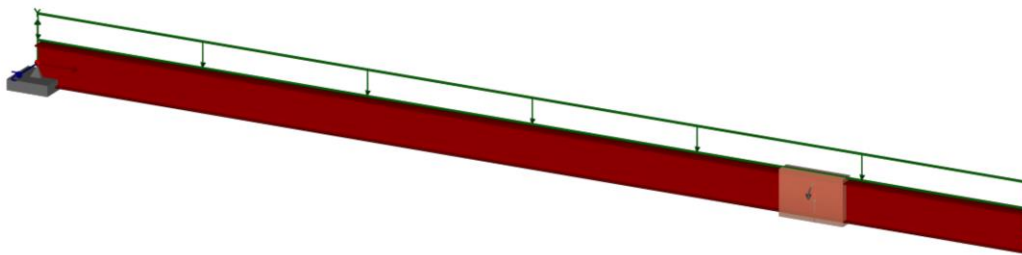


Structural Report

office was tasked to evaluate two beams that exist in the basement. One of the beams is a 28ft long W12x22 steel beam. The second beam is a 16ft long 5½x11¼ GlueLAM with a sistered 1¾x11½ LVL. The span of this beam is 15ft-3in. The steel beam has a clear span of 22ft. This effort was performed at the request of the perspective buyer of the property.

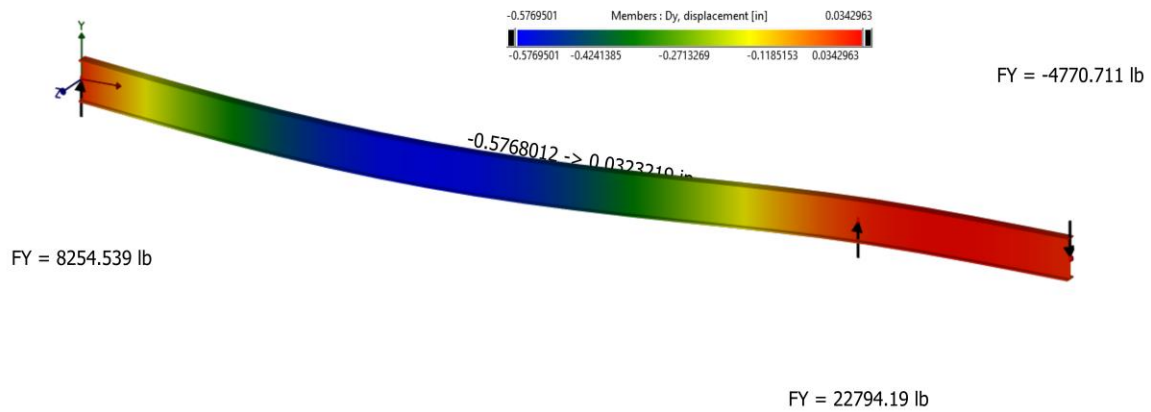
W12x22 Steel Beam Evaluation (Current Configuration)

W12x22
Service Case: L
IES VisualAnalysis 17.00.0012
Monday, April 08, 2019



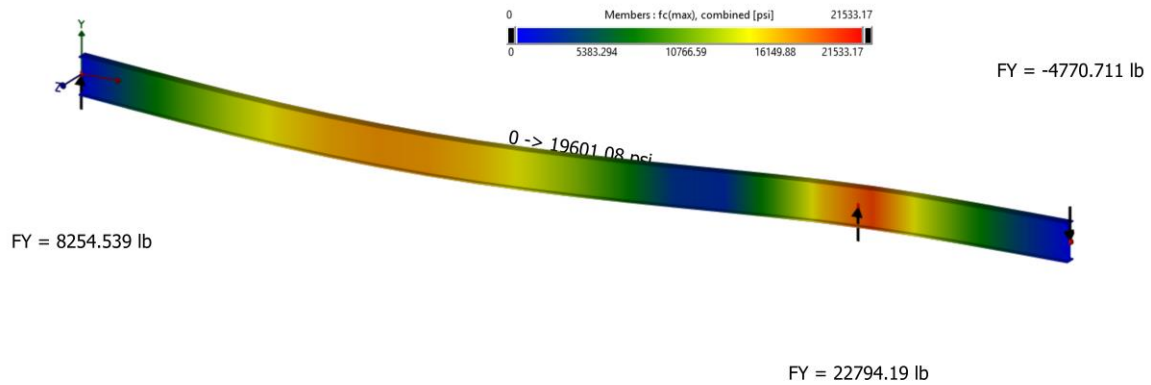
W12x22 Model

W12x22
Result Case: 16-2Lr
IES VisualAnalysis 17.00.0012
Monday, April 08, 2019



W12x22 Deflection

W12x22
Result Case: 16-2Lr
IES VisualAnalysis 17.00.0012
Monday, April 08, 2019

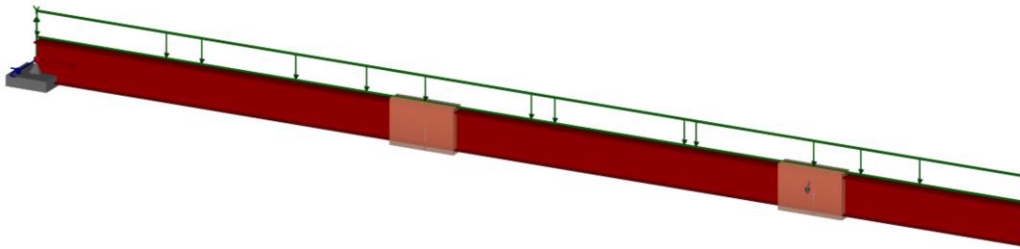


W12x22 Stresses

The steel beam and columns are over stressed. Need to add a column to reduce the stresses.

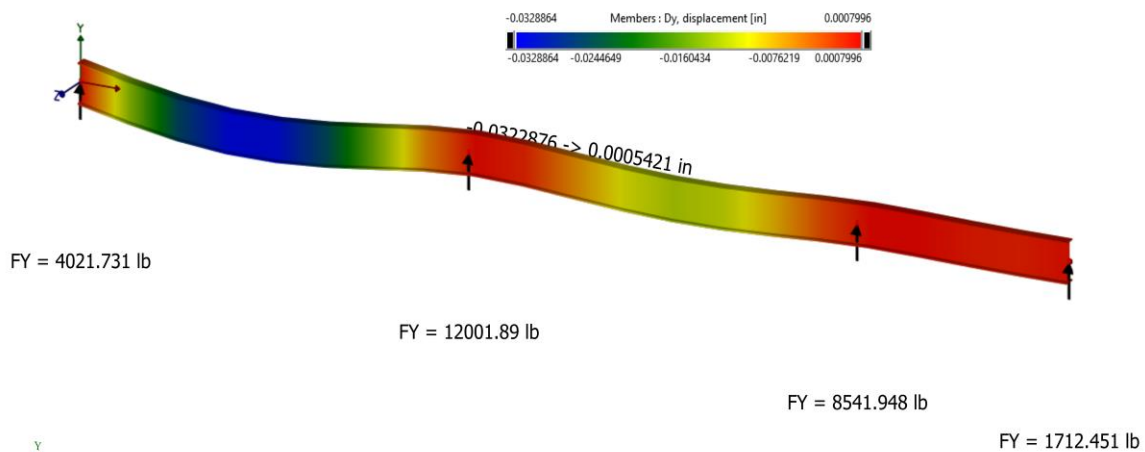
W12x22 Steel Beam Evaluation (With added column)

W12x22
Service Case: L
IES VisualAnalysis 17.00.0012
Monday, April 08, 2019



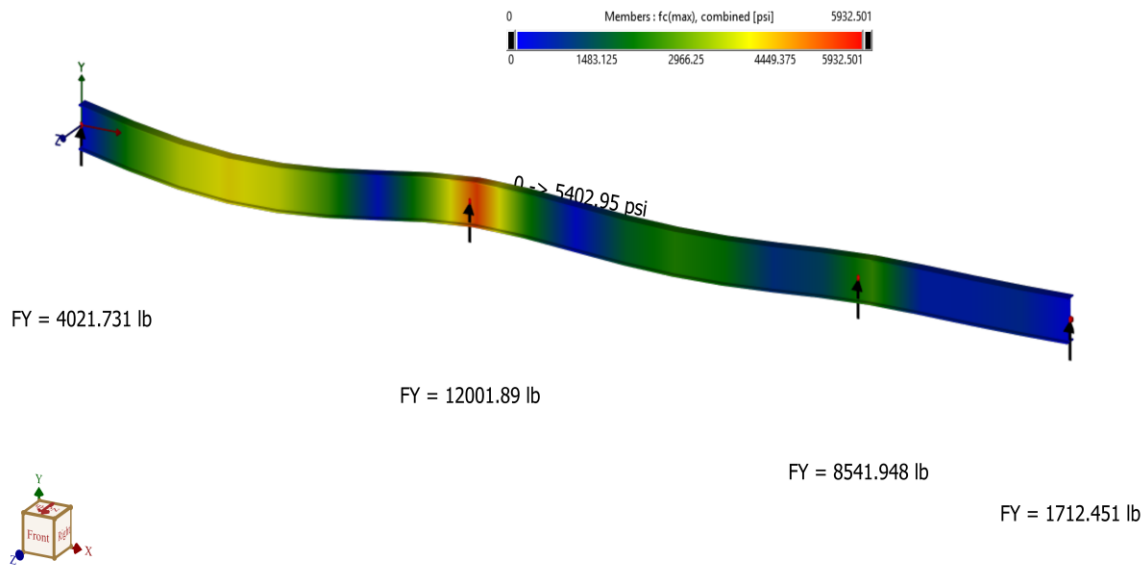
W12x22 Model with added column

W12x22
Result Case: 16-2Lr
IES VisualAnalysis 17.00.0012
Monday, April 08, 2019



W12x22 Deflection with added column

W12x22
Result Case: 16-2Lr
IES VisualAnalysis 17.00.0012
Monday, April 08, 2019

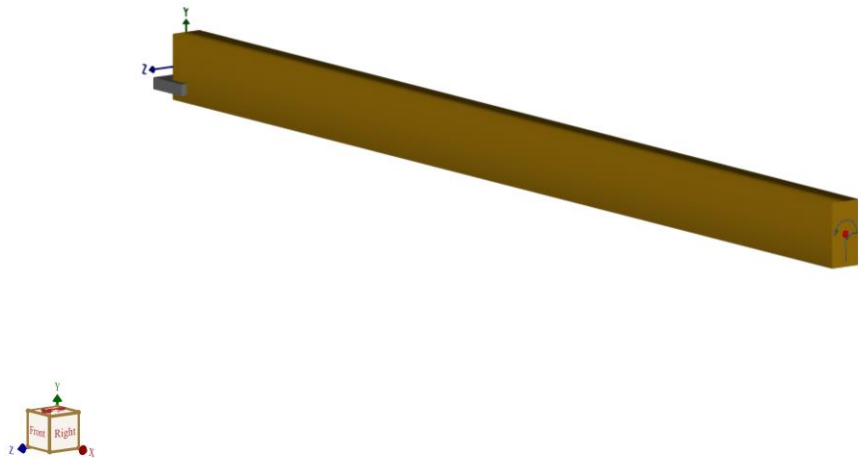


W12x22 Stresses with added column

The beam system with the added column reduces the stresses to acceptable levels.

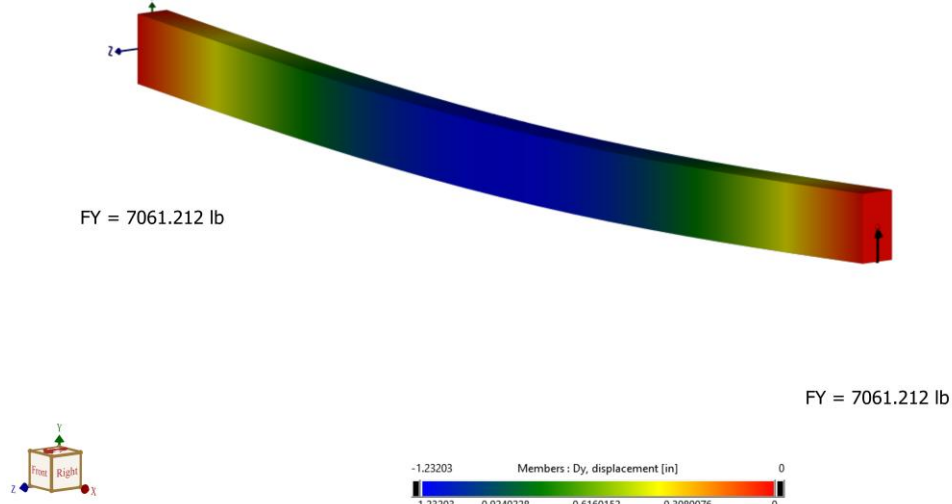
5 1/2 x11 3/4 GlueLAM Beam Evaluation

Glue Lam
Service Case: Ø: L
IES VisualAnalysis 17.00.0012
Monday, April 08, 2019



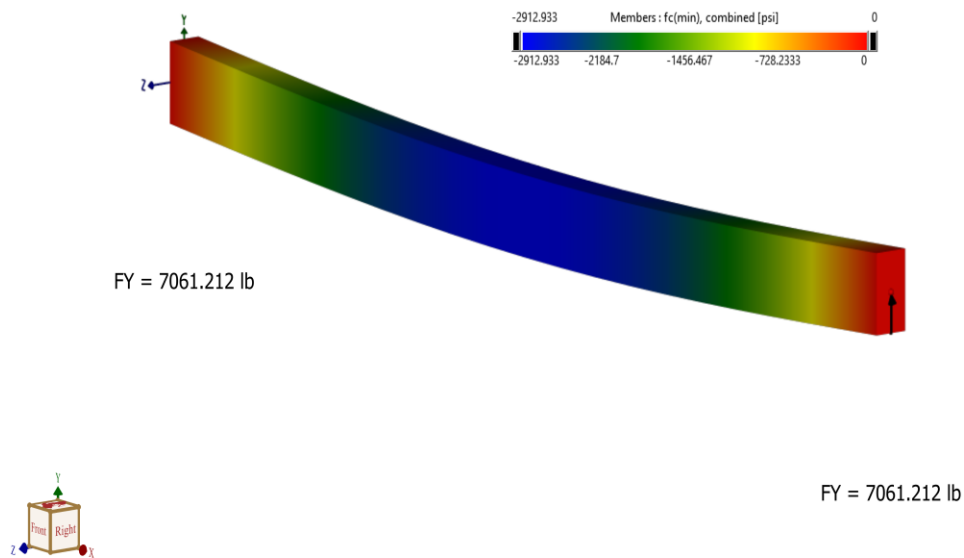
GlueLAM Model

Glue Lam
Result Case: 16-2Lr
IES VisualAnalysis 17.00.0012
Monday, April 08, 2019



GlueLAM Deflection

Glue Lam
Result Case: 16-2Lr
IES VisualAnalysis 17.00.0012
Monday, April 08, 2019



GlueLAM Stress

The GlueLAM Beam is within allowable stresses and deflections.

Summary

As a result of our analysis, this office has determined that the steel beam is over stressed and will require the installation of an additional column.

The column is to be located at the midpoint of the 22ft span and is to be a 4sch40 steel column with a PL $\frac{1}{4}$ x 5x8 plate welded to the top and a PL $\frac{1}{4}$ x 8x8 welded to the bottom. The column is to be supported by a 24x24x8in deep foundation. The column is to be bolted to the steel beam and wedge anchored into the foundation with (4) $\frac{1}{2}$ -inch wedge anchors. The top of the foundation is to reside 4 inches below the top of the floor slab. The bottom plate is to be covered with a second pour of 4 inches of concrete matching the existing finished floor slab.

Our professional opinion of probable cost for this effort is between \$750 and \$1300.