Exercise no 7

New commands and operations: PLOT, MODEL SPACE, PAPER SPACE, PROJECTION

Steal beam. Welded connection.

Name	Color	Line	Width
visible	white	continuous	0.35
axes	violet	ACAD_ISO10W100	0.15
hidden	blue	ACAD_ISO02W100	0.25
dimensions	green	continuous	0.15

7.1. Open new file, set up layers

Start AutoCAD and load the template file acadiso.dwt. Save the file using filename **login_ex5**. Using LAYER command open layer properties and create layers as in the table.

7.2. Draw the cross section of an I beam

Set current layer to "axes". Draw two perpendicular axes intersecting at point 1500,1000 (horizontal length 120, vertical length 350). Set current layer to "visible". Using LINE command draw a quarter of the cross section as in the figure at right. Use FILLET command, setting the radius R=24, to round off the internal corner of I beam. Mirror the drawn segment twice: along the horizontal axis, and along the vertical axis.

7.3. Draw the side and bottom views of the I beam

Use the LINE command to draw the side view of the I beam according to the picture on the back of the card, remembering to choose the appropriate layers. Use the LINE command again to draw the bottom view of the I beam. Apply the OFFSET command to draw the covering plate. The OFFSET command with options THROUGH and LAYER may be useful. CHAMFER plate corners according to the drawing. Transfer the lines drawn to correct layers.

7.4. Prepare the printout

Switch to PAPER SPACE. Use the PAGE SETUP MANAGER to set the proper printing device (PAGESETAP). Set the paper size to A4 and printout style to MONOCHROME.CTB. Apply scale 1:10 to the viewport in paper space. On PAPER insert frame and table block from the file named "A4_EN_L". Verify the attributes in the table. Check the picture using Plot Preview.

7.5. Create a viewport with detail

On the PAPER in PAPER SPACE draw a circle. Using -VPORTS with option OBJECT create new viewport from the circle. Apply scale 1:2, set the view to the bottom of the I-section, as shown on the back of the page.

7.6. Adjusting the line scale

Using LINETYPE COMMAND open LINETYPE MENAGER. For dashed line select "show details" and change „Global scale factor" into 0.4 (changing the settings for one line type will change the settings for all other discontinuous lines). Select "Use paper space units for scaling. Close manager. Use the REGEN command in each viewport.

7.7. Dimension the drawing

Go to the "Model" tab. Set up current layer to "dimensions". The dimension scale can be set in two ways:

1. Annotative dimensions: Set up current dimension style to: "Annotative". Set up the scale of current view to 1:10. Draw dimensions visible in the large viewport. Change the scale of current view to 1:2. Draw dimensions visible in the circular viewport. In properties assign two scales to dimensions visible in both viewports.

2. Manual settings with freezing of layers in viewports: In the dimension style manager, based on ISO-25, create a new style named "dimension10". On the tab FIT set up OVERALL SCALE OF 10. Using this style draw dimensions visible in large viewport. Define new style named "dimension2" with OVERALL SCALE OF 2. Using new style draw dimensions visible in the circular viewport (dimensions visible in both viewports must be drawn twice). Go to the tab "Layout1". Double click in the large viewport. Expand the list of layers and freeze the layer "dimension2" in current viewport. Similarly, freeze the layer "dimension10" in the circular viewport.

7.8. Print the drawing

Hide the viewport frame (you may transfer it to the "defpoints" layer). Preview plot. If the preview is correct save it to file and print to the PDF file using the PRINT command.

R24

8

20

19

600

20

220

200

100

100

500
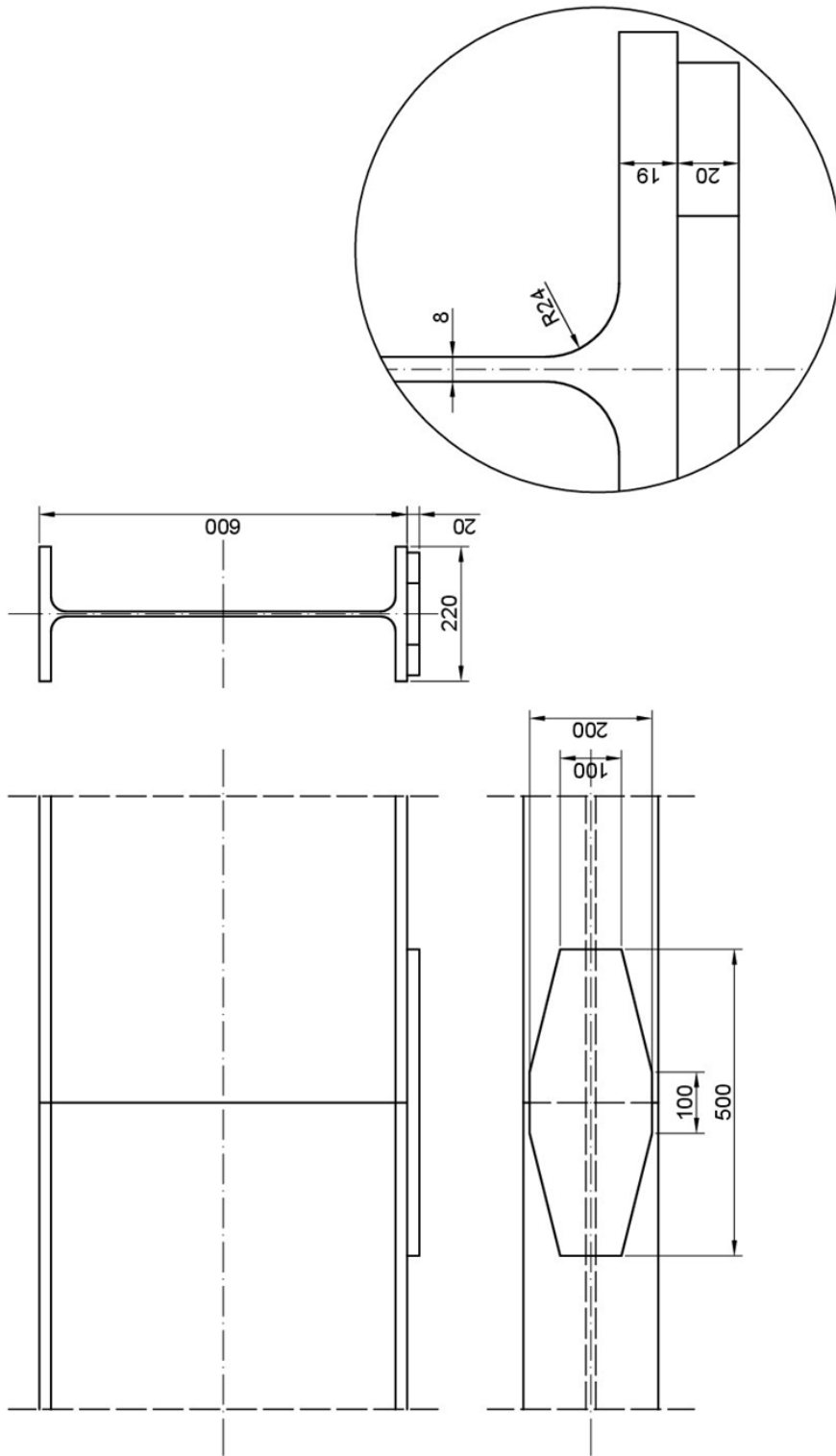
Des.	Jan Kowalski	Date:	Signature:	Project name:	Scale:	1:10,1:2
Draw.	Jan Kowalski	Date:	Signature:	Main beam	Drawing no.	001
Ver.	dr inż. Anna Nowak	Date:	Signature	Contents: Welded connection	File name: drawing1	
					Creation date: 26.7.2018 9:21:37 PM	File size: 55095