

Appendix 4-B
MDEQ Cross Section Guidance
(Modified by MDOT)

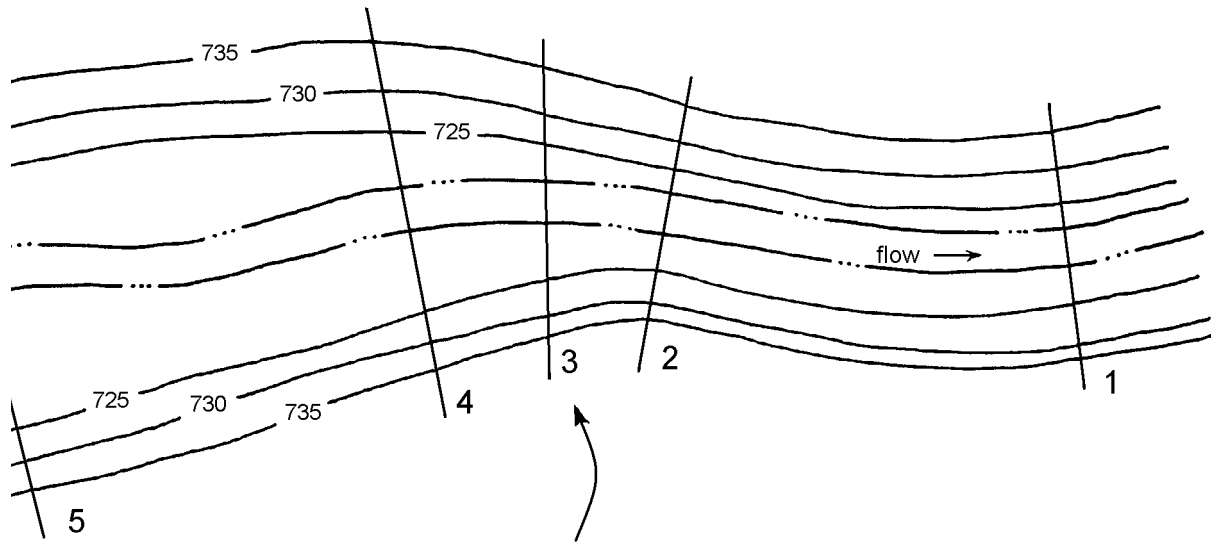
The computation of water surface profiles requires cross sections at representative locations throughout the river reach. When a river reach is fairly straight and uniform, cross sections may be taken at regular intervals. Cross sections should fully define transitional elements of a stream such as: the cross-sectional area increasing or decreasing, channel or overbank roughness changes, or marked breaks in bottom slope. When an abrupt change in cross section occurs, such as at bridges, dams, or other man-made or natural restrictions, several cross sections should be used to describe the change, regardless of the distance.

The number of and distance between cross sections varies with the size and slope of stream and the type of work being proposed at the crossing. Because this varies from site to site, all requests for hydraulic surveys must be made by the MDOT Hydraulics/Hydrology Unit.

Cross sections must be taken perpendicular to the direction of the estimated center of mass of the flood flow. In some instance, this direction may differ materially from that of the normal flow in the channel. Every effort should be made to obtain cross sections that accurately represent the river geometry at all stages.

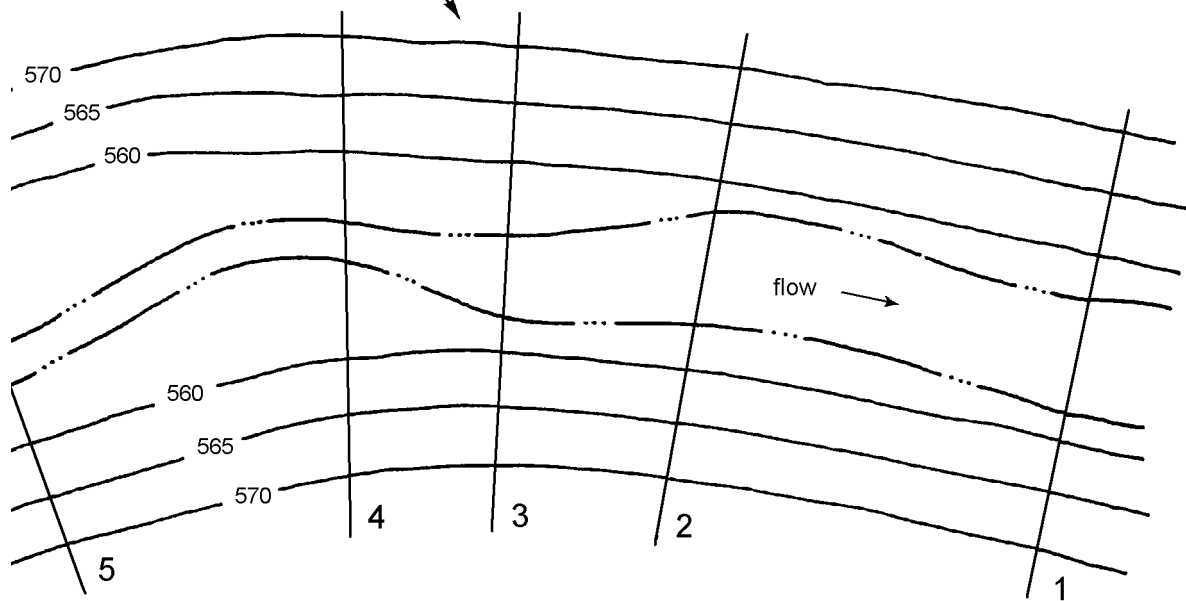
The number of points in each cross section varies with the size of stream. There must be a sufficient number of points to accurately represent the shape of the channel and overbanks. Points should be located at any changes in topography or vegetation.

CONTRACTION
of overbank
flow area

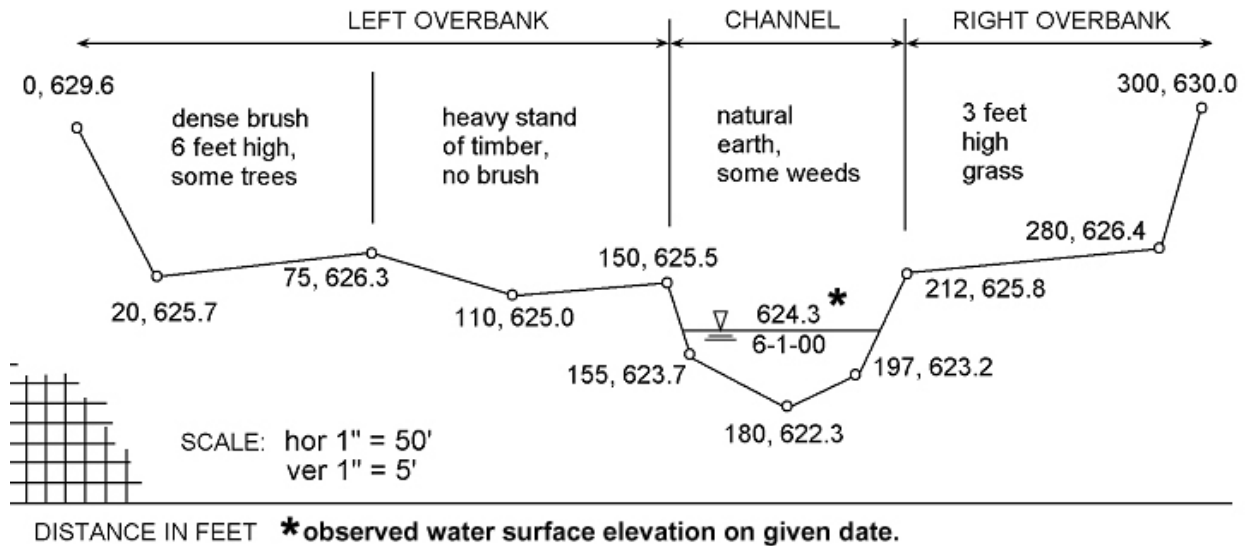


cross sections
spaced in
proportion
to abruptness
of change

EXPANSION
of channel



TYPICAL
PLOTTED
VALLEY
CROSS
SECTION



NOTE: Valley cross sections are located as previously described.

Each valley cross-section is plotted on grid paper at a reasonable scale and oriented so that the left and right overbanks are those viewed when looking downstream.

The distance and elevation are shown for each of the plotted points to facilitate the computation of flow areas.

A brief description of the channel material and overbank vegetation is given to aid in the selection of roughness coefficients.

The water surface elevation and date taken is shown. Any high water marks and date of occurrence should be included.