INDUSTRIAL / LIGHT MANUFACTURING

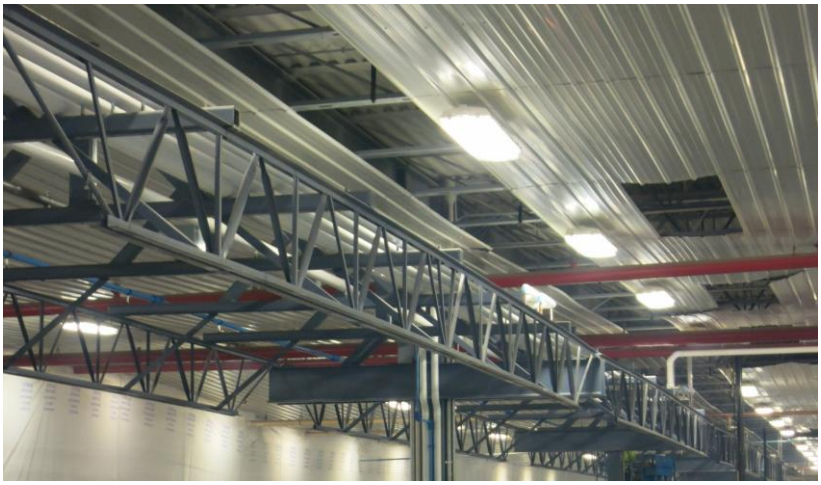
LEFT- Macsteel Overhead Crane Runway Design

Macsteel – Alpha Division USA
Hammond, IN

Contractor: Engineered Companies
Hammond, IN

New 35 ton outdoor crane runway line. Although not visible above grade, a portion of the runway foundation system was designed to span across a wetland.

<u>Rich Products Silo Storage Addition</u> - Above and Left Photos - New 1400 square foot storage building addition for housing four new 60'-0" tall 325,000 pound silos. Design consisted of concrete grade beams and structural slab supported on series of helical piles. Structure was steel framed with steel roof joists.

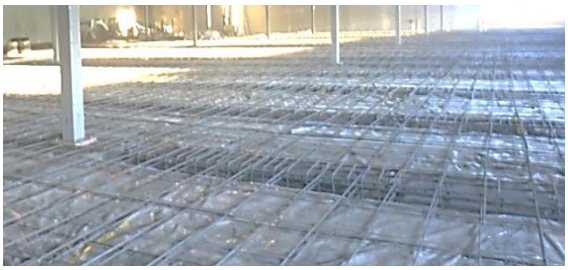


Rich Products New Proofer Platform - Above Left - New 450 Square foot steel plafortm to straddle new production line equipment for control access and housing heavy storage tanks.

Rich Products Suspended Pipe Stansion Run – Above Right -New 550 lineal feet of steel pipe rack for new production line equipment and miscellaneous piping. Due to limited floor space for new production equipment, design was limited to utilize existing column and beam framing only with no addition of columns/footings.

Rich Products New Double Suspended Conveyors - Above Left and Right - New 630 lineal feet of suspended double transport conveyor system suspended from the existing steel roof framing. Due to limited floor space for new production equipment, design was limited to utilize existing column and beam framing only with no addition of columns/footings.

Rich Products Joist Reinforcements- Left -Various areas of existing structure had joist reinforcements completed at existing roof framing and an existing mezzanine level. Roof framing was reinforced for running new glycol lines across roof – approximately 640 lineal feet. In addition to new glycol lines, additional rooftop units and suspended cooling systems were installed. At the mezzanine level, new occupancy changes resulted in floor live loads to increase requiring joist reinforcements and steel beam reinforcments by use of cover plates.



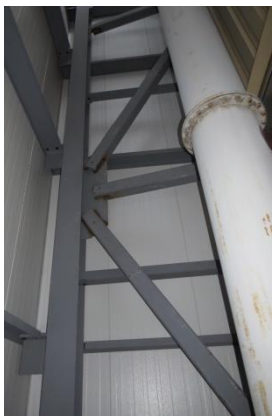
Quincy, IL New Warehouse Storage Facilities – Building A and B – Design of heavy storage facilities requiring helical anchors for wall and roof support and to structurally support floor slab. The floor slab is a one-way reinforced concrete slab system. ***Also, Upper Right*** – Load test for helical anchors via IBC standards.

Epoca- USA - Far Left and - Lactic acid fermentation production facility in Oswego, IL.

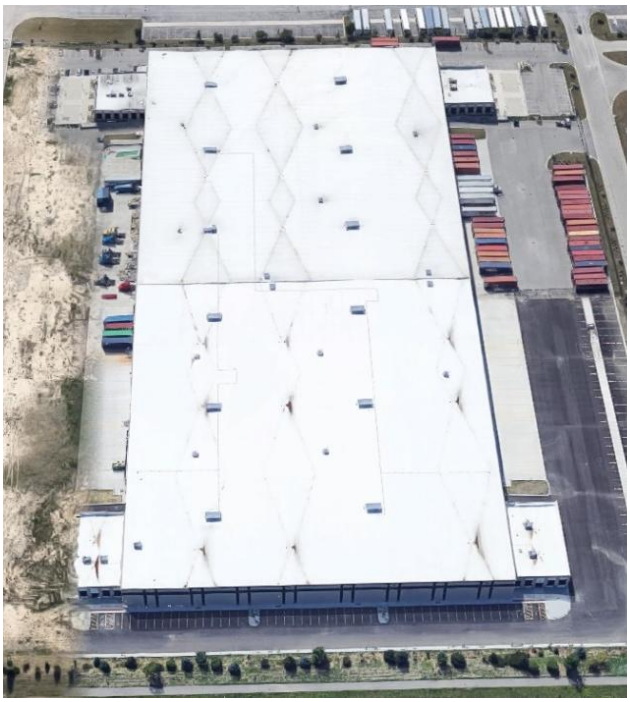
Left – At Epoca facility, design of facility included cast-in-place two way slab systems for ease of cleaning for various mezannine production levels.

Orchard Lane Pedestrian Bridge - Left – Pedestrian bridge over the Little Calumet River in Porter, IN.

The bridge is 250’-0” long and all aluminum construction. The bridge is part of a pedestrian / bicycle trail.



<u>Wieland Metals – Wheaton, IL</u> – USA – Above Left Photo – German manufacturing facility for precision steel expanding vertically. Construction underway shown in photo. Part of expansion included a new 10 ton crane runway shown above left using W36 girders. **Above Middle** - Narrow vertical bracing of the system shown. **Above Photo Right** – New processing line mat foundation. Helical Anchors used for new column placement while facility production continued without lapse or slowdown.



Cap Barbell , Inc. – Joliet, IL - Left and Above - Producer of free weights and weight benches provides weight training equipment, strength equipment, plyometrics boxes, medicine balls, storage racks, mats, inversion tables, and more. LEFT - New warehouse facility approximately 200,000 SF with precast perimeter bearing walls, two 3000 SF office areas and a 30'-0" clear height and 20 loading docks with two drive-in doors.

Left – Asphalt Processing Facility - Plant Office - Skokie, IL – Design and construction documents for a 2500 square foot steel framed facility with mat foundation, main floor and roof-top control center.

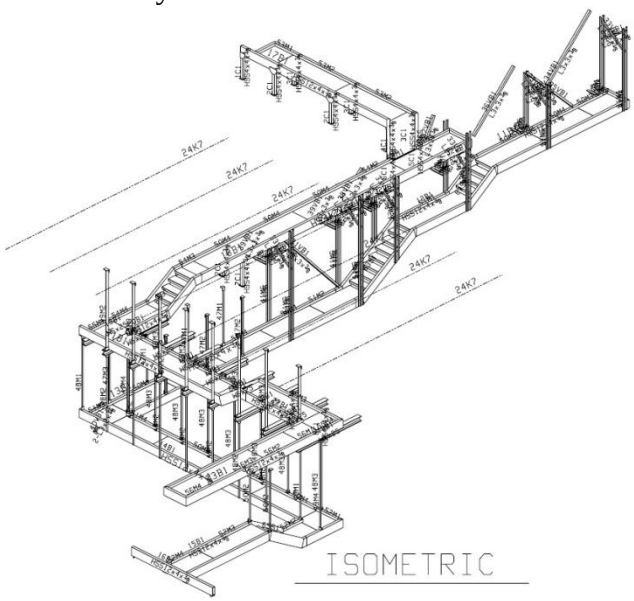
Above - Potash Manufacturing Facility – PCS / Phosphate Feed Ingredients Plant- Marseilles, IL – Structural analysis and investigation with repair documents for repairs to settlement and shifting of existing facility.

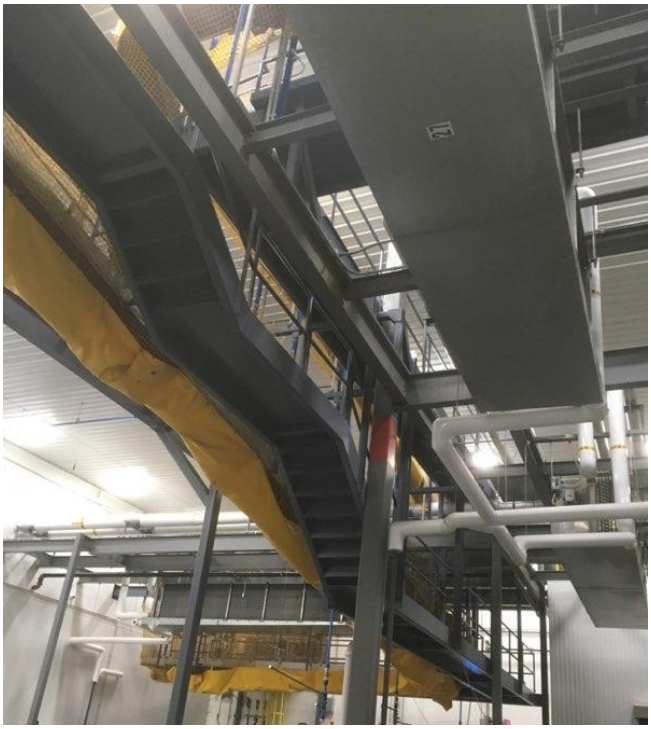
Right – Support Frame Analysis for Conveyor System – PCS / Phosphate Feed Ingredients Plant – Marseilles, IL – Structural analysis and repair recommendations for deterioration of frame due to corrosion.

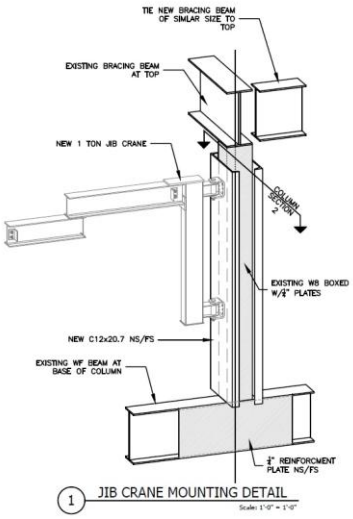
Above Left – **Potash Shipping Building – PCS / Phosphate – Marseilles, IL** – Structural engineering investigation and analysis for the installation of a new conveyor and unloading system assembly into an existing pallet shipping building**.** **Above Right - PCS/Phosphate – Marseilles, IL** – Design and documents for container Loading System at Shipping Area.

Left - Tasty Bread – Northbrook, IL- 4000 sq. ft. building addition to existing processing facility. The addition involved drilled caisson required for poor soil profile, structurally supported heavy warehouse floor slab design, steel framing and insulation panels for refrigeration system.

Rich Products New Double Suspended Conveyors and Catwalk - Right & Below - New suspended steel double level catwalk system for accessing previsouly suspended double conveyor run.







Washington Mills – left – Jib crane loading analysis. Existing column was analyzed and reinforced for thrust and lift loads resulting from new jib crane installation.