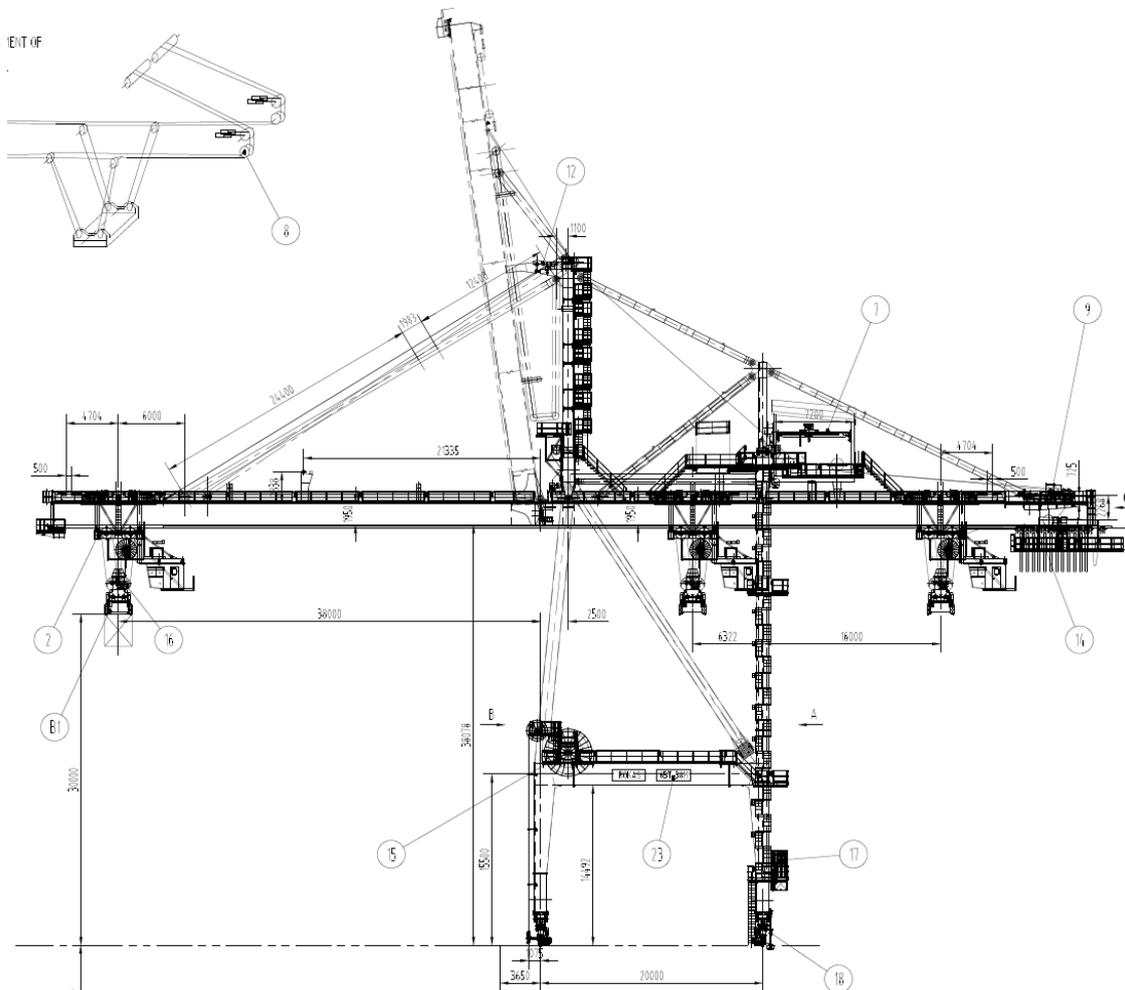


**Part 4 Parts subject for repair**  
**STS Container crane Piraeus**

**Baran Engineering Ltd.**  
**Kühne BSB Project: 17212**

**Revision 0**



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**Table 1: Revision**

Revision No.	Description
0	First issue

## 1 Scope of task of this document

This document is only a short summary of those structural components, parts or locations, where a repair action is required according to our calculation as far as Kühne has considered them in detail, because they are obviously high stressed according to our general proof of stress, fatigue analysis or check of connection details or they are obviously already damaged according to visual inspection by Mr. Tibitanzl.

## 2 Listing of parts, which need repair according to calculation

Listing of parts, which need repair according to structural calculation. All these details can be classified as traffic light yellow, where not otherwise stated at the single detail.

1. Bridge girder connection to Backstay 2 (see part 3, FE-calculation, item 1)  
Reinforcement of not sufficient construction
2. Boom connection to forestay (see part 3, FE-calculation, item 2)  
Repair of bad workmanship and improvement notch cases
3. Short rails at connection of boom to bridge girder (see part 2 calculation of details, item 27)  
Material S355 is not sufficient.
4. End connection of Forestay and Backstay 1-3 (see part 3, FE-calculation, Item 3 and 6)  
Improvement of bad notch case
5. Eyebars connection of link bar of forestay (see part 3, FE-calculation, Item 4)  
Reinforcement of not sufficient construction
6. Connection of vertical link bar of landside pylon to crossbeam (see part 3, FE-calculation, Item 5). Reinforcement of not sufficient construction and improvement of notch cases.
7. Guiding construction for folded forestay on boom  
Repair of bad workmanship.( see part 3, FE-calculation, Item 7)
8. Crossbeam waterside (see part 3, FE-calculation, Item 9)  
Reinforcement of not sufficient construction and improvement of notch cases
9. General check of high stressed areas with respect to fatigue (see part 2 section 2 check of fatigue stress)  
Improvement of notch cases, where applicable, particularly where parts are damaged by corrosion and / or welds are not carried out according to drawings and specifications of FEM notch case K3
10. Already torn welds at the buckling stiffeners, where they are connected because of limited production length: (see part 2 section 2.10 and 2.11 check of fatigue stress)  
Those welds have to be repaired immediately (traffic light red), because the cracks are already growing into the chord of the girder. The repair has to be carried out as full penetration butt weld as stated by the repair drawings of Mr. Tibitanzl.