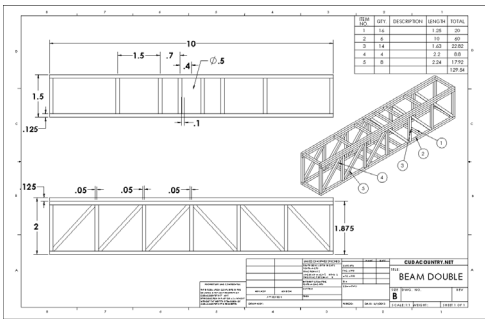
Chapter 12

Beam Drawing



A. Insert Views.

Step 1. Click File Menu > New, click **Drawing** and OK.

Step 2. Click **Model View** 

on the View Layout toolbar.

Step 3. Click **Browse** in the Property Manager.

Step 4. Select your **Beam Double** part file and click Open.

Step 5. In the Property Manager,
under Reference Configuration, **Fig. 1**
select **BEAM JOINTS** <As Machined>
under Orientation
click **Right** 
check **Preview**
under Scale
select **Use custom scale**
set scale **1:1**, **Fig. 1**.

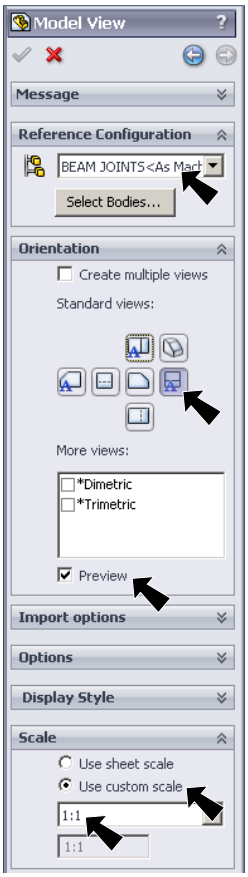


Fig. 1

Step 6. Move the cursor into the drawing and click to place the Right Side view as shown in **Fig. 2**.

Step 7. **Move the cursor straight up** and click to place the Top view as shown in **Fig. 3**.

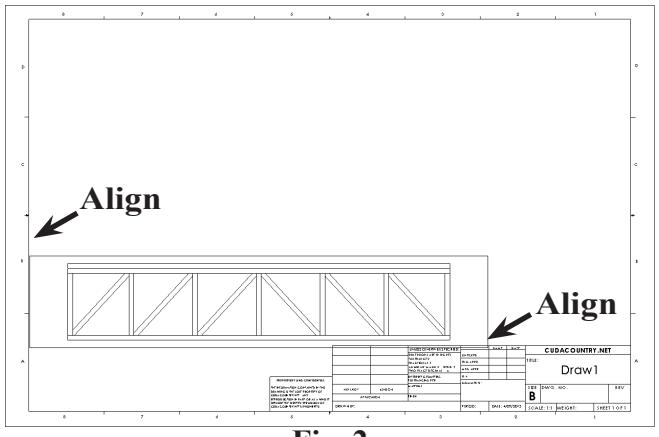


Fig. 2

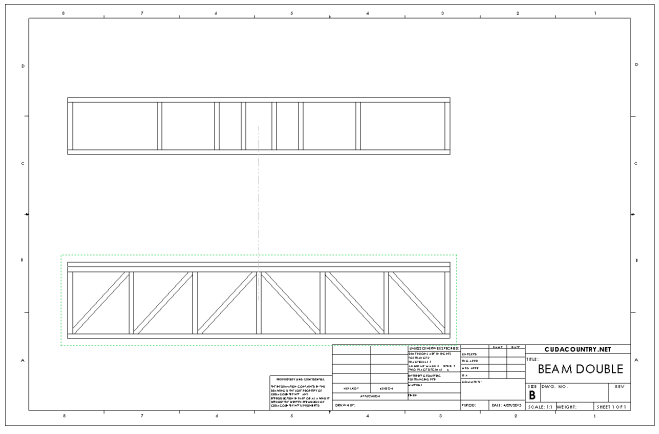


Fig. 3

Step 8. Move the cursor to the top left corner of the drawing and click to place the Isometric view, **Fig. 4**.

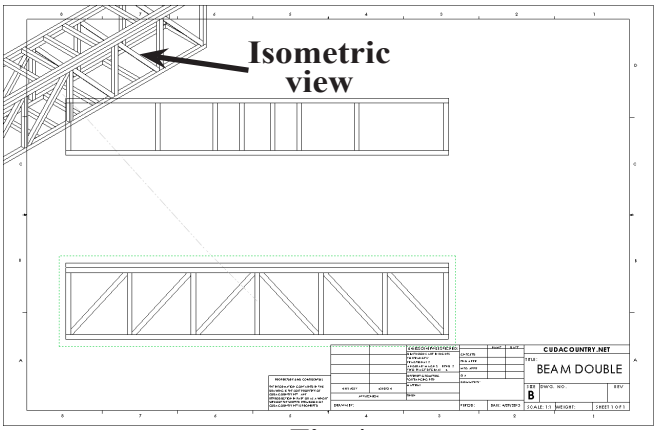


Fig. 4

Step 9. Click OK in the Property Manager.

Step 10. Click the Isometric view to select it, **Fig. 4**. In the Property Manager under Scale, select **User Defined** and **2:3**, **Fig. 5**.

Step 11. Grab any geometry of the Isometric view and move view to left of Right and Top views, **Fig. 6**.

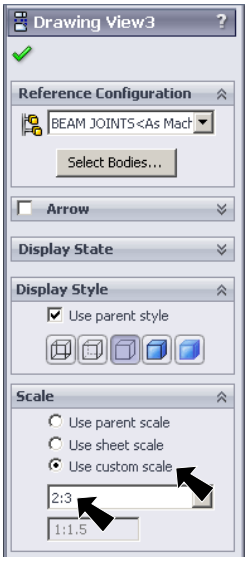


Fig. 5

B. Save as "BEAM DOUBLE".

Step 1. Click File Menu > Save As.

Step 2. Use **BEAM DOUBLE** for the filename and press ENTER.

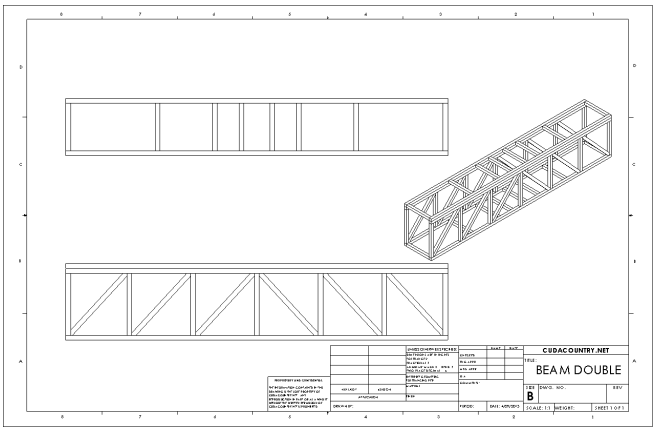
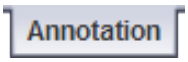


Fig. 6

C. Display Dimensions.

Step 1. Click **Annotation** 

on the Command Manager toolbar.

Step 2. Click **Model Items** 

on the Annotation toolbar.

Step 3. In the Property Manager:
under Source: **Fig. 7**
select **Selected feature**
under Dimensions
select **Marked for drawing** 

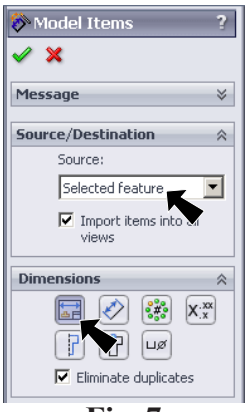


Fig. 7

in the drawing click diagonal member in **Right view**, **Fig. 8**

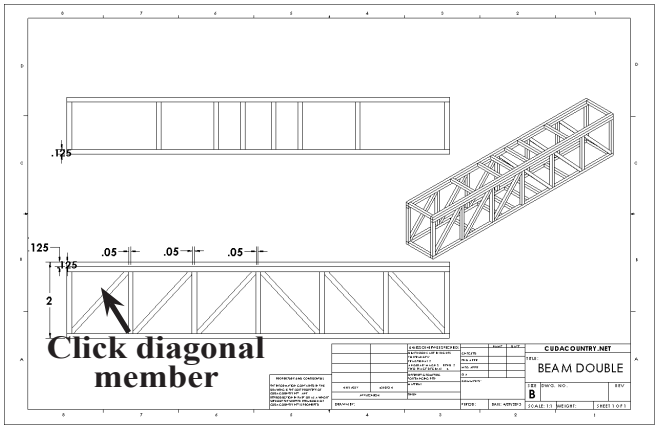


Fig. 8

under Source: **Fig. 9**
select **Entire model**

in the drawing click **Top view**, **Fig. 10**

click OK  .

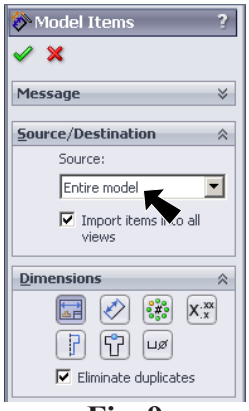


Fig. 9

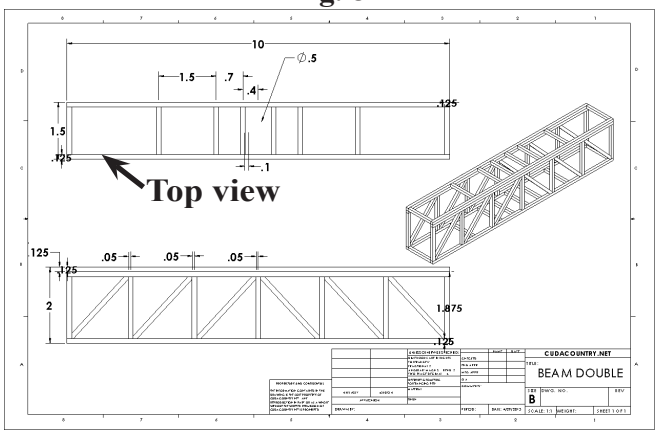


Fig. 10

Step 4. Arrange the dimensions as shown in **Fig. 11**. To hide a dimension, right click and select Hide from menu. **You can only place dimensions here- you can not change dimensions**.

Step 5. Save.
Use **Ctrl-S**.

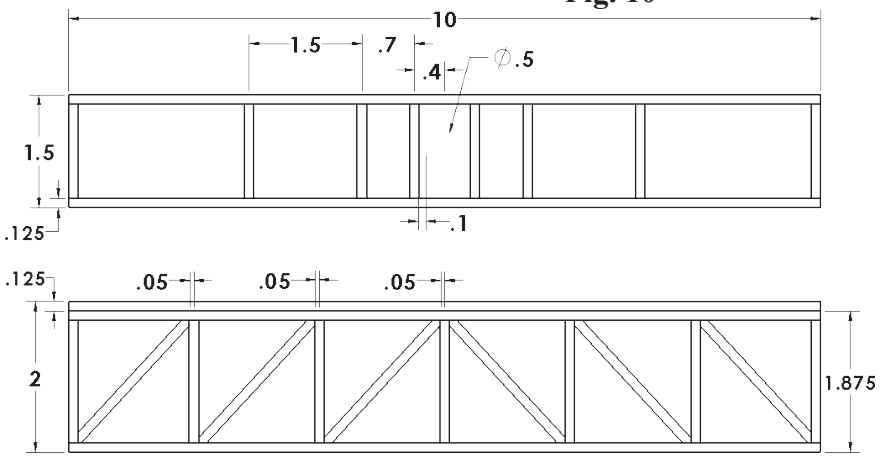


Fig. 11

D. Set Anchor.

Step 1. **Expand Sheet Format1** in the Feature Manger, **right click Weldment Cut List Anchor1** and click **Set Anchor**, **Fig. 12**.

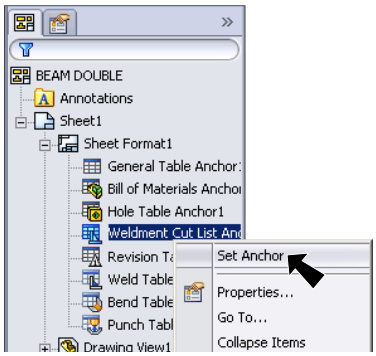


Fig. 12

Step 2. Click **top right corner** of the border lines, **Fig. 13**.

E. Add Weldment Cut List.

Step 1. Click Insert Menu > Tables > Weldment Cut List.

Step 2. Click Isometric view in the graphic area, **Fig. 13**.

Step 3. In the Property Manager set:
under Table Position, **Fig. 14**
check **Attach to anchor point**
click OK  .

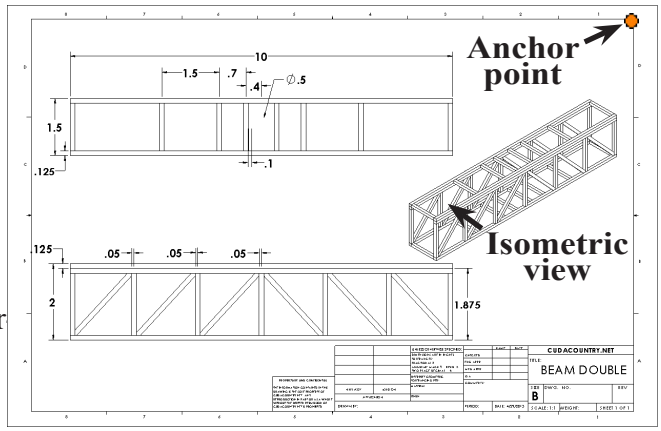


Fig. 13

F. Set Stationary Corner.

Step 1. Click the **Pan**  icon in the top left corner of the table, **Fig. 15**.

Step 2. In the Weldment Cut List Property Manager set:
select **Top Right**  , **Fig. 16**
click OK  , **Fig. 17**.

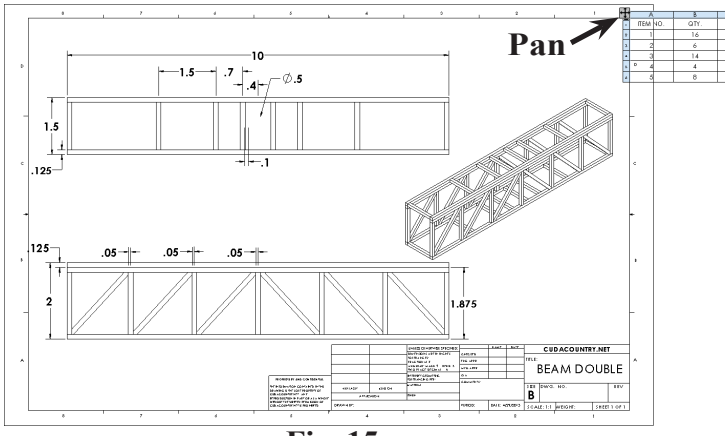


Fig. 15

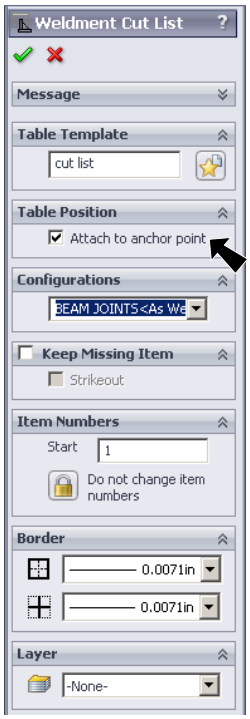


Fig. 14

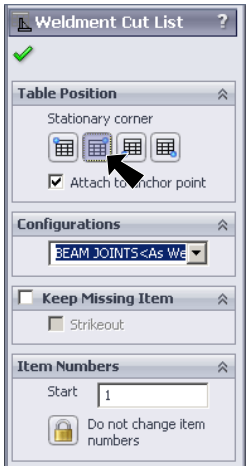


Fig. 16

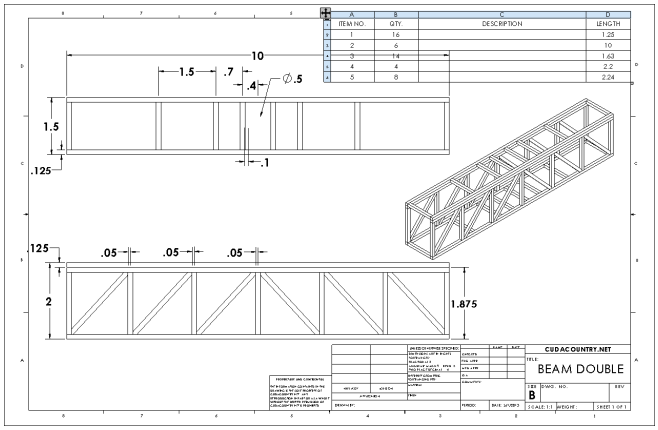


Fig. 17

G. Add Column.

Step 1. **Right click LENGTH column** and click **Insert > Column Right** from menu, **Fig. 18**.

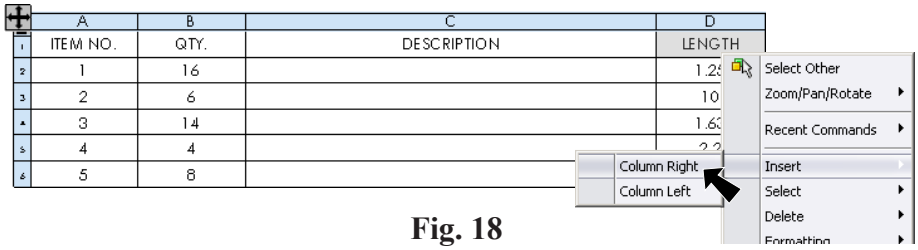


Fig. 18

Step 2. Double click in the column heading field and key-in **TOTAL**, **Fig. 19**.

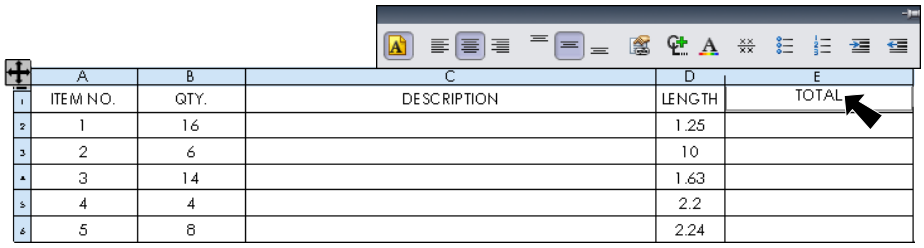


Fig. 19

Step 3. Drag the column dividers to resize columns, **Fig. 20**. To resize, position cursor over column divider, when cursor changes to ⇹ drag column divider.

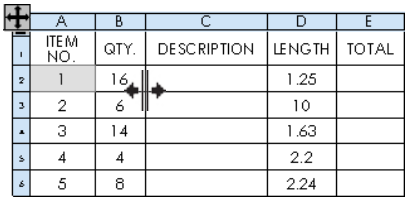


Fig. 20

H. Add Multiply Formula Row 2.

Step 1. Click in cell below TOTAL header and click **Equation** tool Σ in the Table Format toolbar, **Fig. 21**.

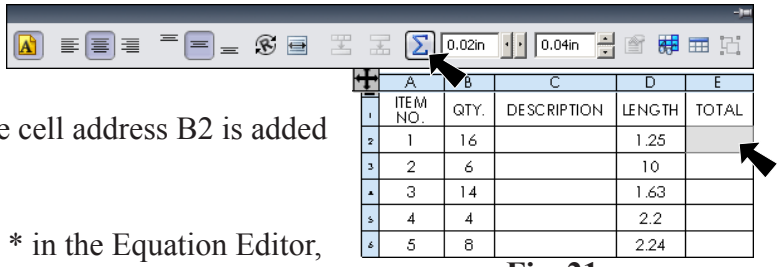


Fig. 21

Step 2. Click the **cell below QTY** and the cell address B2 is added to the Equation Editor, **Fig. 22**.

Step 3. Key-in the multiplication symbol * in the Equation Editor, **Fig. 23**.

Step 4. Click the **cell below LENGTH** and the cell address is added to the Equation Editor, **Fig. 24**. Click OK ✓, **Fig. 25**.

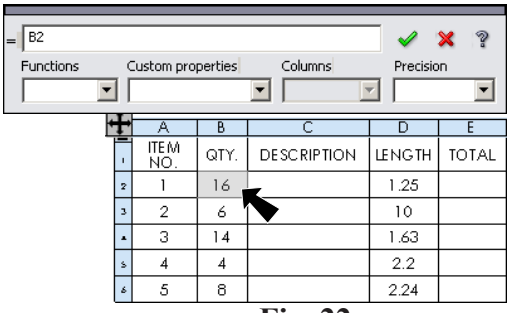


Fig. 22

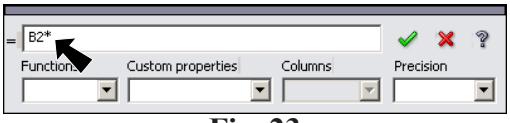


Fig. 23

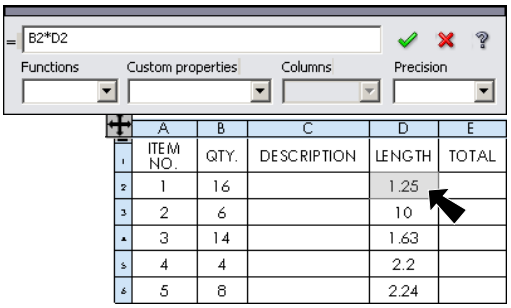


Fig. 24

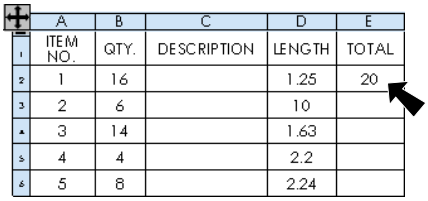


Fig. 25

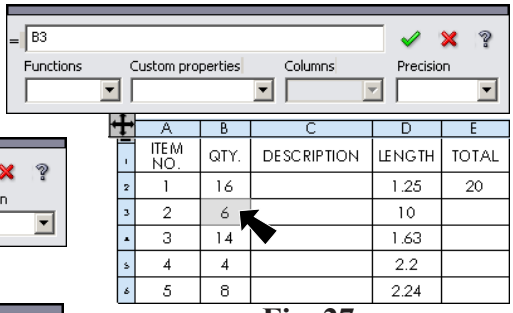
I. Add Multiply Formula Row 3.

Step 1. Repeat previous step and add formula to Row 3. Click in **next empty cell in the TOTAL column** and click **Equation** tool  in the Table Format toolbar, **Fig. 26**.

	A	B	C	D	E
1	ITEM NO.	QTY.	DESCRIPTION	LENGTH	TOTAL
2	1	16		1.25	20
3	2	6		10	
4	3	14		1.63	
5	4	4		2.2	
6	5	8		2.24	

Fig. 26

Step 2. Click **row 3 cell** in the **QTY column** and the cell address B3 is added to the Equation Editor, **Fig. 27**.



	A	B	C	D	E
1	ITEM NO.	QTY.	DESCRIPTION	LENGTH	TOTAL
2	1	16		1.25	20
3	2	6		10	
4	3	14		1.63	
5	4	4		2.2	
6	5	8		2.24	

Fig. 27

Step 3. Key-in the multiplication symbol * in the Equation Editor, **Fig. 28**.

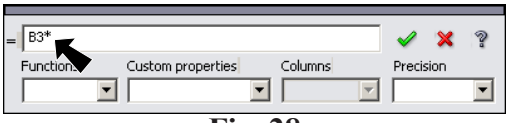
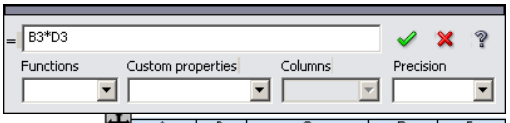


Fig. 28

Step 4. Click **row 3 cell** in the **LENGTH** column and the cell address is added to the Equation Editor, **Fig. 29**. Click OK  , **Fig. 30**.



	A	B	C	D	E
1	ITEM NO.	QTY.	DESCRIPTION	LENGTH	TOTAL
2	1	16		1.25	20
3	2	6		10	
4	3	14		1.63	
5	4	4		2.2	
6	5	8		2.24	

Fig. 29

	A	B	C	D	E
1	ITEM NO.	QTY.	DESCRIPTION	LENGTH	TOTAL
2	1	16		1.25	20
3	2	6		10	
4	3	14		1.63	
5	4	4		2.2	
6	5	8		2.24	

Fig. 30

Step 5. Repeat and add the multiplication formula to the other blank cells in TOTAL column, **Fig. 31**.

	A	B	C	D	E
1	ITEM NO.	QTY.	DESCRIPTION	LENGTH	TOTAL
2	1	16		1.25	20
3	2	6		10	60
4	3	14		1.63	22.82
5	4	4		2.2	8.8
6	5	8		2.24	17.92

Fig. 31

Step 6. Save. Use **Ctrl-S**.

J. Add Row.

Step 1. **Right click a cell in last row** and click **Insert** > **Row Below** from menu, **Fig. 32**.

	A	B	C	D	E
1	ITEM NO.	QTY.	DESCRIPTION	LENGTH	TOTAL
2	1	16		1.25	20
3	2	6		10	60
4	3	14		1.63	22.82
5	4	4		2.2	8.8
6	5	8			

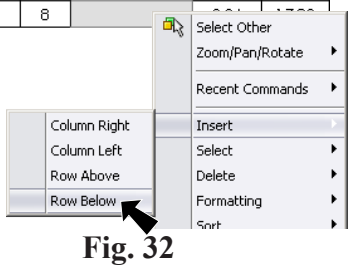
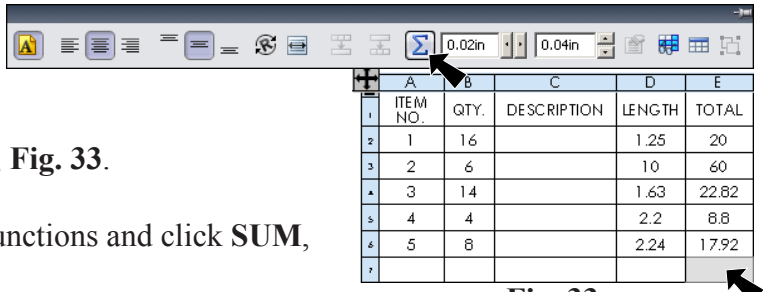


Fig. 32

K. Sum Column.

Step 1. Click in last cell in TOTAL column and click **Equation** tool  in the Table Format toolbar, **Fig. 33**.



	A	B	C	D	E
1	ITEM NO.	QTY.	DESCRIPTION	LENGTH	TOTAL
2	1	16		1.25	20
3	2	6		10	60
4	3	14		1.63	22.82
5	4	4		2.2	8.8
6	5	8		2.24	17.92
7					

Fig. 33

Step 2. Click the drop down arrow for Functions and click **SUM**, **Fig. 34**.

Step 3. Click **cell under TOTAL** heading and the cell address E2 is added to the Equation Editor, **Fig. 35**.

Step 4. Key-in colon **:** in the Equation Editor, **Fig. 36**.

Step 5. Click **last cell in the TOTAL column** and the cell address is added to the Equation Editor, **Fig. 37**. Click OK  , **Fig. 38**.

Step 6. Save. Use **Ctrl-S**.

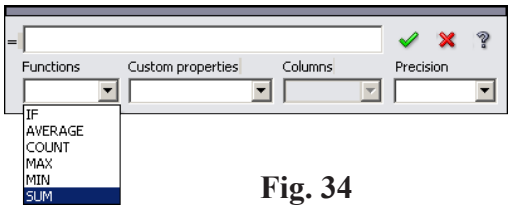
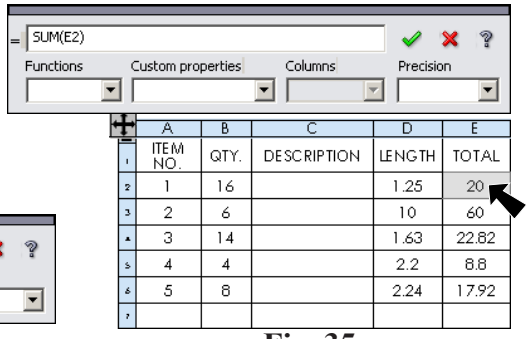


Fig. 34



	A	B	C	D	E
1	ITEM NO.	QTY.	DESCRIPTION	LENGTH	TOTAL
2	1	16		1.25	20
3	2	6		10	60
4	3	14		1.63	22.82
5	4	4		2.2	8.8
6	5	8		2.24	17.92
7					

Fig. 35

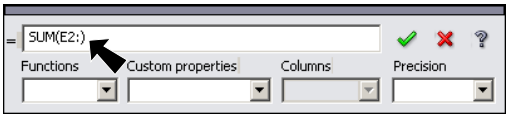
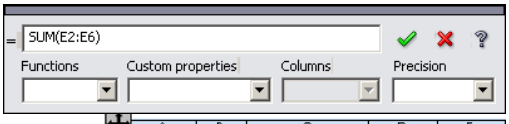


Fig. 36



	A	B	C	D	E
1	ITEM NO.	QTY.	DESCRIPTION	LENGTH	TOTAL
2	1	16		1.25	20
3	2	6		10	60
4	3	14		1.63	22.82
5	4	4		2.2	8.8
6	5	8		2.24	17.92
7					

Fig. 37

	A	B	C	D	E
1	ITEM NO.	QTY.	DESCRIPTION	LENGTH	TOTAL
2	1	16		1.25	20
3	2	6		10	60
4	3	14		1.63	22.82
5	4	4		2.2	8.8
6	5	8		2.24	17.92
7					129.54

Fig. 38

L. Auto Balloons.

Step 1. Click Beam in Isometric view in your drawing, **Fig. 39**.

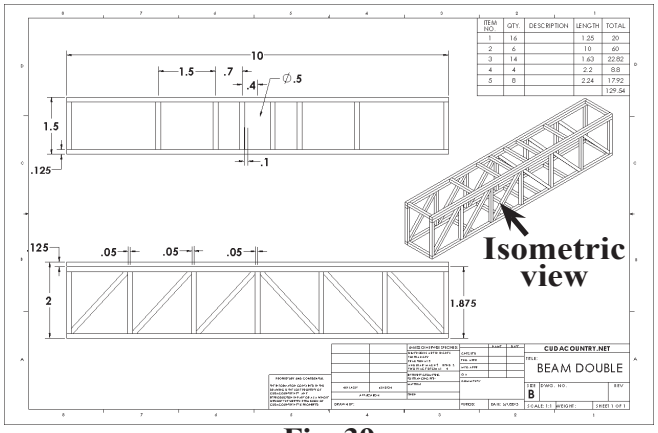
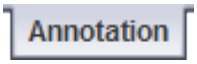


Fig. 39

Step 2. Click **Annotations** 

on the Command Manager toolbar.

Step 3. Click **AutoBalloons** 

on the Annotations toolbar.

Step 4. In the AutoBalloon Property Manager set:

under Balloon Layout, **Fig. 40**

select **Layout Balloons to Right** 

click OK  , **Fig. 41**.

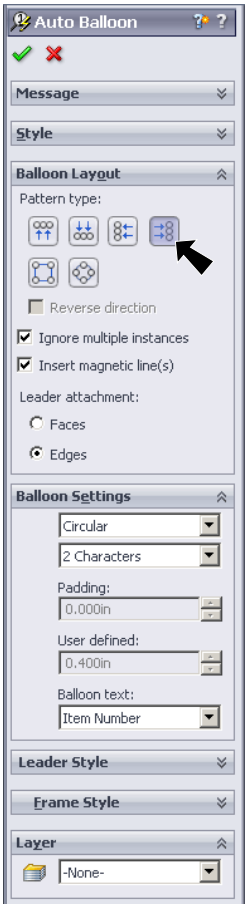


Fig. 40

Step 5. Select a Balloon and then click the **Magnetic Line**, **Fig. 41**.

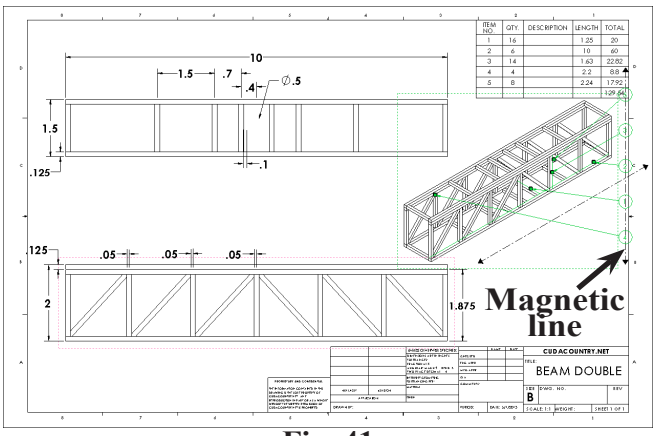


Fig. 41

Step 6. In the Magnetic Line Property Manager set:

under Parameters, **Fig. 42**

Angle 30 
and press the **Tab key**

move the Magnetic Line under the Isometric view, **Fig. 43**

also, move Balloons around on Magnetic Line

click OK  .

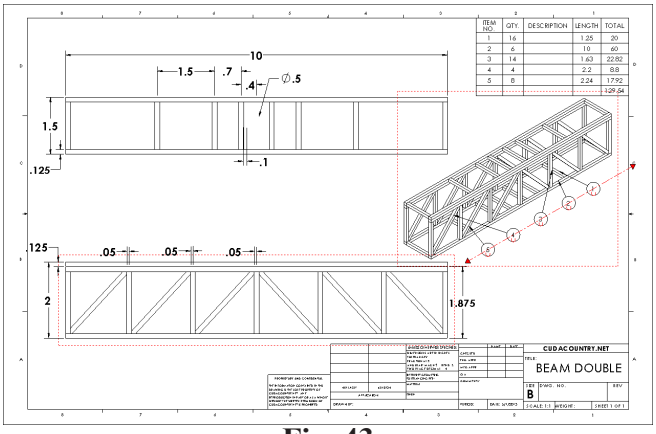


Fig. 43

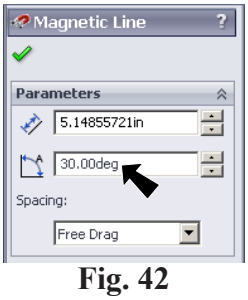


Fig. 42

Step 7. Save. Use **Ctrl-S**.

M. Add Your Name and Period to Title Block.

Step 1. Use the **Zoom to Area** in the View toolbar to drag a zoom window around the **DRAWN BY and PERIOD** in the title block, **Fig. 44**.

Step 2. Click **Note** on the Annotation toolbar.

Step 3. Click just to the right of DRAWN BY:, **Fig. 45**.

Step 4. Lock the Caps and key-in **your first and last names**, **Fig. 45**.

Step 5. Click OK in the Property Manager.

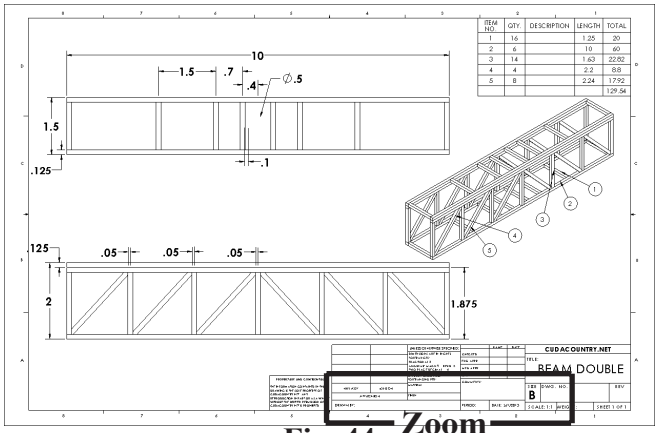


Fig. 44

Step 6. Click **Note** on the Annotation toolbar.

Step 7. Click just to the right of PERIOD: and key-in **your Period number**, **Fig. 46**.

Step 8. Click OK in the Property Manager.

Step 9. Save. Use **Ctrl-S**.

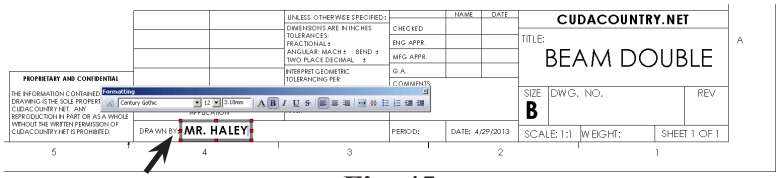


Fig. 45

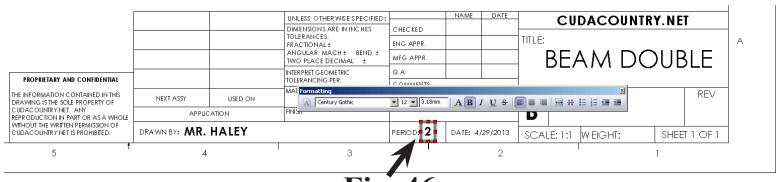


Fig. 46