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UL 90 APPROVED TEE-PANEL ASSEMBLY CONSTRUCTION NO. 296  
UL FIRE RESISTANCE ROOF ASSEMBLY  
UL FIRE RESISTANCE ROOF ASSEMBLY  
UL FIRE RESISTANCE ROOF ASSEMBLY
A. BERRIDGE TEE PANEL: AVAILABLE WITH A PAN WIDTH OF 12-3/4" OR 19-3/4" AND USED WITH THE BERRIDGE PATENTED SNAP-ON SEAM (US PATENT NO. 4,641,475) TO PROVIDE A CONSTANT SEAM HEIGHT OF 1".

THE 12-3/4" PAN WIDTH CAN EITHER BE FACTORY FABRICATED OR FIELD FABRICATED USING THE BERRIDGE MODEL SS-14 PORTABLE ROLL FORMER. THE 19-3/4" PAN WIDTH IS FACTORY FABRICATED ONLY.

PLEASE CONTACT BERRIDGE MANUFACTURING COMPANY FOR FURTHER INFORMATION REGARDING THE BERRIDGE SS-14 PORTABLE ROLL FORMER.

B. MINIMUM SLOPE: THE TEE-PANEL IS RECOMMENDED FOR SLOPES OF 1:12 AND GREATER IN MOST AREAS OF THE COUNTRY. IN HEAVY SNOW AREAS OR AREAS WHERE FREEZE-THAW CYCLES ARE PREVALENT, A MINIMUM ROOF SLOPE OF 3:12 IS RECOMMENDED.

A DOUBLE LAYER OF NUMBER THIRTY FELT UNDERLAYMENT OR EQUAL COVERING THE ENTIRE SUBSTRATE IS RECOMMENDED FOR ALL APPLICATIONS WHERE THE ROOF SLOPE IS 3:12 OR LESS.

C. MATERIAL STORAGE: CAUTION MUST BE EXERCISED IN STORAGE OF MATERIALS PRIOR TO INSTALLATION. KEEP ALL BERRIDGE PREFINISHED MATERIAL IN A DRY LOCATION WITH ADEQUATE VENTILATION AND OUT OF DIRECT SUNLIGHT.

EXPOSURE TO DIRECT SUNLIGHT AND/OR MOISTURE MAY CAUSE THE FACTORY APPLIED STRIPPABLE PLASTIC FILM TO ADHERE TO THE METAL PERMANENTLY AND DISCOLOR THE FINISH.

D. STRIPPABLE FILM: THE STRIPPABLE PLASTIC FILM WHICH IS APPLIED OVER MOST BERRIDGE PREFINISHED PRODUCTS, PANELS, FLASHINGS, COILS AND FLAT SHEETS PROTECTS THE FINISH DURING FABRICATION AND TRANSIT. THIS FILM MUST BE REMOVED PRIOR TO INSTALLATION.

E. SOLID SHEATHING REQUIREMENTS: BERRIDGE MANUFACTURING COMPANY RECOMMENDS THE USES OF EITHER BERRIDGE 24 GA. CORRUGATED METAL (NOMINAL 2-1/2" PITCH x 11/16" DEPTH) OR A MINIMUM OF 1/2" SOLID WOOD SHEATHING TO PROVIDE SUFFICIENT HOLDING POWER FOR FASTENERS. CONTACT BERRIDGE MANUFACTURING'S ENGINEERING DEPARTMENT FOR USE OF ANY OTHER TYPE OF SOLID SHEATHING.

DUE TO # 30 FELTS TENDENCY TO TEAR WHEN USED OVER CORRUGATED DECKING, BERRIDGE MANUFACTURING RECOMMENDS GRACE ICE AND WATERSHIELD OR EQUAL TO BE USED AS AN UNDERLAYMENT FOR ALL CORRUGATED DECKS.

NOTE: FOR PROJECTS REQUIRING UL 90 ASSEMBLY, REFER TO UL 90 DETAILS.

F. SHEATHING INSPECTION:

1. SHEATHING END JOINTS SHOULD BE STAGGERED.

2. ALL END JOINTS SHOULD MEET AT EITHER A JOIST OR RAFTER.

3. BLOCKING OR "H" CLIPS SHOULD BE USED ON PLYWOOD IF JOINTS DO NOT REMAIN FLAT UNDER THE WEIGHT OF WORKMEN.

4. USE SHIMS TO KEEP ENTIRE SUBSTRATE EVEN. UNEVEN SUBSTRATE WILL RESULT IN "OIL-CANNING" IN PANELS. SUBSTRATE SHOULD BE LEVEL TO 1/4" IN 20'-0".
5. ALL CUTS AT PENETRATIONS SHOULD BE TIGHT, WITHOUT GAPS.

6. USE WOOD FRAMED CRICKETS AT LARGE PENETRATIONS.

7. MAKE SURE SUBSTRATE JOINTS ARE TIGHT AT ALL HIPS, VALLEYS AND Ridges.

G. FASCIA/RAKE INSPECTION:

1. STRIKE A LINE THE FULL LENGTH OF THE FASCIA OR RAKE. IF NOT STRAIGHT, CORRECT WITH SHIMS.

2. MAKE SURE FASCIA/RAKE IS FLUSH WITH ROOF SUBSTRATE SHEATHING.

H. FELT UNDERLAYMENT: A SINGLE LAYER OF NUMBER THIRTY FELT UNDERLAYMENT (OR EQUAL) MUST BE APPLIED OVER SOLID SHEATHING AS SHOWN IN THE BERRIDGE MANUFACTURING COMPANY TYPICAL FELTING DETAILS. THE USE OF ADDITIONAL LAYERS OF NUMBER THIRTY FELT IS RECOMMENDED ON LOW-SLOPED ROOFS, AT ALL VALLEY CONDITIONS, AT ROOF PENETRATIONS, AND CERTAIN OTHER FLASHING CONDITIONS AS DEPICTED IN THE TEE-PANEL TYPICAL DETAILS. GRACE ICE AND WATER SHIELD MAY BE REQUIRED ON LOW SLOPED ROOFS OR AT CERTAIN FLASHING CONDITIONS.

I. FELTING INSTALLATION:

1. DO NOT USE RED ROSIN PAPER UNDER METAL ROOFING PANELS.

2. SWEEP ROOF AREA CLEAN.

3. USE FLAT HEAD GALVANIZED ROOFING NAILS x 1-1/4" LONG WITH BERRIDGE GALVANIZED FELT CAPS.

4. INSTALL VALLEY FELT FIRST.

5. INSTALL FELT PARALLEL TO EAVE (2 LAYERS REQUIRED AT EAVE), STARTING AT EAVE AND USING MINIMUM 6" LAPS. USE TWO LAYERS OF FELT ON ENTIRE ROOF DECK IF ROOF SLOPE IS 3:12 OR LESS. 2 LAYERS REQUIRED AT EAVE REGARDLESS OF SLOPE.

6. INSULATE BETWEEN WOOD BLOCKING AND METAL WITH FELT OR ICE AND WATER SHIELD.

J. THERMAL MOVEMENT: EXPANSION AND CONTRACTION OF PANELS WHICH EXCEED THIRTY FEET IN LENGTH CAN BE A FACTOR IN THE DESIGN AND INSTALLATION OF FLASHING AND PANELS. PLEASE REFER TO THE CHART ON PAGE TI-6 TO DETERMINE ANTICIPATED THERMAL MOVEMENT OF THE PANELS. IMPROPERLY DESIGNED FLASHING CAN ALLOW PANELS TO DISENGAGE FROM THE FLASHING, ALLOW OIL-CANNING IN PANEL AND/OR CAUSE FLASHING TO WORK LOOSE FROM ITS ANCHORAGE.

K. ELECTROLYSIS: AVOID ALLOWING FLASHING AND PANELS TO COME INTO CONTACT WITH EITHER LEAD OR COPPER, AND PREVENT EXPOSURE TO WATER RUNDOWN FROM COPPER AND/OR LEAD.

L. FLASHING: IF BERRIDGE MANUFACTURING COMPANY IS TO SUPPLY FLASHING, ALL FLASHINGS WILL BE FABRICATED IN 10'-0" LENGTHS WITH SQUARE END CUTS ONLY. THE PURCHASER MUST PROVIDE ALL DIMENSIONS AND DEGREE OF ANGLES.
M. FLASHING INSTALLATION:

1. REMOVE STRIPPABLE PLASTIC FILM FROM ALL FLASHINGS PRIOR TO INSTALLATION.

2. ALWAYS STAGGER JOINTS WHEN ONE FLASHING IS INSTALLED OVER OTHER FLASHINGS.

3. INSTALL ALL FLASHINGS AS PER BERRIDGE TYPICAL DETAILS.

4. ALL FLASHINGS ARE TO BE DESIGNED AND INSTALLED TO NOT TRAP WATER.

N. PANELS: BERRIDGE MANUFACTURING COMPANY WILL PROVIDE SQUARE END CUTS ONLY ON ALL TEE-PANELS. COMPUTATION OF ALL QUANTITIES AND DIMENSIONS ARE THE RESPONSIBILITY OF THE PURCHASER.

O. PANEL INSTALLATION:

1. REMOVE STRIPPABLE PLASTIC FILM FROM EACH PANEL PRIOR TO INSTALLATION.

2. DETERMINE CENTER LINE OF ROOF AREA AND START PANEL INSTALLATION AT THE CENTER OF THE ROOF, WORKING TOWARD THE GABLE ENDS. MAKE SURE PANELS ARE PERPENDICULAR TO THE EAVE. AT VALLEY AREAS, MAKE SURE PANELS ARE INSTALLED SO THAT DRAINAGE HAS FREE FLOW AND IS NOT OBSTRUCTED BY PANEL SEAMS.

3. INSTALL TEE-PANEL CLIPS AS PER BERRIDGE TYPICAL DETAILS AND TEE-CLIP INSTALLATION NOTES.

4. EACH PANEL IS TO BE KEPT TIGHT AGAINST THE LEG OF THE ADJOINING PANEL. NEVER PERMIT A GAP BETWEEN VERTICAL LEGS. ANY CRIMPS IN VERTICAL LEGS MUST BE STRAIGHTENED (TOTALLY STRAIGHT WITHOUT ANY BENDS, CRIMPS, CREASES, ETC.) PRIOR TO SEAM INSTALLATION.

5. ALWAYS INSTALL SEAM AS YOU INSTALL EACH PANEL. DO NOT INSTALL PANELS FIRST AND THEN FOLLOW LATER WITH SEAM INSTALLATION.

6. KEEP PANELS ALIGNED SO THAT SEAMS MATCH AT HIPS, VALLEYS AND WHERE VERTICAL PANELS ADJOIN ROOF PANELS. DO NOT INSTALL LONG CONTINUOUS RUNS OF PANELS ALL AT ONE TIME WHERE SEAM LINES MUST MATCH. INSTALL 10 OR 12 PANELS IN ONE ELEVATION AND THEN FOLLOW WITH A LIKE NUMBER OF PANELS ON THE OTHER ELEVATION. WHEN YOU INSTALL PANELS IN THIS MANNER, YOU WILL BE ABLE TO MAKE ANY ADJUSTMENTS REQUIRED TO INSURE SEAM MATCHING.

7. COPPER-COTE™, CHAMPAGNE, LEAD-COTE™, AND PREWEATHERED GALVALUME “PANEL INSTALLATION: NOTE THE SERIES OF ARROWS PAINTED ON THE UNDERSIDE OF THE PANEL. ALL PANELS MUST BE INSTALLED IN A CONSISTENT MANNER, MEANING THAT THE ARROWS ON EVERY PANEL ARE ALL POINTING IN THE SAME DIRECTION. IF A PANEL IS REVERSED (ARROWS POINTING OPPOSITE OF THOSE ON OTHER PANELS) IT WILL APPEAR, FROM A DISTANCE, A DIFFERENT SHADE DUE TO THE GRANULAR EFFECT OF THE PIGMENTS IN THE Finish. METALLIC FINISHES ARE MATCH - LOT FINISHES. DO NOT MIX LOTS.

P. SNAP-ON SEAM: BERRIDGE PATENTED SNAP-ON SEAMS HAVE BEEN LABORATORY TESTED ON BOTH SOLID WOOD SUBSTRATE AND METAL FRAMING, BOTH ASSEMBLIES SHOWED NO
SIGNIFICANT LEAKAGE IN ACCORDANCE WITH THE ASTM E 283-84 AND ASTM E 331-86 AIR AND WATER INFILTRATION TESTS. TEST REPORTS ARE AVAILABLE UPON REQUEST.

Q. SNAP-ON SEAM INSTALLATION:

1. INSTALL SEAMS WITH HAND PRESSURE ONLY. DO NOT POUND OR HAMMER SEAMS INTO PLACE; THIS WILL DAMAGE THE SEAM AND VINYL, PERMITTING WATER INFILTRATION.

2. INSPECT EACH SEAM AS YOU INSTALL IT TO MAKE SURE THE VINYL IS PROPERLY SEATED IN THE METAL CAP AND IS SNUGLY FITTED NEXT TO THE PANEL LEGS.

3. USE TWO (2) WORKERS (OR MORE, DEPENDING ON SEAM LENGTH) TO INSTALL SEAMS; ONE WORKER (OR WORKERS) HOLDING ONE END OF THE SEAM AT AN ANGLE OFF THE ROOF SURFACE AND THE OTHER WORKER INSERTING THE SEAM OVER THE PANEL LEGS.

R. TEE-CLIP INSTALLATION:

1. THE CLIPS ARE TO BE INSTALLED AS SHOWN IN THE BERRIDGE TEE-PANEL DETAILS.

2. CLIP SPACING IS TYPICALLY TWENTY (20) INCHES ON CENTER.*

S. FASTENERS: INSTALL FASTENERS AS PER TYPICAL DETAILS. USE 11 GAUGE 1-1/4" GALVANIZED ROOFING NAILS FOR INSTALLATION OVER WOOD SHEATHING AND USE #10 PANCAKE HEAD TEKS FASTENERS (ZINC-PLATED SCREW WITH PHILLIPS INSERT, AS MADE BY CONSTRUCTION FASTENERS CO.) FOR INSTALLATION TO METAL.** WHEN USING POP RIVETS ON FLASHING, STAINLESS STEEL RIVETS ARE RECOMMENDED TO AVOID RUST RUST STAINS.

MAKE SURE ALL FASTENERS ARE DRIVEN STRAIGHT AND SET FLAT. DO NOT OVERDRIVE FASTENERS, AS THIS WILL CAUSE THE CLIP AND/OR FLASHINGS TO BUCKLE OR BECOME RECESSED BELOW THE ELEVATION OF THE SUBSTRATE.

T. UNDERWRITERS LABORATORIES RATINGS: THE BERRIDGE TEE-PANEL COMPLIES WITH THE FOLLOWING UL RATINGS:

1. NO. 580 "TEST FOR WIND UPLIFT RESISTANCE OF ROOF ASSEMBLIES" CLASS UL 90 CONSTRUCTION NUMBER 296. (REFER TO BERRIDGE TYPICAL DETAIL T-90)


REFER TO BERRIDGE TYPICAL DETAILS T-91, T-92, AND T-93.

U. SEALANT RECOMMENDATIONS: TREMCO INC. SPECTREM 1 OR EQUAL. DO NOT USE CLEAR CAULK.

* NOTE: IF LOCAL CODES OR OTHER REGULATIONS DICTATE SPECIFIC WIND UPLIFT REQUIREMENTS, CONSULT THE BERRIDGE ENGINEERING DEPARTMENT, AS IT MAY BE NECESSARY TO USE A DIFFERENT CLIP SPACING OR FASTENER.

** CONSULT BERRIDGE MANUFACTURING'S ENGINEERING DEPARTMENT REGARDING THE USE OF ANY OTHER TYPE OF FASTENER.
BERRIDGE MANUFACTURING COMPANY STRIVES TO PROVIDE ITS CUSTOMERS WITH THE HIGHEST QUALITY STRETCHER LEVELED STEEL AVAILABLE. THE LATEST TECHNOLOGY IS ALSO INCORPORATED IN BERRIDGE'S HIGH-PRECISION COIL HANDLING AND ROLL FORMING EQUIPMENT TO MINIMIZE THE STRESS ON METAL DURING PRODUCTION. FURTHERMORE, BERRIDGE UTILIZES HEAVIER 24 GAUGE METAL RATHER THAN 26 GAUGE STEEL OR LIGHT GAUGE ALUMINUM AS OFFERED BY MANY COMPETITORS. ALL THESE MEASURES HAVE BEEN TAKEN TO MINIMIZE THE AMOUNT OF "OIL-CANNING" (WAVINESS) WHICH IS NATURALLY INHERENT IN FLAT SHEET METAL. MANY TIMES, HOWEVER, THE CAUSE OF WAVINESS OR "OIL-CANNING" CAN BE TRACED TO UNEVEN SHEATHING, IMPROPER FELT INSTALLATION, IMPROPER HANDLING, OR FOOT TRAFFIC ON THE PANELS.

ALL ARCHITECTURAL PANELS REQUIRE CARE IN HANDLING AND INSTALLATION TO AVOID DAMAGING OR DEFORMING THE PANELS.

THESE INSTALLATION INSTRUCTIONS AND THE FOLLOWING TYPICAL DETAILS ARE INTENDED TO PROVIDE OUR CUSTOMERS WITH THE INFORMATION REQUIRED FOR AN AESTHETICALLY PLEASING AND FUNCTIONAL INSTALLATION OF THE BERRIDGE TEE-PANEL SYSTEM.

NOTE: ALL PRODUCTS, SPECIFICATIONS, DETAILS, AND INSTRUCTIONS SUBJECT TO CHANGE WITHOUT NOTICE. FOR SPECIFIC PROJECT DETAILS, CONTACT BERRIDGE.
EXPANSION AND CONTRACTION OF METAL PANELS DUE TO LONGITUDINAL THERMAL MOVEMENT MUST BE CONSIDERED IN BOTH DESIGN AND INSTALLATION. THE ABOVE CHART EMPHASIZES THE NEED TO PROVIDE AMPLE CLEARANCES FROM GUTTERS, RIDGES, ENDWALL, ETC.

MAXIMUM TEMPERATURE SHOULD BE NO LOWER THAN 140°F FOR WHITE PANELS, UP TO 180° FOR DARK PAINTED PANELS, REGARDLESS OF AMBIENT MAXIMUM, MINIMUM SHOULD BE FIGURED WELL BELOW AMBIENT MINIMUM TO ALLOW FOR RADIATION TO NIGHT SKY. IN ANY CASE, A MINIMUM OF 100° DIFFERENTIAL IS RECOMMENDED.
Expansion and contraction of aluminum panels due to longitudinal thermal movement must be considered in both design and installation. The above chart emphasizes the need to provide ample clearances from gutters, ridges, endwall, etc.

Maximum temperature should be no lower than 140°F for white panels, up to 180°F for dark painted panels, regardless of ambient maximum. Minimum should be figured well below ambient minimum to allow for radiation to night sky. In any case, a minimum of 100°F differential is recommended.
THE DETAILS CONTAINED IN THE FOLLOWING PAGES ARE MERELY RECOMMENDATIONS AS TO HOW BERRIDGE MANUFACTURING MATERIALS SHOULD BE INSTALLED. THEY MAY REQUIRE ADAPTATIONS OR MODIFICATIONS FOR A SPECIFIC PROJECT AS CONDITIONS VARY IN BOTH BUILDING DESIGN AND LOCAL WEATHER PECULIARITIES.

BERRIDGE MANUFACTURING COMPANY SHALL BE HELD HARMLESS FROM ANY AND ALL CLAIMS ARISING FROM LACK OF WATERTIGHTNESS AS A RESULT OF FOLLOWING THESE RECOMMENDED DETAILS. ENSURING WATERTIGHTNESS ON ANY GIVEN PROJECT IS THE FUNCTION OF THE INSTALLER. THE ARCHITECT/GENERAL CONTRACTOR/INSTALLER MUST ACCEPT THE RESPONSIBILITY TO ADAPT THESE DETAILS TO MEET PARTICULAR BUILDING REQUIREMENTS AND TO ASSURE ADEQUATE WATERTIGHTNESS.

THE INSTALLER CAN VIRTUALLY ASSURE WATERTIGHTNESS IF THESE FLASHING DETAILS HAVE BEEN PROPERLY ADAPTED, ADEQUATE LAPS HAVE BEEN PROVIDED, CORRECT TYPE OF SEALANT USED, ALL JOINT ADEQUATELY CAULKED AND PROFESSIONAL WORKMANSHIP EMPLOYED.
OVERVIEW - TEE-PANEL STANDING SEAM SYSTEM

Tee-Panel System

*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.

TEE-CLIP
20" O.C. MAX.

*SNAP-ON SEAM WITH VINYL WEATHERSEAL

SNAP-ON SEAM

TEE-CLIP

*SNAP-ON SEAM WITH EXTRUDED VINYL WEATHER SEAL AS INTEGRAL PART

TEE-PANEL SECTION

STANDING SEAM SECTION

TEE-CLIP PANEL

20" O.C. MAX. CLIP SPACING

5/8"

12 3/4"

3/8"

1" NOMINAL

BERRIDGE TEE-PANEL

EXTRUDED VINYL WEATHERSEAL

BERRIDGE STANDING SEAM PANEL
NOTE: THIS DETAIL FOR ROOFS WITH A SLOPE GREATER THAN 3 ON 12

TURN DOWN UPPER PANEL AND LOCK ON TO CONTINUOUS CLEAT ON LOWER PANEL

BERRIDGE TEE-PANEL

CONTINUOUS CLEAT ALLOW 1 5/8" GAP AT ENDS NEXT TO LEGS

BERRIDGE TEE-PANEL

CONTINUOUS BEAD OF CAULK

CONTINUOUS CLEAT

# 30 FELT UNDERLAYMENT

SOLID SHEATHING

TEE-CLIP; 2 CLIPS BELOW AND ABOVE PANEL SPLICE

6" MIN. LAP

NOTE: THIS DETAIL FOR ROOFS WITH A SLOPE BETWEEN 1 ON 12 AND 3 ON 12

TURN DOWN UPPER PANEL AND LOCK ON TO CONTINUOUS CLEAT ON LOWER PANEL

BERRIDGE TEE-PANEL

CONTINUOUS CLEAT ALLOW 1 5/8" GAP AT ENDS NEXT TO LEGS

BERRIDGE TEE-PANEL

TWO CONTINUOUS BEADS OF CAULK

CONTINUOUS CLEAT

# 30 FELT UNDERLAYMENT

SOLID SHEATHING

TEE-CLIP; 2 CLIPS BELOW AND ABOVE PANEL SPLICE

10" MIN. LAP

MIN. 2 FASTENERS; PLACE SMALL AMOUNT OF CAULK BENEATH CLEAT AT FASTENER LOCATION, DRIVE FASTENERS THROUGH CLEAT THEN CAULK FASTENER HEADS.
*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.

1) SPLICES IN SEAMS AND PANELS SHOULD BE STAGGERED. NEVER SPLICE A PANEL AND A SEAM AT THE SAME LOCATION.

2) TWO TEE-CLIPS REQUIRED AT EACH SIDE OF SEAM SPLICE.

NOTE: 2 TEE-CLIPS REQ'D EACH SIDE OF SEAM SPLICE
"Berridge snap-on seam with vinyl weather seal

Caulk at end of vinyl (caulk should seal gap between the two seams)

Cut vinyl weather seal back 1/2"

Cut metal of seam at an angle.
Place seam between metal and vinyl of opposite seam

Note: 1) Splices in seams and panels should be staggered.

Never splice a panel and a seam at the same location.

2) Two tee-clips required at each side of seam splice.

*Snap-on seam is covered under US Patent No. 4,641,475.
1. All felt underlayment, structural members, corrugated deck, and insulating material, are items to be furnished and installed by others at the discretion of the architect.

2. Continuous wood blocking (by others) may be used in lieu of Zee purlins. Blocking must be exact same depth as insulation.

3. Purlin spacing and fastener type will be dependent on governing code and specification requirements. Contact Berridge for specific information.

4. Rigid insulation must have adequate compressive strength to support the weight of a 300 pound man without causing any deformation in the panel.

5. Depth of Zee purlins must be governed by insulation thickness. Any deviation could be cause for damage to panels or leaks.

Zee purlin; minimum 24 gauge steel, depth determined by insulation depth and legs determined by pitch of metal deck
Butt insulation up to purlin

See Zee purlin detail below
1. This detail is recommended for areas with heavy snow loads or where expansion and contraction of panels is a design factor.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulk, and fasteners are items to be furnished and installed by the roofing installer at the discretion of the architect.

4. The "gap" between eave flashing and panel (see detail above) can be increased to allow for linear expansion and contraction of panels. Note 1/2" of panel pan must be engaged with eave flashing when panel has expanded to its maximum length. Refer to detail TI-6.

5. Gap between eave flashing and panel must be adjusted to suit temperature during installation.
1. As roof panels are installed, snip approximately 3/8" section from each panel leg at eave, and form panel pan around eave flashing.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulk, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.

*Snap-on seam is covered under US Patent No. 4,641,475.
1. As roof panels are installed, snip a section from each panel leg at eave and form the pan around the drip flashing.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulking, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.

F = Finish Side

Open Hem

Drip Flashing

Special Zee Closure

Snap-On Seam

Tee-Clip; use 2 at eave

Drip flashing; 4" end lap with continuous caulk at laps

# 30 Felt Underlayment

Field cut and form panel pan around eave flashing see also detail T-11

Special Zee Closure; cut to fit between panel seams

Pop rivet; 40" O.C. max.

Berridge Tee-Panel Tee-Clip

*Snap-on seam is covered under US Patent No. 4,641,475.
1. Field cut Zee closures to fit between seams.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felting underlayment, caulking, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.

*Snap-on seam is covered under US Patent No. 4,641,475.
1. FIELD CUT ZEE CLOSURE TO FIT BETWEEN SEAMS.

2. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

3. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.

*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.
SECTION VIEW

FIELD FORM END OF RIDGE FLASHING AND EXTEND UNDER CONTINUOUS CLEAT

RIDGE FLASHING; 4" END LAPS WITH CONTINUOUS CAULK AT LAPS

FIELD TAPERED ZEE CLOSURE WITH CONTINUOUS CAULK UNDER ZEE CLOSURE

SOLID SHEATHING VALLEY FLASHING; 12" LAPS WITH CONTINUOUS CAULK AT LAPS

*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.

PLAN VIEW

MAIN ROOF PANELS

RIDGE FLASHING

CONTINUOUS CLEAT

VALLEY FLASHING

DORMER PANEL

CONTINUOUS CLEAT; DO NOT CAULK ON OR UNDER CLEAT

*SNAP-ON SEAM

TEE-CLIPS; 2 AT END OF SEAM

# 30 FELT UNDERLAYMENT

FASTENERS; 20" O.C. MAX. PLACE A DAB OF CAULK AT FASTENER LOCATION DRIVE FASTENER AND CAULK FASTENER HEAD
1. FIELD CUT AND FORM LAST PANEL AROUND DRIP FLASHING. PANEL MUST BE CONTINUOUS FROM RIDGE TO EAVE.

2. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

3. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.

*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.
1. Field cut and form last panel around gable flashing panel must be continuous ridge to eave.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulking, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.

*Snap-on seam is covered under US Patent No. 4,641,475.
1. FIELD CUT LAST PANEL AND SLIP INTO J-CLIP. PANEL MUST BE CONTINUOUS RIDGE TO EAVE.

2. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2” PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

3. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.

*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.
1. Field cut last panel and slip into J-clip. Panel must be continuous ridge to eave.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulkking, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.
1. FIELD CUT ZEE CLOSURES TO FIT BETWEEN SEAMS.

2. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

3. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.

*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.
1. Field cut Zee closures to fit between seams.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulking, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.
1. Field cut last panel and form new leg. Panel must be continuous ridge to eave.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulking, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.

*Snap-on seam is covered under US patent no. 4,641,475.
1. FIELD CUT ZEE CLOSURES TO FIT BETWEEN SEAMS.

2. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

3. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.

*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.
1. Field cut last panel and form new leg. Panel must be continuous ridge to eave.

2. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

3. All felt underlayment, caulking, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.

*Snap-on seam is covered under US Patent No. 4,641,475.
SNIP PANEL LEG AND FIELD FORM PANEL PAN AROUND EAVE FLASHING

TOP FELT LAYER TO RUN PARALLEL WITH ROOF SLOPE

# 30 FELT UNDERLAYMENT

SOLID SHEATHING

CLOSURE CHANNEL

EAVE FLASHING

FASCIA BOARD

SEE DETAIL BELOW FOR CAULKING AT THIS LOCATION

RAKE WALL

SOLID SHEATHING

CAULK AT CORNER

FASCIA BOARD

EAVE FLASHING; FORM LEG ON END OF FLASHING AND PUSH INTO CORNER

# 30 FELT UNDERLAYMENT; CARRY FELT UP RAKE WALL

RAKE AT EAVE
USE THIS DETAIL AT RAKE DETAILS, T-51 & T-53
1. Field cut Zee closure to fit between seams.

2. As roof panels are installed, snip approximately 3/8" section from each panel leg at upper panel.

3. As seams are installed on upper roof panels, field notch and bevel cut each seam.

4. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

5. All felt underlayment, caulk, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.

**Note:** Place a dab of caulk at cleat fastener location, drive fastener through caulk, and caulk fastener heads. Do not: run a continuous bead of caulk on cleat or under cleat.

*Snap-on seam is covered under US Patent No. 4,641,475.*
1. Field cut panel leg and bend panel as required for change in slope from roof to fascia.

2. Field miter snap-on seam to slope change.

3. Only one slope transition per panel is recommended.

4. See slope transition isometric for roof to fascia for caulk and snap-on seam miter detail. (Detail T-62)

5. Solid sheathing (by others) to be minimum 1/2" plywood or equivalent in strength for holding power of fasteners.

6. All felt underlayment, caulk, and fasteners, are items to be furnished and installed by the roofing installer at the discretion of the architect.

F = Finish Side

Special Channel Closure
ENSURE LOWER SEAM IS INSIDE UPPER

SPECIAL CHANNEL CLOSURE

*TAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.

TEE-CLIPS;
2 ABOVE TRANSITION

CAULK BETWEEN PANEL LEGS

FIELD BEND PANEL TO DESIRED ANGLE

FIELD CUT PANEL LEGS

FOLDING TEE-CLIPS;
2 BELOW TRANSITION
SEE DETAIL T-63

*SPL-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.

MITER SNAP-ON SEAM BY "V"
CUTTING SNAP ON SEAM AND VINYL WEATHER SEAL. BEND TO SLOPE TRANSITION OF ROOF TO FASCIA.
1. After folding Tee-clips and Tee-panels are installed, field bend folding the clip tab so that it is approximately 3/32" from clip leg. Do not bend tab tight against panel leg as vinyl insert in seam will then not grip the edge of the tab.

2. Use folding Tee-clip at slope transition (roof to fascia, see details T-61 and T-62). Use standard Tee-clip throughout rest of standard Tee panel system.
1. FOR EXPANSION AND CONTRACTION OF PANELS, SEE TI-6 AND T-11.

2. SOLID SHEATHING (BY OTHERS) TO BE A MINIMUM OF 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

3. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.
TEE-CLIPS; PLACE 2 TEE-CLIPS ABOVE VALLEY FLASHING.

TEE-CLIPS; DO NOT USE FASTENERS OVER VALLEY FLASHING

BERRIDGE TEE-PANEL LEG
FIELD CUT PANEL SEAM AND FORM PANEL PAN AROUND CLEAT OF VALLEY FLASHING

CONTINUOUS CLEAT
CONTINUOUS BEAD OF CAULK
SOLID SHEATHING

FASTEN THROUGH VALLEY ONLY AT TOP OF FLASHING UNDER LAP. NO FASTENERS ARE TO BE EXPOSED ON TOP (OVERLAPPING) VALLEY

VALLEY FLASHING
# 30 FELT UNDERLAYMENT

DO NOT RUN CAULK IN OR ON CLEAT OF VALLEY FLASHING

12" LAP

2 CONTINUOUS BEADS OF CAULK AT LAPS

T-71
PIPE PENETRATION (PREFERRED METHOD) IN PAN OF PANEL ONLY 4" DIA. OR LESS

*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.
PIPE PENETRATION OF PANEL SEAM ISOMETRIC AND PLAN VIEW

**CALL BMC BEFORE USING THIS DETAIL

NOTE: CALL BMC BEFORE USING DETAILS ON THIS PAGE.
USE ONLY IF PENETRATION OCCURS ON SEAM OR WITHIN AREA OF PAN THAT WILL NOT ACCOMMODATE BOOT. USE WITH SOLID SUBSTRATE ONLY.

NOTE: IF PIPE IS MADE OF METAL, IT MUST BE PAINTED TO PREVENT RUST RUN-OFF FROM STAINING PANELS.
SECTION A  
**USE THIS DETAIL WHEN STACK IS CENTERED ON *SNAP-ON SEAM**

ROUND STACK MUST BE OF MATERIAL COMPATIBLE WITH 24 GA. GALVANIZED PAINTED METAL

CUT TEE-PANEL AND BEND UP 1" AROUND STACK AND CAULK

MITER ENDS OF *SNAP-ON SEAM. RUN SEAM UP TO STACK AND CAULK

# 30 FELT UNDERLAYMENT

TEE-CLIPS; 2 REQ'D AT PENETRATION

*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.

SECTION B  
**USE THIS DETAIL WHEN STACK IS OFF CENTER OF *SNAP-ON SEAM**

ROUND STACK MUST BE OF MATERIAL COMPATIBLE WITH 24 GA. GALVANIZED PAINTED METAL

CUT TEE-PANEL AND BEND UP 1" AROUND STACK AND CAULK

MITER ENDS OF *SNAP-ON SEAM. RUN SEAM UP TO STACK AND CAULK

TEE-CLIPS; 2 REQ'D AT PENETRATION

# 30 FELT UNDERLAYMENT

FIELD CUT LEGS 2" BACK FROM STACK (ABOVE STACK). FIELD MITER LEGS AND SEAMS BELOW STACK. CUT HOLE IN PANEL 1" LESS THAN DIA. OF STACK. BACK CUT HOLE AND BEND PANEL UP AROUND STACK.

PIECE PENETRATION ON PANEL SEAM; SECTIONS

**CALL BMC BEFORE USING THIS DETAIL**

Tee-Panel System

DATE: 06-01-97

PAGE/FILE T-82
BERRIDGE MANUFACTURING COMPANY

ROOF PENETRATION
RECTANGULAR/SQUARE
Tee-Panel System

DATE: 06-01-97
PAGE/FILE
T-83

CONTINUOUS CLEAT

ANGLE FLASHING

*SNAP-ON SEAM

BERRIDGE TEE-PANEL; FIELD BEND TO CURB

CONTINUOUS CLEAT

ZEE CLOSURE

COUNTERFLASHING

SEE DETAIL BELOW

NOTE: DO NOT RUN A CONTINUOUS BEAD OF CAULK ON CLEAT OR UNDER CLEAT.

*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.

BERRIDGE *SNAP-ON SEAM

UPPER TEE-PANEL; FIELD BEND TO CURB

ANGLE FLASHING

LOWER TEE-PANEL; FIELD BEND TO CURB

ROOF CURB

ZEE CLOSURE; CUT 2" OFF HORIZONTAL LEGS, BEND VERTICAL LEG AND SLIP BETWEEN TEE-PANELS. CAULK BETWEEN ZEE CLOSURE, COUNTERFLASHING AND PANEL

COUNTERFLASHING; EXTEND 1/4" BEYOND ZEE CLOSURE (FLASHING CUT AWAY FOR CLARITY)

*SNAP-ON SEAM

CONTINUOUS CLEAT
1. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS.

2. ALL FELT UNDERLAYERMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.

*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.

NOTE: DO NOT RUN A CONTINUOUS BEAD OF CAULK IN CLEAT OR UNDER CLEAT.
*SNAP-ON SEAM IS COVERED UNDER US PATENT NO. 4,641,475.

1. SOLID SHEATHING (BY OTHERS) TO BE MINIMUM 1/2" PLYWOOD OR EQUIVALENT IN STRENGTH FOR HOLDING POWER OF FASTENERS. (METAL CORRUGATED SHEATHING, MIN. 24 GA. MAY BE USED IN LIEU OF PLYWOOD).

2. ALL FELT UNDERLAYMENT, CAULKING, AND FASTENERS, ARE ITEMS TO BE FURNISHED AND INSTALLED BY THE ROOFING INSTALLER AT THE DISCRETION OF THE ARCHITECT.
1. METAL ROOF DECK PANELS: No. 24 MSG min. 40,000 psi yield strength coated steel. Panel widths to be 12-3/4" or 19-3/4" and rib height to be 5/8". Total seam height with snap-on seam cover in place is nominal 1". Panels to be continuous length. End laps to be overlapped minimum 6". A line of sealant may be used at end and sidelaps.

2. ROOF DECK FASTENERS: (Panel Clips) one piece clip, 3/4" high x 1-1/2" wide x 1-5/8" long, formed from the same type and thickness material as that used to fabricate metal panels. Clips spaced maximum 24" O.C., located at panel sides with guide holes in bottom to accommodate screw fasteners.

2A. ROOF DECK FASTENERS: (Seam Covers) Seams covering panel ribs are to be 3/8" wide and 7/8" high with vinyl insert (US Patent No. 4,641,475), formed from the same type and thickness material as that used to fabricate metal panels.

3. FASTENERS: Screws used to attach the panel clips to plywood to be No. 10 by 1" long pancake head wood screw with a No. 2 Phillips drive. One screw per clip. Screws used to attach plywood substructure to wood trusses of joist to be deformed shank nails. When light ga. Structural Steel joists are used, screws to be No. 12 x 1-5/8" long with Phillips drive head. Spacing of screws to be 6" O.C. at plywood ends and 12" O.C. at interior joints.

4. SUBSTRUCTURE: (Plywood) Plywood decking to be a nominal 5/8" thick, exposure sheathing span C-D, 40/20 plywood. All butt joints are to be sealed with tape and/or caulked.

5. FELT PAPER: Two ply, No. 30 felt per 100 square feet.

6. JOISTS: Joist spaced at 2'-0" O.C. may be one of the following:
   A. Nom. 2 x 6 wood joists No. 2 or better.
   B. Nom. 2 x 4 wood when used on a top chord of a wood truss, No. 2 or better.
   C. Light gauge structural steel framing with the member against the plywood to be a minimum No. 22 MSG coated steel.

FOR ADDITIONAL INFORMATION, PLEASE REFER TO THE UNDERWRITERS LABORATORY, INC. BUILDING MATERIALS DIRECTORY.
1. In order to qualify for a fire-resistant rating, the roof system cannot make a penetration in the insulation system. The tee-panel, in order to make positive attachment, must be attached to a corrugated substratum (if the insulation system has no nailable surface). The corrugated substratum is to be mounted directly to the insulation system with fasteners fastened through into the structural steel deck.

2. This assembly qualifies for the following UL fire-resistant roof assemblies: UL design no. P224, P225, P230, P237, P508, P510, and P227 using cellular glass block in lieu of mineral insulation board.

3. Additional information regarding this assembly is available in the UL fire resistance directory.
1. In order to qualify for a fire-resistant rating, the roof system cannot make a penetration in the insulation system. The TEE-panel, in order to make positive attachment, must be attached to a corrugated substratum (if the insulation system has no nailable surface). The corrugated substratum is to be mounted directly to the insulation system with fasteners fastened through into the structural steel deck.

2. This assembly qualifies for the UL fire-resistant roof assembly: P512.

3. Additional information regarding this assembly is available in the UL fire resistance directory.
1. In order to qualify for a fire-resistant rating, the roof system cannot make a penetration in the insulation system. The Tee-Panel, in order to make positive attachment, must be attached to a corrugated substratum (if the insulation system has no nailable surface). The corrugated substratum is to be mounted directly to the insulation system with fasteners fastened through into the structural steel deck.

2. This assembly qualifies for the following UL fire resistant roof assemblies: UL Design No. P701, P711, P713, P715, P717, P814, P803, P815, P819, and P821 only using sprayed on fiber in lieu of cementious mixture.

3. Additional information regarding this assembly is available in the UL fire resistance directory.