

### **Option 5 – Steel Building**

- Steel Building 32' x 90' x 10'
- Building Materials and Delivery \$34,933
- Develop Structural Plans 20-25 days
- Fabrication 16-18 weeks

### **Not Included:**

- Walls
- Electrical
- Solar
- Erection – estimated to be \$21,600

**From:** Marcus Hensel <mhensel@westernsteel.com>  
**Sent:** Tuesday, May 11, 2021 8:25 AM  
**To:** president@crestlinesoaring.org  
**Subject:** Re: FW: Western Steel

Good morning Stan,

Delivered cost of your building is \$34,933.

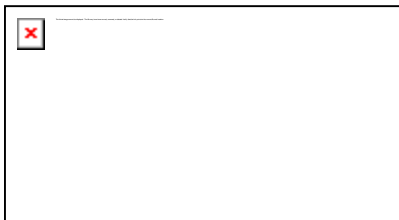
Cost to include the following:

Building dimensions 32x90 single slope  
Complete roof wall cladding  
Complete structural steel package  
All hardware needed to erect  
(4) wall deletions  
Portal frame design  
(3) stamped and sealed structural plans  
130 MPH wind load  
15 PSF snow load  
Delivery to job site

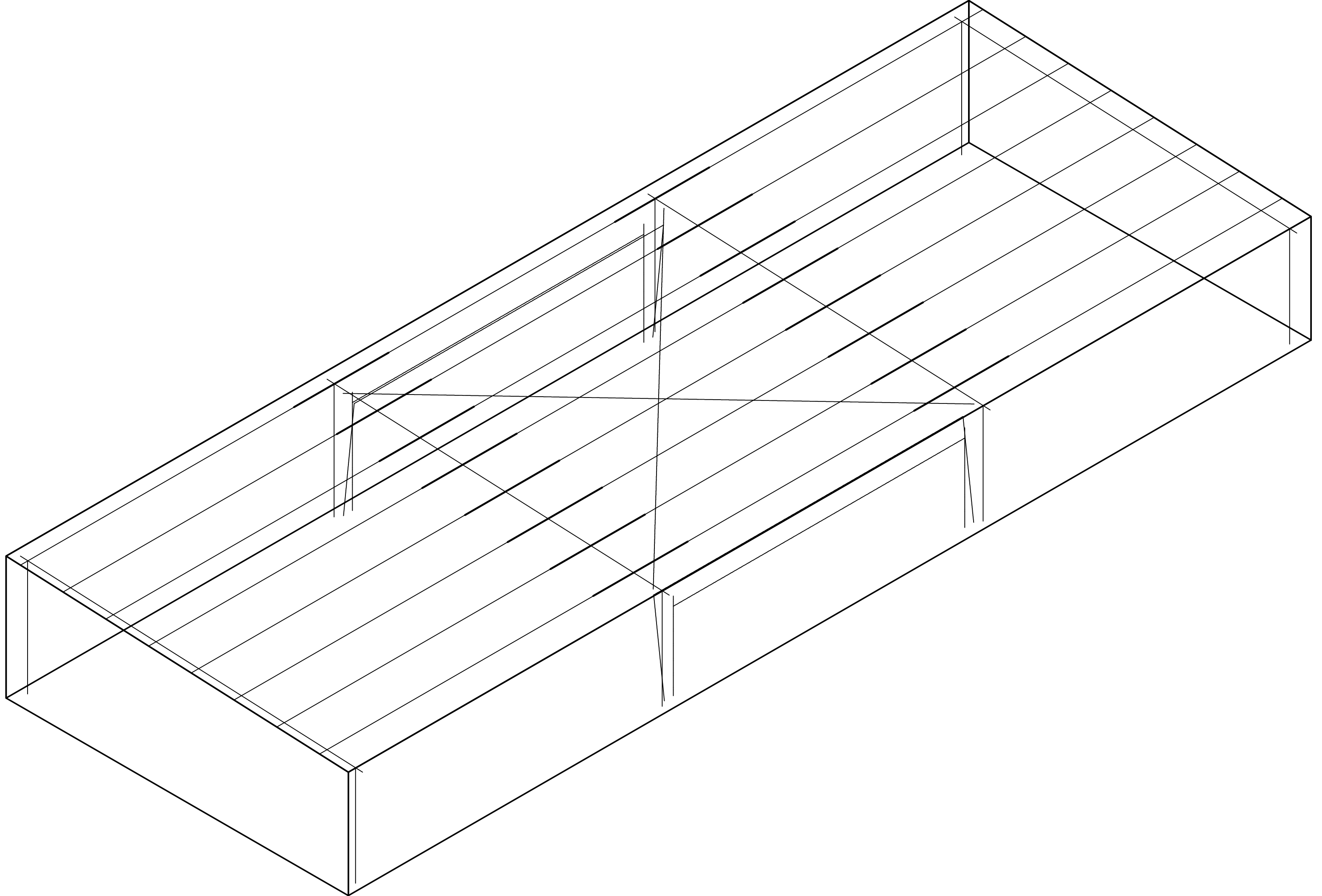
I hope this information is helpful. If you need a formal drafted proposal, please let me know.

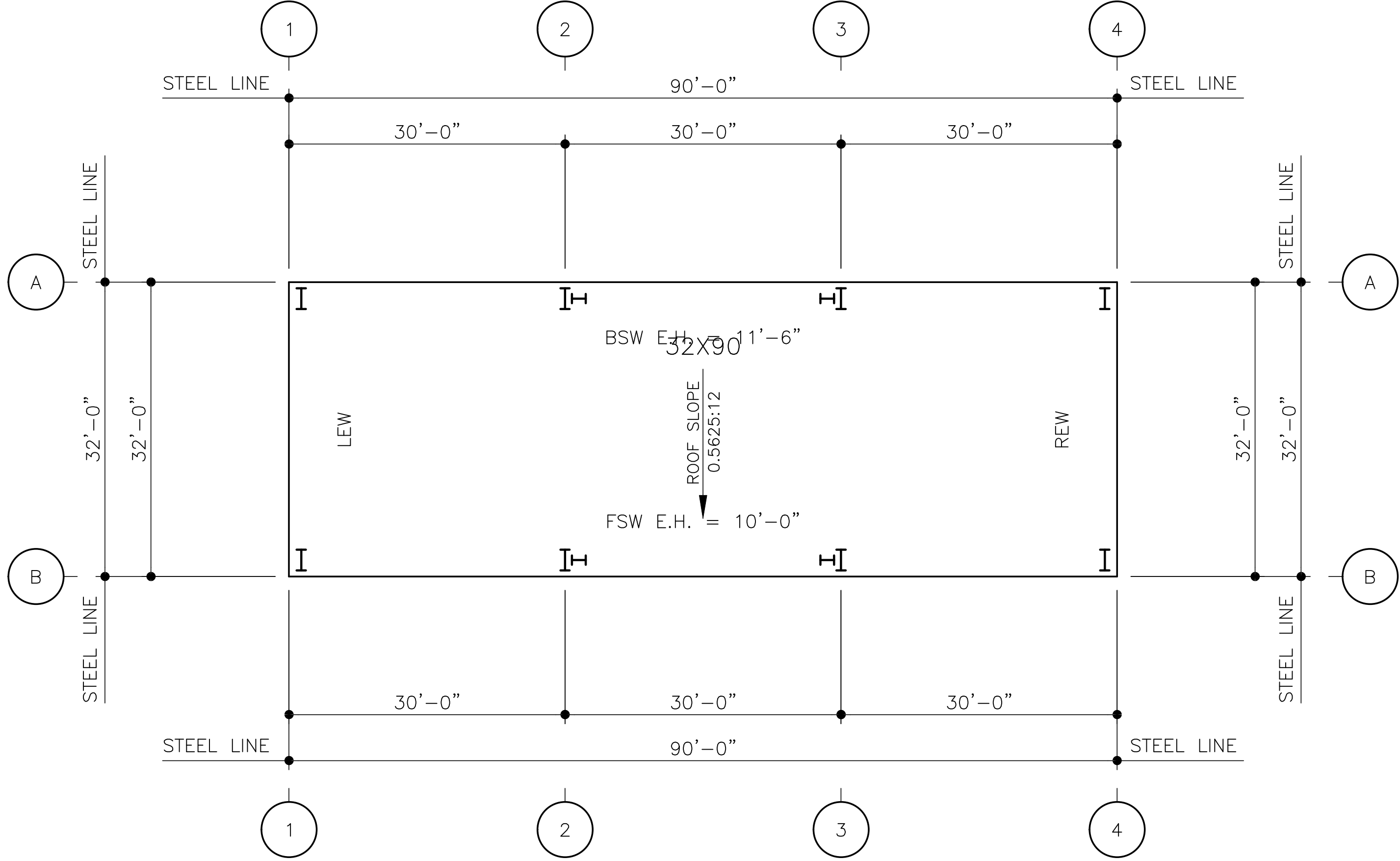
—  
Marcus Hensel  
Account Manager  
**WESTERN STEEL BUILDINGS**  
[www.westernsteel.com](http://www.westernsteel.com)  
[mhensel@westernsteel.com](mailto:mhensel@westernsteel.com)  
Office: 435-565-6882  
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The content of this email is confidential and intended for the recipient specified in this message only. It is strictly forbidden to share any part of this message with any third party, without written consent of the sender.



On Mon, May 10, 2021 at 6:32 PM <[president@crestlinesoaring.org](mailto:president@crestlinesoaring.org)> wrote:





**DO NOT USE FOR FINAL CONSTRUCTION**

SHEET TITLE: 4/14/2021 2:17 PM

PRELIMINARY FLOOR PLAN

SHEET NUMBER: QUOTE NUMBER:

FP1

1

PROJECT NAME:

MITCHELL MCALEER

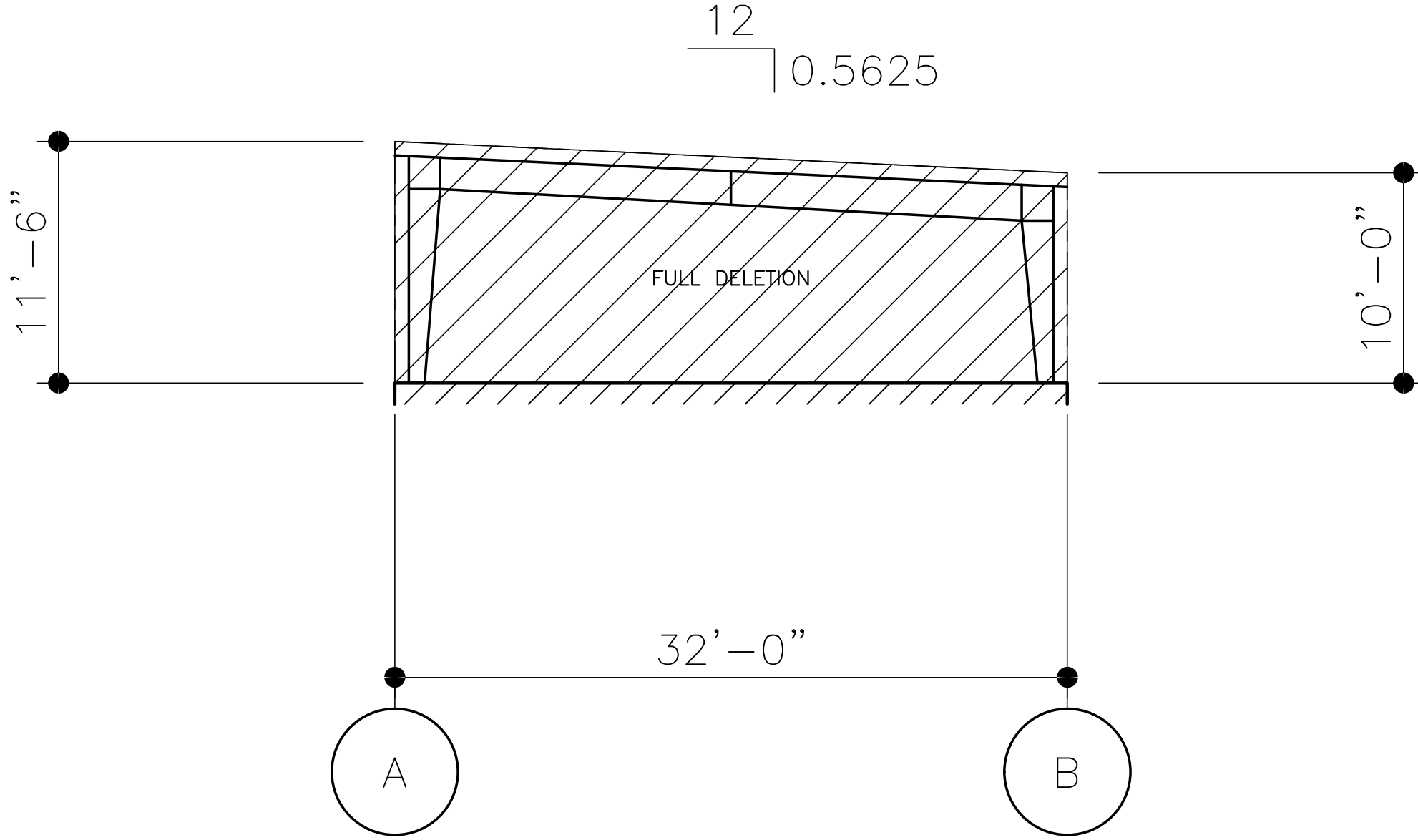
SAN BERNARDINO, CA

CUSTOMER NAME:

PARK CITY, UT

KEY PLAN

32X90



ELEVATION AT LINE 1

DO NOT USE FOR FINAL CONSTRUCTION

4/14/2021 2:17 PM

PRELIMINARY STRUCTURAL ELEVATIONS

SHEET NUMBER: ST5 QUOTE NUMBER: 1

PROJECT NAME:

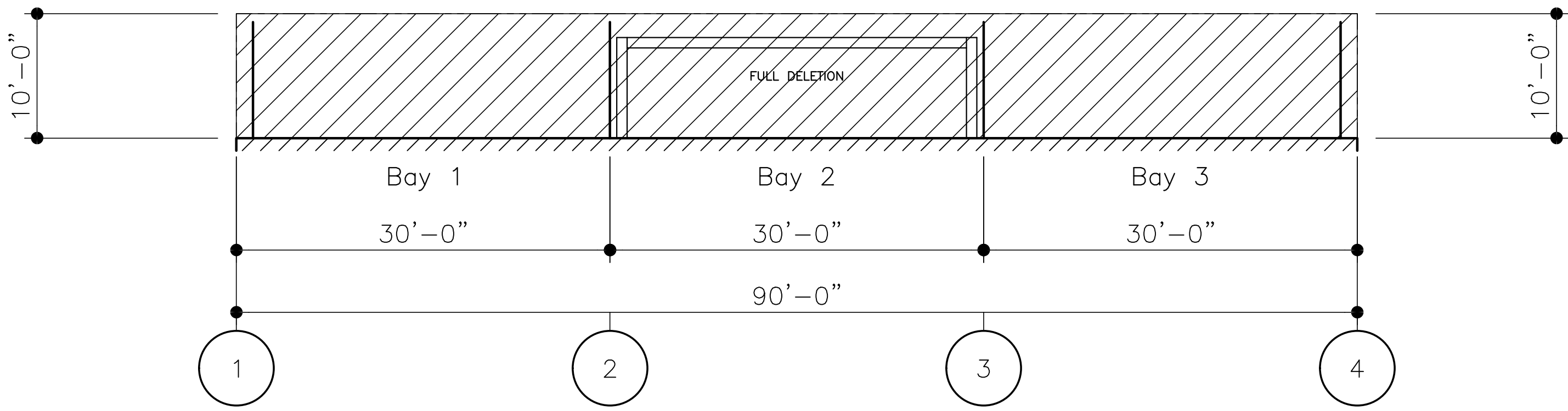
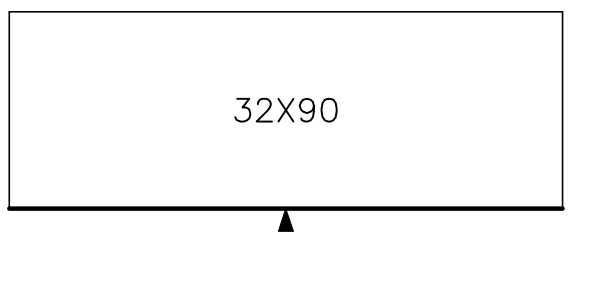
MITCHELL MCALEER

SAN BERNARDINO, CA

CUSTOMER NAME:

PARK CITY, UT

KEY PLAN

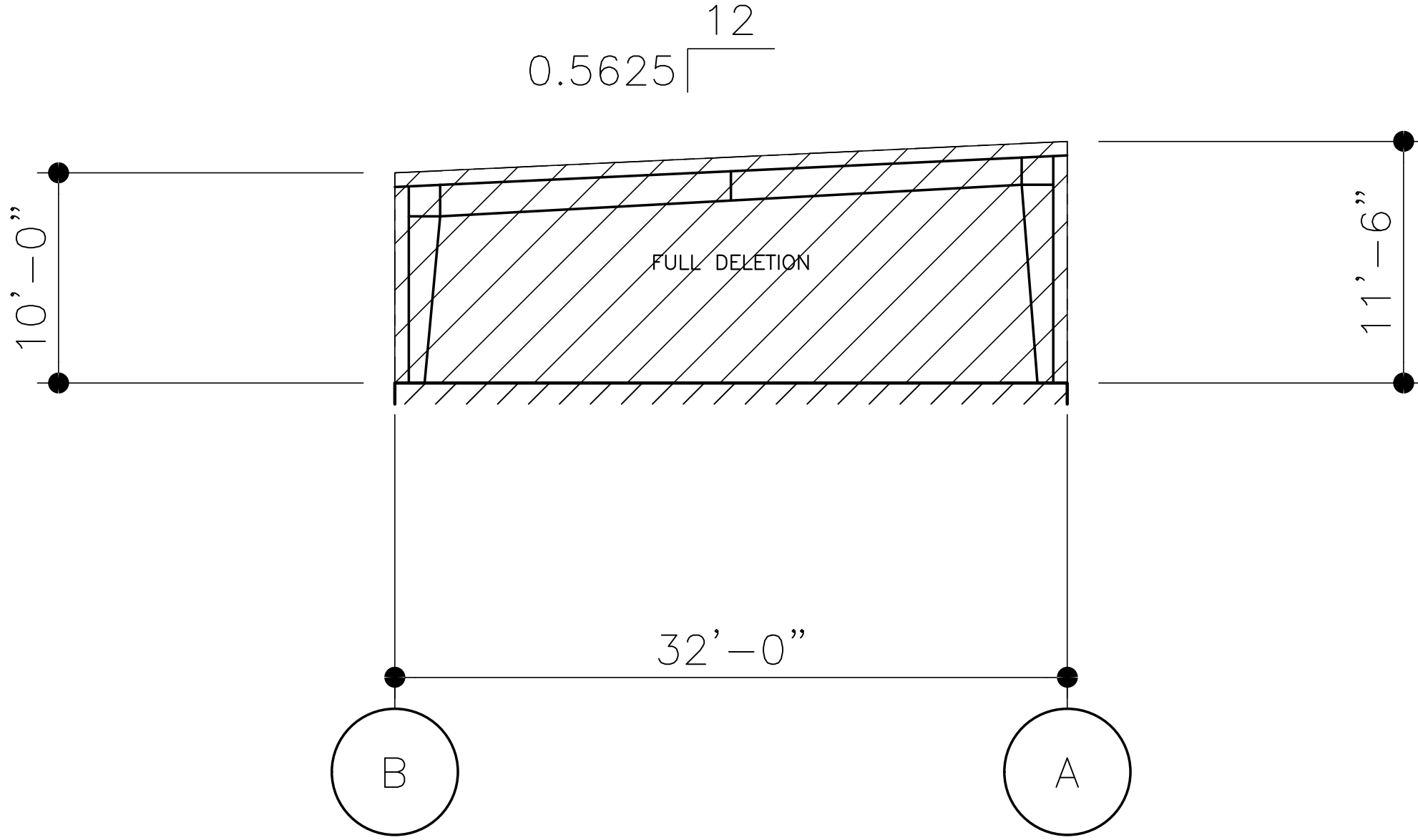


ELEVATION AT LINE B

DO NOT USE FOR FINAL CONSTRUCTION		PROJECT NAME: MITCHELL MCALEER	
SHEET TITLE: PRELIMINARY STRUCTURAL ELEVATIONS		SAN BERNARDINO, CA	
SHEET NUMBER: ST6		CUSTOMER NAME: PARK CITY, UT	
4/14/2021 2:17 PM			
QUOTE NUMBER: 1			

KEY PLAN

32X90



ELEVATION AT LINE 4

DO NOT USE FOR FINAL CONSTRUCTION

SHEET TITLE: 4/14/2021 2:17 PM

PRELIMINARY STRUCTURAL ELEVATIONS

SHEET NUMBER: QUOTE NUMBER: 1

ST7

PROJECT NAME:

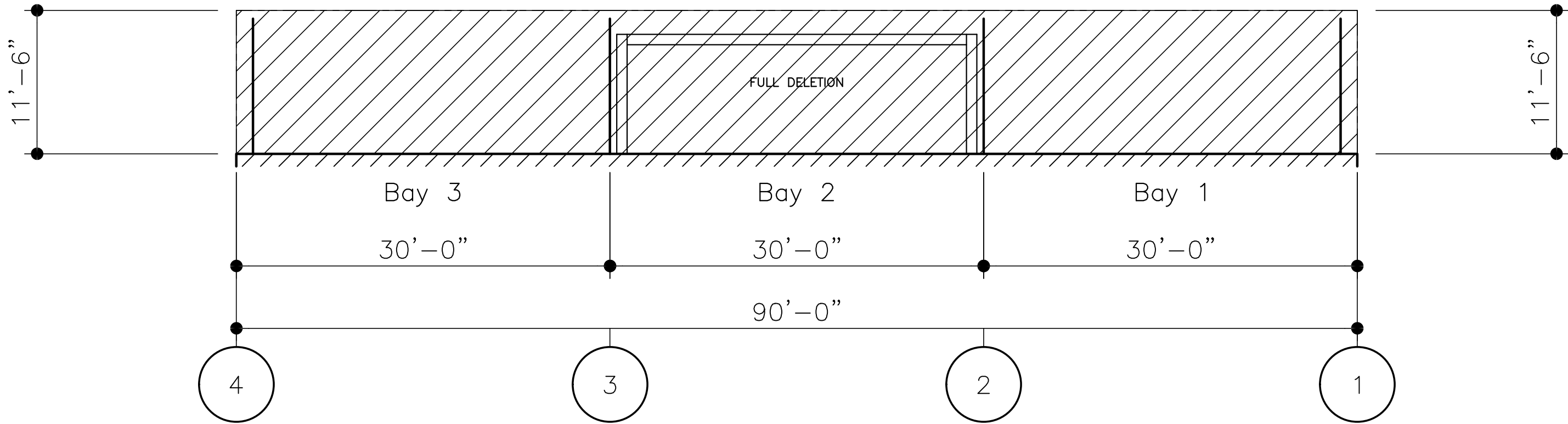
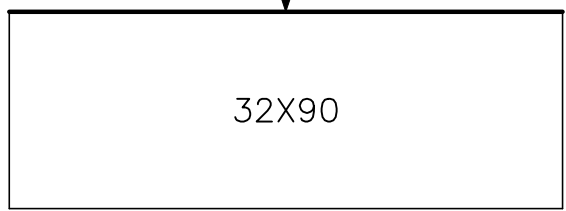
MITCHELL MCALEER

SAN BERNARDINO, CA

CUSTOMER NAME:

PARK CITY, UT

KEY PLAN



ELEVATION AT LINE A

PROJECT NAME:

MITCHELL MCALEER

SAN BERNARDINO, CA

CUSTOMER NAME:

PARK CITY, UT

DO NOT USE FOR FINAL CONSTRUCTION

4/14/2021 2:17 PM

PRELIMINARY STRUCTURAL ELEVATIONS

QUOTE NUMBER:

1

ST8











# WESTERN<sup>TM</sup>

## STEEL BUILDINGS

**YOUR SOURCE**  
FOR PRE-ENGINEERED STEEL BUILDINGS





Discover how Western Steel Buildings can reduce construction costs, meet tight deadlines, and adapt to other building materials to be the most innovative, time-saving, construction method today.

#### **FLEXIBLE DESIGNS**

With a variety of framing systems, we will Value-Engineer a new building design. We can produce a standard box structure in as little as three weeks. For complex designs we can time manage to meet tight deadlines on designs that include parapet walls, attachment buildings, concrete tilt walls (shown above), mezzanine levels and more.

#### **DURABLE BUILDINGS**

Built to withstand hurricane force winds, tectonic shifts, heavy snow, our buildings meet or exceed engineering code requirements per location. Steel structures are not subject to termites or wood decay. In addition, the structural members can be hot-dip galvanized for ultimate protection from precipitation and rust.

**MADE  
IN THE  
USA**

**REDUCE YOUR  
CARBON  
FOOTPRINT**

#### **FIRE-RESISTANT**

Steel has a melting point of approx. 2,500 degrees. It is a non-combustible material that will not feed a fire. Steel framing offers excellent fire protection. Our buildings can also incorporate firewalls per code requirements.

#### **COST-EFFECTIVE BUILDING SOLUTIONS**

Our prefab buildings save on design, fabrication, construction, and maintenance costs. Western buildings bolt-together on the job site, allowing faster install times and a streamlined approach to construction. Our buildings can be delivered in as little as three weeks, contingent on design and building approval.

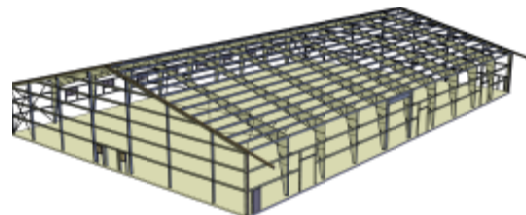
#### **NATURALLY GREENER BUILDINGS**

As much as 90% of the steel that is used in our fabrication process is recycled steel domestically sourced. In addition, our buildings are engineered to make them easy to insulate, with tighter fittings around doors and windows that allow for lower operating costs. Pre-Engineered steel buildings mean less fabrication and construction waste, overall a much better choice for the environment.

# Western Steel Buildings

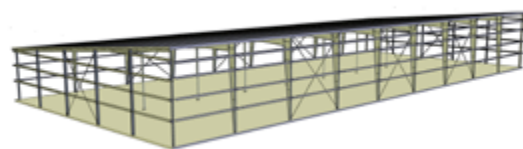
## Structural Framing Systems

**Clear Span:** Column-free interiors provide unobstructed space. Ideal for sport arenas, aviation hangars, retail space, manufacturing facilities, and more.



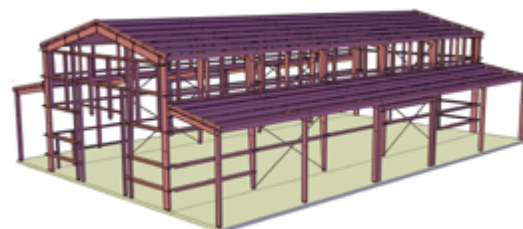
130'0" x 200'0" x 20'0"  
Double Slope, Clear Span Building with Tapered Frames

**Multi-Span:** Interior columns may be added to maintain a cost-effective building solution. Factors include client requirements, building size, location, seismic activity, and other considerations.



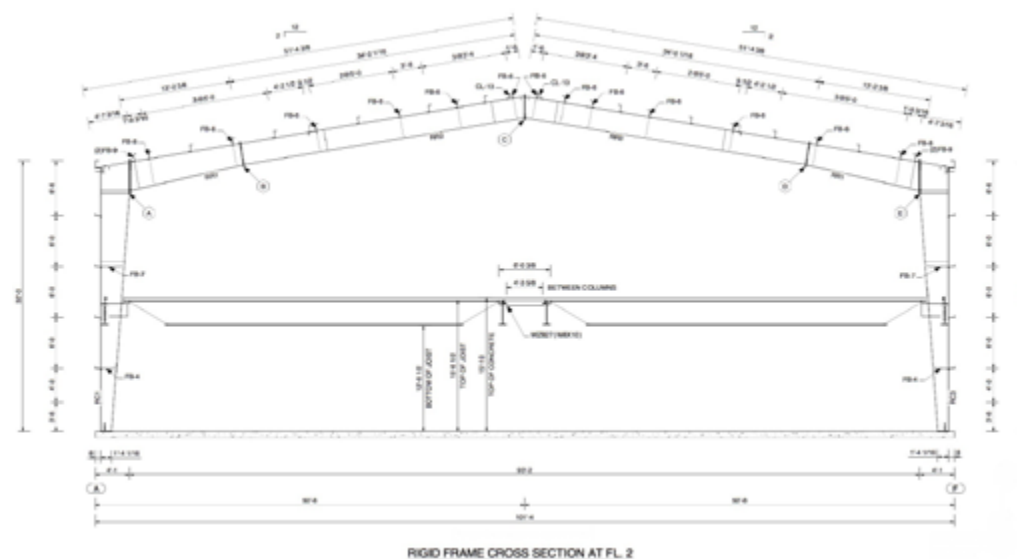
50'0" x 180'0" x 16'0"  
Single Slope, Multi-Span Building with Tapered Frames

**Lean-To:** Lean-to frames can be used as an economical addition to an existing structure, or as an expansion of a new design. These frames are single slope and are supported by attachment to an existing frame.



42'0" x 80'0" x 20'0" with 13'0" Sidewall Lean-to Frames  
Double Slope, Clear Span Building, Lean-To on SWA & SWC  
Straight Frames (shown in image to the right)

**Endwalls:** Rigid Frame Full Load and Half Load Bearing Endwalls can be interchanged to offer advantages in specific applications. The Full Load Rigid Frame can provide an entirely open endwall 150' wide. An ideal design for a covered riding arena, hangar, or providing flexibility for complex designs such as the mezzanine level shown right.



Factory precision  
you can count on.



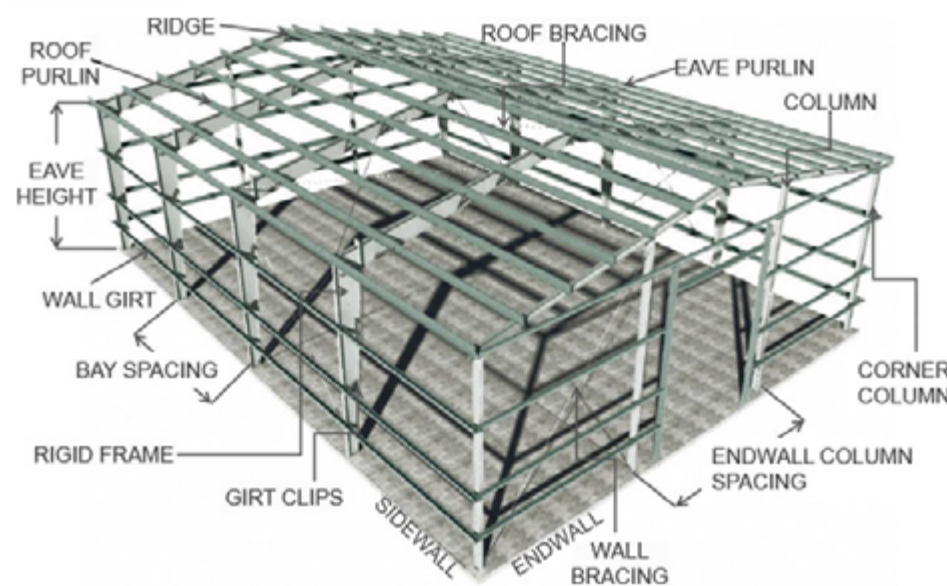
**Tapered Frames vs. Straight Frames:** The tapered frame is typically used in column free situations from 40' to 150'. The straight column rigid frame is designed for maximum efficiency of interior space. Building widths of 40' - 80' are available with the option of straight columns instead of tapered columns. Lean-to structures are also available for future expansion or additional space if the original main structure had been designed to support the additional load of a lean-to.

**Crane Buildings:** The building crane is a complex structural system consisting of the crane with trolley and hoist, crane rails, and crane runway beams, structural supports, stops and bumpers.

**Mezzanines Structural Framing:** An intermediate level between floor and ceiling occupying a partial area of the floor space creating square footage.



## WESTERN STEEL BUILDING SYSTEM DIAGRAM



**Bay Spacing** - Each space or interval between the rigid frames.

**Column** - Main member used in vertical support position to transfer loads from main purlins or rafters into the foundation.

**Eave Height** - Vertical dimensions from finished floor to eave.

**Eave Purlin** - Structural member located at the eave of a building that supports roof and wall paneling and may transfer bracing loads to frames.

**Endwall** - Exterior wall that is parallel to the interior rigid frame.

**Endwall Column** - Vertical member located at the endwall of a building that supports the girts.

**Girt** - Horizontal structural member that is attached to sidewall or endwall columns to support paneling.

**Girt Clips** - Connection clips used to attach the back side of a panel to a structural beam.

**Ridge** - Horizontal line formed by opposing sloping sides of a roof running parallel with the building length. Generally the highest point of building without parapet walls.

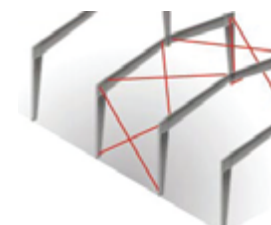
**Rigid Frame** - Structural frame consisting of members joined together with moment connections to render the frame stable with respect to the design loads, without the need for bracing in its plane.

**Roof Purlin** - Horizontal structural member that supports roof covering.

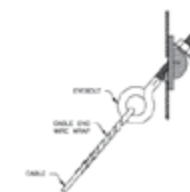
**Sidewall** - Exterior wall that is perpendicular to the frames of a steel building system.

## BRACING SYSTEMS

Bracing transfers seismic and wind loads from endwalls and sidewalls to the foundation.



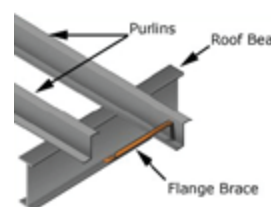
**ROD BRACING** | (also called X-bracing) is a tension-only bracing system. It may be located in the roof and walls of a building between frame members, transferring longitudinal forces to the foundation.



**CABLE BRACING** | Another tension-only X-bracing system. It is one of the most efficient ways to transfer longitudinal loads to the foundation in smaller low-rise buildings, however it has application limitations due to capacity constraints for buildings with mezzanines, cranes, or in high seismic areas.



**PORTAL BRACING** | When bracing must occur in locations where doors or other accessories would interfere with rod-bracing, a portal frame may be used. A portal frame is comprised of two columns and a rafter made of built-up material and is attached to the web of the sidewall columns.

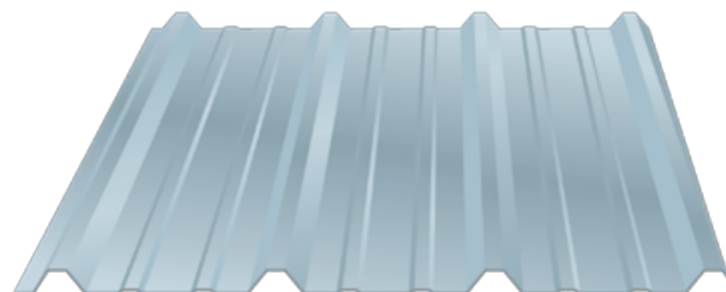


**FLANGE BRACING** | Structural members that attach purlins, girts, and eave struts to primary structural members. They are used to prevent the main frame from twisting or buckling laterally under the load. Flange braces can also be very useful as an erection aid to align the purlins and eave struts. Purlin bracing is an angle that connects the bottom flange of adjoining purlins to prevent purlin roll.



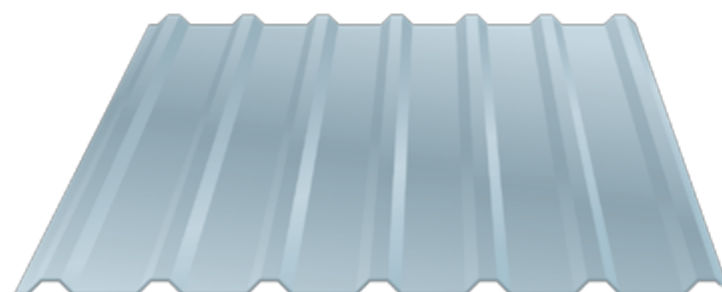
### “PBR” Panel

The versatility of this exposed fastener panel makes PBR a classic choice. Recognized for adaptability in multiple environments, the PBR metal panel is a staple, providing various designs through horizontal and vertical options as well as roof and wall applications. PBR offers high quality with the ease of delivery and installation.



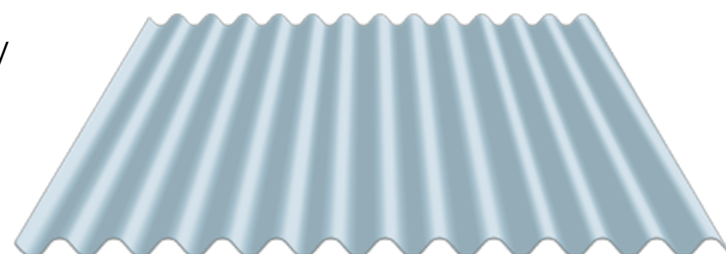
### “PBU” Panel

Our most versatile profile, this exposed fastener panel can be installed vertically or horizontally. Offering various design options, the PBU metal panel can be used in both roof and wall applications as well as installed horizontally or vertically. As one of the most cost-efficient metal panels in the industry, PBU sustains with longevity and quality.

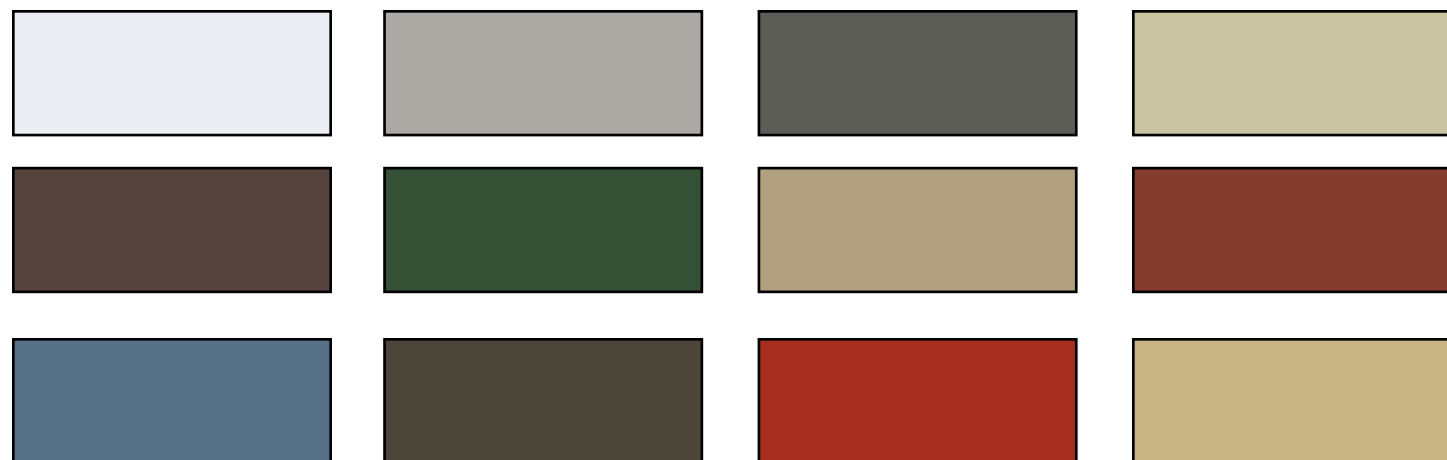


### “PBC” Panel

Functional in roof and wall applications, this exposed fastener panel is ideal for any industry. The PBC metal panel endures with longevity as the highest quality metal in the industry. Providing stability with the ease of installation, PBC is popular for structures with numerous uses and functions.



#### SAMPLE COLOR CHART - COLORS MAY VARY



#### “PBR” ARCHITECT/ENGINEER INFORMATION

1. “PBR” panel is a structural roof and wall panel. This panel can be installed directly over purlins or joists. Several different UL 90 construction numbers are available for this panel.
2. “PBR” panel is recommended for Z\X:12 or greater roof slopes.
3. Field applied sealant is required at panel sidelaps and endlaps.
4. “PBR” panel is a through-fastened panel.
5. The information in this manual is believed to be correct and accurate. It should not be used for any specific application without being reviewed by a registered professional engineer.

#### GENERAL DESCRIPTION

Coverage Width - 36”  
 Minimum Slope - Z\X:12  
 Panel Substrate - Galvalume®  
 Gauge - 26 standard - 29, 24 and 22 also available



#### “PBU” ARCHITECT/ENGINEER INFORMATION

1. “PBU” panel is a structural roof and wall panel. This panel can be installed directly over purlins or joists. “PBU” panel is UL 90 rated per construction number 39.
2. “PBU” panel is recommended for 1:12 or greater roof slopes.
3. Field applied sealant is required at panel sidelaps and endlaps.
4. “PBU” panel is a through-fastened panel.
5. The information in this manual is believed to be correct and accurate. It should not be used for any specific application without being reviewed by a registered professional engineer.

#### GENERAL DESCRIPTION

Coverage Width - 36”  
 Minimum Slope - 1:12  
 Panel Substrate - Galvalume®  
 Gauge - 26 standard - 29, 24 and 22 also available

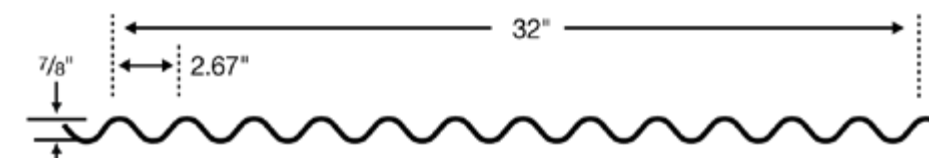


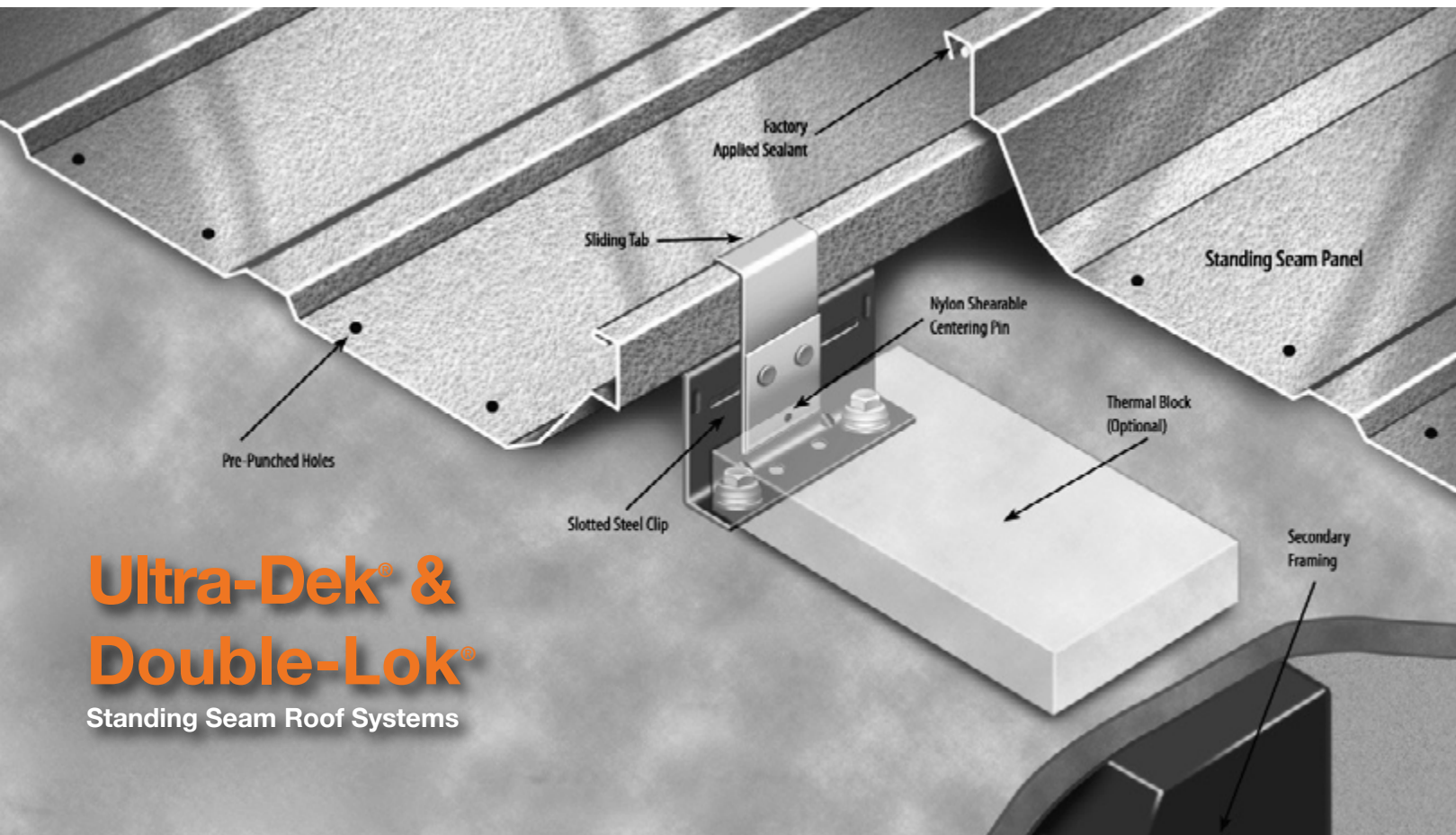
#### PBC ARCHITECT/ENGINEER INFORMATION

1. “PBC” panel is a structural roof and wall panel. This panel can be installed directly over purlins or joists. Several different UL 90 construction numbers are available for this panel.
2. “PBC” panel is recommended for 3:12 or greater roof slopes.
3. Field applied sealant is required at panel sidelaps and endlaps.
4. “PBC” panel is a through-fastened panel.
5. The information in this manual is believed to be correct and accurate. It should not be used for any specific application without being reviewed by a registered professional engineer.

#### GENERAL DESCRIPTION

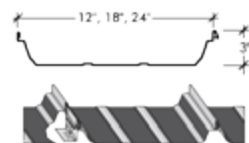
Coverage Width - 32”  
 Minimum Slope - 3:12  
 Panel Substrate - Galvalume®  
 Gauge - 26 standard - 29, 24 and 22 also available





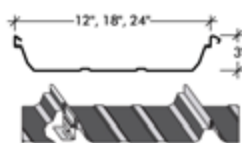
## Ultra-Dek® & Double-Lok® Standing Seam Roof Systems

**Ultra-Dek®**  
Seamed with an interlocking snap seam making installation faster and easier.



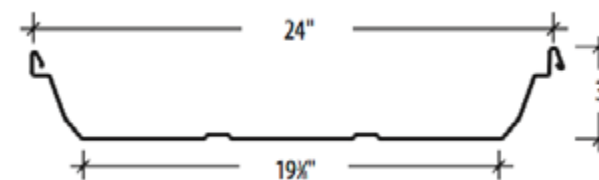
- Floating Roof: Designed to eliminate the damage caused by thermal expansion and contraction.
- Fire Resistance Rating: UL "Class A" Fire Rating.
- UL 90 Rating: Over 7 different UL 90 construction numbers, each available with several options.
- FM: "Class 1" Standards: The Double-Lok® roof has met the rigorous "Class 1" standards for fire wind, hail damage resistance and water leakage resistance.
- Flexibility: Wall covering can be erected before or after the roof is installed.
- Durability: Every unpainted panel is manufactured from acrylic coated Galvalume Plus®.
- Colors & Finishes: Panels are available in 22 popular colors.

**Double-Lok®**  
Machine joined at the edges with a true 360 degree Pittsburgh locked seam, which is mechanically locked with the Double-Lok® seamer.



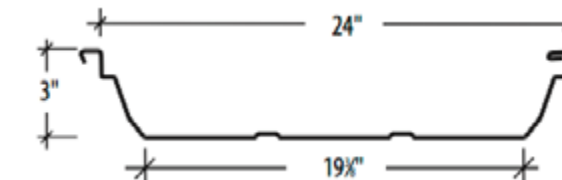
- Pre-punched: Our Pre-Punched system, combined with self-engaging back-up plates, ensures panel modularity and speeds up roof installation.
- Acceptance: The most utilized standing seam roofing system. One million square feet of Ultra-Dek® and Double-Lok® ship weekly.
- Quality Control: Superior panel finish quality control from corporately owned coating operations.
- R&D: The most comprehensive research and development program in the industry, including UM and FM in-house testing.
- Design: Designed to avoid water and debris build-up, and panel scoring.
- Training: Superior installation training programs which include a "Certified Installer" program.

### ULTRA-DEK® PANEL PROFILE



Seamed with an interlocking snap seam making installation faster & easier.

### DOUBLE-LOK® PANEL PROFILE



Machine joined at the edges with a true 360 degree seam, which is mechanically locked with the Double-Lok seamer.

### PANEL SPECIFICATIONS

**Substrate** | Galvalume coated steel. Unpainted Acrylics are coated.

**Warranty** | 20-year finish warranty standard.

**Sealant** | Factory applied thermal set sealant, which resists dirt accumulation and thermal

**Insulation** | Varying thickness up to an R-Value of 38.

**Wind Uplift** | UL 90 rated. FM 1-60 thru 1-105 ratings available.

**Eave** | Self Driller with Neoprene Washer

**Endlaps** | Self Tapper with Washer

**Ridge** | Lap Tek Self Driller w/Neoprene Washer

**Trim to Panel** | Lap Tek Self Driller with Neoprene Washer

**Light Transmitting Panels** | Optional skylights are available insulated or non-insulated, with or without a UL 90 rating.

**Insurance** | Our UL & FM ratings allow for reduced building insurance rates.

### ENGINEERING PROPERTIES FOR DOUBLE-LOK® STEEL PANELS

Gauge	F <sub>y</sub> (KSI)	Weight (PSF)	Top Flat in Compression			Bottom Flat in Compression		
			I <sub>xe</sub> (IN <sup>4</sup> /FT)	S <sub>xe</sub> (IN <sup>3</sup> /FT)	Maxo (KIP-IN)	I <sub>xe</sub> (IN <sup>4</sup> /FT)	S <sub>xe</sub> (IN <sup>3</sup> /FT)	Maxo (KIP-IN)
24	50	1.23	0.153	0.115	2.713	0.270	0.115	3.427
22	50	1.56	0.207	0.162	3.567	0.363	0.150	4.488

1. All calculations for the properties of Double-Lok® panels are calculated in accordance with the 2001 edition of the COLD-FORMED STEEL Design Manual – published by the American Iron and Steel Institute (AISI).  
2. I<sub>xe</sub> is for reaction determination.

3. S<sub>xe</sub> is for bending.  
4. Maxo is allowable bending moment.  
5. All values are for one foot of panel width.  
6. Please inquire for Ultra-Dek® Engineering Properties.

### ALLOWABLE UNIFORM LOADS IN POUNDS PER SQUARE FOOT

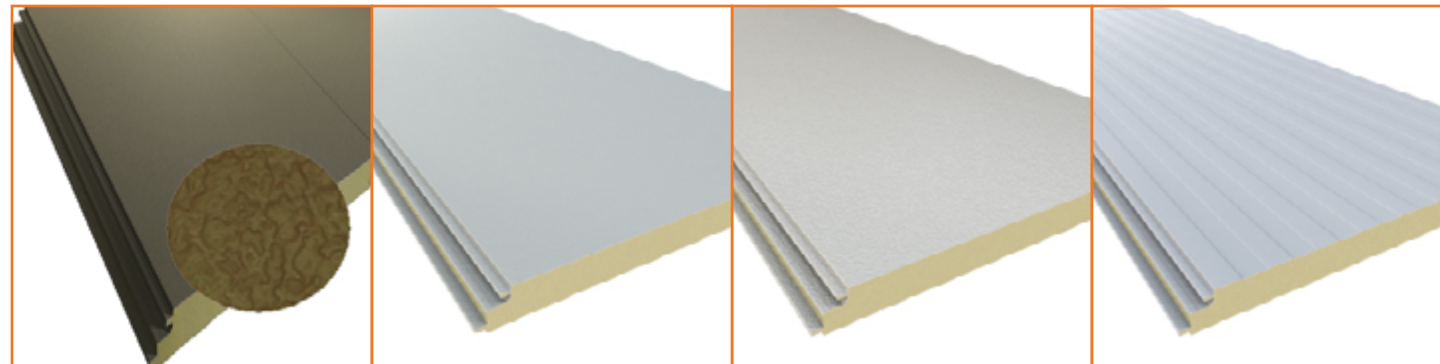
24 Gauge (F <sub>y</sub> = 50 KSI) (Standard)		Span in Feet						
Span Type	Load Type	2.5	3.0	3.5	4.0	4.5	5.0	5.5
1-Span	Live Load	142	119	102	89	79	71	65
2-Span	Live Load	128	107	91	80	71	64	58
3-Span	Live Load	146	121	104	91	81	73	66
4-Span	Live Load	140	117	100	88	78	70	64
22 Gauge (F <sub>y</sub> = 50 KSI) (Optional)		Span in Feet						
Span Type	Load Type	2.5	3.0	3.5	4.0	4.5	5.0	5.5
1-Span	Live Load	215	180	154	135	120	108	98
2-Span	Live Load	207	172	148	129	115	103	94
3-Span	Live Load	235	196	168	147	131	118	107
4-Span	Live Load	236	189	162	141	126	113	103

1. Allowable loads are based on uniform span lengths and panel yield strength (F<sub>y</sub>) = 50 ksi.  
2. LIVE LOAD is limited by bending, shear and combined shear & bending.  
3. Above loads consider a maximum reaction ratio of L/180.  
4. THE ABOVE LOADS ARE NOT FOR USE WHEN DESIGNING PANELS TO REDUCE WIND UPLIFT.

5. Weight of the panel has not been deducted from allowable loads.  
6. Please contact manufacturer or manufacturer's website for most current allowable wind uplift loads.  
7. The use of any field seaming machine other than that provided by the manufacturer may damage the panels, void all warranties and will void all engineering data.

Insulated Metal Roof & Wall Panels provide a secure thermal envelope, resulting in reduced energy and operating costs. Insulated panels are versatile, with many options for roof, wall, and interior applications.

### INSULATED METAL WALL PANEL PROFILES



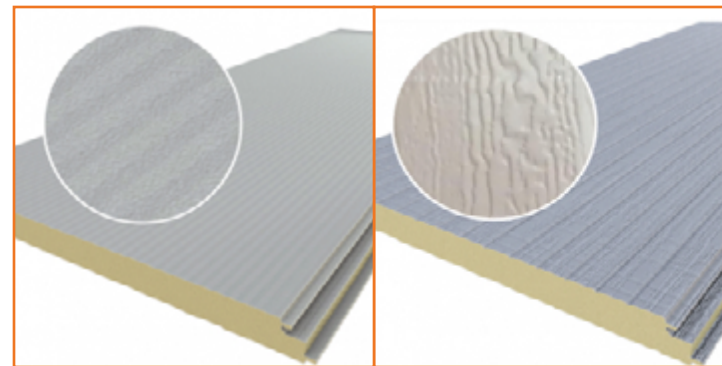
Adobe

Flat

Heavy Embossed

Mesa

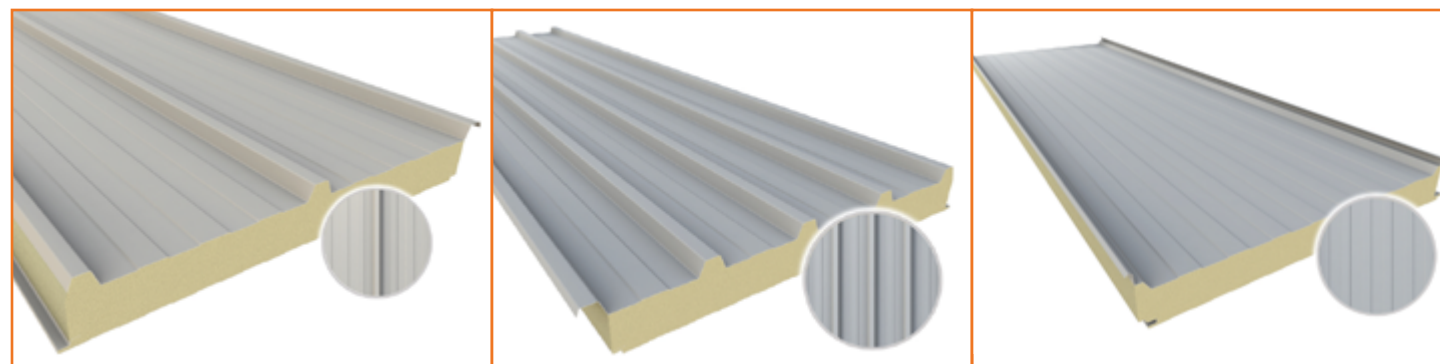
Western Steel offers engineering services such as detailing, wind calculations, panel calculations, fastening analysis, building code compliance and testing. We can provide insight on how to maximize the benefits of constructing with insulated metal panels in all applications.



Striated

Wood Grain

### INSULATED METAL ROOF PANEL PROFILES



HR Series (HR3)

HR Series (HR5)

Standing Seam



### FEATURES & BENEFITS

- The panel's overlapping joint is self-aligning and allows for easy sealant application.
- The standard exterior metal surface is 24ga G-90 galvanized steel with standard PVDF and SMP exterior coatings. (other coatings may be available).
- The standard interior metal surface is 26ga Imperial White.
- The panel arrives on site in one piece and requires a simple one step installation reducing construction time and costs.
- Panel Length: 6' min to 40' maximum
- Insulation Material: Mineral Wool
- Joint Configuration: tongue and groove with concealed fastener, or standard interior joint, unless standing seam.
- Metal facings: 24ga galvanized steel
- The panel arrives on site in one piece.
- Panel thickness ranges from 4" to 8", R-Value from 15 to 29.
- Hourly Fire Rating: 1, 2, or 3 hour available.

# Western Steel Buildings offers a variety of options to customize your building. Accessories & options include:

- Attachment Buildings
- Bridge Crane Capacity
- Canopies & Overhangs
- Columns
- Dormers
- Facades
- Framed Openings
- Galvanized Frames
- Grey Frames
- Gutters & Downspouts
- Hangar Doors
- Light Transmitting Panels
- Liner Panel Systems (Roof/Wall)
- Louvers
- Mansards
- Mezzanine Structural Framing
- Metal Endwall Panel Closures
- Parapet Walls
- Partitions
- Roof Vents
- Pipe Flashing
- Roll Up Doors
- Slide Doors
- Valley Gutters
- Walk Doors
- Windows and more



Light Transmitting Panels



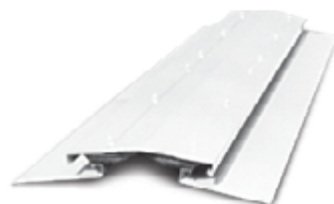
Louvers



Metal Endwall Panel Closures



Pipe Flashings  
(More Options Available)



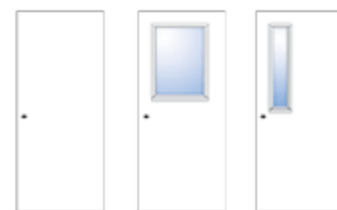
Roof Vents  
(Low Profile Shown)



Valley Gutters  
(Many Options Available)



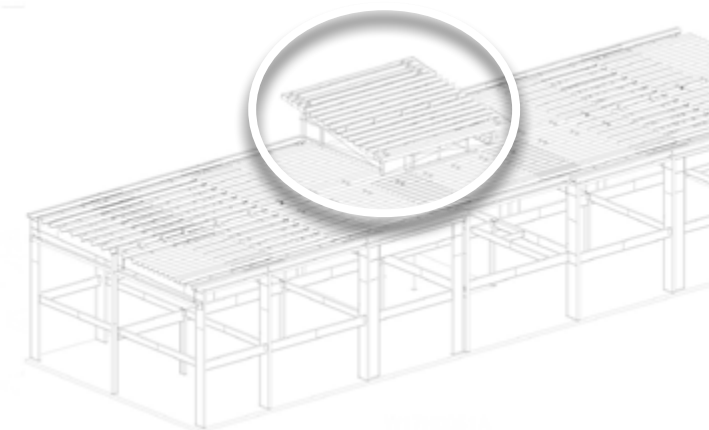
Windows



Walk Doors  
Agri-Line & Commercial Grades



**Canopies & Overhangs:** Both overhangs and canopies are shown in the building pictures above. Overhangs are available from 6" to 5'0" without additional support. They change the profile of the building to add aesthetic value. They can be added to one side up to all four. Canopies are longer extensions that require support, they are typically 8'10"-12'0".



**Dormer:** A window that projects vertically from a sloping roof. Dormers are commonly used to increase space or allow more natural interior light. The dormer shown is over the entryway of a commercial structure. There are many different styles of dormer designs that work well with our steel structures.



**Parapet Walls:** A parapet is a barrier which is an extension of the wall at the edge of a roof, terrace, balcony, walkway or other structure.