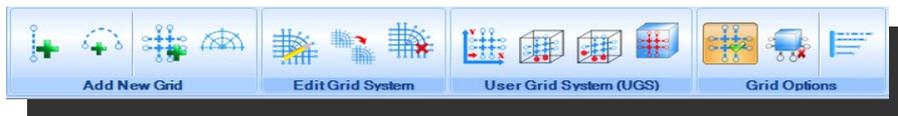


VISKAR BIM – GRID

1. GRID

The **Grid** tab contains options to create, edit, and delete a single grid or an entire grid system. It also allows to hide the grid system and change the grid line type scale.



2. ADD NEW GRID

The **Add new grid** options allows to add a linear grid, circumferential grid, Cartesian co-ordinate system and cylindrical co-ordinate system. The following are the options available in the add new grid,

- Add linear grid
- Add circumferential grid
- Add Cartesian Co-ordinate grid system
- Add cylindrical Co-ordinate grid system

2.1 ADD LINEAR GRID

The **Add linear grid** option is used to add a linear grid line in the x,y and z direction. The added grid line will be assigned to the existing or the selected Cartesian co-ordinate grid system.



- Select the GRID tab → ADD LINEAR GRID from add new grid
- Choose the grid system in which grid line is to be added, if two or more grid system exists.
- Choose the start and end point of the grid line.
- Enter the required grid mark. A Linear grid line is created.

NOTE: The options for picking the start point

- OFF – OFFset is a way of picking a point from a selected first point in a direction of x, y and z from the selected point. Enter the distance of x, y and z-axis to offset from the selected point.
- NOFF – New_OFFset is similar to offset but with a new first point. Generally used as a second offset when needed.
- MID – MIDpoint, is a way to pick a point centered between two selected points.
- ONL – Online, is a way to pick a point along a direction with distance. Choose direction by picking up first and second point and enter distance, so that the point is picked along the direction chosen.
- SLOPE- it includes 3 methods

By providing the x,y,z distances which is the distances from the reference point and providing the slope distance which is the distance of the slope from the reference point.

On providing the slope angle the object moves along the specified slope angle

2.2 ADD CIRCUMFERENCIAL GRID

Add circumferential grid options is used to add a circumferential grid line. The added grid line will be attached to the existing or selected cylindrical co-ordinate grid system.



- Select the GRID tab → ADD CIRCUMFERENCIAL GRID from add new grid
- Choose the grid system in which the grid line is to be added, if two or more grid system exists.
- Choose the center, start and end point of a grid line.
- Enter the required grid mark. A circumferential grid is created.

NOTE: The options for picking the start point

- OFF – OFFset is a way of picking a point from a selected first point in a direction of x, y and z from the selected point. Enter the distance of x, y and z-axis to offset from the selected point.
- NOFF – NewOFFset is similar to offset but with a new first point. Generally used as a second offset when needed.
- MID – MID point, is a way to pick a point centered between two selected points.
- ONL – Online, is a way to pick a point along a direction with distance. Choose direction by picking up first and second point and enter distance, so that the point is picked along the direction chosen.
- F – First, allows the user to draw circumferential grid line by selecting first, second and third on the grid line.
- A – Angle & Radius, is way to draw a circumferential grid by entering the radius, start angle and end angle.

2.3 ADD CARTESIAN CO-ORDINATE GRID SYSTEM

Add Cartesian co-ordinate grid system is used to create a Cartesian co-ordinate grid system with desired grid intervals in the x, y and z-axis and grid marks. The grid marks can also be auto generated.



- Select the GRID tab → ADD CARTESIAN CO-ORDINATE GRID SYSTEM from add new grid
- Enter the required values in the Cartesian Co-ordinate dialog box.
- Click on the Ok button. A Cartesian Co-ordinate grid system is created.

NOTE: The values described below

- Grid Origin – It is the origin point of the grid system. It acts as a reference point along which the grid can be rotated or moved.
- Grid Angle – Grid angle will rotate the entire grid in anti-clockwise direction considering the grid origin as point of rotation.
- X, Y and Z Axis Intervals are the distances between grid lines in a particular axis.
- Each value is separated by a comma.
- Multiple values of the same or different distance can be entered with an asterisk symbol. Example, 4*10-0.
- Intervals is in the format 10-00. Inches will automatically convert to feet –inches.
- Grid Marks are the Grid IDs that identify each grid
- Each values are separated by a comma.
- The button at end of grid mark text box is used to automate the naming process of the grid marks in forward order or reverse order. Only start with string can be auto generated. The prefix string and suffix string are available to prefix and suffix the start with string. Exception string can be used to skip particular grid marks. Grid marks can also be manually edited in grid mark text box.
- The number of values in this field must be equal to or greater than the number of intervals that precedes it. If there are less grid marks than the grid intervals, you will be asked to add grid marks. If the number of grid marks is more than the grid intervals, the additional grid marks will be ignored.
- Grid Name – You can provide a grid name for a grid system. Grid Names must be unique.

2.4 ADD CYLINDRICAL CO-ORDINATE GRID SYSTEM

Add cylindrical co-ordinate grid system is used to create a cylindrical co-ordinate with desired grid intervals in circumferential and radial grid line and grid mark. Grid mark can be auto generated.



- Select the GRID tab → ADD CYLINDRICAL CO-ORDINATE GRID SYSTEM from add new grid
- Enter the required values in the Cylindrical Co-ordinate dialog box.
- Click on Ok button. A Cylindrical Co-ordinate grid system is created.

NOTE: The values are similar to those found with the Cartesian Co-ordinate grid system with few exceptions described below

- Grid Origin – It is the intersection point of all the radial grid line in a cylindrical co-ordinate grid system. This is the center of your grid system. It is the insertion point of the grid system.
- Grid Angle – Instead of grid rotation we are given a Start Angle and End Angle which would allow for partial or full circle grid systems based on start and end angle. Radial grid line will rotate in the anti-clockwise direction with respect to the angles given.

2.5 EDIT GRID SYSTEM

The **Edit grid system** option allows the user to edit an entire grid system.



- Select the GRID tab → EDIT GRID SYSTEM from edit grid system
- Edit the required fields in the dialog box.
- Click on the Update button. The Edited grid system is now displayed.

NOTE: The values are similar to those found specific to the grid system selected. Objects and dimensions are independent to the grid system and grid line and will not be adjusted.

2.6 COPY GRID SYSTEM

The **Copy grid system** option is used to copy the existing grid system within the workspace.



- Select the GRID tab → COPY GRID SYSTEM from edit grid system
- Select the grid system which is to be copied.
- Enter the grid origin, name and style of an grid in copy grid system dialog box.
- Click on Ok button. Parent and child grid system is displayed.

2.7 DELETE GRID SYSTEM

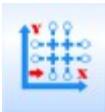
The **Delete grid system** option allows the user to delete the entire grid system.



- Select the GRID tab → DELETE GRID SYSTEM from edit grid system
- Select the grid system which is to be deleted.
- Click on yes button.

2.8 UGS – BASIC

UGS – Basic option allows the user to create/move the grid system in top view, front view and left view for a specific distance.

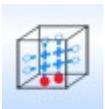


- Select the GRID tab → UGS – BASIC from User Grid System(UGS)
- Select the required plane and enter the co-ordinates.
- Click on Create button. Enter the UGS view name.
- Click on Ok button.
- Select open view button. Grid system in the specific plane is moved/created to the entered co-ordinates is shown.

NOTE: Views saved can be opened through saved view option in the view tab.

2.9 UGS – TWO POINTS

UGS – two points option allows the user to create a grid system along the axis of two selected points.

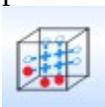


- Select the GRID tab → UGS – TWO POINTS from User Grid System(UGS)
- Select the first and second point
- Enter the UGS view name. Click on Ok button.
- Select open view button. Grid system along the axis of two selected points is shown.

NOTE: Views saved can be opened through saved view option in the view tab.

2.10 UGS – THREE POINTS

UGS – three points options allows the user to create a grid system along the three selected points.



- Select the GRID tab → UGS – THREE POINTS from User Grid System(UGS)
- Select the first, second and third point
- Enter the UGS view name. Click on Ok button.
- Select open view button. Grid system along the axis of three selected points is shown.

NOTE: Views saved can be opened through saved view option in the view tab.

2.11 UGS GRID ON FACE

UGS grid on face option allows the user to create the grid system on the selected face of an object.



- Select the GRID tab → UGS GRID ON FACE from User Grid System(UGS)
- Select the face of an object.
- Enter the UGS view name. Click on Ok button.
- Select open view button. Grid system along the selected face is shown.

NOTE: Views saved can be opened through saved view option in the view tab.

2.12 GRID ON/OFF

Grid on/off option allows the user to view and hide the grid system in the workspace.



- Select the GRID tab → GRID ON/OFF from Grid options
- All the grid system is hidden in the workspace.

NOTE: A Particular grid system cannot be hidden separately in the workspace.

2.13 GRID MODE ON/OFF

Grid mode on/off option is used to allow the user to select a grid line in an entire grid system. We can also delete/edit a grid line from the grid system.



- Select the GRID tab → GRID MODE ON/OFF from Grid options

NOTE: while grid mode is turned on, you will only be able to select grid line. Objects, dimensions and reinforcing cannot be selected when the grid mode is “on”.

2.14 GRID LINE TYPE SCALE

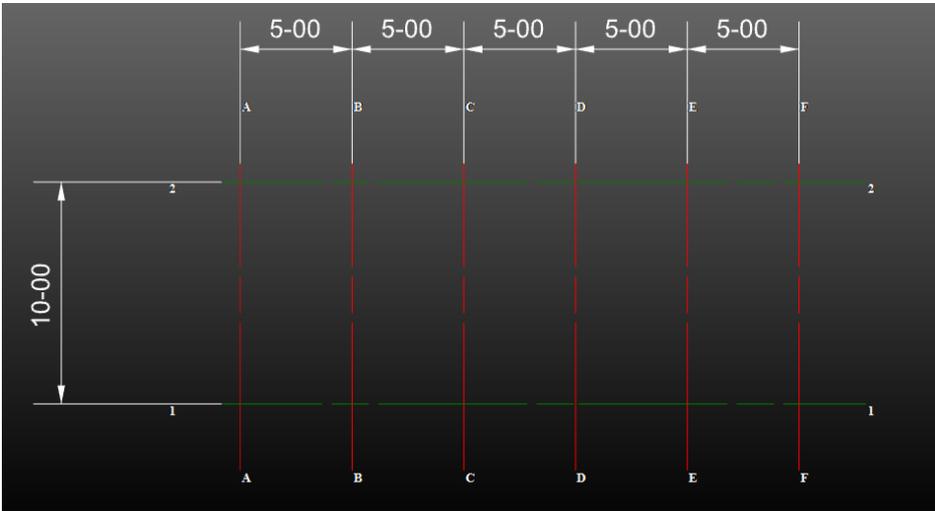
Grid line type scale option allows the user edit the line type of the grid lines.



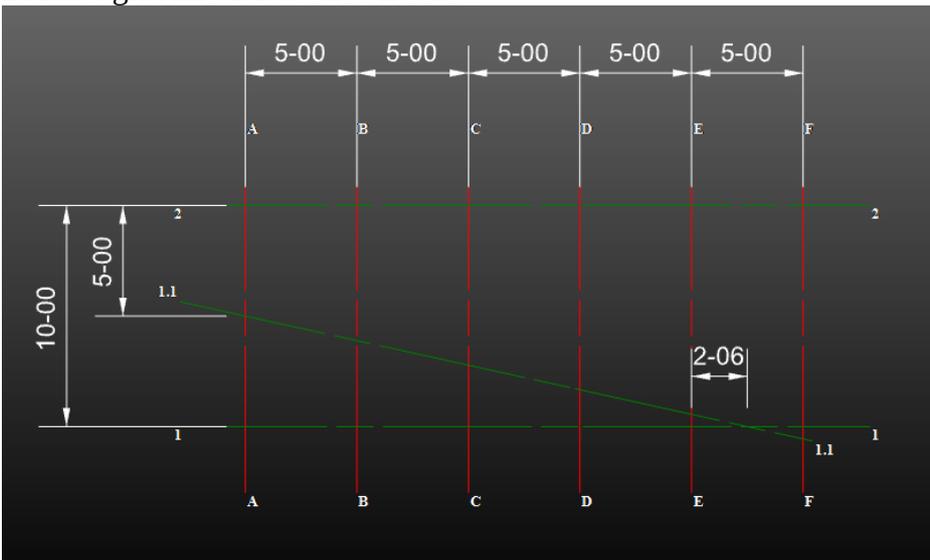
- Select the GRID tab → GRID LINE TYPE SCALE from the Grid options
- Select the required grid system.
- Edit the scale value in set scale dialog box.
- Click on the update button. Now the line type will be changed.

GRID EXERCISES

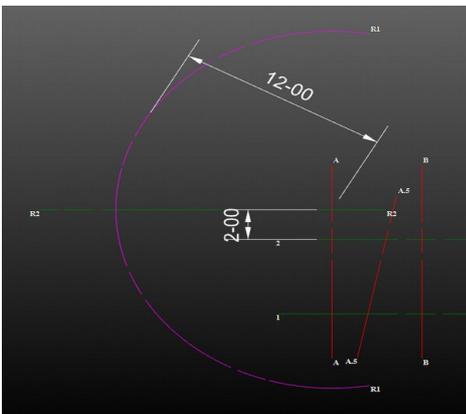
1. Edit the default grid system as per the given image.



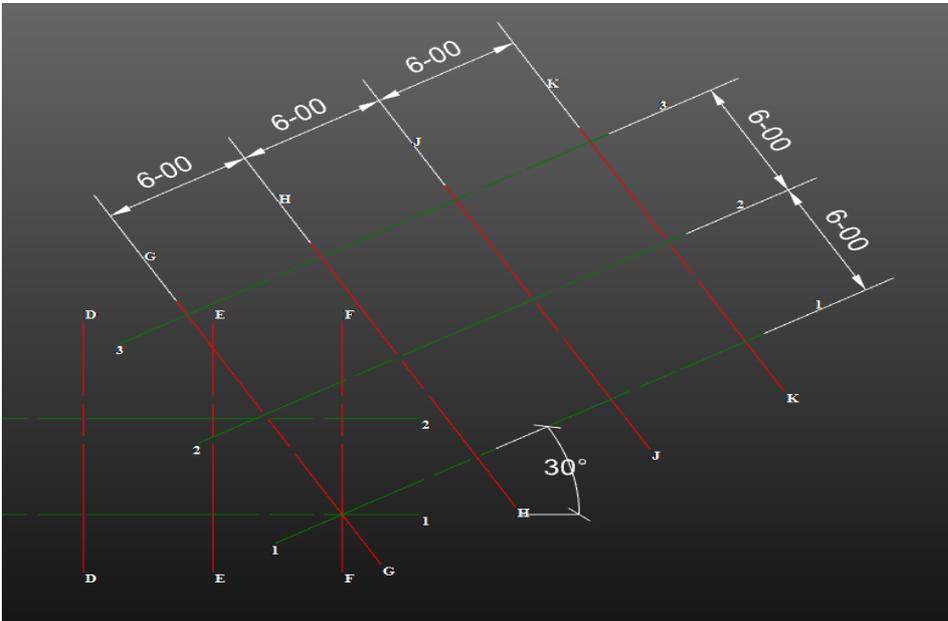
2. Add a grid line 1.1 as shown below



3. Add a grid R1 as shown below

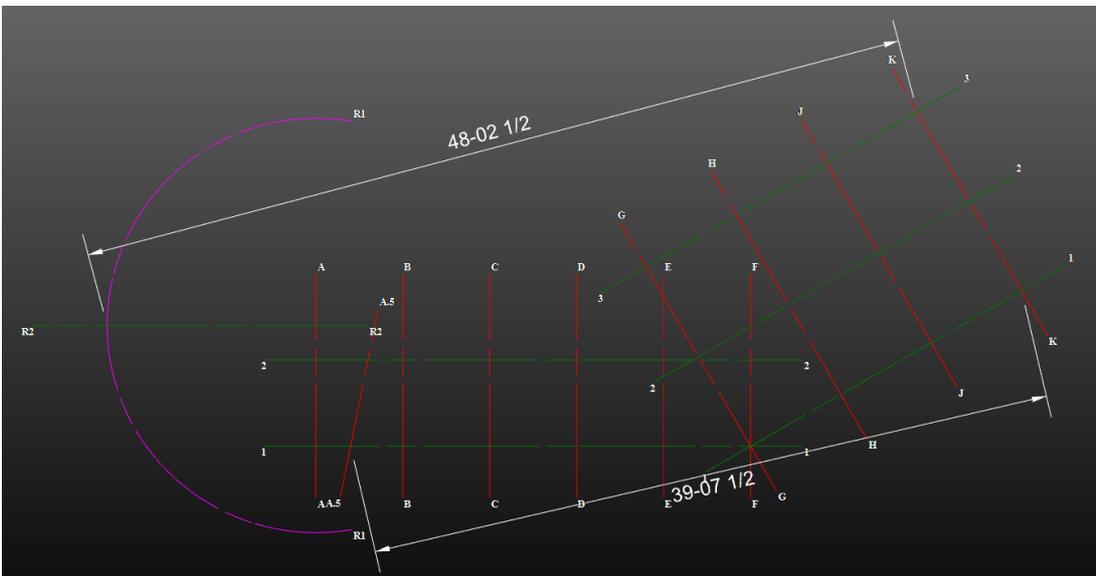


4. Add a rotated second Cartesian coordinate grid system with G passing through K, and 1 passing through 3, rotated at 30 degrees from the shared coordinate F/1 & G/1 as shown below



5. Add the dimensions to verify your progress.

The distance from A.5/1 to K/1 is?
 The distance from R1/R2 to K/3 is?



6. Adjust the grid line A beyond the circumferential grid R1.

