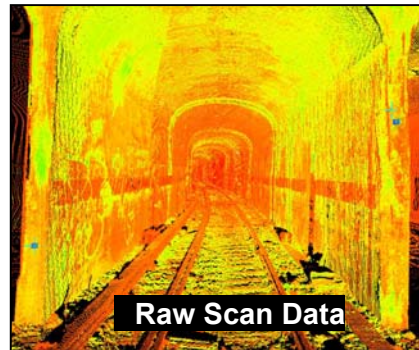


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# 6<sup>th</sup> & 8<sup>th</sup> Avenues Subway

# GPI

3D Laser Scanning



**Client/Owner:** New York Mass Transit Administration

**Project Location:** Manhattan, New York

GPI was contracted to provide **survey** information for 2,400' of New York City Subway tunnel and station detail. The purpose of the **survey** was to have accurate profile and section drawings showing wall and track details throughout the tunnels. The drawings were used to determine clearances for design and re-habilitation of the current tunnel. To **survey** the project conventionally would have been difficult due to time constraints for track closures.

Through use of it's state of the art **3D Laser Scanning** technology, GPI provided as-built plans for a total of 2 tracks, each 2,400' in length, eliminating the need for significant track closures and reducing project time radically. The resulting data files were archived for future use, preventing costly and time consuming call-backs if future profile or survey data is needed. High accuracy **control** was obtained assuring both accuracy and timeliness of the final product.

The **survey** was completed without train service interruptions and was **data collected** at night time, on a weekend. GPI used **3D Laser Scanning** and scanned the tunnels providing raw data scans and 25' sections. The raw scan data was registered to New York State Plane Coordinates using **GPS** and conventional **survey** techniques. GPI established permanent **control** on the station platforms and then ran traverse through the tunnels to establish the co-ordinate geometry for the scan data. The **control** set at the stations was then referenced and tied to existing New York Benchmarks. Following the **integration** and processing of the **data** the final **deliverables** consisted of **MicroStation DGN** and **AutoCAD DWG** drawings, as well as **InRoads DTM** surface models. The **DTM's** were created depicting the interior walls of the tunnels. A complete **3D model** was created integrating all the **3D Laser Scanning** data for both tracks.

Completion Date: 2005