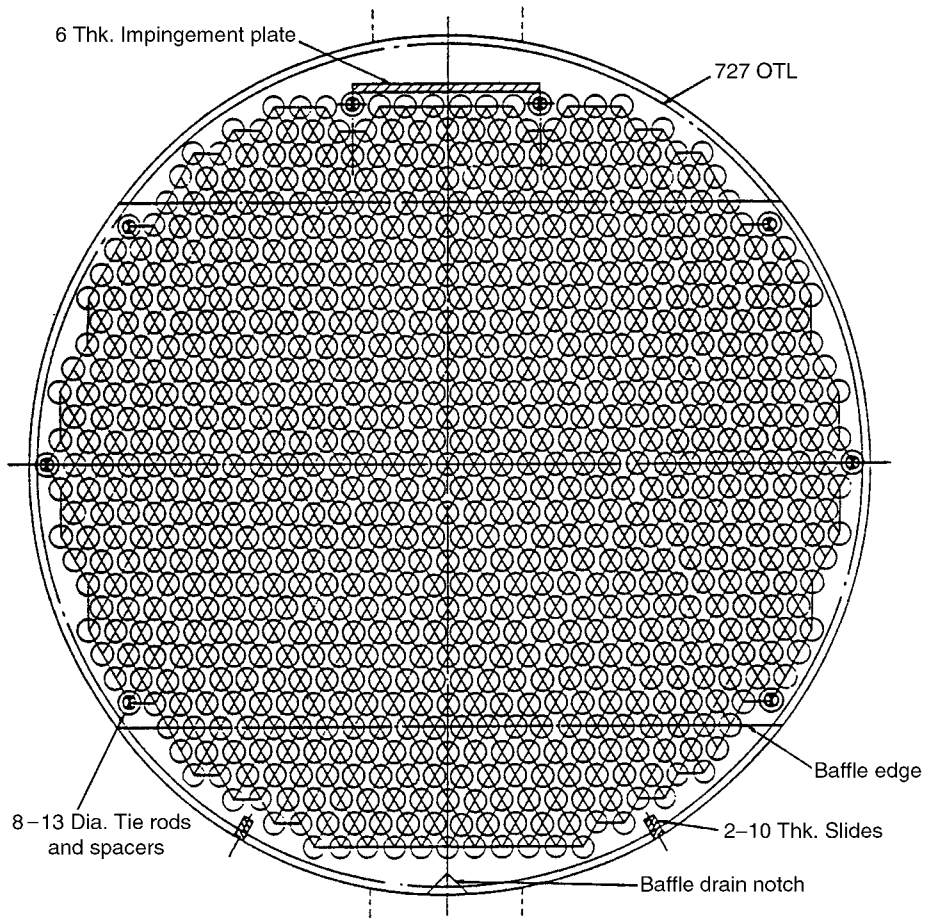


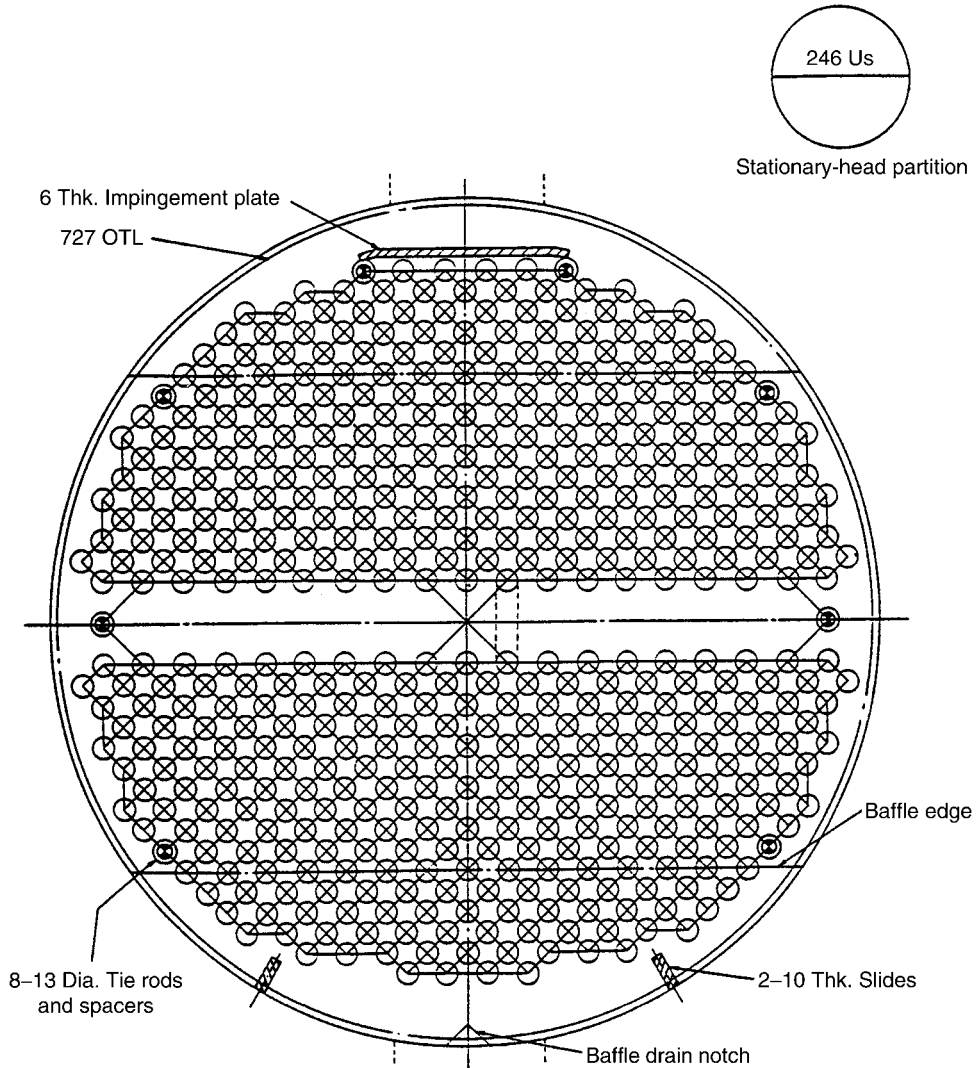
H TYPICAL SHELL AND TUBE HEAT EXCHANGER TUBE-SHEET LAYOUTS

- (a) Fixed tube-sheet exchanger
- (b) U-tube exchanger
- (c) Floating-head exchanger with split backing ring
- (d) Pull through floating-head exchanger

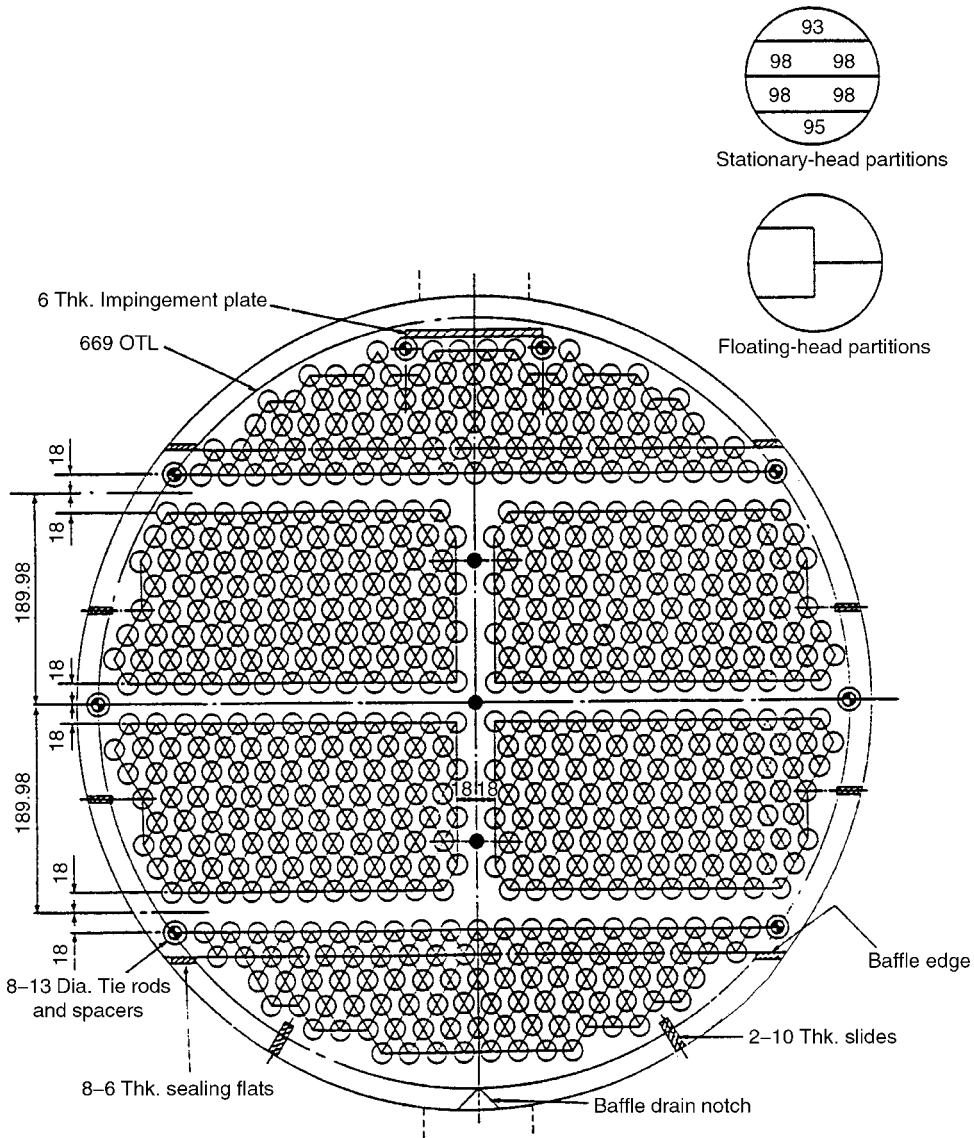
Reproduced with permission from *Heat Exchanger Design*, E. A. D. Saunders (Longman Group).



(a) Typical tube layout for a fixed tubesheet exchanger 740 i/Dia. shell, single pass, 780-tubes, 19.05 o/Dia. on 23.8125 pitch, 30° angle.

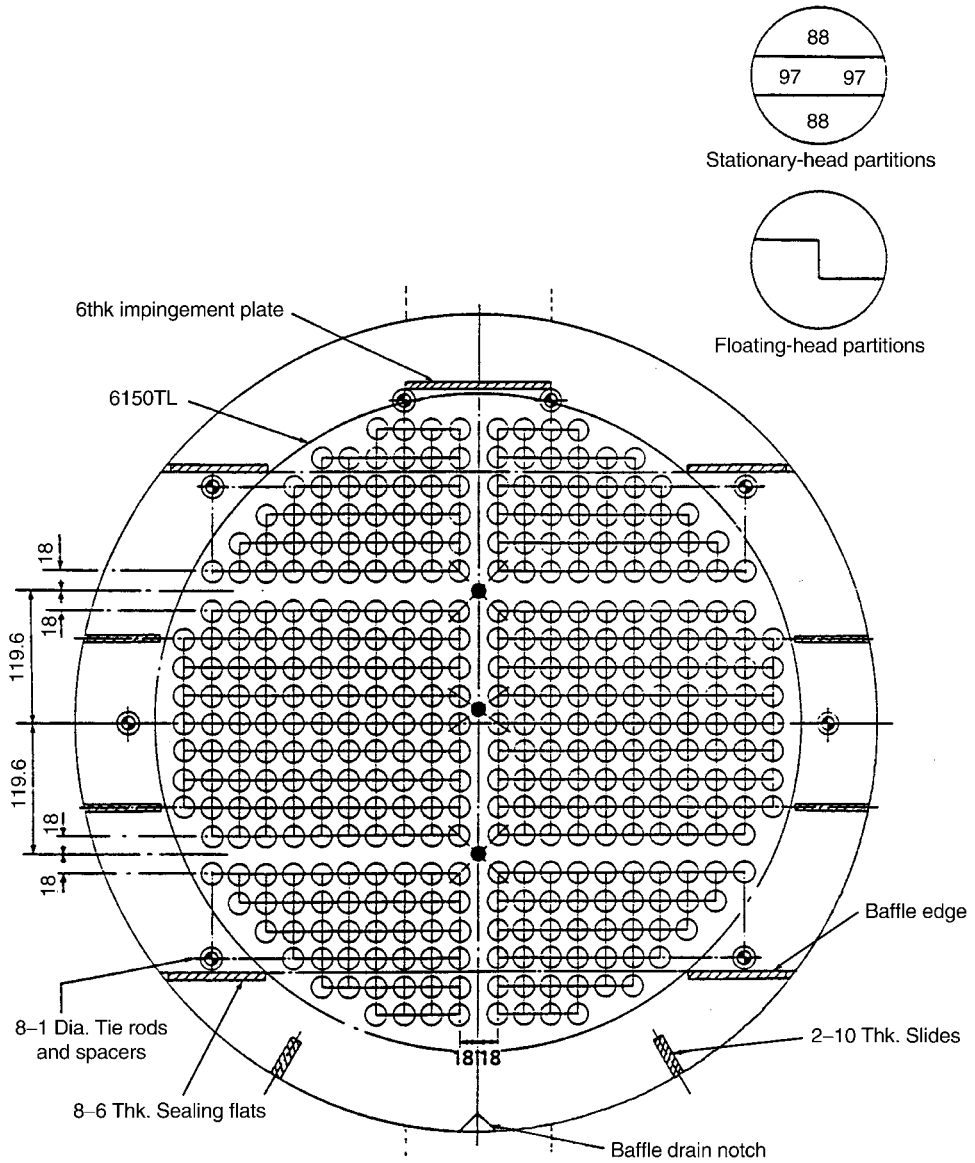


(b) Typical tube layout for a U-tube exchanger 740 i/Dia. shell, 2-pass, 246 U-tubes, 19.05 o/Dia. on 25.4 pitch, 45° angle.



(c) Typical tube layout for a split backing ring floating-head exchanger. 740 i/Dia. shell, 6-pass, 580 tubes, 19.05 o/Dia. on 25.4 pitch, 30° angle.

• Denotes 13 Dia. sealing bars.



(d) Typical tube layout for a pull-through floating-head exchanger. 740 i/Dia. shell, 4-pass, 370 tubes 19.05 o/Dia. on 25.4 pitch, 90° angle.

• Denotes 13 Dia. sealing bars.