INTRODUCTION

If your roof is causing problems due to leaks, high maintenance costs and low energy efficiency, the MBCI NuRoof® Retrofit System is the remedy. With the NuRoof® Retrofit System, you can install a slopped roof which will eliminate leaks and minimize maintenance costs. Energy efficiency may also be increased substantially with additional insulation.

The NuRoof® Retrofit System allows design flexibility with a choice of roof slopes, hips, valleys, gable endwalls, vertical and trapezoidal standing seam panels, as well as the traditional PBR Panel. These panels are available in a wide range of colors and gauges. So, whether you are retrofitting an old warehouse, manufacturing plant or an office building, the MBCI NuRoof® Retrofit System is the answer.

ARCHITECT/OWNER RESPONSIBILITY

The architect/owner using the MBCI NuRoof® Retrofit System must recognize that the existing structural roof system most likely was designed based on the roof load being applied uniformly by means of a metal deck or similar substrate. The NuRoof® Retrofit System will replace the uniform load with a series of concentrated loads onto the existing roof system which may not be feasible in all applications. Also, as a result of the addition of the retrofit roof, additional weight will be added to the existing roof that must be checked. MBCI highly recommends that a structural engineer conduct an investigation of the entire structure being proposed for a retrofit system to determine the adequacy of the existing roof structure to withstand additional loading. Their investigation should include the condition of the existing structural, existing dead loads, can existing loads be removed, (i.e. rock ballast) and what additional dead loads will the structure accept and at what spacing?

NOTE:
1. Some buildings may have structural members in both directions. In this case, each method may be used where required.
2. Hipped NuRoof® Systems may require both methods.
# TABLE OF CONTENTS

Architect/Engineer Information ................................................... NR-5 - NR-6
Design Data Sheet ........................................................................ NR-7
Material Properties ........................................................................ NR-8
  Section Dimensions
  Section Properties
Retrofit Framing over Structural Members Parallel to the Roof Slope
  Base Channel Attachment ......................................................... NR-9
  Column Attachment ..................................................................... NR-10
  “X” Bracing Attachment ............................................................. NR-11
    Longitudinal
      Transverse (Recommended every 40’ minimum) ....................... NR-12
    Strut Attachment (Every braced column line) ......................... NR-13
    Panel Attachment .................................................................... NR-14
Retrofit Framing over Structural Members Perpendicular to the Roof Slope
  Base Zee Attachment .................................................................. NR-15
  Column Attachment .................................................................... NR-16
  “X” Bracing Attachment ............................................................. NR-17
    Longitudinal
      Transverse (Recommended every 40’ minimum) ....................... NR-18
    Strut Attachment (Every braced column line) ......................... NR-19
    Panel Attachment .................................................................... NR-20
Gable Endwall
  Isometric/Cross-section ............................................................. NR-21
Hip Roof
  Isometric Showing Combination of Base Zee/Base Shoe Utilization and Columns . NR-22
    Hip Framing (B-T-B Channels) ................................................. NR-22
Valley
  Isometric Showing Combination of Base Zee/Base Shoe Utilization and Columns . NR-23
    Valley Framing (B-T-B Channels) ............................................ NR-23
Peak Framing
  Isometric/Cross-section ............................................................. NR-24
Details
  Base Channel/Column Connection (Flange) ................................. NR-25
  Base Zee/Column Connection (Flange) ........................................ NR-25
  Base Zee/Column Connection (Web) .......................................... NR-26
  Base Zee Lap ............................................................................ NR-26
  High Strength Base Zee/Column Connection (Flange/Web) ........ NR-27
  Purlin to Column Connection (Flange) ....................................... NR-28
  Purlin to Column with/Purlin Clip (Flange) ............................... NR-28
  Purlin Lap to Column Connection (Flange) ................................ NR-28
  Purlin to Column Connection (Web) .......................................... NR-29
  Purlin to Column with/Purlin Clip (Web) ................................. NR-29
  Purlin Lap to Column Connection (Web) ................................... NR-29
  Angle Bracing .......................................................................... NR-30 - NR-35
    Longitudinal
      Transverse
    Eave .................................................................................... NR-36
      Overhang (with Parapet Wall)
      Eave (with Fascia Wall)
      Eave (with Angles)
  Edge/Corner Zone (For Use in High Wind Conditions) ............. NR-37
  Architect/Engineer Information (Optional Method) .................. NR-38
# TABLE OF CONTENTS

NuRoof® Optional Methods

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isometric - Grid System</td>
<td>NR-39</td>
</tr>
<tr>
<td>Grid System Details</td>
<td>NR-40</td>
</tr>
<tr>
<td>Isometric - SSR System Over Existing PBR Panel</td>
<td>NR-41</td>
</tr>
<tr>
<td>Eave Detail</td>
<td>NR-42</td>
</tr>
<tr>
<td>Clip Attachment Detail</td>
<td>NR-42</td>
</tr>
<tr>
<td>Rake Detail</td>
<td>NR-43</td>
</tr>
<tr>
<td>Ridge Detail</td>
<td>NR-43</td>
</tr>
<tr>
<td>EndLap Detail</td>
<td>NR-44</td>
</tr>
<tr>
<td>Notes</td>
<td>NR-45 - NR-47</td>
</tr>
</tbody>
</table>

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11-05/30M

Descriptions and specifications contained herein were in effect at the time this publication was approved for printing. In a continuing effort to refine and improve products, MBCI reserves the right to discontinue products at any time or change specifications and/or designs without notice and without incurring obligation. **To insure you have the latest information available, please inquire or visit our Web Site at www.mbcicom.** Application details are for illustration purposes only and may not be appropriate for all environmental conditions, building designs, or panel profiles. Projects should be engineered to conform to applicable building codes, regulations, and accepted industry practices. Insulation is not shown in these details for clarity. If there is a conflict between this manual and the erection drawings, the erection drawings will take precedence.
ARCHITECT/ENGINEER INFORMATION

1. The recommended slope range of the retrofit roof is 1/4:12 - 4:12. For slopes greater than 4:12 please contact MBCI.

2. The maximum recommended height of the retrofit system above the existing roof is 10 feet. This is not due to the capacity of the framing, but to the altered shape of the building and its ability to withstand the new wind loads as well as erection limitations.

3. The NuRoof® Retrofit System will add approximately 2 to 4 PSF to the weight of the existing roof.

4. Load transfer may result in concentrated loads occurring on the existing roof. A professional structural engineer must investigate the existing roof to be sure that no undesirable effects are created on the existing roof by the NuRoof® Retrofit System.

5. Lateral wind forces will be developed at gabled endwalls created by the retrofit roof. These wind forces will be transmitted into the existing roof by the “X” bracing parallel to the retrofit purlins. MBCI cannot be responsible for the adequacy of the existing building to resist the additional wind forces which develop at these gabled endwalls.

6. The uniform retrofit roof loads will be concentrated through the retrofit columns. These concentrated loads are then transmitted to the existing roof deck above the existing roof structural members. The adequacy of the existing metal deck corrugations to resist web crippling must be investigated during the design phase. It is not recommended to install this system over the existing insulation board due to possible creep over the life of the system (consult the manufacturer of the existing insulation board for allowable static compressive loads). If the existing roof has moisture trapped within the layers from water intrusion, MBCI recommends the removal of the roofing materials (down to the existing deck) at all base channels or roof support zee locations. This will allow trapped moisture to be drawn out by proper ventilation. If the deck is corroded through to the structural framing, consult with your structural engineer for possible deck reinforcement at the column base attachments to maintain the integrity of the metal deck. NOTE: Existing metal decks can provide lateral support (diaphragm action) to the overall structure. Removing the metal deck at the column locations may compromise the integrity of the existing metal deck diaphragm system. Since the NuRoof® Retrofit System relies on the existing metal deck to transfer its lateral loads to the existing structural system, the existing metal deck must remain intact.

7. An “attic space” will be created by the NuRoof® Retrofit System. MBCI recommends proper venting of this “attic space” in accordance with applicable codes, to be determined by a mechanical engineer, allowing any trapped moisture to escape. MBCI also recommends that “attic space” be reviewed by other building, fire, or insurance related officials for possible sprinkling or extension of existing fire walls to the bottom of the “new” roof system. Use a minimum of 3” vinyl faced roll insulation between the retrofit panels and the retrofit purlins to help prevent condensation and roof noise. If the use of retrofit framing in “New Construction” will result in the installation of HVAC equipment and ductwork in the “attic space” to conflict with the extensive bracing system required by the NuRoof® Retrofit System, please consult with MBCI’s sales engineering staff during the design phase to resolve these issues.

8. The NuRoof® framework is equally effective over existing roof decks made of metal, Tongue and Groove wood and concrete decks. However, each existing roof system must be evaluated independently on its ability to accept multiple point loading from the retrofit system.

9. The NuRoof® framework will be supplied in unpunched 20’-0” lengths. Field cutting of material will be required.
10. For MBCI to properly design the retrofit framing, the following information is required:
Retrofit roof live/wind load, collateral load, snow load, seismic zone, existing building size and location, existing structural orientation (parallel or perpendicular to retrofit roof slope) and spacing, type of existing substrate members, governing code, retrofit roof pitch, retrofit roof panel desired, and the use of hipped or gable ends. MBCI is not responsible for the ability of the existing building to accept the loads imposed upon it by the retrofit framework. The MBCI engineering department can conduct an engineering study of the proposed retrofit framing and provide column reactions based on the above information that may be used by your structural engineer to do their study of the existing structure. Following this page is a design data sheet. This sheet can be filled out and sent to MBCI for our Project Service Department to perform estimates, designs, drawings or a combination of all three.

CAUTION
In certain cases the retrofit roof panel selected may require additional retrofit purlins at the perimeter of the roof to ensure that the panel is capable of resisting the additional wind/snow load in this area.
# NuRoof® DESIGN INFORMATION

## DESIGN DATA SHEET

### PROJECT INFORMATION

| From: | Live Load: psf | ASTM E1592 |
| Date: | Dead Load: psf | UL90 |
| Project Name: | Collateral Load: psf | Factory Mutual |
| Project Location: | Snow Load: psf | SREF |
| (City, State, County): | Wind Speed: mph |  |
| Building Code: | Importance Factor: |  |
| Deflection Rqmts.: | Exposure Category: |  |

### EXISTING ROOF GEOMETRY

- Length: ft
- Eave Height: ft
- Width: ft
- Overhang: ft
- Slope: \( \frac{\text{ft}}{12} \)
- Parapet Height: ft

(Provide drawings of existing building - Including structural drawings)

### EXISTING ROOF TYPE

- Built Up
- Shingle
- Modified Bitumen
- Trocal
- Single Ply
- PVC
- Other - Specify

### EXISTING ROOF SUBSTRATE

- Insulation Type: in.
- Tectum Thickness: in.
- Insulation Thickness: in.
- Concrete Thickness: in.
- Plywood Thickness: in.
- Lightweight
- Wood Thickness: in.
- Structural
- Metal Deck Thickness: in.
- Precast
- Metal Deck Gauge: Other - Specify

### EXISTING STRUCTURAL MEMBERS

- Bar Joists: @ " o.c.
- "Hot Rolled" Steel: @ " o.c.
- Wood Trusses: @ " o.c.
- Concrete Beams: @ " o.c.
- Wood Rafters: @ " o.c.
- Other - Specify: @ " o.c.

Has the existing structure been analyzed by a professional engineer?
- yes
- no

Engineer's name: ________________________
Engineer's phone #: ________________________

### NUROOF® GEOMETRY

| Length: ft | Ridge Condition: |
| Width: ft | Gable |
| Slope: \( \frac{\text{ft}}{12} \) | Hip |
| Eave Height: ft | Roof Panels: (Profile, Width, Gauge) |
| Overhang: ft | Wall Panels: (Profile, Width, Gauge) |
| Eave Condition: | Eave Trim |
| Box Gutter | Structural Members: Red Oxide |
| Sculptured Gutter | Galvanized |
| Snow Gutter | |

(Provide drawings of new proposed roof plan)

### NOTES

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## SECTION PROPERTIES

### Axis X-X

<table>
<thead>
<tr>
<th>D x B1 x B2 (in.)</th>
<th>Section</th>
<th>Ga.</th>
<th>Weight (PLF)</th>
<th>Ix (in.4/ft.)</th>
<th>Sx (in.3/ft.)</th>
<th>Rx (in.)</th>
<th>Ma (in.-Kips)</th>
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### Axis X-X

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<th>Sx (in.3/ft.)</th>
<th>Rx (in.)</th>
<th>Ma (in.-Kips)</th>
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### Axis X-X

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<th>Sx (in.3/ft.)</th>
<th>Rx (in.)</th>
<th>Ma (in.-Kips)</th>
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<td>0.827</td>
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**Notes:**

1. All calculations for the properties of cees and zees are calculated in accordance with the 2001 North American Specification for the Design of Cold-Formed Steel Structural Members published by the American Iron and Steel Institute (A.I.S.I.).
2. \( S_x \) is for deflection determination.
3. \( S_x \) is for bending.
4. \( M_a \) is allowable bending moment.
5. The allowable bending moment \( (M_a) \) assumes that the compressive flange is laterally braced so as to provide the full moment capacity of the section.

The Engineering data contained herein is for the expressed use of customers and design professionals. Along with this data, it is recommended that the design professional have a copy of the most current version of the North American Specification for the Design of Cold-Formed Steel Structural Members published by the American Iron and Steel Institute to facilitate design. This Specification contains the design criteria for cold-formed steel components. Along with the Specification, the designer should reference the most current building code applicable to the project jobsite in order to determine environmental loads. If further information or guidance regarding cold-formed design practices is desired, please contact the manufacturer.

**NR-8 SUBJECT TO CHANGE WITHOUT NOTICE SEE www.mbci.com FOR CURRENT INFORMATION EFFECTIVE NOVEMBER 4, 2005**
RETROFIT FRAMING OVER STRUCTURAL MEMBERS
PARALLEL TO THE ROOF SLOPE
(Base Channel Attachment)

EXISTING STRUCTURAL

BASE CHANNEL ATTACHMENT

CROSS SECTION A-A
BASE CHANNEL ATTACHMENT

PLAN VIEW
BASE CHANNEL ATTACHMENT

DETAIL 1

A

A
RETROFIT FRAMING OVER STRUCTURAL MEMBERS
PARALLEL TO THE ROOF SLOPE
(Column Attachment)

DETAIL 1

CROSS SECTION A-A
COLUMN ATTACHMENT

PLAN VIEW
COLUMN ATTACHMENT

EXISTING STRUCTURAL
SELF-DRILLING FASTENERS
BASE CHANNEL
EXISTING ROOF DECK
RETROFIT COLUMN

DETAIL 1

EXISTING STRUCTURAL
SELF-DRILLING FASTENERS
BASE CHANNEL
EXISTING ROOF DECK
RETROFIT COLUMN

RETROFIT COLUMN
SPACING DETERMINED
BY EXISTING STRUCTURAL
SPACING

RETROFIT COLUMN
BASE CHANNEL

RETROFIT FRAMEWORK

FASTENER TO
EXISTING STRUCTURAL
(NOT BY MBCI)

EXISTING STRUCTURAL
SELF-DRILLING FASTENERS
BASE CHANNEL
EXISTING ROOF DECK
RETROFIT COLUMN

EXISTING STRUCTURAL
SELF-DRILLING FASTENERS
BASE CHANNEL
EXISTING ROOF DECK
RETROFIT COLUMN

CURRENT INFORMATION

EFFECTIVE NOVEMBER 4, 2005

SEE www.mbci.com FOR CURRENT INFORMATION
NuRoof®

DESIGN INFORMATION

RETROFIT FRAMING OVER STRUCTURAL MEMBERS
PARALLEL TO THE ROOF SLOPE
(“X” Bracing Attachment)

DETAIL 1

CROSS SECTION A-A
ANGLE BRACE ATTACHMENT

EXISTING STRUCTURAL

BASE CHANNEL

LONGITUDINAL ANGLE BRACING

RETROFIT COLUMN

TRANSVERSE ANGLE BRACING
(EVERY 40' MIN.)

RETROFIT FRAMEWORK

RETROFIT COLUMN SPACING DETERMINED
BY EXISTING STRUCTURAL SPACING

RETROFIT COLUMN

FIELD NOTCH

ANGLE BRACING

SELF-DRILLING FASTENERS

EXISTING STRUCTURAL

BASE CHANNEL

ANGLE BRACING

SELF-DRILLING FASTENERS

EXISTING ROOF DECK

A

DETAIL 1

A
RETROFIT FRAMING OVER STRUCTURAL MEMBERS
PARALLEL TO THE ROOF SLOPE
(Purlin Attachment)

NOTE: PURLIN LAPS MUST OCCUR AT A COLUMN LOCATION

SELF-DRILLING FASTENERS

RETROFIT PURLIN

RETROFIT COLUMN

BASE CHANNEL

RETROFIT COLUMN SPACING DETERMINED BY EXISTING STRUCTURAL SPACING

LONGITUDINAL ANGLE BRACING

EXISTING STRUCTURAL

PURLIN FLANGE CAN BE ROLL FORMED TO A MAXIMUM SLOPE OF 4:12

4:12
3:12
2:12
1:12

TRANSVERSE ANGLE BRACING (EVERY 40' MIN.)

DETAIL 1

CROSS SECTION A-A
PURLIN ATTACHMENT

BASE CHANNEL

EXISTING STRUCTURAL TO EXISTING STRUCTURAL (NOT BY MBCI)

FASTENER TO EXISTING STRUCTURAL

SELF-DRILLING FASTENERS

CONCRETE PAVING

SELF-DRILLING FASTENERS

SELF-DRILLING FASTENERS

SELF-DRILLING FASTENERS

SELF-DRILLING FASTENERS

SELF-DRILLING FASTENERS

SELF-DRILLING FASTENERS

SELF-DRILLING FASTENERS

SELF-DRILLING FASTENERS

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SELF-DRILLING FASTENERS

SELF-DRILLING FASTENERS

SELF-DRILLING FASTENERS

SELF-DRILLING FASTENERS

SECOND FLOOR

SELF-DRILLING FASTENERS

SELF-DRILLING FASTENERS

SECOND FLOOR
NuRoof®

DESIGN INFORMATION

RETROFIT FRAMING OVER STRUCTURAL MEMBERS
PARALLEL TO THE ROOF SLOPE
(Strut Attachment)

CONTINUOUS CHANNEL SECTION
(EVERY BRACED COLUMN LINE)

BASE CHANNEL

RETROFIT COLUMN SPACING DETERMINED BY EXISTING STRUCTURAL SPACING

LONGITUDINAL ANGLE BRACING

EXISTING STRUCTURAL

DETAIL 1

RETROFIT FRAMEWORK

RETROFIT PURLIN

TRANSVERSE ANGLE BRACING
(EVERY 40' MIN.)

RETROFIT COLUMN

CROSS SECTION A-A

STRUT ATTACHMENT

DETAIL 1

RETROFIT PURLIN

CONTINUOUS CHANNEL SECTION
(EVERY BRACED COLUMN LINE)

RETROFIT COLUMN

SELF-DRILLING FASTENERS

BASE CHANNEL

EXISTING STRUCTURAL

EXISTING ROOF DECK

SELF-DRILLING FASTENERS

EXISTING ROOF DECK

SELF-DRILLING FASTENERS

SELF-DRILLING FASTENERS
RETROFIT FRAMING OVER STRUCTURAL MEMBERS
PARALLEL TO THE ROOF SLOPE
(Panel Attachment)

DETAIL 1

CROSS SECTION A-A
PANEL ATTACHMENT
RETROFIT FRAMING OVER STRUCTURAL MEMBERS
PERPENDICULAR TO THE ROOF SLOPE
(Base Zee Attachment)

NOTE: BASE ZEE LAPS MUST OCCUR OVER A SUPPORT

SELF-DRILLING FASTENERS

EXISTING STRUCTURAL

BASE ZEE SPACING

BASE ZEE

DETAIL 1

EXISTING ROOF DECK

BASE ZEE

FASTENER TO EXISTING STRUCTURAL (NOT BY MBCI)

PLAN VIEW
BASE ZEE ATTACHMENT

CROSS SECTION A-A
BASE ZEE ATTACHMENT

EFFECTIVE NOVEMBER 4, 2005
RETROFIT FRAMING OVER STRUCTURAL MEMBERS
PERPENDICULAR TO THE ROOF SLOPE
(Column Attachment)

DETAIL 1
CROSS SECTION A-A
COLUMN ATTACHMENT
RETROFIT FRAMING OVER STRUCTURAL MEMBERS
PERPENDICULAR TO THE ROOF SLOPE
(“X” Bracing Attachment)

- RETROFIT FRAMEWORK
- LONGITUDINAL ANGLE BRACING
- RETROFIT COLUMN
- TRANSVERSE ANGLE BRACING (EVERY 40' MIN.)
- DETAIL 1
- SELF-DRILLING FASTENERS
- ANGLE BRACING
- BASE ZEE
- FASTENER TO EXISTING STRUCTURAL (NOT BY MBCI)

EXISTING STRUCTURAL

DETAIL 1

EFFECTIVE NOVEMBER 4, 2005
SEE www.mbcicom FOR CURRENT INFORMATION
SUBJECT TO CHANGE WITHOUT NOTICE
NR-17
RETMFIT FRAMING OVER STRUCTURAL MEMBERS
PERPENDICULAR TO THE ROOF SLOPE
(Purlin Attachment)

NOTE: PURLIN LAPS MUST OCCUR AT A COLUMN LOCATION

SELF-DRILLING FASTENERS

RETROFIT FRAMEWORK

DETAIL 1

RETROFIT COLUMN

TRANSVERSE ANGLE BRACING (EVERY 40’ MIN.)

PURLIN FLANGE CAN BE ROLL FORMED TO A MAXIMUM SLOPE OF 4:12
RETROFIT FRAMING OVER STRUCTURAL MEMBERS
PERPENDICULAR TO THE ROOF SLOPE
(Strut Attachment)

DETAIL 1

CROSS SECTION A-A
STRUT ATTACHMENT
RETROFIT FRAMING OVER STRUCTURAL MEMBERS
PERPENDICULAR TO THE ROOF SLOPE
(Panel Attachment)

DETAIL 1

CROSS SECTION A-A

PANEL ATTACHMENT
NuRoof®

DESIGN INFORMATION

RETROFIT FRAMING OVER STRUCTURAL MEMBERS
(Gable Endwall Girt Attachment)

ISOMETRIC VIEW OF ENDWALL

CROSS SECTION A-A
ENDWALL ATTACHMENT
RETROFIT FRAMING FOR ROOF HIP
(Back-to-Back Hip Channel Attachment)

DETAIL 1

12" O.C. STAGGERED

HIP CHANNEL BACK TO BACK

RETROFIT FRAMEWORK

BASE CHANNEL

EXISTING STRUCTURAL

BASE ZEE

DETAIL 1

HIP CHANNEL BACK TO BACK

SELF-DRILLING FASTENERS

LONGITUDINAL ANGLE BRACING

CONTINUOUS CHANNEL SECTION
(EVERY BRACED COLUMN LINE)

TRANSVERSE ANGLE BRACING
(EVERY 40' MIN.)

(2) PANCAKE HEAD SELF DRILLERS

(2) PANCAKE HEAD SELF DRILLERS

HIP CHANNEL (BACK TO BACK)

4½" x 2" HIP CHANNEL (BACK TO BACK STITCHED @ 12" O.C.)

4½" x 2" HIP CHANNEL (BACK TO BACK)

(2) PANCAKE HEAD SELF DRILLERS

RETROFIT PURLIN

RETROFIT COLUMN

RETROFIT PURLIN

RETROFIT PURLIN

RETROFIT FRAMING FRAMEWORK
RETROFIT FRAMING FOR ROOF VALLEY
(Back-to-Back Valley Channel Attachment)

RETROFIT PURLIN

4⅛” x 2” VALLEY CHANNEL (BACK TO BACK)

LONGITUDINAL ANGLE BRACING

TRANSVERSE ANGLE BRACING (EVERY 40’ MIN.)

BASE ZEE

EXISTING STRUCTURAL

RETROFIT FRAMEWORK

CONTINUOUS CHANNEL SECTION (EVERY BRACED COLUMN LINE)

RETROFIT COLUMN

BASE CHANNEL

SELF-DRILLING FASTENERS

VALLEY CHANNEL BACK TO BACK

12” O.C.
STAGGERED

4⅛” x 2” VALLEY CHANNEL (BACK TO BACK
STITCHED @ 12” O.C.)

(2) PANCAKE HEAD SELF DRILLERS

(2) PANCAKE HEAD SELF DRILLERS

DETAIL 1

DETAIL 1

NuRoof® DESIGN INFORMATION

RETROFIT FRAMING FOR ROOF VALLEY
(Back-to-Back Valley Channel Attachment)
RETROFIT FRAMING FOR ROOF RIDGE
(Peak Framing Attachment)

EXISTING ROOF DECK
EXISTING STRUCTURAL

CROSS SECTION A-A
STRUT ATTACHMENT

SELF-DRILLING FASTENERS
SELF-DRILLING FASTENERS
SELF-DRILLING FASTENERS
SELF-DRILLING FASTENERS

RETROFIT COLUMN
RETROFIT COLUMN
RETROFIT COLUMN

CONTINUOUS CHANNEL SECTION
CONTINUOUS CHANNEL SECTION
CONTINUOUS CHANNEL SECTION

RIDGE SUPPORT CHANNEL SECTION
SELF-DRILLING FASTENERS
SELF-DRILLING FASTENERS
SELF-DRILLING FASTENERS

BASE CHANNEL
EXISTING ROOF DECK
EXISTING STRUCTURAL

ISOMETRIC VIEW
OF ENDWALL
BASE CHANNEL CONNECTION WITH COLUMN ATTACHMENT (Flange Connection)

**EXISTING ROOF SYSTEM**

**BASE SHOE FASTENER**

(MIN. QTY. 4, NOT BY MBCI)

**EXISTING STRUCTURAL**

**BASE CHANNEL CONNECTION**

WITH COLUMN ATTACHMENT (Flange Connection)

**EXISTING ROOF SYSTEM**

**BASE ZEE FASTENER**

(MIN. QTY. 2, NOT BY MBCI)

**EXISTING STRUCTURAL**

**BASE ZEE CONNECTION**

WITH COLUMN ATTACHMENT (Flange Connection)
BASE ZEE CONNECTION WITH COLUMN ATTACHMENT
(Web Connection)

2" x 2" ANGLE (SEE PLAN FOR EXACT LOCATION)
⅛"-14 x 1½" SELF-DRILLER W/O WASHER [FASTENER #1B] (2) PER CONN.
BASE ZEE

EXISTING ROOF SYSTEM
BASE ZEE FASTENER (MIN. QTY. 2, NOT BY MBCI)
EXISTING STRUCTURAL

BASE ZEE CONNECTION
(Lap Connection)

⅛"-14 x 1½" SELF-DRILLER W/O WASHER [FASTENER #1B] (4) TOTAL
BASE ZEE

EXISTING ROOF SYSTEM
BASE ZEE FASTENER (MIN. QTY. 2, NOT BY MBCI)
EXISTING STRUCTURAL
HIGH STRENGTH BASE ZEE-CLIP ANGLE CONNECTION
WITH COLUMN ATTACHMENT
(Stroke Connection)

EXISTING ROOF SYSTEM
BASE ZEE FASTENER
(MIN. QTY. 2, NOT BY MBCI)

ANGLE CLIP FASTENER
(MIN. QTY. 2, NOT BY MBCI)

4" CEE COLUMN
1/4"-14 x 1 1/4" S.D.
W/O WASHER [FASTENER #1B]
(4) TOTAL

2" x 2" ANGLE (SEE PLAN FOR EXACT LOCATION)
1/4"-14 x 1 1/4" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(2) PER CONN.

BASE ZEE
BASE ZEE CLIP ANGLE

EXISTING STRUCTURAL

HIGH STRENGTH BASE ZEE-CLIP ANGLE CONNECTION
WITH COLUMN ATTACHMENT
(Web Connection)

EXISTING ROOF SYSTEM
BASE ZEE FASTENER
(MIN. QTY. 2, NOT BY MBCI)

ANGLE CLIP FASTENER
(MIN. QTY. 2, NOT BY MBCI)

4" CEE COLUMN
1/4"-14 x 1 1/4" S.D.
W/O WASHER [FASTENER #1B]
(4) TOTAL

2" x 2" ANGLE (SEE PLAN FOR EXACT LOCATION)
1/4"-14 x 1 1/4" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(2) PER CONN.

BASE ZEE
BASE ZEE CLIP ANGLE

EXISTING STRUCTURAL
PURLIN TO COLUMN ATTACHMENT
(Flange Connection)

1/4"-14 x 1 1/4" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(4) TOTAL

ZEE PURLIN

4" CEE COLUMN

1/4"-14 x 1 1/4" S.D.
W/O WASHER [FASTENER #1B]
(2) PER CONN.

2" x 2" ANGLE (SEE PLAN
FOR EXACT LOCATION)

1/4"-14 x 1 1/4" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(2) PER CONN.

PURLIN TO COLUMN ATTACHMENT
(Flange Connection With Purlin Clip)

1/4"-14 x 1 1/4" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(4) TOTAL

ZEE PURLIN

3" x 3" CLIP ANGLE

4" CEE COLUMN

1/4"-14 x 1 1/4" S.D.
W/O WASHER [FASTENER #1B]
(2) PER CONN.

2" x 2" ANGLE (SEE PLAN
FOR EXACT LOCATION)

1/4"-14 x 1 1/4" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(2) PER CONN.

PURLIN TO COLUMN ATTACHMENT
(Flange Connection at Purlin Lap)

1/4"-14 x 1 1/4" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(4) TOTAL

ZEE PURLIN

6"

3" x 3"

4" CEE COLUMN

1/4"-14 x 1 1/4" S.D.
W/O WASHER [FASTENER #1B]
(8) TOTAL

CS-1 STRUT

2" x 2" ANGLE (SEE PLAN
FOR EXACT LOCATION)

1/4"-14 x 1 1/4" S.D.
W/O WASHER [FASTENER #1B]
(2) PER CONN.

4" CEE COLUMN
PURLIN TO COLUMN ATTACHMENT
(Web Connection)

ZEE PURLIN

1/4"-14 x 1 1/4" SELF-DRILLER
W/O WASHER [FASTENER #18]
(4) TOTAL

1/4"-14 x 1 1/4" S.D.
W/O WASHER [FASTENER #18]
(2) PER Conn.

2" x 2" ANGLE (SEE PLAN FOR EXACT LOCATION)
1/4"-14 x 1 1/4" SELF-DRILLER
W/O WASHER [FASTENER #18]
(2) PER Conn.

1/4"-14 x 1 1/4" S.D.
W/O WASHER [FASTENER #18]
(2) PER Conn.

4" CEE COLUMN

PURLIN TO COLUMN ATTACHMENT
(Web Connection With Purlin Clip)

ZEE PURLIN

1/4"-14 x 1 1/4" SELF-DRILLER
W/O WASHER [FASTENER #18]
(4) TOTAL

1/4"-14 x 1 1/4" S.D.
W/O WASHER [FASTENER #18]
(2) PER Conn.

2" x 2" ANGLE (SEE PLAN FOR EXACT LOCATION)
1/4"-14 x 1 1/4" SELF-DRILLER
W/O WASHER [FASTENER #18]
(2) PER Conn.

3" x 3" CLIP ANGLE

1/4"-14 x 1 1/4" S.D.
W/O WASHER [FASTENER #18]
(2) PER Conn.

4" CEE COLUMN

PURLIN TO COLUMN ATTACHMENT
(Web Connection at Purlin Lap)

ZEE PURLIN

1/4"-14 x 1 1/4" SELF-DRILLER
W/O WASHER [FASTENER #18]
(8) TOTAL

1/4"-14 x 1 1/4" S.D.
W/O WASHER [FASTENER #18]
(2) PER Conn.

2" x 2" ANGLE (SEE PLAN FOR EXACT LOCATION)
1/4"-14 x 1 1/4" SELF-DRILLER
W/O WASHER [FASTENER #18]
(2) PER Conn.

6"

1/4"-14 x 1 1/4" S.D.
W/O WASHER [FASTENER #18]
(2) PER Conn.

4" CEE COLUMN

NuRoof®

PREPARED FOR

EFFECTIVE NOVEMBER 4, 2005
SEE www.mbcicom FOR CURRENT INFORMATION
SUBJECT TO CHANGE WITHOUT NOTICE
NR-29
LONGITUDINAL ANGLE BRACING
(Parallel to Purlins)

EXISTING ROOF SYSTEM

4¼" x 2" CHANNEL x 1'-0" (BASE SHOE)

EXISTING STRUCTURAL

FIELD NOTCH ANGLE AS REQUIRED

BASE ZEE FASTENER (MIN. QTY. 4, NOT BY MBCI)

BASE SHOE FASTENER (MIN. QTY. 4, NOT BY MBCI)

4¼" x 1¼" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(2) PER CONN.

1½"-14 x 1⅛" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(4) PER CONN.

FIELD NOTCH ANGLE AS REQUIRED

4" CEE COLUMN

FIELD NOTCH ANGLE AS REQUIRED

1½"-14 x 1⅛" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(2) PER CONN.

1½"-14 x 1⅛" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(4) PER CONN.

1½"-14 x 1⅛" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(2) PER CONN.

1½"-14 x 1⅛" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(4) PER CONN.

1½"-14 x 1⅛" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(4) PER CONN.

1½"-14 x 1⅛" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(4) PER CONN.

1½"-14 x 1⅛" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(4) PER CONN.

2" x 2" ANGLE (SEE PLAN FOR EXACT LOCATION)

CS-1 STRUT

ZEE PURLIN

4" CEE COLUMN

BASE ZEE

EXISTING STRUCTURAL

EXISTING ROOF SYSTEM
TRANSVERSE ANGLE BRACING
(Perpendicular to Purlins)

EXISTING ROOF SYSTEM
BASE SHOE FASTENER (MIN. QTY. 4, NOT BY MBCI)
EXISTING STRUCTURAL

FIELD NOTCH ANGLE AS REQUIRED

FIELD NOTCH ANGLE AS REQUIRED

¹⁄₄"-14 x 1½" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(4) PER CONN.

¹⁄₄"-14 x 1½" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(4) PER CONN.

¹⁄₄"-14 x 1½" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(2) PER SIDE, (4) TOTAL

BASE ZEE
EXISTING ROOF SYSTEM

BASE ZEE FASTENER (MIN. QTY. 2, NOT BY MBCI)
EXISTING STRUCTURAL

4½" x 2" CHANNEL x 1'-0" (BASE SHOE)

2" x 2" ANGLE (SEE PLAN FOR EXACT LOCATION)

ZEE PURLIN

¾"-14 x 1½" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(2) PER CONN.

¾"-14 x 1½" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(4) PER CONN.

¾"-14 x 1½" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(4) PER CONN.

¾"-14 x 1½" SELF-DRILLER
W/O WASHER [FASTENER #1B]
(2) PER CONN.
DOUBLE LONGITUDINAL ANGLE BRACING
(Parallel to Purlins With Base Shoe)

- **ZEE PURLIN**
- **2" x 2" ANGLE (SEE PLAN FOR EXACT LOCATION)**
- **CS-1 STRUT**
- **FIELD NOTCH ANGLE AS REQUIRED**
- **EXISTING ROOF SYSTEM**
- **BASE SHOE FASTENER (MIN. QTY. 4, NOT BY MBCI)**

**FIELD NOTCH ANGLE AS REQUIRED**

**2" x 2" CHANNEL x 1'-0" (BASE SHOE)**

**4" CEE COLUMN**

**FIELD NOTCH ANGLE AS REQUIRED**

**1/8"-14 x 1 1/4" SELF-DRILLER W/O WASHER [FASTENER #1B] (2) PER CONN.**

**1/8"-14 x 1 1/4" SELF-DRILLER W/O WASHER [FASTENER #1B] (4) PER CONN.**

**FIELD NOTCH ANGLE AS REQUIRED**

DOUBLE LONGITUDINAL ANGLE BRACING
(Parallel to Purlins With Base Zee)

EXISTING ROOF SYSTEM

BASE ZEE

2" x 2" ANGLE (SEE PLAN FOR EXACT LOCATION)

CS-1 STRUT

2" x 2" ANGLE (SEE PLAN FOR EXACT LOCATION)

ZEE PURLIN

1/4"-14 x 1 1/4" SELF-DRILLER W/O WASHER [FASTENER #1B]
(4) PER CONN.

1/4"-14 x 1 1/4" SELF-DRILLER W/O WASHER [FASTENER #1B]
(2) PER CONN.

1/4"-14 x 1 1/4" SELF-DRILLER W/O WASHER [FASTENER #1B]
(4) PER CONN.

BASE ZEE FASTENER (MIN. QTY. 2, NOT BY MBCI)

EXISTING STRUCTURAL
DOUBLE TRANSVERSE ANGLE BRACING
(Perpendicular to Purlins With Base Shoe)

EXISTING ROOF SYSTEM
BASE SHOE FASTENER (MIN. QTY. 4, NOT BY MBCI)
EXISTING STRUCTURAL

4⅝” x 2” CHANNEL x 1'-0” (BASE SHOE)

²⁄₄”-14 x 1⅛” SELF-DRILLER W/O WASHER [FASTENER #1B]
(4) PER SIDE, (4) TOTAL

²⁄₄”-14 x 1⅛” SELF-DRILLER W/O WASHER [FASTENER #1B]
(2) PER CONN.

²⁄₄”-14 x 1⅛” SELF-DRILLER W/O WASHER [FASTENER #1B]
(2) PER CONN.

²⁄₄”-14 x 1⅛” SELF-DRILLER W/O WASHER [FASTENER #1B]
(2) PER CONN.

2” x 2” ANGLE (SEE PLAN FOR EXACT LOCATION)

4” CEE COLUMN

ZEE PURLIN
CS-1 STRUT
CS-1 STRUT

ZEE PURLIN

EXISTING ROOF SYSTEM
BASE SHOE FASTENER (MIN. QTY. 4, NOT BY MBCI)
EXISTING STRUCTURAL

4⅝” x 2” CHANNEL x 1'-0” (BASE SHOE)

²⁄₄”-14 x 1⅛” SELF-DRILLER W/O WASHER [FASTENER #1B]
(4) PER SIDE, (4) TOTAL

²⁄₄”-14 x 1⅛” SELF-DRILLER W/O WASHER [FASTENER #1B]
(2) PER CONN.

²⁄₄”-14 x 1⅛” SELF-DRILLER W/O WASHER [FASTENER #1B]
(2) PER CONN.

²⁄₄”-14 x 1⅛” SELF-DRILLER W/O WASHER [FASTENER #1B]
(2) PER CONN.
DOUBLE TRANSVERSE ANGLE BRACING
(Perpendicular to Purlins With Base Zee)

FIELD NOTCH ANGLE AS REQUIRED

\[ \frac{1}{4}" \times \frac{1}{4}" \text{ SELF-DRILLER W/O WASHER [FASTENER #1B]} \]
(4) PER CONN.

\[ \frac{1}{4}" \times \frac{1}{4}" \text{ SELF-DRILLER W/O WASHER [FASTENER #1B]} \]
(2) PER CONN.

\[ 2" \times 2" \text{ ANGLE (SEE PLAN FOR EXACT LOCATION)} \]

\[ 4" \text{ CEE COLUMN} \]

\[ \text{FIELD NOTCH ANGLE AS REQUIRED} \]

\[ \frac{1}{4}" \times \frac{1}{4}" \text{ SELF-DRILLER W/O WASHER [FASTENER #1B]} \]

\[ \frac{1}{4}" \times \frac{1}{4}" \text{ SELF-DRILLER W/O WASHER [FASTENER #1B]} \]

\[ 2" \times 2" \text{ ANGLE (SEE PLAN FOR EXACT LOCATION)} \]

\[ \text{FIELD NOTCH ANGLE AS REQUIRED} \]

\[ \text{BASE ZEE FASTENER (MIN. QTY. 2, NOT BY MBCI)} \]

\[ \text{EXISTING ROOF SYSTEM} \]

\[ \text{EXISTING STRUCTURAL} \]
EAVE OVERHANG
(With Parapet Wall)

- EAVE STRUT CLIP
- 4" CEE OUTRIGGER
- ¼"-14 x 1½" S.D. W/O WASHER [FASTENER #1B] (4) PER CONN.
- ¼"-14 x 1½" SELF-DRILLER W/O WASHER [FASTENER #1B] (2) PER SIDE, (4) TOTAL

EXISTING ROOF SYSTEM

- BASE SHOE FASTENER (MIN. QTY. 4, NOT BY MBCI)
- 4½" x 2" CHANNEL x 1'-0" (BASE SHOE)
- ¼"-14 x 1½" SELF-DRILLER W/O WASHER [FASTENER #1B] (4) PER CONN.

EAVE DETAILS

- EAVE CHANNEL
- HAT SECTION
- 4" CEE COLUMN
- ¼"-14 x 1½" SELF-DRILLER W/O WASHER [FASTENER #1B] (4) PER CONN.
- BASE ZEE
- EXISTING ROOF SYSTEM
- EXISTING STRUCTURAL
- BASE ZEE FASTENER (MIN. QTY. 2, NOT BY MBCI)

EAVE WITH FASCIA WALL

- EAVE ANGLE
- 12 x 1" PANCAKE SELF-DRILLER W/O WASHER [FASTENER #12A] @ 12" O.C.
- BASE ANGLE FASTENER @ 12" O.C. (NOT BY MBCI)

EAVE WITH ANGLES
**EDGE/CORNER ZONE**
(For Use in High Wind Condition)

- **4" CEE COLUMN**
- **4" CEE PURLIN BRIDGING**
- **ZEE PURLIN**
- **BASE SHOE FASTENER** (MIN. QTY. 4, NOT BY MBCI)
- **EXISTING ROOF SYSTEM**
- **4" CEE PURLIN**

Use the following fasteners:

- **¼"-14 x 1¼" Self-Driller W/O Washer [FASTENER #1B]**
- **(4) per conn.**
- **¼"-14 x 1¼" Self-Driller W/O Washer [FASTENER #1B]**
- **(2) per conn.**
- **¼"-14 x 1¼" Self-Driller W/O Washer [FASTENER #1B]**
- **(2) per side, (4) total**

**For Use in High Wind Condition**

- **4" CEE PURLIN BRIDGING**
- **ZEE PURLIN**
- **BASE SHOE FASTENER** (MIN. QTY. 4, NOT BY MBCI)

**EXISTING ROOF SYSTEM**

- **4½" x 2" CHANNEL**
- **x 1'-0" (BASE SHOE)**

**NuRoof®**

**Details**

**NuRoof®**

**Huston, TX**
877/713-6224

**Atlanta, GA**
877/511-6224

**Atwater, CA**
800/829-9324

**Dallas, TX**
800/653-6224

**Indianapolis, IN**
800/735-6224

**Lubbock, TX**
800/758-6224

**Memphis, TN**
888/206-6224

**Oklahoma City, OK**
800/597-6224

**Omaha, NE**
800/458-6224

**Phoenix, AZ**
888/533-6224

**Richmond, VA**
800/729-6224

**Rome, NY**
800/559-6224

**Salt Lake City, UT**
800/874-2404

**San Antonio, TX**
800/598-6224

**Salt Lake City, UT**
800/874-2404

**Tampa, FL Sales Office**
800/359-6224

**Tampa, FL Sales Office**
800/359-6224

**SEE www.mbcicom FOR CURRENT INFORMATION**

**SUBJECT TO CHANGE WITHOUT NOTICE**

NR-37
ARCHITECT/ENGINEER INFORMATION (Optional Method)

1. The optional NuRoof® Retrofit Systems are designed to go directly over existing sloped roof systems.
2. The optional NuRoof® Grid System allows for additional purlins to be installed when the existing purlin spacing does not meet the current code requirements.
3. The optional NuRoof® Retrofit System over existing PBR requires the use of the MBCI Ultra-Dek® or Double-Lok® roof systems. The high clips used with these systems elevate the roof system $1\frac{3}{8}$" over the existing structure, allowing the panels to pass over a standard $1\frac{1}{4}$" PBR panel. If the existing roof system has a rib height of $1\frac{1}{2}$" a non-compressible $\frac{1}{4}$" shim can be used.
4. Care must be taken when cutting back the eave of the existing roof system to make sure no shavings land on adjacent or stored new roofing materials. Hot shavings landing on new material can cause premature rusting of the material surface.
5. When installing the optional NuRoof® Retrofit System over a PBR system the module of the existing roof system must be checked. The MBCI Ultra-Dek®/Double-Lok® roof systems hold a 24" module and if the existing roof was stretched ahead or shrunk back the clips will eventually foul into an existing major rib. An 18" panel can be installed in lieu of a 24" panel to allow the new roof system to stay on the module created by the existing roof panels.

INSTALLATION GUIDELINES

1. Pre-Order
   a. Prior to ordering panels, all dimensions should be confirmed by field measurements.
2. Jobsite Storage and Handling
   a. Check the shipment against the shipping list.
   b. Damaged material must be noted on Bill of Lading.
   c. Materials should be handled carefully. A spreader bar of appropriate length is recommended for hoisting.
3. Application Checklist
   a. Check substrate for proper alignment and uniformity.
   b. Periodic check of panel alignment is crucial to proper panel installation.
   c. Material should be cut on the ground to minimize cut fillings on new materials.
NuRoof® GRID SYSTEM
(Optional Method)

EXISTING ROOF PANEL

HAT SECTION [HS-1]
ATTACH TO EXISTING FRAMING WITH (2) FASTENERS PER CONN.

EXISTING FRAMING

HAT SECTION [HS-1]
ATTACH TO SECONDARY FRAMING WITH (2) FASTENERS PER CONN.

EXISTING WALL PANEL
NuRoof® GRID SYSTEM  
(Optional Method Details)

**CONNECTION OF HAT SECTIONS TO PURLIN**  
(SIDE VIEW)

**CONNECTION OF HAT SECTIONS TO PURLIN**  
(FRONT VIEW)

**SPLICE DETAIL**

NOTE: MUST OCCUR OVER A SUPPORT MEMBER.
NR-41
SUBJECT TO CHANGE WITHOUT NOTICE
SEE www.mbci.com FOR CURRENT INFORMATION
EFFECTIVE NOVEMBER 4, 2005

Houston, TX 877/713-6224
Adel, GA 888/446-6224
Atlanta, GA 877/513-6224
Atwater, CA 800/829-9324
Dallas, TX 800/553-6224
Indianapolis, IN 800/735-6224
Lubbock, TX 800/756-6224
Memphis, TN 800/206-6224
Oklahoma City, OK 800/597-6224
Omaha, NE 800/458-6224
Phoenix, AZ 888/533-6224
Richmond, VA 800/729-6224
Rome, NY 800/559-6224
Salt Lake City, UT 800/874-2404
San Antonio, TX 800/598-6224
Tampa, FL Sales Office 800/359-6224

NuRoof

DETAILS

SSR SYSTEM OVER EXISTING PBR PANEL
(Optional Method)

High Floating Rake Support Angle [HW-7720]

TRI-BEAD TAPE SEALER [HW-504]

3” x 3” Eave Angle
(14 GA. Galvanized)

Metal Inside Closure
[HW-426]

1/4-14 x 1 1/4” Long-life S.D.
W/Washer [Fastener #1E]
(8 Per Panel)

Field Cut Panel at Eave
(Roof Panel Cannot Extend Beyond High Rib of Wall Panel)

Existing PBR Panel

Remove Existing Side-lap Fastener and Attach One Pancake Head Self-driller Next to Removed Fastener

Minor Rib Tape Sealer [HW-512]

Existing Framing

2” x 4” Rake Angle

14-13 x 3” Deck Screw
[Fastener #210] @ EA. High Rib of Existing “PBR” Panel

High Floating Rake

Min. Rib Tape Sealer [HW-512]

Existing Wall Panel

Metal Inside Closure
[HW-426]

3” x 3” Eave Angle
(14 GA. Galvanized)

High Floating Rake Support Angle [HW-7720]

NOTE: MAJOR RIB OF EXISTING ROOF PANEL CANNOT EXCEED 1 1/4” IN HEIGHT.
SSR SYSTEM OVER EXISTING PBR PANEL
(Eave Detail)

INSTALLATION NOTE:
1. APPLY TRI-BEAD TAPE SEALER CONTINUOUS ALONG EAVE ANGLE.
2. ATTACH INSIDE METAL CLOSURE WITH \(\frac{1}{4}\)-14 x 1" S.D.S. W/WASHER [FASTENER #1E].
3. APPLY A 10" LONG PIECE OF TRI-BEAD TAPE SEALER UP AND OVER THE INSIDE METAL CLOSURE.
4. APPLY A 2" LONG PIECE OF TRI-BEAD TAPE SEALER IN VERTICAL LEG OF PANEL SEAM.
5. IF THE PANELS HAVE MINOR RIBS, APPLY MINOR RIB TAPE SEAL BETWEEN PANEL AND EAVE TRIM OR GUTTER.
6. ATTACH PANEL WITH \(\frac{1}{4}\)-14 x 1\(\frac{1}{4}\)" LONG-LIFE W/WASHER IN THE FLAT PANEL AND ONE EACH SIDE OF THE INSIDE METAL CLOSURE (8) TOTAL [FASTENER #1E].

SSR SYSTEM OVER EXISTING PBR PANEL
(Clip Attachment Detail)
SSR SYSTEM OVER EXISTING PBR PANEL

(Rake Detail)

1. Ø1/4 x 1 1/4" LONG-LIFE S.D.
   [FASTENER #1E]
   @ 24" O.C.

2. Ø1/4 x 1 1/4" SHOULDER TEK 2
   SELF-DRILLER [FASTENER #5]
   @ 24" O.C. (CENTER IN SLOT)

3. Ø1/4 x 1 1/4" SELF-DRILLER
   W/WASHER [FASTENER #1]
   (2 @ EA. PURLIN)

4. 1/14 x 1/2" SELF-DRILLER
   W/WASHER [FASTENER #1]
   (2 @ EA. PURLIN)

5. 1/14 x 1/2" SELF-DRILLER
   W/WASHER [FASTENER #1]
   (6 PER PANEL LOCATED IN
   PREPUNCHED HOLES IN PAN
   OF PANEL)

SSR SYSTEM OVER EXISTING PBR PANEL

(Vented Ridge Detail)

1. 1/14 x 1 1/2" LONG-LIFE S.D.
   [FASTENER #46]
   (6 PER PANEL LOCATED IN
   PREPUNCHED HOLES IN PAN
   OF PANEL)

2. 1/14 x 1/2" SELF-DRILLER
   W/WASHER [FASTENER #1]
   (2 PER CLIP)

3. 1/14 x 1/2" SELF-DRILLER
   W/WASHER [FASTENER #1]
   (3 PER PANEL)

4. 1/14 x 1 1/2" LONG-LIFE S.D.
   [FASTENER #46]
   (3 PER PANEL)

5. 1/14 x 1/2" SELF-DRILLER
   W/WASHER [FASTENER #46]
   (6 PER PANEL LOCATED IN
   PREPUNCHED HOLES IN PAN
   OF PANEL)
SSR SYSTEM OVER EXISTING PBR PANEL
(EndLap Detail)

FASTENER SEQUENCE @ ENDLAP

1/4-14 x 1 1/4" LONG-LIFE S.D.
W/WASHER [FASTENER #1E]
(2 PER ENDLAP)

1/8 x 5/8" LONG-LIFE TYPE "B"
W/WASHER [FASTENER #46]
(6 PER PANEL LOCATED IN PREPUNCHED HOLES IN PAN
OF PANEL)

1/4-14 x 1 1/4" SELF-DRILLER
W/WASHER [FASTENER #1]
(2 PER CLIP)

EXISTING PBR PANEL

ULTRA-DEK® PANEL
DOUBLE-LOK® PANEL
(PREPUNCHED)

ULTRA-DEK® PANEL
DOUBLE-LOK® PANEL
(PREPUNCHED)

TRI-BEAD TAPE SEALER CONT.
ACROSS PANEL [HW-504]

PURLIN

MODIFIED BACKUP PLATE
[HW-7760] 24" PANEL

HIGH FLOATING
CLIP [HW-2120]
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<thead>
<tr>
<th>Location</th>
<th>Address Details</th>
<th>Phone Numbers</th>
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<tr>
<td>Houston, TX</td>
<td>14031 West Hardy P.O. Box 38217 Houston, TX 77238 877/713-6224</td>
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<tr>
<td>Adel, GA</td>
<td>1601 Rogers Road P.O. Box 653 Adel, GA 31620 888/446-6224</td>
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<tr>
<td>Atlanta, GA</td>
<td>2280 Monier Avenue P.O. Box 44729 Atlanta, GA 30336 877/512-6224</td>
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<tr>
<td>Atwater, CA</td>
<td>550 Industry Way P.O. Box 793 Atwater, CA 95301 800/829-9324</td>
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<tr>
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<td>300 Highway 51 North P.O. Box 366 Hernando, MS 38632 800/206-6224</td>
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<tr>
<td>Oklahoma City, OK</td>
<td>7000 S. Eastern Avenue P.O. Box 95998 Oklahoma City, OK 73143 800/597-6224</td>
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<tr>
<td>Rome, NY</td>
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<td>Salt Lake City, UT</td>
<td>1155 West 2300 North P.O. Box 16027 Salt Lake City, UT 84116 800/874-2404</td>
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<tr>
<td>San Antonio, TX</td>
<td>8677 I-10 East P.O. Box 69 Converse, TX 78109 800/998-6224</td>
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<tr>
<td>Tampa, FL (Sales Office)</td>
<td>402 N. Frontage Road P.O. Box 2418 Plant City, FL 33564 800/359-6224</td>
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