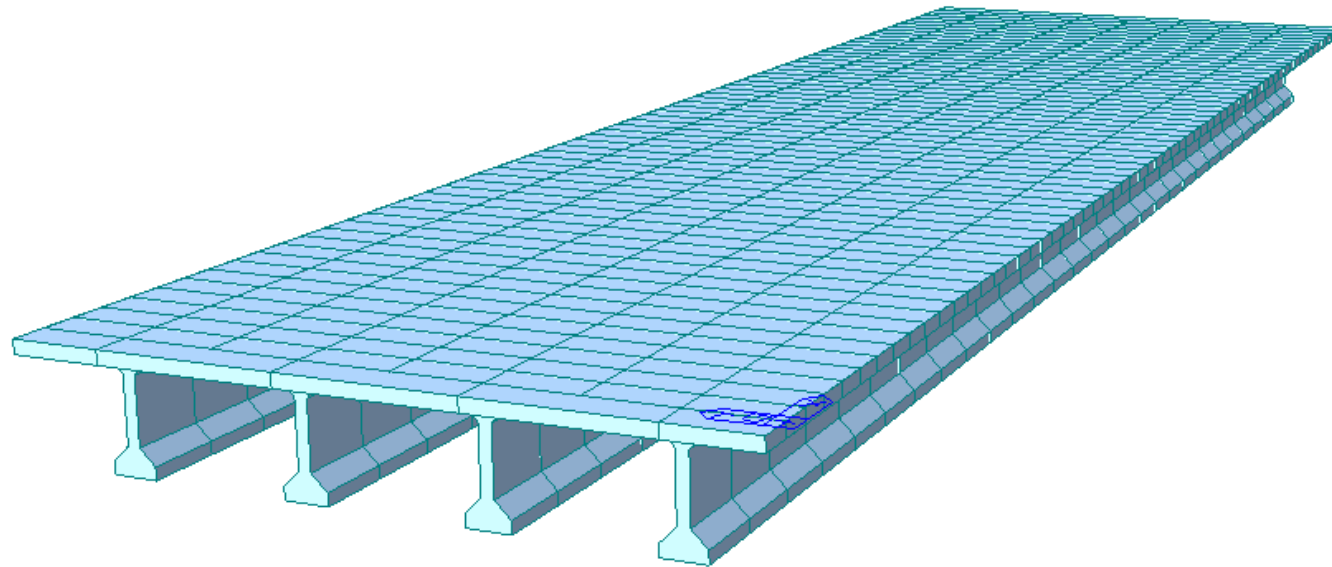


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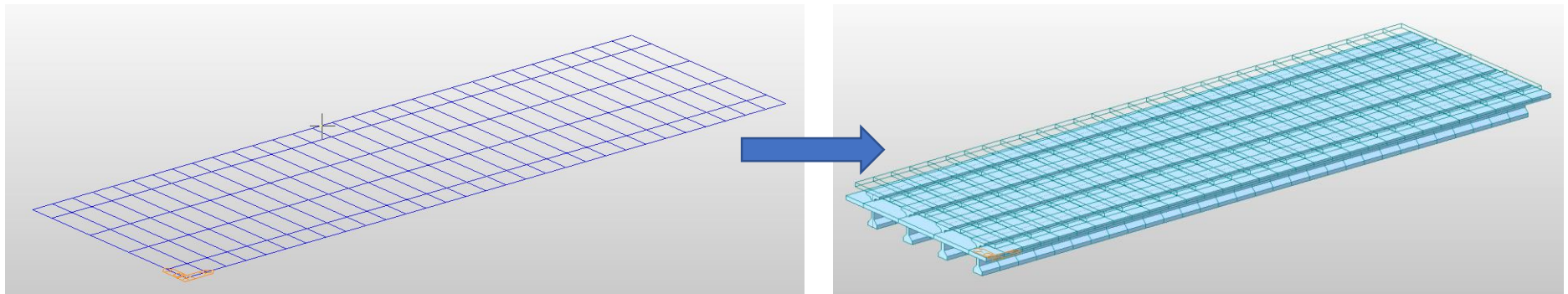
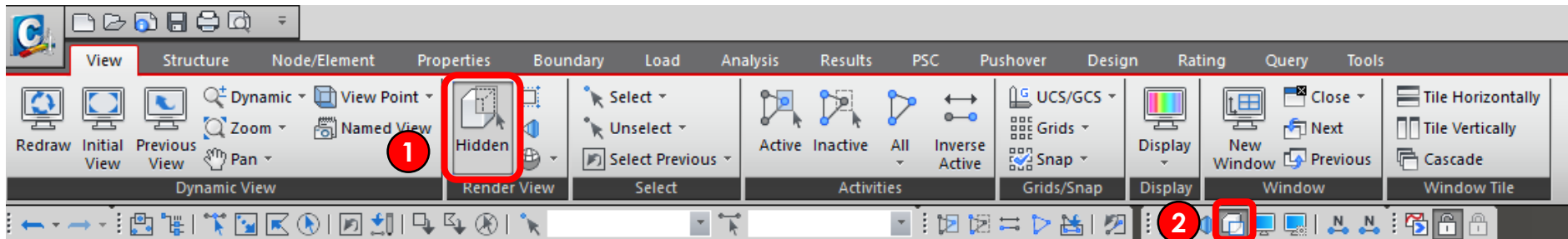
## Season 1


### Episode 4

Does Section Offset Matter?



# midas Civil Learning Season 1 Episode 4



1. Click **Hidden** from main menu
2. Or click  **Hidden icon** from quick access tab

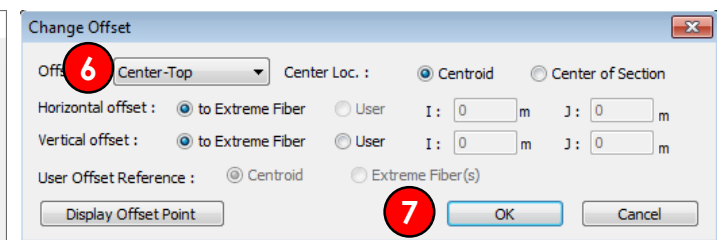
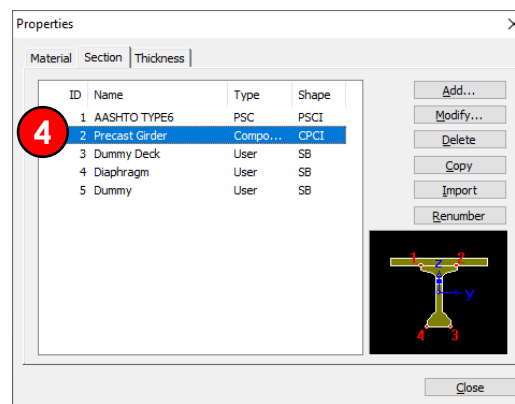
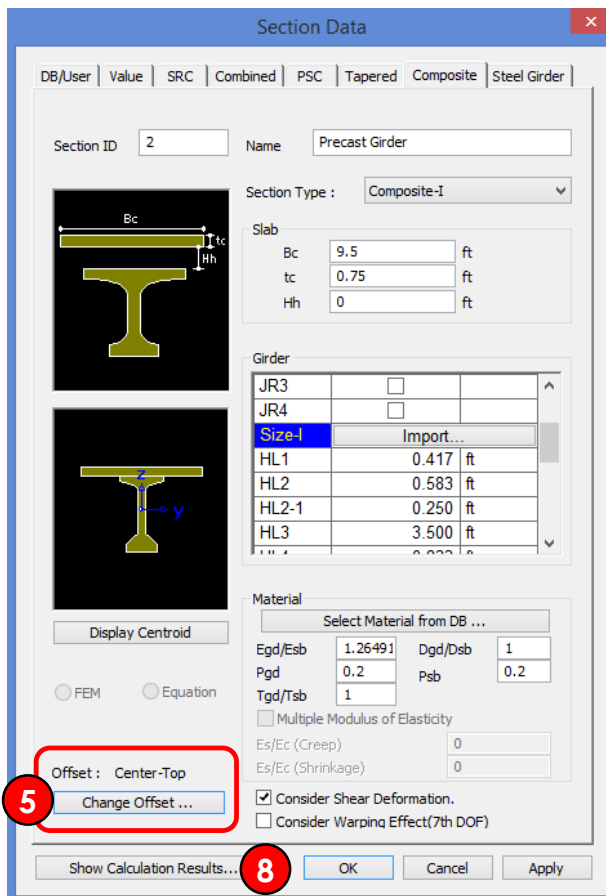
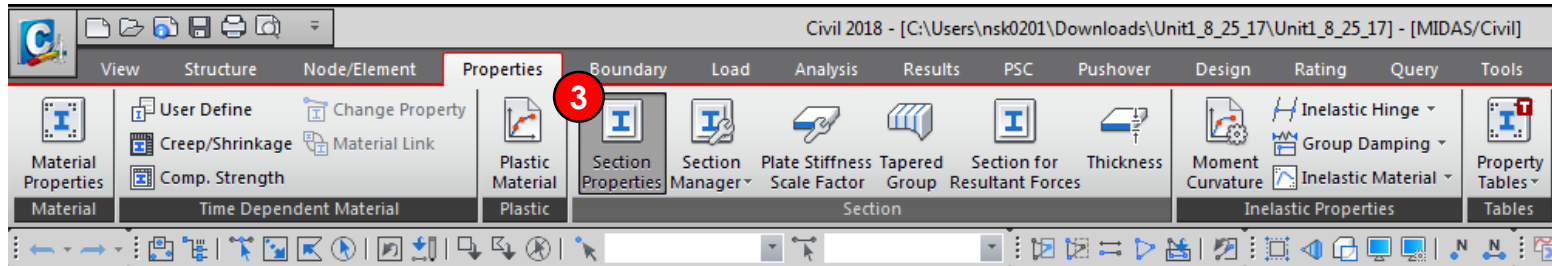


## WHY are we clicking Hidden icons?


Hidden icons will allow you to switch between views of the model that reflects section properties and the model with plain nodes and elements.

In Episode 4, we will work on section offsets. Therefore, we need to see the section properties reflected model to understand the section offset change in the model.

# midas Civil Learning Season 1 Episode 4



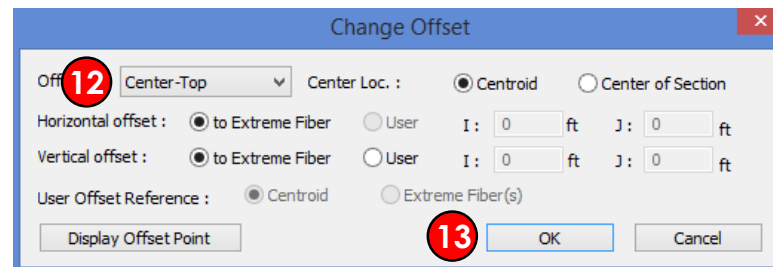
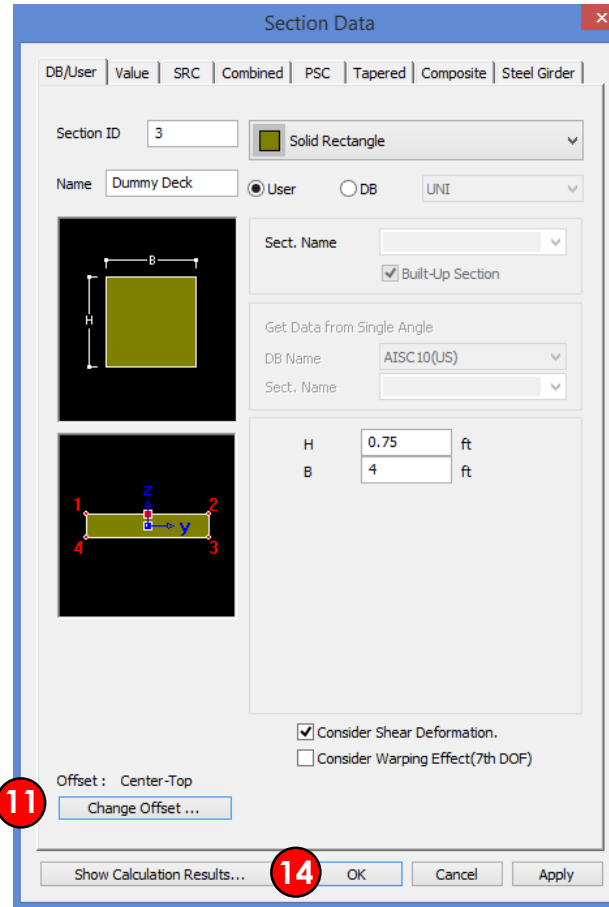
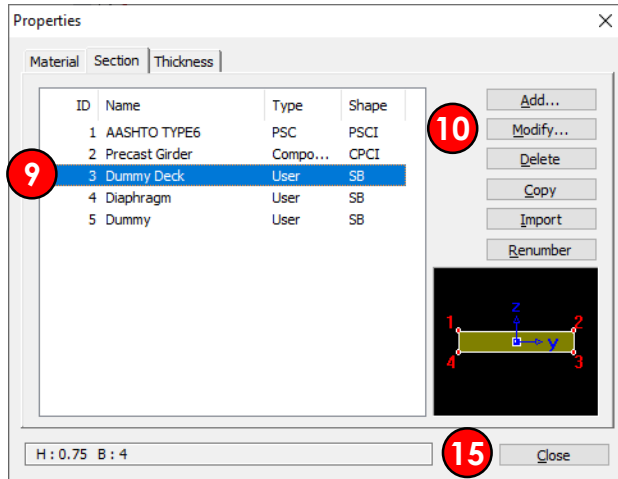
3. Click **Section Properties** from main menu
4. Double click **2: Precast Girder**
5. Click **Change Offset...**
6. Choose **Center-Top** from drop box menu
7. Click **Okay**
8. Click **Okay**

 **WHEN do we usually need to consider section offset?**

Especially when you work on:

- Diaphragm Modeling
- Segmental Bridges (Tapered Section)
- Composite Girders

# midas Civil Learning Season 1 Episode 4



9. Click **2: Precast Girder**
10. Click **Modify**
11. Click **Change Offset...**
12. Choose **Center-Top** from drop box menu
13. Click **Okay**
14. Click **Okay**
15. Click **Close**



## Does change in section offset alter results?

Yes. If you change section offsets, the visual presentation will be changed as well as the analysis/design results. However, the location of the centroid of the section will remain as a default.

Changing in section offset will affect how the loading is applied in the section or to the beam element itself.

**Check our Q&A Forum for more about section offset!**

<http://globalsupport.midasuser.com/helpdesk/KB/View/20438996-section-offset-in-midas-civil>

<http://globalsupport.midasuser.com/helpdesk/KB/View/13248320-composite-section-beam-diagram>

# midas Civil Learning Season 1 Episode 4

Tree Menu

Tables Works Group Report

Works

- Structures
  - Nodes : 186
  - Elements : 335
    - Beam : 335
      - 4: Diaphragm
- Properties
  - Material : 4
    - 1: Precast Girder
    - 2: Dummy Deck
    - 3: Diaphragm
    - 4: Tendon
  - Section : 5
    - 1: AASHTO TYPE6
    - 2: Precast Girder
    - 3: Dummy Deck
    - 4: Diaphragm
    - 5: Dummy
- Boundaries
  - Supports : 8
- Moving Load Analysis
  - Moving Load Cod

Assign

Select

Select Plus

Unselect

Unselect All

Active

Active Plus

Inactive

Active All

Delete

Properties

Section Data

DB/User Value SRC Combined PSC Tapered Composite Steel Girder

Section ID: 4

Name: Diaphragm

Sect. Name: [ ]

Get Data from Single Angle

DB Name: AISC10(US)

Sect. Name: [ ]

H: 4.5 ft

B: 0.75 ft

Offset: Center-Top

Change Offset ...

Show Calculation Results... OK Cancel Apply

Change Offset

Offset: 19 Center-Top

Center Loc.: Centroid

Horizontal offset: to Extreme Fiber

Vertical offset: to Extreme Fiber

User Offset Reference: Centroid

Display Offset Point

OK Cancel

16. Right click **4: Diaphragm** from Tree menu
17. Click **Properties**
18. Click **Change Offset...**
19. Choose **Center-Top** from drop box menu
20. Click **Okay**
21. Click **Okay**



**WHY do we select section from Tree menu this time?**

It will give you the same result. But we are trying it in a different way to provide you with more options to access section properties.

# midas Civil Learning Season 1 Episode 4



## WHAT is midas Civil's internal process of section offset?

A beam element is defined by two nodes and a line connecting the two nodes. This line becomes a reference line representing the beam element, which usually coincides with the neutral axis of the beam element.

If a section offset is assigned to a section, the neutral axis of the member shifts by the specified offset distance, and the element reference line is placed at the offset location. The reference line is used for selecting the element, assigning loads, displaying member forces, etc. The offset of the neutral axis of the member relative to the reference line in turn is reflected in analysis as shown in the figure below.

