WHAT IS CLAIMED IS:

1. A wafer processing method for processing a wafer with devices formed in regions on a side of a front surface (11a) of the wafer, the regions being defined by first scheduled division lines (13a) and second scheduled division lines (13b) that intersect the first scheduled division lines (13a), comprising:

a protective member bonding step of bonding a protective member (17) on the side of the front surface (11a) of the wafer,

first modified layers forming step (23a) of irradiating a laser beam (8), the laser beam (8) having transmissivity through the wafer, from a side of a back surface of the wafer (11b) along the first scheduled division lines (13a) and the second scheduled division lines (13b) with a focal point of the laser beam being set at a height leveled with a height of a first region located inside the wafer, the wafer being held by a chuck table (4) via the protective member (17), on the side of the front surface of the wafer (11a), whereby a lower first modified layer and a upper first modified layer are formed in the first region, wherein the formation of the upper first modified layer has a predetermined height higher than the predetermined height of the lower first modified layer in the first region,

second modified layers (23b) forming step of, after conducting the first modified layers forming step, irradiating the laser beam (8) from the side of the back surface of the wafer (11b) along the first scheduled division lines (13a) and the second scheduled division lines (13b) with the focal point of the laser beam being set at a height leveled with a height of a second region located inside the wafer on the side of the back surface of the wafer (11b) , whereby a lower second modified layer and a upper second modified layer are formed in the second region, wherein the formation of the upper second

modified layer has a predetermined height higher than the predetermined height of the lower second modified layer in the second region,

and cracks (27) are also formed extending from the front surface (11a) to the back surface (11b) of the wafer to divide the wafer along the first scheduled division lines (13a) and the second scheduled division lines (13b), and

a grinding step of, after conducting the second modified layers (23b) forming step, grinding the wafer on the side of the back surface of the wafer (11b) to thin the wafer to a predetermined thickness.

2. The wafer processing method according to claim 1, wherein,

in the first modified layers (23a) forming step, cracks (25a) are formed extending from the first modified layers (23a) to the front surface of the wafer (11a).

3. The wafer processing method according to claim 1, wherein,

in the first modified layers (23a) forming step, the first modified layers (23a) are formed so that the front surface of the wafer (11a) and the first modified layers (23a) have a distance greater than the predetermined thickness therebetween, and,

in the grinding step, the wafer is thinned to the predetermined thickness, whereby the first modified layers (23a) are removed.