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Let  $I$  be a homogeneous height four Gorenstein ideal in  $R = k[x, y, z, w]$  generated in degree 2 and higher. Let  $I_t$  represent the ideal generated by the degree  $t$  elements in  $I$ . We construct the free resolution and the structure for a class of such ideals where  $I_2$  is of height one and generated by exactly three elements. (Received January 04, 2007)