

# DSI PROJECT – UNITED BULK TERMINAL

## DOCK OFFICE SUPPORT STRUCTURE

As part of United Bulk Terminal’s expansion, a dock office support structure was designed to replace what formerly was the upper surge bin on the tower. (Figure 1 and 2)

The dock office is 320 sq. ft (40 ft in length and 8 ft wide) and sits at an elevated height of about 10 ft above the dock level. One of the challenges involved in this project was to utilize the existing 8 columns arranged along the circumference of about a 16 ft radius circle to support the dock office container. The orientation of the dock office was to DSI’s engineering disadvantage as the client had an existing conveyor, at a higher elevation in the same place and did not wish the dock office to be placed directly below the conveyor.



Figure 1: Existing Upper Surge Bin

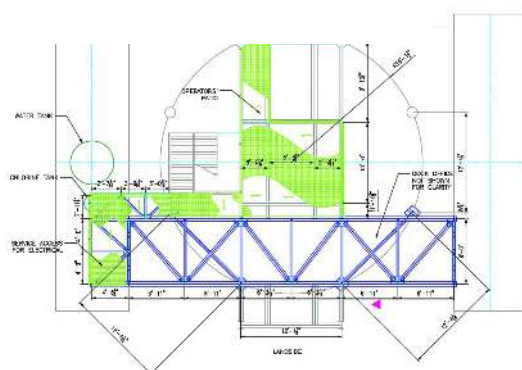
Figure 2: Existing Upper Surge Bin



Figure 3: Existing access and control room

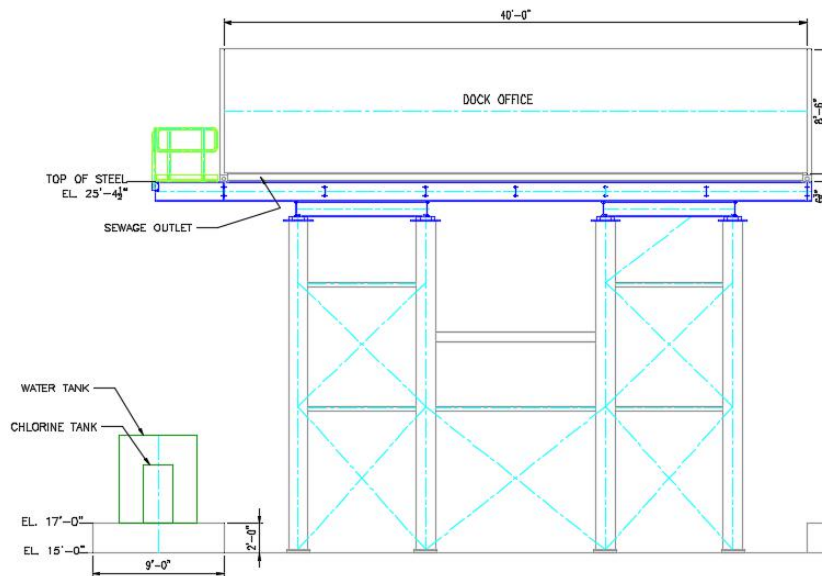
Hence due to limited options in terms of orientation of the office, DSI had to support the dock office on the rear 4 columns and have a significant length of the office to be cantilevered out from the supports.

Another challenge encountered in this project was that of the access to the dock office. The client approached DSI with the request of maintaining the existing stairs and landing up to the elevation of new dock office. (Figure 3) The client also requested easy access to electrical and servicing panels round the office, making the loads on the columns due to the cantilevered supporting structure larger.

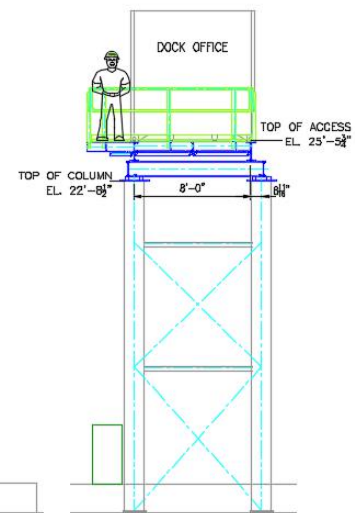


The solution was easy. The rear end columns were tied together by welding hefty W16x57s between them that would support the primary structure and transfer the forces into the existing columns. These W16x57s support W12x22s that support the Dock Office along its length.

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



**Figure 5: End View Elevation**



**Figure 6: Side View Elevation**

This new dock office provides functionality, appearance and cost effectiveness. We are sure it will meet all the expectations and a valuable addition to United Bulk Terminals.

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