

GEOD

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Puzzle Answer Due by Midnight on Friday,
January. 28, 2022

GEOD Provides

Aerial Photography /
Photogrammetric & LIDAR Mapping

Land Surveying

Laser Scanning

Subsurface Utility Markouts

Drone Surveying





GEOD Becomes a Subsidiary of MFS Engineers & Surveyors

by Michael Mudalel, PE, MFS Managing Partner



IF YOU HAVEN'T YET HEARD THE NEWS, in early October GEOD was acquired by MFS Engineers & Surveyors, a multi-discipline, MBE/DBE/SBE-certified civil engineering firm based in South Plainfield, N.J. While GEOD will continue to operate under its own brand and in its current location as an MFS subsidiary, we warmly welcome the entire GEOD survey team and look forward to establishing synergies between the two companies.

We acquired GEOD to expand our own survey capabilities to include aerial photogrammetry/ LIDAR mapping, SUE markout, and 3D laser scanning. In short, GEOD's fully assembled workforce enables us to do more and build a bigger, stronger team to serve clients.

How Does This Benefit GEOD Clients and Partners?

- MFS is known for its ability to manage large projects combining engineering, surveying, and construction management. Because GEOD is now part of this cross-discipline team, its clients now have a consolidated source, if they choose, for all their A/E/C needs.
- For GEOD's partners, MFS's MBE/DBE status will enable GEOD to soon achieve these certifications as well, enabling greater access to government contracting opportunities.

John Emilius remains with GEOD in a business development/customer relations role, and his brother Paul Emilius will be involved from a Professional Land Surveyor standpoint as needed. Both are committed to ensuring a successful transition into GEOD's newest chapter.

The Longevity and Value of the GEOD Name

MFS is very aware of the value the GEOD brand carries, as well as its 60-year history and reputation for cutting-edge services. We're also committed to ensuring the job satisfaction and continued career development of the entire GEOD survey workforce. We truly believe the power is not just in the technologies, but in the professionals behind them. This is one likely reason that we've been on NJBiz's list of "Best Places to Work" for six consecutive years.

GEOD and its staff are an ideal fit with MFS's continual mission to provide a range of high-quality services to our partners and clients. As we continue to explore ways to more closely integrate the two companies, I hope you'll join us in our excitement for the future.

As a GEOD client or partner, I also invite you to reach out to me or anyone on our leadership team with questions, or in surveyor speak, to get the "lay of the land."



GEOD Celebrates 60 Years of Providing Quality Survey Services



IN 1961, AFTER TIME SPENT serving as chief surveyor for a large design and construction project in northern New Jersey, Paul Emilius, Sr., was offered a similar project in Virginia. After giving the position much consideration, Paul made the choice to maintain his family's roots in Newfoundland, New Jersey, and go out on his own to found a new land-survey business, then known as Emilius & Associates.

Over time, and with the addition of aerial photogrammetry and topographic mapping to its capabilities in the 1970s, the firm's name changed to GEOD Corporation (GEOD being a shortening of the word geodesy) to better reflect its identity and ongoing focus on cutting-edge technologies to provide greater accuracy and better data for project design.

Over a Half Century of Delivering High Quality Survey Services

This month, GEOD celebrates its 60th anniversary in business. While many things about the survey industry have changed, one thing that has not is GEOD's unwavering reputation for delivering high quality survey services to its clients. As a firm at the forefront of technology advancements to support increasingly complex design projects, GEOD has been able to accomplish projects in size and scope that many other survey firms cannot.

Some of GEOD's largest and most prominent projects over the last six decades include the Statue of Liberty, Tweed Courthouse, the Williamsburg Bridge, the Brooklyn Bridge, the Holland Tunnel, and most recently the widening of the New Jersey Turnpike. The firm continues to manage large survey projects in the private and public sectors, including in transportation, in New Jersey and New York as well as in other parts of the country and around the world.

Decades ago, standard survey equipment included transits, levels, and tape, and what took a four-person team several weeks to accomplish can often now be done by one person in a matter of days. The survey tools of the past have given way to robotic and reflectorless total stations, global positioning systems, computer-aided design, and 3D laser scanners that support today's multifaceted, sophisticated design needs.

Looking Forward to the Future of Surveying

GEOD intends to remain at the leading edge of these and other evolving technologies to continue serving clients in the most accurate, efficient, and cost-effective manner. Sixty years later, the firm's mission is the same: to provide its clients with a range of unparalleled survey services to meet their project design needs. Even as GEOD transitions to being a subsidiary of MFS Engineers & Surveyors in its latest chapter, its team of skilled professionals and commitment to excellence remain.

We're excited to see what the next 60 years will bring and how innovation will continue to change the way surveying is performed.





The Leaves Have Fallen,

LET'S GET *Flying*



Aerial survey is faster and more cost effective when the leaves are off the trees and before inclement weather becomes an issue. This means now is the time to schedule your photographic coverage while visibility is still a plus.

Call GEOD at **973-697-2122** to discuss your aerial photogrammetric needs today!

FROM THE FIELD

Planimetric & Topographic Survey at Poletti Power Plant

New York Power Authority, Astoria, Queens, NYC



GEOD PERFORMED A SUBSURFACE UTILITY investigation and topographic survey of two areas within the New York Power Authority property (Block 850 Lot 1) located at the Poletti Power Plant

in Astoria, Queens, New York. To begin, GEOD performed the subsurface utility investigation to demarcate the subsurface utility lines. Utilizing a combination of ground-penetrating radar and electromagnetic pipe, cable and box locators, the subsurface utilities were demarcated. Upon completion of the subsurface investigation, a topographic survey began. Field crews utilized conventional and GNSS RTN to perform the survey. Equipment included a Leica TS15 robotic instrument and Carlson BRX6 GNSS receiver. The survey included all man made surface features (building, walks, drives, surface utilities, fences) in addition to the demarcated subsurface utilities. Invert data was collected on storm/sanitary structures. Field observations were made to ground surface features (top/bottom curbs, slopes, swales) in addition to random ground spot elevations. Upon completion of the field work, GEOD created a topographic map of the two areas utilizing AutoCAD Civil 3D and included a digital terrain model of the site with 1' contours.



FROM THE FIELD

Pulaski Skyway Rehabilitation Project

Pulaski 8B Contract Mod Communipaw Ave. Intersection, Truck Routes 1 & 9 (milepost 1.9 to 2.3)



GEOD WAS REQUESTED TO PERFORM topographic mapping of (3) 2000' Truck Route 1 & 9 from the Hackensack River to Communipaw Ave. in Jersey City, N.J., to support the NJDOT Pulaski Skyway Rehabilitation Project. To begin, GEOD utilized GNSS RTN to establish the primary control stations. This was done utilizing a Leica GS16 antenna and CS20 controller. Upon establishment of the primary survey control, GEOD performed 3D terrestrial scanning of the project corridor utilizing a Leica P40 laser scanner. Supplemental scan control was established as needed to perform the 3D laser scanning utilizing a Leica TS15 Robotic

instrument. Invert data was collected for the sanitary and storm structures within the project corridor. GNSS RTN observations were made on the structures to establish a horizontal location and elevation. This data was compared to the scan data as well. Supplemental ground locations were observed at the dirt areas adjacent to the roadway. A topographic map of the project was prepared utilizing MicroStation V8i and a surface file was prepared utilizing InRoads. NJDOT CADD standards were followed for the project.



FROM THE FIELD

New Jersey Turnpike Authority

Interchange 1-4 Widening Program, MP 0.0-36.5 (T3839)



GEOD WAS TASKED WITH PROVIDING TOPOGRAPHIC basemapping for design of the New Jersey Turnpike Widening Project, which is adding an additional travel lane, new shoulders, and replacing all bridge structures for the southern 34 miles of the turnpike from the Delaware Memorial Bridge to Interchange 4. GEOD set 800+ preflight targets, performed the photo control survey, and obtained new color digital aerial imagery. Twelve intervisible GPS control pairs were established. The horizontal control was tied to the N.J. State Plane Coordinate System NAD83, and the vertical control was tied to the North American Vertical Datum NAVD 1988. GEOD then photogrammetrically compiled LAMP

basemapping from the 2.0cm GSD imagery of the turnpike mainline from approximately MP 0.0 to MP 36.5. Mapping was extended 20' beyond the existing ROW lines. 6.0cm imagery was used to extend the mapping outward along all crossing roads and railroads to approximately 1,250 feet both east and west of the turnpike center median, within the crossing road or railroad right of way. Mapping was compiled at 1" = 100' with 1' contours and was delivered in MicroStation V8i in accordance with current NJTA standards. All project 6cm GSD imagery was ortho-rectified at 1/4 ft pixel and delivered in GeoTIFF and ECW formats. (project ongoing)



FROM THE FIELD

NJ Division of Property Management and Construction

Jersey City Maintenance Yard, Jersey City



THE NEW JERSEY DEPARTMENT of Transportation is currently upgrading its maintenance yard by improving lighting, storage, and updating existing structures. GEOD was subcontracted to perform underground utility markout, marking all utilities found onsite. Field survey crews conducted an existing conditions survey of the five-plus-acre maintenance yard. Key features located included underground utilities, buildings, fuel, and storage yards. The site was surveyed utilizing a combination of GPS RTN and robotic total station locations. (project ongoing)

NYC DDC Contract No. PW348-73

Replacement and Upgrade of Petroleum Storage Tanks



GEOD WAS SUBCONTRACTED to survey existing site conditions to aid in the design of replacement underground storage tanks at multiple New York City municipal agency buildings (police, fire, parks, DOT, etc.). Buildings, interiors and exteriors, and key features related to the USTs and fuel systems were mapped within the required two-week turnaround from notice to proceed for each site. Depending on the site layout, GEOD crews utilized 3D laser scanning or GPS RTN and/or conventional surveying tasks.



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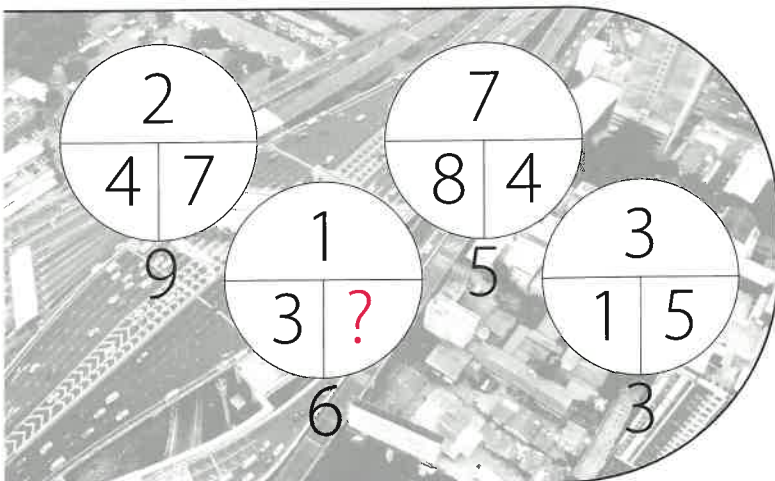
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24 Kanouse Road | Newfoundland, NJ 07435
Phone: 973.697.2122 | Email: info@geodcorp.com
Visit us at: www.geodcorp.com

FALL PUZZLE

Here we have another nice image-based puzzle. Should be no problem for the surveyors out there, and who knows—maybe even a couple of engineers will get it right! Simply deduce the numerical value of the magenta question mark. A careful perusal of the numbers should reveal a pattern that will then enable a quick solve.



Email your answer to marketing@geodcorp.com by midnight on Friday, January 28, 2022.

A random winner will be drawn from the correct entries who will receive a \$200 Amazon gift card. As always, if you are precluded from accepting such a prize, we'll be delighted to donate a check for \$200 to the charity of your choice.

Enjoy the puzzle and good luck! Of course, the decision of the judges is final!

Visit www.geodcorp.com for the winner & solution to puzzle