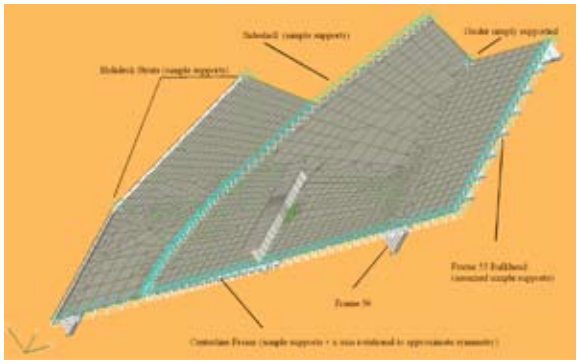
Burner Boom Foundation Modifications and Analysis

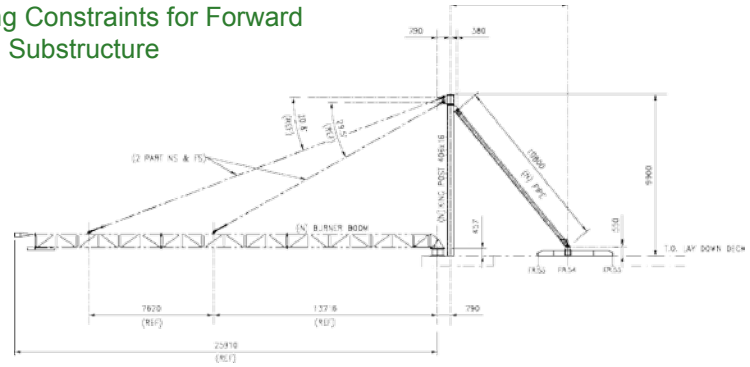
Our client needed a new foundation design for the relocation of the aft burner booms for a deepwater drillship. Bastion was contracted to analyze the Burner Boom foundations of the new twin Burner Booms located on the aft end of the ship. Design and analysis tasks were performed due to changes in loading conditions and new requirements imposed since the original design and analysis effort.

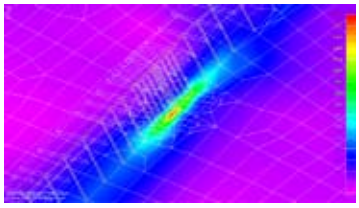
The new loading requirements enable the boom to move up and down between horizontal 0 and 45 degrees in elevation. The boom is required to swing inboard and outboard while at any angle between these two elevation angles. The client required that added reinforcements to existing structure above the deck to eliminate interference with the existing structure, electrical, ducting, etc.

The Burner Boom is designed in accordance with American Bureau of Shipping (ABS) rules and guidelines (ABS Rules for Building and Classing Mobile Offshore Drilling (Ref 4.2), in addition to American Institute of Steel Construction (AISC), Manual of Steel Construction, Allowable Stress Design (Ref 4.1).



FEA Model Showing Constraints for Forward Strut Anchor Beam Substructure





Von Mises Stress on Deck Plate Forward Strut Anchor Beam

BASTION TECHNOLOGIES