



# **Modular** Building Solutions

## Specifications Guide

[nVent.com/Trachte](http://nVent.com/Trachte)

# Building Specifications

## Drawings and Design Data 18-24 Gauge Roll-Formed Self-Framing

### General

The buildings covered by these specifications will be of self-framing design, utilizing the roof and wall panels as the primary structural supporting members. **These building specifications apply only to modular and site-built solutions built at the West Virginia Facility of 18-24 gauge steel, roll formed with painted coil stock.**

We can build 12-18 gauge flat stock, paint after fabrication at our Texas facility and Channelframe construction at our Wisconsin and Georgia facilities. Visit [nVent.com/Trachte](http://nVent.com/Trachte) for more information.

Each building will be supplied complete with all necessary component parts, including drill-in foundation anchors, to form a complete building system. All parts will be new and free from any defects or imperfections.

The building width and length will be measured from the outside of the building wall panels, and the height of the building will be the distance measured from the bottom surface of the base channel to the exterior juncture of the roof and side wall panels.

The building supplier will supply a complete set of building drawings showing the step-by-step construction instructions for the assembly of the building. The erection drawings will be prepared specifically for the building covered by these specifications showing the exact location of all roof and wall accessories and the exact anchor bolt locations required for each accessory.

### **Design Criteria**

All buildings will be designed in accordance with the applicable sections of the latest edition of the AISC "Specifications for Structural Steel Buildings" and the AISI "Specifications for the Design of Cold-Formed Steel Structural Members." Each building will be designed for the following loads, in addition to the stationary weight (dead load) of the building. Reduction of gravity loads due to tributary loaded areas will not be permitted.

1. The vertical Live Load of the building will not be less than (\*) pounds per square foot applied on the Horizontal projection of the roof. **\*Per customer request but not less than 20psf or as required by local code, whichever is greater.**
2. The Ground Snow Load of the building will not be less than (\*) pounds per square foot. The factored roof snow load will be applied on the Horizontal projection of the roof. **\*Per customer request or as required by local code, whichever is greater.**
3. The design Wind Load of the building will not be less than (\*) miles per hour (3 second gust) and will be distributed and applied in accordance with the applicable edition of the "International Building Code" published by the International Code Council. **\*Per customer request or as required by local code, whichever is greater.**
4. The design Seismic Load of the building will be calculated, distributed and applied in accordance with the applicable edition of the "International Building Code" published by the International Code Council. A 0.2 second Spectral Response Acceleration of (\*) percent and a 1.0 second Spectral Response Acceleration of (\*) percent will be used for design. **\*Per customer request or as required by local code, whichever is greater.**

# Building Specifications

## Drawings and Design Data

### Design Criteria (continued)

All combining and distributing of auxiliary equipment loads imposed on the building system will be done in accordance with the applicable edition of the "International Building Code" published by the International Code Council. NOTE: The building designer is responsible for advising the building supplier of any auxiliary loads

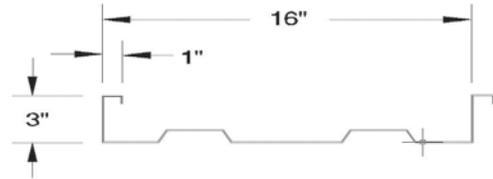
Upon request, the selected building manufacturer will provide the building purchaser with a complete design certification signed and sealed by a registered professional engineer.

nVent TRACHTE designs all standard buildings using the applicable edition of the "International Building Code" (IBC) published by the International Code Council. Please note that many areas of the country require the use of state or local building codes which may be different from the "IBC". Building codes can be markedly different from one another and are often revised at the local level. Therefore, it is the responsibility of the specifier to notify nVent TRACHTE of any building code(s) in effect for any particular building or provide nVent TRACHTE with contact information for the building inspector with jurisdiction over the building site.

### **Wall Panel Design**

Exterior wall panels of the building will be a single continuous length from the base channel to the roof line of the building at the side walls and end walls of the building except where interrupted by wall openings.

Wall panels will be 16" wide with a 3" deep inward-turned interlocking side rib. Wall panels will contain two 3/4" deep by 3-1/8" wide fluted recesses, each starting 2-7/16" from the panel edge.

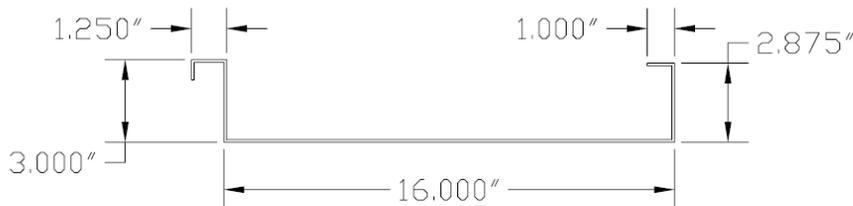


Wall panels will be fastened internally to the base channel and eave cap of the building with 3/8" diameter plated machine bolts placed within the panel interlock. The fastening system will be designed so that no wall fasteners are exposed on the exterior surface of the walls.

Wall panels shall be nominal 24-gauge galvanized steel conforming to ASTM A 653 specifications with the galvanized coating conforming to G90 (0.90 oz. commercial) standards.

Minimum yield strength of the panel material will be 40,000 PSI. Panel material will be embossed with a random pattern pebble embosser of approximately 0.007-0.008 depth.

### **Wall Panel Design - Texas HD 12 gauge Interlocking Panel**



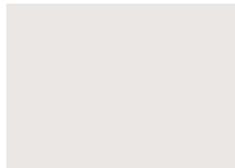
TEXAS HD 12ga INTERLOCKING Panel  
16" wide w/ 3" Ribs  
23-3/4" x XXX", .093" Bend Radius  
[ BENT LENGTH UP TO 240" ]

# Building Specifications

## Exterior Wall and Roof Panels

### Wall Panel Finish

All exterior surfaces of the galvanized steel wall covering and exterior trim will receive a factory, roller applied paint coating having an exterior coating thickness of 0.95 to 1.1 mils of dry film thickness. The finish coat for wall panels will be a silicone polyester formulation of one of the following colors:



**Arctic White**



**Desert Tan**



**Twilight Blue**



**Laurel Green**



**Roman Bronze**



**Shell Gray**

**\*Colors indicated are approximate.**

The wall panel color coating will carry a low fire hazard rating equal to a Class 1 material as defined by Factory Mutual. The panel coating will have achieved a Flame Spread Index of 0 and a Fuel Contributed Index of 5 or less when tested in accordance with ASTM E 84 test procedures.

Exterior color coatings will meet the following performance standards after 10 years continuous exposure in normal atmospheric conditions not containing corrosive fumes, such as chemical fumes or salt spray.

- A. Panels will show no evidence of blistering, peeling or chipping. Paint finish will not peel, flake or otherwise lose adhesion to an extent that is apparent on ordinary visual observation. NOTE: Slight crazing or cracking may occur on roll-formed edges or break bends at the time of forming.
- B. Panels will not show surface chalking in excess of the No. 8 rating per ASTM D 4214, Method A as established by the American Society of Testing Materials (ASTM).
- C. Panels will not show color change in excess of five Hunter units when measured in accordance with the ASTM D 2244 standard after cleaning per ASTM D 3964.

The above performance standards will not apply where panels have been damaged by fire, radiation or other physical damage.

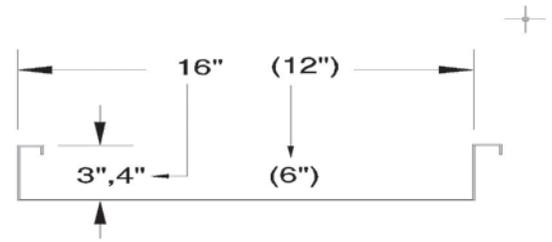
# Building Specifications

## Exterior Wall and Roof Panels

### Roof Panel Design

Roof panels will be supplied in a single continuous length from eave line to ridge line on Gable buildings and from eave line to eave line on other buildings, and will be designed to tightly interlock so that no fasteners are required at intermediate points along the panel side laps.

Roof panels will be a maximum of 16" wide with a smooth surface between the interlocking side ribs. The interlocking ribs will be a minimum 3" high and will be turned upward. All roof panels will be factory punched for connection at the eave line of the building.



There will be no fastener penetrations through the roof covering except at eave lines, ridge lines and roof accessory openings, such as skylights and ventilators.

### Roof Panel Finish (Standard)

Roof panels shall be nominal 24-gauge steel coated on both sides with a coating of corrosion resistant aluminum-zinc alloy conforming to ASTM A 792 specification with the coating conforming to AZ55 standard by a continuous hot dipping process. Coating weight will be a minimum of 0.55 oz. of aluminum-zinc alloy per square foot of coated sheet equivalent to about 0.8 mil. thickness on each side. Minimum yield strength of panel material will be 50,000 PSI.

### Roof Panel Finish (Optional)

Roof panels shall be nominal 24-gauge galvanized steel conforming to ASTM A 653 specifications with the galvanized coating conforming to G90 (0.90 oz. commercial) standards. Minimum yield strength of the panel material will be 50,000 PSI. All exterior surfaces of the galvanized steel roof panels will receive two factory, roller applied paint coats having a combined coating thickness of 0.8 to 1.1 mils of dry film thickness. The finished coat for the roof panels will be a white siliconized polyester formulation.

The roof panel color coating will carry a low fire hazard rating equal to a Class 1 material as defined by Factory Mutual. The panel coating will have achieved a Flame Spread Index of 0 and a Fuel Contributed Index of 5 or less when tested in accordance with ASTM E 84 test procedures.

The finish coat will be a white siliconized polyester formulation that will meet the following performance standards after 10 years continuous exposure in "normal" atmospheric conditions not containing corrosive fumes, such as chemicals or salt spray.

1. Panels will show no evidence of blistering, peeling or chipping.
2. Panels will not show surface chalking in excess of the No. 6 rating per ASTM D 4214, Method A, as established by the American Society of Testing Materials (ASTM).
3. Panels will not show color change in excess of 7 Hunter units when measured in accordance with the ASTM D 2244 standard after cleaning per ASTM D 3964.

The above performance standards will not apply where panels have been damaged by fire, radiation or other physical damage.

# Type S - Single Slope Design

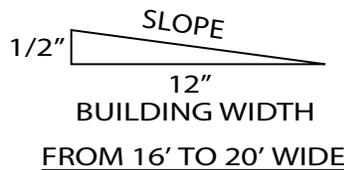
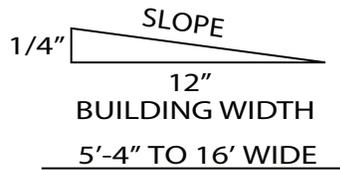
## Roof Design

Each 'Type S' building roof will be pitched: 5'-4" to 16' wide buildings will have a 1-1/2" pitch over the building width and buildings greater than 16' wide will have a 3" pitch. Roof panels will be interlocking and be attached to the wall cap through factory punched holes with #14 corrosion resistant fasteners.

The roof system will include a gutter and downspout system at the low side wall and matching rake trim at the building end walls. All gutters and trim will be nominal 26-gauge galvanized steel pre-painted Arctic White or Roman Bronze.

## Wall Design

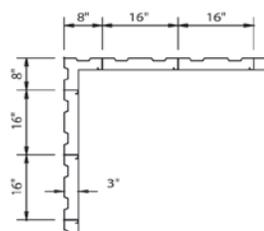
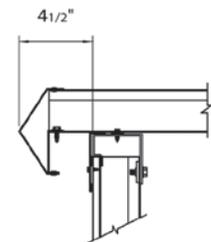
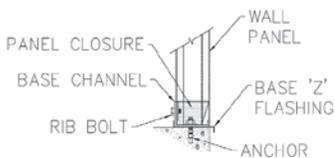
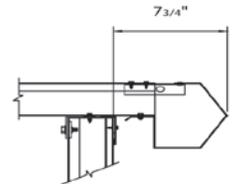
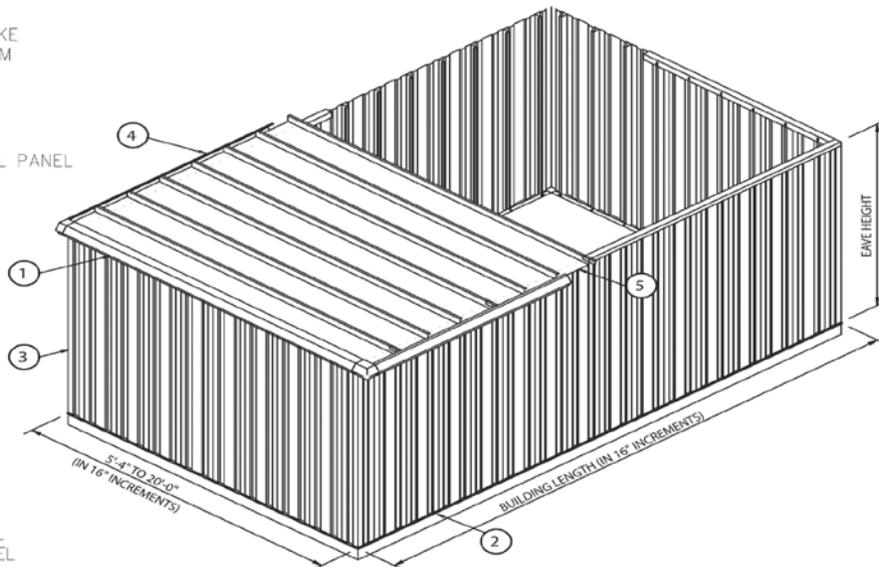
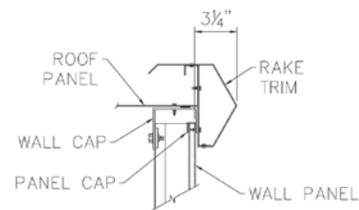
The wall system will provide structural support for the roof and lateral support for the building. No secondary girt system will be required for structural support of the building wall system.



## Structural Framing

Transmission of horizontal wind loads across the building will be made through the panel roof system and no separate roof or wall diagonal bracing will be required. 'Type S' buildings are self-supporting structures and will not depend on existing structures for support.

Where required for proper transmission of lateral wind loads, structural frame wind bents will be installed. Wind bents will consist of a bolted column and rafter assembly of steel conforming to ASTM A 36 specifications.



# Type LT Design

Building widths:  
5'-4" to 20'-0" wide in 16" increments

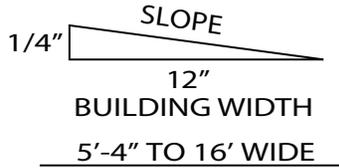
## Roof Design

Each 'Type LT' building roof will be pitched: 5'-4" to 16' wide buildings will have a 1-1/2" pitch over the building width and buildings greater than 16' wide will have a 3" pitch. Roof panels will be interlocking and be attached to the wall cap through factory punched holes with #14 corrosion resistant fasteners.

The roof system will include a gutter and downspout system at the low side wall and matching rake trim at the building end walls. All gutters and trim will be nominal 26-gauge galvanized steel prepainted Arctic White or Roman Bronze.

## Wall Design

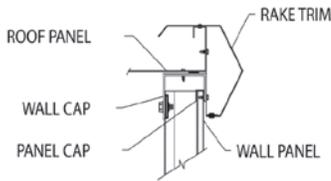
The wall system will provide structural support for the roof and lateral support for the building. No secondary girt system will be required for structural support of the building wall system.



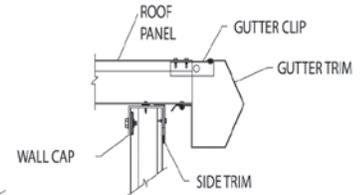
## Structural Framing

Transmission of horizontal wind loads across the building will be made through the panel roof system and no separate roof or wall diagonal bracing will be required. 'Lean-To' buildings are self-supporting structures and will not depend on existing structures for support.

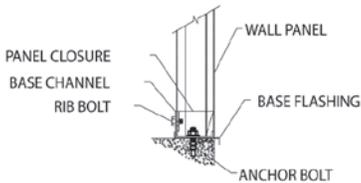
Structural support and attachment of roof at existing building will be the responsibility of others. In snow prone areas, drifting should be considered.



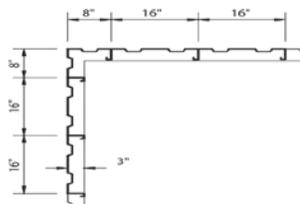
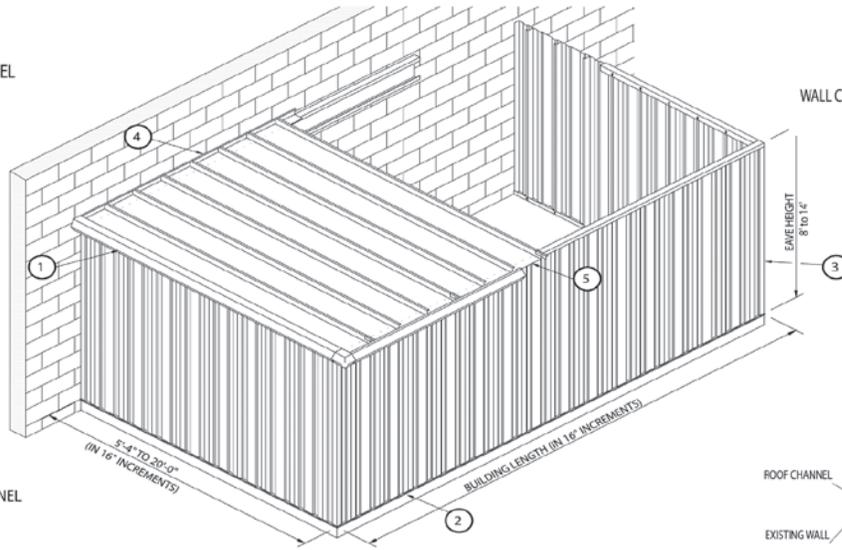
1 End Wall



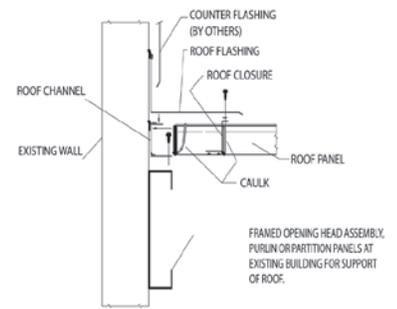
5 Low Side Eave



2 Detail at Base of Wall



3 Corner Detail



4 High Side Roof Connection

# Type AL Gable

Building Widths:  
8'-0" to 32'-0" wide in 4'-0" increments

## Roof Design

Each 'Type AL' building will have a center gable roof with a slope of 2" in 12" (8'-0" to 28'-0" wide) or 4" in 12" (32'-0" wide). The interlocking roof panels will vary in width up to 16" wide and in thickness from 0.024" thick to 0.044" thick depending upon the loading conditions. They will be fastened to an eave cap with 1/4" diameter 300 Series stainless steel bolts through factory punched holes. The ridge of the roof will be a welded double channel assembly sealed with a nominal 20-gauge steel ridge cover matching the roof in color. The interlocking panel roof system shall extend a minimum of 6" over the side wall panels and a minimum of 8" over the end wall panels of the building, except that buildings with 12" wide roof panels will have no end wall overhang.

The gable ends will be trimmed with nominal 26-gauge factory painted rake trim having matching ridge and eave cornices. Color will be Arctic White or Roman Bronze.

OPTIONAL: The eaves of the building will have nominal 26-gauge gutter and 2" x 3" downspouts factory painted to match the building's rake trim. The system will be complete with all required outlet drops, elbows and connecting hardware.

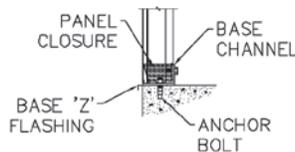
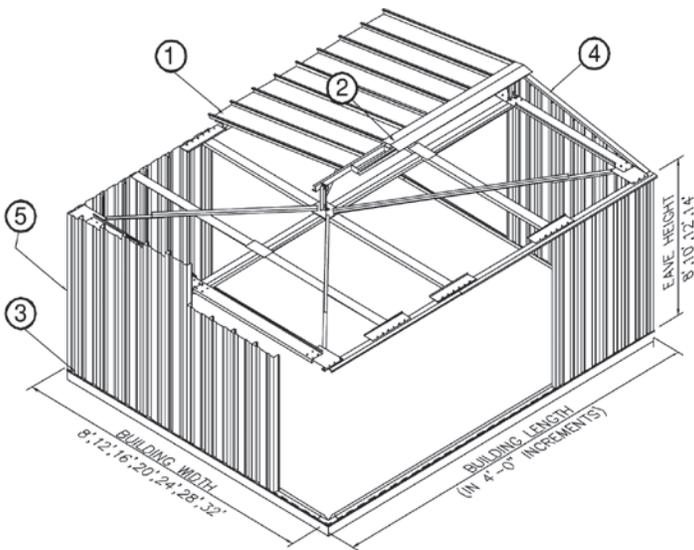
## Wall Design

The wall system will provide structural support for the roof and lateral support for the building. No secondary girt system will be required for structural support of the building wall system.

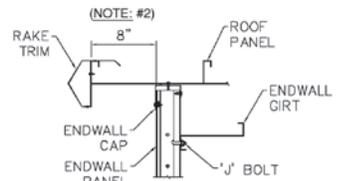
## Structural Framing

Strap and/or channel bracing components will be placed across the building width to allow transmission of horizontal wind loads. All wind bracing components will be not less than nominal 14-gauge galvanized steel.

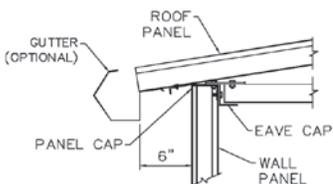
Where required for proper transmission of lateral wind loads, structural frame windbents will be installed. Windbents will consist of a prime painted column and rafter bolted assembly of steel conforming to ASTM A 36 specifications.



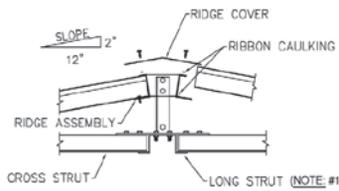
3 Base Detail



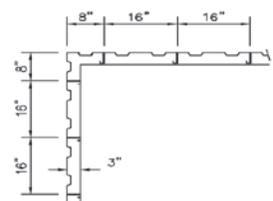
4 Wall Section



1 Eave Detail



2 Ridge Detail



5 Corner Detail

# Factory Assembled Building

## Building Design

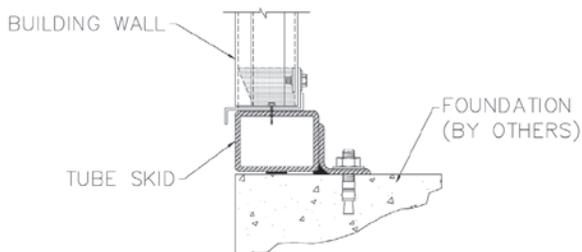
Factory-assembled buildings consist of a self-framing building, using the walls and roof as the structural supporting system. Buildings can be supplied in single slope or gable roof design and may be shipped in multiple sections. The roof system will include gutter and rake trim for a finished appearance. Building to include accessories, steel base system, electrical, HVAC and interior finishes as required by the customer. All assemblies will be completed in a controlled environment to ensure a quality product. Where required, buildings will be shipped with necessary third-party inspection certificates and/or state labels. Off-loading, setting, and connection of utilities is not the responsibility of the building manufacturer.

## Base Design

Each building will be factory erected in a controlled environment on one of the following:

### Tube Skid

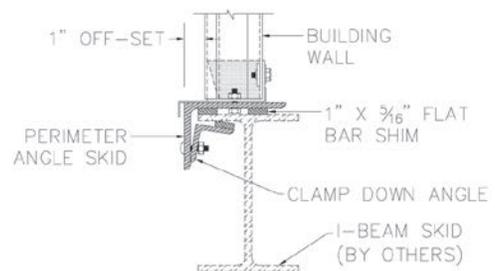
A tube skid is to be used if the building is to be set on a customer-supplied concrete foundation.



Tube Skid

### Angle Skid

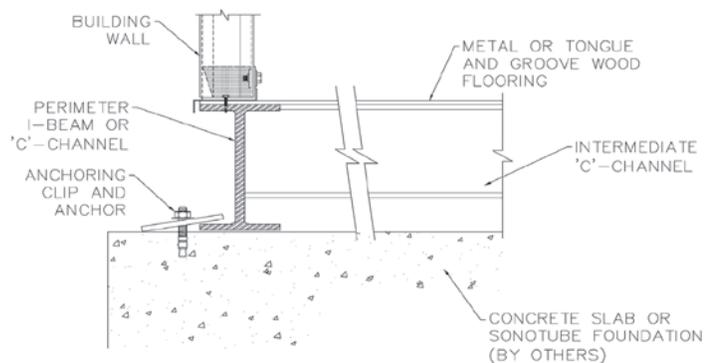
An angle skid is to be used if the building is to be set on a customer-supplied I-beam base, C-channel skid, or concrete foundation.



Angle Skid

### Structural Skid w/ Floor

A structural perimeter frame with floor system designed for (\*) psf live load is to be used if the building is to be set on a customer-supplied concrete foundation or piers. **\*Per customer request but not less than 50 or as required by local code (based on building occupancy), whichever is greater.**

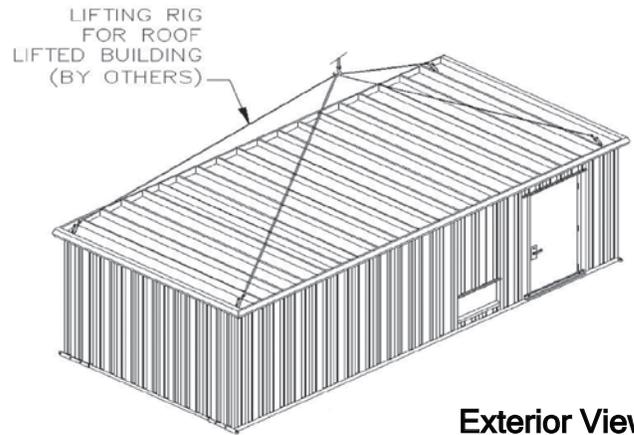


Structural Skid w/ Floor

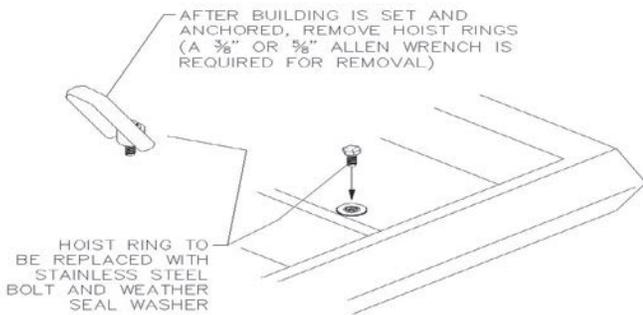
# Factory Assembled Building

## Lifting Design

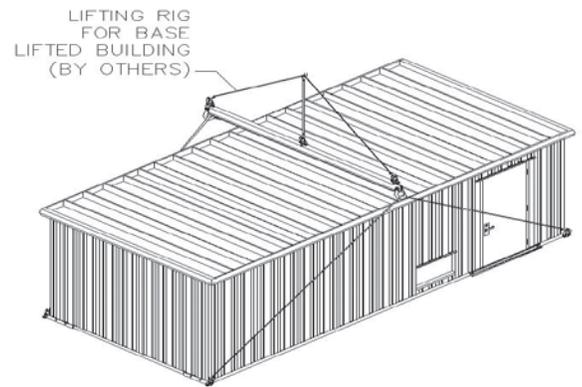
All factory assembled buildings will be designed for either a base lift or roof lift. Rigging required for lifting of the building will be provided by others.



**Exterior View  
(Roof Lifted Building)**



**Hoist Ring Detail  
(For Roof Lifted Buildings)**



**Exterior View  
(Base Lifted Building)**

## Electrical Equipment

Electrical equipment provided in building will be based on customer-supplied specifications. All electrical equipment to be installed per national electrical code.

## HVAC

Buildings that require heating and cooling will be equipped with an HVAC unit designed to meet the requirements given by the customer. HVAC system design will be required to meet the minimum national energy code. Heat loads generated from customer-supplied equipment inside building must be given to building supplier in order to size unit accurately.

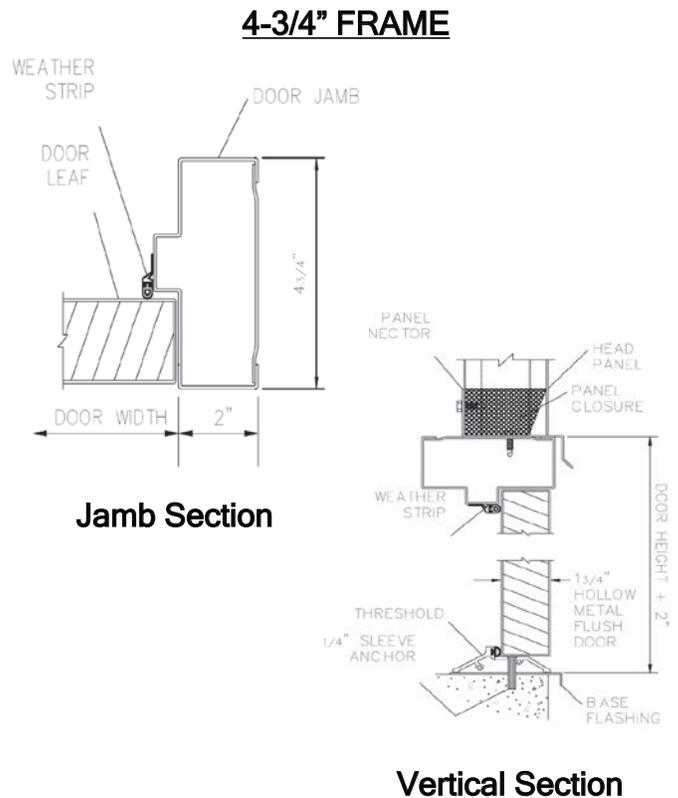
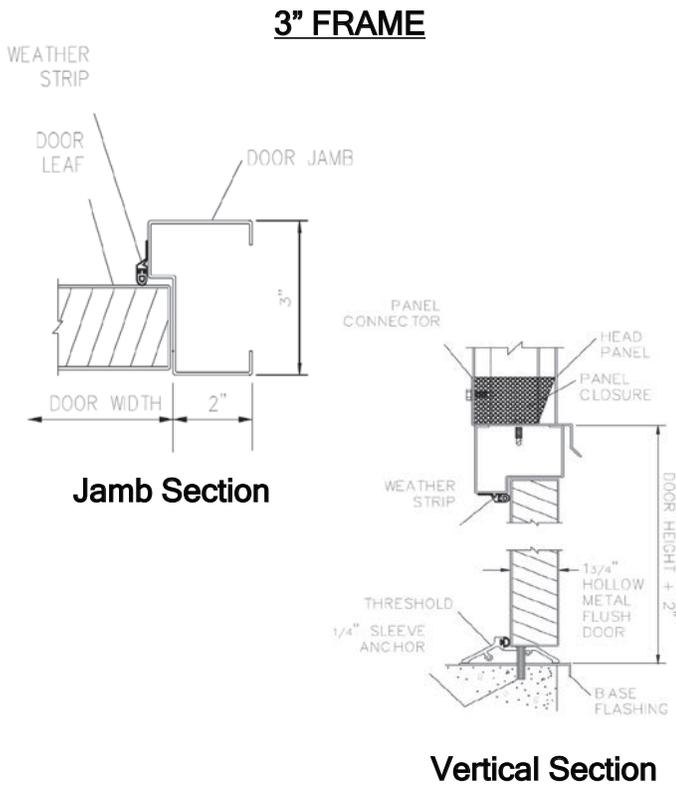
# Hollow Metal Doors

## Door Leaf

Door leaves will be 1-3/4" thick flush construction of a nominal 20-gauge galvanized steel, reinforced by lamination to a small cell honeycomb core. Leaves will be manufactured in accordance with ANSI/SDI-100, Grade 1, Model 1. (STC rating - 30, and U value - .14).

## Door Frame

Door frames will be either 3" deep, single rabbit or 4-3/4" deep, double rabbeted type, of nominal 16-gauge galvanized steel. Frames will have hinge reinforcement of a nominal 7-gauge and lock reinforcement of a nominal 16-gauge.



## Door Assembly

All doors will be provided "assembled" in their frames with all hardware, except door levers, knobs, bars or closers installed on door leaf. (Double swing doors will require some field assembly).

## Door Finish (Standard)

All leaves and frames will be factory painted with one coat of baked on primer.

## Door Finish (Optional)

Door leaf and frame will receive one factory applied finish coat of polyester paint to match the wall color.

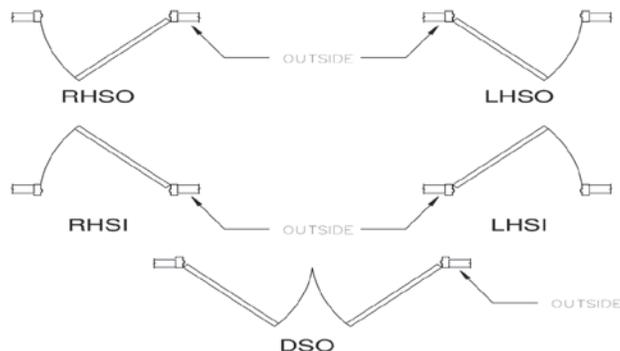
# Hollow Metal Doors

## Door Hardware (Standard)

- A. (3) 4-1/2" x 4-1/2" hinges per ANSI #A5133-630 satin stainless steel finish with non-rising pins.
- B. 3-11/16" wide x 5/8" high extruded aluminum threshold.
- C. 11/16" x 1/4" aluminum/vinyl weatherstripping.
- D. Mortise lock set per ANSI A 156.13, Series 1000, Grade 1, Function F13, 626 satin chrome finish (levers both sides).

## Door Hardware (Optional)

- A. Cylindrical key in lever lock set per ANSI A 156.2, Series 4000, Grade 2, Function F81, 626 satin chrome finish.
- B. Rim type "push pad" panic device per ANSI A 156.3, Type 1 Grade 2, Function 08, 689 aluminum lacquer finish interior, 626 satin chrome finish exterior.
- C. Passage set per ANSI A 156.2, Series 4000, Grade 2, Function F75, 626 satin stainless steel finish.
- D. Door closer is certified to conform to ANSI 156.4, Grade 1 and meets entrance accessibility requirements with 689 aluminum lacquer finish.
- E. 23" wide x 20" high adjustable blade louver with mesh insect screen. Free area of approximately 155 square inches.
- F. ADA (The Americans With Disabilities Act) Package.
- G. Insulated leaf, foamed-in-place polyurethane core, bonded to 18-gauge galvanized steel face sheets, having a .087 U value and STC rating of 26.
- H. (3) 4-1/2" x 4-1/2" standard weight ball bearing hinges per ANSI A 5112, 630 satin stainless finish with non-rising pins.



## **Door Swing Options**

**NOTE: If swing is not specified PHSO will be furnished.**

# Framed Openings

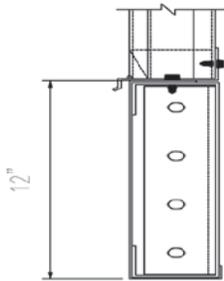
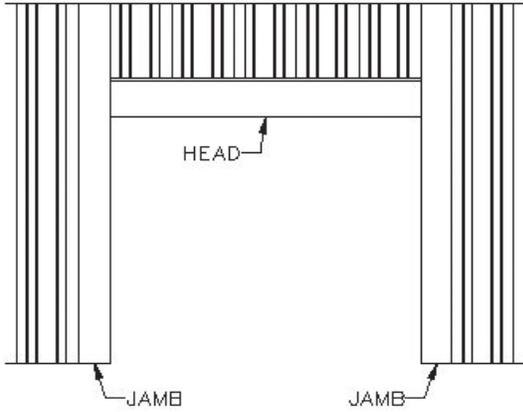
## Framed Openings for Overhead Doors

Framed openings for overhead doors will be constructed from nominal 12-gauge galvanized steel. The 8" wide jambs will be provided with a minimum 2-1/2" wide inside surface for field mounting of overhead door track and hardware. Head and jambs will be provided with nominal 24-gauge covers, embossed, painted wall color.

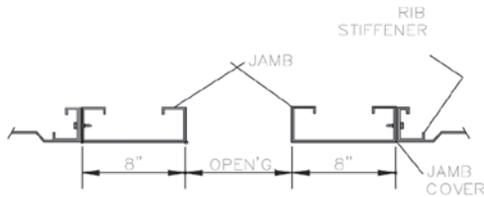
NOTE: See below for head room requirements.

<u>Roll-up doors:</u>	
manual lift	- 16-1/2"
chain hoist	- 18-1/2"
motor operator	- 26"

<u>Sectional doors (2" track):</u>	
manual lift	- 16-1/2"
motor operator	- 19"
low head room	- 6-1/2"
load head rm. w/ motor op.	- 9"



Section Thru Head



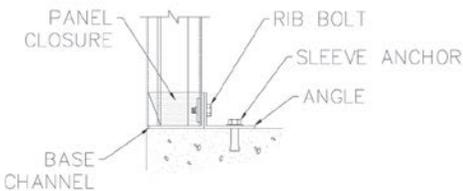
Section Thru Jambs

<u>Standard Opening Sizes Available</u>	
Widths	Heights
4'-0" wide	7'-0" high
6'-8" wide	8'-0" high
8'-0" wide	9'-0" high
10'-8" wide	10'-0" high
12'-0" wide	11'-0" high
14'-8" wide	12'-0" high
16'-0" wide	13'-0" high

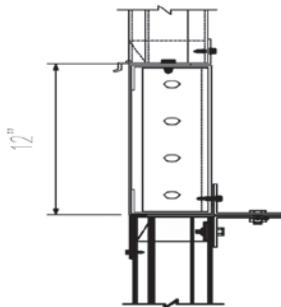
## Removable Wall Sections

A removable wall section will consist of a framed opening capable of supporting roof and wall loads when the wall section is removed. The removable wall section will consist of the same materials as the permanent wall. Section will be removable by unbolting from inside the building.

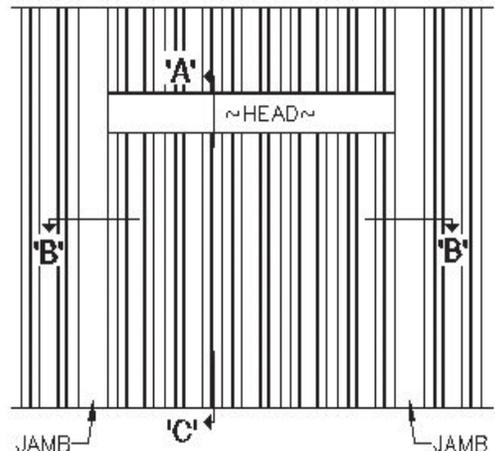
NOTE: Refer to framed opening details for size availability.



Section - 'C'



Section - 'A'

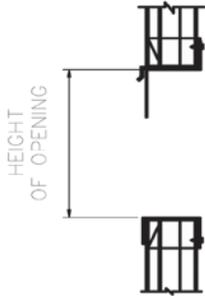


# Framed Openings

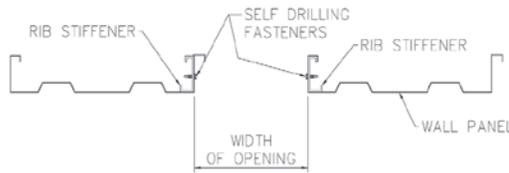
## Wall Opening Kit

All necessary framing and connectors to structurally replace the panels removed by wall opening. All trim and flashings required to make a unit placed in the opening weathertight will be provided by the supplier of the unit being installed.

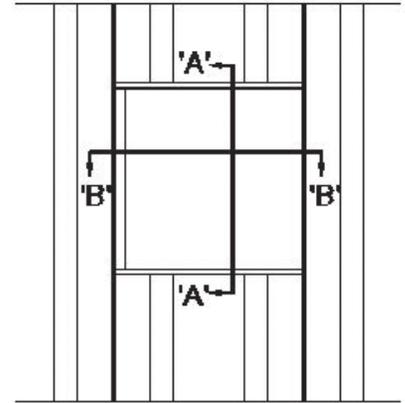
Standard Widths: 1'-4", 2'-8", 4'-0", 5'-4", 6'-8" (heights as required)



**Section - 'A' - 'A'**  
(For 1'-4", 2'-8", 4'-0" wide)



**Section - 'B' - 'B'**



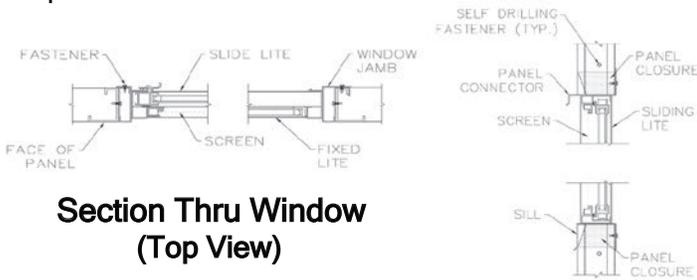
**Exterior Elevation**

## Windows

### Horizontal Sliding Windows

Sliding windows will be furnished factory-glazed and complete with all attaching hardware and screen. The window unit will be factory-assembled for single unit installation. All window sash sections will be of 0.05" minimum extruded aluminum and will be color finished in white or bronze baked enamel. All windows, unless otherwise noted, will be factory glazed with 5/8" minimum insulated glass.

NOTE: See below for available sizes and glazing options.



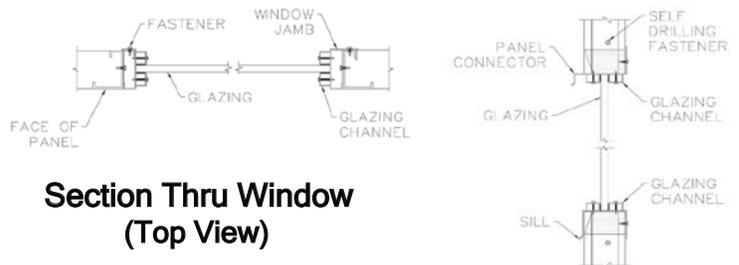
**Section Thru Window  
(Top View)**

**Section Thru Window  
(Side View)**

### Fixed Windows

Fixed windows will be furnished factory-glazed and complete with all attaching hardware. The window unit will be factory-assembled for single unit installation. All window sash sections will be formed from nominal 18-gauge galvanized G90 steel and factory color finished white or bronze baked on enamel.

NOTE: See below for available sizes and glazing options.



**Section Thru Window  
(Top View)**

**Section Thru Window  
(Side View)**

### Available Sizes:

- 2'-8" wide x 3'-0" high
- 4'-0" wide x 3'-0" high
- 4'-0" wide x 4'-0" high

### Glazing Options:

- 5/8" - Insulated Glass
- 1/4" - Polished Wire
- 1/4" - Acrylic
- 1/4" - Obscure Glass
- 1/4" - Polycarbonate Glazing

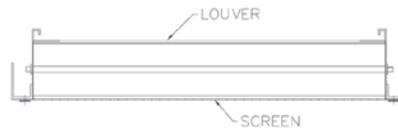
# Wall Louvers

## Adjustable Wall Louvers

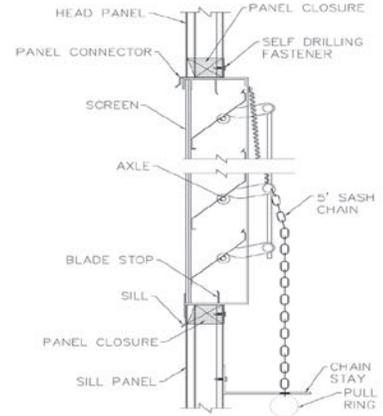
Adjustable louvers will be of self-framing design. The louver frame will be of nominal 14-gauge formed aluminum and the louver blades will be nominal 12-gauge extruded aluminum. Finish will be natural mill finish and will not require field painting. Blades will be pivoted on 1/2" diameter aluminum pivot pins through nylon flanged bearings and operated by means of a pull-bar operating handle. All louvers will be complete with an exterior mounted 18-14 aluminum mesh insect screen.

- Options:**
1. Removable filters
  2. Motor operator - Available in:
    - a. 12 or 24 volt DC
    - b. 110/220 volt AC

**NOTE:** Designer must specify louver sill height. Minimum sill or head height is 6".



**Section Thru Louver (Top View)**



**Section Thru Louver (Side View)**

**Available Sizes:**

- 16" wide x 24" high (181 sq. in. free area)
- 32" wide x 24" high (406 sq. in. free area)
- 48" wide x 42" high (1160 sq. in. free area)

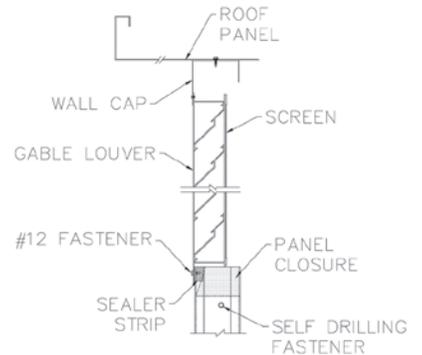
## Gable Louver

Gable louvers will be fixed blade type with blades set on a 45 degree slope. Blades and frames will be 14-gauge extruded aluminum with natural mill finish. Louvers will include 18-14 aluminum mesh insect screens.

**NOTE:** Gable louvers are not available for 8'-0" wide buildings.

**Available Sizes:**

- 16" wide x 10" high ( 48 sq. in. free area)
- 32" wide x 6" high ( 37 sq. in. free area)
- 32" wide x 12" high (130 sq. in. free area)
- 48" wide x 12" high (198 sq. in. free area)

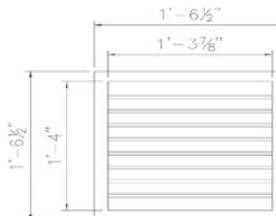


**Section Thru Louver (Side View)**

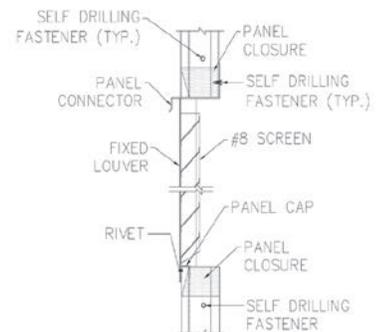
## Fixed Louver

Fixed louvers will be aluminum, general purpose type of self-framing design with free area of 63 sq. inches. Finish will be an aluminum mill finish. All louvers will be complete with #8 mesh screen.

**NOTE:** Designer must specify louver sill height. Minimum sill or head height is 6".



**Free Area = 63 sq. in.**



**Section Thru Louver (Side View)**

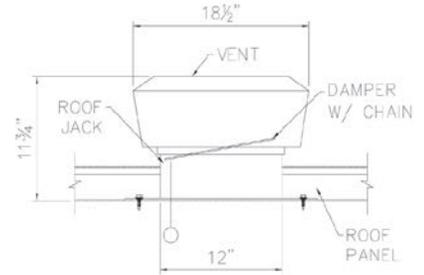
# Roof Vents

## Circular Roof Ventilator

Stationary ventilator for 3" or 4" roof will be gravity type with standard 12" diameter throat, fabricated from aluminum, and will be furnished complete with bird screen, operable disc type damper with chain, and base.

NOTE: Not available for 6" roof.

VENT SIZE	TEMP. DIFF. °F	EXHAUST CAP. (CFM)	
		WIND VELOCITY	
		5 MPH	10 MPH
12"	0°	204	385
	10°	282	462
	20°	314	495

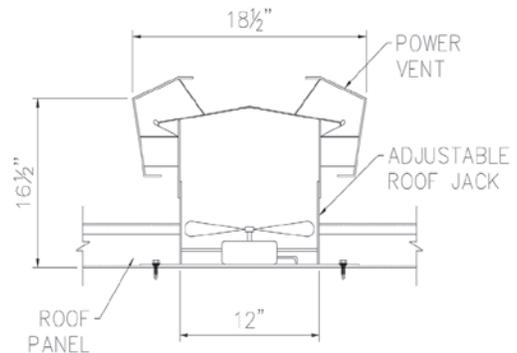


**Circular Roof Ventilator**

## Power Roof Exhauster

Aluminum power roof exhauster for 3" or 4" roof will have a 12" diameter throat, capable of 280 CFM air movement at 1/8" static pressure and will be equipped with U.L. listed adjustable thermostat. Power requirements of exhauster will be .86 amps at 115 volts. An intake louver of 115 square inches minimum free air area will be required for each exhauster.

NOTE: Not available for 6" roof.

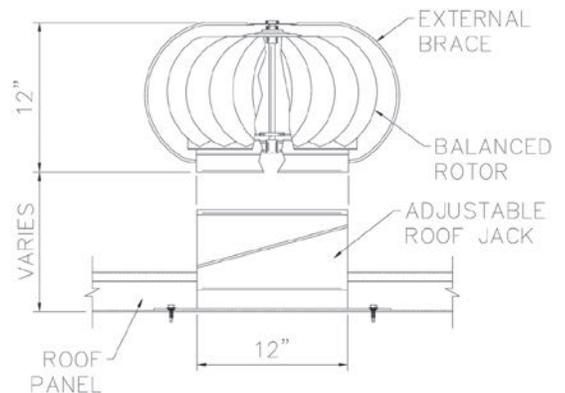


**Power Roof Exhauster**

## Turbine Vent

Turbine vent will be wind-driven rotary type gravity roof ventilator, with 8" or 12" diameter throat, fabricated from galvanized steel, externally braced.

VENT SIZE	TEMP. DIFF. °F	EXHAUST CAP. (CFM) @ WIND OF 5 MPH	ROOF
12"	20°	580	3" & 4"
8"	20°	255	6"



**Turbine Ventilator**

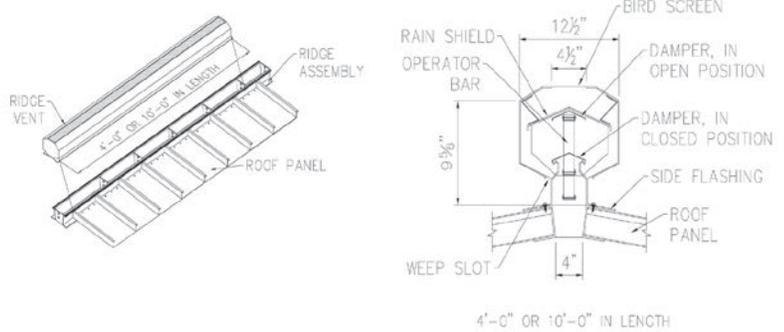
# Exterior Roof Options

## Ridge Ventilator (Gable Buildings only)

Ridge ventilator will be of gravity type with 4" throat and chain operated vertical lift dampers. Ventilators will be made of nominal 24-gauge steel, factory-painted white on all visible exterior galvanized surfaces. Top of the ventilator will have a bird screen cover.

CFM CAPACITIES  
WITH 4 MPH WIND  
AND 10' BUILDING  
HEIGHT

TEMP. DIFF. °F	EXHAUST CAPACITY (CFM)	
	4" THROAT x 4'-0"	4" THROAT x 10'-0"
10°	370	930
20°	430	1080
30°	470	1190



## Roof Curb

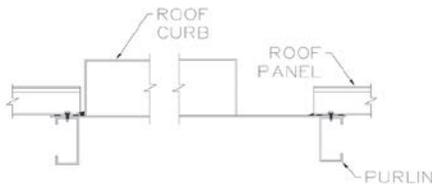
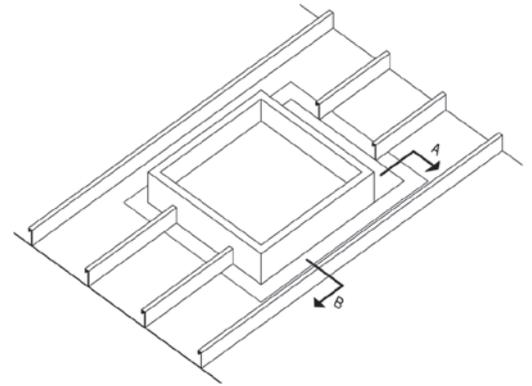
Roof curbs will be constructed of minimum 18-gauge Galvalume steel. Minimum height of curb will be 5", but not less than 1" above adjoining roof panel ribs. All flashings will be provided to ensure water tightness. All roof curb support members are constructed of minimum 14-gauge galvanized steel. Optional hatch or cover is available.

Standard sizes:

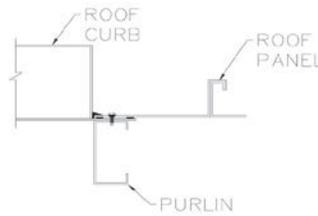
2'-8" x 2'-8" (2'-5" x 2'-5" Inside Dimensions)

4'-0" x 4'-0" (3'-9" x 3'-9" Inside Dimensions)

**NOTE:** Single slope building sections shown.  
Interior clear height may be affected.



Section - 'A'



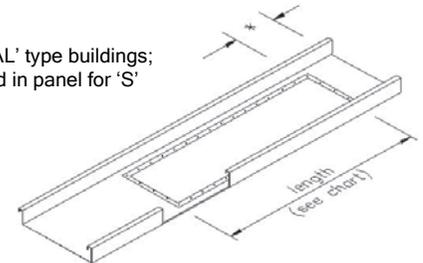
Section - 'B'

## Skylights

A skylight panel will be a flat polycarbonate sheet, factory-assembled into a standard 16" wide flush interlocking panel. The polycarbonate sheet will be 1/8" thick, clear with a matte finish, having a light transmission factor of approximately 70%. The panel will meet ANSI Z 97.1 safety glazing standards and UL 94 flammability rating.

- NOTE:**
1. Skylight panels are field located as required.
  2. Skylight panels must have a minimum of one solid panel between each skylight for proper roof support.
  3. Skylights for 6" rib roof panels are 8" wide in lieu of 12".

\* 6" from ridge for 'AL' type buildings;  
skylight is centered in panel for 'S'  
type buildings.



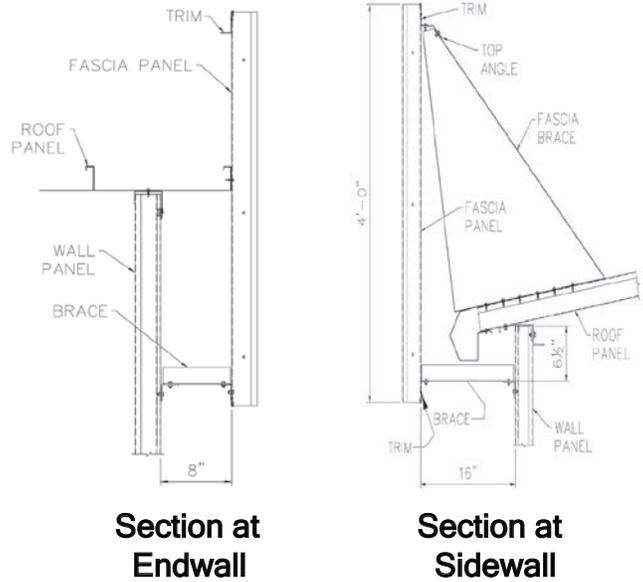
SKYLIGHT SIZE	'S' BLDG. WIDTHS	'AL' BLDG. WIDTHS
12" x 2'-0"	N/A	8'-0"
12" x 4'-0"	5'-4" and 6'-8"	12'-0"
12" x 6'-0"	8'-0" - 20'-0"	16'-0" - 32'-0"

# Exterior Roof Options

## Vertical Facade

The fascia system will consist of nominal 18-gauge galvanized steel framing and nominal 24-gauge embossed facing panels. Fascia will be attached to the upstanding legs of the interlocking roof panels with no penetration of the roof surface. The embossed fascia panels are available in flush or fluted profile. Buildings with fascias in heavy snow areas should allow 10 psf additional live load for snow buildup. Fascias are not recommended for 40 psf snow load areas.

**NOTE:** Flush fascia panels are available in bronze or white.  
 Fluted fascia panels are available in seven standard colors.  
 (Gable building details shown)



# Interior Finishes

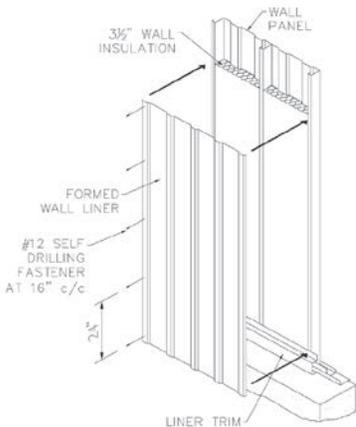
## Formed Wall Liner

Interior liner panels will have a maximum coverage width of 32" and overlap with the adjoining liner panel. The interior surface will have 1/4" high x 1" wide ribs on 8" centers. The liner will be continuous length from base to eave, except where interrupted by wall accessories. The exterior panel void will have a 16" wide, 3-1/2" thick unfaced R13 fiberglass insulation.

**NOTE:** Buildings that are heated and/or cooled must meet the requirements of the International Energy Conservative Code in effect for the building's final destination. If you select an insulation system that does not meet these minimum requirements, we will add insulation to meet the code when the building is quoted.

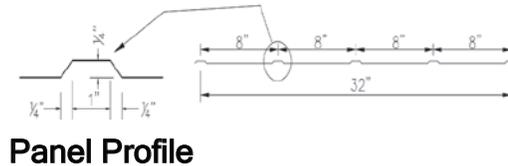
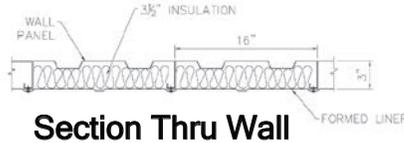
### Optional

A one inch wide thermal tape can be applied to the inside of the exterior panel ribs to abate thermal bridging between the joints.



### Optional

A 1/4" layer of continuous, reflective, polyethylene insulation (R-7.75, U-0.13) may be installed outside of the exterior panel ribs.



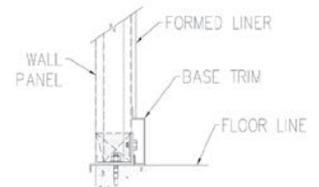
Panel Profile

Cavity Insulation	R 13
-------------------	------

Calculated system "U" value 0.16  
 (ASHRAE zone method)

### Optional

A29 Acoustical Wall System will be accomplished by the system described above including thermal tape, except the liner panel will have 1/8" diameter perforations spaced on 3/8" staggered centers. The system will have an NRC rating of 0.90 and STC rating of 29.



Base Detail

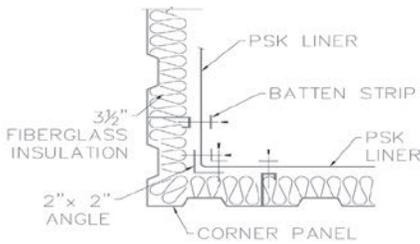
# Interior Finishes (Wall)

## Roll-In Insulation

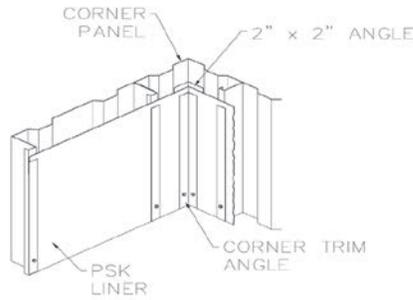
The interior of the building will be insulated with 16" wide, 3-1/2" thick R13 unfaced fiberglass insulation with separate white metalized polypropylene scrimkraft (PSK) facing stretched across the interlocking panel ribs and held in place with a PVC 1-1/2" wide batten strip attached with #12 self-drilling fasteners.

Optional: A 1/4" layer of continuous, reflective, polyethylene insulation (R-7.75, U-0.13) may be installed inside of the exterior panel ribs.

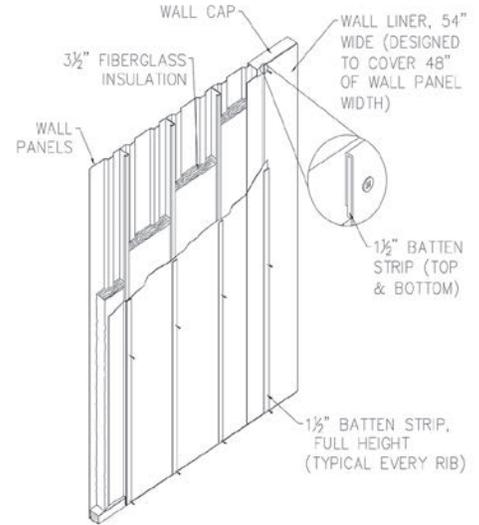
\*Please see NOTE below.



**Corner Detail**



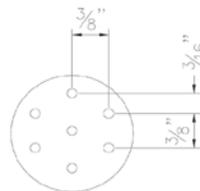
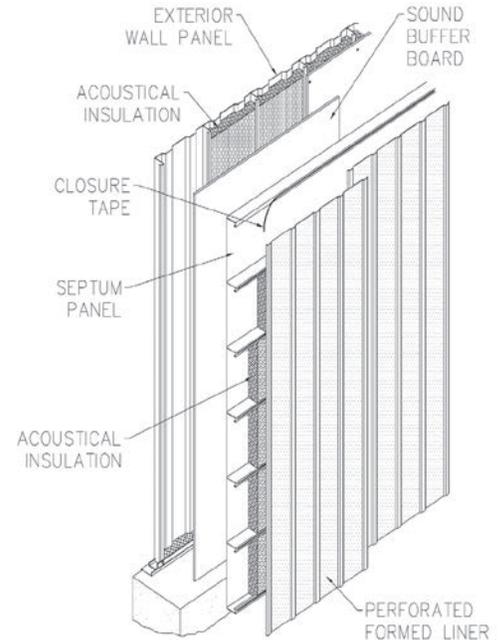
<b>Cavity Insulation</b>	<b>R 13</b>
Calculated system "U" value 0.16 (ASHRAE zone method)	



## Acoustical Wall System

A48 Acoustical Wall System consists of a nominal 24-gauge fluted exterior panel with a minimum 16" wide, 3-1/2" thick R13 unfaced fiberglass insulation in panel void. A 1/2" thick sound buffer board will separate the exterior wall system and a nominal 26-gauge flush metal septum panel. The septum panels will be installed perpendicular to the exterior wall panels with void filled with a minimum 16" wide, 3" thick R13 4# density fibrous acoustical insulation. A vibration retardant tape will be installed between the septum panel ribs and a perforated formed liner panel. The system will have an NRC of 1.00 and STC of 48. Wall accessories may affect overall performance. For panel profile, please see FORMED WALL LINER above. This system has NOT been sound tested.

\*Please see NOTE below.



**Perforation Detail**

<b>Cavity Insulation</b>	<b>R 13</b>
<b>Continuous Insulation</b>	<b>R 0.45</b>
<b>Cavity Insulation</b>	<b>R 13</b>

Calculated system "U" value 0.07  
(ASHRAE zone method)

**NOTE:** Buildings that are heated and/or cooled must meet the requirements of the International Energy Conservation Code in effect for the building's final destination. If you select an insulation system that does not meet these minimum requirements, we will add insulation to meet the code when the building is quoted.



# Interior Finishes (Roof)

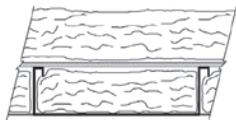
## Ceiling

The metal ceiling system will consist of 3" deep, 16" wide interlocking panels of nominal 24-gauge embossed galvanized steel, factory painted Arctic White. The ceiling system will be supported at its perimeter by concealed angles. The ceiling system will be furnished complete with all necessary connectors and fasteners.

\*Please see NOTE below.

### Option R-30

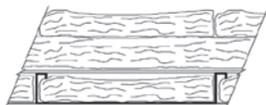
The ceiling will be insulated with 16" wide by 3-1/2" thick R13 unfaced fiberglass insulation laid in panel void. A 1/4" layer of continuous, reflective, polyethylene insulation (R-7.55, U-0.13) will be laid on top of the ceiling panel ribs. A second layer of 16" wide by 3-1/2" thick R13 unfaced fiberglass insulation will be laid on top at right angles to the panel ribs. The "U" value through the finished ceiling will be a maximum of 0.04 BTU's per square foot when calculated in accordance with the "Zone Method" contained in ASHRAE "Handbook of Fundamentals", 1981 edition. Clear height = eave height - 6" (single slope type buildings), eave height - 9" (gable type buildings).



**7" un-faced fiberglass plus 1/4" reflective polyethylene**

### Option R-38

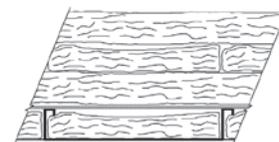
The ceiling will be insulated with 16" wide by 3-1/2" thick R13 unfaced fiberglass insulation laid in panel void. A 1/4" layer of continuous, reflective, polyethylene insulation (R-7.55, U-0.13) will be laid on top of the ceiling panel ribs. A second layer of 16" wide by 3-1/2" thick R13 unfaced fiberglass insulation will be laid on top at right angles to the panel ribs. A third layer of 16" wide by 3-1/2" thick R13 unfaced fiberglass insulation will be laid on top, parallel to the ceiling panel ribs. The "U" value through the finished ceiling will be a maximum of 0.032 BTU's per square foot when calculated in accordance with the "Zone Method" contained in ASHRAE "Handbook of Fundamentals", 1981 edition. Clear height = eave height - 8" (single slope type buildings), eave height - 11" (gable type buildings).



**10-1/2" un-faced fiberglass plus 1/4" reflective polyethylene**

### Option R-49

The ceiling will be insulated with 16" wide by 3-1/2" thick R13 unfaced fiberglass insulation laid in panel void. A 1/4" layer of continuous, reflective, polyethylene insulation (R-7.55, U-0.13) will be laid on top of the ceiling panel ribs. A second layer of 16" wide by 3-1/2" thick R13 unfaced fiberglass insulation will be laid on top at right angles to the panel ribs. A third layer of 16" wide by 3-1/2" thick R13 unfaced fiberglass insulation will be laid on top, parallel to the ceiling panel ribs. A fourth layer of 16" wide by 3-1/2" thick R13 unfaced fiberglass insulation will be laid on top at right angles to the panel ribs. The "U" value through the finished ceiling will be a maximum of 0.025 BTU's per square foot when calculated in accordance with the "Zone Method" contained in ASHRAE "Handbook of Fundamentals", 1981 edition. Clear height = eave height - 11" (single slope type buildings), eave height - 13" (gable type buildings).



**14" un-faced fiberglass plus 1/4" reflective polyethylene**

**NOTE:** Buildings that are heated and/or cooled must meet the requirements of the International Energy Conservation Code in effect for the building's final destination. If you select an insulation system that does not meet these minimum requirements, we will add insulation to meet the code when the building is quoted.

# Interior Finishes (Roof)

## Blanket Roof Insulation

Roof insulations will consist of 48" wide, 3" thick, 6# density fiberglass faced on its exposed side with a white metalized polypropylene scrimkraft facing. The faced insulation material will have a UL Flame Spread Rating of 25 when tested in accordance with UL 723 ASTM E 84 procedures. Insulation will be supported at the roof line by means of mechanical clips spaced on maximum 4'-0" centers and will be sealed by means of 2" side tab on facing.

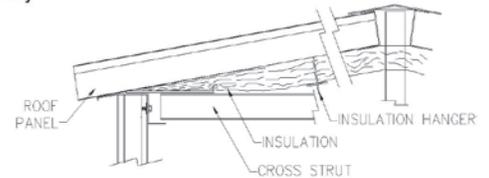
\*Please see NOTE below.

SYSTEM VALUES		R
3" Thick	Continuous	10.4
4" Thick	Continuous	13.2
6" Thick	Continuous	19.3

Calculated system "U" value 0.10, 0.08 & 0.05 respectively (ASHRAE zone method)



**'S' Type Building**



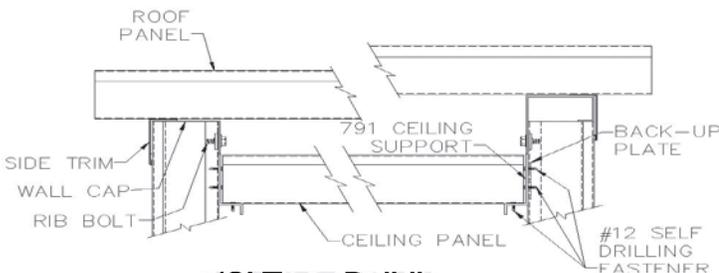
**'AL' Type Building**

## Therma-Roof

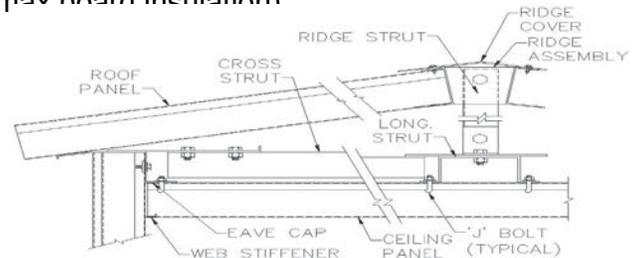
The Therma-Roof insulation system will consist of two layers of 1-1/2" thick, 48" wide polyisocyanurate foam board faced with a white embossed foil on the exposed interior surface. The roof insulation system will include metal supporting tees on 4' centers and all trim required for a finished interior appearance. No metal-to-metal contact between the insulation system and exterior roof or wall covering will be permitted. The insulation will have a maximum UL Flame Spread Rating of 25, Fuel Contributed Rating of 10 and Smoke Developed Rating of 155-190 when tested in accordance with UL 723 testing methods and will meet the requirements of the Underwriters Laboratories "Wall-Ceiling" Construction Classification.

NOTE: Insulation thickness will be 3". (Two layers of 1-1/2" thermamax board insulation)

\*Please see NOTE below.



**'S' Type Building**



**'AL' Type Building**

SYSTEM VALUES		R
1 1/2"	Continuous	10
1 1/2"	Cavity	10

Calculated system "U" value 0.04 (ASHRAE zone method)

NOTE: Buildings that are heated and/or cooled must meet the requirements of the International Energy Conservation Code in effect for the building's final destination. If you select an insulation system that does not meet these minimum requirements, we will add insulation to meet the code when the building is quoted.

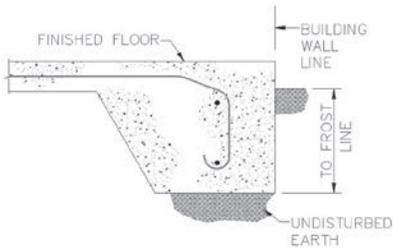
# Building Foundation

## Building Foundation

Due to the even distribution of loads, the foundation designs are usually quite simple when compared to other types of building construction.

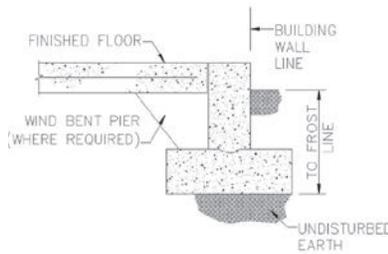
The information below is offered only as a general guidance regarding foundation designs commonly used for Parkline buildings. In order to achieve the proper foundation design for a specific building, an engineer should be retained who is familiar with the building codes, soil conditions, etc. in the area where the building is to be constructed.

In many applications, a combined foundation-floor design can be used. (Section-1)



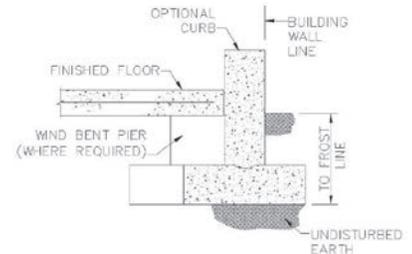
Section - 1

However, in extreme frost conditions, poor soil, etc. it may be necessary to design a separate foundation and floor system. (Section-2)



Section - 2

Separate pier and footings are required where a wind column assembly is used. (Section-2 and Section-3)



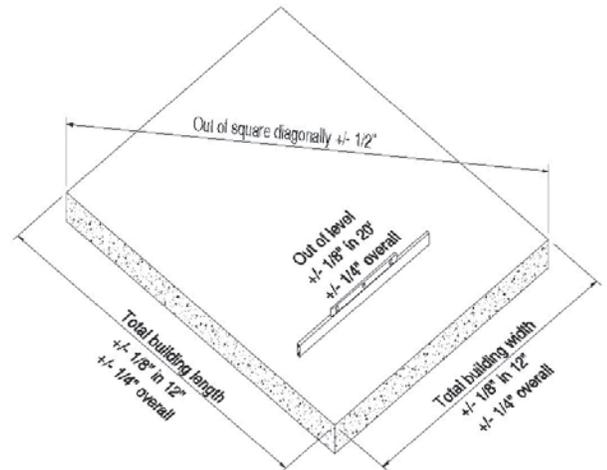
Section - 3

Wire mesh reinforcing is recommended in the floor slab under any condition. Additional reinforcing, such as rods, may be required to satisfy strength requirements and to prevent cracks due to uneven settlement of soil. The tabulation below shows the nominal loads induced into the perimeter wall.

## Allowable Foundation Tolerances

The values shown include dead load, live load and wind load. Any other loads supported by the building MUST be added and the foundation designed accordingly.

FOUNDATION LOAD REQUIREMENTS							
BUILDING WIDTH	COMPRESSION (PLF)			UP-LIFT (PLF)			
	ROOF LIVE LOAD (PSF)			WIND SPEED (EXPOSURE "B", MPH)			
	20	30	40	90	100	110	120
5'-4" THROUGH 8'-0"	116	156	196	80	104	131	161
10'-8" THROUGH 16'-0"	248	328	408	68	97	130	166
20'-0" THROUGH 24'-0"	396	516	636	59	97	138	184
24'-0" THROUGH 32'-0"	560	720	880	43	90	143	200
	BUILDING HEIGHT		HORIZONTAL SHEAR (PLF)				
	8'-0"		71	88	106	126	
	10'-0"		89	110	133	158	
	12'-0"		107	131	159	189	
		14'-0"	124	153	186	221	





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