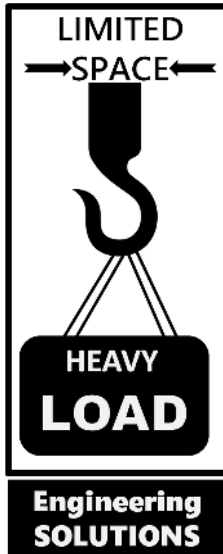


## DSI ENGINEERING – POWER PLANT

### MONORAIL DESIGNS FOR EQUIPMENT REMOVAL [W10234]

**CHALLENGE:** Design two monorail structures for equipment removal within a limited space

**SOLUTION:** Existing structures required reinforcement as well as additional design of special support brackets for proper weight distribution at the water wall



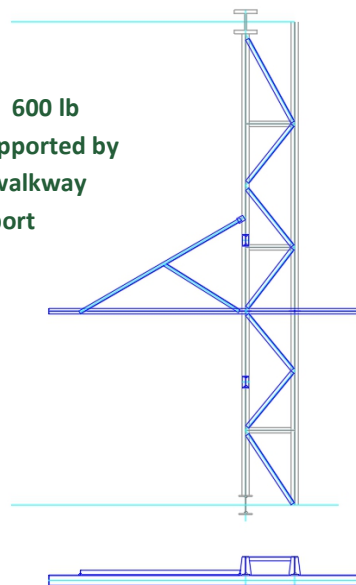
The facility was faced with the need to replace old equipment. DSI was tasked with designing two monorails to facilitate the removal and replacement of the equipment.

The equipment removal for the first monorail required a load capacity of 600 lb and was to be supported by existing walkway support beams. Upon inspection, it was discovered that the walkway support beams did not meet code requirements with regard to structural stability. This made it necessary to add horizontal bracing members, increasing the moment capacity of the walkway supports. With the stability issue addressed and the moment capacity increased, the walkway support beams were then adequate to support the cantilevered monorail load.

The second monorail, of 400 lb load capacity, was supported at the water wall, which is composed of closely spaced tubing. A special support bracket was designed to fit through a small slit between the closely spaced water wall tubing and distribute the hanging loads (shear and bending) across several tubes. The special support bracket was also designed for easy installation and removal.

The reinforcements to the existing steel and the fabrication of the monorails and bracket were successful, allowing for timely completion of the necessary plant maintenance.

**Figure 1:** 600 lb monorail supported by existing walkway support



**Figure 2:** 400 lb monorail supported at water wall with special brackets

