

PRO•TEC ENGINEERED BUILDINGS



# SENTRY SERIES

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## BUILDING SPECIFICATIONS

Sioux Steel Company  
**1-800-557-4689**  
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[info@siouxsteel.com](mailto:info@siouxsteel.com)  
 Fax: 1-605-357-8597

Check Us Out On:



### Engineering Design Specifications:

**Wind Loads:** The Sentry building series is classified as partially enclosed with a wind speed of 90mph. This enclosure classification requires the use of .55 and -.55 internal pressure coefficients for positive and negative internal pressure. These are the highest coefficients that are required for any enclosure classification. It allows for a building to have three closed walls and one open wall. Pressure relief panels are not needed to lower the enclosure classification.

**Snow Loads:** Both balanced and unbalanced snow is applied to the model as service load cases. The standard building series is designed to 30psf, 40psf, and 50psf ground snow. The trusses are spaced closer together as the snow load increases 16ft, 12ft, and 10ft respectively.

**Design Load Combinations:** Service loads are factored and combined in accordance with ASCE 7-05. Applying the load cases to the entire building system is essential in the design of this type of building. Loading a single frame of the building is not an accurate depiction of the actual conditions that a building would be under in its intended environment.

#### • Powder Coated Steel Frame

*Standard powder coating is environmentally friendly. Hot-dip, galvanized option is also available.*

#### • Engineered To Meet Current IBC

*Engineered to 30-40-50 psf of ground snow and 90 mph basic wind speed!*

#### STEP 1

### What Will Your Building Be Used For?

- Industrial Warehousing
- Agricultural Storage
- Livestock Housing
- Riding Arenas
- Commodity Storage
- Grain Storage
- Equipment Storage
- Other Uses

#### STEP 2

### Choosing Size For Location & Needs

Sentry Buildings are available in widths from 40' up to 150'. Frame spacings come in 10', 12' and 16'.

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#### STEP 3

### Color Options

From red to grey to natural white, Sentry Buildings have multiple color options to choose from.

PAGE 6

#### STEP 4

### Accessories

- Truss or Pony Wall Legs
- Ridge Vents
- Roll Up Sides
- Awnings
- Roll Up Doors
- End Walls

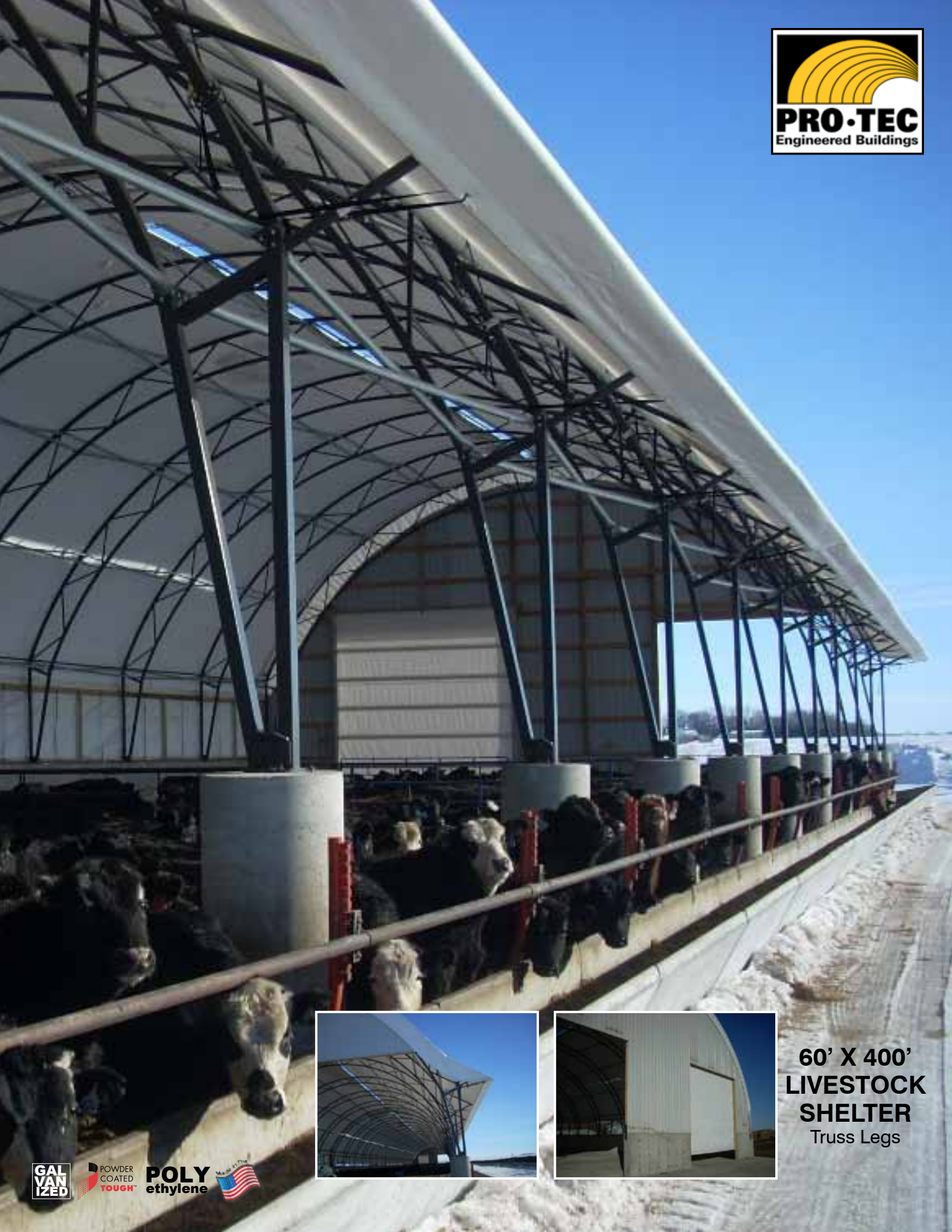
### General Building Specifications

Building Width*	Rafter Spacing Options**	Rafter Chord Size	Rafter Branch Size	Rafter Depth
40'	16', 12' or 10'	2.5"	1.5"	1'8"
50'	16', 12' or 10'	2.5"	1.5"	1'8"
60'	16', 12' or 10'	3"	1.5"	2'3"
70'	16', 12' or 10'	3"	1.5"	2'3"
80'	16', 12' or 10'	3"	1.5"	2'9"
90'	16', 12' or 10'	3.5"	1.5"	2'9"
110	16', 12' or 10'	4"	2"	3'4"
130'	16', 12' or 10'	4"	2"	3'10"
150'	16', 12' or 10'	4.5"	2"	4'4"

\* Measured outside to outside on vertical leg.

\*\* Snow loads on rafter spacing is: 16'-30 psf, 12'-40 psf & 10'-50 psf.





**60' X 400'  
LIVESTOCK  
SHELTER**  
Truss Legs

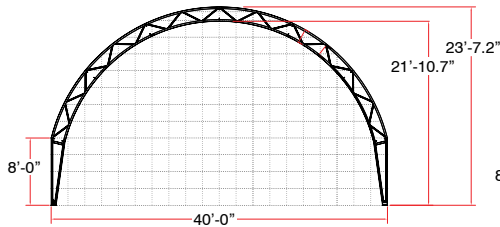


# SENTRY SERIES

## HEIGHT & WIDTH

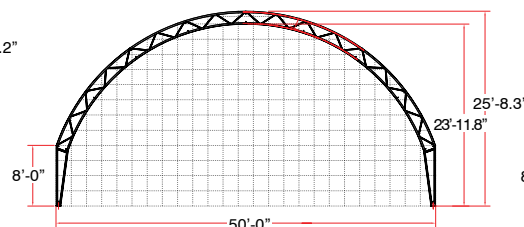
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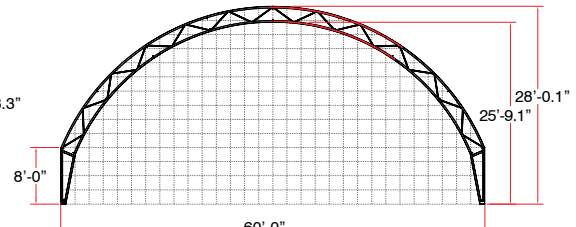
**40' ARCH**

Requires 2 End Wall Towers



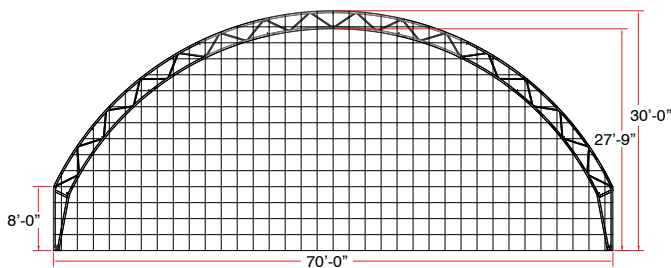
**50' ARCH**

Requires 2 End Wall Towers



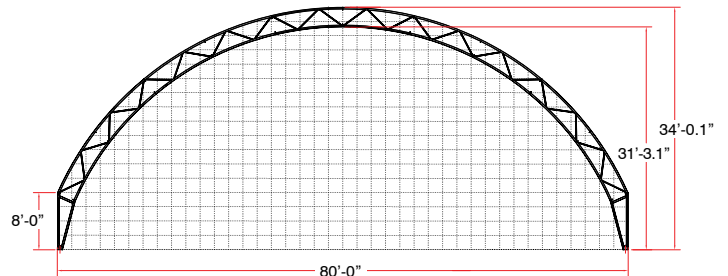
**60' ARCH**

Requires 4 End Wall Towers



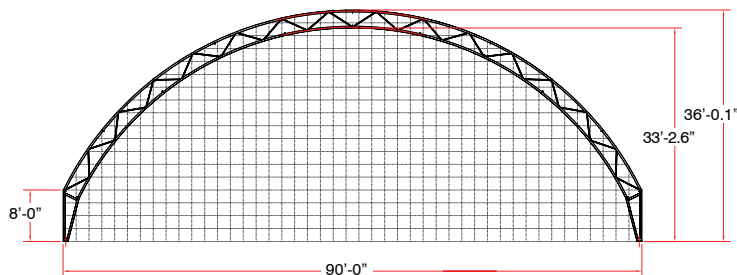
**70' ARCH**

Requires 4 End Wall Towers



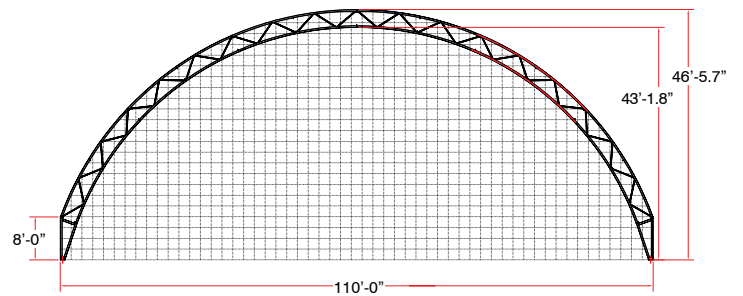
**80' ARCH**

Requires 4 End Wall Towers



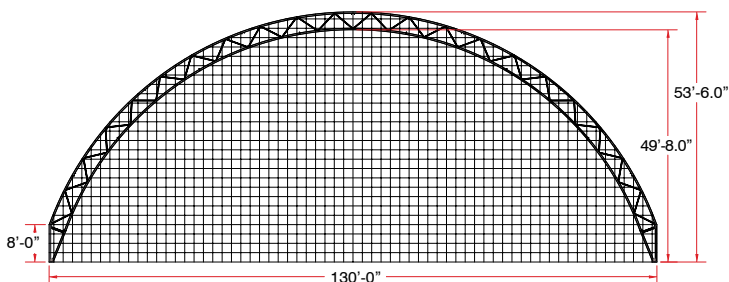
**90' ARCH**

Requires 4 End Wall Towers



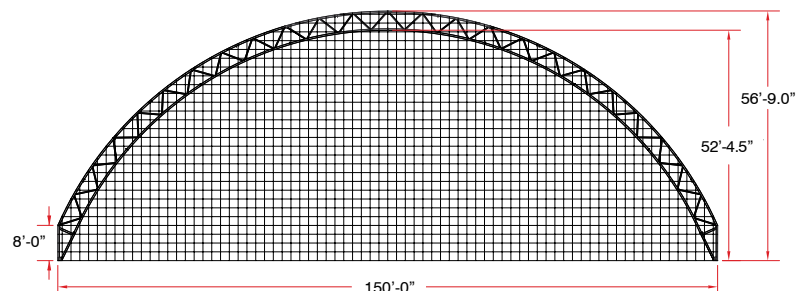
**110' ARCH**

Requires 6 End Wall Towers



**130' ARCH**

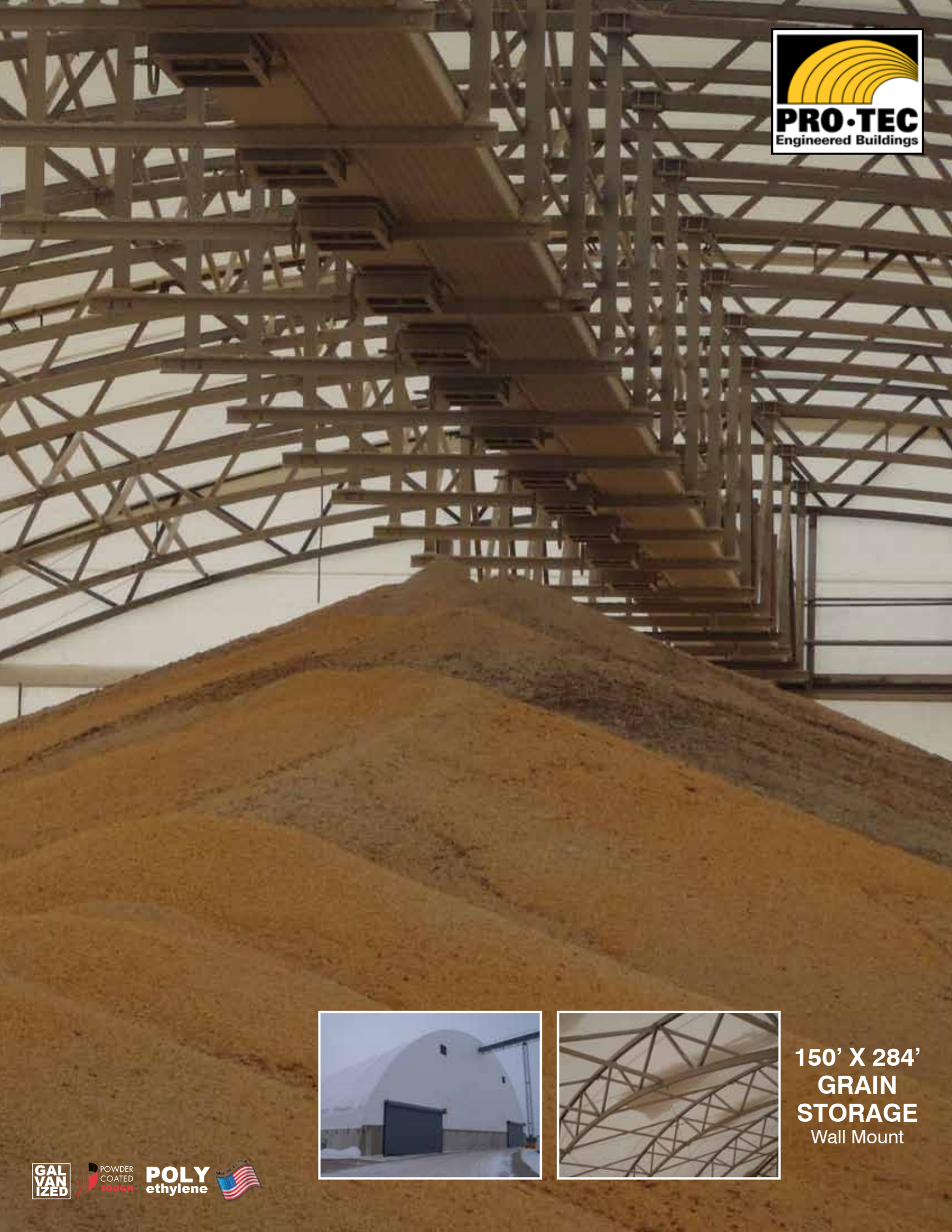
Requires 6 End Wall Towers



**150' ARCH**

Requires 6 End Wall Towers





**150' X 284'**  
**GRAIN**  
**STORAGE**  
Wall Mount

**GAL**  
**VAN**  
**IZED**

**POWDER**  
**COATED**  
**TOUGH**

**POLY**  
**ethylene**



# SENTRY SERIES

## COLOR/LEGS/ACCESSORIES

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Check Us Out On:



### COVER COLORS:

Option: Fire Retardant Covers



Wall Mount Option



Leg To Rafter Connection



Purlin To Rafter Connection



Standard 8' Truss Leg



### RIDGE VENT



Ridge vents allow for a consistent flow of air and exhaust of humidity.

### AWNINGS



Protection from the elements. Our durable awnings shelter the feed bunk from inclement weather.

### ROLL UP SIDES



Adjustable roll-up sides move up and down to regulate air intake and exhaust, resulting in a premier environment.

### DOORS



Doors are available in different sizes to offer access to the building.





**40' X 72'**  
**SENTRY**  
**BUILDING**  
Post Mount



# ENGINEERING

## SAFETY/DESIGN/STRENGTH

Check Us Out On:



### Safety is our #1 Priority:

We follow the 2006 International Building Code when designing all of our buildings. Wind loads are calculated based on a partially enclosed building classification. Partially enclosed classification uses the highest wind forces of any building classification. This allows you to detail building wall and door layouts as needed, without worry of the building being under-designed. These buildings are designed as partially enclosed because it is the recommended interpretation of the building code for fabric buildings. A "cross-braced" design method has been incorporated for this building series. This method does

not rely on the cover for bracing of the top chord. It also ensures that the building maintains its required strength regardless of a tear in the cover due to blowing debris. No reduction in snow loads that are not allowed by the code are taken.

### Innovative Design Ideas:

Sentry Series building highlights include: using all high strength steel, "cross-braced" frames, rolled chords, universal wall attachments, grain storage capabilities, conveyor capabilities, simplified construction, and many more, that make the "Sentry Series" a state of the art investment for any application.



**General:** ASCE 7-05 specifications are used for the design of all of the Sentry Series buildings. Dead, wind and snow loads are calculated and applied to the structure. STAAD. PRO V8i structural software is used to analyze the truss system. An entire building is modeled, not an individual arch. That ensures that force transfer between trusses, cables, and lateral bracing (purlins), are incorporated together. LRFD design of the building is used in accordance with AISC 360-05. Excel design spreadsheets are used in the remainder of the design for bolted and welded connections, cables, truss member design, base plates, and tension pipes.

**Contact Us Today For A Dealer Near You!**

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Phone!**