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Taking a Closer Look at the Grizzly MultiGrip

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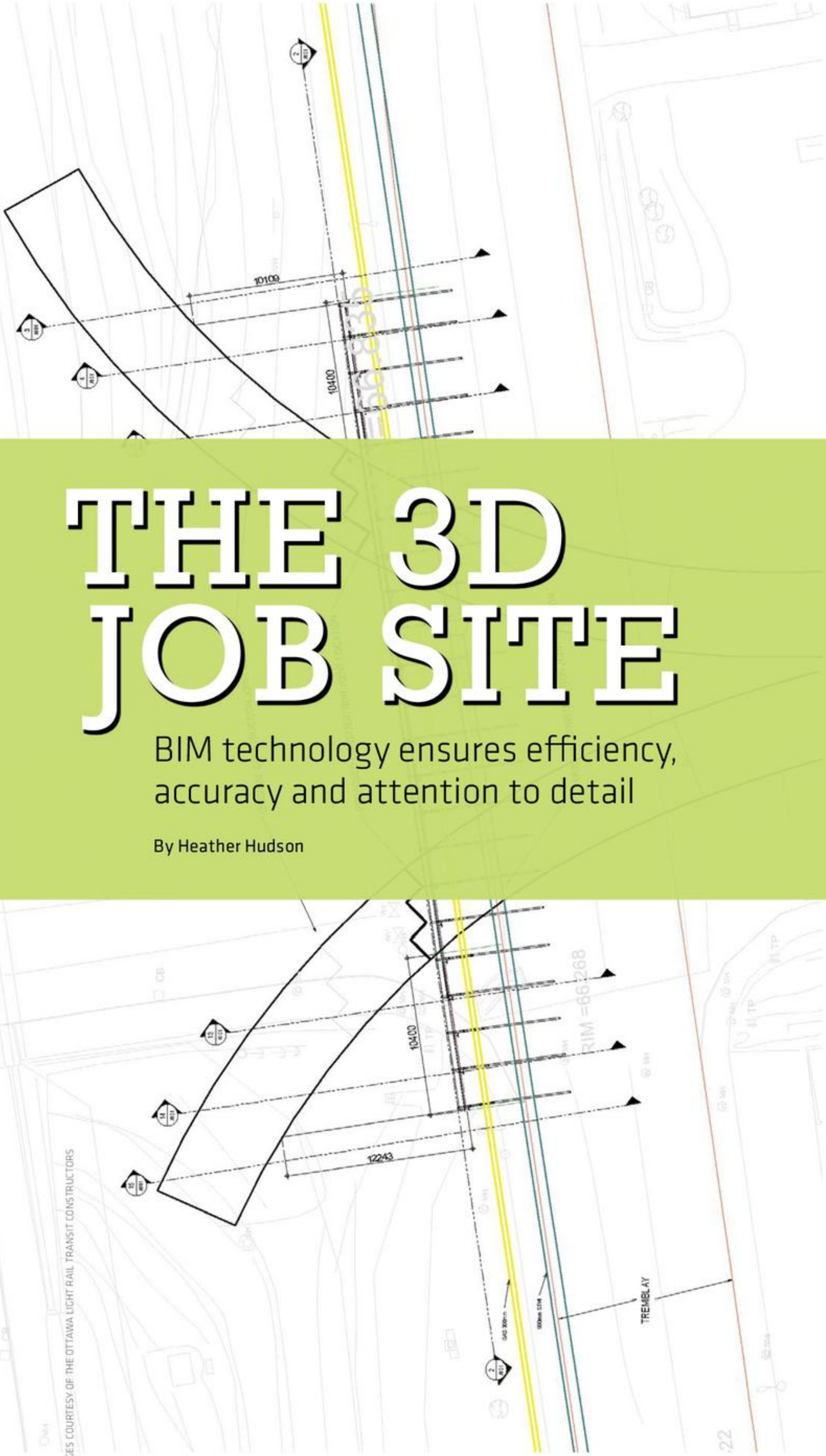
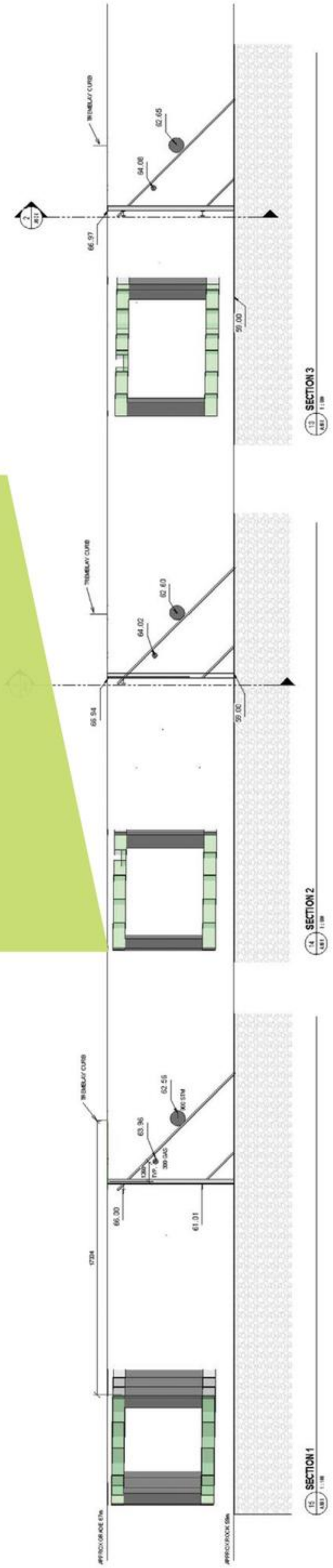
THE 3D JOB SITE

BIM technology ensures efficiency, accuracy and attention to detail

By Heather Hudson





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Imagine watching a construction job unfold step-by-step, from start to finish in mere moments, all while standing on an empty site.

Peer beneath the earth to see if rock, utilities or other obstacles will pose a problem for pile driving. See how the challenges of one trade affect the schedule of another. Inspect how the proposed measurements actually play out when fittings are installed.

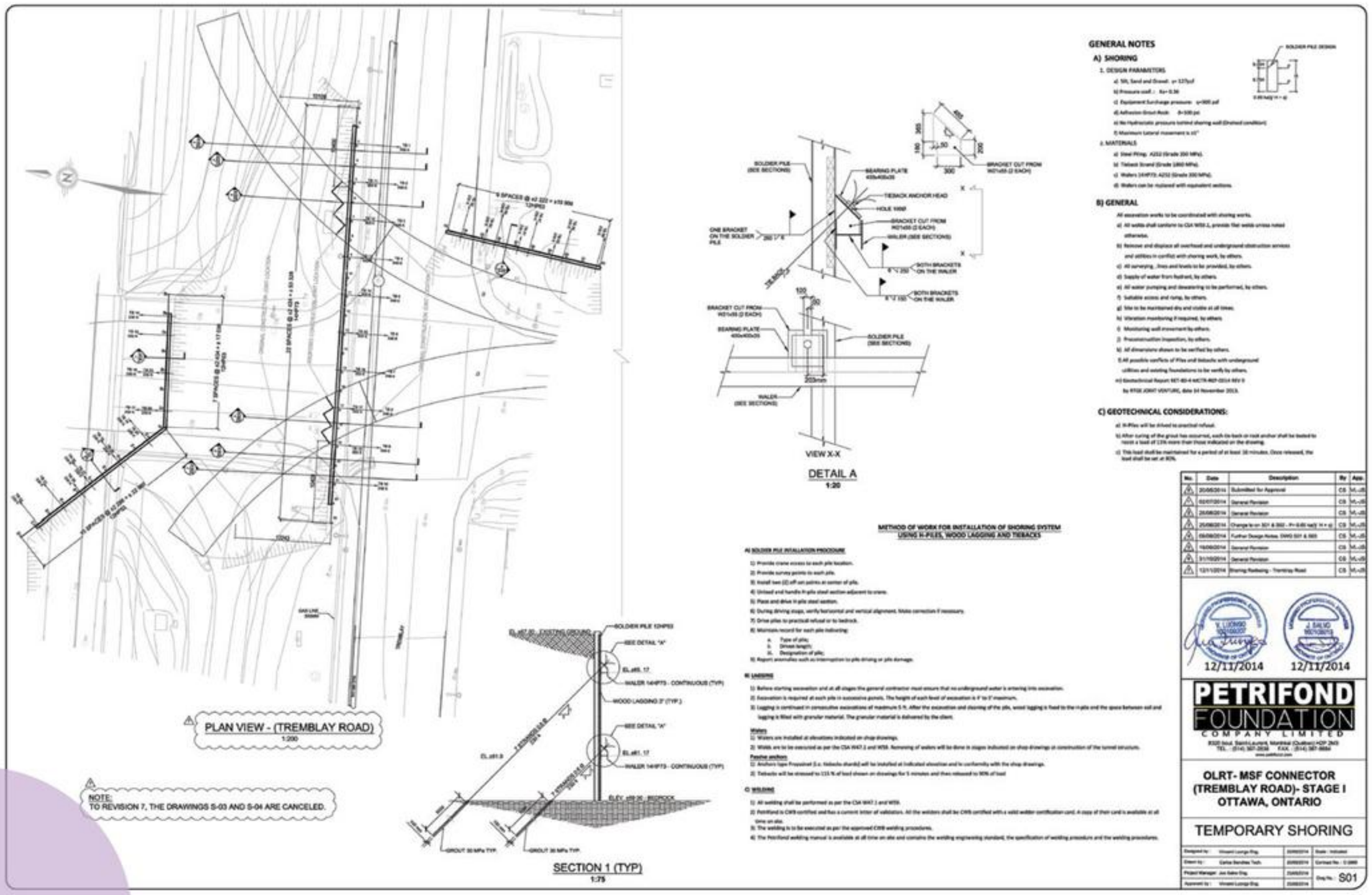
Sounds like a fantasy, but it's becoming more and more a reality in Canada, thanks to building information modeling (BIM) technology.

Also known as virtual design, BIM is a form of virtual construction that's changing how buildings and infrastructure are planned, designed, built and managed using 3D models.

Various BIM software programs help create a model that contains all the data the contractor and tradespeople – including pile drivers – need to prepare for and proceed with a construction job.

BIM can even be used to capture information about the smallest details long after the job is done.

"You could have a BIM of a hospital where you can click on a light fixture and contained in that file of the light fixture you have all data related to that element, including the name of the manufacturer, serial number, the last time it was maintained, the size of voltage and more," said Thomas Strong, EllisDon Construction's VDC director and VP of the Canada



"There's real intelligence in a BIM. It's like a three-dimensional Excel sheet."

– Thomas Strong, VDC Director, EllisDon Construction and Vice President, Canada BIM Council

BIM Council. "There's real intelligence in BIM. It's like a three-dimensional Excel sheet."

Strong would know. As managing director of virtual construction services for EllisDon, his days revolve around BIM.

EllisDon was first introduced to BIM when the company constructed the futuristic, Frank Gehry-designed Art Gallery of Ontario in Toronto. With a significant amount of complex architecture, it was critical that every detail was considered before and during construction.

"Gehry's office used 3D modeling and we learned a lot about the concept there. After that job wrapped up, our virtual construction group began to incorporate BIM in our other construction projects," said Strong.

Marwan Bakri, director of BIM and virtual construction with Ledcor, takes BIM a step further: 4D simulation.

"4D is 3D modeling, plus time. The idea is you tie the schedule directly into the 3D model. For a pile driver, think of it as a timeline. It simulates the sequence per scheduled line items and you see the piles coming. We're finding this is particularly useful with clients concerned about encroaching into property lines. To visually show where we're going to be digging is really important."

The benefits of BIM

When all the right information is plugged into the software, 3D modeling can offer a window into the construction process, revealing potential snags and even scheduling challenges.

"We can see the construction process six months in advance. We can plan all the piping, duct work and sprinkler systems, identify where the problems will be and get solutions produced before even going into construction," said Strong. "It's all about proactive mitigation of issues, risk management and cost avoidance."

A common misconception about BIM in the industry is that there's one model produced and passed around from company to company working on a project.

"Everyone actually produces their own content and it's integrated together," said Strong.

BIM and foundation work

While it's unusual to find a pile driver using BIM technology, it's something that they may consider.

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