

Cross Section Spacing and Sheet Dimensions

The purpose of this section is to provide guidelines for the provision of cross sections in letting plans and electronic files. Cross sections for each corridor should be presented in order of sequential stationing in the letting plans. For guidelines on drawing cross sections from surfaces, refer to Section [21B-250](#). For guidelines on sheeting cross sections, refer to Section [21B-20](#). For guidelines on W, X, and Y sheets, refer to Section [1F-23](#).

Cross Section Working File Organization

Refer to Section [20B-71](#) for cross section file and model description guidance.

The designer is to organize and label the contents of each design cross section file in the following manner:

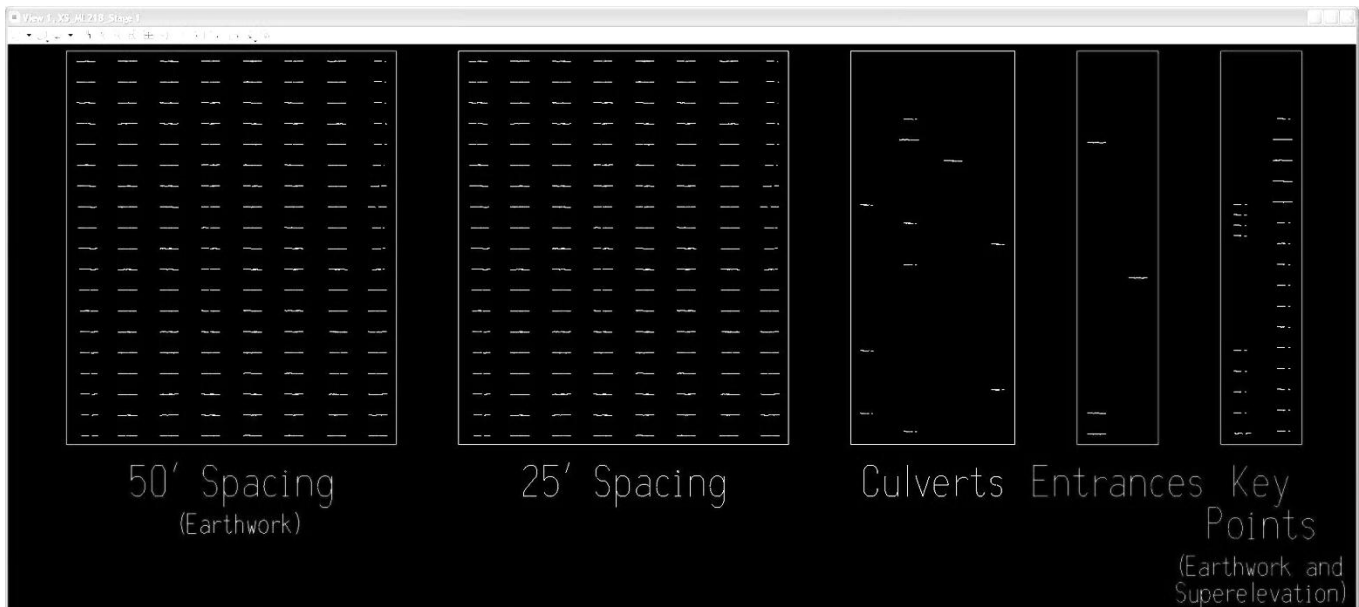


Figure 1: Cross Section File Organization.

It is suggested that the designer coordinate the color of the boxes surrounding the groups of cross sections, as described above, to coincide with the attributes of the pattern lines used to develop each group.

The cross sections drawn at 25' spacing are to be included in the design file regardless of the necessity to show them in the letting plan.

If the 25' spacing cross sections are not to be included in the letting plans (i.e. the corridor is rural) *select* the 25' spacing cross sections in MicroStation, then Navigate to *Edit > Group*. Once the cross sections have been grouped, the cross section sheeting process will be unable to recognize the grouped area as individual cross sections and will not sheet them.

Rural Corridors

Cross sections should be provided in the letting plans at 50' spacing and at all key points listed below for grading and grade/pave projects.

For paving projects, only areas containing grading are to be provided in the letting plans.

Urban Corridors

For the purpose of cross section spacing, urban corridors are defined as those residing within city limits that contain curb and gutter. Urban corridors also include transitional areas between rural and urban corridors, which may or may not be curbed, but are part of the project area. Cross sections should be provided in the letting plans at 25' spacing and at all key points listed below.

Multiple Construction Stage Corridors

Cross sections depicting each grading-related stage of construction that cannot be completed without disrupting traffic or drainage must be included in the letting plans and follow the guidelines in this section. Sheet cross sections for each required stage. Refer to Figure 2, below for an example.

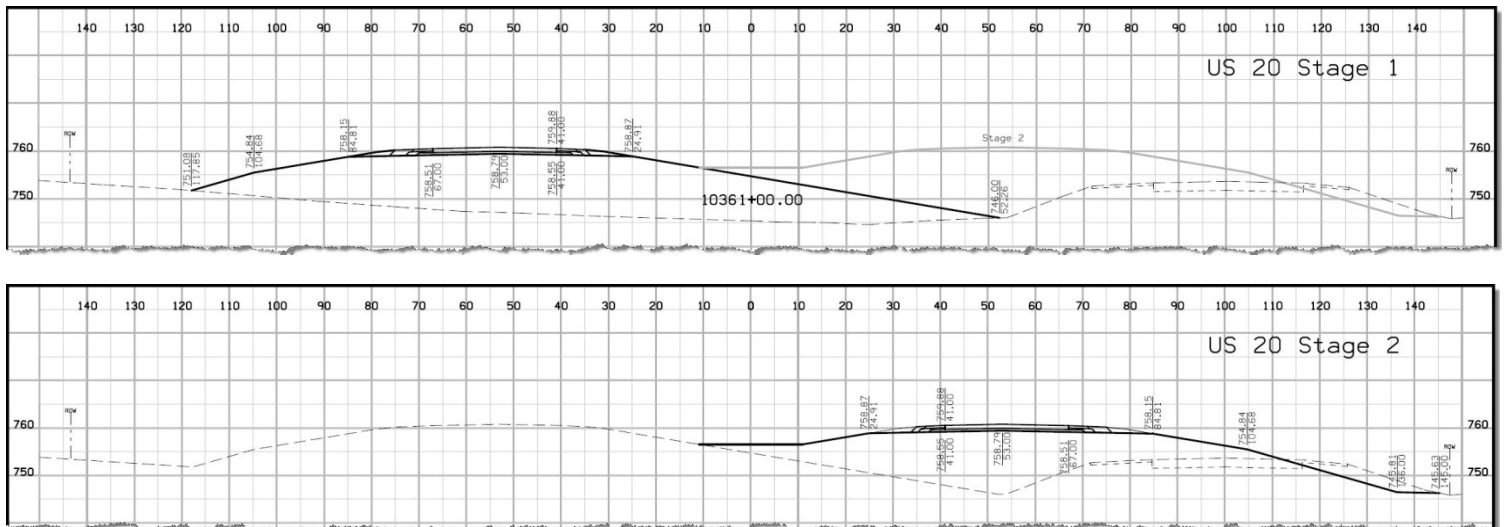


Figure 2: Multiple Construction Stage Sample

Key Points

At the following key points, cross sections should be provided:

- Begin and end of tapers
- Begin and end of returns
- Culverts
- Superelevation transition points
- Centerline of entrances
- Guardrail blister transition points

Skewed Cross Sections

Skewed cross sections may occur at culverts and at the centerline of entrances. Skewed sections should never be included in earthwork calculations. These sections must also be labeled "Skew XX° RT/LT Ahead".

Cross Section Sheet Dimensions

Cross section sheet files are available for the following sheet widths for roadways: 140-foot, 280-foot, and 560-foot. These sheets are approximately 5, 10, and 20 scale, respectively. 1400- and 2800-foot wide cross section sheets are also available, but are for the use of borrow design only. Cross section sheets are always displayed at a 1:1 horizontal to vertical ratio and show major gridlines at 30 equal intervals along the horizontal axis and at 20 equal intervals along the vertical axis.

For example, a 280-foot cross section sheet is approximately 10 scale and can fully display a cross section that is at most 280 feet in width. The sheet contains 30 equal intervals, each 10 feet in width, along the horizontal axis and 20 equal intervals, each 10 feet in width, along the vertical axis. Each block created by the intersection of major gridlines represents a square with dimensions of 10 feet by 10 feet. Refer to this [Sample Cross Section Sheet](#) for clarification.

The cross section sheet width should be selected based on the following criteria:

- The scale should be as large as possible to include the right-of-way limits.
- The scale should be such that the cross section elements and labels are clear and legible when printed.

Urban corridors use the following cross section sheet widths, in general:

140-foot—Two-lane to five-lane corridors

280-foot—Urban interstates and transitional areas

560-foot—Urban interstates (with very wide cross sectional width or dramatic fluctuations in relief)

Rural corridors use the following cross section sheet widths, in general:

140-foot—Granular side roads, two-lane rural corridors

280-foot—Divided roadways

560-foot—Divided roadways (with very wide cross sectional width or dramatic fluctuations in relief)

NOTE: Appropriate sheet widths may vary depending on terrain, right-of-way limits, etc.

Chronology of Changes to Design Manual Section:

001F-023a Cross Section Spacing and Sheet Dimensions

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New.