

Union County Vocational School

TITLE

What do you do when educators have planned an addition to a building, but find the plans call for a full basement 15 feet lower than the existing structure? That's the situation in which the Union County Vocational School in Scotch Plains, New Jersey found itself.

THE SITUATION

The existing school was built slab on grade. The architect's new design called for an addition with a full depth basement 15 feet deeper than the original structure. This would in the end require that a three-foot wall be extended 15 feet. The school had contacted several companies in the area, none of which were willing to take on such an unusual job or the inherent liability. They needed more space, had the vision, the plans, and the funding but no way to carry them out. Of course, time was also of the essence, as the school couldn't accommodate students during the expansion. Enter Scott McKay and Ram Jack of the Tri-States.

THE SOLUTION

After assessing the situation, it was determined that the only course of action would be to install 56 Ram Jack commercial brackets with deep driven steel piers. Ram Jack installed custom-built 16 feet guide sleeves and 2-7/8" deep driven powder coated carbon steel pipe to load the bearing strata 40 feet below grade, thus stabilizing the wall. Two feet below the brackets, they installed the first row of tiebacks every 4 feet, resulting in 3 tiebacks per each driver pier. Essentially, they dug out in 5-foot increments, put tiebacks in and attached wire with about 8 inches of shotcrete underneath, tied everything together, effectively building one wall all the way around, encasing all of the piers. Because the soil was a fill, this was the only way to bring the wall down the required 15 feet. The only alternative for the Vocational School would have been to do without the basement and build on a slab once again.



East wall to be excavated 13'.



A bucket lift was necessary to install the 16' long guide sleeves.



First tie back is secured.

RAM JACK CASE STUDY:



Second row of tie backs installed and being prepared for Shotcrete.



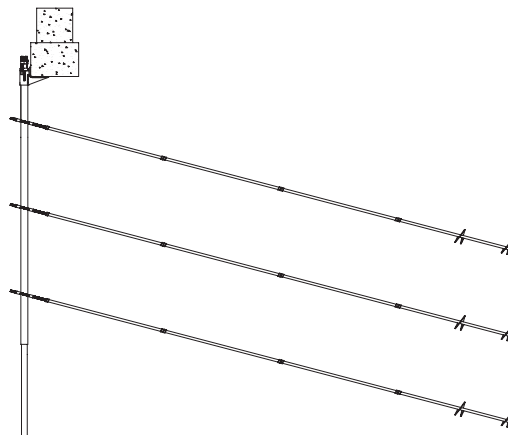
Excavation complete. The Shotcrete wall will serve as the back form for the new basement.

LESSONS LEARNED

It is always important to have the right tool for the job. In this case, Ram Jack Foundation Solutions had to creatively devise a solution and custom build the tools to ensure that this was the case. "It is always gratifying to see that we can build any type of bracket for the most difficult installations, while still accomplishing the job quickly, with little or no down time," said Scott McKay, Ram Jack of the Tri-states.

CONCLUSION

This unusual job resulted in the use of 224 piers and took only 20 days to complete. In the end, the Union County Vocational School wound up with a new addition, complete with basement that will serve them well for years to come.



Pier Tie Back With Concrete

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Email: info@ramjack.com

Website: www.ramjack.com

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