1. At left we see eaves on a 4:12 slope slate roof that has suffered chronic leakage from ice damming. Although heat cable had been installed, it had been nailed through the slates with 16 penny nails, doing more harm than good.

2. Pull off all the slates and expose the rotted mess that you’re sure to find underneath.

3. Repair the rafters by scabbing new wood where needed.

4. Install new roof decking material. This is 1” rough-sawn hemlock lumber, similar to the material used on the original roof.

5. Install 30 lb. felt over the repaired roof deck to weather it in.

6. Install red rosin paper over the felt. This “slip sheet” is to allow the copper to expand and contract.

7. Install a copper drip edge. This is 16 ounce copper.

8. Prepare your copper flat-lock pans. These are 20 ounce half-hard copper pans made from 18”X24” stock. Read more about flat-lock soldered copper in TR #6 online at TraditionalRoofing.com.

9. Prepare 20 ounce copper cleats.

10. Cleat the pans to the roof.
11. Hook the joints together, cleat the pans down, pound the seams flat with a dead-blow hammer, then solder the pans together. We’re using 50/50 tin/lead solder and an Express soldering iron here. We also use American Beauty electric soldering irons, Aero acetylene, and Sievert propane soldering irons for this work. All are available at SolderWarehouse.com.

12. Continue to install and solder the copper snow apron pans until all the pans are installed.

13. Hang a 1/2”X1” cant strip (cut from the hemlock roof deck lumber) on copper or stainless steel wires so that the slates will overlap the copper approximately 6” and overlap the cant strip approximately 2”. Use chalk lines to keep things straight.

14. Install the starter course of slates, back side up.

15. Install the field slates with nails and bibs or slate hooks.

16. You now have an eave assembly that is waterproof!

A video of this process is available at SlateRoofWarehouse.com