Mueser Rutledge
Consulting Engineers

Lower Left: Driving piles for the new crane rail beam. The remainder of the photos on this page and the next show some completed projects in January 2004.

Global Terminal

Jersey City, NJ

Mueser Rutledge Consulting Engineers (MRCE) began work on the expansion of the Global Marine Terminal in 1998 and continues to work on the upgrade of this facility.

Crane Rail Upgrade

Mueser Rutledge Consulting Engineers (MRCE) provided structural engineering services, including the performance of structural analysis and detailing required to produce design drawings of a new crane beam, link type tie downs, stow pin pockets, cable turnout boxes, foundations for light poles, and a new marine control building and crane shop. The project also included the design of a new power supply to feed the new cable reel fed cranes. The crane beam is supported on H-piles to bedrock; MRCE engaged the services of a subcontractor for testing piles dynamically. MRCE hired a subconsultant to design electrical systems for the power supply to the new crane rail, and the new marine control building. Additional MRCE tasks included design of crane stop impact attenuators and asphalt pavement, inspection of the construction, and securing of permits required.

Fendering System

MRCE designed a new high energy absorption fender system to off-load both large container ships and barges. Additional services included preparation of Contract Documents and bid assistance.

Transtainer Foundations

MRCE designed reinforced concrete beams on grade to provide support for large rubber tired gantries (RTGs) or “Transtainers”. The RTGs are automated by GPS to transport shipping containers and the crosslevel and slope of the beams was critical for proper operation. MRCE engaged the services of a civil/site engineer subconsultant to provide precise topographic features and elevations.

Mooring Dolphins and Catwalks
MRCE performed preliminary and final design, obtained permits, prepared cost estimates, reviewed shop drawings and inspected construction for the installation of the two new Mooring Dolphin structures and catwalks for Global Terminal's Port Jersey Channel Wharf.

The Mooring Dolphins were placed east and west of Global's existing 1,800 linear feet Wharf in order to accommodate two vessels of 1,000 feet in length simultaneously. The mooring dolphins each consist of a concrete cap supported by eight 30 inch pipe piles. The 135 ton concrete cap was precast in an innovative manner to allow placement atop the driven piles.

The Mooring Dolphins were precisely located to avoid an existing active 12 foot diameter sanitary sewer. Pile installation criteria were developed so as to minimize impact on the sewer.