



# ***Local Agency Bridge Design***

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- *Senior Local Bridge Standards Engineer*



*ODOT Local  
Agency  
Certification  
Academy –  
Session #4 -  
Design Elements*



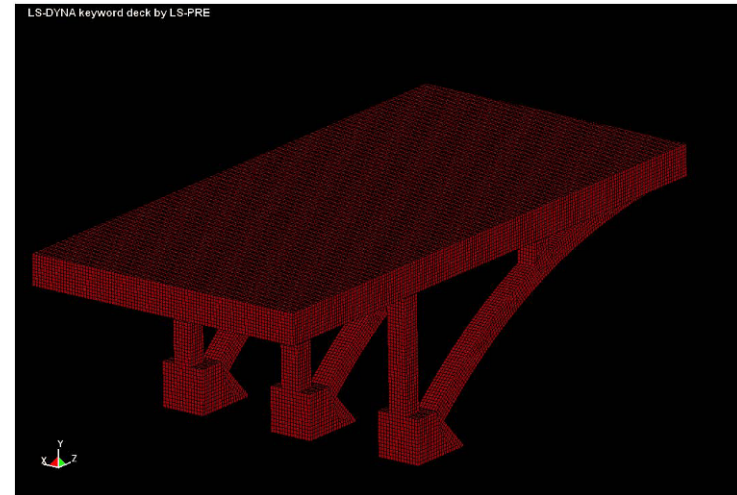
## ***Presentation Outline***

*Expectation*

*Why*

*Review  
process*

- Expectation:
  - Qualification of Staff
  - Personnel
- Why?
  - Bridges are high risk
  - Bridge Design is specialized area of engineering
  - ODOT has to maintain the bridge after design
- Review Process:
  - TS & L, Preliminary and final Design





# ***Bridge Design Certification***

- **Expectation:**
  - Qualification of Staff
    - The *Hydraulics Engineer*
    - Foundation Engineer
- Personnel to perform following:
  - Bridge Design Reviewer
  - Bridge Design Checker
  - required to either stamp and/or sign the final plans





# ***Bridge Design Certification***

- Why?
  - Bridges are high risk to the public (cost & Time)
  - Bridge Design is specialized area of engineering
  - ODOT has to maintain the database & report to FHWA
  - ODOT inspects the bridge every 24 months





## ***Bridge Design Certification Review***

- Type Size & Location (TS & L):
  - Requires AASHTO Bridge Design
  - LRFD for Replacement bridges
  - Standard Specification for repairs
- Things to look for:
  - Exceptions (roadway width)
  - Seismic design (500 yr & 1000 yr)
  - Hydraulics report
  - Foundation report (liquefaction?)

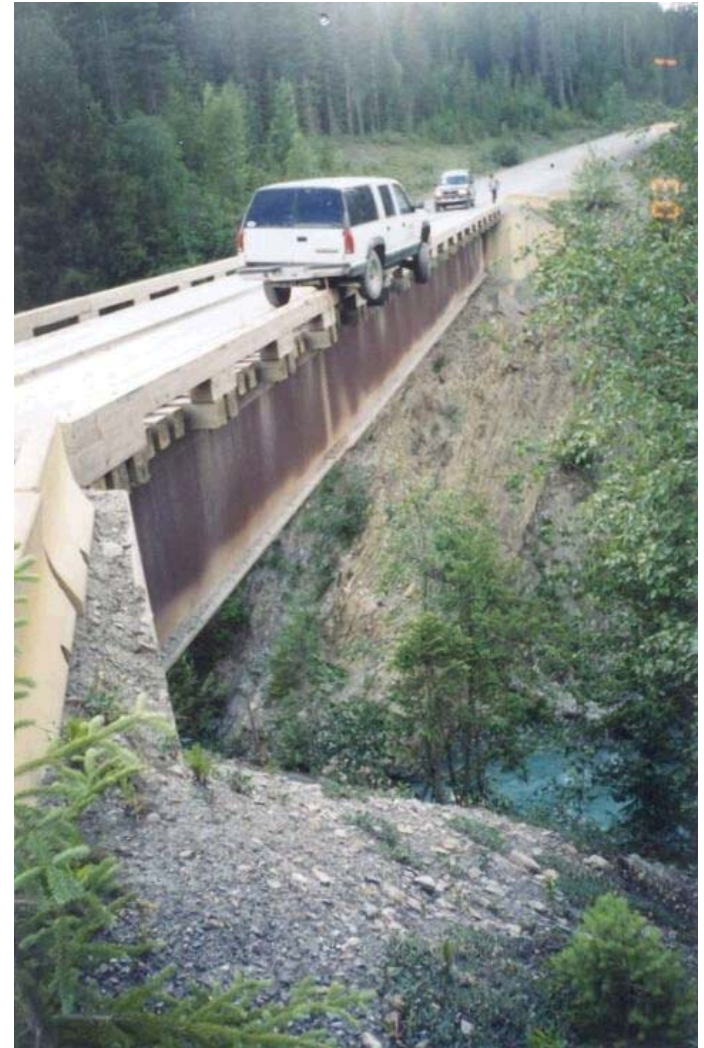






## ***Preliminary Bridge Design Review***

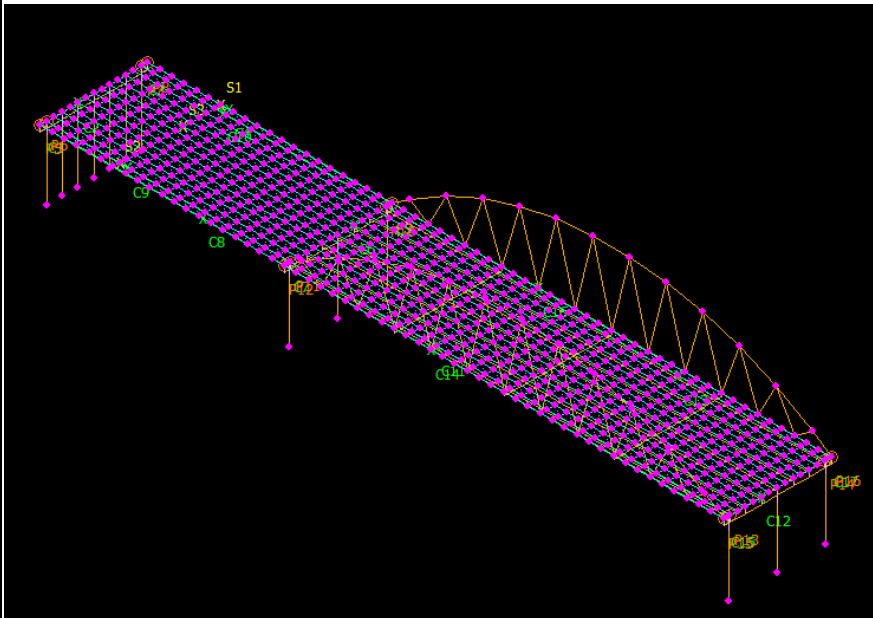
- **Things to keep in mind:**
  - Rail exceptions
  - End panels –cost effective for settlement bridge ends
  - unusual detailing
- Special provisions
- Estimates





## ***Bridge Design Certification Cont.***

- **Final Design:**
  - Follow up of the previously concerns & comments
  - Consistency from Plan, specs, estimates







# Design Checklist for Class II

## Bridge Design Checklist

6/16/2010  
8:29 AM

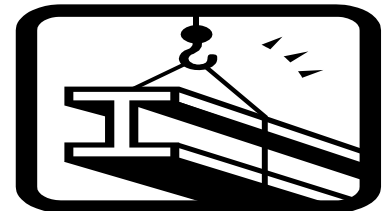
DESIGN CHECKS	Y	N	N/A	Designer	DATE	Checker	DATE	Reviewer	DATE
<b>Class II Check</b>									
<ul style="list-style-type: none"> <li>Class II Check is a review of design concepts and construction details &amp; does not necessarily include structural analysis. It will be done primarily for:               <ul style="list-style-type: none"> <li>Minor Bridges designed by an experienced designer</li> </ul> </li> <li>Checker's Responsibilities:               <ul style="list-style-type: none"> <li>Review of correspondence, job files and design calculations</li> <li>Confirmation that foundation and hydraulic requirements are met</li> <li>Verification of geometry, alignment and structure type selection</li> <li>Confirmation with Designer that structural critical elements have been analyzed during final design</li> <li>Completeness of plans</li> <li>Check of construction details and Final Estimate quantities</li> <li></li> <li></li> </ul> </li> </ul>									

[http://www.oregon.gov/ODOT/HWY/BRIDGE/docs/BDDM/apr-2010\\_finals/br\\_design\\_checklist\\_rev02.pdf](http://www.oregon.gov/ODOT/HWY/BRIDGE/docs/BDDM/apr-2010_finals/br_design_checklist_rev02.pdf)



## ***Plans Specifications & Estimates (PS & E) Bridge Design certification***

- Document submittal to ODOT:
- As-Built Drawings (signed, final copy on mylar, "D" sized (24 x36). (containing final construction notes).
- A copy of the construction or contract drawings. These can be half size (11x17) and can be on paper.





## ***Bridge Design Certification Cont.***

- A copy of the foundation report.
- Pile records. (If applicable).
- Hydraulic reports (scour analysis report included in this report)
- load rating (as-built)  
Report -State will need a hard copy that has been stamped and signed
  - an electronic copy for our records.
  - If the bridge has not been load rated, is there a contract in place to have the bridge load rated?





## ***Bridge Design Certification Continued***

- Notify State's Steve Tuttle, Bridge Inventory Coordinator when a bridge project is complete
- The initial inspection can be scheduled.
- It requires within 90 days after construction complete
- It requires within 160 days to be in Pontis





*Thank You!*



*Questions ?*

*Holly Winston, P.E.*

Local Government Section

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