

Meat Plant Processing Basement Beam Repair and Strengthening

STRUCTURE: Processing Basement Beam Repairs
LOCATION: Dakota City, NE
PROJECT DATE: Summer 2001
JOB DURATION: 8 weeks
CLIENT: IBP
CONTRACTOR: Vector Construction Group



PROJECT DESCRIPTION:

Years of pre-cast Double T joints leaking water directly over the beams combined with high humidity and warm temperatures created a perfect environment for corrosion of the reinforcing steel in the processing basement. Vector Construction was contacted to develop a repair procedure that would restore the original designed load capabilities to the beams. All work would have to be performed with no impact on the plant operations while at the same time having no reduction in headroom or no additional shoring post be left in the room.

Work proceeded as follows:

1. Survey of entire room was conducted and it was determined that 10 beams would require repair concrete repair and them strengthening for either flexural or shear.
2. In conjunction with a licensed structural engineer, stamped drawings were provided to the owner.
3. All failed concrete was removed and reinforcement bars cleaned.
4. Galvshield XP anodes were installed at the end of each repair to protect from future corrosion damage.
5. Repair areas were formed and poured back with an engineered repair material.
6. M-Brace Composite Strengthen System was installed to restore loading capacity of the beams. Both flexural and shear strengthening was required.
7. All of the double T joints directly above a beam were injected with a flexible urethane injection resin to stop any further water leaks from the processing floor above.



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