

DETAILING PRACTICES & PLAN PREPARATION

PURPOSE

The purpose of these standards is to enable the Bridge Section to produce consistent and effective plan sheets which will have uniform appearance and information. Engineers and detailers are responsible for ensuring that the criteria are implemented.

DRAWING ORIENTATION & LAYOUT CONTROL

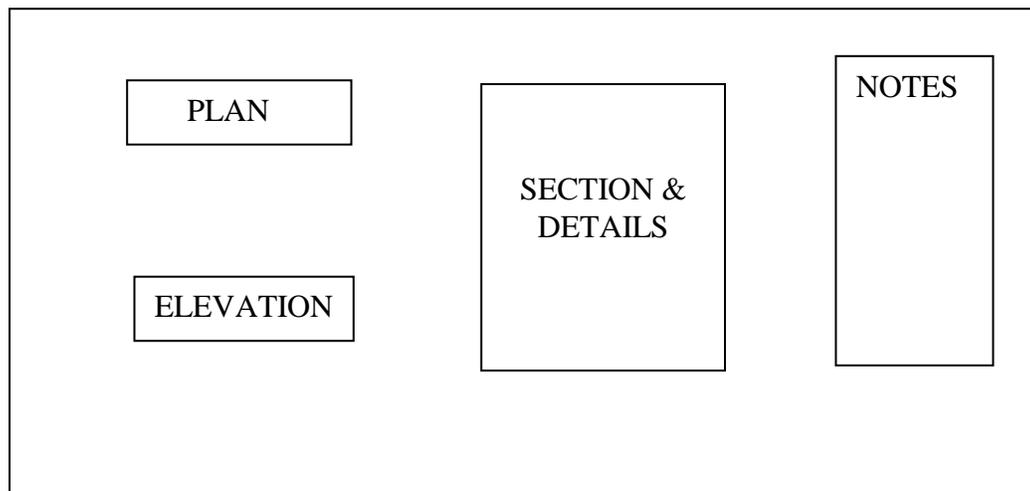
The standard sheet for bridge drawings is 34"x22" with the title block as shown on page B17.3.

Plastic lead or ink shall be used on mylar drafting film for making changes and signing drawings.

Drawings shall be carefully organized so the intent of the drawing can be easily read.

- North arrows shall be shown on Situation layout and Footing Layout sheets.
- Related details shall be grouped together in an orderly arrangement.
- The drawing should not be overcrowded with details.

The standard sheet configuration should be as follows:



PLAN ORGANIZATION

Plan sheets shall be assembled in the normal order of construction as follows:

- Situation and Layout
- Sheet Index, Quantities, & Vicinity Map
- Design and General Notes
- Foundation Investigation
- Stage Construction Details
- Footing Layout and Pile Details
- Abutment Details
- Wingwall Details
- Bent or Pier Details
- Framing Plan
- Girder Details
- Deck Typical Section
- Deck Details and Pour Sequence
- Bearing Details
- Expansion Joint Details
- Railing/Parapet Details
- Approach Slab Details
- Reinforcement Details

LETTERING & DIMENSIONING

Lettering shall follow the CADD standards shown in Article 17.4.

Underline all titles with a single line having the same weight as the lettering used with the scale noted beneath the line.

Lettering shall be oriented so as to be read from the bottom or right edge of the sheet.

A dimension shall be shown once on a drawing, unless repeating it is necessary for clarity. All dimensions shall be placed above the dimension line so that they may be read from the bottom or the right edge of the sheet.

Reinforcing bar clearances need not be specified unless different from the General Notes sheet.

When details or structural elements are complex, utilize two drawings; one for dimensions and the other for reinforcement details.

Dimensions 12" or more shall be shown in feet & inches unless the item dimensioned is conventionally designated in inches; e.g. 16"φ pipe.

Dimensions should be placed outside the view. However, in the interest of clarity and simplicity, it may be necessary to place them otherwise.

Breaks are allowable in lines that cross, provided that their intent is clear. Detail or object lines take precedence over dimension lines; dimension lines take precedence over note or information lines.

REINFORCEMENT CALL-OUT FORMAT

Rebar shall be noted as follows: 20 F1~#6 19 spaces @ 12" = 19'-0"

Rebar sets shall be noted as follows: 1 set W1~#8 9 spaces @ 6" = 4'-6"

Epoxy coated rebar shall be denoted as follows: 25 S1~# 6(E) 24 spaces @ 12" = 24'-0"

SCALE

An engineering scale shall be used for the Situation Layout sheet and may be used for framing plan sheets. An architectural scale shall be used for all detail sheets.

All Plan, Elevation, and Details should be drawn to a scale to be clearly represented. The use of "not to scale" details should be limited to a minimum and used only on very simple details.

When selecting a scale, it should be kept in mind that the drawing will be reduced. Generally, the minimum acceptable scale is as follows:

- Situation and Layout. 1" = 20'
- Section Details with rebar. 3/8" = 1'-0"
- Details for steel sections. 1/2" = 1'-0"
- Plan View without rebar. 1/4" = 1'-0"

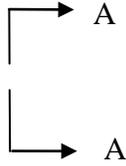
Section, details and views may be enlarged for clarity, but the number of different scales used on a sheet should be kept to a minimum.

SECTIONS, VIEWS, AND DETAILS

A Section cuts through the structure or object; a View is from the outside; a Detail shows part of a structural element in more detail and usually at a larger scale.

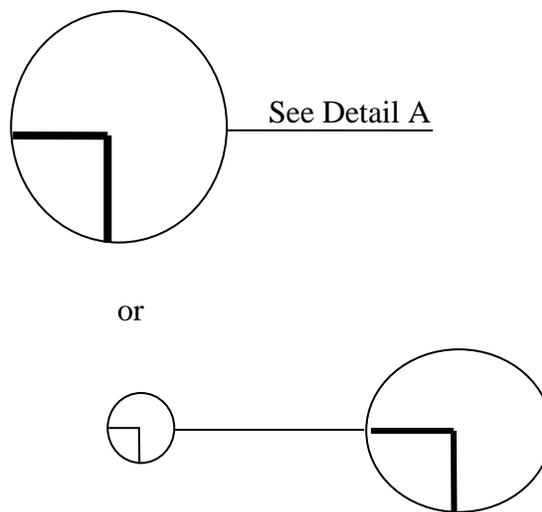
Care shall be taken to ensure that the orientation of a detail is identical to that of the plan, elevation, etc., from which it is taken.

Section or Views are noted by using an arrow with a letter as follows:



If the section can not be placed on the same sheet where it is taken, the following note should be added next to the section symbol; "For Section A-A see sheet #_".

Details are noted by using a bubble with a letter and a leader line to a bubble around the specific detail or view to be expanded for clarity as follows:



The letter designation for views and details shall begin with "A" on each sheet; e.g., Detail A, View A-A.

Each structural component (abutment, pier, etc.) shall be detailed separately as a general rule. If similar components are the same except for height, then the details can be shown on a single sheet using a table for the variable dimensions.

REVISIONS

The revision block shall be used to record revisions made after the plans have been signed by the Bridge Engineer.

Minor revisions shall be done using plastic lead or ink and erasing or crossing out the items to be changed. Major revisions may require the changes be done using the CADD and resigning the drawing.

Revisions shall be noted by a number in a triangle next to the change. A number corresponding to the change shall be placed in the triangle in the revision block, followed by the date, the initials of the person making the change, and a brief description of the changes made on the drawing.

FINAL PLANS

The completed drawings shall be stored in the vertical plan file and the index filled out to indicate which packet contains the drawings. Both the full size stamped mylars and half size plans for bidding with electronic signature shall be stored in the vertical file.

Revisions:

June 2006	Added new article.
July 2009	Revised order of sheets in Plan Organization