

WIND UPLIFT RATINGS OF BERRIDGE ROOF SYSTEMS



**BERRIDGE
MANUFACTURING
COMPANY**

INTRODUCTION

BERRIDGE U.L. 90 UPLIFT RATED ROOF ASSEMBLIES:

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CONST. NO. 297	HIGH SEAM TEE-PANEL OVER SOLID PLYWOOD SHEATHING, JOISTS MAX. 2' SPACING
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CONST. NO. 404	CEE-LOCK ON 5/8" PLYWOOD W/INDIVIDUAL CLIPS
CONST. NO. 405	BERRIDGE BERMUDA ROOF PANEL OVER SOLID WOOD SHEATHING
CONST. NO. 161	"R" PANEL WITH UP TO 4.5" THICK BLANKET INSU- LATION OVER OPEN PURLINS, MAX. 5' SPACING.

THE U.L. CLASS 90 RATING:

The U.L. Class 90 Rating is an industry standard load test by which all metal panels are compared. This rating is granted by the Underwriter's Laboratories to those roof assemblies which have successfully completed the U.L. 580 Test Procedure For Uplift Resistance of Roof Assemblies, with Class 90 being the most severe case. Lesser ratings, such as UL30 and UL60 are also assigned where appropriate.

DESCRIPTION OF THE U.L. 580 TEST:

The U.L. 580 Test is four (4) hours in duration and subjects both top and bottom panel surfaces to oscillating or fluctuating loads. These oscillating or fluctuating loads range in pressures from sixteen (16) pounds per square foot (PSF) to one hundred and five (105) PSF of uplift, and are intended to test strength and resistance to fatigue failure of the roof assembly. The time duration and load magnitudes are representative of the long duration wind load phenomena which can be expected along the Gulf Coast and other coastal areas which experience severe winds and storms.

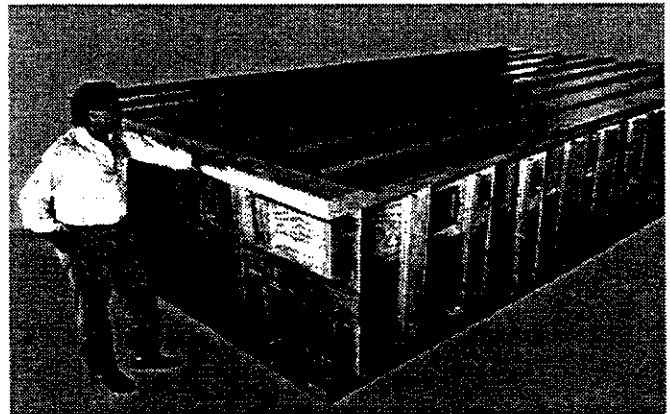
THE IMPORTANCE OF THE ROOF ASSEMBLY:

The Underwriters Laboratory Construction Numbers for Berridge Roof Panels listed on the Contents Page and on each individual assembly page of this publication are taken from the **UNDERWRITERS LABORATORIES ROOFING MATERIALS AND SYSTEMS** publication. These numerical designators are used to identify the tested parameters of a Class 90 Roof Assembly, using the particular Berridge roof panel to which the construction number has been assigned. It is important to note that all elements of the assembly must be present in order for the Rating Construction Number to be applicable for a given application. Parameters of these assemblies include (but are not limited to):

- Maximum Panel Width & Minimum Gauge.
- Purlin Minimum Gauge & Spacing.
- Solid Substrate Specifications.
- Fastener Type & Minimum Spacing.
- Insulation Type & Thickness

THE BERRIDGE IN-HOUSE LIVE LOAD & WIND UPLIFT TESTING PROGRAM:

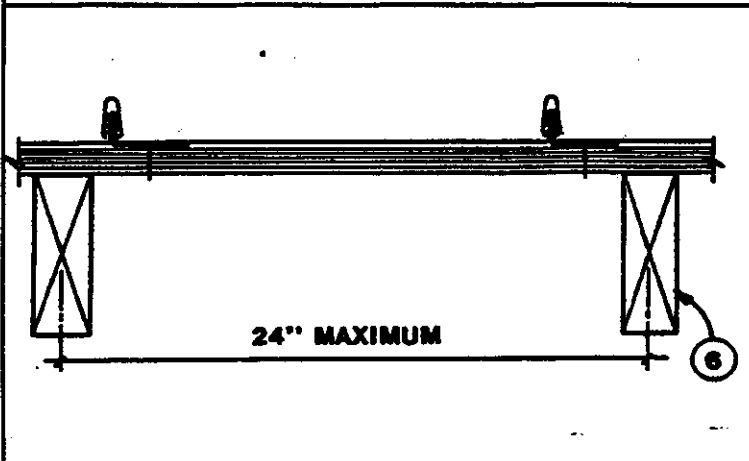
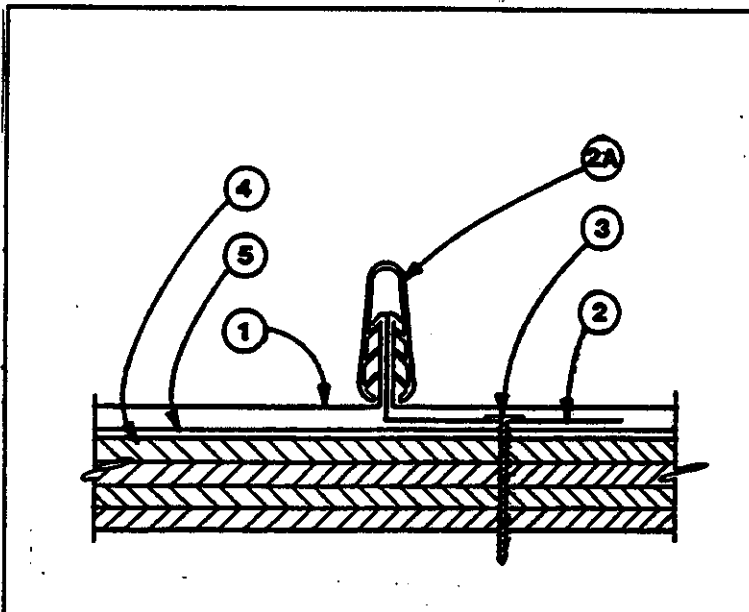
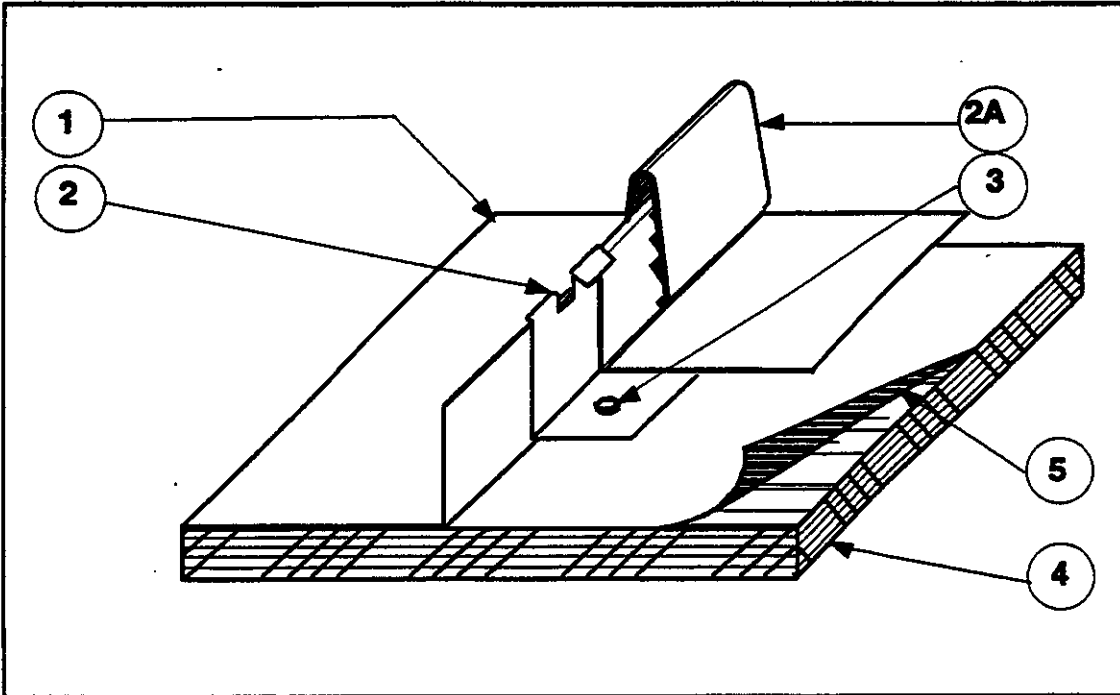
In order to insure that each roof panel assembly will perform as specified, Berridge Manufacturing Company operates its own Air-Driven Test Chamber in Houston, Texas. The function of the chamber is to perform exhaustive in-house Live Load and Wind Uplift tests of both new and existing Berridge roof panel assemblies prior to formal testing at independent commercial testing laboratories. This in-house capability places Berridge in a position to accurately determine the loading characteristics of new panel designs during the actual development stage. In many instances, a letter of certification on a specific assembly, based on in-house testing will satisfy project requirements.



THE BERRIDGE TEST FACILITY PROVIDES FAST RESPONSE TO SPECIFIC PROJECT LOAD REQUIREMENTS FOR ANY BERRIDGE ROOF ASSEMBLY

A NOTE TO SPECIFIERS:

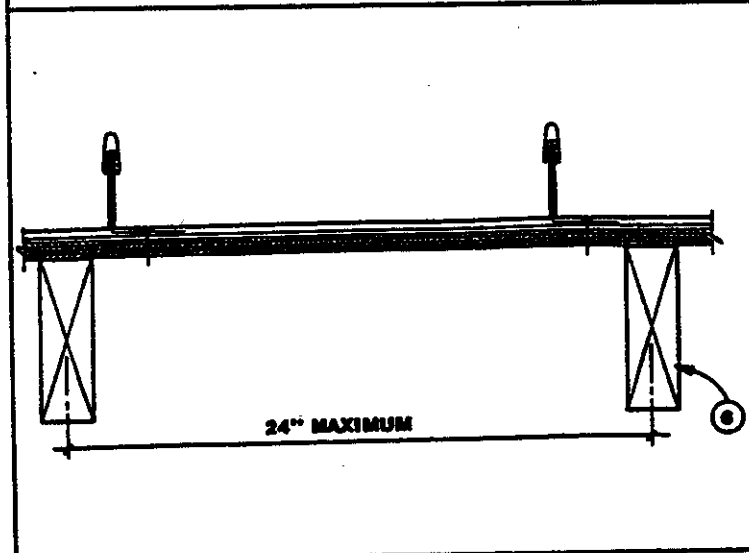
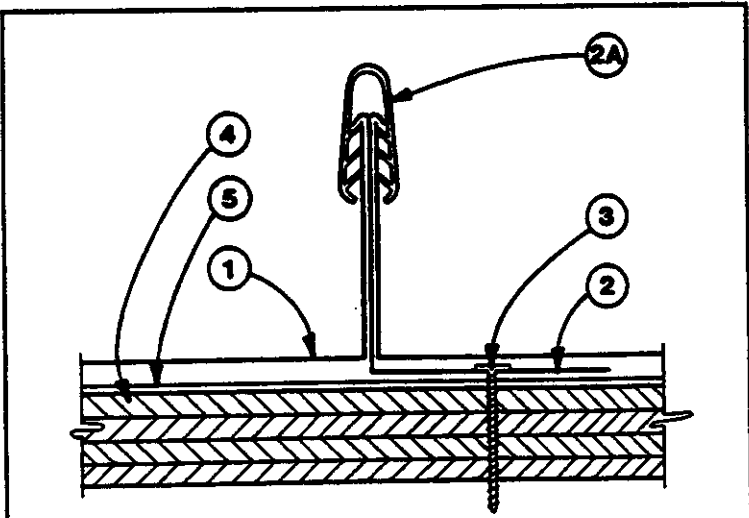
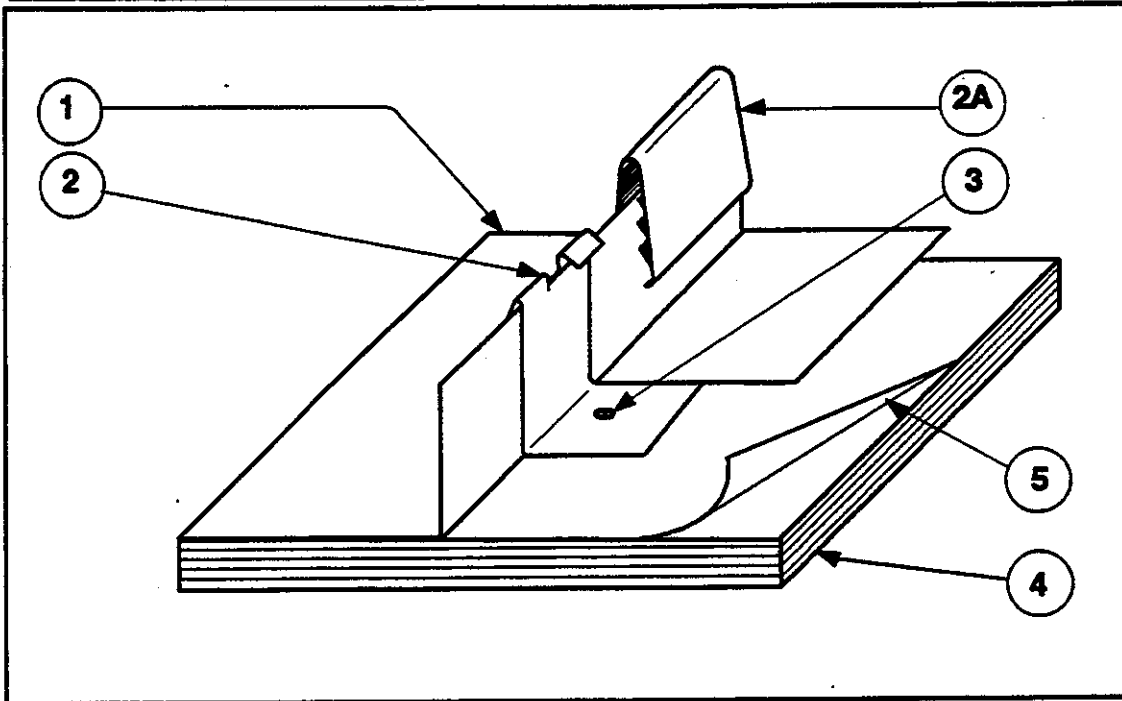
When specifying UL 90 or other ratings, be sure to obtain each manufacturer's Underwriters Laboratories Construction Number and either a Listing Card or a photocopy of the appropriate listing from the **UNDERWRITERS LABORATORIES ROOFING MATERIALS AND SYSTEMS**



TEE-PANEL OVER SOLID WOOD SHEATHING

COMPONENTS:

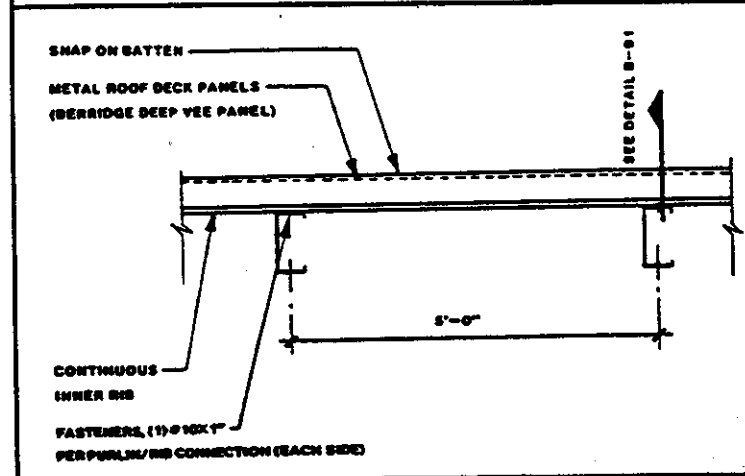
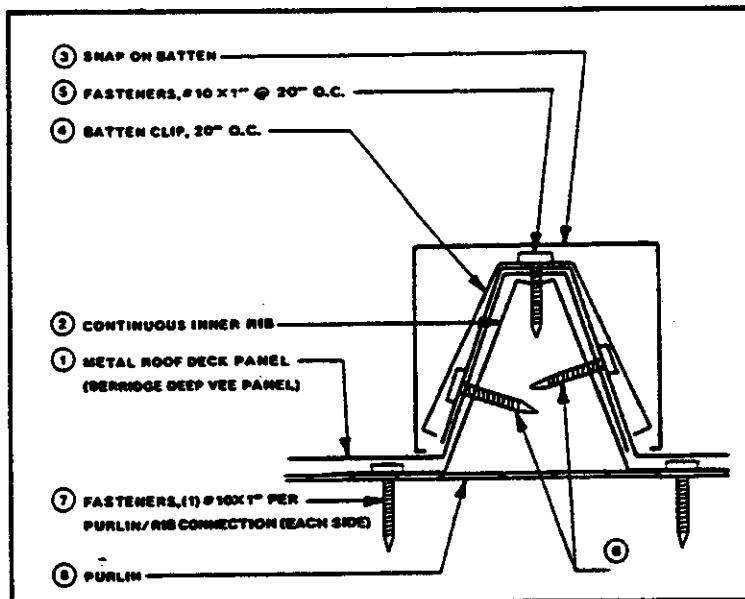
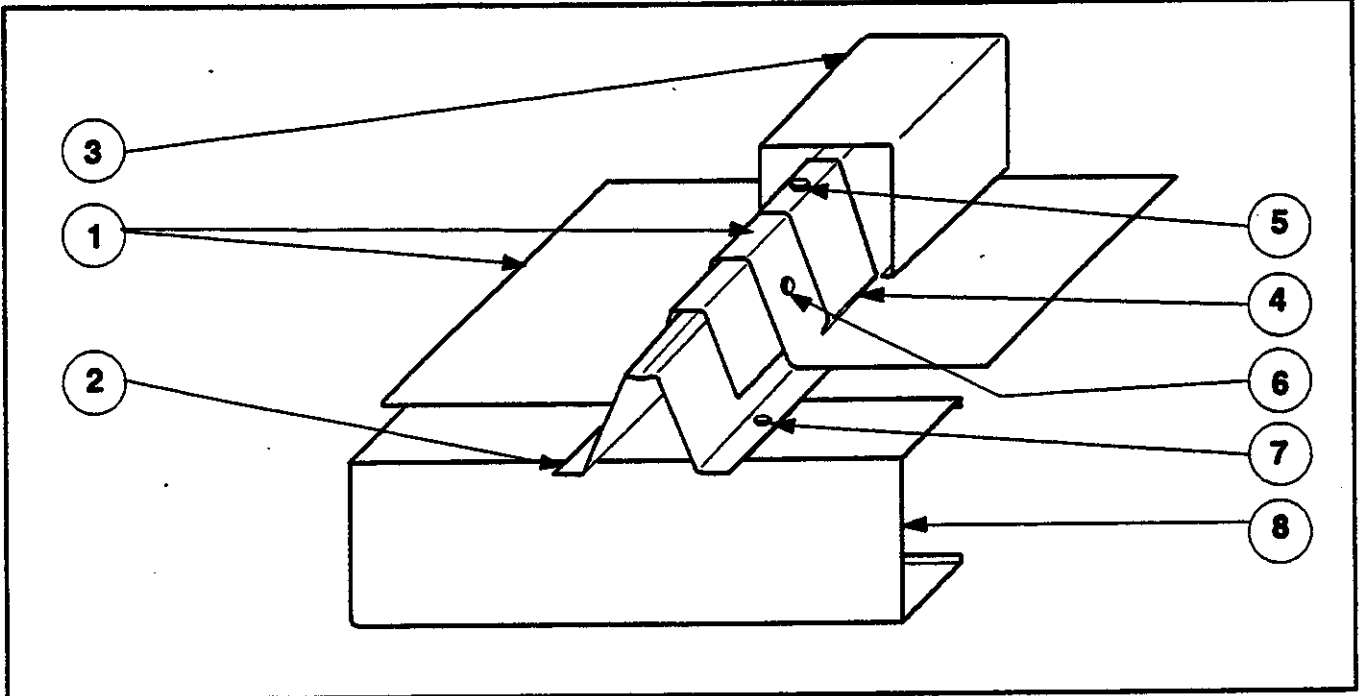
1. **BERRIDGE TEE-PANEL** : No. 24 MSG (Min. yield strength 40,000 PSI) thickness coated steel, 12 3/4", 17 1/4" or 19 3/4" wide and rib height of 5/8". Total seam height with snap-on seam cover in place is nominal 1". Panels to be continuous length. Endlaps to be overlapped min. 6". A line of sealant may be used at panel end & side laps..
2. **PANEL CLIP**: One piece clip, 3/4" high x 1 1/2" wide x 1 5/8" long, No. 24 MSG min 40,000 psi coated steel. Clips spaced max 24" O.C., located at panel sides.
- 2A. **SNAP-ON SEAM COVERS**: Seams covering panel ribs to be 3/8" wide x 7/8" high with vinyl insert (U.S. Patent No. 4,641,475) formed from No. 24 MSG min. 40,000 psi coated steel.
3. **FASTENERS (SCREWS)**: No. 10 x 1" long pancake head wood screw with No. 2 Phillips drive. One screw per clip. Fasteners used to attach plywood substructure to wood trusses or joist to be deformed shank nails. When light gauge steel joists are used, screws to be No. 12 x 1 5/8" with Philips drive head. Screws to be spaced 6" O.C. at plywood ends and 12" O.C. at interior joints.
4. **SUBSTRUCTURE (PLYWOOD)**: Nominal 5/8" thick, exposure sheathing span C-D, 40/20 plywood. Butt joints sealed with tape and/or caulked.
5. **FELT PAPER**: Two ply, No. 30 lb. per 100 sq. ft.
6. **JOISTS**: Spaced 2' O.C. May be one of the following:
 - A. Nom 2x6 wood joists No. 2 or better
 - B. Nom 2x4 wood when used on top chord of wood truss, No2 or better
 - C. Light ga. structural steel with the member against wood to be min 22 MSG coated steel.



HIGH SEAM TEE-PANEL OVER SOLID WOOD SHEATHING

COMPONENTS:

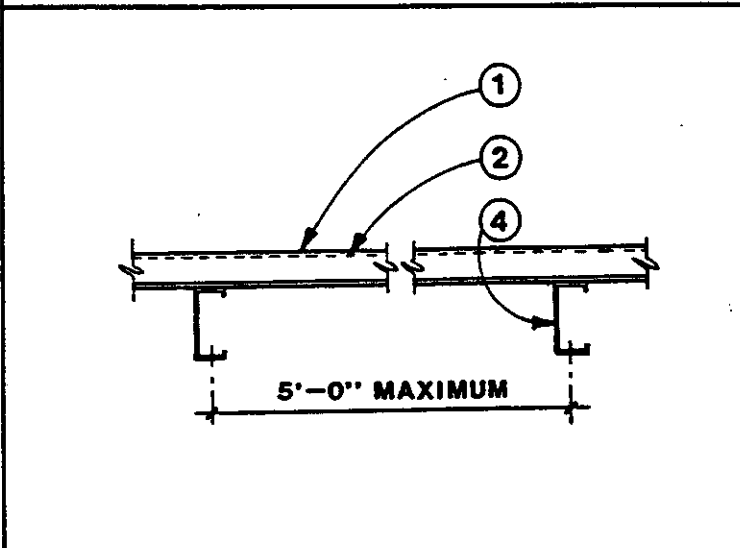
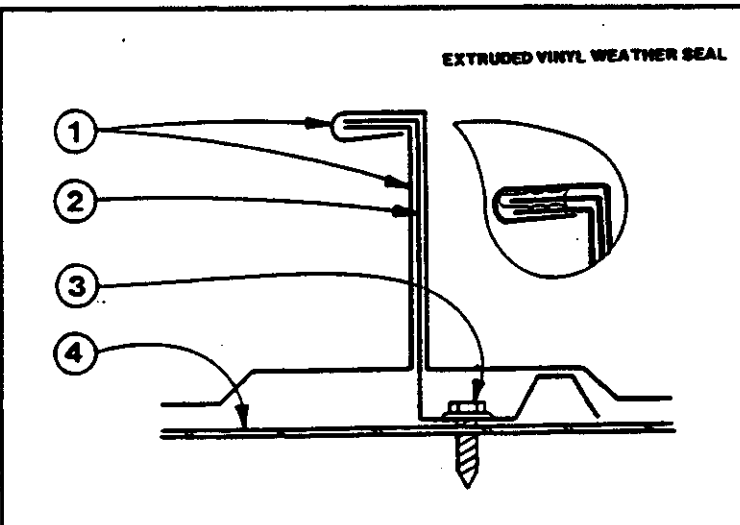
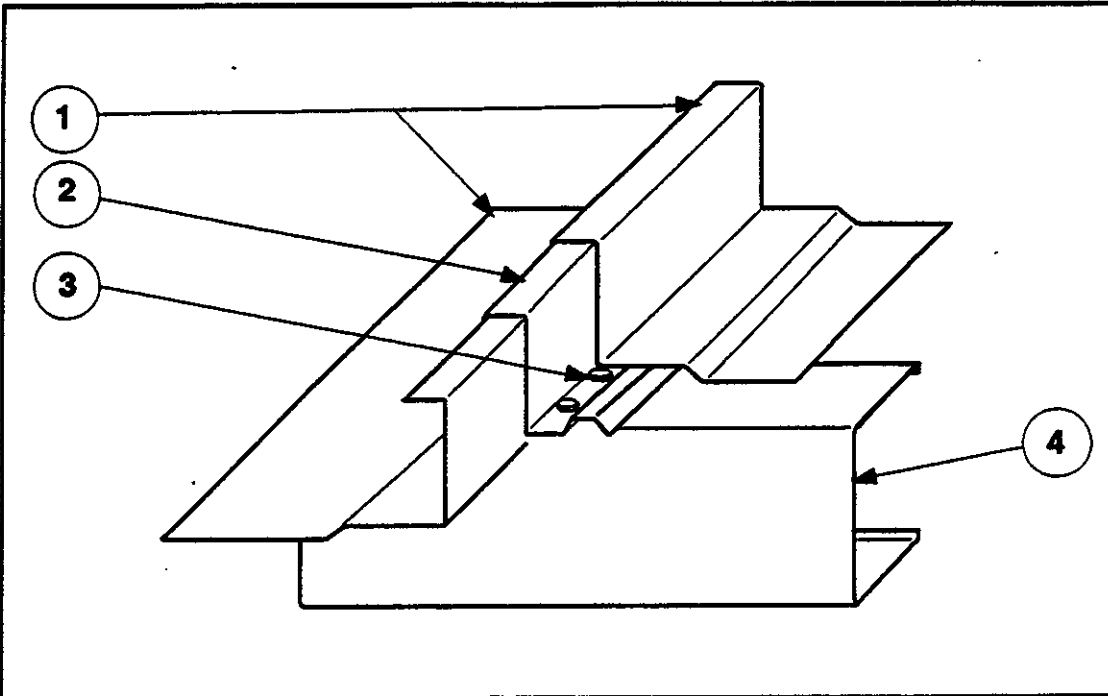
1. **BERRIDGE HIGH SEAM TEE-PANEL:** No. 24 MSG (Min. yield strength 40,000 PSI) thickness coated steel, 17 1/4" wide and rib height 1 3/8". Total seam height with snap-on seam cover in place is nominal 1-1/2". Panels to be continuous length. End laps to be overlapped min. 6". A line of sealant may be used at panel end & side laps.
2. **PANEL CLIP:** One piece clip, 1 3/8" high x 1 1/2" (nominal) wide x 1 5/8" long, No. 24 MSG min 40,000 psi coated steel. Clips spaced max 24" O.C., located at panel sides.
- 2A. **SNAP-ON SEAM COVERS:** Seams covering panel ribs to be 3/8" wide x 7/8" high with vinyl insert (U.S. Patent No. 4,641,475) formed from No. 24 MSG min. 40,000 psi coated steel.
3. **FASTENERS (SCREWS):** No. 10 x 1" long pancake head wood screw with No. 2 Philips drive. One screw per clip. Fasteners used to attach plywood substructure to wood trusses or joist to be deformed shank nails. When light gauge steel joists are used, screws to be No. 12 x 1 5/8" with Philips drive head. Screws to be spaced 6" O.C. at plywood ends and 12" O.C. at interior joints.
4. **SUBSTRUCTURE (PLYWOOD):** Nominal 5/8" thick, exposure sheathing span C-D, 40/20 plywood. Butt joints sealed with tape and/or caulked.
5. **FELT PAPER:** Two ply, No. 30 lb. per 100 sq. ft.
6. **JOISTS:** Spaced 2' O.C. May be one of the following:
 - A. Nominal 2x6 wood joists No. 2 or better
 - B. Nominal 2x4 wood when used on top chord of wood truss, No. 2 or better
 - C. Light ga. structural steel with the member against wood to be min 22 MSG coated steel.



**BATTEN SEAM SYSTEM
OVER OPEN PURLINS (5' O.C. MAX SPACING)**

COMPONENTS:

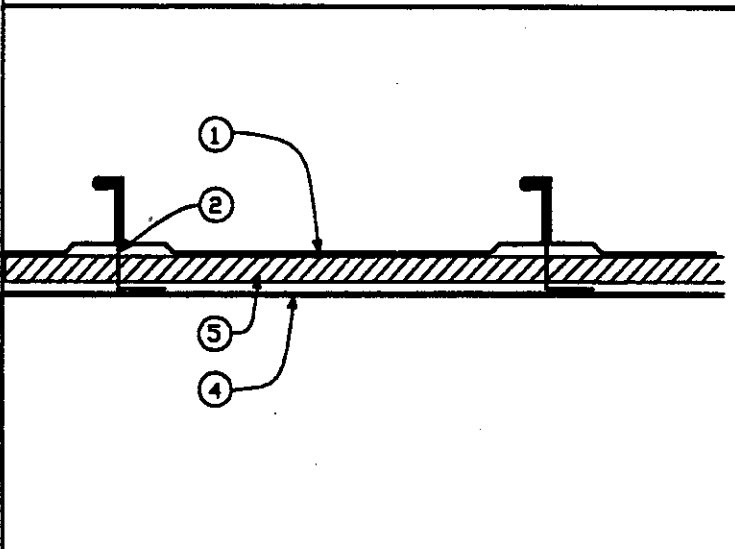
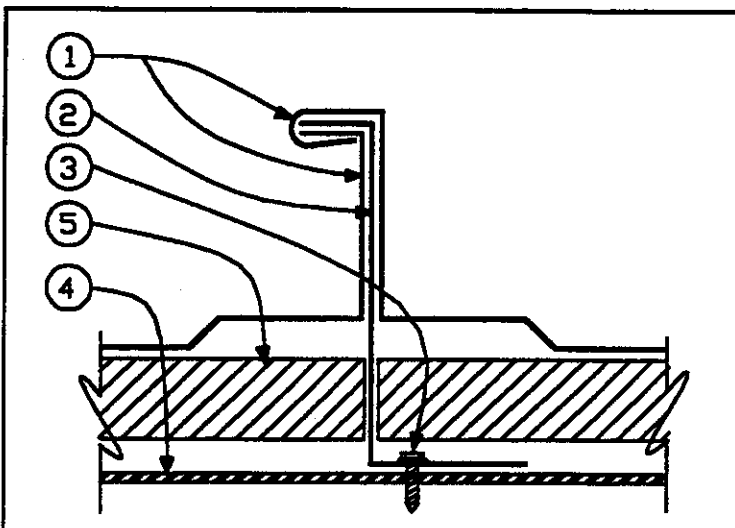
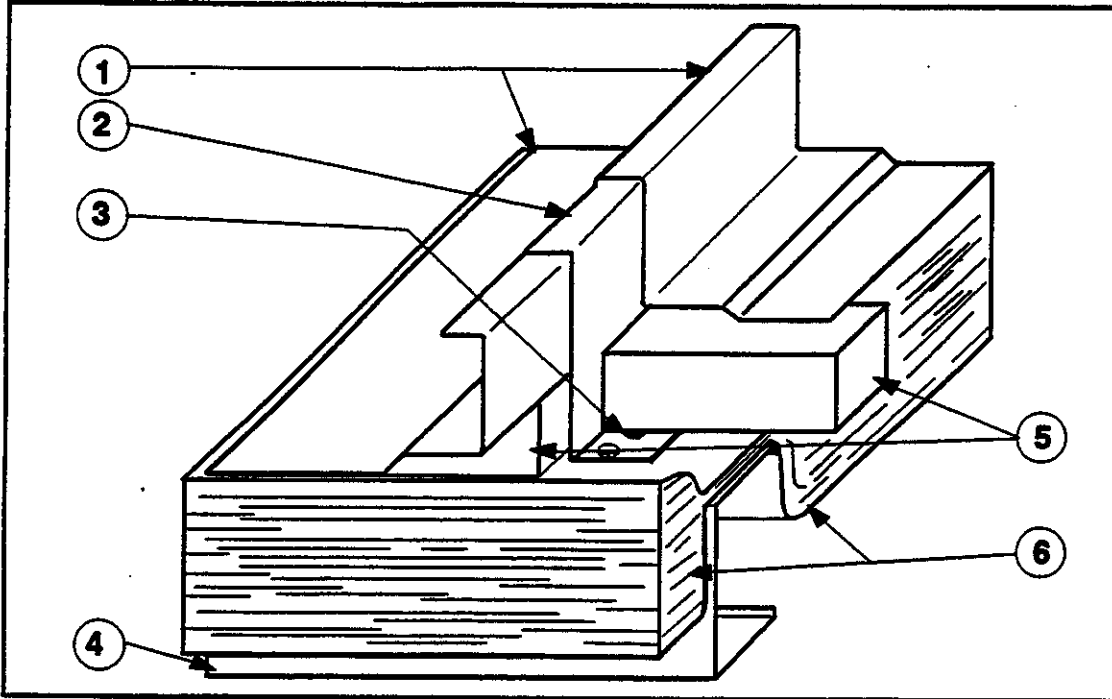
1. **BERRIDGE DEEP VEE PANEL:** No. 24 MSG (Min. yield strength 40,000 PSI) thickness coated steel, 16" wide, 1 1/2" high panel continuous over 2 or more spans without endlaps.
2. **BERRIDGE CONTINUOUS INNER RIB:** One-piece assembly fabricated from 24 MSG (Min. yield strength 40,000 PSI) coated steel. Inner Rib located at each panel side joint, continuous and equal to length of Berridge Deep Vee Panels (Item 1)
3. **SNAP-ON BATTEN:** Located at each panel side lap. Fabricated from .024 thick coated steel, formed to snap over batten clips
4. **BATTEN CLIP:** Located at each panel rib and spaced 20" on center, fabricated from 24 MSG coated steel in lock-forming configuration.
5. **FASTENERS (SCREWS):** For attaching Batten Clip (Item 3) to Deep Vee Panel; use No. 10 by 1" 20" on center.
6. **FASTENERS (SCREWS):** For attaching Deep Vee Panel to Continuous Inner Rib; use No. 10 by 1" alternating 12" on center full length of rib.
7. **FASTENERS (SCREWS):** For attaching Continuous Inner Rib to Purlin ; use No. 10 by 1" pancake head. Use 2 at each Purlin
8. **PURLINS:** No. 16 MSG (Min. yield strength 50,000 PSI), 5' Maximum spacing.



UNINSULATED ZEE-LOCK PANEL OVER OPEN PURLINS (5' O.C. MAX SPACING)

COMPONENTS:

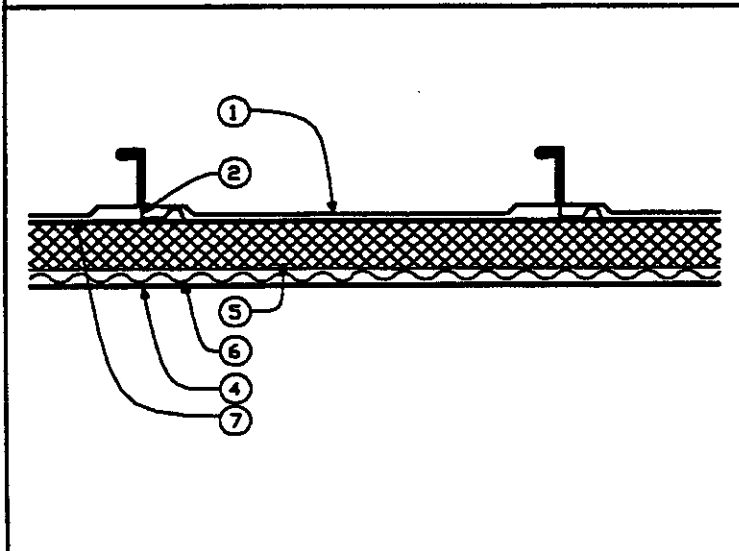
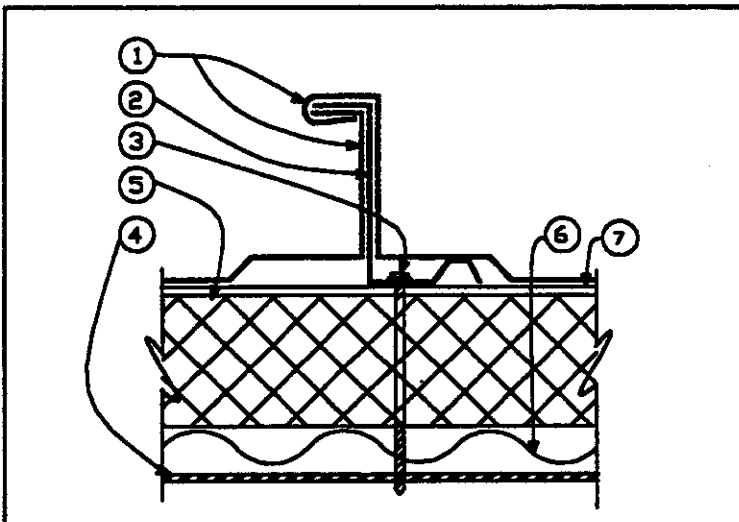
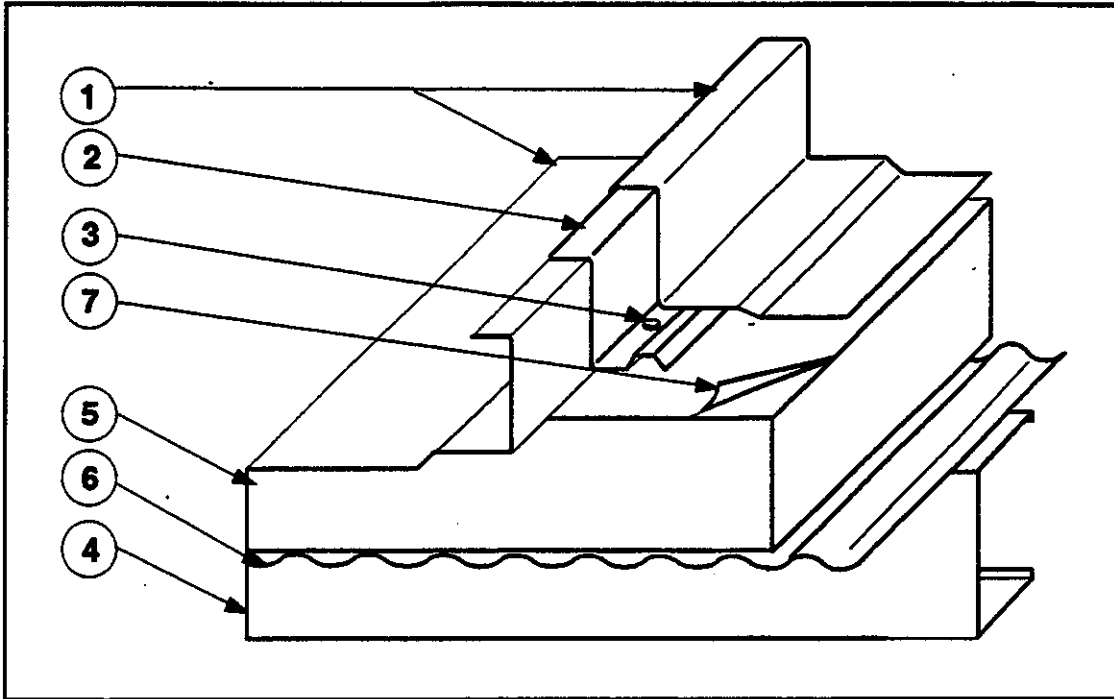
1. **BERRIDGE ZEE-LOCK PANEL:** No. 24 MSG (Min. yield strength 40,000 PSI) thickness coated steel, 16" wide, 2" high panel continuous over 2 or more spans without endlaps. An Optional Extruded Vinyl Weatherseal (U.S. Patent 5134825) may be used at panel side joints. Adjacent panels are seamed together along side joints using an electric seamer tool.
2. **BERRIDGE CONTINUOUS ZEE-RIB:** One-piece assembly fabricated from 24 MSG (Min. yield strength 40,000 PSI) coated steel. Zee-Rib located at each panel side joint, continuous and equal to length of Berridge Zee-Lock Panels. (Item 1).
3. **FASTENERS (SCREWS):** For attaching Zee-Rib (Item 2) to purlins; use No. 12x1" Self-Drilling, Self-Tapping steel screws. Two fasteners at each purlin location.
4. **PURLINS:** No. 16 MSG (Min. yield strength 50,000 PSI), 5' Maximum spacing.
5. **LATERAL BRACING:** (Not Shown) Refer to General Information, Roof Deck Construction Building Material Directory for items not evaluated.



**ZEE-LOCK PANEL WITH 6" BLANKET
INSULATION & 1" THERMAL BLOCK OVER
OPEN PURLINS (5' O.C. MAX SPACING)**

COMPONENTS:

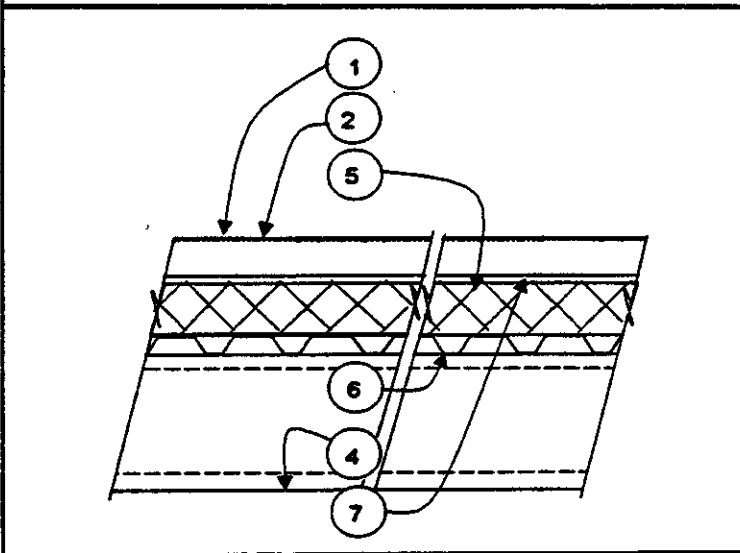
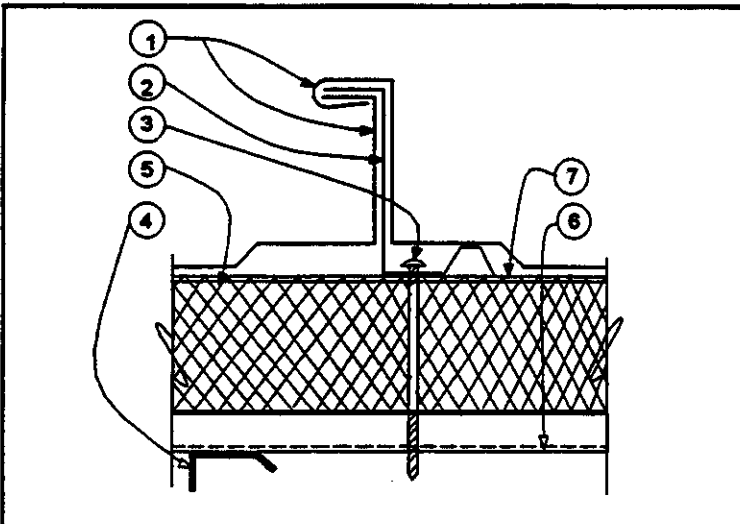
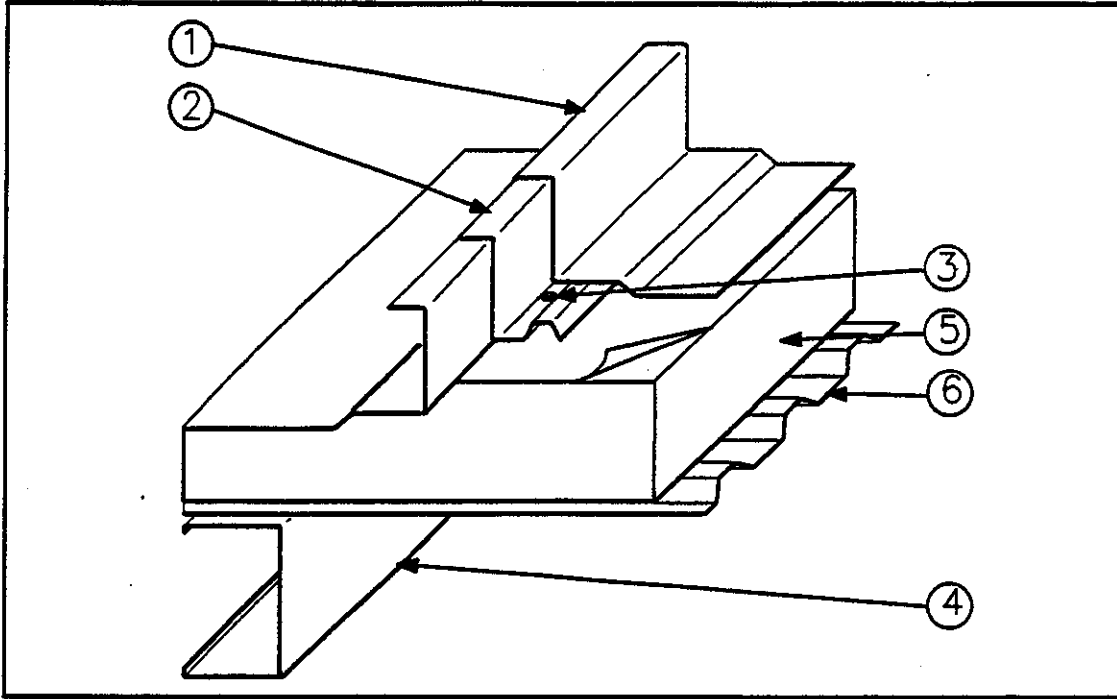
1. **BERRIDGE ZEE-LOCK PANEL:** No. 24 MSG (Min. yield strength 40,000 PSI) thickness coated steel, 16" wide, 2" high panel continuous over 2 or more spans without endlaps. An Optional Extruded Vinyl Weatherseal (U.S. Patent 5134825) may be used at panel side joints. Adjacent panels are seamed together along side joints using an electric seamer tool.
2. **BERRIDGE CONTINUOUS ZEE-RIB:** One-piece assembly fabricated from 24 MSG (Min. yield strength 40,000 PSI) coated steel. Zee-Rib located at each panel side joint, continuous and equal to length of Berridge Zee-Lock Panels. (Item 1).
3. **FASTENERS (SCREWS):** For attaching Zee-Rib (Item 2) to purlins; use No. 12x1" Self-Drilling, Self-Tapping steel screws. Two fasteners at each purlin location.
4. **PURLINS:** No. 16 MSG (Min. yield strength 50,000 PSI), 5' Maximum spacing.
5. **THERMAL BLOCK:** 3" by 16" by 1" Polystyrene Foam blocks placed along purlin lines.
6. **INSULATION:** 6" Vinyl Faced compressable insulation (Item 6).
7. **LATERAL BRACING:** (Not Shown) Refer to General Information, Roof Deck Construction Building Material Directory for items not evaluated.



ZEE-LOCK PANEL WITH RIGID INSULATION BOARD (4" MAX.) ON 24 GA. LINER ON PURLINS (5' O.C. MAX SPACING)

COMPONENTS:

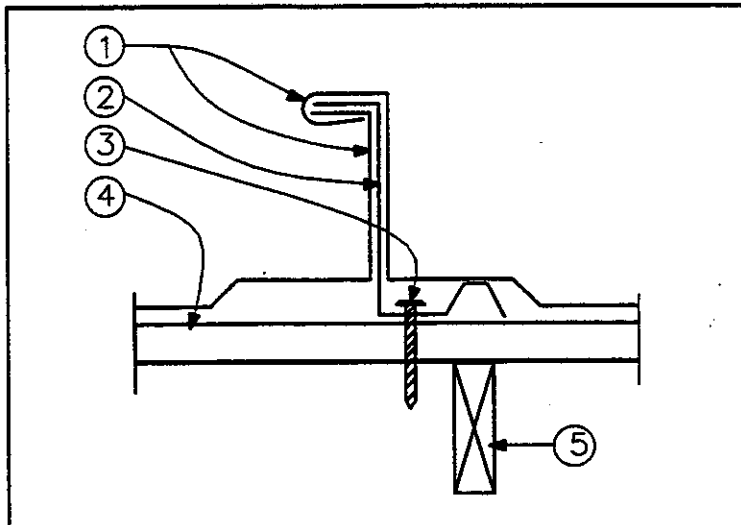
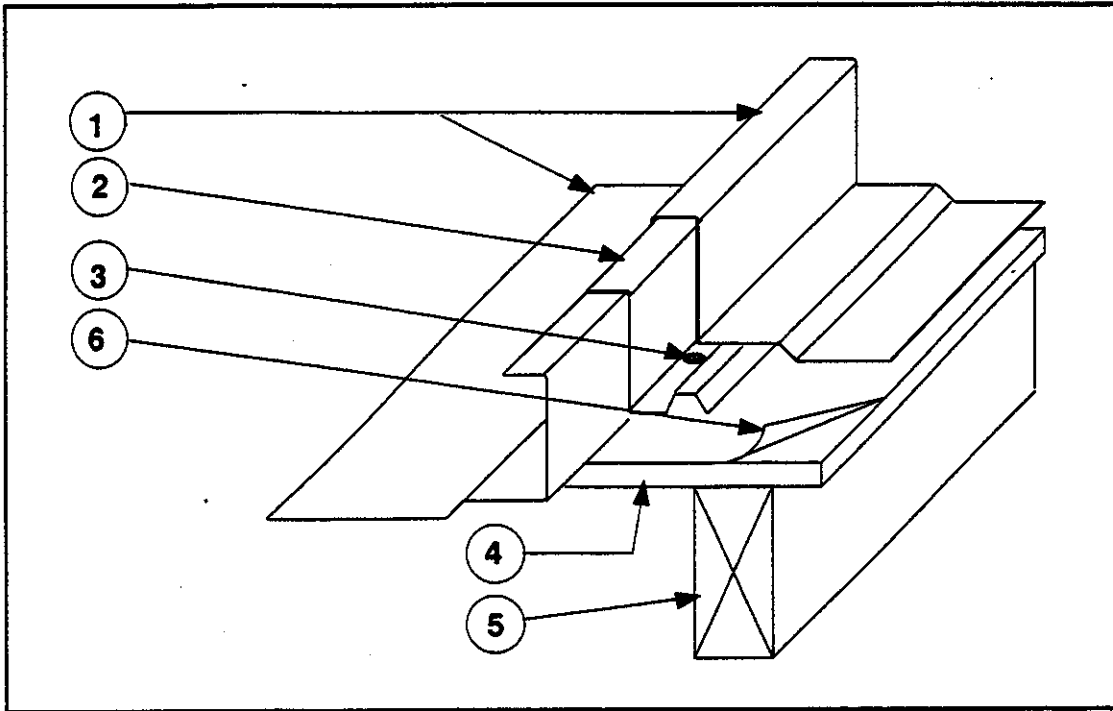
1. **BERRIDGE ZEE-LOCK PANEL:** No. 24 MSG (Min. yield strength 40,000 PSI) thickness coated steel, 16" wide, 2" high panel continuous over 2 or more spans without endlaps. An Optional Extruded Vinyl Weatherseal (U.S. Patent 5134825) may be used at panel side joints. Adjacent panels are seamed together along side joints using an electric seamer tool.
2. **BERRIDGE CONTINUOUS ZEE-RIB:** One-piece assembly fabricated from 24 MSG (Min. yield strength 40,000 PSI) coated steel. Zee-Rib located at each panel side joint, continuous and equal to length of Berridge Zee-Lock Panels. (Item 1).
3. **FASTENERS (SCREWS):** For attaching Zee-Rib (Item 2) to purlins; use No. 12 Self-Drilling, Self-Tapping steel screws. One fastener at each purlin location.
4. **PURLINS:** No. 16 MSG (Min. yield strength 50,000 PSI), 5' Maximum spacing.
5. **INSULATION:** 4" Rigid Insulation Board.
6. **BERRIDGE S-DECK LINER:** No. 24 MSG (Min. yield strength 40,000 PSI) Steel, Corrugated Liner.
7. **FELT PAPER:** Two ply, No. 30 lb. per 100 sq. ft.
8. **LATERAL BRACING:** (Not Shown) Refer to General Information, Roof Deck Construction Building Material Directory for items not evaluated.



ZEE-LOCK PANEL WITH RIGID INSULATION BOARD (4" MAX.) & 22 GA. LINER (ZEE-RIB FASTENED TO LINER)

COMPONENTS:

1. **BERRIDGE ZEE-LOCK PANEL:** No. 24 MSG (Min. yield strength 40,000 PSI) thickness coated steel, 16" wide, 2" high panel (without endlaps). An Optional Extruded Vinyl Weatherseal (U.S. Patent 5134825) may be used at panel side joints. Adjacent panels are seamed together along side joints using an electric seamer tool.
2. **BERRIDGE CONTINUOUS ZEE-RIB:** One-piece assembly fabricated from 24 MSG (Min. yield strength 40,000 PSI) coated steel. Zee-Rib located at each panel side joint, continuous and equal to length of Berridge Zee-Lock Panels. (Item 1).
3. **FASTENERS (SCREWS):** For attaching Zee-Rib (Item 2) to liner; use No. 12 6" long Self-Drilling, Self-Tapping steel screws. one fastener @ 24" o.c.max.
4. **PURLINS:** No. 16 MSG (Min. yield strength 50,000 PSI), 4'-0" spacing.
5. **INSULATION:** 4" 2PCF density 20 psf compressive strength rigid closed cell polyisocyanurate core fiberglass faced insulation.
6. **F-DECK LINER:** No. 22 MSG (Min yield strength 33,000 PSI) Steel, Corrugated liner.
7. **FELT PAPER:** Two ply, No. 30 lb. per 100 sq. ft.
8. **LATERAL BRACING:** (Not Shown) Refer to General Information, Roof Deck Construction Building Material Directory for items not evaluated.

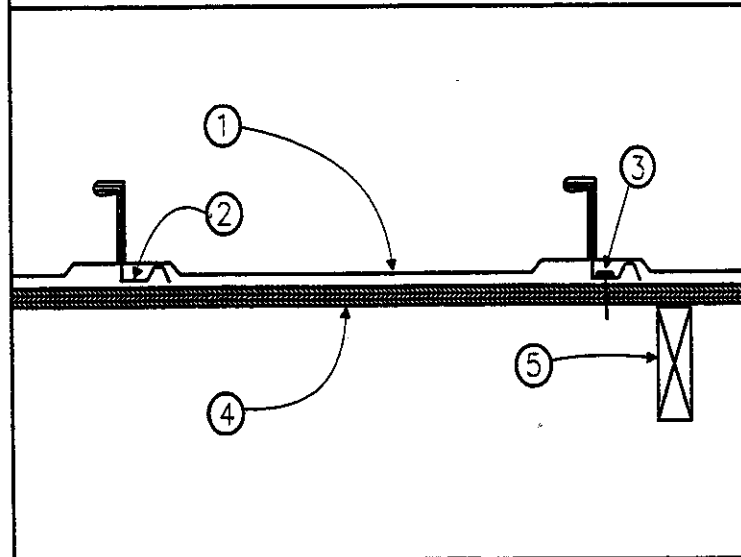


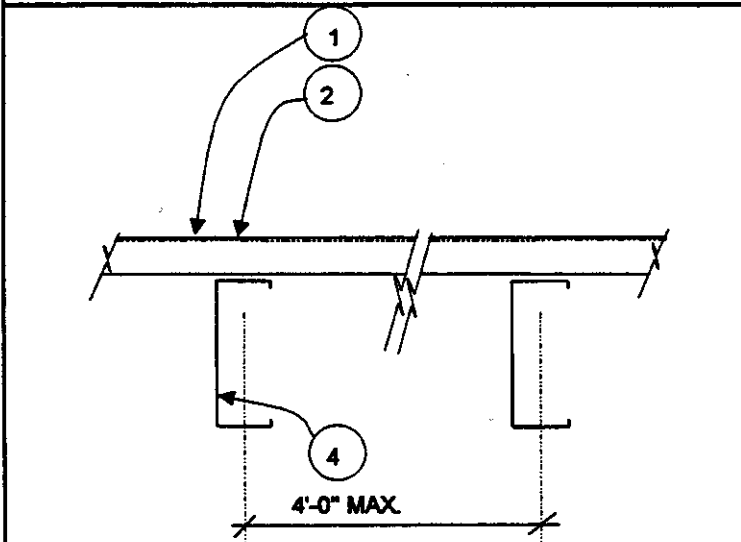
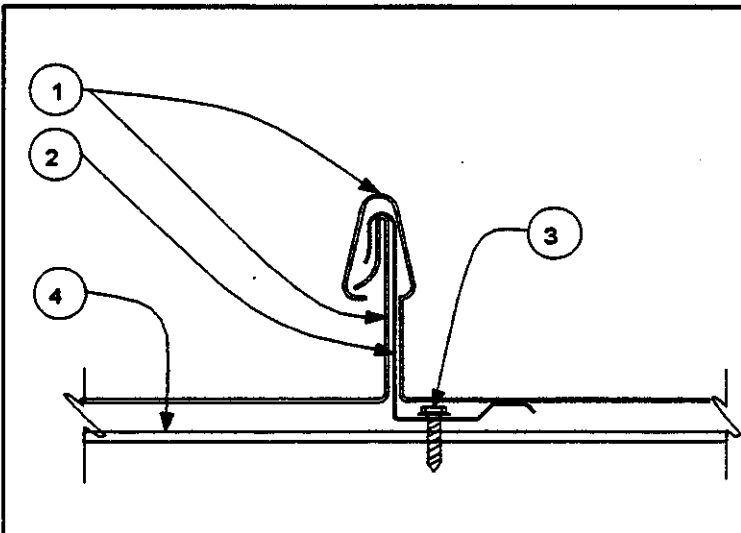
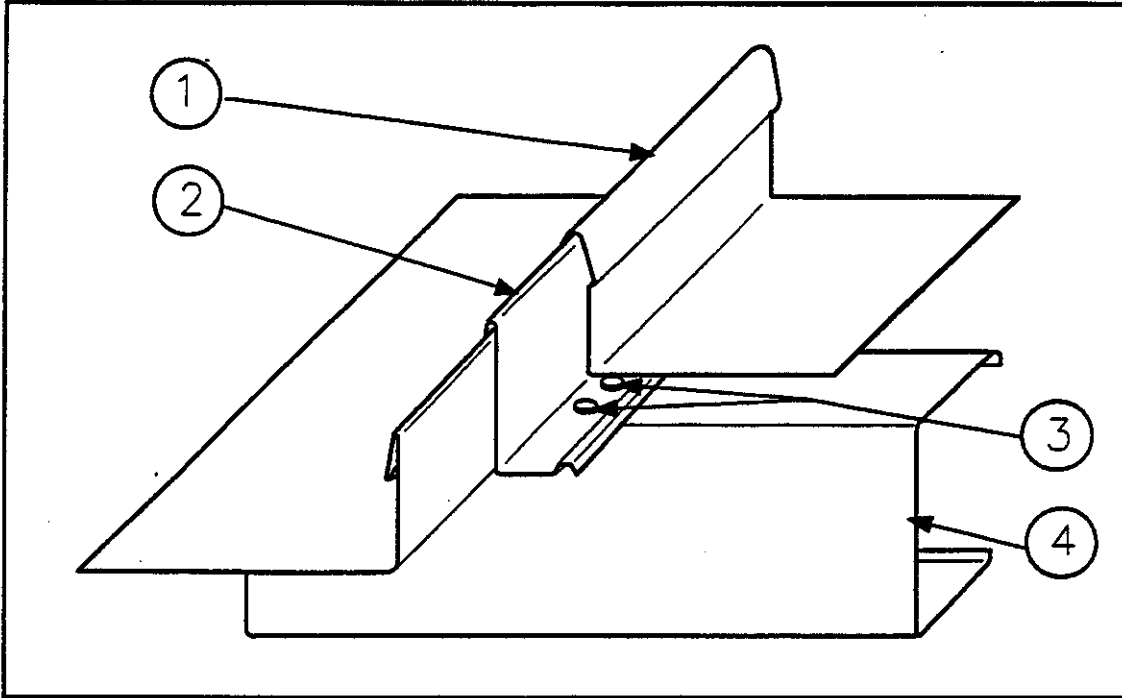
**ZEE-LOCK PANEL OVER SOLID 5/8" PLYWOOD
WITH ZEE-LOCK CLIPS**

COMPONENTS:

ZEE-LOCK

1. Berridge Zee-Lock Panel: 24 Ga. (Min. yield 40,000 PSI) coated steel, 16" w x 2" high.
2. Zee-Lock Clips: One piece, fabricated from 24 Ga. (Min yield 40,000 PSI) coated steel. Located at panel side lap, 3'-0" max. spacing.
3. Fasteners: Use two (2) No. 10 Pancake head "TEKS" steel screws per Zee-Lock Clip.
4. Deck: 5/8" APA 40/20 Plywood.
5. Joists: 2" x 4" @ 2'-0" O.C. max w/#12 x 2" pan head wood screws @ 12" O.C. max @ plywood to joist connection and at plywood ends.
6. Felt Paper: 1 layer #30 Roofing Felt, laid horizontally, eave to ridge.

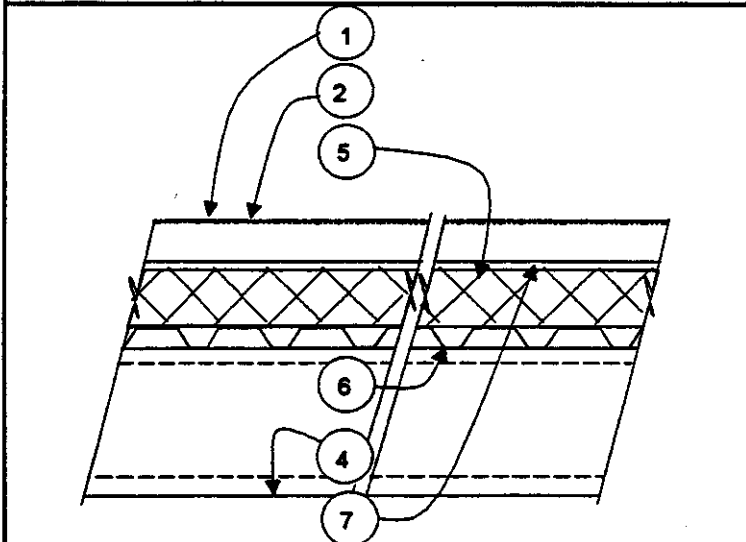
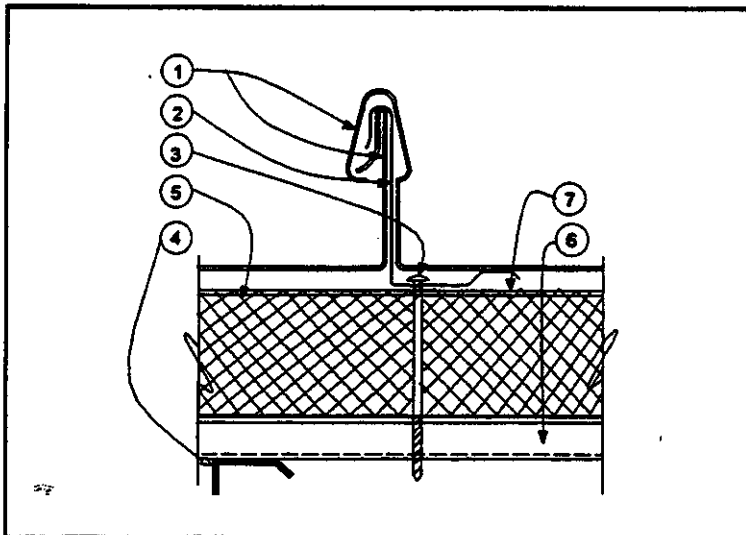
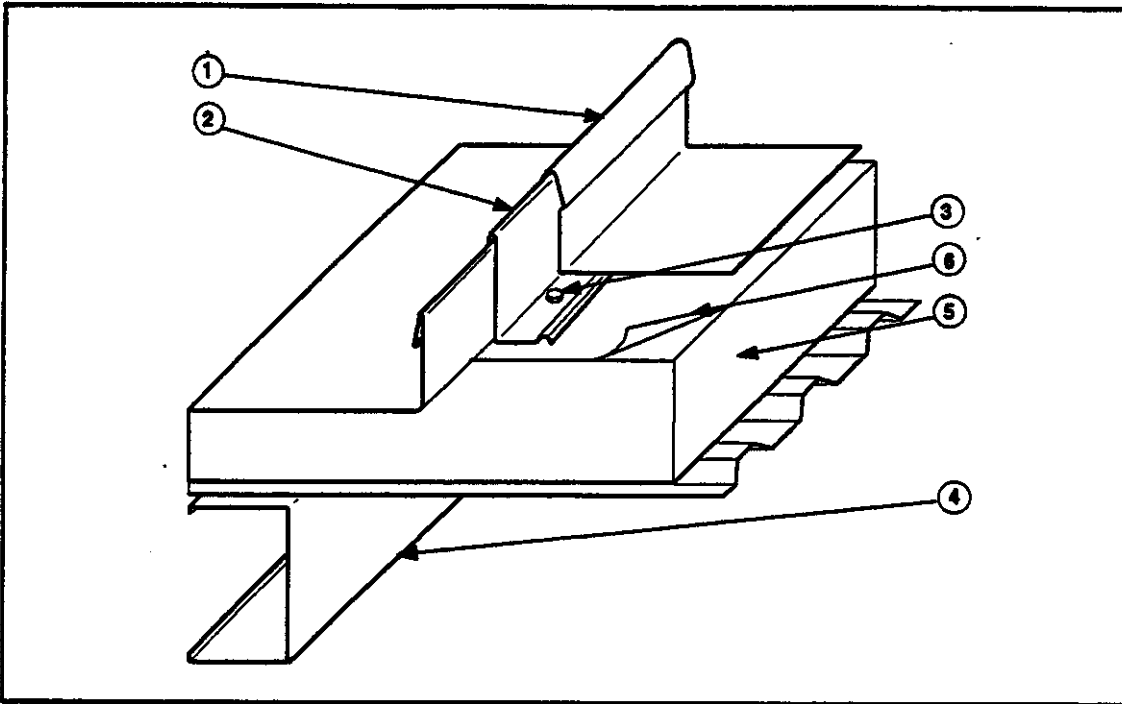




CEE-LOCK PANEL (NO INSULATION) & CONTINUOUS CEE-RIB, OVER OPEN PURLINS (4' O.C. MAX SPACING)

COMPONENTS:

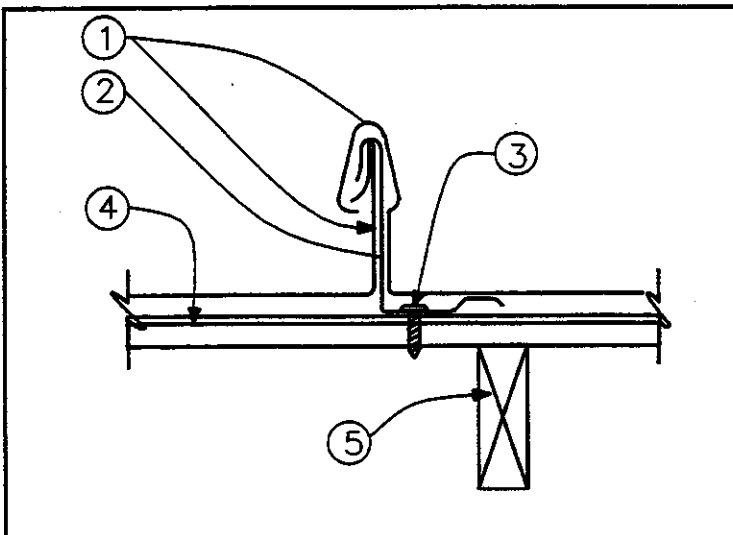
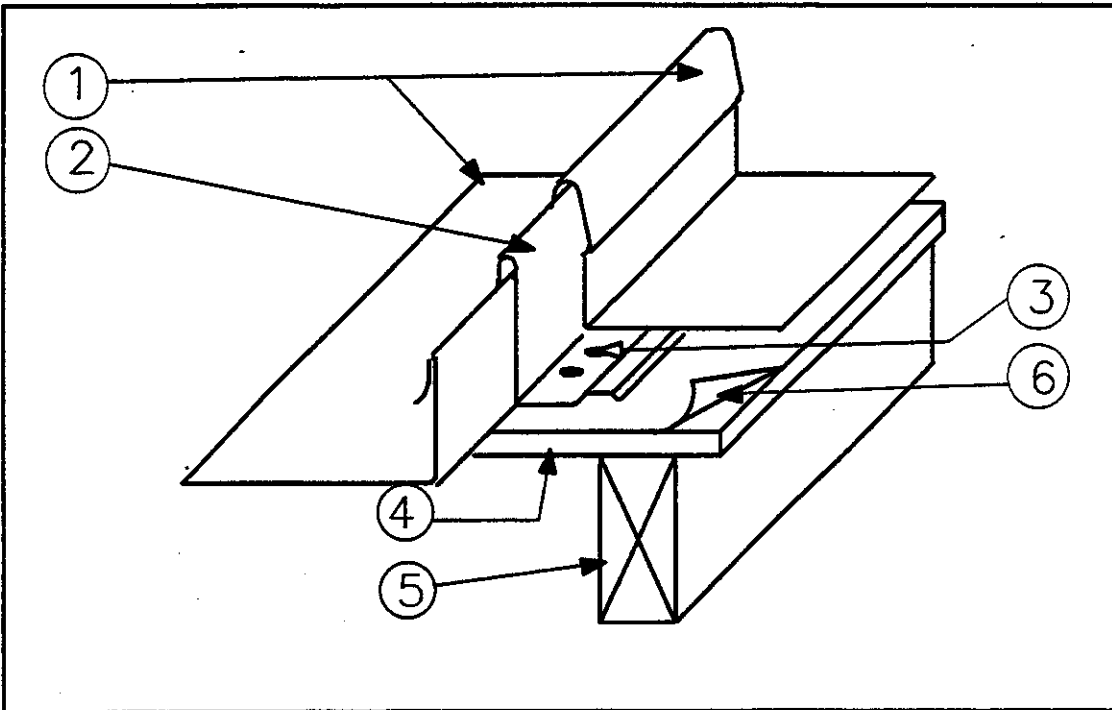
- 1. BERRIDGE CEE-LOCK PANEL:** No. 24 MSG (Min. yield strength 40,000 PSI) thickness coated steel, 16½" wide, 1½" high panel continuous over 2 or more spans without endlaps.
- 2. BERRIDGE CONTINUOUS CEE-RIB:** One-piece 1-½" high assembly fabricated from 24 MSG (Min. yield strength 40,000 PSI) coated steel. Cee-Rib located at each panel side joint, continuous and equal to length of Berridge Cee-Lock Panels. (Item 1). Vinyl WeatherSeal Insert (U.S. Patent 4641475) optional. (Item 1).
- 3. FASTENERS (SCREWS):** For attaching Cee-Rib (Item 2) to purlins; use No. 10 Pancake Head steel screws. Two fasteners at each purlin location.
- 4. PURLINS:** No. 16 MSG (Min. yield strength 50,000 PSI), 4' Maximum spacing.
- 5. LATERAL BRACING:** (Not Shown) Refer to General Information, Roof Deck Construction Building Material Directory for items not evaluated.



**CEE-LOCK PANEL W/RIGID INSULATION
& CONTINUOUS CEE-RIB, OVER 22-GA.
F-DECK LINER**

COMPONENTS:

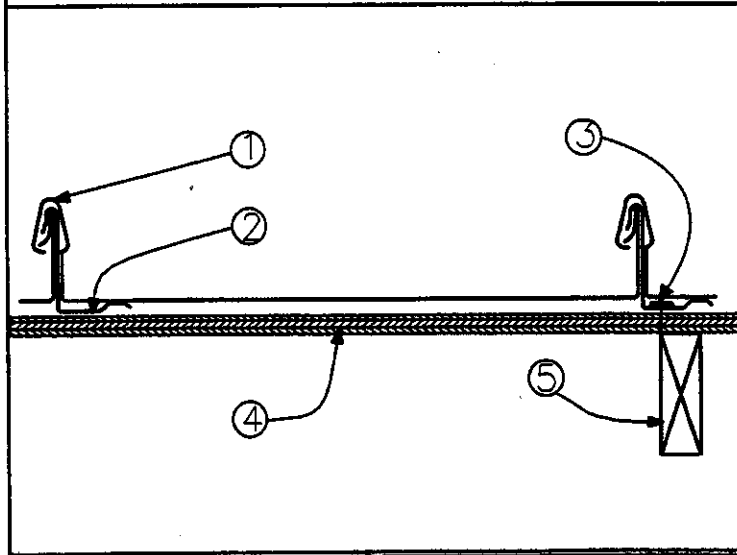
1. **BERRIDGE CEE-LOCK PANEL:** No. 24 MSG (Min. yield strength 40,000 PSI) thickness coated steel, 16½" wide, 1½" high panel without endlaps.
2. **BERRIDGE CONTINUOUS CEE-RIB:** One-piece 1-½" high assembly fabricated from 24 MSG (Min. yield strength 40,000 PSI) coated steel. Cee-Rib located at each panel side joint, continuous and equal to length of Berridge Cee-Lock Panels. (Item 1). Vinyl WeatherSeal Insert (U.S. Patent 4641475) optional.
3. **FASTENERS (SCREWS):** For attaching Cee-Rib (Item 2) to liner; use No. 12 self-tapping, self-drilling 6" long steel screws, spaced 24" on center.
4. **PURLINS:** No. 16 MSG (Min. yield strength 50,000 PSI)
5. **INSULATION:** 4" 2PCF density 20 psf compressive strength rigid closed cell polyisocyanurate core fiberglass faced insulation.
6. **LINER:** Type "F" 22 Ga. 33,000 psi yield corrugated steel liner.
6. **FELT PAPER:** 2 Ply, No. 30 lb. per 100 s.f.
7. **LATERAL BRACING:** (Not Shown) Refer to General Information, Roof Deck Construction Building Material Directory for items not evaluated.

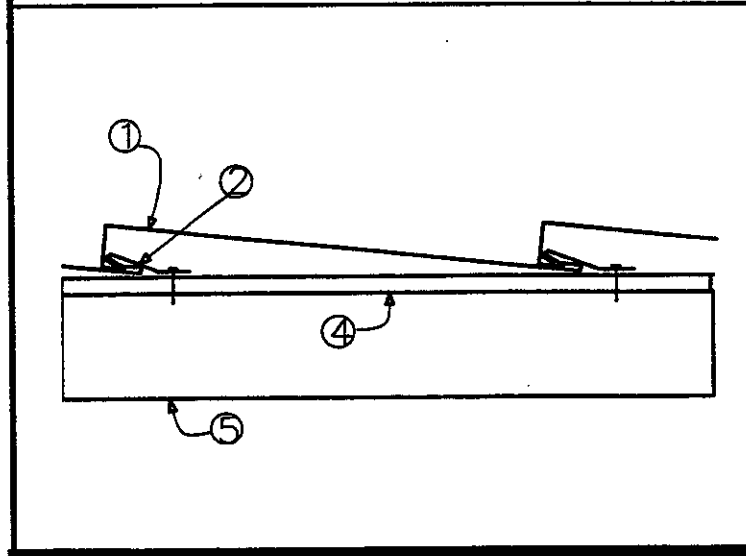
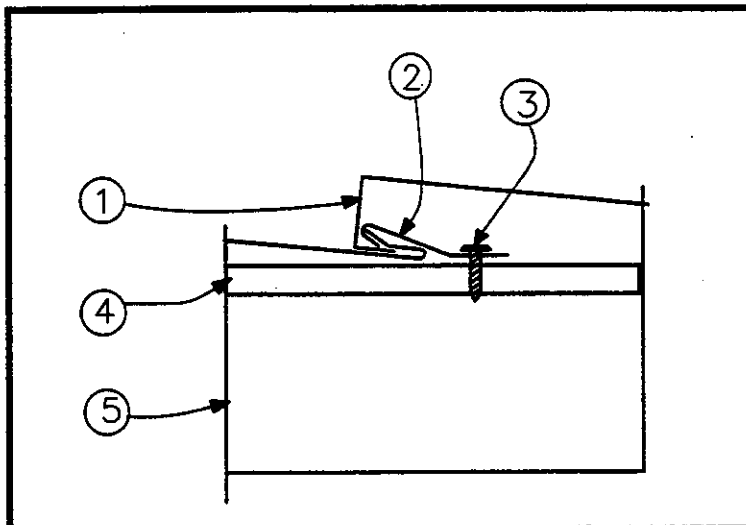
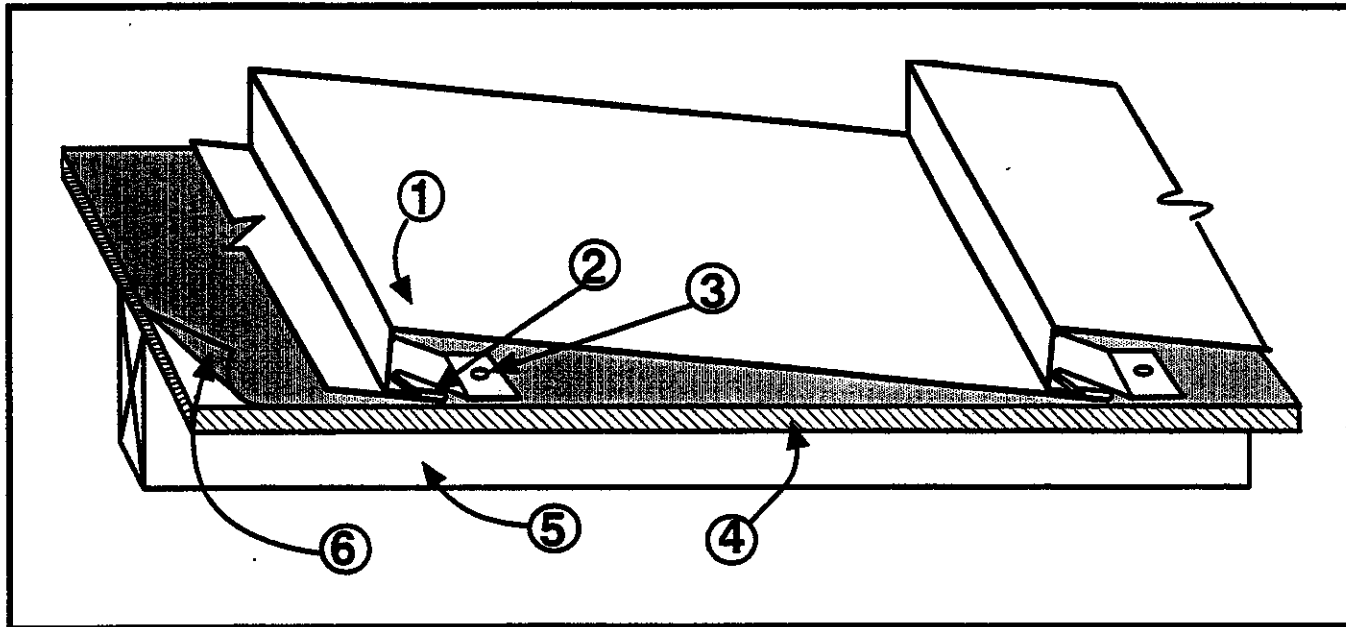


**CEE-LOCK PANEL ON 5/8" SOLID PLYWOOD
W/INDIVIDUAL CLIPS**

COMPONENTS:

1. **Berridge Cee-Lock Panel:** 24 Ga. (Min yield 40,000 PSI) coated steel, 16-1/2" w x 1-1/2" high.
2. **Cee-Lock Clips:** One piece, fabricated from 24 Ga. (Min yield 40,000 PSI) coated steel. Located at panel side lap, 3'-0" O.C. max. spacing.
3. **Fasteners:** Use two (2) No. 10 Pancake Head "TEKS" steel screws per Cee-Lock Clip.
4. **Deck:** 5/8" APA 40/20 Plywood.
5. **Joists:** 2" x 4" @ 2'-0" O.C. max. w/#12 x 2" pan head wood screw @ 12" O.C. @ plywood to joist connection and at plywood ends.
6. **Felt Paper:** 1 layer #30 Roofing Felt, laid horizontally, eave to ridge.



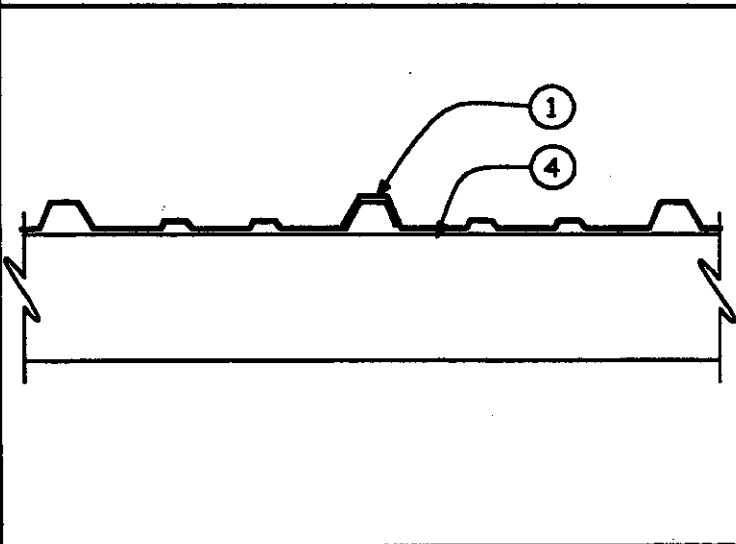
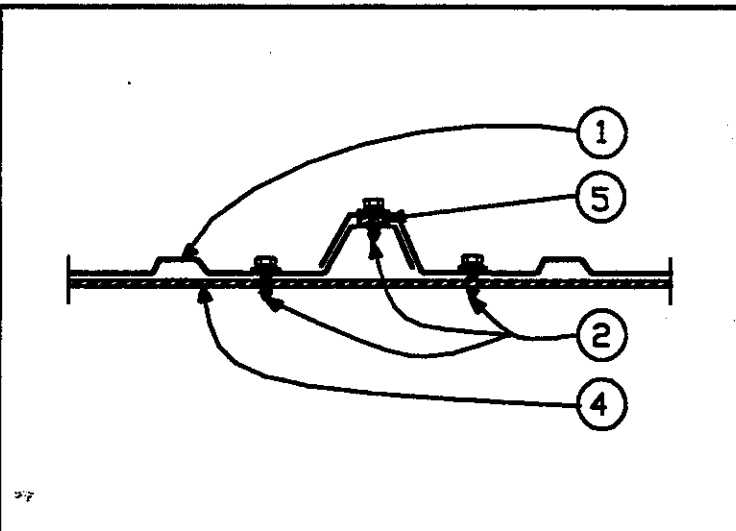
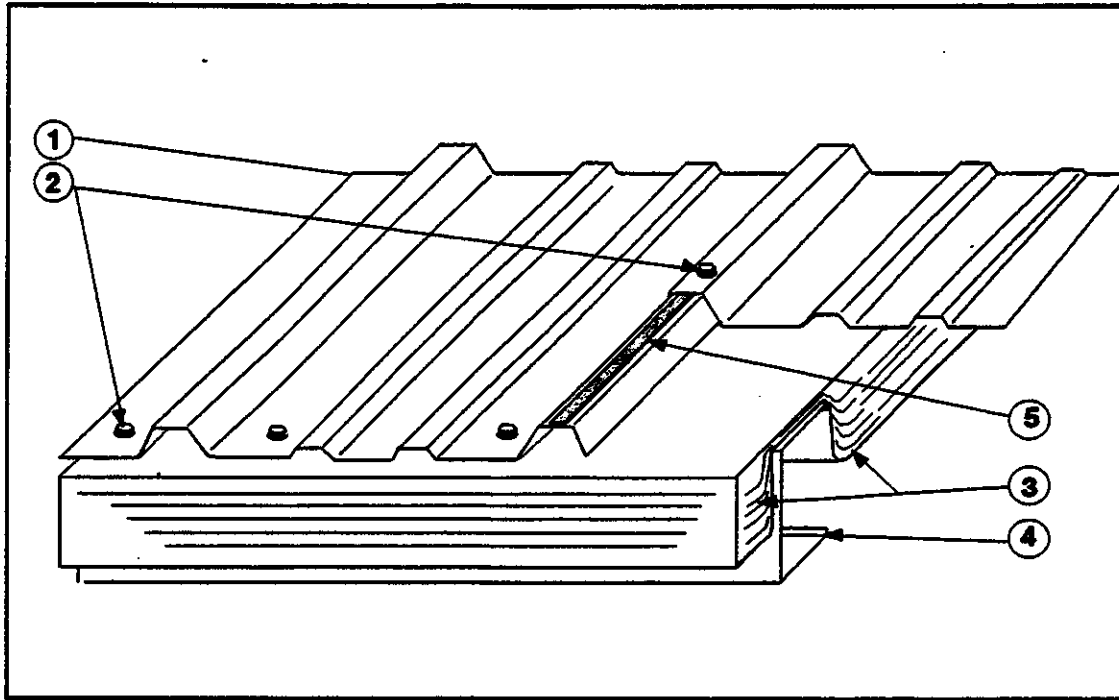


**BERRIDGE BERMUDA ROOF PANEL OVER
SOLID WOOD SHEATHING WITH CLIPS**

COMPONENTS:

1. **Berridge Bermuda Panel:** 24 Ga. (Min. yield 40,000 PSI) coated steel, 11" w x 1" high.
2. **Bermuda Panel Clips:** One piece, fabricated from 24 Ga. (Min yield 40,000 PSI) coated steel. Located at panel lap, 2' - 0" max. spacing.
3. **Fasteners:** Use one (1) No. 10 Pancake head "TEKS" screw steel screw per clip location.
4. **Deck:** 5/8" APA 40/20 Plywood.
5. **Joists:** 2" x 4" @ 2'-0" O.C. max w/#12 x 2" pan head wood screws @ 12" O.C. max @ plywood to joist connection and at plywood ends.
6. **Felt Paper:** 1 layer #30 Roofing Felt, laid horizontally, eave to ridge.

REV. 9/15/93



"R" PANEL WITH MAX. 4½" BLANKET INSULATION OVER OPEN PURLINS (5' O.C. MAX. SPACING)

COMPONENTS:

1. BERRIDGE "R" PANEL: No. 24 MSG (Min. yield strength 40,000 PSI) thickness coated steel, 36" wide, 1¼" high rib panel continuous over 2 or more spans. Endlaps to occur over purlins overlapped with a min. of 4" with lap centered over purlin web. A line of tape sealant (Item 5) may be used at panel side and end laps.

2. FASTENERS (SCREWS): For panel-to-panel and panel-to-purlin connections to be No. 12 14 by 1" self-drilling, self-tapping, hex head, plated steel screws with a 5/8" O.D. formed steel washer and neoprene sealing washer.

3. INSULATION (Optional): 4½" Max. thickness (before compression) Vinyl Faced compressible insulation (Item 6).

4. PURLINS: No. 16 MSG (Min. yield strength 50,000 PSI), 5' Maximum spacing.

5. TAPE SEALANT: Used along panel sidelaps and endlaps for watertightness.

6. LATERAL BRACING: (Not Shown) Refer to General Information, Roof Deck Construction Building Material Directory for items not evaluated.