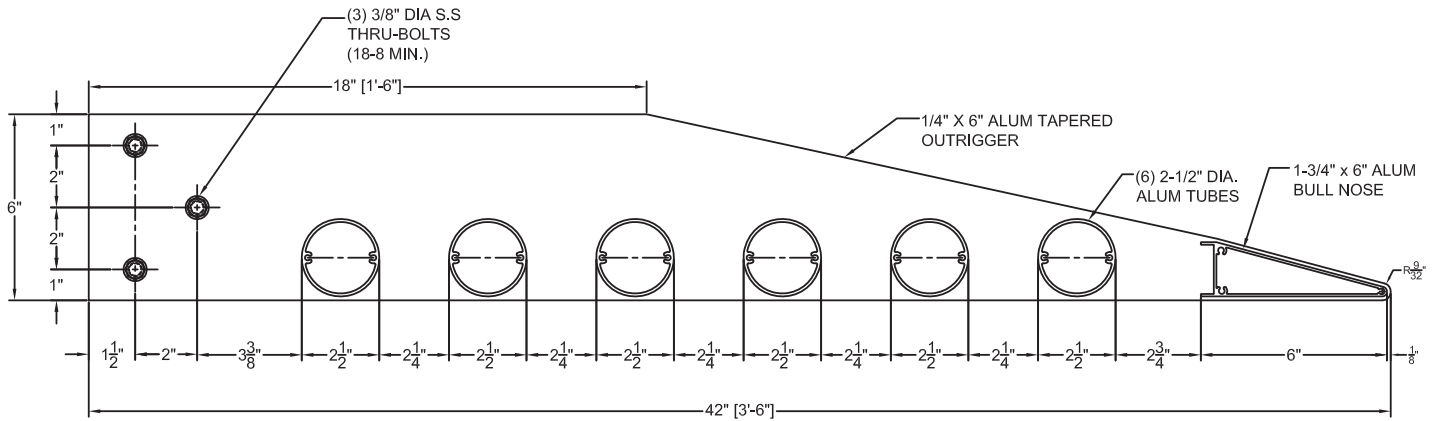
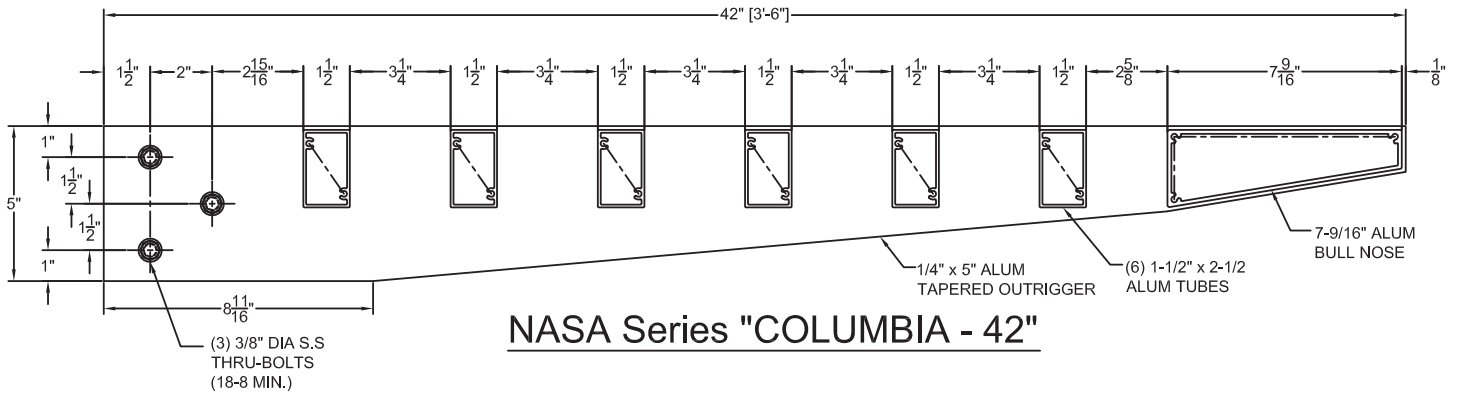


NASA Series "MERCURY 7 - 42"

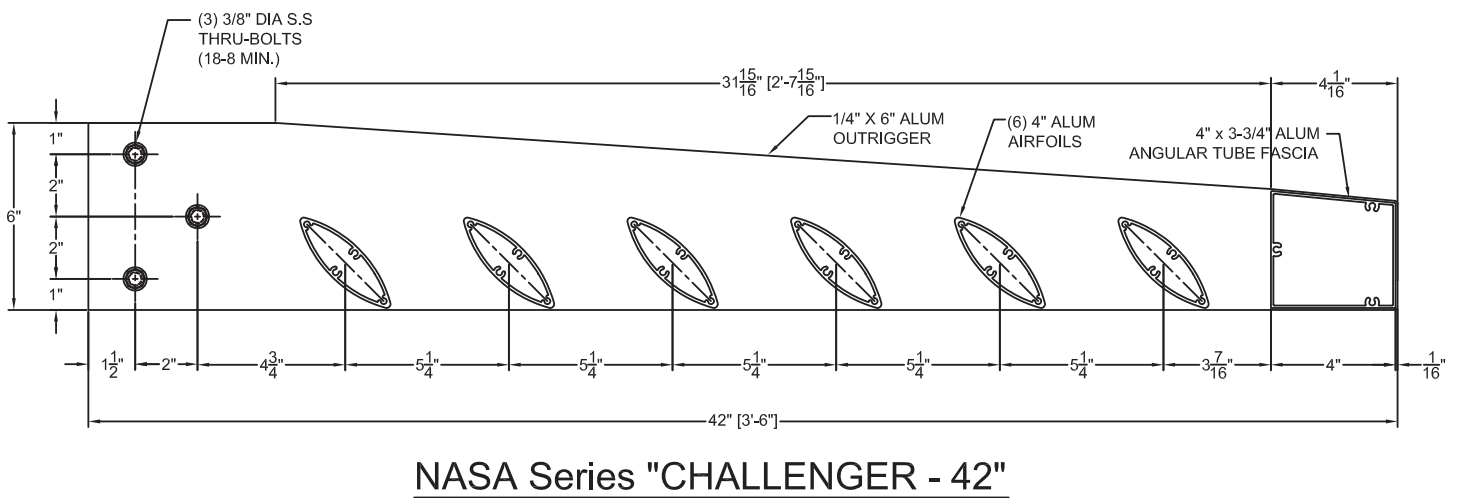
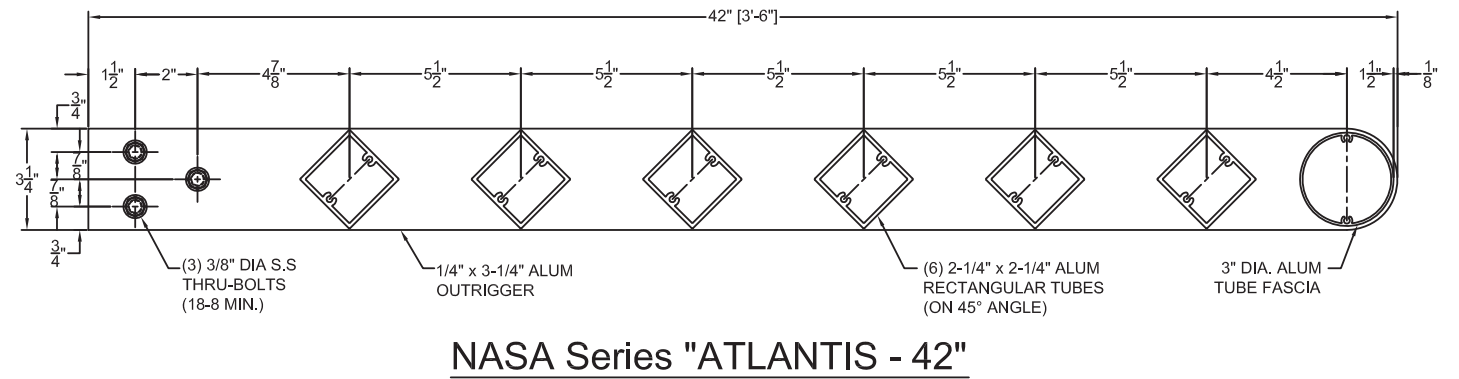
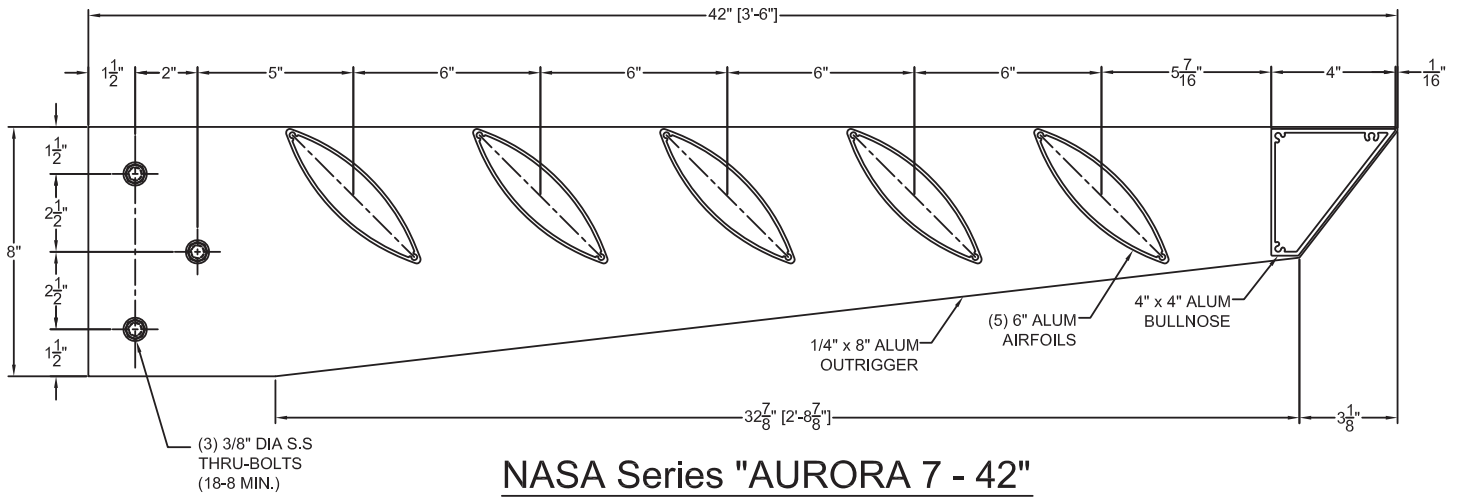


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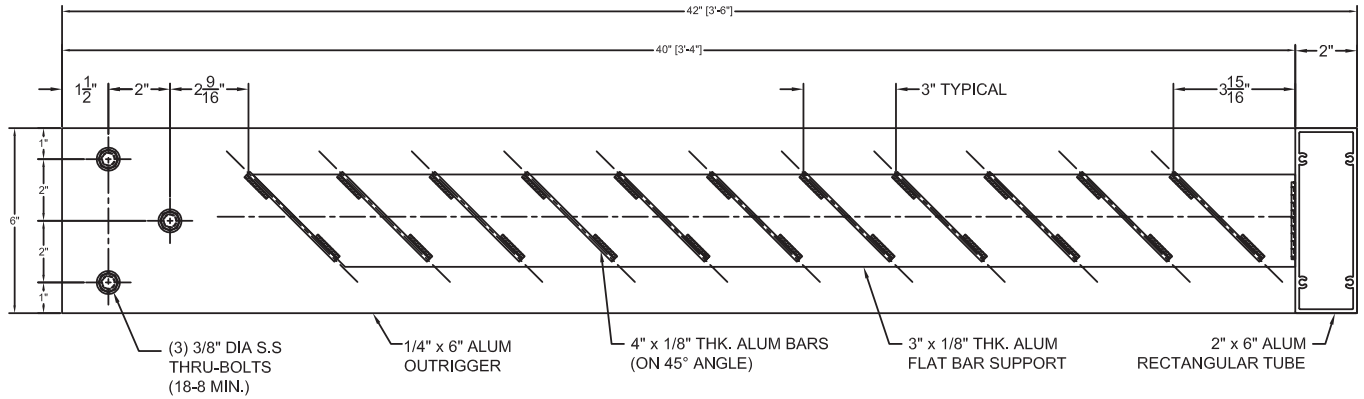
All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.



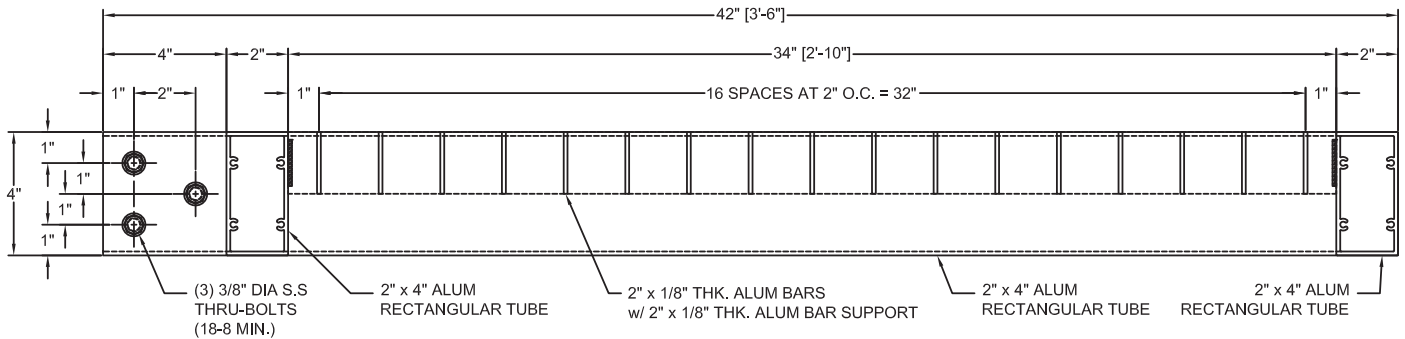
All the above models are available "as is" or "as a basis of design".
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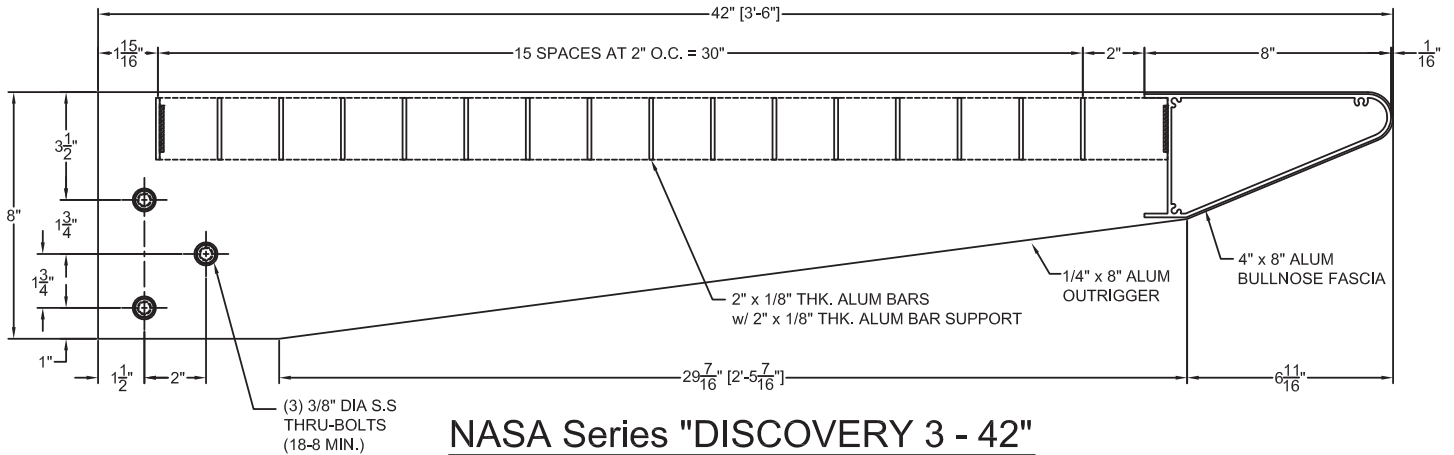
All the above models are available "as is" or "as a basis of design".
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NASA Series "DISCOVERY 1 - 42"

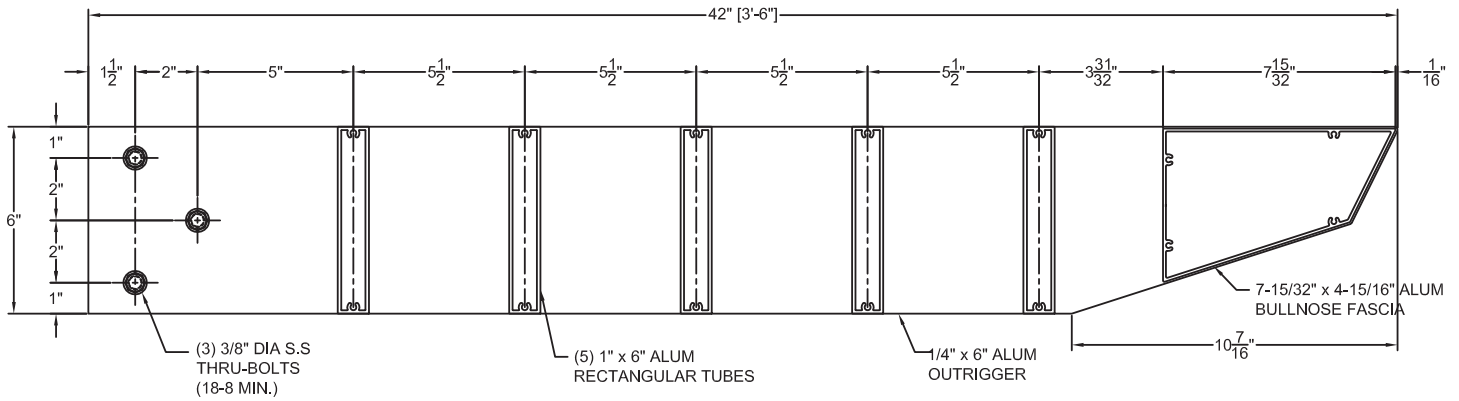


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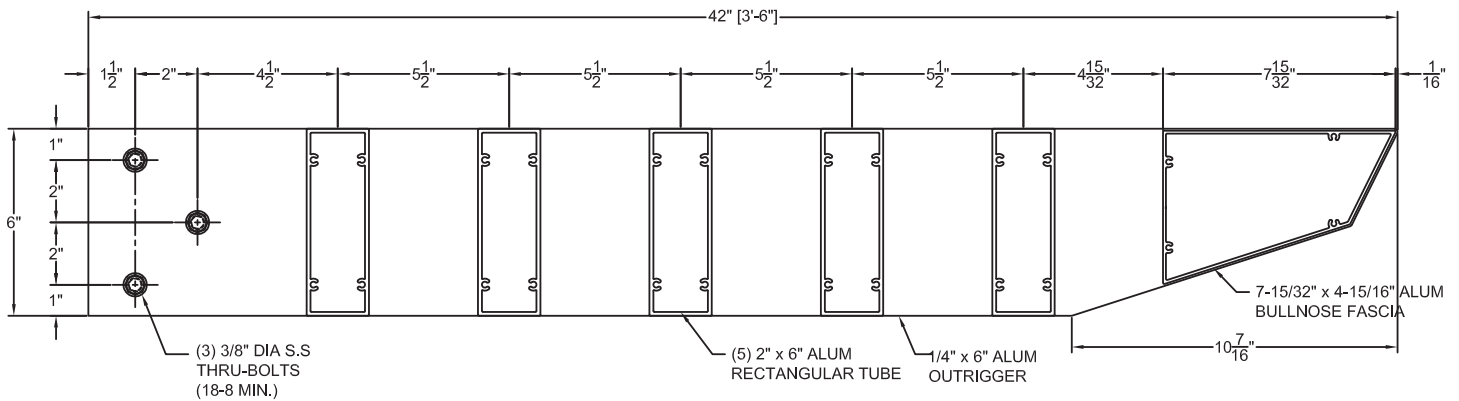


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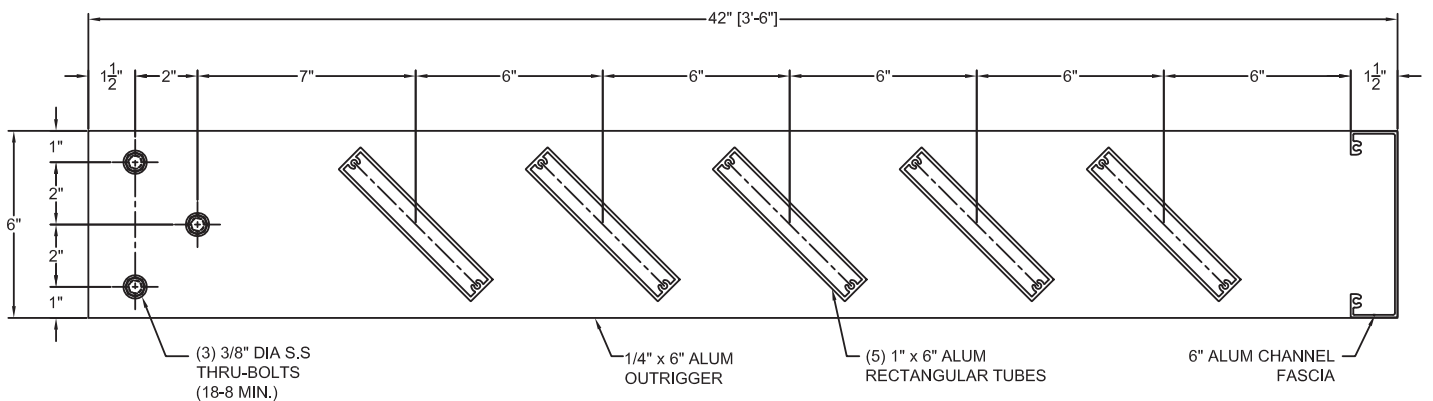
All the above models are available "as is" or "as a basis of design".
 Qualified Engineering Modifications to the above sizes and shapes are available.



NASA Series "ENTERPRISE 1 - 42"

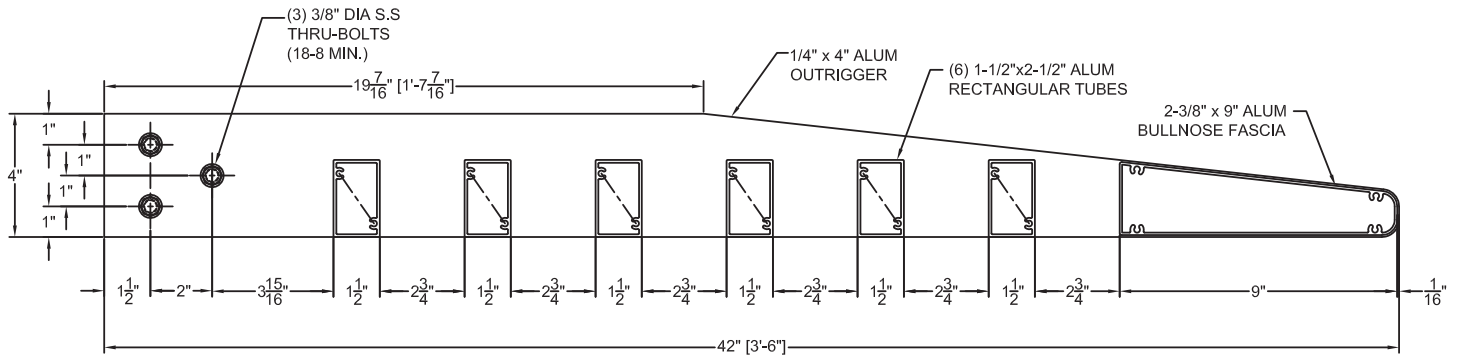


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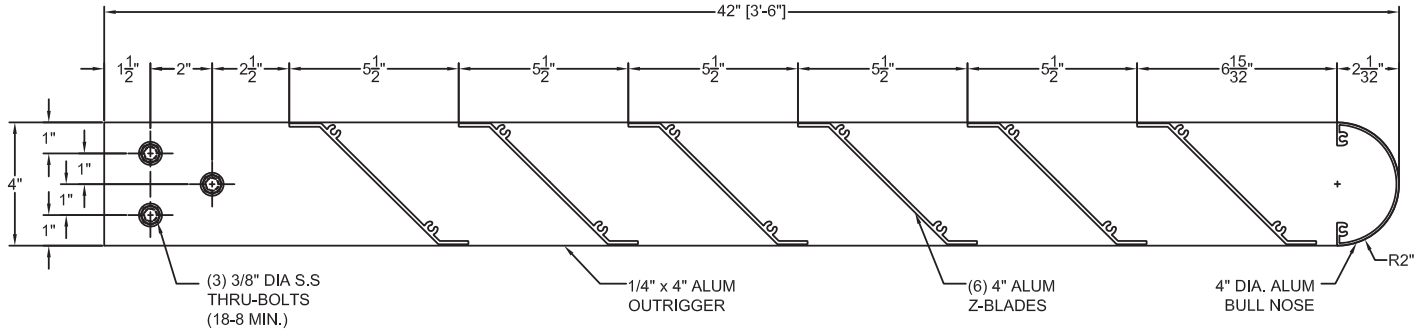


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All the above models are available "as is" or "as a basis of design".
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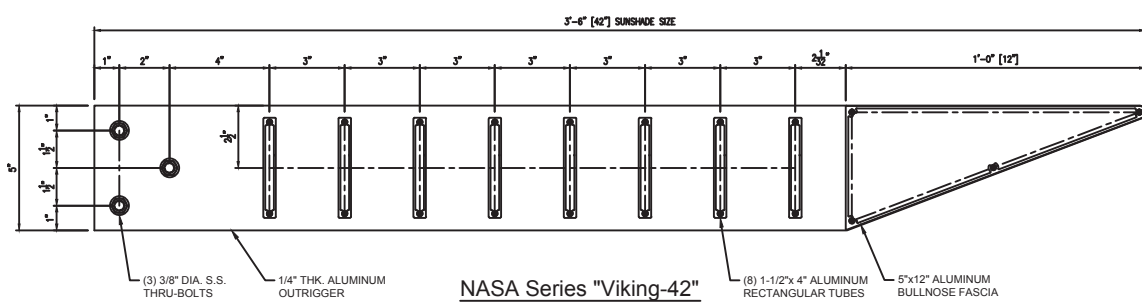
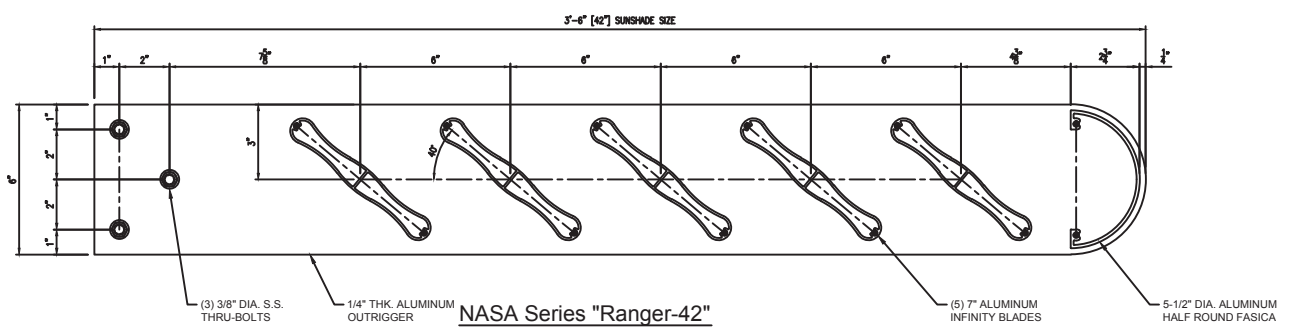
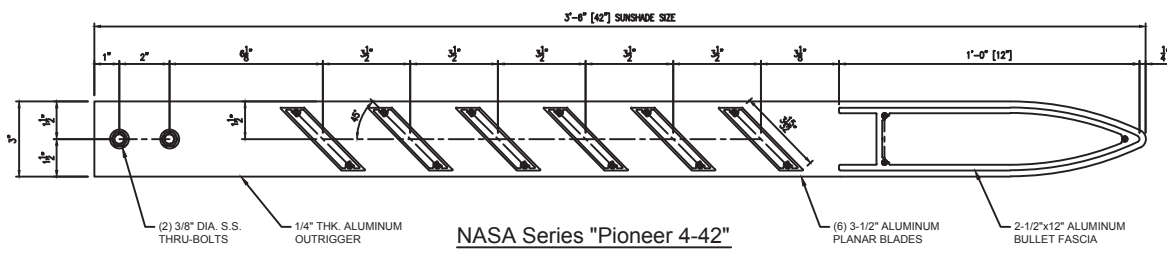
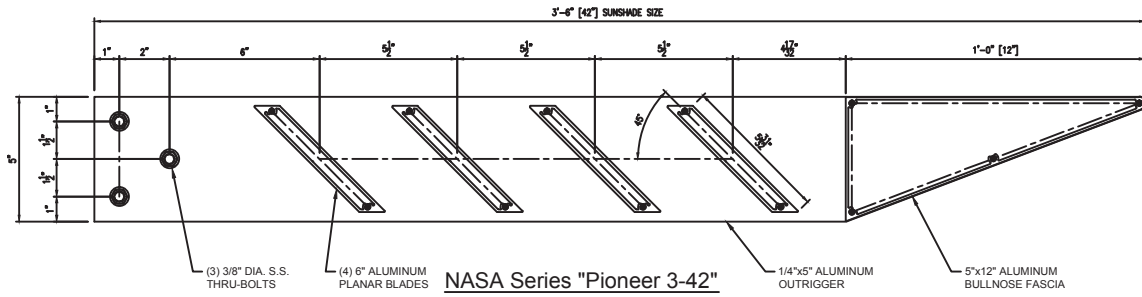


NASA Series "ENDEAVOUR - 42"

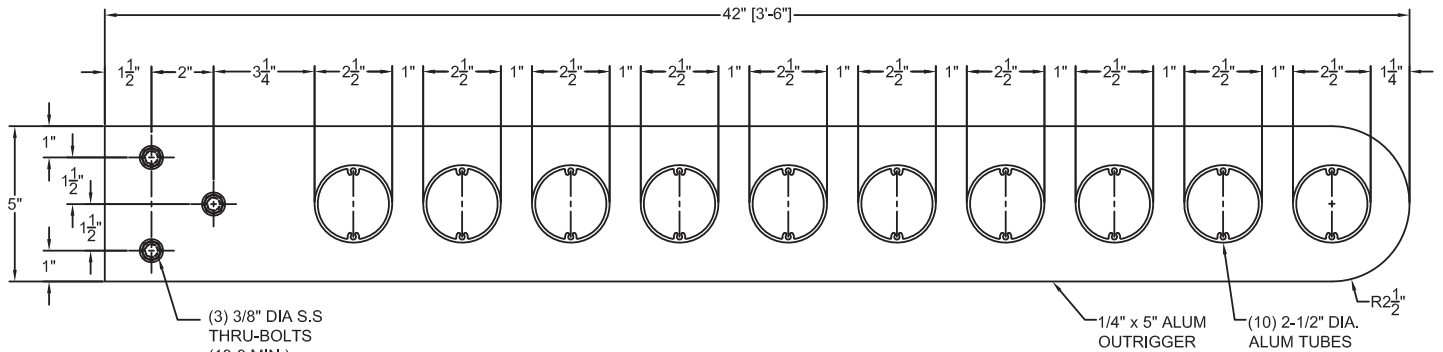


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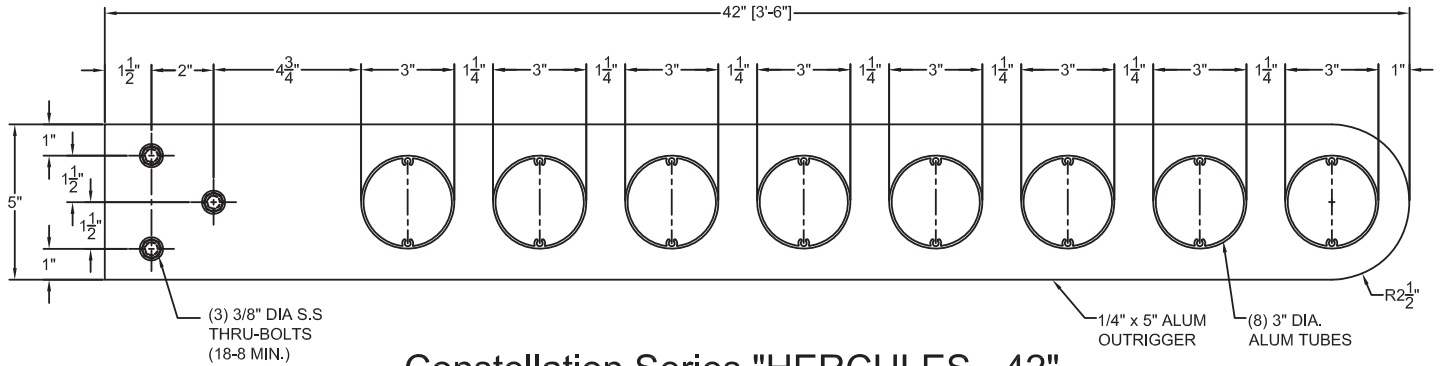
All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.



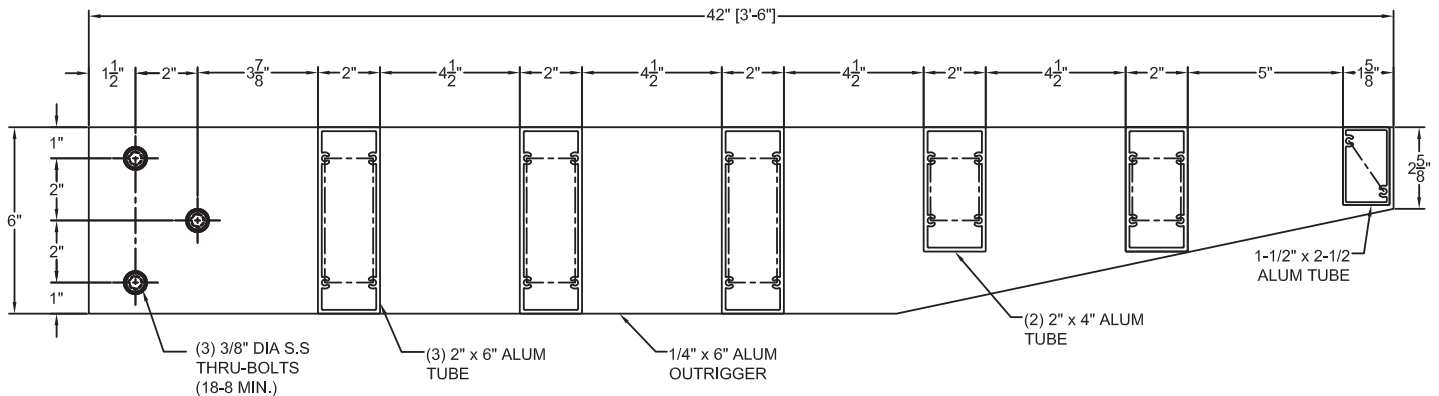
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Qualified Engineering Modifications to the above sizes and shapes are available.



Constellation Series "CASSIOPEIA - 42"

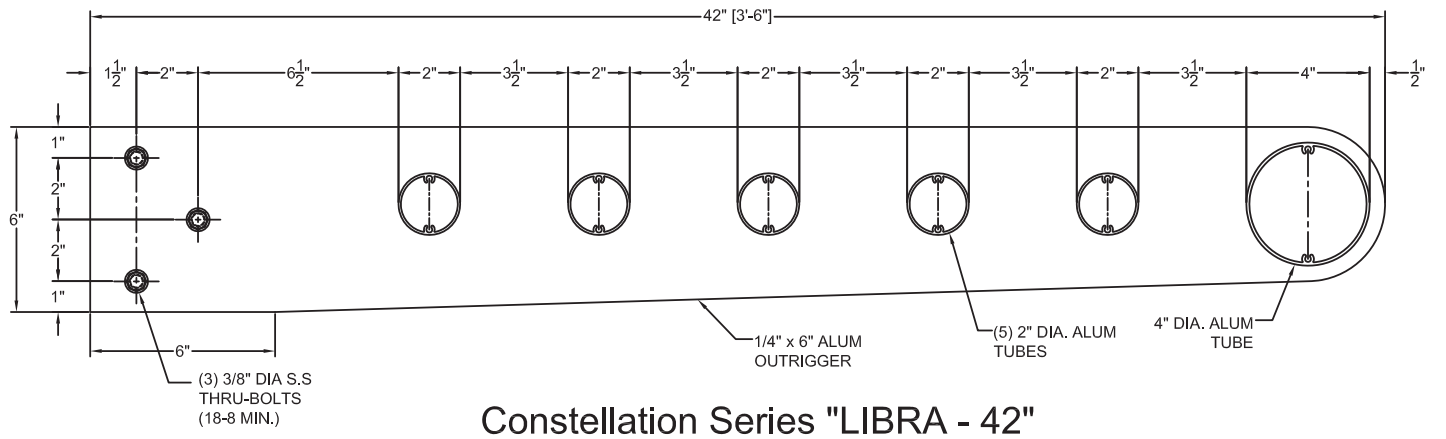
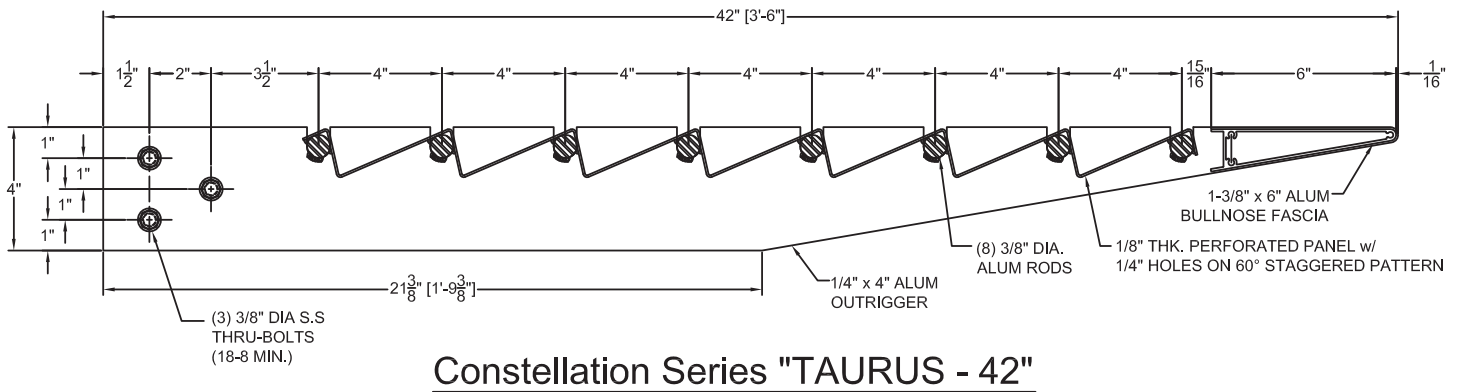
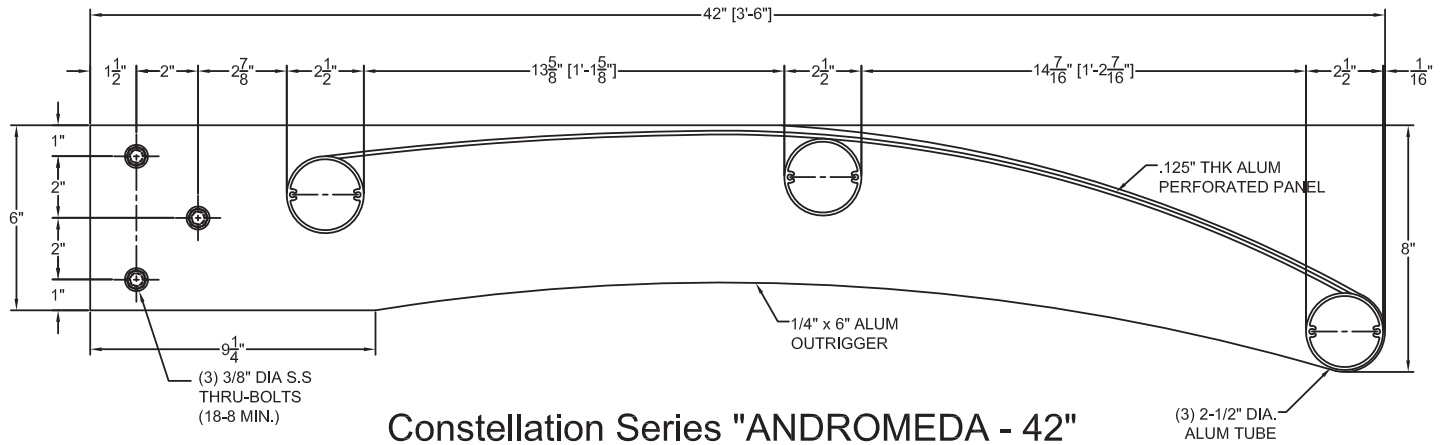


Constellation Series "HERCULES - 42"

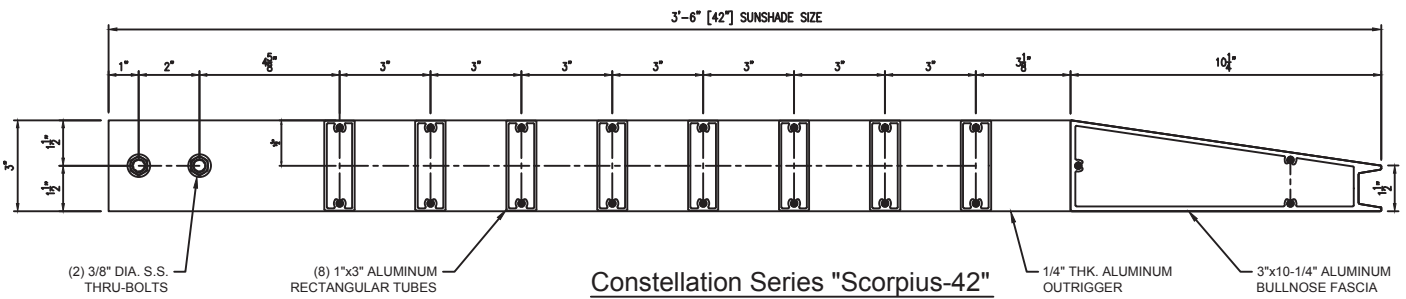
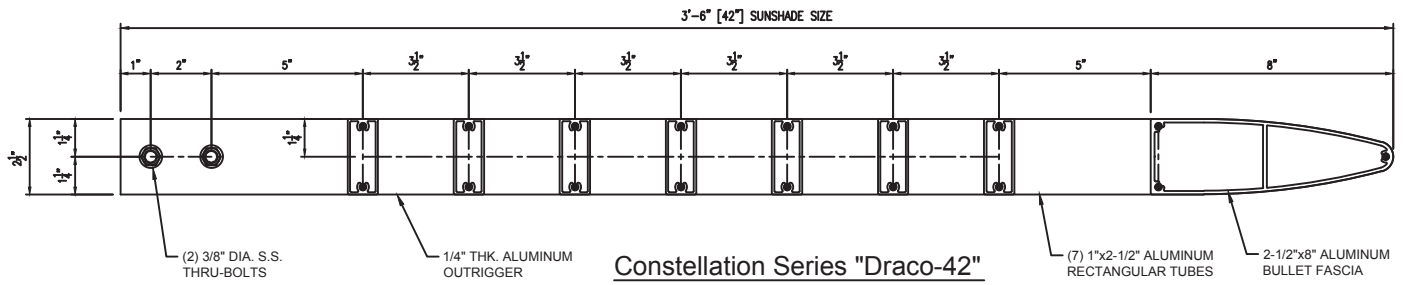


Constellation Series "ORION - 42"

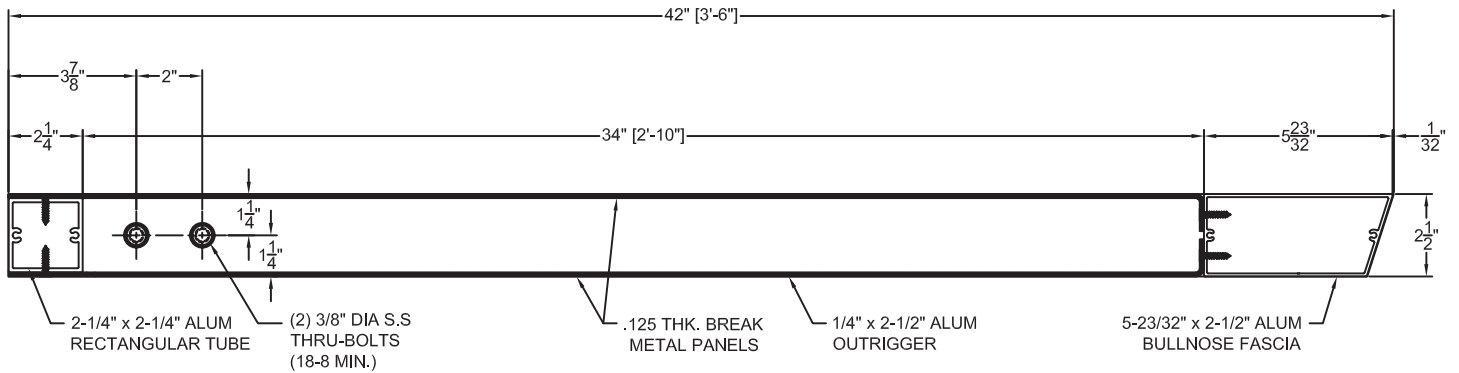
All the above models are available "as is" or "as a basis of design".
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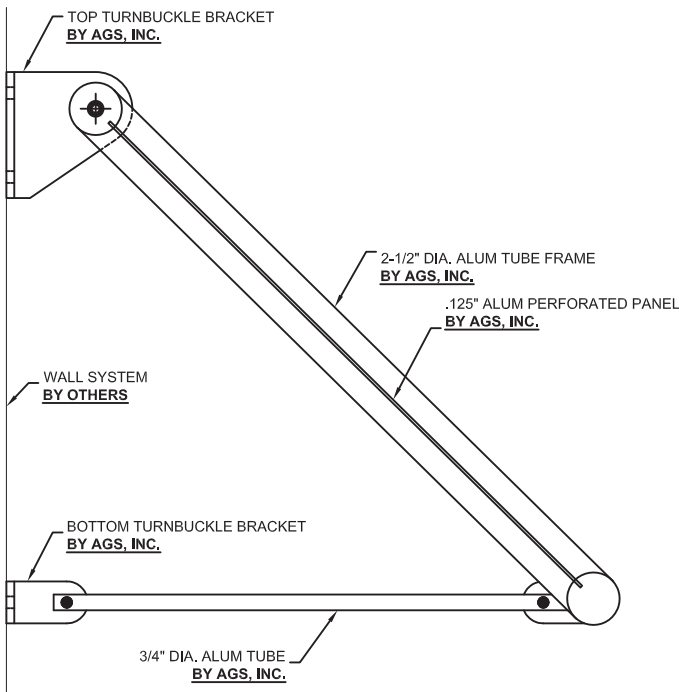


All the above models are available "as is" or "as a basis of design".
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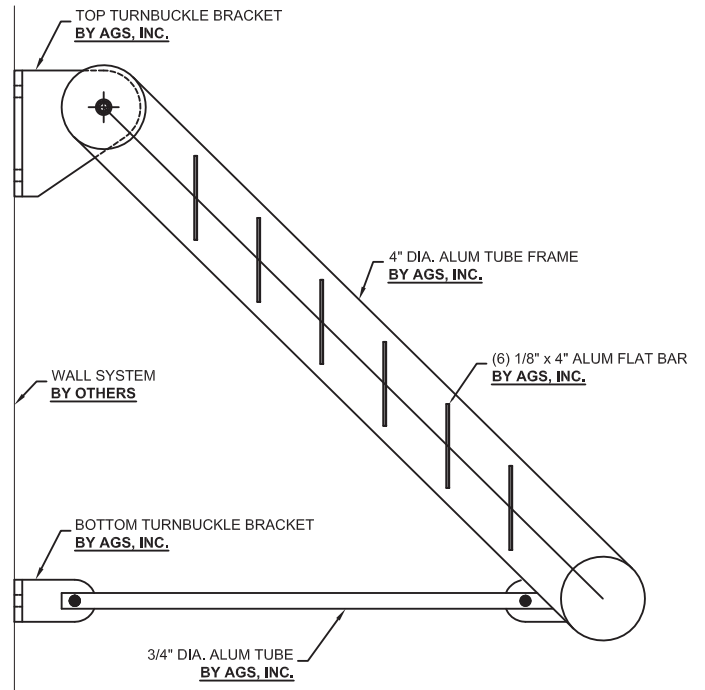


Constellation Series "ARA - 42"

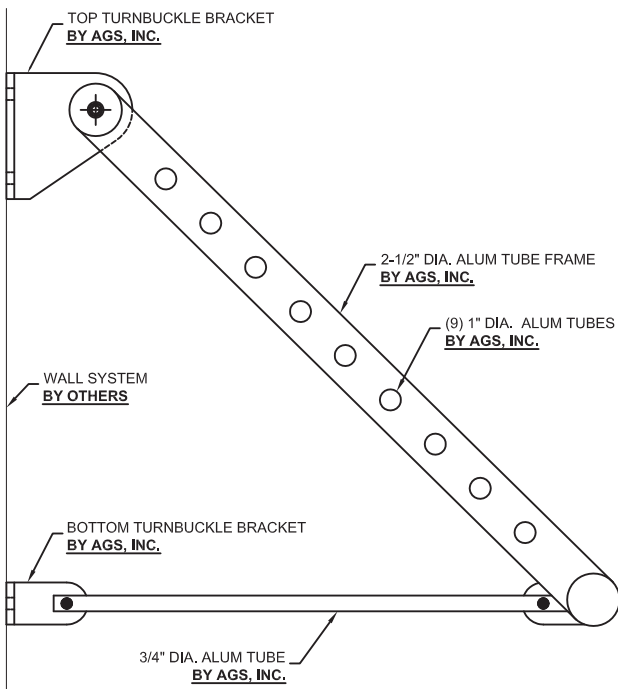
All the above models are available "as is" or "as a basis of design".
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Spherical Series "KEEGAN"

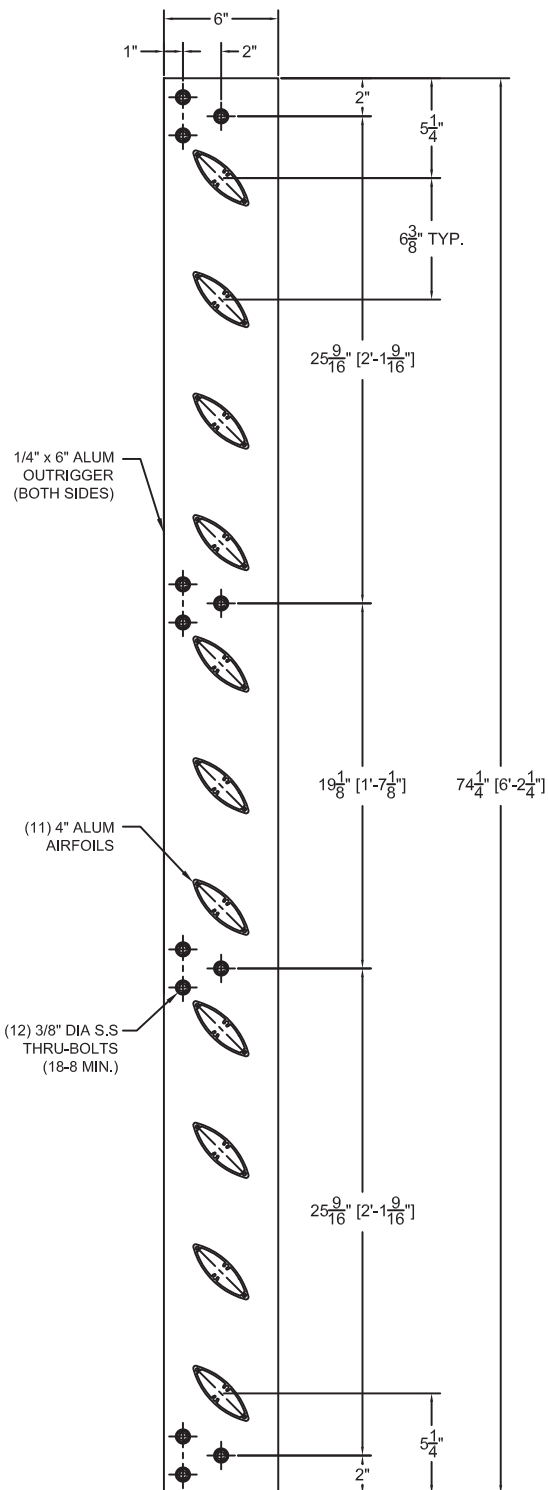


Spherical Series "EMERSYNN"

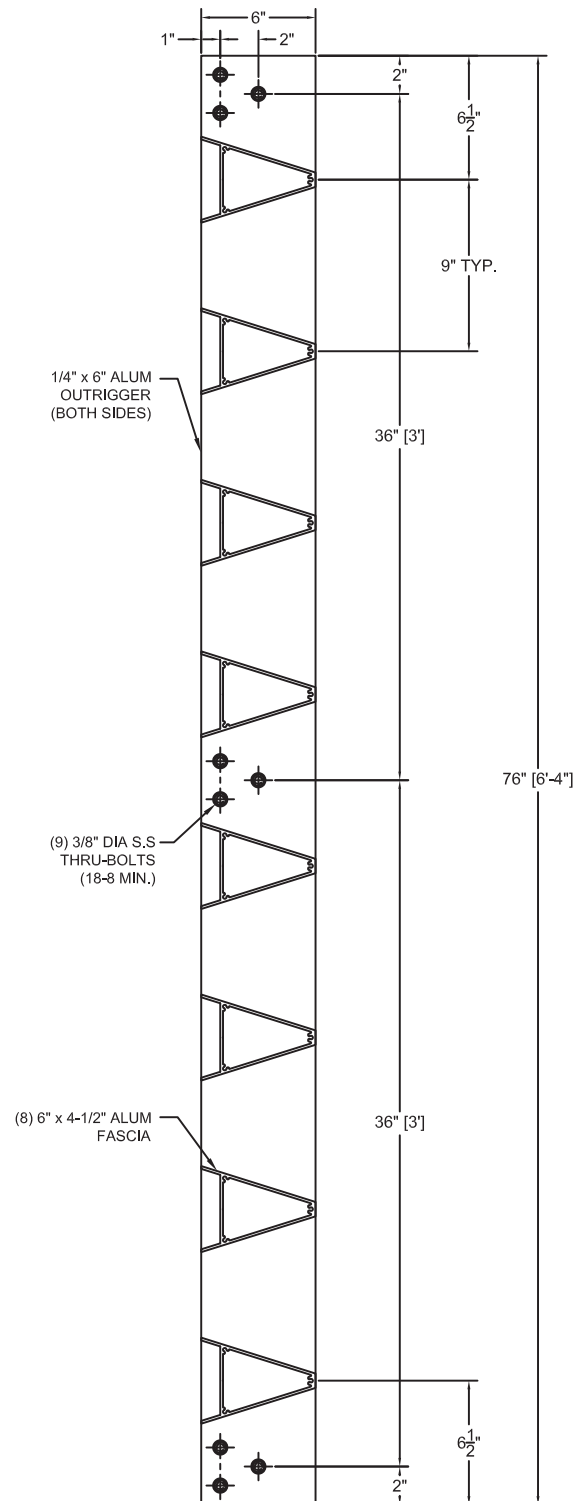


Spherical Series "JAXON"

All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.

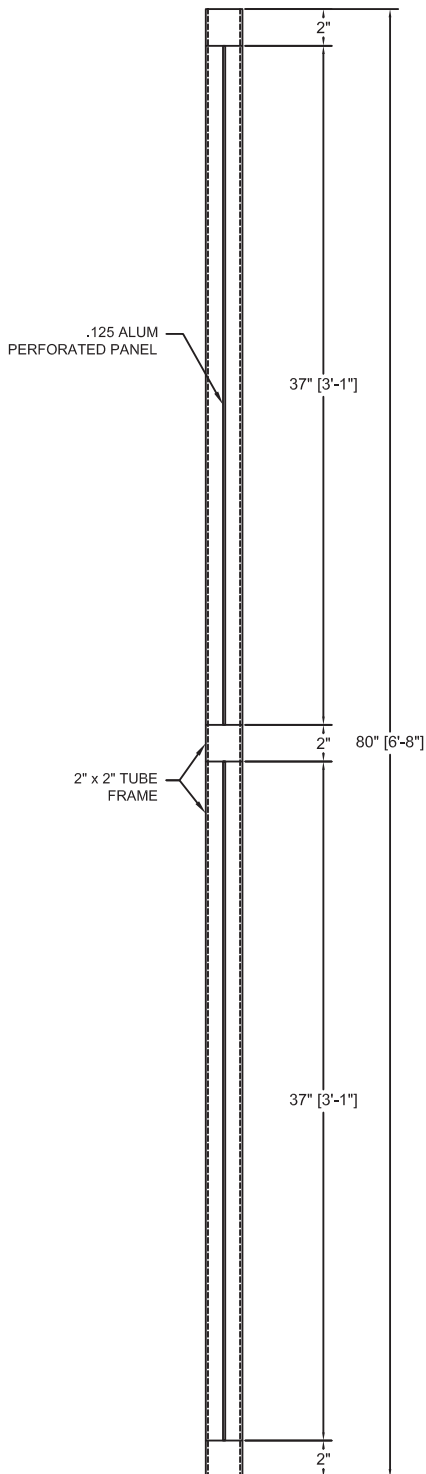


Ireland Series "WATERFORD"

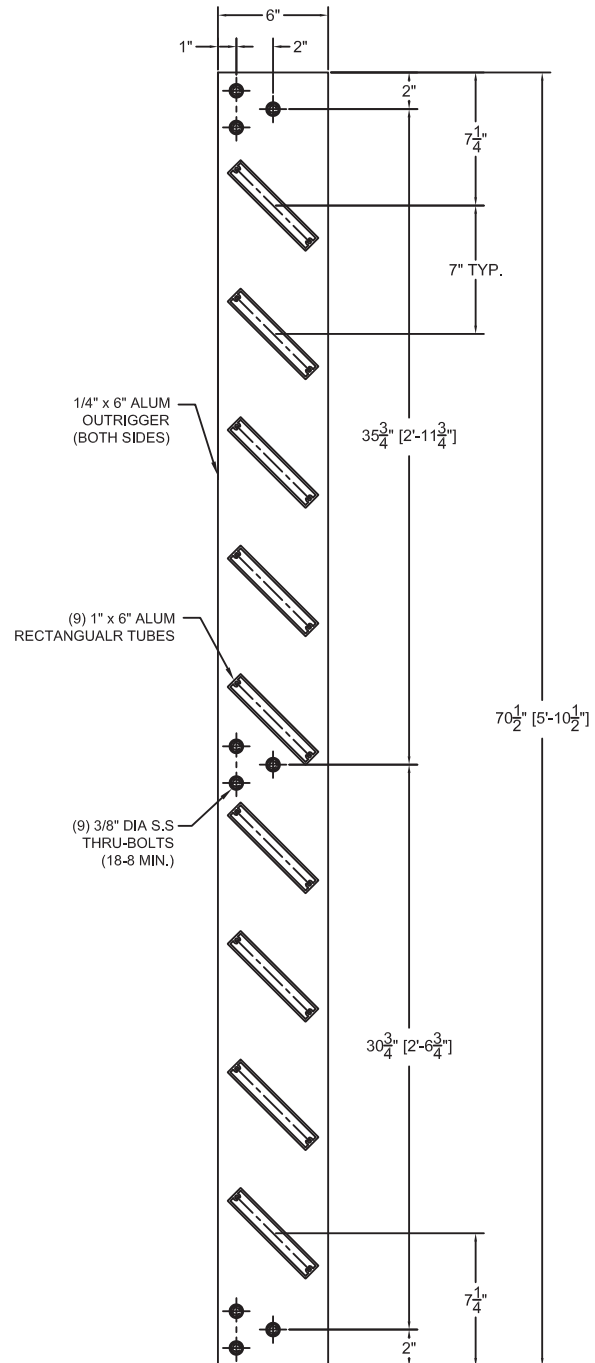


Ireland Series "LEVANT"

All the above models are available "as is" or "as a basis of design".
Qualified Engineering Modifications to the above sizes and shapes are available.

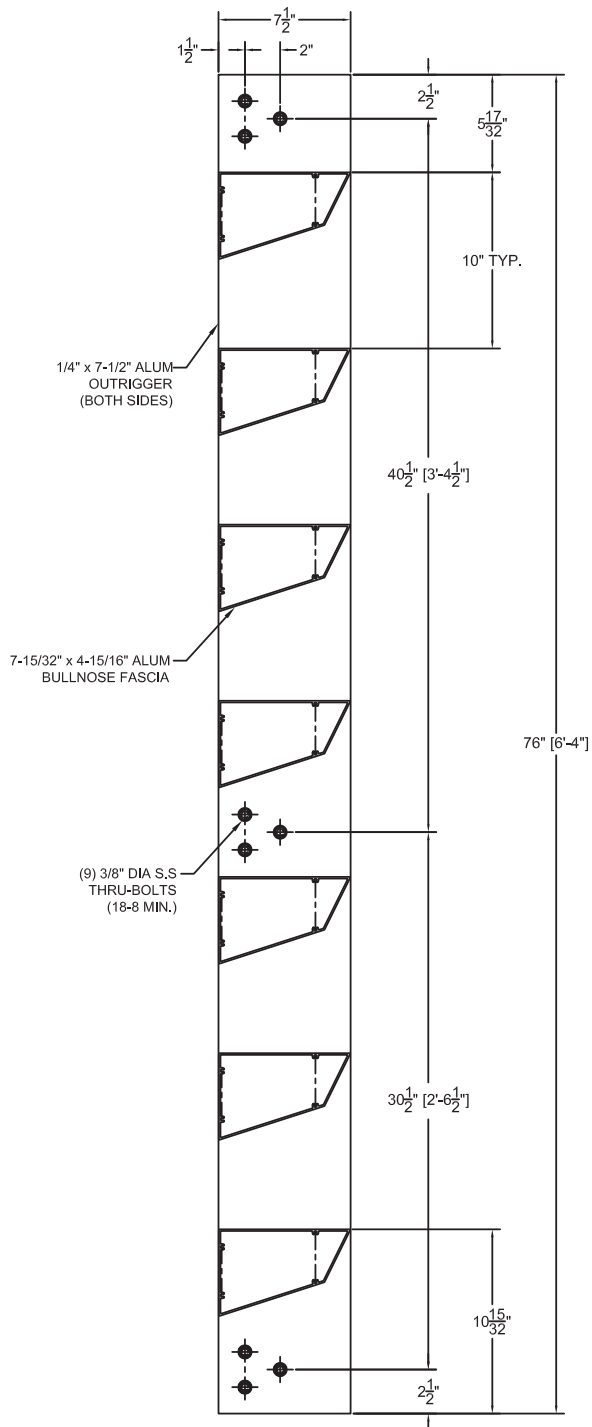


Constellation Series "PEGASUS"

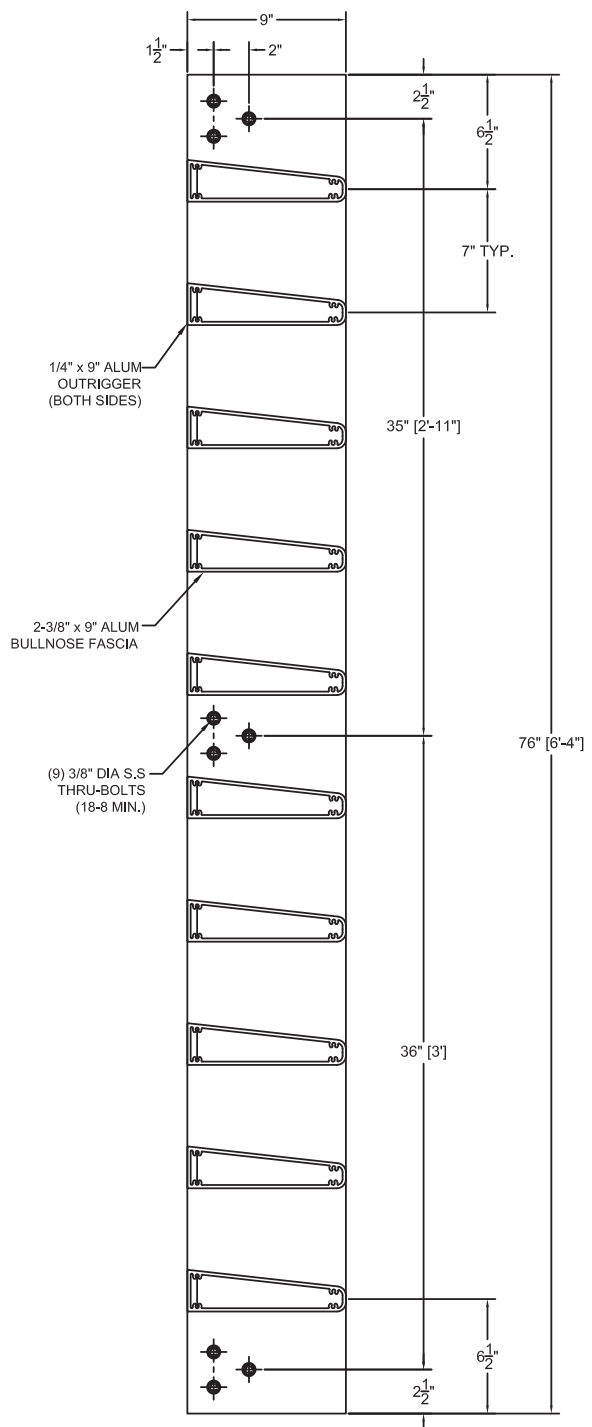


Constellation Series "PISCES"

All the above models are available "as is" or "as a basis of design".
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Constellation Series "LIBRA"



Constellation Series "GEMINI"

All the above models are available "as is" or "as a basis of design".
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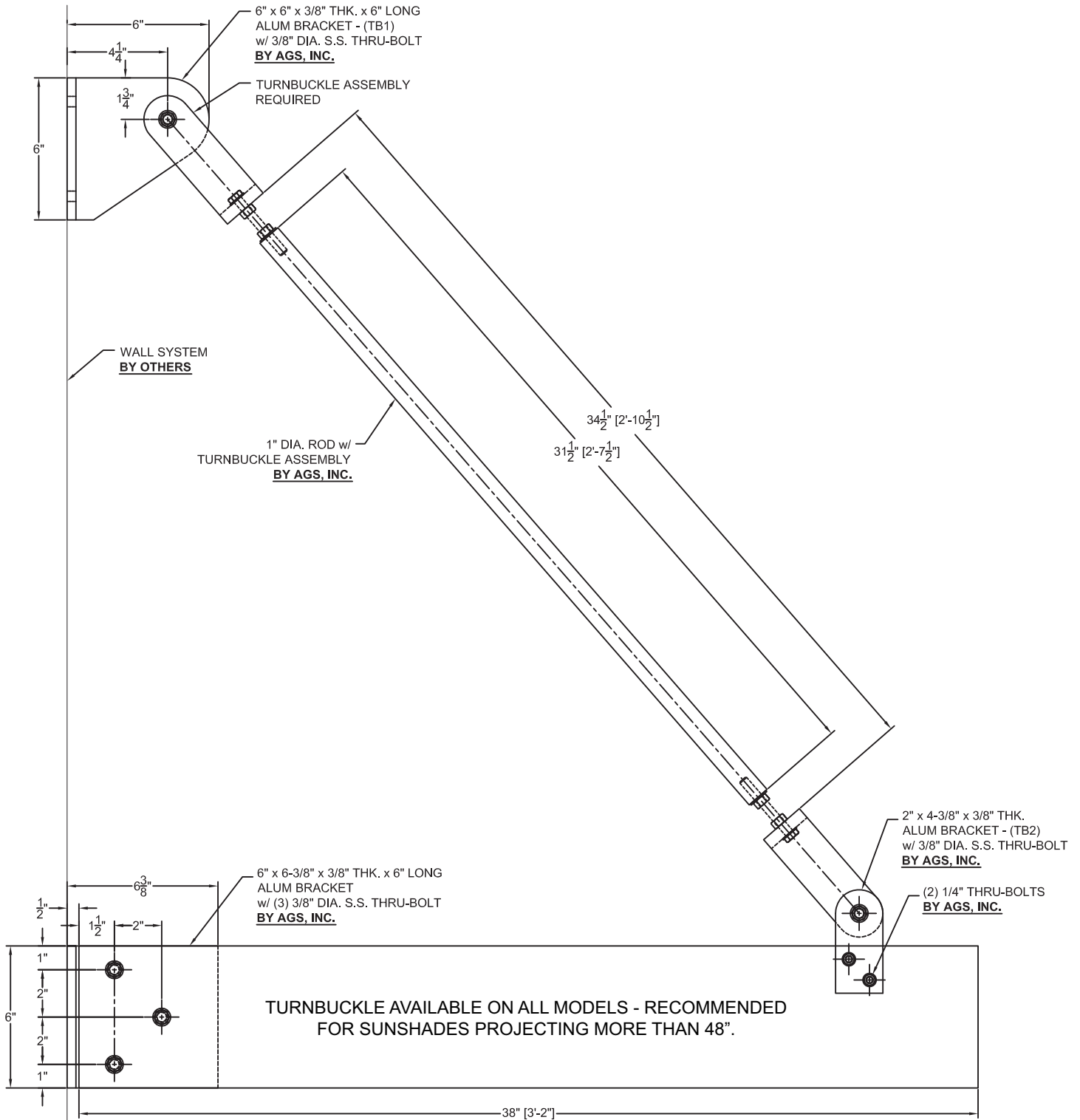


AGS INC

Architectural Grilles & Sunshades

22442 Fey Drive, Frankfort, IL 60423

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Qualified Engineering Modifications to the above sizes and shapes are available.



Aluminum Sunshades • Guide Specifications #107100

Part 1 – General

1.1 Summary

- A. This section includes products to assist in controlling the effects of the sun.
- B. Related work specified elsewhere
 - 1. Concrete Section
 - 2. Sheet Metal Work Section
 - 3. Glazed Aluminum Curtain wall Section
- C. Work included in this section.
The extent of the extruded aluminum sunshade system is shown on the contract drawings and hereby defined to include all sunshade devices of the type shown and specified herein.

1.2 Industry Standard

- A. Reference: Products and executions are specified in this section by reference to the following industry and/or trade specifications or standards of the following:
- B. National Association of Architectural Metal Manufacturers (NAAMM), the Aluminum Association (AA), American Architectural Manufacturers Association (AAMA).

1.3 Qualifications

- A. Manufacturers:
 - 1. Standard
 - 2. For the purpose of designation type and quality for the work under this section, drawings and specifications are based on the products manufactured by:
Architectural Grilles and Sunshades, Inc. (AGS, Inc.)
Address: 9950 W. 190th Street • Mokena, IL 60448
Phone: (708) 479-9458 • Fax: (708) 479-9478
Contact: Eric Niemeyer (e-mail: eric@agsshade.com)
- B. Acceptable Manufacturers:
Subject to compliance with these specifications, products as manufactured by:



1.4 Submittals

- A. Product data:
Manufacturer's technical and descriptive data.
- B. Shop Drawings:
Submit for architect's approval prior to commencement of any work or fabrication under this section, _____ sets of detail shop drawings showing all areas of work profiles and sections of all components, finishes and fastening details.
- C. Structural Calculations:
Submit comprehensive analysis of design loads, dead, live, snow, wind and thermal movements. Calculations shall be stamped and signed by a professional engineer in the jurisdiction where the project is located.
- D. Warranties:
The work in this section shall be guaranteed against defects in material and workmanship for a period of one (1) year from date of acceptance of the building. Contractor shall replace and repair any defects at no cost to the owner.

1.5 Components

- A. Shipping and Handling:
Deliver materials to the job site ready for erection. Assembled units to be packaged and shipped to prevent damage during freight and storage on site.

Part 2 – Products

2.1 Materials

- A. General: Metal shall be free from defects impairing strength, durability or appearance.
 - 1. Aluminum – ASTM B 221, alloys 6063-T5 and 6063-T6 for extrusions. ASTM B 209, alloys 5052-H32 or greater.
 - 2. Fasteners – Unless otherwise noted, fasteners shall be 300 series non-magnetic stainless steel. ASTM A-307, grade A or better

2.2 Components

- A. Sunshades component shall be – 6063 T5 extruded aluminum AGS, Inc.
- B. Outriggers shall be – 6063 T5 extruded aluminum AGS, Inc.
- C. Fascia shall be – 6063 T5 extruded aluminum AGS, Inc.
- D. Components shall be shop assembled in large practical sections to allow for immediate erection.



2.3 Aluminum Finish

A. General:

Finish on exposed aluminum shall be compliant with the performance standards set forth in AAMA Specifications 2605-98, "Superior Performing Organic Coatings on Aluminum."

B. Type:

Factory-applied, high performance, 70% Polyvinylidene Flouride (PVDF) coating based on Elf Atochem Inc. Kynar 500 or Ausimont USA Inc. Hylar 5000 resin, formulated by a licensed paint manufacturer, and applied by paint manufacturer's warranty-approved applicator.

C. Pretreatment:

Applicator to pretreat the aluminum with solutions to remove organic and inorganic surface soils, remove residual oxides, followed by a chrome phosphate conversion coating- at minimum 40 mg/square foot – to ensure adhesion of paint to the aluminum.

D. Application:

One primer coat, one color coat, for a minimum of 1.2 mils of dry film thickness.

E. Color:

Architect to choose standard color.

OR

- A. Class I, clear anodic finish: AA-M12C22A41 (Mechanical Finish: Chemical finished: etched, medium matte; anodic coating: Architectural class I, clear coating 0.018 mm or thicker) complying with AAMA 607.1.

Part 3 – Execution

3.1 Field Dimensions

- A. Verify conditions: Examine areas where work is to be performed and identify any conditions that could be detrimental to proper or timely completion.
- B. General Contractor shall field confirm openings and elevations as shown on shop drawings prior to fabrication.
- C. Installation should not proceed until all conditions are satisfactory.

3.2 Erection

- A. Qualified installer needs to comply with manufacturer's installation instructions.
- B. Verify all dimensions and the supporting structure and provide accurate field measurements, so that the sunshades will be properly designed, fabricated and fitted to the structure.
- C. Anchor sunshades to the building per the architectural drawings.
- D. A maximum of +/- 1/8" tolerance between any column to column spacing is acceptable.



- E. Do not cut or trim any sunshade components without written approval by AGS, Inc.
- F. Do not erect any damaged or deformed members. Remove or replace any damaged members in the erection process as directed by AGS, Inc.
- G. Set sunshade units level, plumb, with uniform joints.
- H. Qualified installer to erect after all adjacent painting, roofing and masonry had been completed.

3.3 **Cleaning**

- A. Clean exterior sunshades surfaces to prevent buildup of dust and debris, refer to AGS, Inc. cleaning instructions based on the finish of the material.

3.4 **Protection**

- A. Protect sunshade materials after installation to prevent damage by other tradespersons.



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Attachment Samples



Brick



Mitered Corner



Masonry



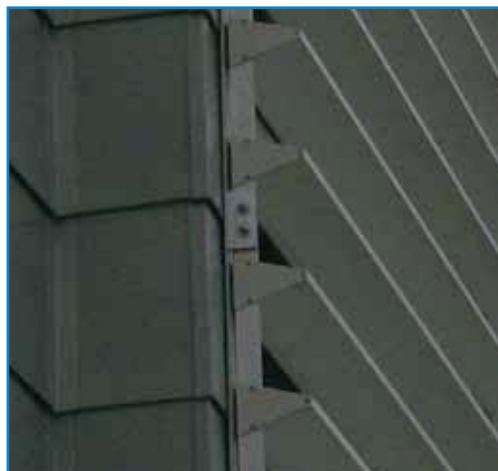
Turnbuckle Assembly



Turnbuckle Assembly

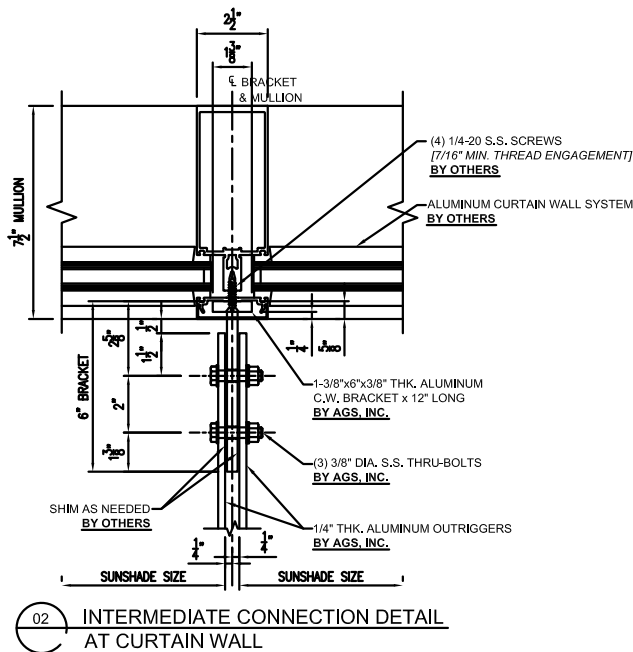
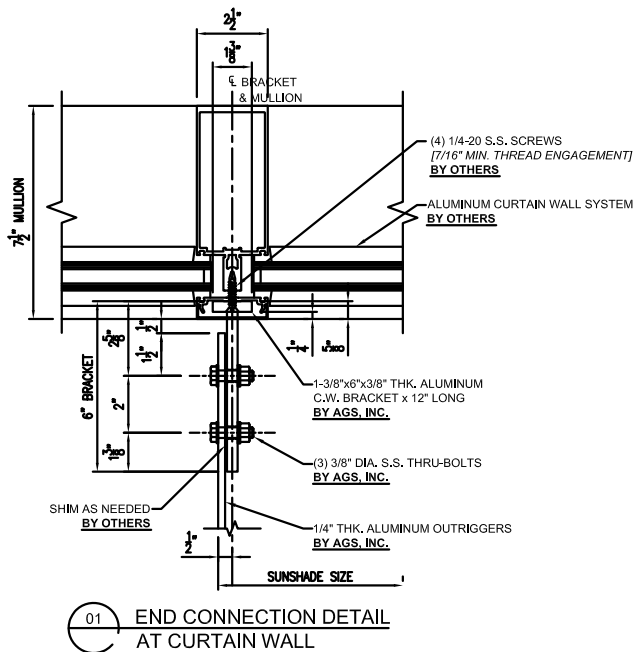


Metal Panel





Attachments

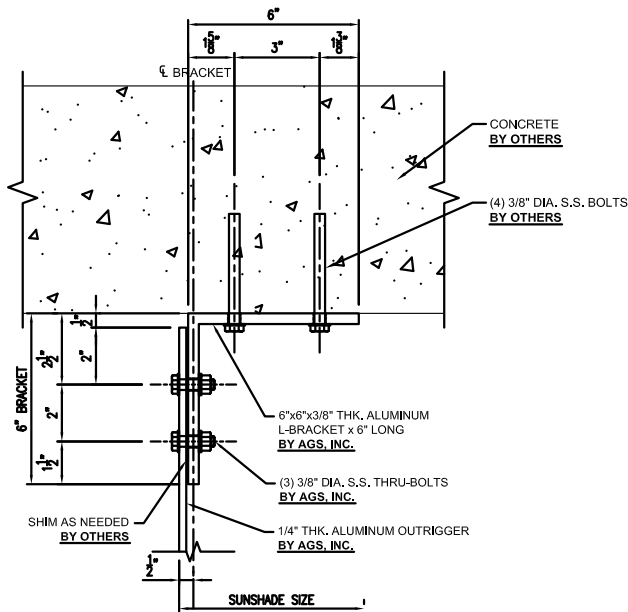


Installation for an Aluminum Curtain Wall Condition

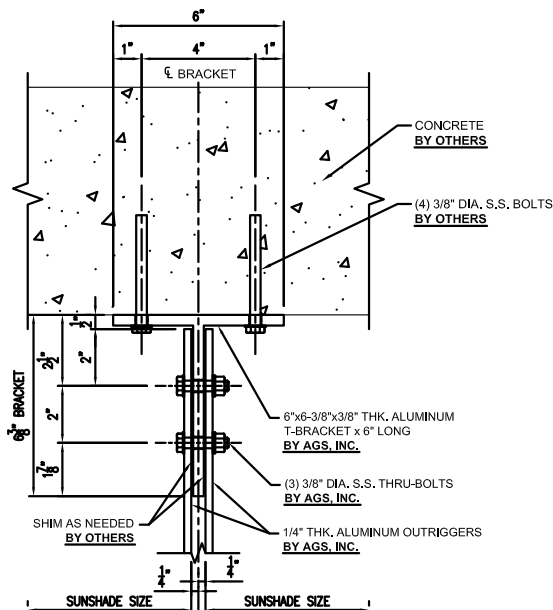
- AGS, Inc. Brackets are Extruded Aluminum
- Each Bracket is Pre-Drilled for 3/8" Thru Bolts to Attach to Outriggers
- Sunshade Outriggers are Pre-Drilled to Match Bracket Hole Locations
- Brackets are Attached to Structure by Installer Per Architectural Drawings and AGS, Inc. Shop Drawings
- Field Measurements by the Installer are Recommended Before Fabrication of Sunshades
- Sunshade Outriggers are Attached to the Brackets



Attachments



01 END CONNECTION DETAIL AT CONCRETE



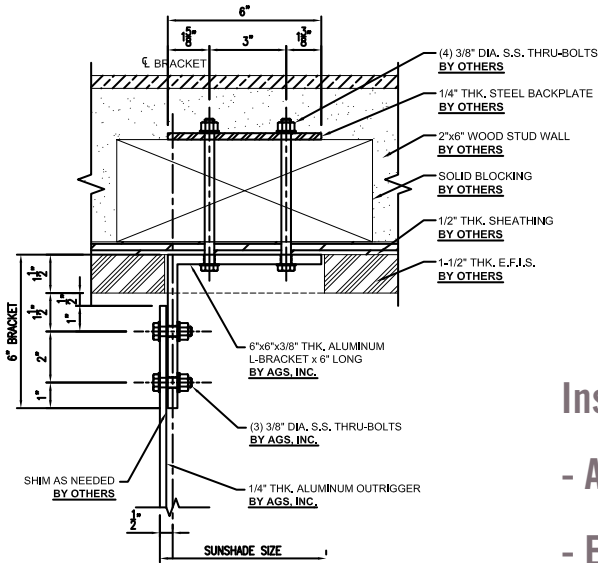
02 INTERMEDIATE CONNECTION DETAIL AT CONCRETE

Installation for a Concrete Condition

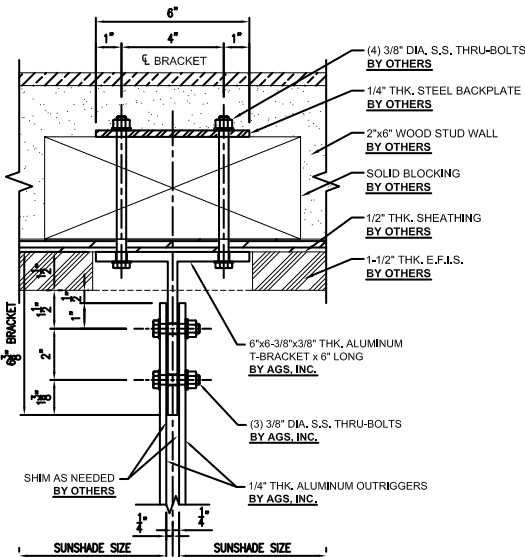
- AGS, Inc. Brackets are Extruded Aluminum
- Each Bracket is Pre-Drilled for 3/8" Thru Bolts to Attach to Outriggers
- Sunshade Outriggers are Pre-Drilled to Match Bracket Hole Locations
- Brackets are Attached to Structure by Installer Per Architectural Drawings and AGS, Inc. Shop Drawings
- Field Measurements by the Installer are Recommended Before Fabrication of Sunshades
- Sunshade Outriggers are Attached to the Brackets



Attachments



01 END CONNECTION DETAIL AT BLOCKING



02 INTERMEDIATE CONNECTION DETAIL AT BLOCKING

Installation for Blocking at E.I.F.S. Condition

- AGS, Inc. Brackets are Extruded Aluminum
- Each Bracket is Pre-Drilled for 3/8" Thru Bolts to Attach to Outriggers
- Sunshade Outriggers are Pre-Drilled to Match Bracket Hole Locations
- Brackets are Attached to Structure by Installer Per Architectural Drawings and AGS, Inc. Shop Drawings
- Field Measurements by the Installer are Recommended Before Fabrication of Sunshades
- Sunshade Outriggers are Attached to the Brackets



Span Tables

4" AIRFOIL MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	FAILS
84	OK	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS
90	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS
96	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS
102	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
108	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
114	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
120	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
126	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
132	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
138	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
144	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Airfoils are modeled as simple span beams from outrigger to outrigger.

5" AIRFOIL MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
90	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
96	OK	OK	OK	OK	OK	OK	OK	OK	OK	FAILS
102	OK	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS
108	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS
114	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS
120	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
126	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
132	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
138	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
144	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Airfoils are modeled as simple span beams from outrigger to outrigger.



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Span Tables



Span Tables

6" AIRFOIL MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
90	OK	OK	OK	OK	OK	OK	OK	OK	OK	FAILS
96	OK	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS
102	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS
108	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS
114	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
120	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
126	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
132	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
138	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
144	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Airfoils are modeled as simple span beams from outrigger to outrigger.

8" AIRFOIL MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
90	OK	OK	OK	OK	OK	OK	OK	OK	OK	FAILS
96	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS
102	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS
108	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS
114	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
120	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
126	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
132	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
138	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
144	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Airfoils are modeled as simple span beams from outrigger to outrigger.



Span Tables

2"x4"x1/8" TUBE MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
90	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
96	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
102	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
108	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
114	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
120	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
126	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
132	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
138	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
144	OK	OK	OK	OK	OK	OK	OK	OK	OK	FAILS

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Tubes are modeled as simple span beams from outrigger to outrigger.

2"x6"x1/8" TUBE MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
90	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
96	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
102	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
108	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
114	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
120	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
126	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
132	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
138	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
144	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Tubes are modeled as simple span beams from outrigger to outrigger.



Span Tables

2"x6"x1/8" TUBE MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
90	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
96	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
102	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
108	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
114	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
120	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
126	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
132	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
138	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
144	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Tubes are modeled as simple span beams from outrigger to outrigger.

2"x8"x1/8" TUBE MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
90	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
96	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
102	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
108	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
114	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
120	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
126	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
132	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
138	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
144	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Tubes are modeled as simple span beams from outrigger to outrigger.



Span Tables

2" ROUND MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
90	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
96	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
102	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
108	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
114	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
120	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
126	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
132	OK	OK	OK	OK	OK	OK	OK	OK	OK	FAILS
138	OK	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS
144	OK	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Round blades are modeled as simple span beams from outrigger to outrigger.
- Round blades are particularly susceptible to vortex shedding and vibration.
- These tables DO NOT take vibration into account which may limit spans.

2 1/2" ROUND MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
90	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
96	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
102	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
108	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
114	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
120	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
126	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
132	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
138	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
144	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Round blades are modeled as simple span beams from outrigger to outrigger.
- Round blades are particularly susceptible to vortex shedding and vibration.



Span Tables

3" ROUND MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
90	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
96	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
102	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
108	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
114	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
120	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
126	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
132	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
138	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
144	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Round blades are modeled as simple span beams from outrigger to outrigger.
- Round blades are particularly susceptible to vortex shedding and vibration.
- These tables DO NOT take vibration into account which may limit spans.

4" ROUND MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
90	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
96	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
102	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
108	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
114	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
120	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
126	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
132	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
138	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
144	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Round blades are modeled as simple span beams from outrigger to outrigger.
- Round blades are particularly susceptible to vortex shedding and vibration.
- These tables DO NOT take vibration into account which may limit spans.



Span Tables

4" Z BLADE MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	FAILS
48	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS
54	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS
60	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
66	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
72	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
78	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
84	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
90	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
96	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
102	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
108	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
114	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
120	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
126	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
132	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
138	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
144	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Round blades are modeled as simple span beams from outrigger to outrigger.
- Round blades are particularly susceptible to vortex shedding and vibration.
- These tables DO NOT take vibration into account which may limit spans.
- This table assumes a maximum blades spacing of 10" o.c.

4" Z BLADE BRACED MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	FAILS
90	OK	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS
96	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS
102	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS
108	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS
114	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS
120	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
126	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
132	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
138	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
144	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS

NOTES:

- These tables are based on the blades being braced at mid-span.
- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Round blades are modeled as simple span beams from outrigger to outrigger.
- Round blades are particularly susceptible to vortex shedding and vibration.



Span Tables

5" Z BLADE MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS
54	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS
60	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
66	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
72	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
78	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
84	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
90	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
96	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
102	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
108	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
114	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
120	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
126	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
132	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
138	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
144	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Round blades are modeled as simple span beams from outrigger to outrigger.
- Round blades are particularly susceptible to vortex shedding and vibration.
- These tables DO NOT take vibration into account which may limit spans.
- This table assumes a maximum blades spacing of 10" o.c.

5" Z BLADE BRACED MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
90	OK	OK	OK	OK	OK	OK	OK	OK	OK	FAILS
96	OK	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS
102	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS
108	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS
114	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS
120	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS
126	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
132	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
138	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
144	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS

NOTES:

- These tables are based on the blades being braced at mid-span.
- Calculated stress and deflections can be found in the following tables.
- Airfoil span tables are conservative and based on weak axis stress and deflection
- Round blades are modeled as simple span beams from outrigger to outrigger.
- Round blades are particularly susceptible to vortex shedding and vibration.



Span Tables

6" Z BLADE MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	FAILS
48	OK	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS
54	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS
60	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
66	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
72	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
78	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
84	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
90	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
96	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
102	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
108	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
114	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
120	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
126	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
132	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
138	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
144	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS

NOTES:

- Calculated stress and deflections can be found in the following tables.
- Span tables are conservative and based on weak axis stress and deflection
- Deflections are based on L/120 per IBC 2003.
- Allowable stress is based on 6063-T5 aluminum.
- Round blades are modeled as simple span beams from outrigger to outrigger.
- Round blades are particularly susceptible to vortex shedding and vibration.
- These tables DO NOT take vibration into account which may limit spans.
- This table assumes a maximum blades spacing of 10" o.c.

6" Z BLADE BRACED MAXIMUM SPAN TABLE TOTAL LOAD (PSF)

Span (in.)	20	25	30	35	40	45	50	60	70	80
36	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
42	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
48	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
54	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
60	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
66	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
72	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
78	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
84	OK	OK	OK	OK	OK	OK	OK	OK	OK	FAILS
90	OK	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS
96	OK	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS
102	OK	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS
108	OK	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS
114	OK	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS
120	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
126	OK	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
132	OK	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
138	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS
144	OK	OK	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS	FAILS

NOTES:

- These tables are based on the blades being braced at mid-span.
- Calculated stress and deflections can be found in the following tables.
- Span tables are conservative and based on weak axis stress and deflection
- Round blades are modeled as simple span beams from outrigger to outrigger.
- Round blades are particularly susceptible to vortex shedding and vibration.