4. The ground improvement method according to any one of claims 1 to 3, wherein water is injected from the screw rod when the screw rod is caused to penetrate into the ground.

5. The ground improvement method according to claim 4, wherein an amount of the injected water approximates an amount of water obtained from a liquid limit of an improvement target ground.

~~6. A construction control system in a ground improvement method which is applied on carrying out the ground improvement method of: causing a screw rod, a tip portion of which has agitation blades, to penetrate into a ground; injecting a ground improvement material into the ground via the screw rod; withdrawing the screw rod while agitating and mixing the ground improvement material with soil by rotation of the agitation blades; and removing the soil, equivalent to an injected volume of the ground improvement material, from the ground by the screw rod, and which detects and monitors a depth, rotation number, penetration speed, and withdrawal speed of the screw rod and the injected volume of the ground improvement material,~~

~~wherein the system:~~

~~uses a rate of the injected volume of the ground improvement material slurry with respect to an improvement ground as a ground improvement material admixture rate;~~

~~sets a soil removal coefficient from a relation between the ground improvement material admixture rate previously obtained for each ground condition and the soil removal coefficient based on the given ground improvement material admixture rate; and~~

~~computes an estimated soil removal volume caused by the screw rod based on~~

the set soil removal coefficient and the rotation number and monitors the estimated soil removal volume as a control item.

7. The construction control system according to claim 6, wherein the system is configured to compare the estimated soil removal volume with the injected volume of the ground improvement material, and to determine whether construction is poor.

8. The construction control system according to claim 6 or 7, wherein the construction control system is applied on carrying out the ground improvement method of: causing the screw rod having the agitation blades to penetrate into the ground to a given depth while rotating the screw rod in a state where the ground improvement material is not injected; and withdrawing the screw rod while rotating the screw rod and injecting the ground improvement material from the screw rod to agitate and mix the ground with the ground improvement material using the agitation blades.

9. The construction control system according to claim 8, wherein, in the ground improvement method of removing the soil equivalent to the injected volume of the ground improvement material from the ground by the screw rod, the construction control system is applied on carrying out the ground improvement method of: causing the screw rod, the tip portion of which has the agitation blades, to penetrate into the ground while removing the soil equivalent to a plunged mixing tool volume; when the tip portion approaches a deepest point of a ground improvement range, further causing the screw rod to penetrate while injecting the ground improvement material into the ground from a lower injection outlet formed in the tip of the screw rod; and when a most tip of the screw rod arrives at the deepest point of the ground improvement range, withdrawing the

screw rod while injecting the ground improvement material into the ground from an upper injection outlet formed above the agitation blades to agitate and mix the ground with the ground improvement material using the agitation blades.

10. The construction control system according to claim 6 or 7, wherein the system is applied when the ground improvement method set forth in any one of claims 1 to 3 is performed.