



SDC
SOLENOIDAL DETECTOR NOTES

SDC ENDPLUG CALORIMETER-WBS 2.2.10
PIZZA PANS AND SOURCE TUBES

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Pizza Pans and Source Tubes**

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This note provides brief documentation on the planned configuration of pizza pans and (in-plate) source tubes for the SDC endplug calorimeter.

Figure 1 (shown here from Ref. 1) illustrates a layout of the 5 tiles within a typical hac1 tower, including the routing of wave shifter fibers in each tile and the paths of bundles of clear fibers to the rear of the plug along the $\eta = 2$ surface. The vertical line down the center of the tiles represents the path of the source (guide) tube adjacent the tile's front face. This tube will be installed in a machined slot in the back face of the absorber plate in front. The pizza pan, which surrounds the 5 tiles is not shown.

Figures 2, 3 & 4 show free-hand sketches of the tiles and their fibers, the planned configuration of typical pizza pans, and the planned configuration of the source tube (mounting strips); which will be constructed of ≈ 0.5 mm thick Stainless steel. There are 60 different sizes of these pans and source tube strips; 16 each of a given size. It is very important that these pans and strips incorporate common fabrication features wherever possible to minimize costs.

Figure 5 shows a cut-away view of a typical pan "slot" in the endplug absorber structure, showing how the source tube strips will be folded and attached using ring-shank (or equivalent) nails--no hole tapping.

Similarly, **Figure 6** shows how a typical pizza pan slips into the absorber slot--over the source tube strip, and its single screw attachment to the adjacent absorber plate.

Finally, **Figure 7** provides a rough sketch of the filled slot as seen from the endplug's outer, $\eta = 2$ surface. The center "tab" of the source tube strip is bent 90 degrees to retain the tile group within the pan. The creases in the pizza pan provide the following functions:

- a. ensure that the tiles will be "close" to the source tube,
- b. prevents "rocking" of the tile,
- c. slightly increases the pan's bending stiffness.

The forging conceptual sketches show that these parts will be functionally adequate and relatively inexpensive. In subsequent CAD layout work, we will explore further simplifications--e.g. reducing the number of tabs (and nail holes) for the source tube strips from 4 to 2 each.

Ref.1 W.L. Pope & M. D. Hoff, "Fiber Routing & PMT Mounting",
SDC-92-324, Lawrence Berkeley Laboratory, 8/24/92.

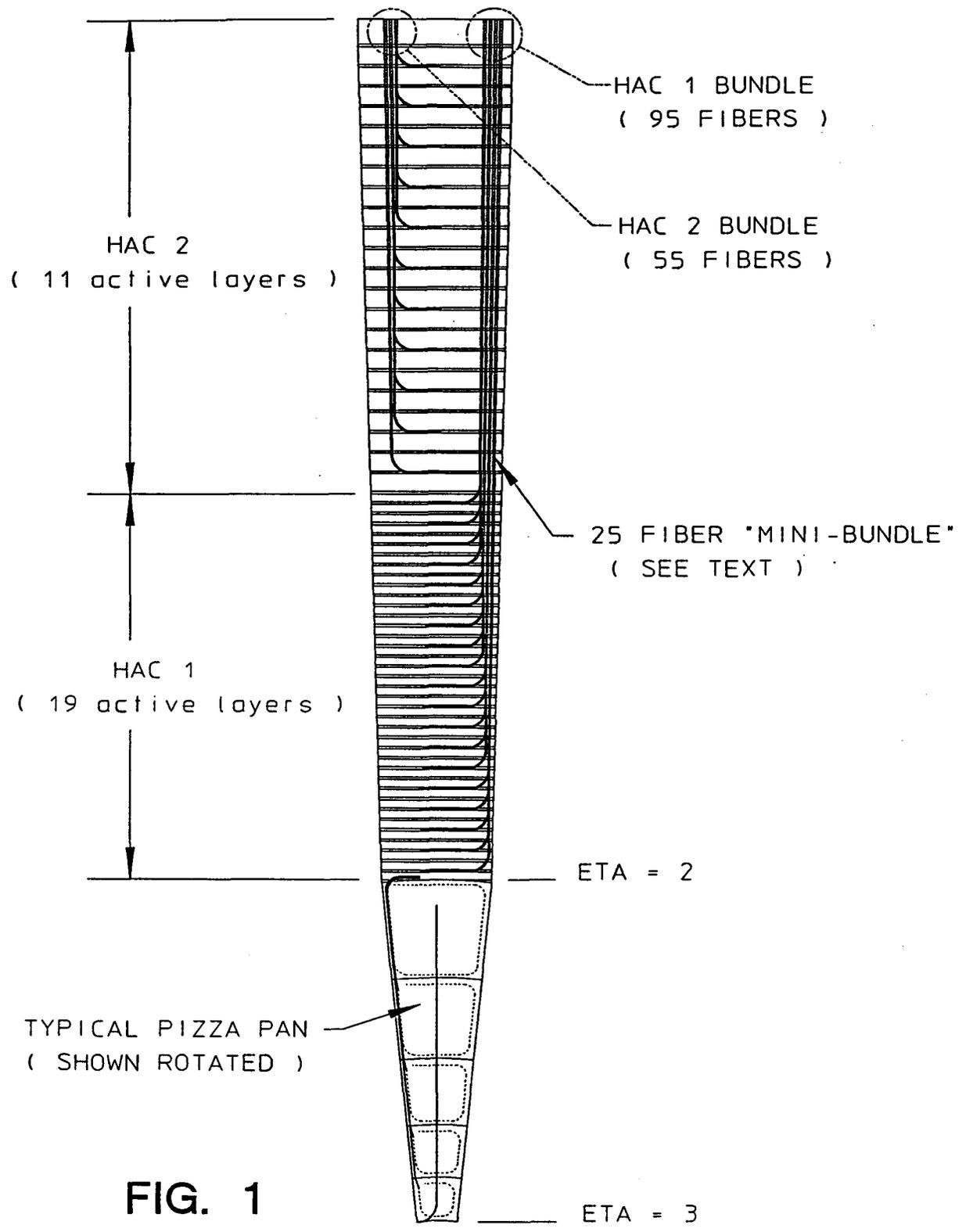


FIG. 1

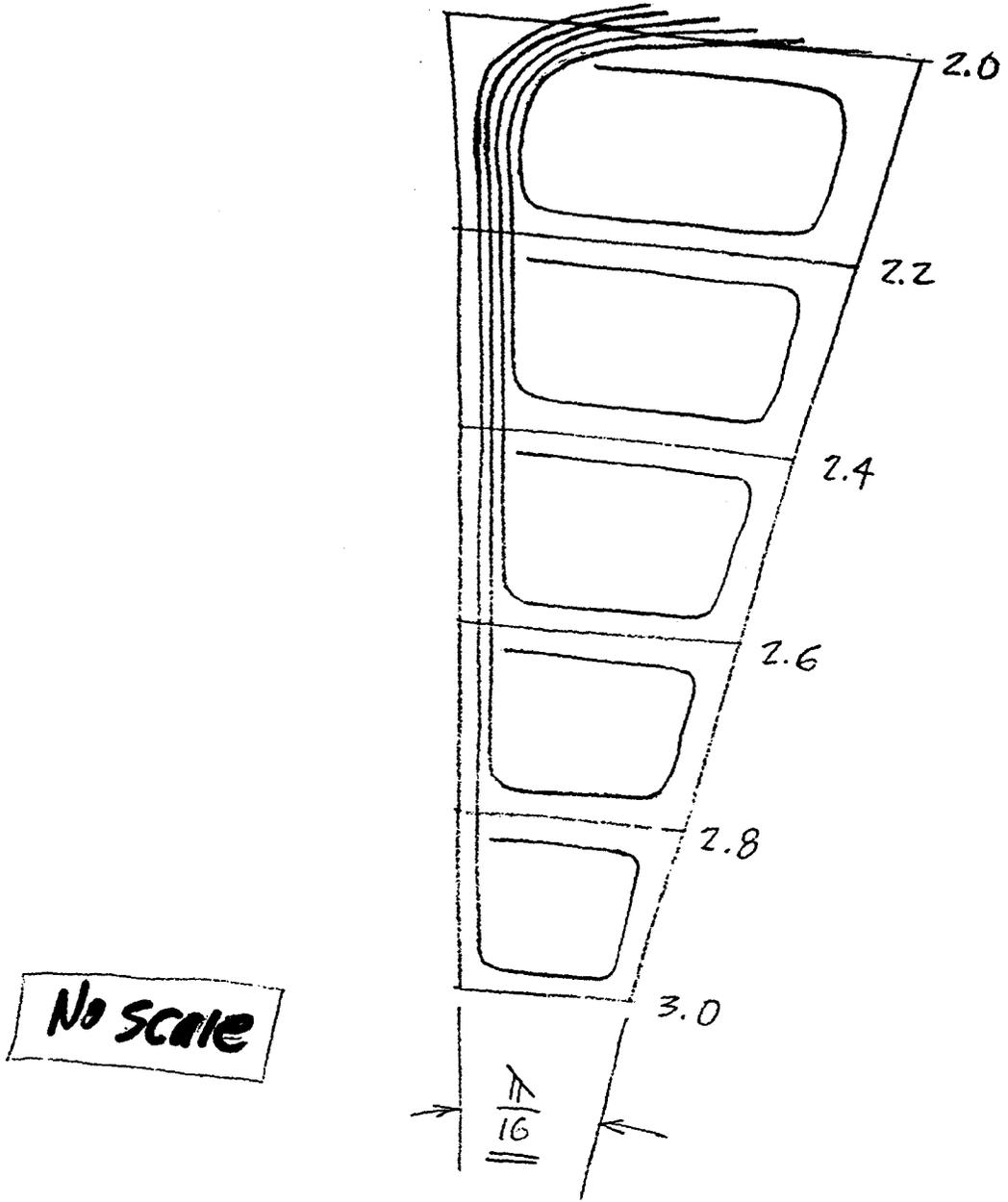


Fig. 2 Schematic Tile/Fiber Routing

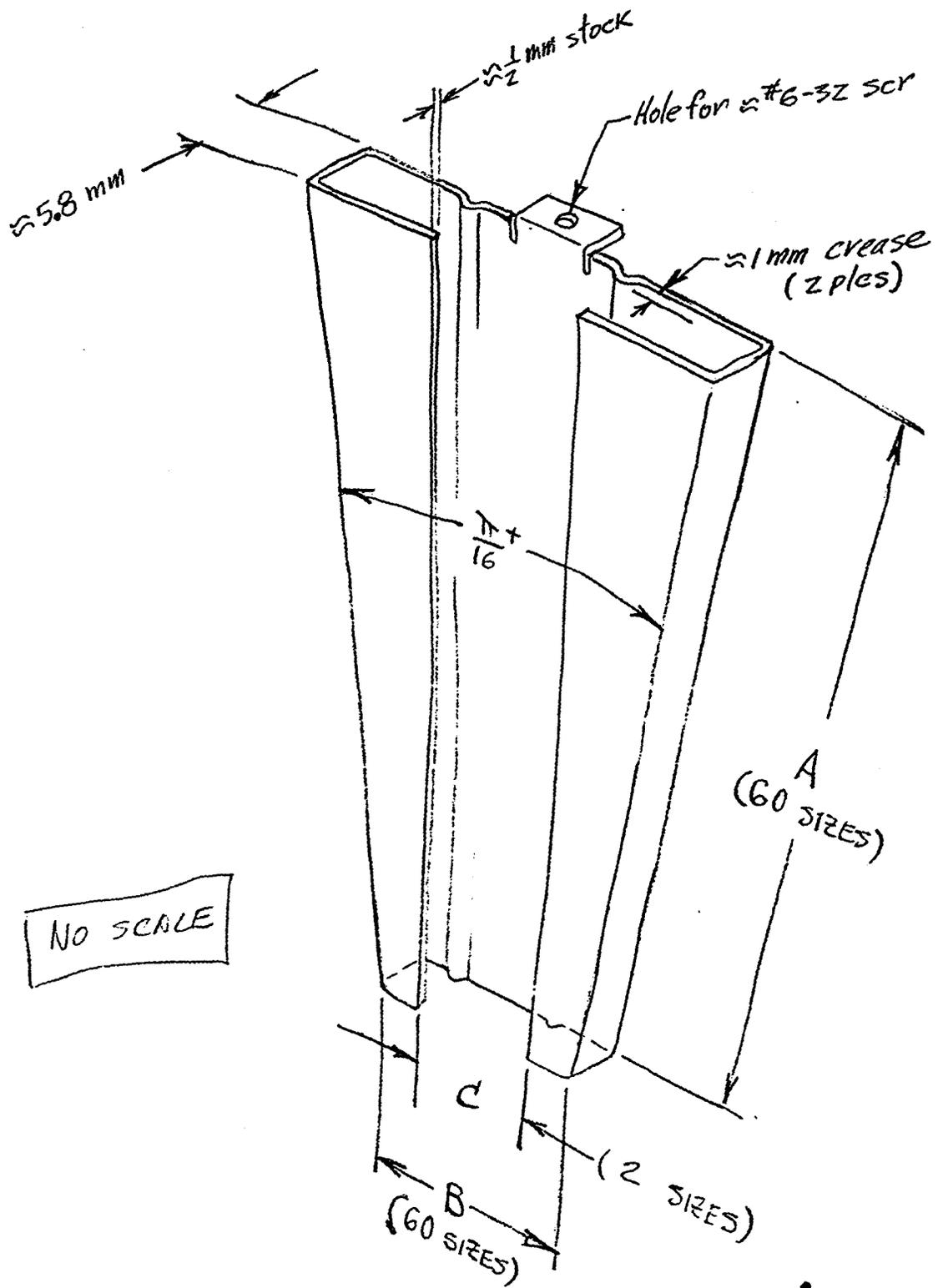


Fig. 3 Pizza Pan Construction

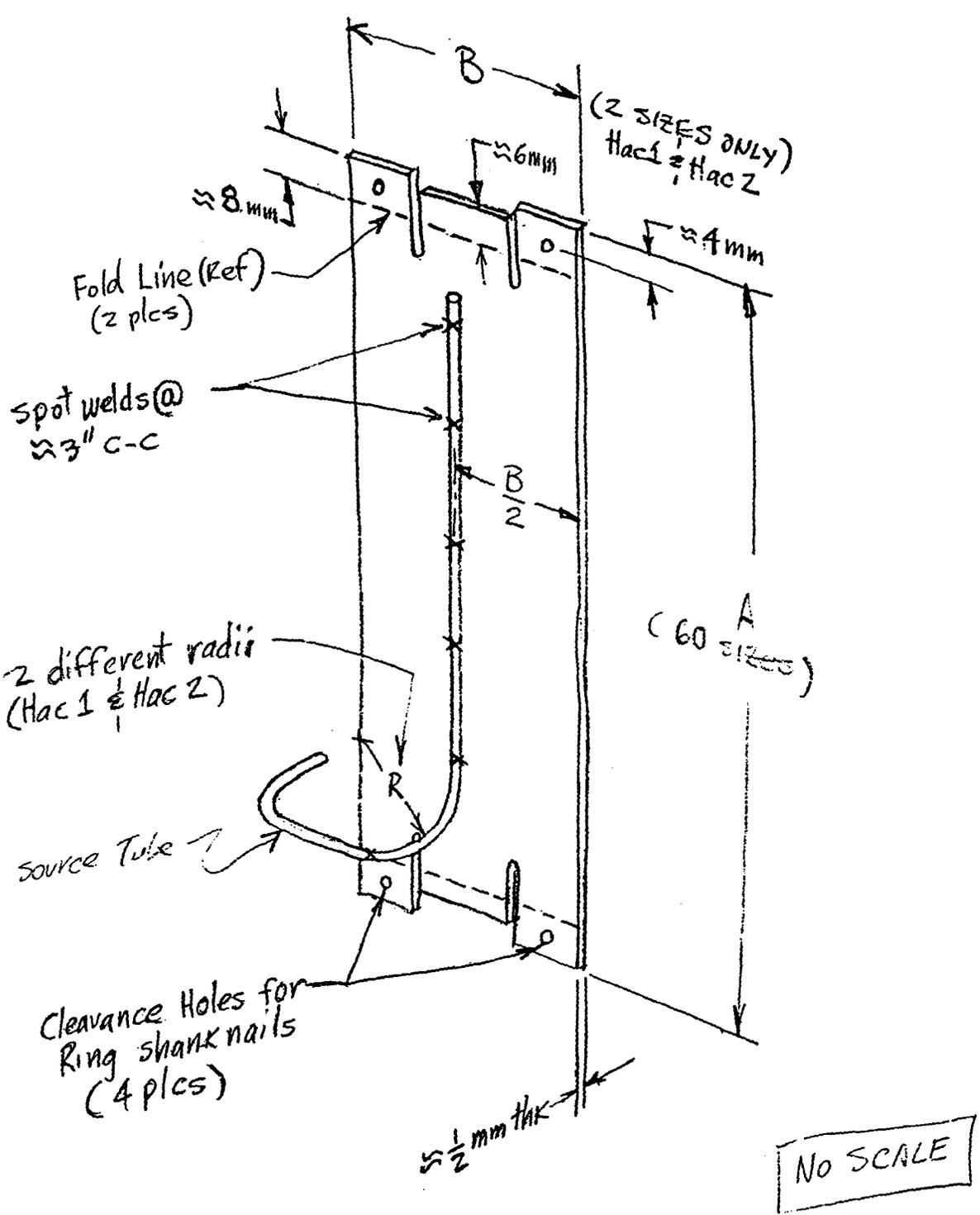


Fig. 4 Source Tube Strip

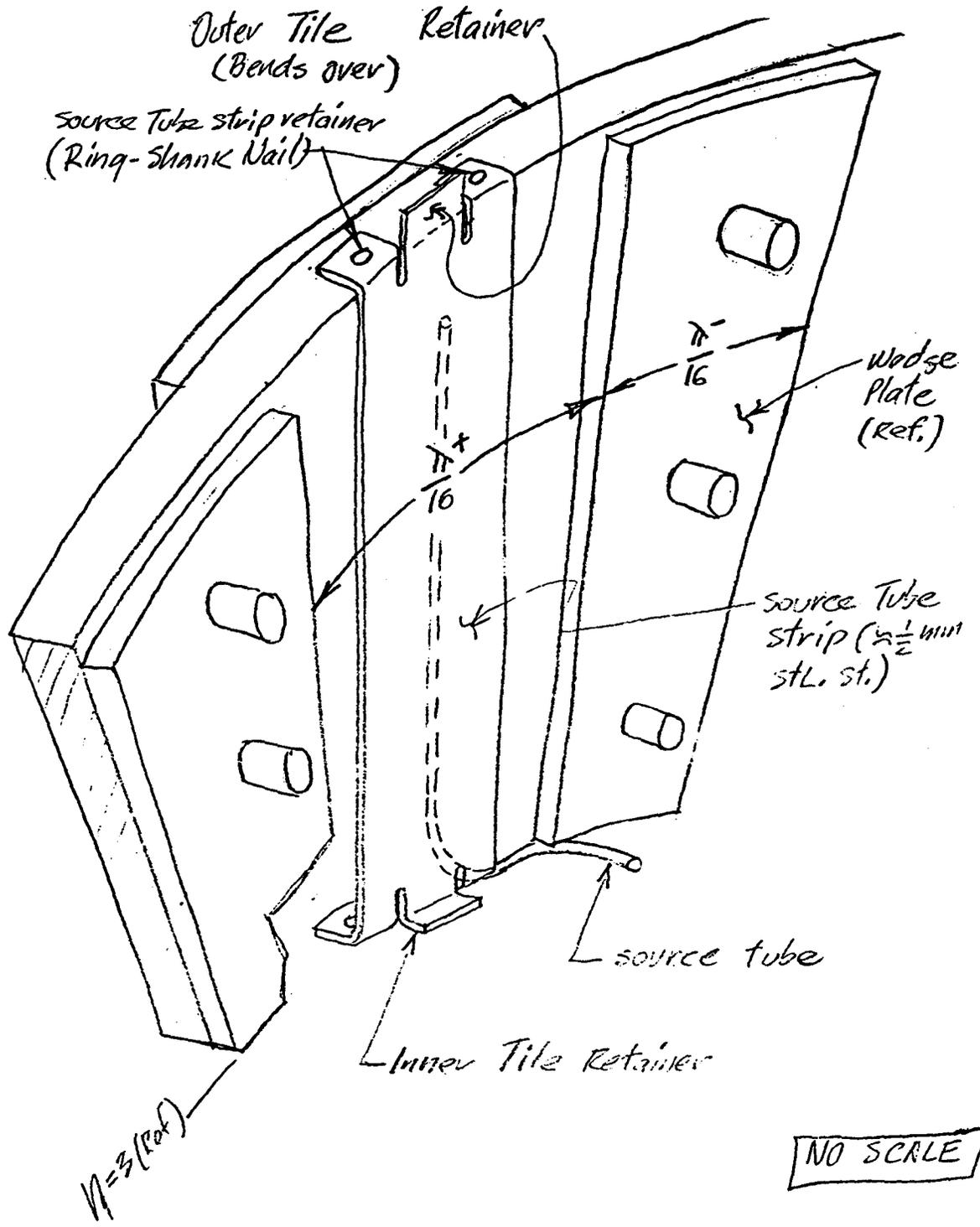


Fig. 5 Source Tube Strip Installation

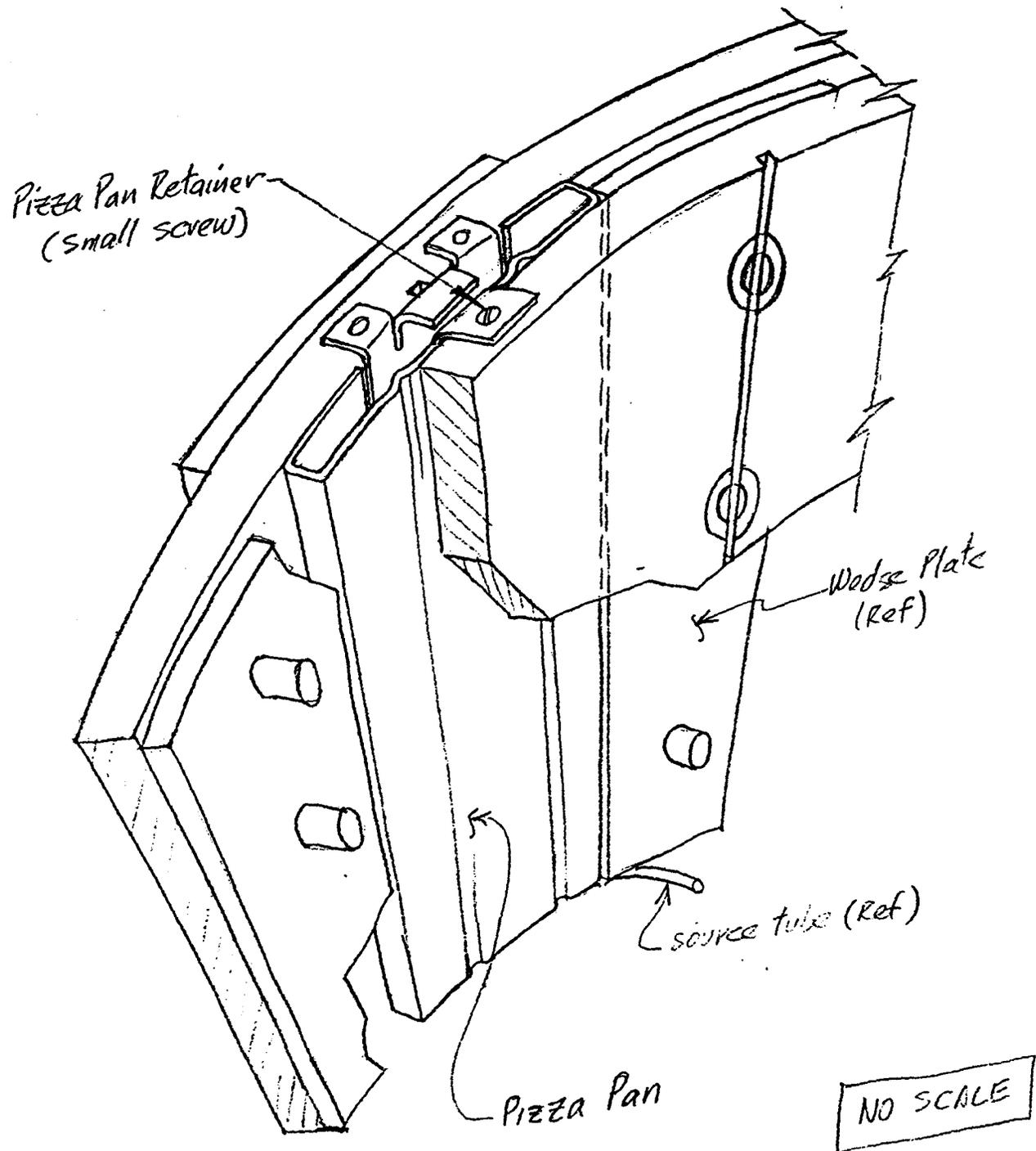


Fig. 6 Pizza Pan Installation

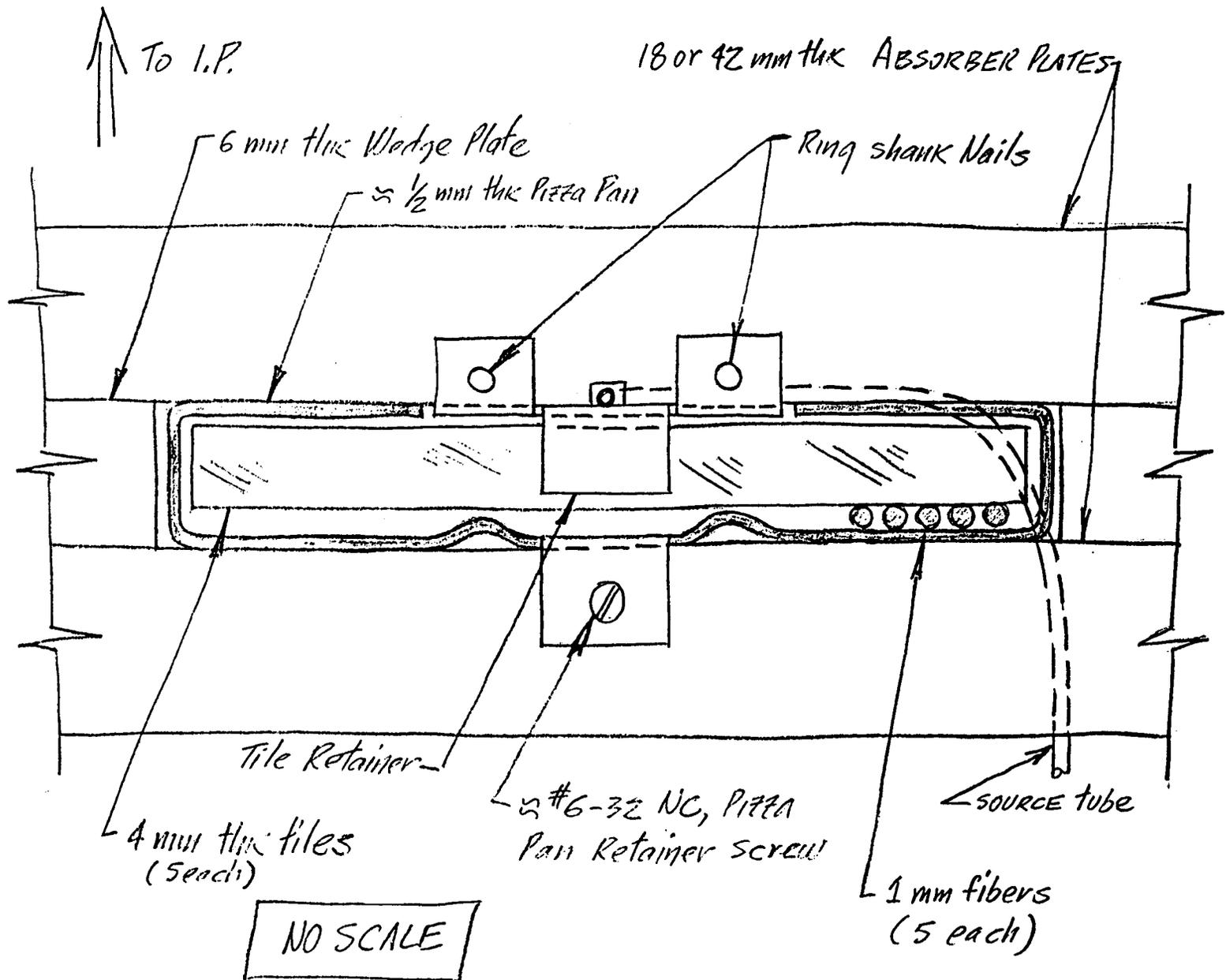


Fig. 7 Outer edge view of absorber slot