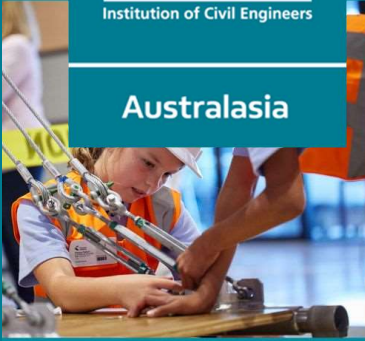


ice

Institution of Civil Engineers

Australasia



# BRIDGES TO SCHOOLS

*Aotearoa*



ICE New Zealand Local Association

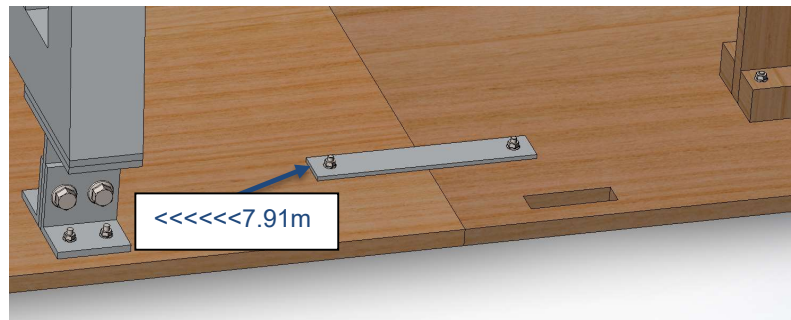
# Guidelines for Construction of ICE Bridge

### Site prep – before the young bridge builders arrive

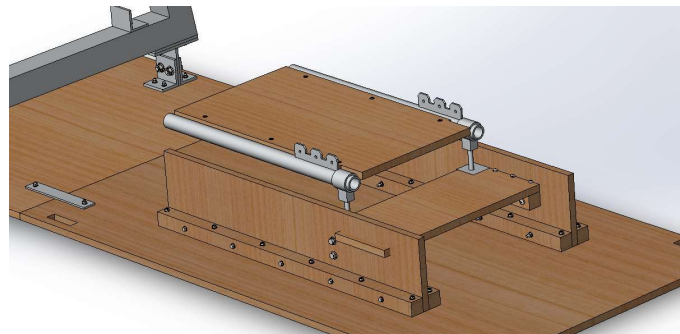
- The bridge is 13m long overall and 2.8m high, so the hall where it is to be erected will have to be at least 16m long to with a 3m ceiling to allow for working space. You will need the space to be as flat as possible.
- Lay one set of base boards out and join them with rectangular panels (can use bolts without nuts just to keep the boards together). Rubber mats have been provided to go under each corner of each panel to help keep it stable.

### Assembly

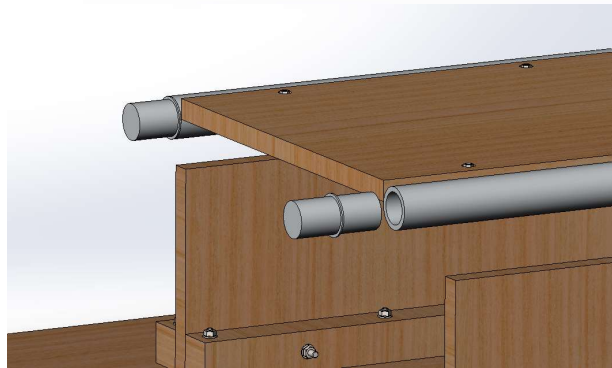
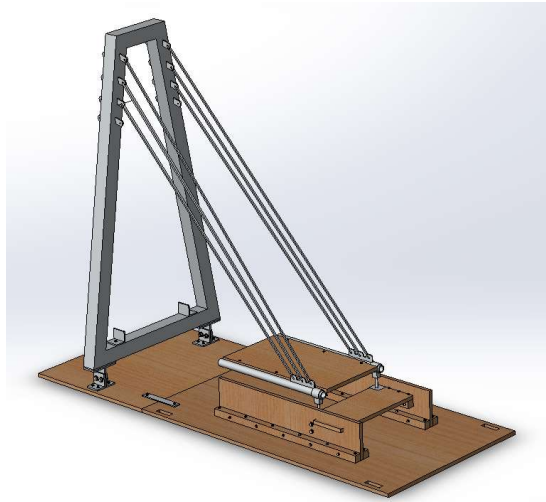
1. Connect footing 1 and footing 2 by steel panel and M8 bolts. Nuts facing up, sockets are drilled to hide the bolt heads. **NOTE – The distance between the two steel plates (frame side) is to be 7.91m.**



2. Install panel A as shown and connect the cables for panel A. **NOTE – All panels are colour coded with electrical tape. You need to match the colours. We have single colours and double colours. Single colours are on the step side (outer most side) and the doubles run towards the middle. The same applies for the cables which are also colour coded. These will need to be prehung for the smaller children.**



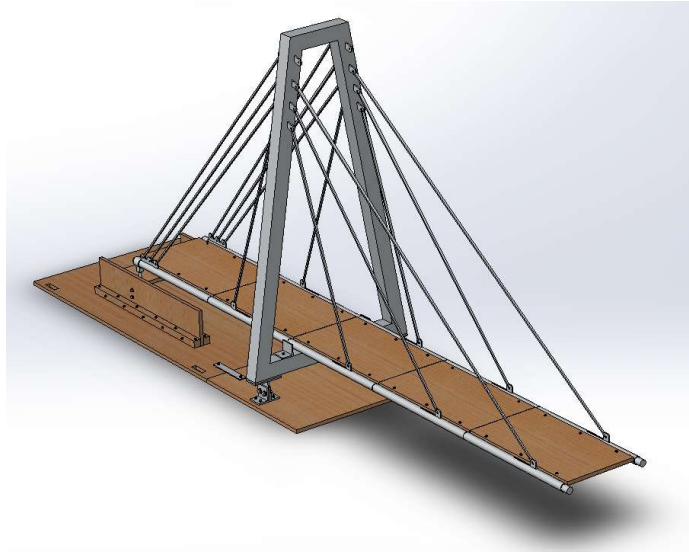
3. Connection pins are installed on the end of panel A



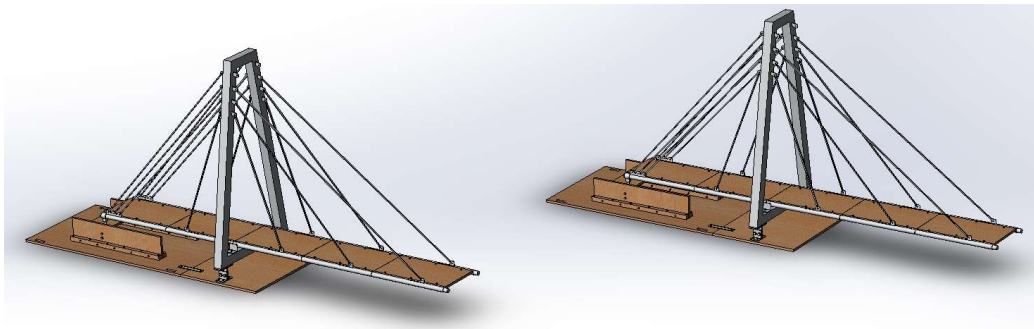
4. Install panel A with its cables. Make sure you use the single coloured cables for this side of the pier. The lugs and the end of each cable is colour coded.



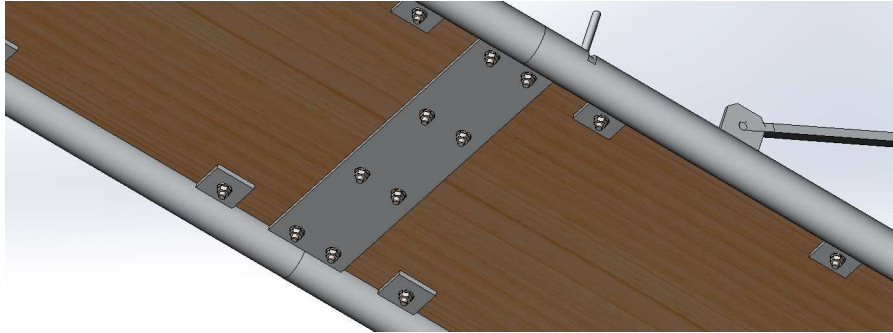
- Repeat the process with panel B as shown and so for the rest of the panels. There should be 5 No. panels each side in total (panels for other side of the birdge are A1, B1, C1, D1 and E1). The panels on the other side of the pier running towards the middle double coloured.



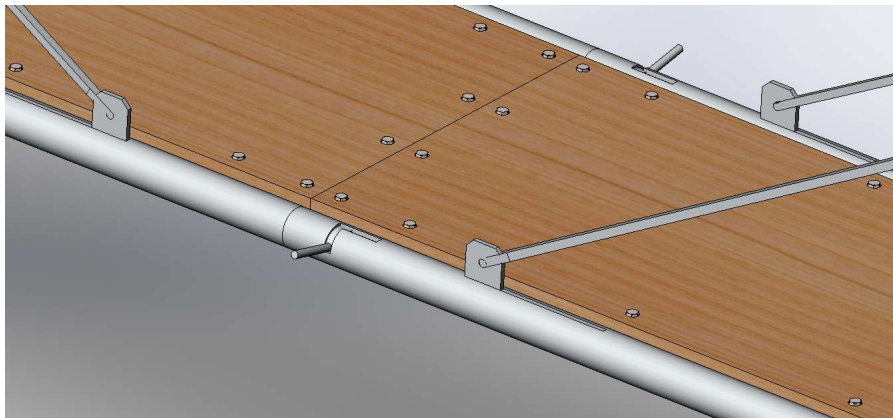
- When you get to panel E install the sliding bolt ready to slide into panel E1. **NOTE – You will need to install panel E1 before panel E due to the steel plate that panel E will rest on.**



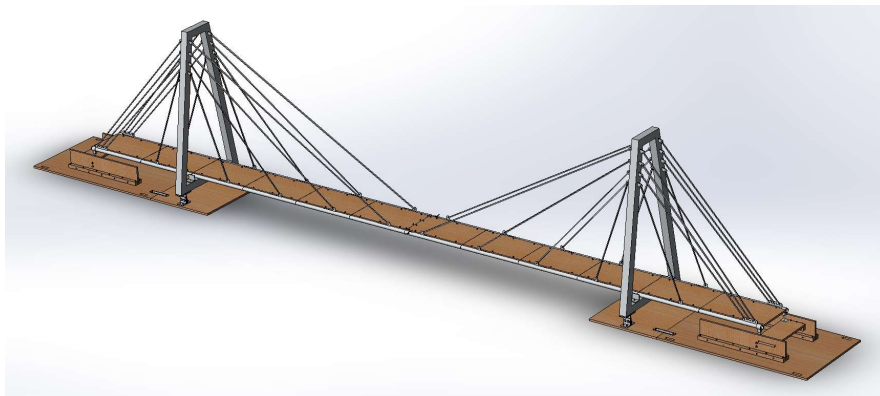
7. Connect the panel E and E1 by steel panel and M8 bolts. Nuts facing down, sockets are drilled to hide the bolt heads.



8. Extend the sliding boss. Finally, you may need to adjust the turn buckles to have a little slack (we need some slack for when the students/teachers walk over it – one at a time – although you can have several technically). There will be significant adjustment required when on an uneven surface/slight slope).



**DONE!!!!**



#### **Dismantling the bridge**

- Reverse to take down, ensure pins, bolts and nuts are placed back through the shackles, otherwise they will get lost. If you drag cables across the ground to the trailer, check all the pins, wingnuts, bolts are still fastened before loading into trailer.
- **Leave the A-frame on the board**, but undo and remove one of the bolts so it can be folded down. Replace the bolt.
- Carry to the trailer using trolley wheel then place in either side of trailer with woodenboard facing towards trailer wall