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(54) STAIRLESS THREE-DIMENSIONAL MEMORY DEVICE AND METHOD OF MAKING THEREOF BY FORMING REPLACEMENT WORD LINES THROUGH MEMORY OPENINGS

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(57)ABSTRACT

A semiconductor structure includes an alternating stack of insulating layers and electrically conductive layers, memory openings vertically extending through the alternating stack, and memory opening fill structures located in the memory openings and including a respective vertical semiconductor channel and a respective vertical stack of memory cells. An integrated line-and-via structure is provided, which is a unitary structure including a metallic plate portion that is a portion of or laterally contacts an electrically conductive layer, and a metallic via portion that vertically extends through dielectric material plates that overlie the metallic plate portion.

