

CAD6 assignment – Main column

- In this assignment, generate the detail drawing of the main column of the structure (as shown below) in imperial unit.
- The beams are standard.
- Submit a 2D drawing of the column in a standard scale, as well as the BOM and the BOLT LIST.
- Symbols for welding and bolting should be added.
- A completed title block with a layout format (size A or B) is required.
- Dimension your drawing for this assignment.



Bottom



Middle





Top





such an equation the distance locating the group itself from some reference point, even though the distance may happen to be the same as the increment of spacing.

Elevation detail dimensions, known as *levels*, are normally furnished by a note on the drawing. When it is desirable to show the level or vertical distance above some established reference point (usually ground level), the value is given in inches (or millimeters) and placed above the level symbol, as shown in Fig. 25-1-15. A plus or minus precedes the value, indicating that the level specified is higher or lower than the reference point.

Another dimensioning practice is to enclose bolt and hole sizes in diamond-shaped frames, as shown in Fig. 25-1-15. This helps to differentiate the circular sizes from the linear dimensions. Bolt symbols are shown in Fig. 25-1-16.

The neatness, and hence the legibility, of shop drawings is enhanced by lining up notes and dimensions that have the same common purpose. Thus if the 5 in. cut instructions (Fig. 25-1-15) were required at both ends of the beam, they would be shown in the same elevation, even though the dimension lines were not drawn from end to end of the sketch. Attention paid to these features, resulting in an orderly and systematic presentation of the necessary information, does much to enhance the finished appearance of a shop drawing.

REFERENCES AND SOURCE MATERIAL

1. American Institute of Steel Construction.
2. Canadian Institute of Steel Construction.

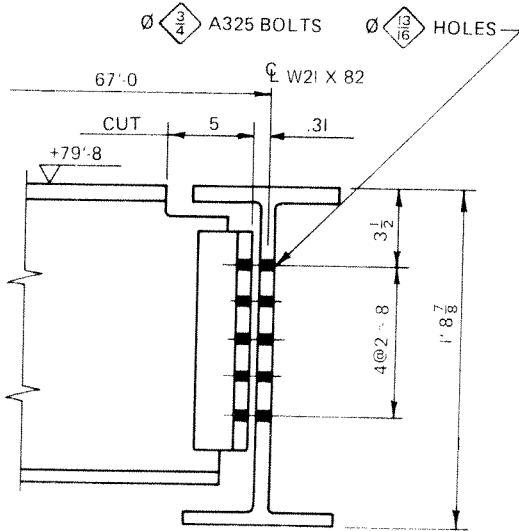


FIG. 25-1-15

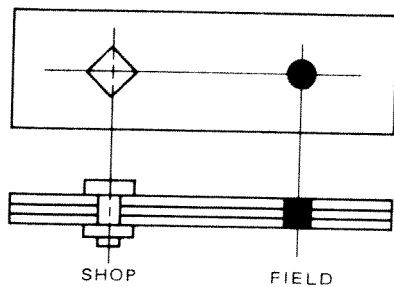


FIG. 25-1-16 Bolt symbols.

ASSIGNMENT

See Assignment 1 for Unit 25-1 on pages 852-853.

25-2 BEAMS

As a rule, each beam in a system of floor or roof framing makes a convenient erection unit. Hence, the required shop fabrication for each beam is shown on a shop drawing, which provides complete information for that beam. Such a drawing seldom pictures any part of the adjacent members to which this beam will later be joined in the field. However, in the preparation of the beam detail drawing, all the features that have a bearing on the later installation of the beam into its proper location in the frame, as indicated on the design drawing, must be investigated.

The location of the open holes to be provided in the beam for its field connection must match the location of similar holes in the supporting members. Proper clearances must be provided so that the beam can be swung into position after its supporting members have been erected. Any possible interference must be eliminated by cutting away the excess material.

The various fabricating-shop drafting rooms do not always agree among themselves on a standard way of making shop drawings. In this text, details will be presented in a manner that all shops could use.

The two principal kinds of beam connections most often used are the framed and the seated types. In the framed type, the beam is connected by means of fittings (usually a pair of short angles) attached to its web. With seated connections, the end of the beam rests on a ledge, or seat, which receives the load from the beam just as if the end of the beam rested upon a wall (Fig. 25-2-1).

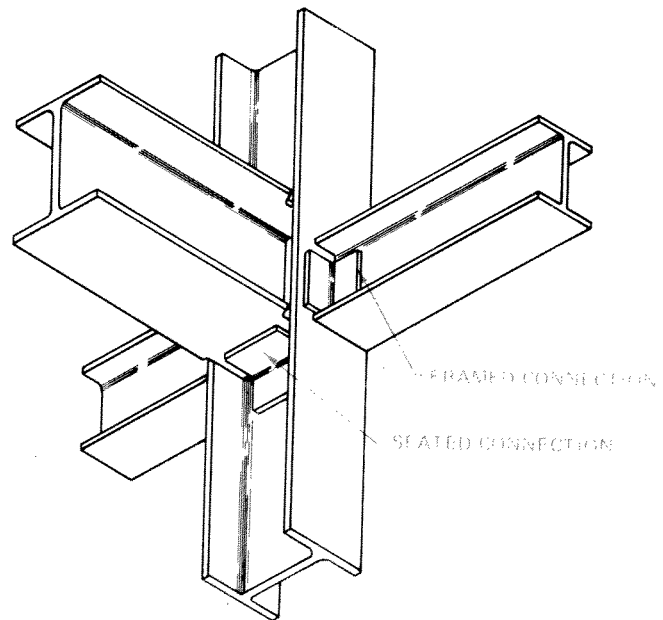
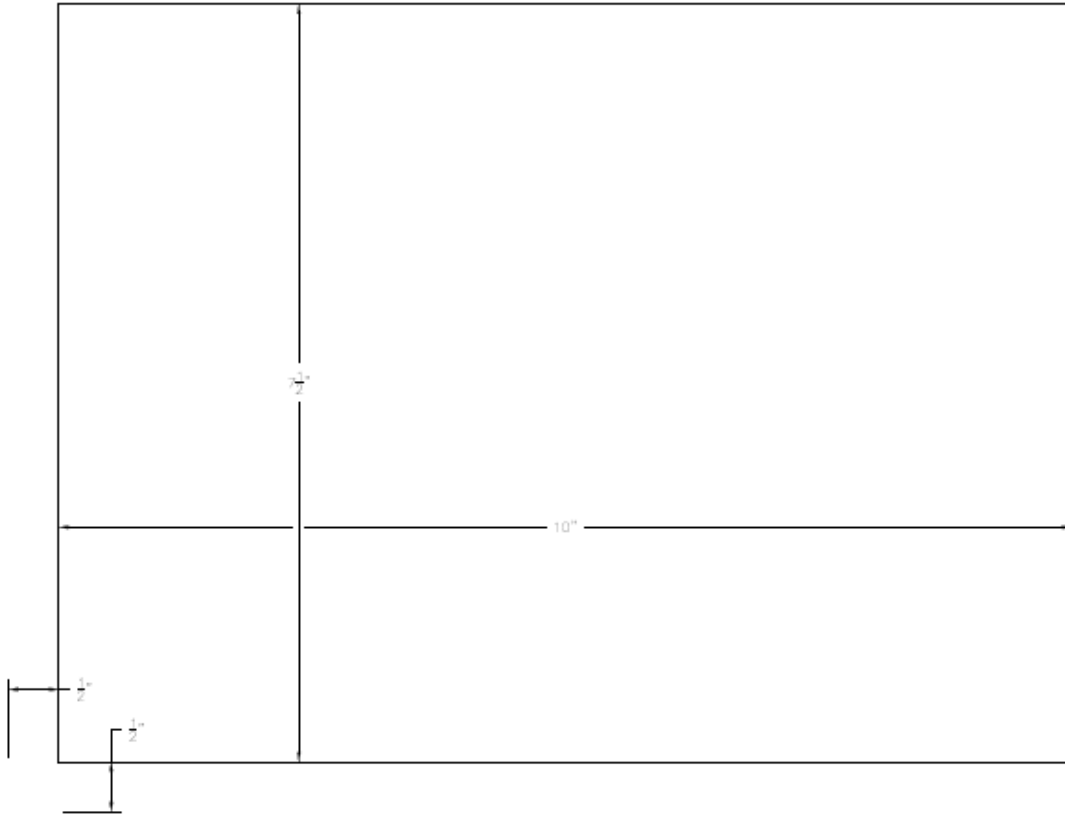
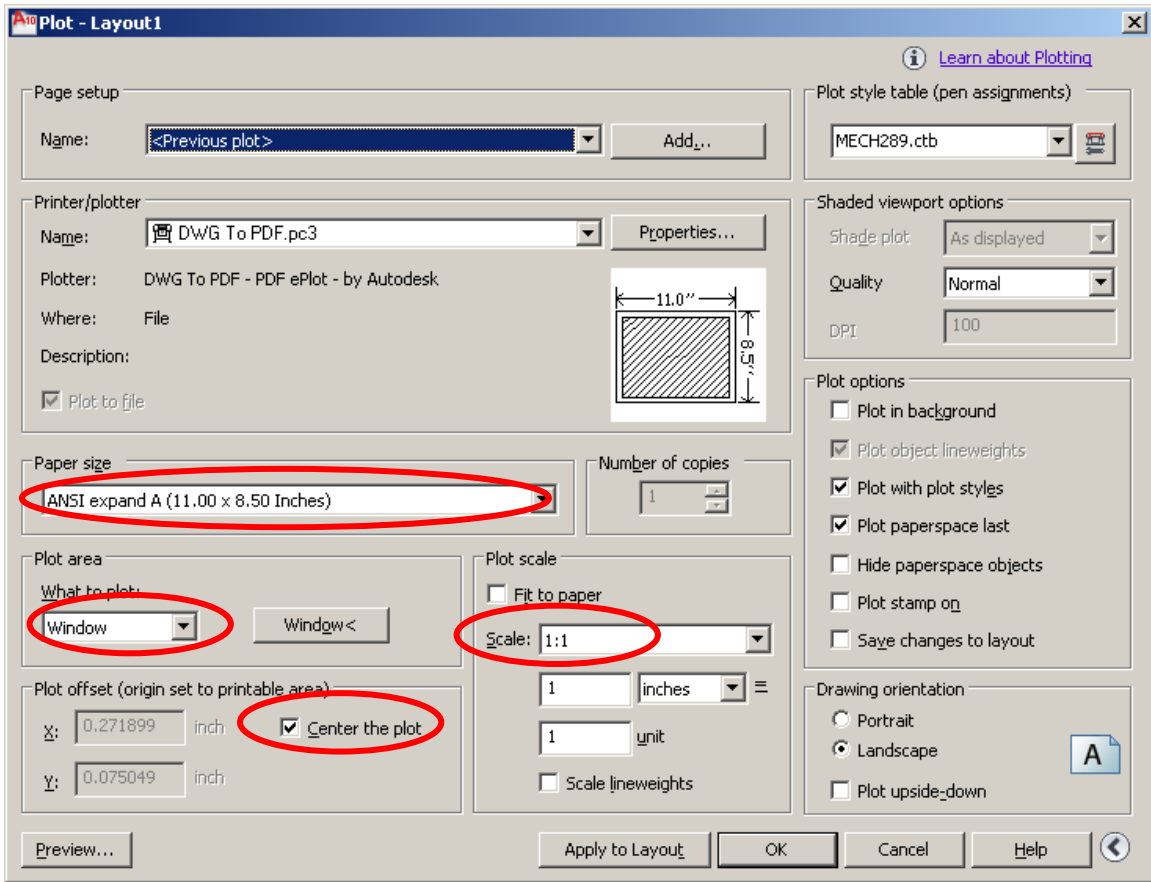


FIG. 25-2-1 Beam-to-column connections.

Define a block for Size A, Dimension (10" x 7.5") and distance from insertion point (0.5" x 0.5").

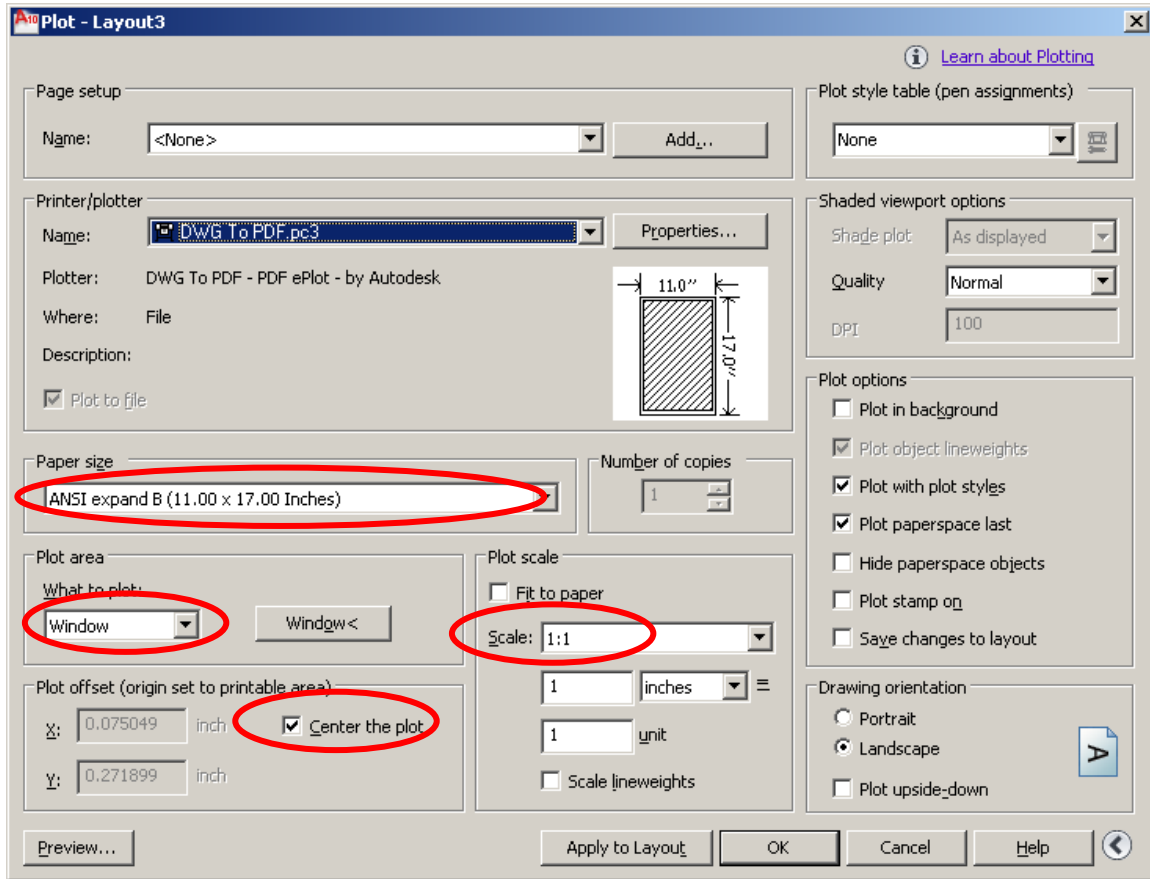


Adjust, plot parameters:



That results in EXAMPLE-1.pdf

For size B, define the block as mentioned in “Create layout.pdf”, Dimension (16” x 10”) and distance from insertion point (0.5” x 0.5”).



That results in EXAMPLE-2.pdf