

AT WORK

 TOPCON

Construction
Winter 2009



Chicago police station on schedule, costs down



Chris Aspegren, project manager for Berger Excavating, checks location footings using a Topcon HiPer Lite+ rover unit and FC-200 field controller.

A new police station is scheduled for completion by June 2010 in Hoffman Estates, Illinois. Construction of the two-story, 79,000-square-foot foundation, began during the second week of October 2008 and was scheduled for completion by the end of the year—an 11-week timeframe.

The critical milestone was to have the footings and the foundation in prior to December 31, prior to the onset of severe winter weather. If this was not done, the owner—the Village of Hoffman Estates—would incur significant costs from the need to use winter concreting practices and materials such as air-entraining admixtures. Delaying the excavation until February or March of 2009 would make achieving completion by June of 2010 virtually impossible.

The most challenging part of the site-preparation work, from a grading standpoint, was the underground parking area, which has two levels. A Global

Company: Berger Excavating
Location: Wauconda, Illinois

Project: New police station
Location: Hoffman Estates, Illinois
Scope: 30,000 cubic yards from 32,000-square-foot excavation for \$28 million 79,000-square-foot facility

Topcon Products:

3D GPS machine control
HiPer Lite+ base station and rover
FC-200 field controller
3D-Office software
3DMC software
Pocket 3D software

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'[Falling behind] would delay occupancy of the building and it would just multiply the associated costs, especially with concrete.' – Chris Aspegren, project manager, Berger Excavating

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Navigation Satellite System (GNSS) gave Berger Excavating, Wauconda, Ill., a significant productivity boost in grading the parking area and basement and the entire five-acre-plus site.

Chris Aspegren, project manager, reports that the surveyor came out to the site once, after the full excavation was made but prior to footing excavation to verify footing locations, and determined that the footings and columns were located within hundredths of an inch of their locations according to the official survey. Aspegren pointed out that the grade-checking was critical because any necessary adjustments would have been required prior to footing excavations.

Without the Topcon equipment, "We would have had a surveyor on site every day, staking and verifying the grades," Aspegren said. "But basically, he set the control on the site, we took it from there, and when we were done, he came in and verified the readings."

Aspegren estimates the cost savings provided by this technology in the tens of thousands of dollars.

(BELOW) Recycled stones are spread at 3/4 inch on the foundation base. (RIGHT) The reference display in the cab uses a 3D model developed from the "rover" antenna.



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Topcon's 3D GPS+ Machine Control

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