

United Bulk Terminal – Elevated Dock Office Support Structure

Description

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Industry: Ports & Terminals | **Service:** Structural & Mechanical Engineering

Location: United Bulk Terminal, Davant, LA

The Challenge

As part of United Bulk Terminal’s expansion program, the upper surge bin on the transfer tower was to be replaced with a new elevated dock office – a 320 sq. ft container (40 ft x 8 ft) at approximately 10 ft above dock level. The existing structure had eight columns arranged on a roughly 16-ft radius circle. The problem: the preferred orientation of the dock office placed a significant portion of it beyond the available column support points, and a high-level conveyor occupied the space that would otherwise have allowed a more favorable orientation. The office had to be cantilevered substantially off the rear four columns.

Additional requirements included maintaining existing stair and landing access up to the office elevation, and providing easy access to electrical and servicing panels around the perimeter – both of which added to the column loads from the cantilevered structure.

The Solution

DSE tied the four rear support columns together with W16x57 beams welded between them, creating the primary transfer structure for the cantilever loads. These primary beams support W12x22 secondary beams running along the length of the dock office, providing the full 40-ft support span needed for the container above.

An access platform was provided on the downriver side for servicing electrical panels at the far end of the office. At the client’s request, a spacious open patio area was incorporated overlooking the dock and the Mississippi River.

Result

The dock office support structure was successfully designed and installed, delivering the functionality and access the terminal operations team required within the constraints of the existing column layout. The structure provides a stable, code-compliant support for the elevated office while accommodating all

servicing and access requirements.

Contact DSE to discuss structural engineering for port and terminal facilities.

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Author

marcdossantos

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