Question Types

Questions related to the webinar topic

Questions related to the general features of midas Civil

Questions related to the modeling components and analysis results of the demo model

Questions related to other topics

# A. Questions related to the webinar topic

- Can bent foundation piles be modeled in this comprehensive model to check reaction loads to each pile?
  - ➤ Yes, the bent piles can be modeled in midas civil to check the pile load.
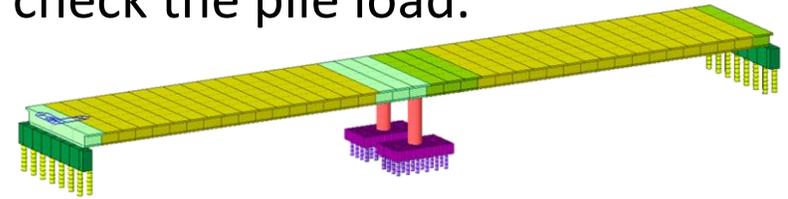
- Can the program also do the transverse top deck design? This is a critical initial step.
  - ➤ Yes, the program supports transverse top deck design.
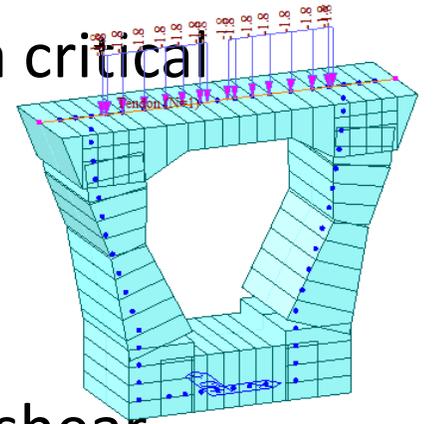
- For prestress P jack does the program design Pjack? What about shear stirrups and additional mild steel for Ultimate Moment?
  - ➤ No, the program does not recommend the required value of Pjack or reinforcement. User has to input the Pjack and reinforcement, and program can verify the input.

A. Questions related to the webinar topic

- Are your PS cable paths straight or parabolic? Are you allowing tension in the DL + LL case?
  - ➤ The model has straight tendons. The prestressing/tensioning should be defined using "Prestress" load case and separated from the DL or LL case. For the load combination, users can automatically include prestress (PS) load cases using "Generate Load Combinations as per AASHTO" or manually add PS load cases to the specific load combinations.

A. Questions related to the webinar topic

- If the bridge width varies, there can be a different number of design lanes throughout the length of the bridge. Can the new live load optimization tool capture that?
  - ➢ The live load optimization can consider a range of lane numbers. For example, the load case can be set up so that the optimization feature can consider 1 to 3 lanes for maximizing the beam force moment at each element location.
  - ➢ Varying width is another story. If lane width vary, one optimization lane cannot handle all varying width. Rather, multiple optimization lane should be set so that each lane can handle different skew angle to consider the varying width of the bridge. Any group of continuous element can be selected as the reference line of optimization lanes or regular line/surface lanes.

A. Questions related to the webinar topic

- It would be good to quickly show how to modify the mass source for the RS analysis.

- For RSA, when a bridge is defined through the wizard is the mass automatically taken based on the materials and sections input or do we have to assign mass separate? If a new load is added after the wizard is used will the software include the mass or load? Do the loads or items have to be assigned to a particular load case to be accounted for in the RSA?
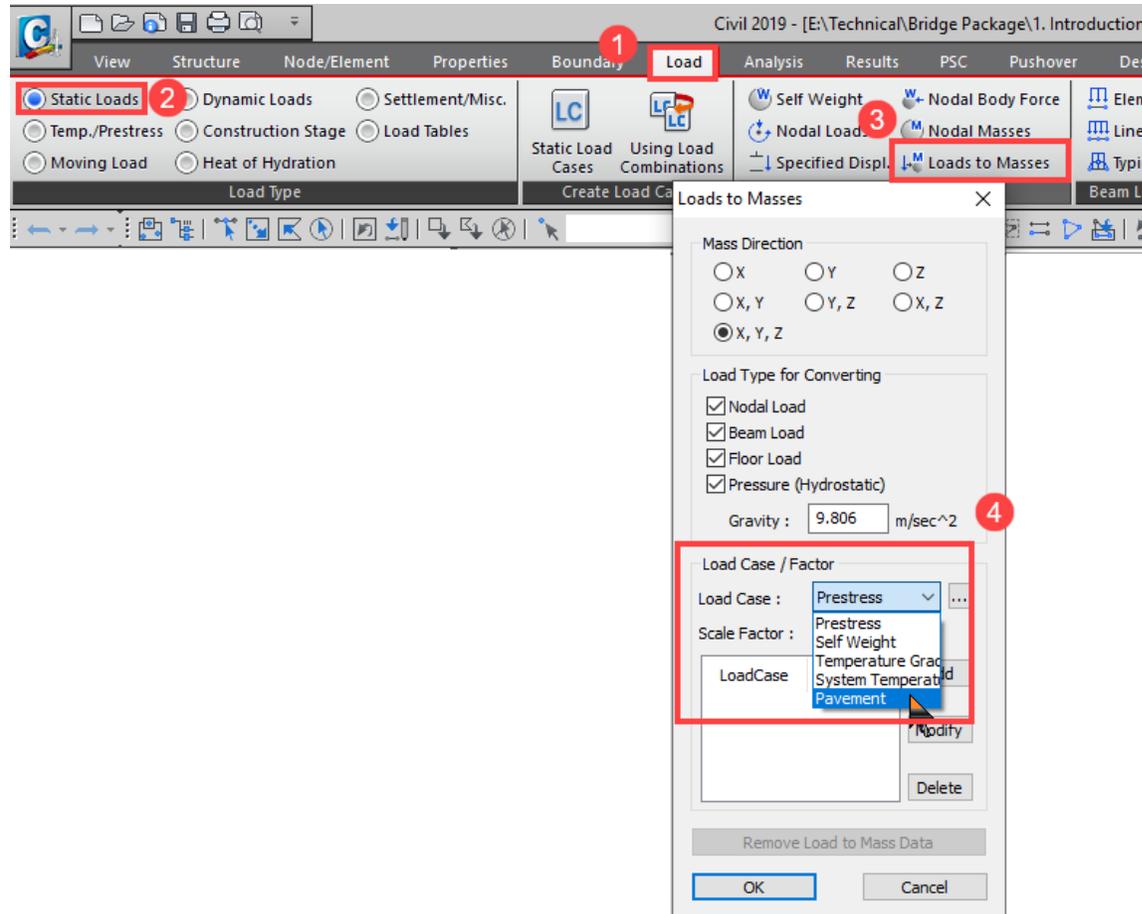

> User doesn't need to assign the loads manually.

A. Questions related to the webinar topic

- I saw that the spring definition generated a non linear curve p-y for nodes of integral abutment piles. But RSA is a linear analysis. how is the actual spring stiffness is arrived during the analysis?

  ➢ The live load optimization can consider a range of lane numbers. For example, the load case can be set up so that the optimization feature can consider 1 to 3 lanes for maximizing the beam force moment at each element location.

A. Questions related to the webinar topic

- Can Midas perform strut and tie design for the pile cap?
  - ➢No

- Does it take into account the grouping effect for piles?
  - ➢No

- We still used a separate model for push over..is it possible to integrate all the analysis in one model.
  - ➢Yes

- How are the soil springs added?
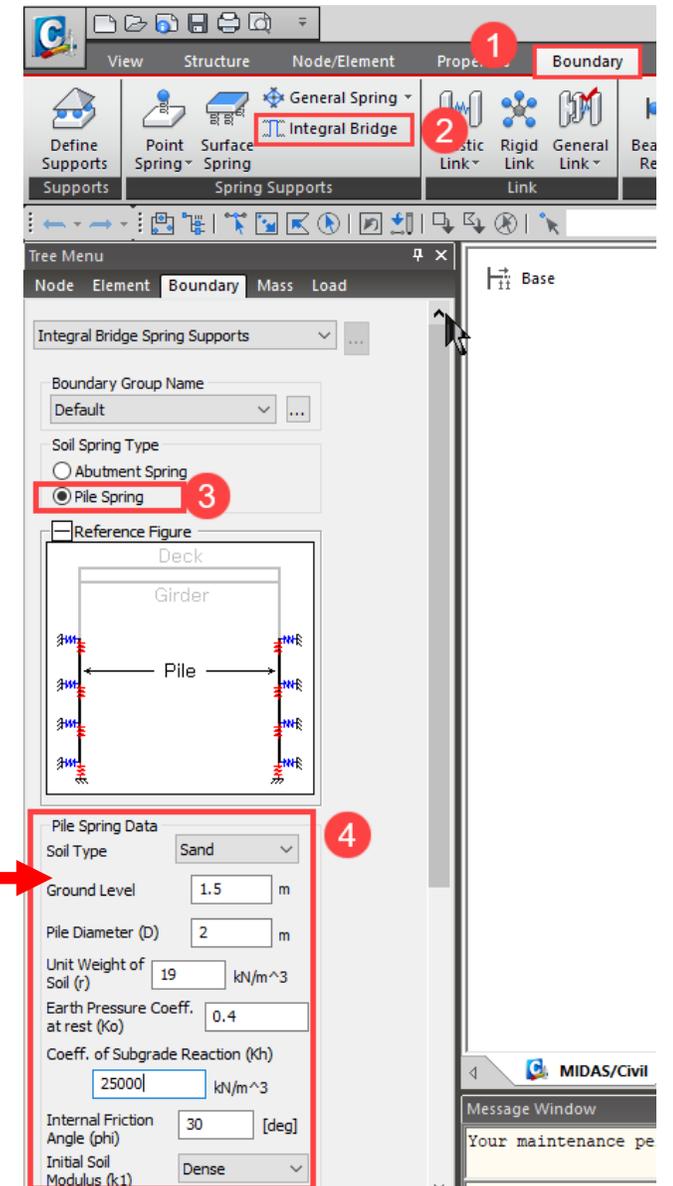
A. Questions related to the webinar topic

- Is AASHTO LRFD Appendix B5 used to calculate the shear capacity in the automated design tool?
  - ➤ It is not considered in current AASHTO LRFD checking. We plan to implement the 8th edition in fall 2019. We will add it to the development list the 8th edition update.

- How do you get from a full model to the pushover model?
  - ➤ User can perform pushover analysis in the full model. The pushover analysis is not limited to substructure-only model.

B. Questions related to the general features

- Can the geometry of the bridge be accomplished by inputting the CAD file?
    - ➤ Yes, related technical material will be shared in the post-webinar follow up email.
- Can you spans in feet rather than inches?
    - ➤ Yes, unit setting can be changed. Related technical materials will be shared in the post-webinar follow up email.
- For the box girder section definition, you used off-set of "center-top". What is the reason of that? If we use "center-center" instead, do you think the global behavior of model will be the same?
    - ➤ The girder offset was set to "center-top" for the modeling convenience. The offset location does effect the analysis result. Depending on the case the different can be negligible or critical. In this model, it did not affect the analysis case much. Related technical resources will be shared in the follow up email.

C. Questions related to the model and result

- Can you explain what the thickness item was that you inputted with the sections and materials?
    - ➢ Pile Cap is modeled using the plate elements. The thickness is used to define the plate elements.
- Please explain how the column is linked to the footing using linkage element.
- Is it column linked to only on node on the pile cap or the load can be spread out to a nodal group when the column size is big. to avoid localized stress on cap
    - ➢ Pile Cap is modeled using the plate elements. The thickness is used to define the plate elements.
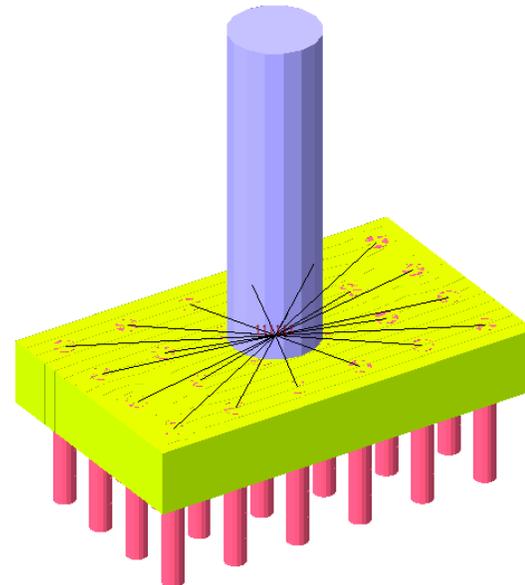
C. Questions related to the model and result

- There are warnings in your message window indicating that displacement at a node is abnormal.... What is causing this?

  ➢ Wrong input of median strip load.

The abnormal deformations is due to incorrect input of loads. 12.5 kips/in is just too high. Rather than using 12.5 kN/m, I specified 12.5 kips/in leading to both the errors.

C. Questions related to the model and result

- Why the moment at the beam beginning is not zero?

  ➢ Because of the torsion stiffness of the abutment, moment at the beginning of the beam is not zero.
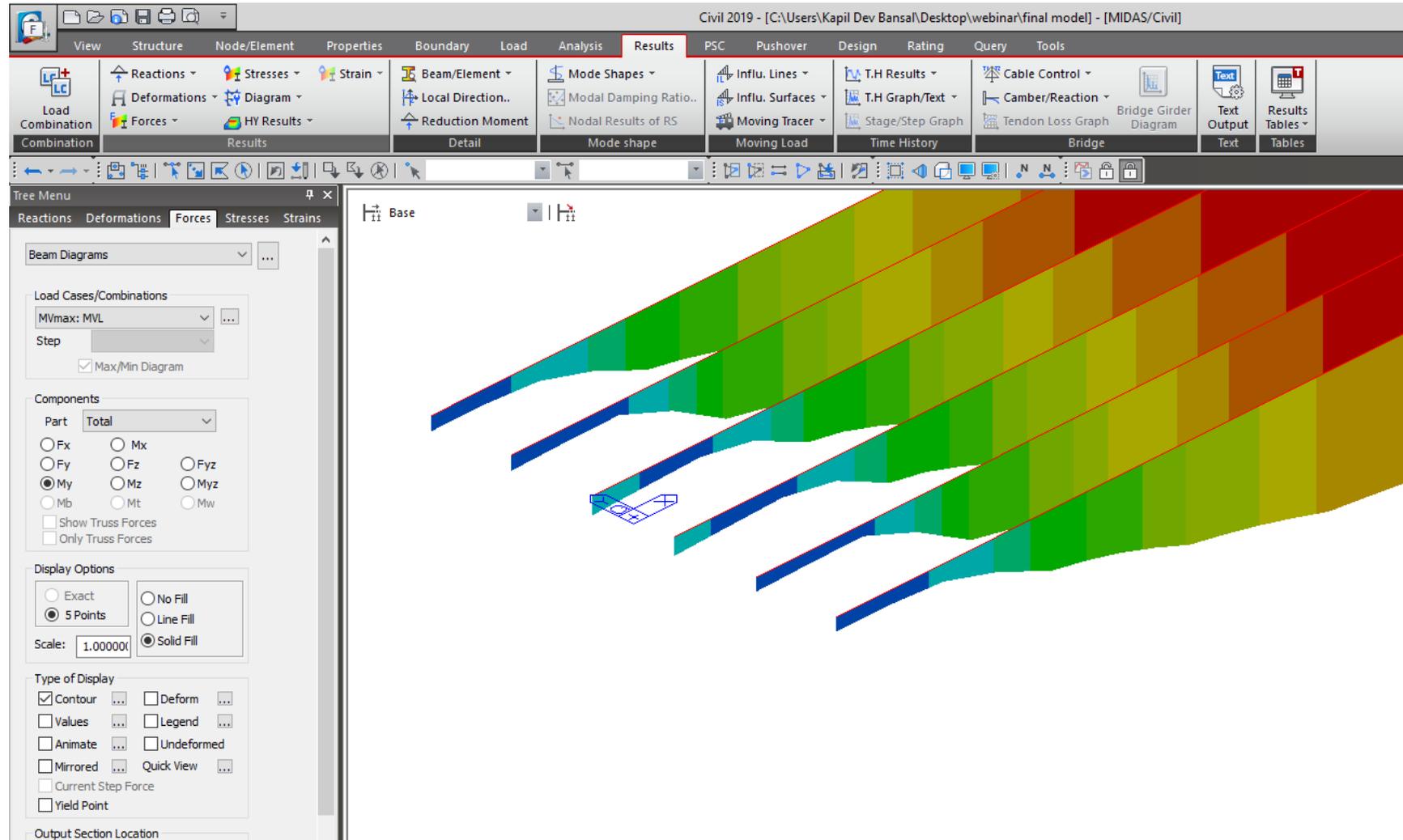
C. Questions related to the model and result

- Can you please explain the zig-zag in the live load moment diagram? Is that caused by transverse beam torsion?

  ➢ Yes, it is. Once I reduced the stiffness of the transverse members, the moment shape is smoother for Moving Load analysis.
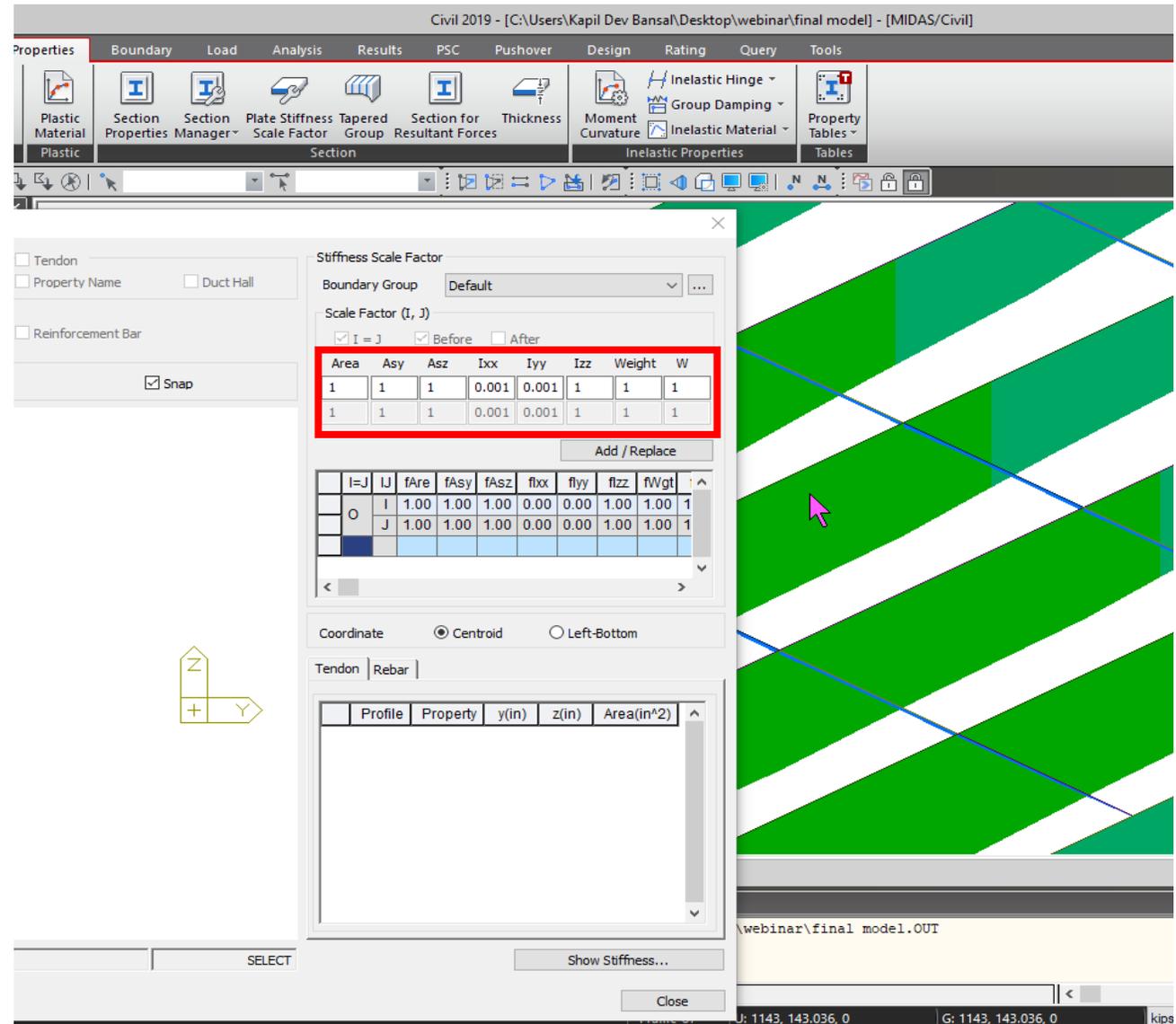
D. Questions related to other topics

- Can you please share the model that you are demonstrating?

- Can you please advise can we do Concrete/Masonry Arch bridges in Midas? if you can share technical literature and related video it will be helpful.

  ➤ Yes, we can do masonry arch bridges in midas Civil. You can refer to the link for an example: https://www.researchgate.net/publication/323977300_Analysis_of_Static_Load_Test_of_a_Masonry_Arch_Bridge/fulltext/5ab5b2aea6fdcc46d3b38f8a/323977300_Analysis_of_Static_Load_Test_of_a_Masonry_Arch_Bridge.pdf?origin=publication_detail

  ➤ In addition, you can refer to the following video for the definitions https://www.youtube.com/watch?v=t_MxYqBjIfU

D. Questions related to other topics

- Hello, on the topic of the wizard and curved bridges… is there an easy way to define a curved deck with a composite steel girder bridge where the girders are chording the curve (i.e. girders are not curved).

- With my earlier question relating to curved steel bridges, the specific feature I would be looking for is a chording steel girder (ex. 3 straight segments of girder to form the curve). If the wizard can only include curved steel girders it may not meet the situation I am looking for.

  ➢ Our prestress (pre/post-tension) composite girder bridge can handle this modeling: model girders straight while deck is curved. Therefore, we can work around by initially modeling using the prestressed composite girder bridge wizard. Once the wizard is executed, we can replace the prestressed girder with steel plate girder.