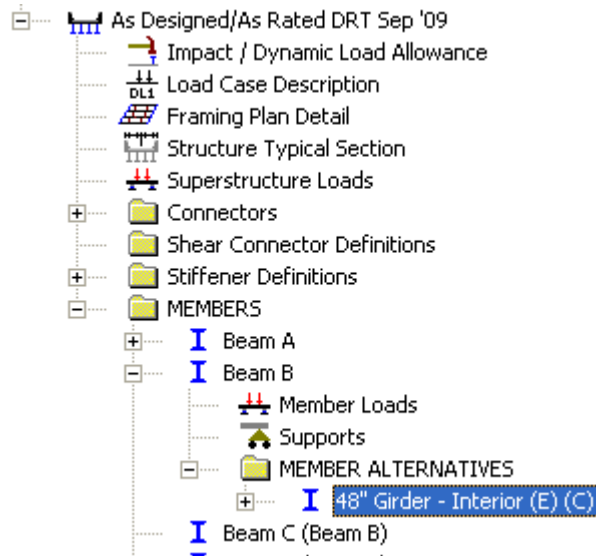
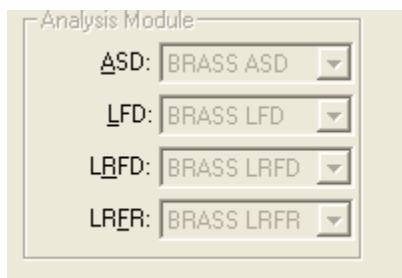


# LRFR Rating and LRFD Specification Check

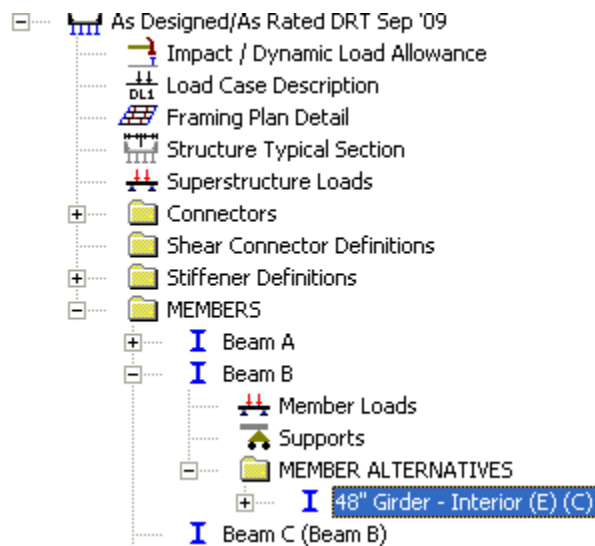
Open the member in the Member Alternatives that you want to investigate



Set your Analysis Module (engine selection) to look like this, select OK when done



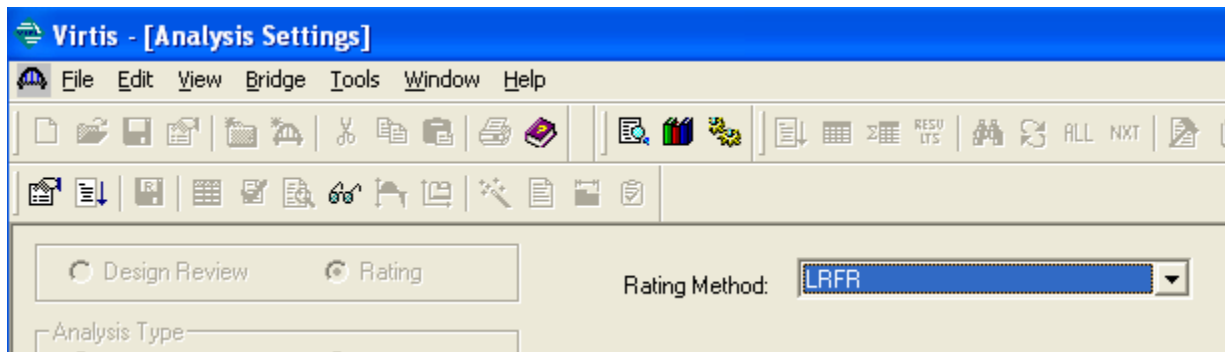
With the Member Alternative highlighted



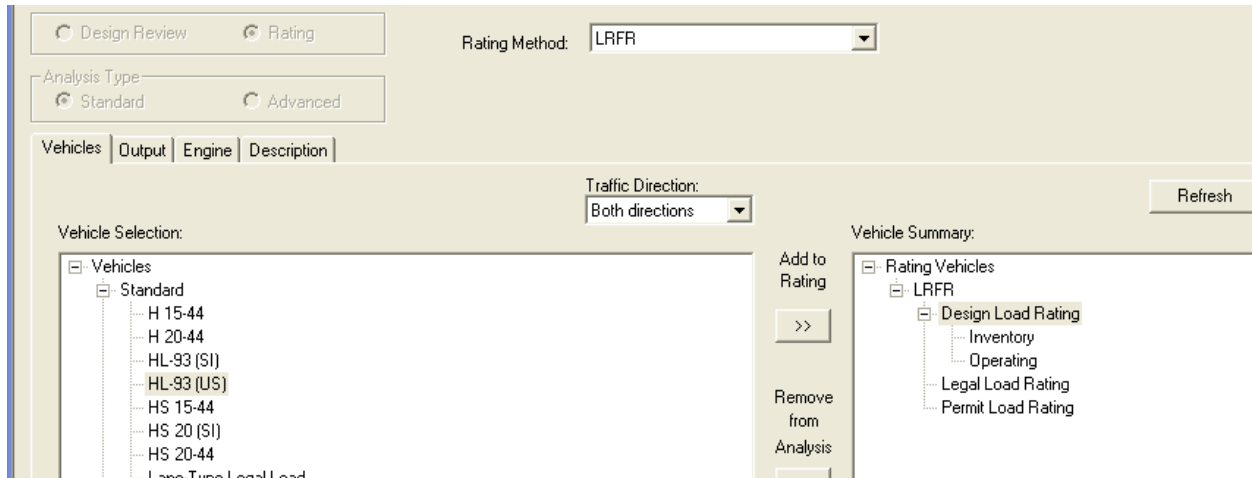
Select the "View analysis settings" from the tool bar



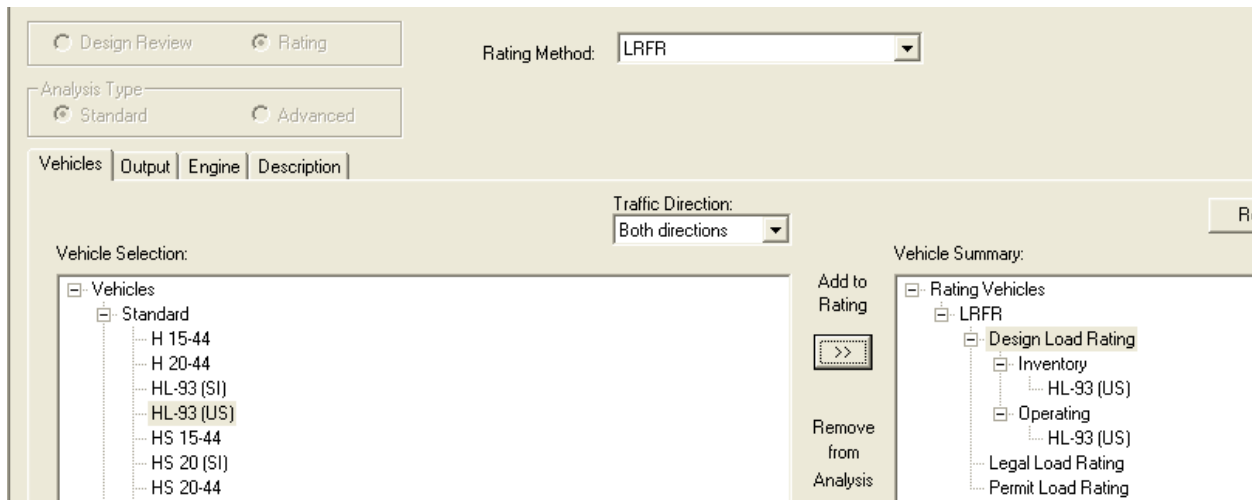
Select Rating Method in the upper middle for LRFR



Highlight “Design Load Rating” in the right panel  
Highlight HL-93(US) in the left panel



Then select the “Add to Rating” button between the panels  
And your screen should look like this



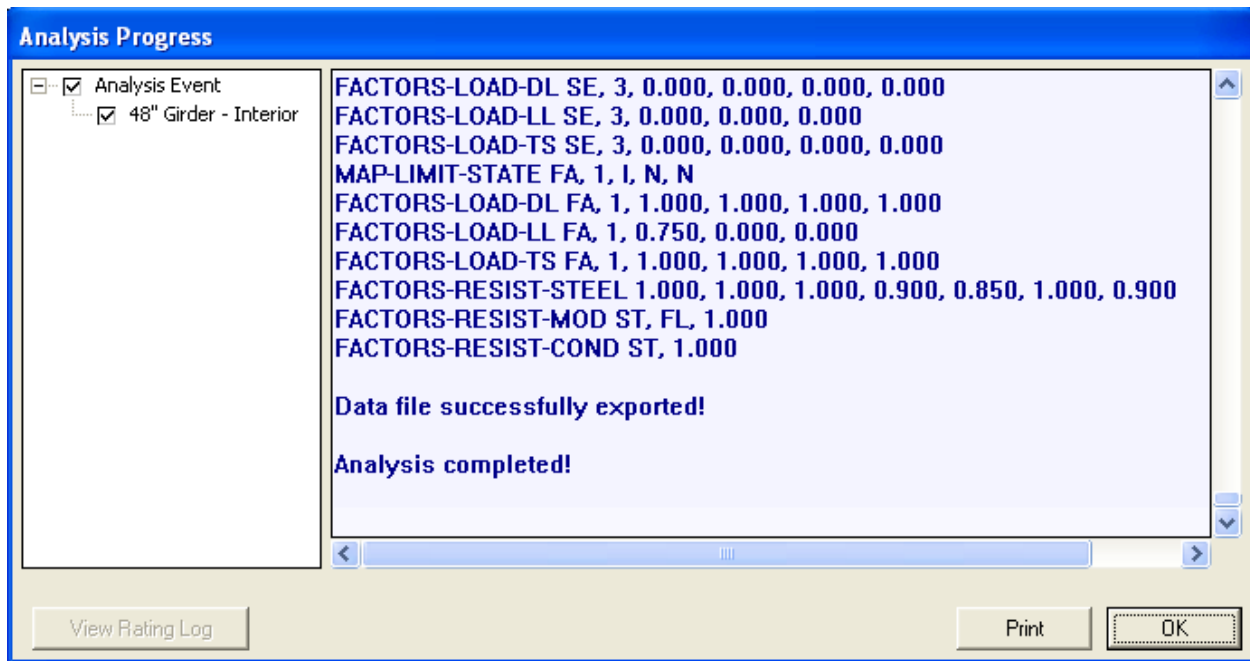
Select OK in the lower right

And then select the “Analyze” button from the tool bar

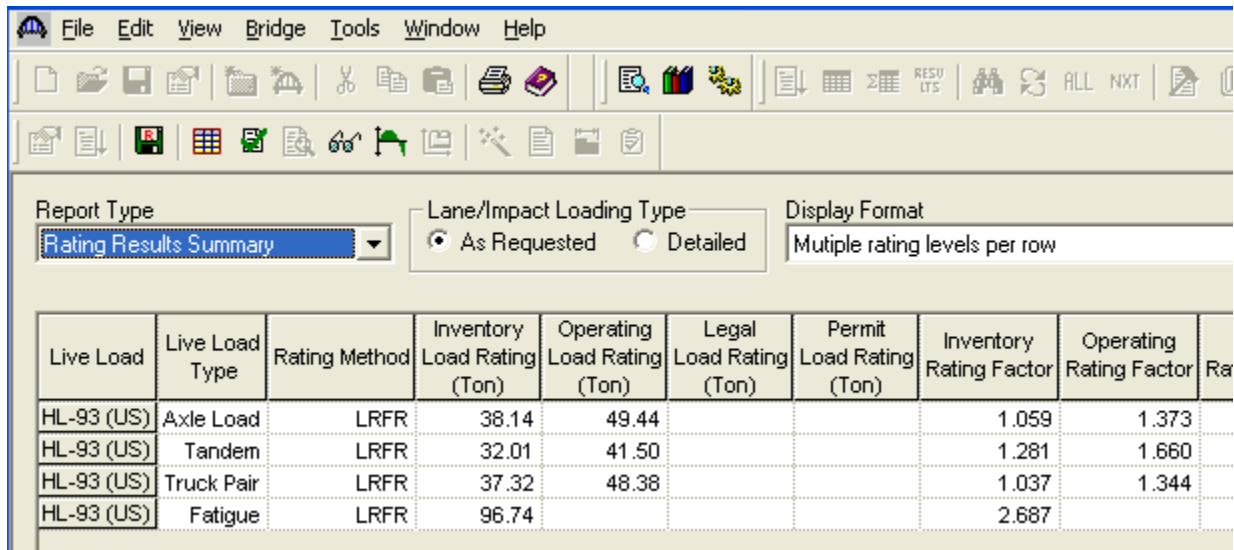
Another item will appear on your windows task bar “Executing BRASS-Girder(LRFD)”

You can bring that window up on your screen if you want to watch the analysis

When you get Analysis Completed, select the OK button in the lower right



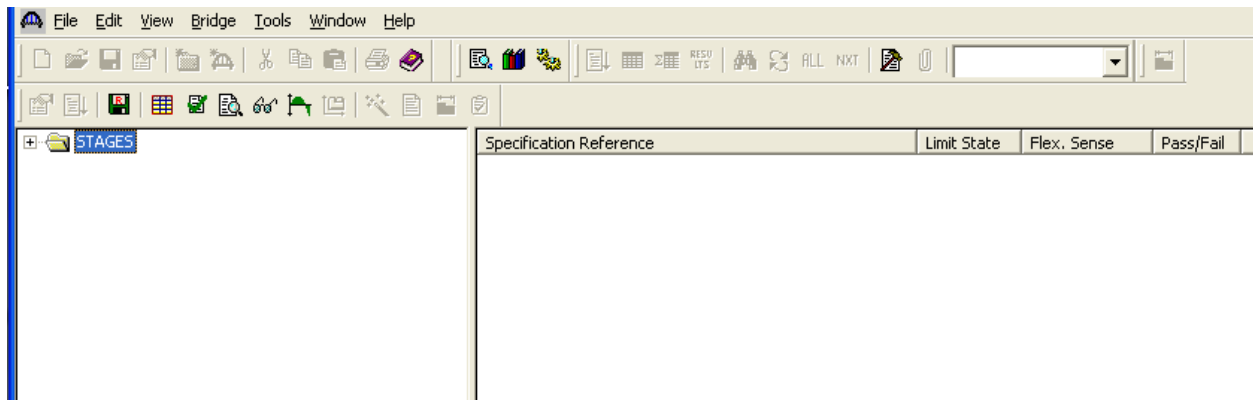
Select the View Analysis Report from the toolbar and review the table of results  
 The Inventory Rating Factors need to be  $\geq 1.0$  to be acceptable



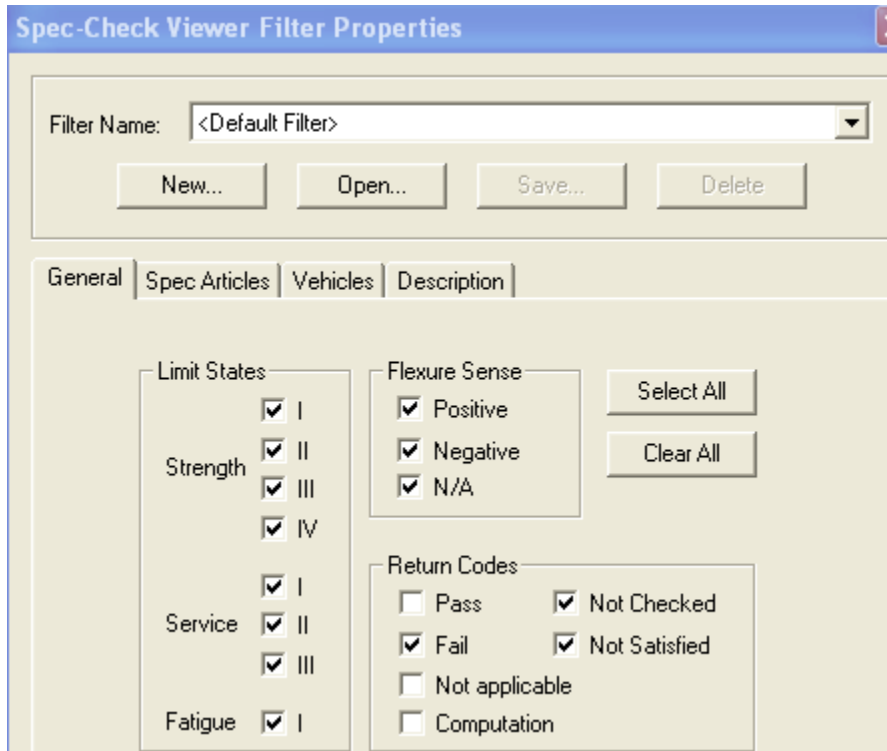
## Virtis Bonus Functionality – LRFD Specification Checking

The specification checking is not as robust as an Opis Design Review and Specification check. The specifications being checked are for the LRFR rating with whatever loading condition you specified.

After reviewing the load rating report above  
Select the “View Spec Check” button on the tool bar  
You will see a window that looks like this



To the right of the Spec Checker button on the tool bar is a button for a filter  
Notice that I turned off some of the codes, like Pass. Now I will only see codes that failed



I selected Stage 3 from the list on the right; following is an example of the failed specifications

Specification Reference	Limit State	Flex. Sense	Pass/Fail
✗ 6.10.11.2.2-1 Bearing Stiffeners: Projecting Width	STRENGT...	Positive Flexure	Failed
✗ 6.10.11.2.4 Bearing Stiffeners: Axial Resistance of Be...	STRENGT...	Positive Flexure	Failed
✗ 6.10.11.2.2-1 Bearing Stiffeners: Projecting Width	STRENGT...	Positive Flexure	Failed
✗ 6.10.11.2.4 Bearing Stiffeners: Axial Resistance of Be...	STRENGT...	Positive Flexure	Failed
✗ 6.10.11.2.2-1 Bearing Stiffeners: Projecting Width	STRENGT...	Positive Flexure	Failed
✗ 6.10.11.2.4 Bearing Stiffeners: Axial Resistance of Be...	STRENGT...	Positive Flexure	Failed
✗ 6.10.11.2.2-1 Bearing Stiffeners: Projecting Width	STRENGT...	Positive Flexure	Failed
✗ 6.10.11.2.4 Bearing Stiffeners: Axial Resistance of Be...	STRENGT...	Positive Flexure	Failed
✗ 6.10.11.2.2-1 Bearing Stiffeners: Projecting Width	STRENGT...	Positive Flexure	Failed
✗ 6.10.11.2.4 Bearing Stiffeners: Axial Resistance of Be...	STRENGT...	Positive Flexure	Failed
✗ 6.10.11.2.2-1 Bearing Stiffeners: Projecting Width	STRENGT...	Positive Flexure	Failed

Double click on the first failed specification and you will see this

Spec Check Detail for 6.10.11.2.2-1 Bearing Stiffeners: Projecting Width

PERFORMING AASHTO LRFD SPECIFICATION CHECKS - 6.10.11.2 Bearing Stiffeners

Point of Interest : 100.00

Construction Stage: 3

AASHTO REFERENCE: 6.10.11.2.2 Projecting Width

EQUATION NO. : 6.10.11.2.2-1

Input Parameters:

tp = 0.500 in E = 29000.000 ksi Fys = 50.000 ksi

Input Value : bt = 7.000 in

AASHTO Limit:  $0.48 * tp * \text{SQRT}(E / Fys) = 5.780 \text{ in}$

Result Code : FAIL

OK

At this point you could make some adjustments to your design and review again – until all failures are satisfied.

If you feel that failure is justified – please record it and send your explanation in along with the exported file.