

LC600200 INSTALL SURVEY MONUMENTS (LCDOT) For use on LCDOT let projects only - do not include in IDOT let projects. Delete this note from the Contract Specifications.

Effective: January 1, 2007

Revised: May 6, 2022

Description: This work shall consist of installing survey monument(s) at the location(s) shown on the plans.

Materials: The Lake County Division of Transportation will supply the survey monument(s). The Contractor shall supply all the materials necessary to install the monument(s).

General: After the final surface course has been placed the Engineer will install four Mag™ nails for each point to be monumented. The Contractor shall use the following procedure to install the survey monuments.

1. At each monument location, the Engineer shall install four Mag™ nails in the surface. Each nail shall be one foot from the center and in a direct line with the opposite nail to be used for setting the new monument.
2. The Contractor shall use a hammer drill mounted with a 1¼" diameter masonry bit, to drill a hole 4½" deep, centered within the four Mag™ nails.
3. The Contractor shall use a drilling machine mounted with a four inch diamond core bit, to cut a hole, ¾" deep, centered on the initial hole. The Contractor shall chisel out the hole to a level depth of ¾".
4. The Contractor shall remove debris from the hole and insure that it is dry before applying the epoxy adhesive.
5. The Contractor shall fill the hole with an epoxy adhesive. The adhesive shall be Mark-29.9, a two-component epoxy adhesive, manufactured by Poly-Carb, Inc., or approved equal. Equivalent adhesives shall meet the requirements of ASTM Specification C881, Type IV, Grade 3 for temperatures at or above 50°F or AASHTO Specification M237-90, Table 2 Type III for the two component, epoxy adhesive if the temperature is between 31°F and 50°F. Equivalent adhesives shall be approved by the Engineer before installation.
6. The Contractor shall place the new monument in the center of the hole. Set the monument so that the center of the legend top is ⅜" below the pavement surface. Aggregate can be used to adjust the monument elevation to obtain the correct depth.

7. The Contractor shall use the four Mag™ nails and a string line or 1/8" chalk line to center the monument in the hole to the nearest 0.005 foot. This can be accomplished by drawing the string across two diagonally opposite Mag™ nails.
8. Each monument shall be protected from traffic for a minimum of 90 minutes.
9. The Contractor shall notify the Engineer prior to installing the survey monuments. The Engineer shall be present during the installation process.

Pavement Marking Order of Operations:

- The centerline pavement markings will be laid out.
- All survey monuments to be installed and or remain in place shall be located.
- Recessed Pavement Markers will be installed.
- The Centerline Rumble Strip will be constructed.
- At centerline survey monuments a 10' gap (5' either side of the monument) in the rumble strip shall be provided.
- The Spray Thermoplastic centerline markings will be placed.

Basis of Payment: This work will be paid for at the contract unit price per each for INSTALL SURVEY MONUMENTS. *The unit price shall include all labor, equipment and materials required to complete the monument installation.*