

# NAU Steel Bridge

## Meeting Minutes

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*Date / Time:* December 12th, 2017 / 5:30 PM

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*Present Members:* Isaac Block, Ian Connair, Matt Parrish

*Present Advisors:* Thomas Nelson, PE, SE

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**Meeting Begins: 12/12/17 at 5:30 PM**

### **What do you think of our design?**

- Note: cross-bracing
- Tweak model for diagonals to reflect bridge better (they should all be less than 3 feet)
- Plate bearing A36:  $F_u=58$  ksi
- Bolt diameters: As small as you can, not below one quarter of an inch
  - Bottom chord- the holes minimize the area
  - For smaller bolts, looser connection
    - Try for holes that are 1/32" bigger than the bolt
    - Try 1/4", 5/16", then 3/8"
  - Can use non-structural
    - Grade 5, ASAE
      - Same as ASTM 449
      - What we will be purchasing
    - Grade 8.3 is even stronger
      - Use these, 20 threads per inch
    - Copper state in Flagstaff
      - Give photo in end
    - Check block shear and tensile rupture
  - Truss to footing connection?
    - Triangle gusset good idea, but try to create a tube that chord and diagonal can slide into
  - Edits on model?
    - Not much really
  - Finish connection calcs
  - Shop drawing--? Make sure model updated with drawing
  - Steel order:
    - Make sure 1.5"x11 ga is strong enough