

SECTION 01 71 23
FIELD ENGINEERING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Requirements for construction surveying of project specific elements

PART 2 PRODUCTS

- A. Not Used.

PART 3 EXECUTION

3.01 CONSTRUCTION STAKING

A. Unless otherwise specified in the specific sections, Owner shall provide engineering surveys to establish reference points for construction as follows:

1. Sanitary Sewer and Storm Sewer: Staking will be furnished and set by the Engineer at 50 foot spacing (usually offset for construction) for the control of the underground construction herein described. Cuts to the proposed pipeline grade will be furnished by the Engineer. Manholes and catch basins will be staked with an offset and a witness with a cut to the lowest structure invert. Location staking shall be provided for service wyes for new construction. No staking will be provided for service wyes for reconstruction projects or where existing services are being connected to the new sewer line.
2. Watermain: The staking interval for watermain shall be 50 feet. Cuts to the proposed pipeline grade will be furnished by the Engineer. Location staking shall be provided for valves and fittings. Hydrants will be staked with an offset and a witness with a cut to the ground elevation at the hydrant.
3. Services: No staking will be provided for service line construction for reconstruction projects or where existing services are being connected to the new sewer line.
4. Street Grading and Top of Curb: A control line (usually offset from the curb line) with cuts and fills to proposed grade at 50 foot spacing on tangents, and 25 foot spacing on horizontal or vertical curves, shall be furnished and set on both sides for control of the construction herein described.
5. Concrete Paving: Control lines for paving forms or stringline control with cuts and fills to proposed finished grade at 25 or 50 foot stations shall be furnished and set by the Engineer for control of the concrete construction herein described. The offset and actual form or stringline locations shall be in accordance with the paver manufacturer's recommendations and the approved paving strategy as determined at the Preconstruction conference.
6. Site Grading: Centerline stakes, with cut or fill to finished grade will be provided at 50 foot spacing. Stakes with cut or fill to finished grade will be provided for; contours representing grade breaks at 100 foot spacing along the contour, contours representing the top and bottom of ponds at 100 foot spacing along the contour, and for building pad corners (usually offset from the actual corner).
7. Miscellaneous: Location stakes will be provided for silt fence locations at 100 foot spacing. Location stakes representing clearing and grubbing limits will be provided at 100 foot spacing.

- B. The Contractor shall give the Engineer sufficient notice, normally two working days, to provide staking for the orderly progress of the work and shall provide clear line of sight for all staking.
- C. The stakes are an integral part of the project and the Contractor shall protect and preserve all such stakes and marks, and may be charged with the expense of resetting all such stakes and marks destroyed or disturbed due to the Contractor's carelessness or negligence.
 - 1. Stakes that are destroyed due to vandalism, erosion or other incidents shall be re-staked by the Engineer, at the Contractor's expense.
- D. In the event of apparent or questionable errors or inconsistencies in such stakes set for control of line and/or grade, the Contractor shall promptly notify the Engineer of such error or inconsistency and shall not proceed with the work until such stake, grade, or mark shall have been verified or corrected by the Engineer.
- E. All other line and grade staking shall be the responsibility of the Contractor. The Contractor shall furnish sufficient equipment and personnel for determination of plan grades, cross sections, course thicknesses, etc. The survey cost of establishing stakes requested by the Contractor for the convenience of the Contractor, beyond those cited as basic project control, will be charged to the Contractor or withheld from the amounts due to the Contractor.
- F. Unless otherwise stated in the applicable section of the Specifications or waived by the Engineer, the Contractor shall provide Blue Tops prior to final paving for subgrade and aggregate base construction.

END OF SECTION