CLAIMS

1. An annular support system pre-stressed with tensioned strings, comprising an annular support constructed in a foundation pit, and a plurality of tensioned strings extending along diameters of the annular support, any two adjacent ones of the tensioned strings being spaced apart by an equal angle, each of the tensioned strings being at least provided with a pre-stressing means at one intersection of the tensioned string or an extension thereof with the annular support.

2. The annular support system pre-stressed with tensioned strings of claim 1, wherein the pre-stressing means is a jack.

3. The annular support system pre-stressed with tensioned strings of claim 1, wherein the pre-stressing means is an electric motor connected to the tensioned string by a lead screw.

4. The annular support system pre-stressed with tensioned strings of claim 1, wherein the pre-stressing means is arranged inside or outside the annular support or so as to extend from the inside to the outside of the annular support.

5. The annular support system pre-stressed with tensioned strings of claim 1, wherein the tensioned strings are stranded steel cables, steel tubes, steel bars, or a combination thereof.

6. The annular support system pre-stressed with tensioned strings of claim 1, wherein the angle between any two adjacent ones of the tensioned strings is acute.

7. The annular support system pre-stressed with tensioned strings of claim 1, wherein the tensioned strings are arranged along radial directions of the annular support in multiple layers.

8. The annular support system pre-stressed with tensioned strings of claim 1, wherein the annular support is on-site cast with concrete, or formed by putting together

preformed concrete parts, or formed by putting together steel parts.

9. The annular support system pre-stressed with tensioned strings of claim 1, wherein the tensioned strings extend through the annular support or not.

10. A deformation control method of the annular support system pre-stressed with tensioned strings of any one of claims 1 to 9, in which when deformation of the foundation pit in one direction or an opposite direction occurs to cause a deformation of the annular support in the same direction, a pre-stressing force exerted on the annular support is adjusted by using a pre-stressing means associated with a tensioned string perpendicular to the direction of deformation, so that the deformation of the annular support is controlled.