CLAIMS

Claim 1. A marker system, comprising:

a plurality of types of magnetic markers having different ratios of height to a size of a cross-section, the plurality of types of the magnetic markers including at least a sheet magnetic marker disposed on a surface of a road, or a columnar magnetic marker inserted in the road so as to be detectable by a magnetic sensor of a vehicle and used for vehicle-side drive assist control for assisting driving, wherein

each of the plurality of types of the magnetic markers includes a magnet that contains a magnetic powder that is a powder of a magnetic material, and

each of the different ratios of the magnetic markers is changed according to either a thickness of an asphalt layer constituting a road surface or traffic volume.

Claim 2. The marker system according to claim 1, wherein the magnetic marker is a magnet having a magnetic flux density of 45 mT or lower of a surface thereof.

Claim 3. The marker system according to claim 1, wherein the magnetic powder is a magnetic powder of iron oxide.

Claim 4. The marker system according to claim 1, wherein the magnet is a molded article having the magnetic powder dispersed in a polymer material constituting a base material.

Claim 5. The marker system according to claim 3, wherein the magnet is a molded article having the magnetic powder dispersed in a polymer material constituting a base material.

Claim 6. The marker system according to claim 4, wherein the polymer material is asphalt.

Claim 7. The marker system according to claim 5, wherein the polymer material is asphalt.

Claim 8. The marker system according to claim 1, wherein the magnetic marker is a columnar magnet measuring 50 mm or smaller in diameter.

Claim 9. The marker system according to claim 1, wherein the magnet is provided with a retaining structure for preventing the magnetic marker from being removed in a pull-out direction when accommodated in a hole.

Claim 10. The marker system according to claim 2, wherein the magnet is provided with a retaining structure for preventing the magnetic marker from being removed in a pull-out direction when accommodated in a hole.

Claim 11. The marker system according to claim 1, wherein the magnetic marker has an outer circumferential surface all or a part of which is formed by a protective layer including at least fiber.

Claim 12. The marker system according to claim 1, wherein the magnet holds an information providing part that provides a vehicle side with information by radio communication.

Claim 13. The marker system according to claim 12, wherein the information providing part provides the vehicle side with height-indicating information by radio communication.

Claim 14. The marker system according to claim 1, wherein the columnar magnetic marker is laid in a state of being accommodated in a hole bored in a road surface.

Claim 15. The marker system according to claim 14, wherein the columnar magnetic marker is accommodated in the hole in a state of being recessed from the road surface, and a lid is fitted in the hole.

Claim 16. The marker system according to claim 15, wherein the lid is a lid made of a paving material.

Claim 17. The marker system according to claim 15, wherein the lid is a lid made of metal or resin and is fitted in the hole so as to serve as a mark for a laying place of the magnetic marker.

Claim 18. A marker system, comprising:

a plurality of types of magnetic markers, including at least a sheet magnetic marker disposed on a surface of a road, or a columnar magnetic marker inserted in the road, so as to be detectable by a magnetic sensor of a vehicle and used for vehicle-side drive assist control for assisting driving, wherein

each of the plurality of types of the magnetic markers includes a magnet that contains a magnetic powder that is a powder of a magnetic material, and

the plurality of types of the magnetic markers are combined so as to be different in ratio of height to a size of a cross-section and in magnetic flux density of a surface thereof and so as to be equal in magnetic flux density at an upper-limit height in a possible range of heights of attachment of the magnetic sensor in the vehicle.

Claim 19. A marker system, comprising:

a plurality of types of magnetic markers, including at least a sheet magnetic marker disposed on a surface of a road and a columnar magnetic marker inserted in the road, so as to be detectable by a magnetic sensor of a vehicle and used for vehicle-side drive assist control for assisting driving, wherein

the sheet magnetic marker includes a magnet formed into a sheet shape and containing a magnetic powder that is a powder of a magnetic material,

the columnar magnetic marker includes a magnet molded into a columnar shape and containing a magnetic powder that is a powder of a magnetic material,

the sheet magnetic marker is disposed on the surface of the road of a detour temporarily set to avoid entry of the vehicle into a region into which entry is temporarily restricted or a guidepath temporarily set so as to guide the vehicle, and

the columnar magnetic marker is permanently inserted in the road.

Claim 20. The marker system according to claim 19, wherein the sheet magnetic marker that is disposed on the surface of the road of the detour or guidepath temporarily set and the columnar magnetic marker that is permanently inserted in the road have different polarities so as to be distinguishable on a vehicle side.