

Generally, slope stakes shall be set by the Contractor as an initial part of the construction operations on the project.

- (i) **Right of way and boundary stakeout affecting property ownership:** The right of way stakes will be placed at a minimum of 100-foot intervals on each side of the roadway or as directed by the Engineer and the stakes will be marked with both the station and offset back to centerline. All final boundary stakeout will be performed by the Department survey party.
- (j) **Locating and setting right-of-way monuments:** All location and final right of way monumentation will be performed by the Department in accordance Section 105.13.

517.05—Minimum Plan (M) projects

The following specific requirements shall apply:

- (a) **Digital Terrain Model (DTM) and construction cross-sections:** “M” projects are based on plan quantities; therefore DTM and construction cross-sections are not required.

Should the Engineer determine at any time that an actual measurement is warranted, the Department will make the necessary measurement in the field.
- (b) **Borrow Pits:** All borrow pit DTM’s, originals and finals, will be secured by the Department. The Contractor is encouraged to also secure DTMs or cross-sections of borrow areas. A claim of discrepancy in borrow volume will not be considered by the Engineer unless survey data was obtained and submitted by the Contractor to substantiate the claim.
- (c) **Horizontal and vertical control for bridges:** These stakeouts require certified plats. Certified plats, field notes, coordinates and computations shall be furnished to the Engineer by the Contractor in accordance with the requirements of Sample Figures 2 and 3 as shown in the Department’s Survey Manual prior to the Contractor beginning work on these structures.
- (d) **Horizontal and vertical controls for all box culverts, all pipe culvert installations (including single and multiple line installations) with a total hydraulic opening equivalent to 12.6 square feet and larger, and for all closed systems such as storm sewers, and sanitary sewers regardless of size:** These stakeouts are deemed critical and require certified plats. Exceptions may be granted by the Engineer for simple closed systems by requiring stake out sketches. The Contractor shall stake all such installations. Certified Plats for these stakeouts shall be in accordance with the requirements of Sample Figure 1 as shown in the Department’s Survey Manual and shall be submitted to the Engineer prior to the Contractor beginning work on these culvert structures. The notes, coordinates, or computations used to support the platted information shall be provided by the Contractor to the Engineer with the certified plat.
- (e) **Horizontal and vertical control for pipe culvert installations (including single and multiple line installations) having a total hydraulic openings equivalent to 3.1 square feet and up to 12.5 square feet:** The Contractor shall be responsible for staking horizontal and vertical controls for pipe culvert installations having a total hydraulic opening equivalent to 3.1 square feet and up to 12.5 square feet. These stakeouts require sketches, but not certified