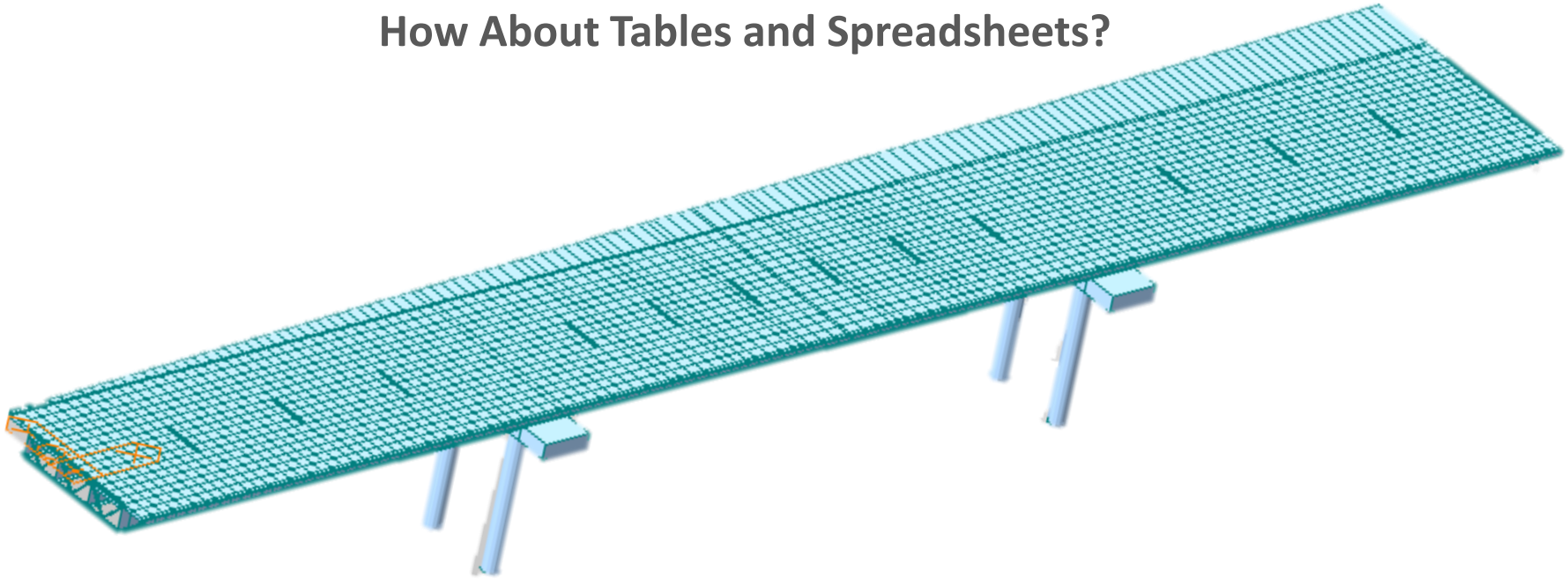
midas Civil Learning

Season 1

Episode 7

How About Tables and Spreadsheets?



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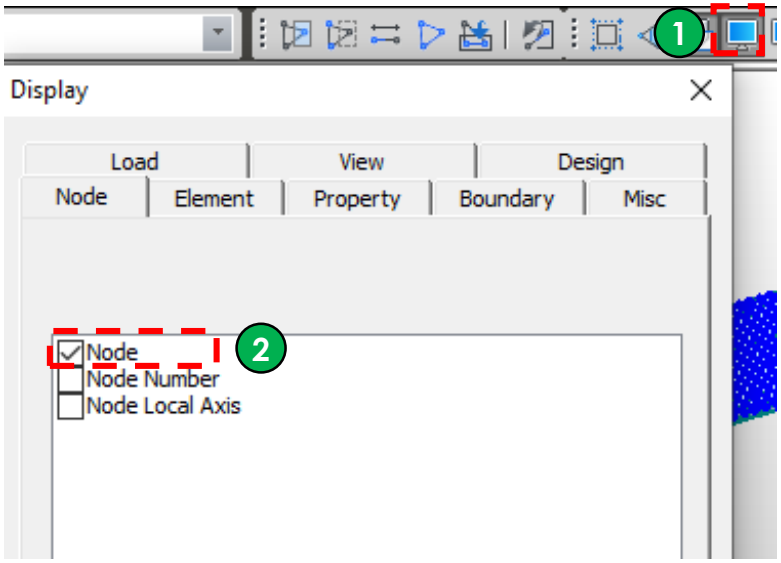
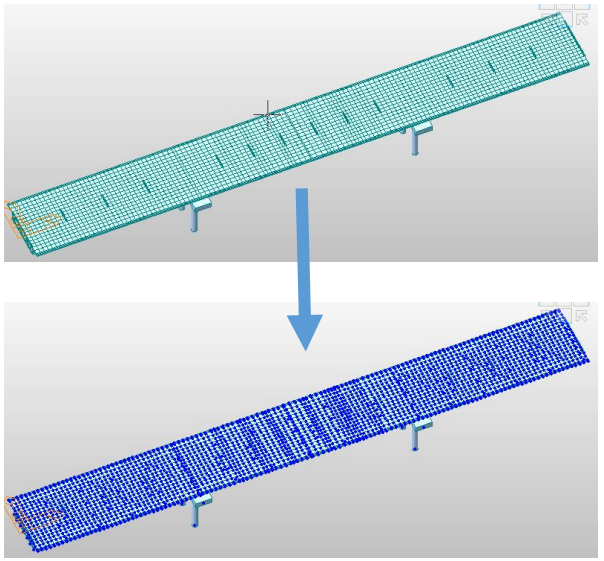
Why is it important to know the manual way to create a bridge when various wizards are available?

Various wizards will give you quick, easy, and simple guides/templates to model bridges. However, not every bridge fits into the wizards' template. In that case, you need to use other available options that midas Civil provides:

1. Graphic Interface (creating nodes & elements)
2. Importing CAD Files (dxf files)
3. Table Format
4. Text Format

Of course, you can combine multiple different ways to build a model, like using a wizard and graphic interface together. You can create a model that looks similar to the bridge using wizards, and then you can modify nodes/elements for minor differences. Today, we will practice changing node location using midas Table format and Excel spreadsheet, so you can manually build or modify your model using tabular inputs.





Did you know?

By displaying the nodes on the graphic interface, you will be able to select nodes easily using the graphic interface.

1. Click **Display** from Quick Tool Bar
2. Check **Node** box

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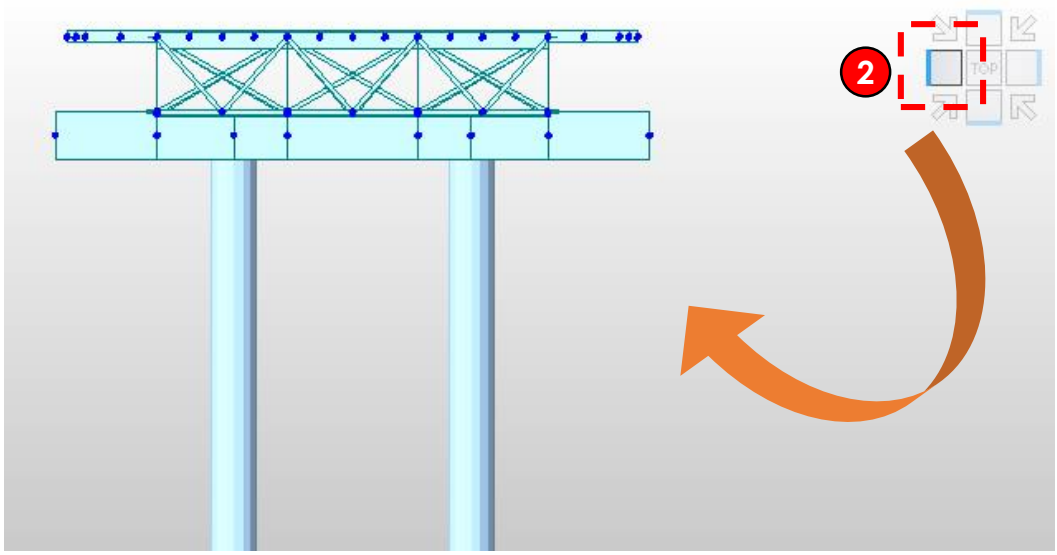
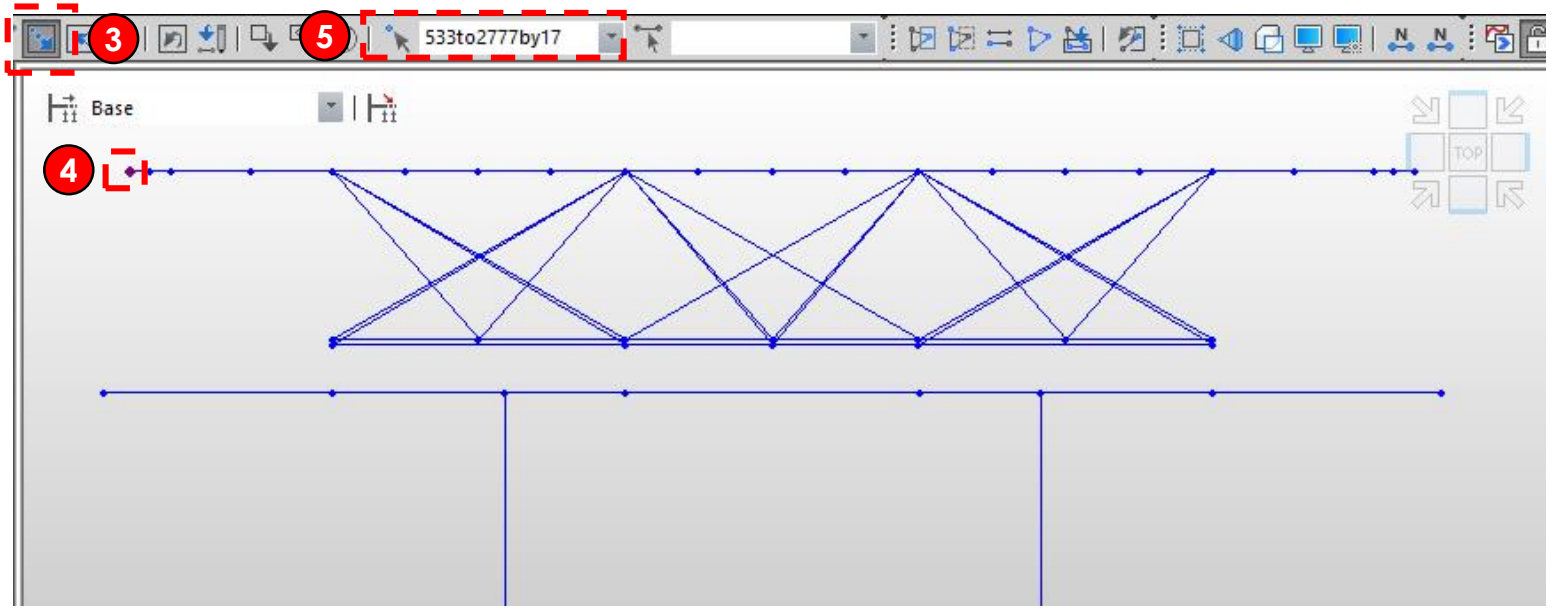


1. Open **midas_Civil_Learning_S1_E7** file
2. Click **left side view button** from the top-right corner of the model window for the quick side view
3. Click **Select by Window** from Quick Tool Bar
4. Click the very left top node from side view, so we can select all
5. Check node selection window to make sure you selected nodes from **533 to 2777 by 17**

If it's difficult to select using graphic interface, then you can also type **533 to 2777 by 17** into node selection window and hit enter



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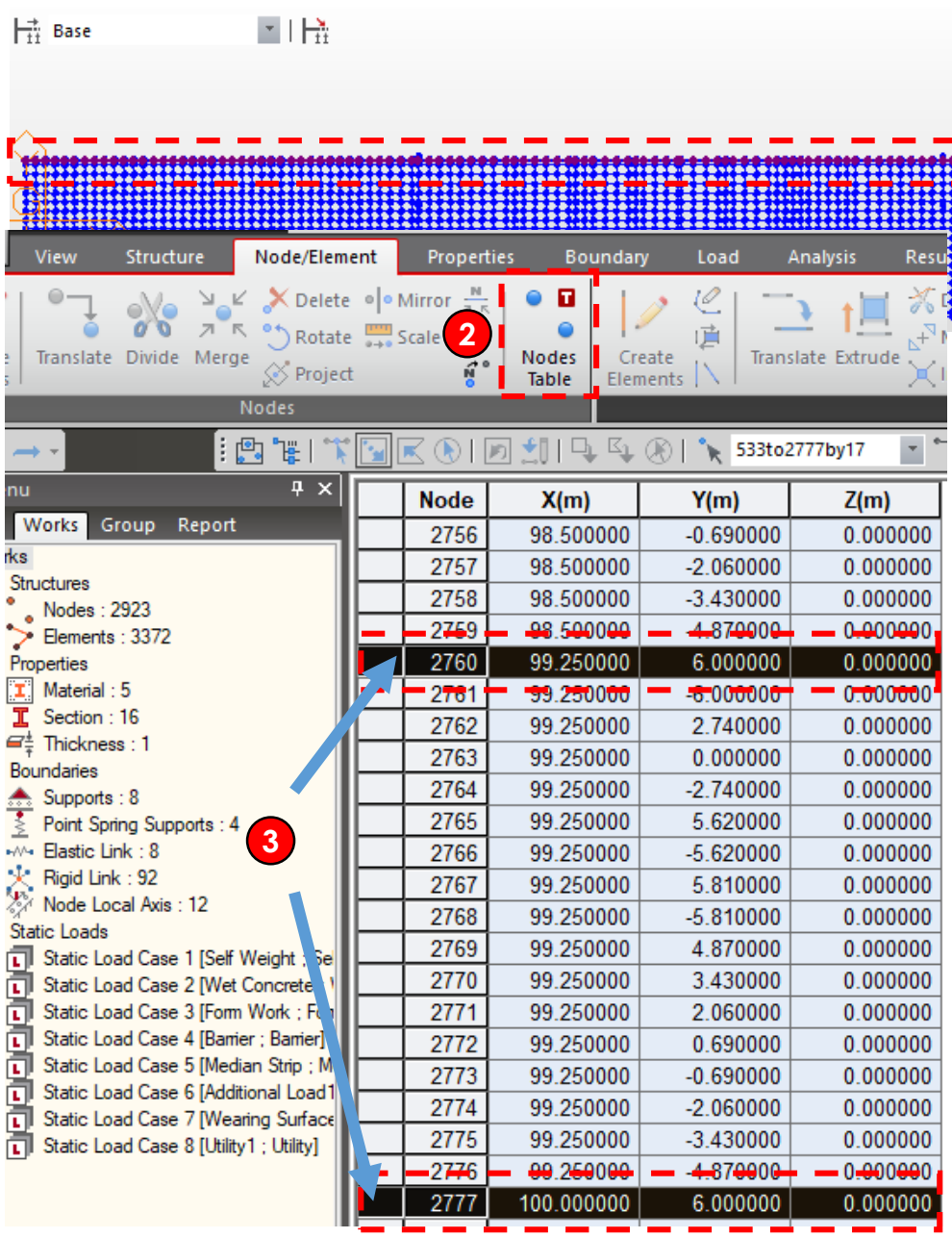

Node	X(m)	Y(m)	Z(m)
2756	98.500000	-0.690000	0.000000
2757	98.500000	-2.060000	0.000000
2758	98.500000	-3.430000	0.000000
2759	98.500000	-4.870000	0.000000
2760	99.250000	6.000000	0.000000
2761	99.250000	-6.000000	0.000000
2762	99.250000	2.740000	0.000000
2763	99.250000	0.000000	0.000000
2764	99.250000	-2.740000	0.000000
2765	99.250000	5.620000	0.000000
2766	99.250000	-5.620000	0.000000
2767	99.250000	5.810000	0.000000
2768	99.250000	-5.810000	0.000000
2769	99.250000	4.870000	0.000000
2770	99.250000	3.430000	0.000000
2771	99.250000	2.060000	0.000000
2772	99.250000	0.690000	0.000000
2773	99.250000	-0.690000	0.000000
2774	99.250000	-2.060000	0.000000
2775	99.250000	-3.430000	0.000000
2776	99.250000	-4.870000	0.000000
2777	100.000000	6.000000	0.000000

1. Click **top side view button** from the top-right corner of the model window for the quick top view and check all the top nodes are selected
2. Go to **Node/Element tab** and click **Nodes Table**
3. Once table is opened, scroll up & down to check the selected nodes are highlighted

As shown in the picture left, the selected nodes are difficult to review in the tabular interface because of node number differences. Is there a way to renumber them?

Good news for you! Yes. In midas Civil, there is a function that you can renumber nodes & elements. By renumbering specific nodes & elements, we can separately work on them from other nodes & elements and conveniently modify their positions and information using tables.

We will go through the steps in the next slides.

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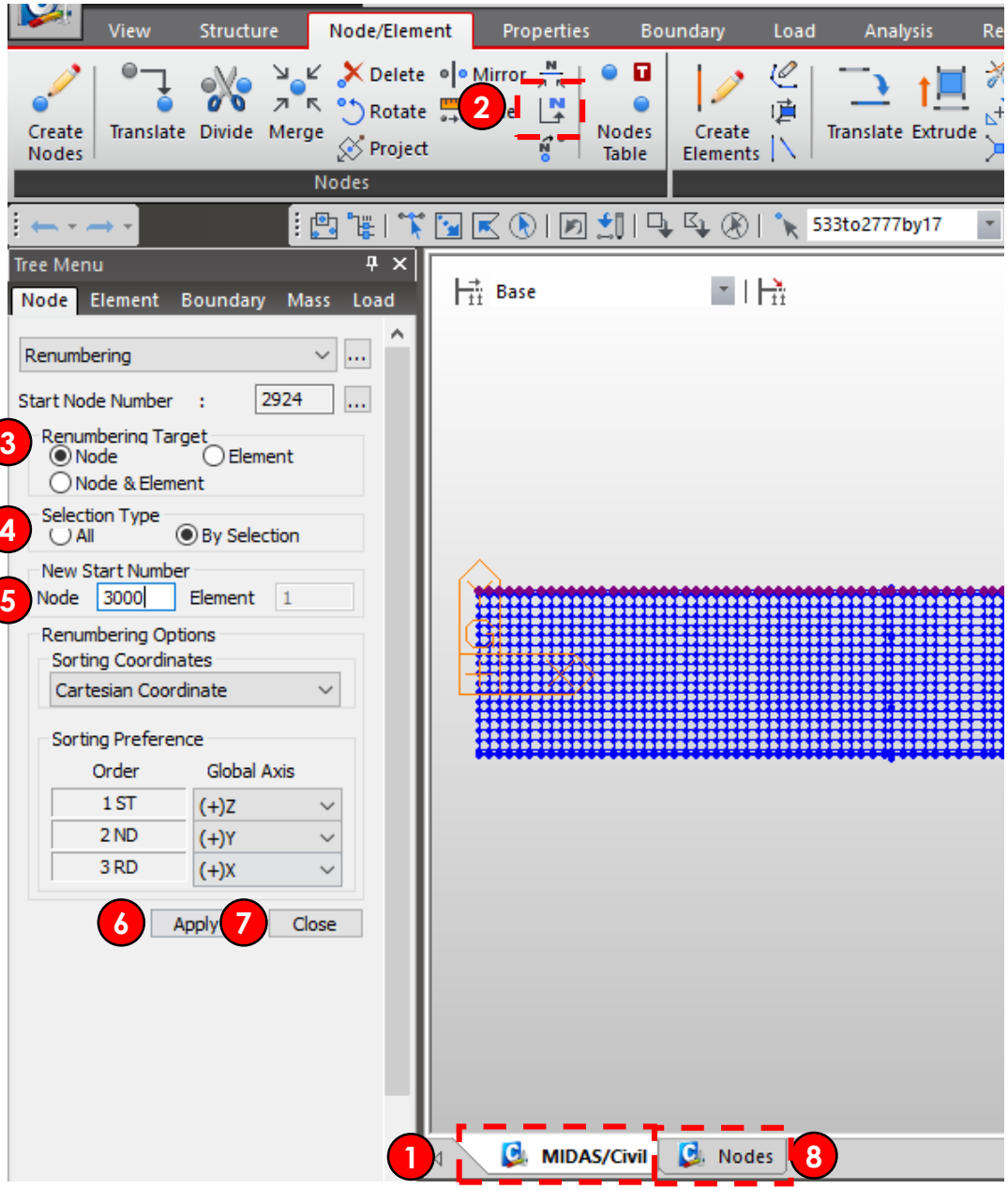

1. Comeback to model view by clicking **MIDAS/Civil** at the bottom of model window
2. From **Node/Element tab**, click **Renumber Node ID**
3. Select **Node** for **Reunumbering Target**
4. Select **By Selection** for **Selection Type**
5. Type **3000** for **New Start Number**
6. Click **Apply**
7. Click **Close**
8. Go back to **Nodes Tab** to see tabular value

What are the meaning of our inputs?

- **Start node number**
  This shows the node number when you create a new node. So this option is not applicable/modifiable for renumbering function
- **Renumbering Target**
  You can choose which target/information you want to renumber
- **Selection Type**
  'All' means all the nodes/elements are targeted. 'By Selection' means the selected nodes/elements are targeted
- **New Start Number**
  You can choose what number to be the starting nodes/elements number

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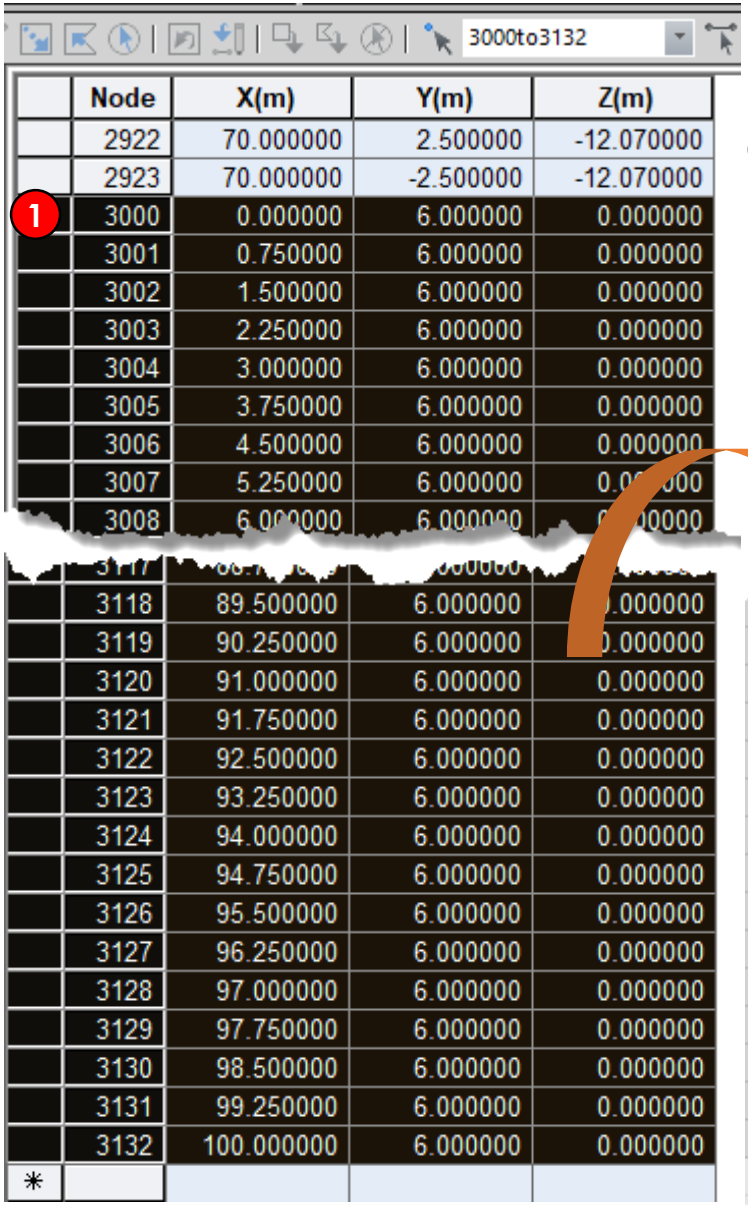

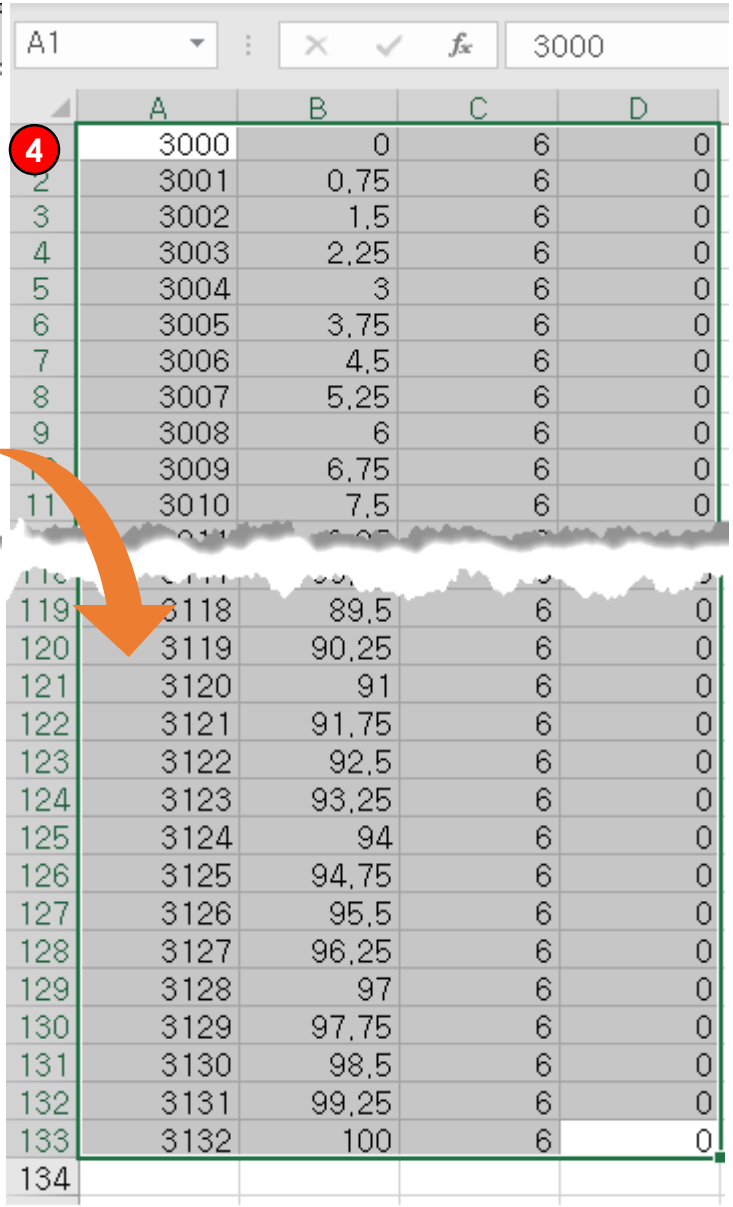

1. Click **node 3000 row** and drag until **node 3132** to select the nodes
2. Press **Ctrl + C** to copy tabular information
3. Open **Excel spreadsheet**
4. Press **Ctrl + V** to paste copied tabular information into Excel **A1 cell**

Did you know? midas Civil' table works similarly as Excel spreadsheets!

In MIDAS tabular interface, if you scroll the wheel button while pressing Ctrl key, the table will get bigger or smaller.

Selecting, inputting, copying, and pasting of cells, columns, and rows also work in a similar way

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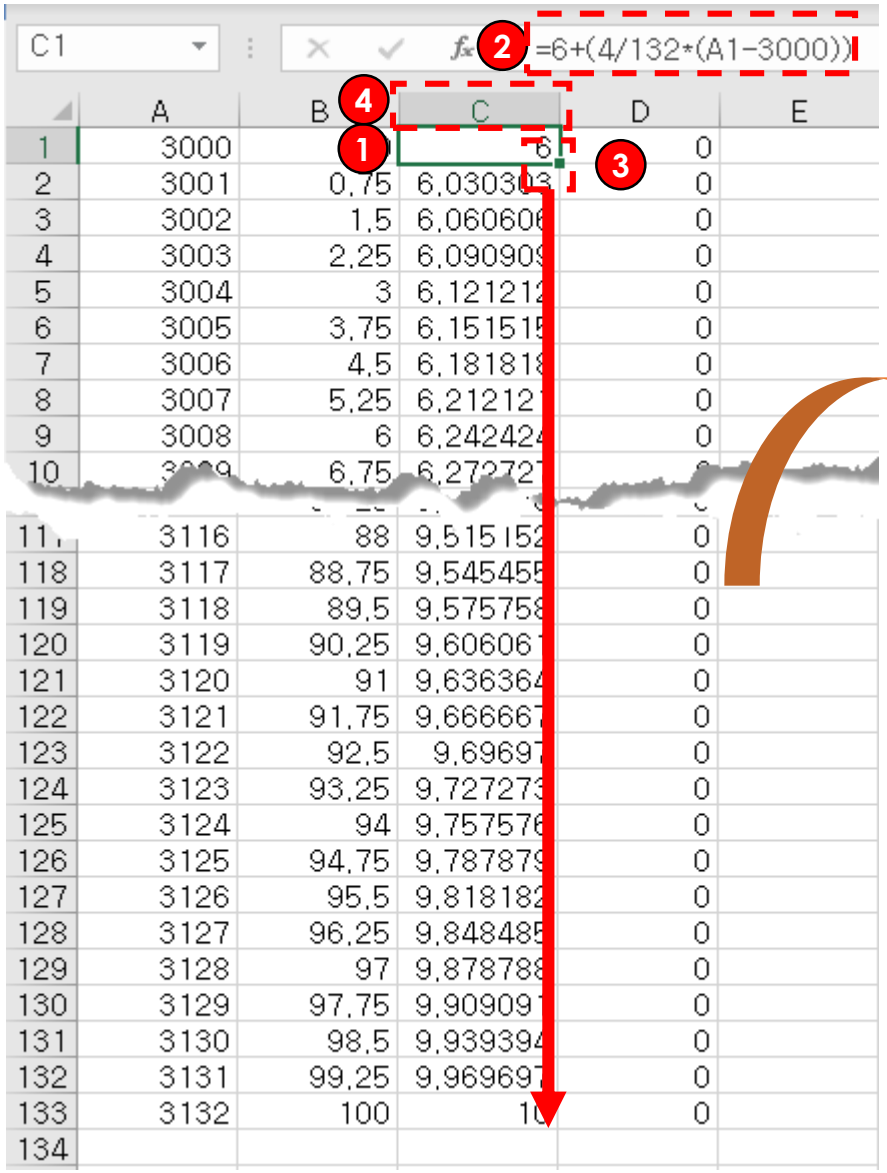
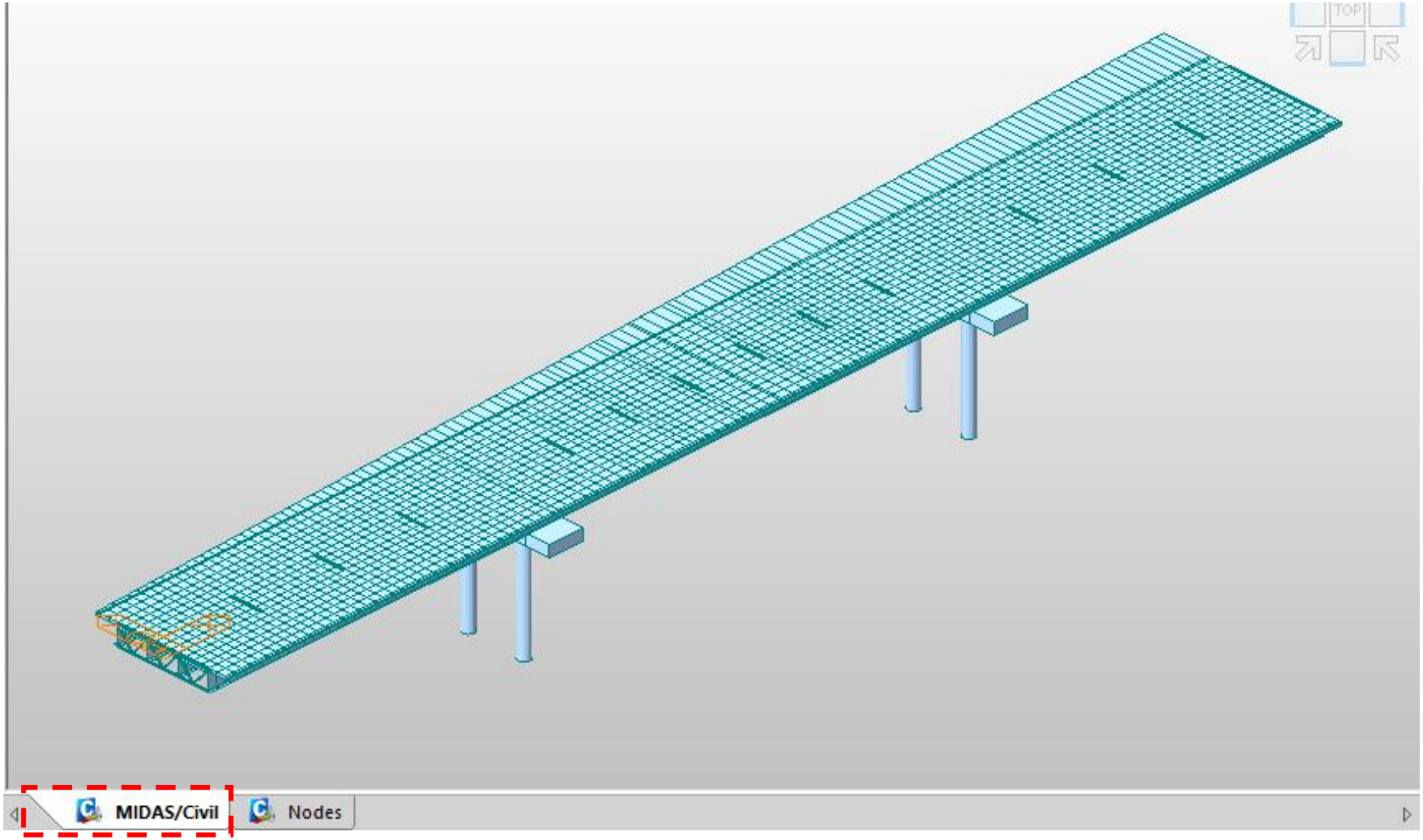


	A	B	C	D	E
1	3000		6	0	
2	3001	0.75	6.030303	0	
3	3002	1.5	6.060606	0	
4	3003	2.25	6.090909	0	
5	3004	3	6.121212	0	
6	3005	3.75	6.151515	0	
7	3006	4.5	6.181818	0	
8	3007	5.25	6.212121	0	
9	3008	6	6.242424	0	
10	[illegible]	6.75	6.272727	0	
11	3116	88	9.515152	0	
118	3117	88.75	9.545455	0	
119	3118	89.5	9.575758	0	
120	3119	90.25	9.606061	0	
121	3120	91	9.636364	0	
122	3121	91.75	9.666667	0	
123	3122	92.5	9.69697	0	
124	3123	93.25	9.727273	0	
125	3124	94	9.757576	0	
126	3125	94.75	9.787879	0	
127	3126	95.5	9.818182	0	
128	3127	96.25	9.848485	0	
129	3128	97	9.878788	0	
130	3129	97.75	9.909091	0	
131	3130	98.5	9.939394	0	
132	3131	99.25	9.969697	0	
133	3132	100	10	0	
134					

	Node	X(m)	Y(m)	Z(m)
	2923	70.000000	-2.500000	-12.070000
▶	3000	0.000000	6.000000	0.000000
	3001	0.750000	6.030303	0.000000
	3002	1.500000	6.060606	0.000000
	3003	2.250000	6.090909	0.000000
	3004	3.000000	6.121212	0.000000
	3005	3.750000	6.151515	0.000000
	3006	4.500000	6.181818	0.000000
	3007	5.250000	6.212121	0.000000
	3008	6.000000	6.242424	0.000000
	[illegible]009	6.750000	6.272727	0.000000
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	88.750000	9.545455	0.000000
	3118	89.500000	9.575758	0.000000
	3119	90.250000	9.606061	0.000000
	3120	91.000000	9.636364	0.000000
	3121	91.750000	9.666667	0.000000
	3122	92.500000	9.696970	0.000000
	3123	93.250000	9.727273	0.000000
	3124	94.000000	9.757576	0.000000
	3125	94.750000	9.787879	0.000000
	3126	95.500000	9.818182	0.000000
	3127	96.250000	9.848485	0.000000
	3128	97.000000	9.878788	0.000000
	3129	97.750000	9.909091	0.000000
	3130	98.500000	9.939394	0.000000
	3131	99.250000	9.969697	0.000000
	3132	100.000000	10.000000	0.000000
*				

1. Click C1 cell
2. Type **=6+(4/132*(A1-3000))**
3. Then click **the green dot** and drag it **until the end** to distribute the Y coordinate locations, which the staring and ending nodes are 6m and 10m, respectively
4. Select the entire **column C** by clicking column C
5. Press **Ctrl + C** to copy the column
6. Go back to **midas Civil program**
7. Click **Y coordinate** for **node 3000**
8. Press **Ctrl + V** to paste the copied column



1. Comeback to model view by clicking **MIDAS/Civil** at the bottom of model window
2. Check how the node location is changed!