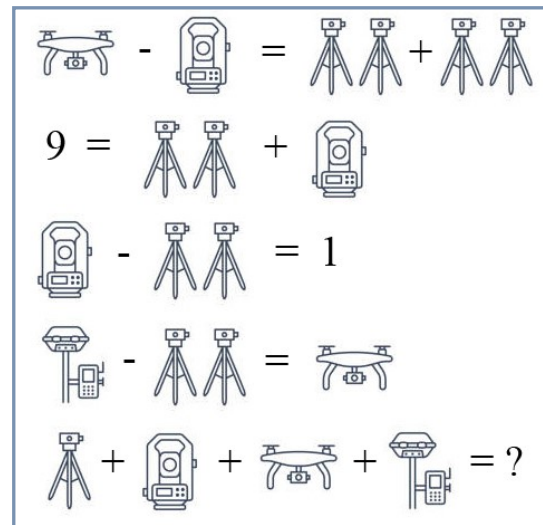


SPRING BRAIN TEASER



So for the Spring 2019 brain teaser, we decided to go with a simple math puzzle. This should be no problem for surveyors, and who knows, maybe even some engineers might have a shot! We have lots of surveying tools here: drones, total stations, digital levels and GNSS receivers. Consider all of the information in the graphic, and solve for the “?” in the 5th line. However, as you muddle your way through the puzzle and all that equipment, be careful you don’t trip over the digital level!

Email your answer to marketing@geodcorp.com by midnight **Friday 3rd May, 2019**. A random winner will be drawn from all of the correct entries received and will **win a \$200 Amazon gift card**. As always, if you are precluded from accepting such a prize, we will 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!



For our Fall 2018 newsletter, you were asked to identify what the special relationship that exists within each highlighted pair of figures is. **Answer: Father and Son (Presidents)**

John Adams was the 2nd U.S. President and his son **John Quincy Adams** was the 6th U.S. President and **George H. W. Bush** was the 41st U.S. President and his son **George W. Bush** was the 43rd U.S. President.

Mike McAtee, PE of Urban Engineers was drawn at random from the correct responses received and won a \$200 Amazon Gift Card. Congratulations Mike!



DID YOU KNOW?

The sighting of a robin is considered the first sign of spring by many in the U.S. Even though some American Robins do migrate, many remain in the same place year-round. As with many birds, the wintering range of American Robins is affected by weather and natural food supply, but as long as food is available, these birds are able to do well for themselves by staying up north. Because of the harsh conditions, their behaviors change and you don't see much of them.



It's time for Spring Flying!

Spring is just around the corner. GEOD Project Managers are gearing up for Spring Flying Season and making aerial photography the top item on their list once again. To get optimal photographic coverage, arrange to have your project flown just before the foliage begins to appear.

Typically, the best time to schedule your flight is from mid-March to mid-April, when the trees have not yet begun to bloom, the snow has melted and we have a higher sun angle. **Call GEOD Project Managers now to assist in your project planning and aerial mapping needs, (973) 697-2122.**

In This Issue:

- I-80 Delaware Water Gap, NJ & PA
- Route 64 Bridge, Princeton Junction, NJ
- Teterboro Airport, Teterboro, NJ
- NJ DOT Route 73, Burlington County, NJ
- NJDOT Route 80 Rockaway & Parsippany, NJ
- North Shore Alternatives Analysis, Staten Island, NY
- NYC DDC, New York, NY
- PANYNJ—PATH Extension, Newark, NJ

GEOD Provides:

- Aerial Photography / Photogrammetric & LiDAR Mapping
- Land Surveying
- Laser Scanning
- Subsurface Utility Markouts
- Drone Surveying

CHECK US OUT ON THE WEB!

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Subsurface Utility Locating and Markout at GEOD

As you all know, GEOD enjoys a well-deserved reputation for employing the latest equipment and technologies available to the Land Surveying / Aerial Mapping industry, operated by a highly trained staff of professional technicians. However, even though we have been offering Subsurface Utility Markout and Location Services for more than 10 years, we are always surprised to learn that quite a few of our clients are unaware that we offer these particular SUE services.

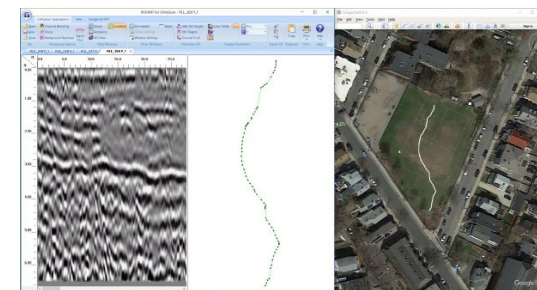
GEOD has 3 full time SUE crews, each equipped with GSSI's UtilityScan and Vivax/Metrotech vLocPro2, which are the (most accurate subsurface utility locating systems) available for

non-destructive location of all subsurface utilities and features, both metallic and non-metallic. GEOD can immediately locate and mark subsurface utilities such as gas, electric and sewer lines. Depth and location of water mains, underground storage tanks, terra cotta pipes, vaults and the like are easily detected with incomparable accuracy.

GEOD has several on-call contracts for SUE services, including one with the Port Authority of NY & NJ which has us locating and marking out utilities along PATH line routes in the City of Newark. GEOD also has on-call SUE contracts with Morris County Parks, The Township of Millburn and Ocean

County Community College. Our state-of-the-art equipment, combined with our years of experience in subsurface utility markouts, make us a stand out in subsurface utility exploration!

Call us at 973-697-2122 for ALL your SUE needs today.



FROM THE FIELD



NYC Transit On-Call Land Surveyor Consultant Services

GEOD was recently awarded the 5-year NYC Transit Land Surveyor Consultant Services Contract. Work under this contract will consist of preparation of legal title surveys, establishment of baselines, monuments and benchmarks, preparation of damage and acquisition maps for real property, perform topographic surveys, provide testimonial and expert witnesses on behalf of NYCT, 3D scanning and modeling for Building Information Modeling (BIM) projects within the City of New York for any of the NYCT properties, sidewalk vaults, rights of way and other sites.



NYC DDC - Preliminary and Final Design Services for Complex Pedestrian Ramps, Brooklyn and Queens, NY

GEOD was contracted to provide topographic surveying and mapping to support design of complex pedestrian ramps adjacent to Transit Authority facilities within the boroughs of Brooklyn and Queens to comply with applicable Federal ADA requirements. GEOD used a combination of conventional surveying and 3D laser scanning to collect the data required to create the basemapping. GEOD field crews established horizontal and vertical control by GPS. Property and ROW of lines were shown within the project limits. The mapping was prepared in accordance with NYCDDC General Requirements Section 4.2 at 1"=10' and delivered in digital format compatible with AutoCAD Civil 3D software to meet or exceed the National Map Accuracy Standards (NMAS). Tie sketches for control points prepared in 2015 AutoCAD format.



Concept Development—Route 73, Church Road & Fellowship Road, Mount Laurel Twp., Burlington County, NJ

GEOD was contracted to provide topographic basemapping to support concept development for safety and operational improvements of the Route 73 corridor with a focus on the above listed intersections.

For this project, GEOD utilized a combination of aerial photogrammetry, conventional surveying and terrestrial 3D laser scanning. Primary and secondary control points were established and utilized to perform a topographic survey. GEOD field crews are marking out all utilities and utility structures utilizing ground penetrating radar and M-Scoping. GEOD crews are performing a field survey to locate boundary evidence to assist in the establishment of property lines for mapping limits. All data is being formatted in MicroStation V8 in accordance with NJDOT requirements and Articles 44 and 51.



Aerial Mapping and Surveying to support Concept Development for Full Bridge Replacement, Route 64 Bridge over Amtrak, Princeton Junction, NJ

GEOD was contracted to provide aerial mapping and surveying services to support the concept development study to replace the Route 64 Bridge over Amtrak at Princeton Junction, NJ.

GEOD obtained new color photography and provided the necessary photo and primary control consistent with NJDOT Article 44. GEOD's field crews performed field edit surveys including utility inverts and bridge clearances. Mapping was compiled directly at 1"=30' with all visible features consistent with NJDOT standards and specifications for 1"=30' scale mapping shown. All data was

formatted in MicroStation V8 with a corresponding InRoads DTM using NJDOT standards.



Route 80 Rockfall Mitigation, Route 80WB, Rockaway & Parsippany, NJ

GEOD was contracted to provide survey and mapping for two sites along Route 80 in Rockaway and Parsippany, NJ. GEOD field crews recovered project control points to tie into the base mapping coordinate system, and set photo control points sufficient to cover the aerial photography. GEOD obtained new low altitude aerial photography and aerial LiDAR. LAMP Mapping is compiled directly at 1"=30' and all features consistent with NJDOT standards and specifications for 1"=30' scale mapping is being shown. GEOD laser scan technicians incorporated laser scanning derived DTM data into the site DTM file provided by NJDOT and provided a final comprehensive DTM. All mapping is being formatted in MicroStation V8 in accordance with the requirements of the NJDOT's Minimum Guidelines for Aerial Photogrammetric Mapping and Survey Manual.



Hurricane Sandy Community Recovery, Residential Queens & Brooklyn NY

GEOD continues to provide full property boundary surveys with metes and bounds to support the NYC Build It Back program dedicated to helping New Yorkers living in communities affected by Hurricane Sandy rebuild their homes. GEOD has conducted over 500 surveys in Queens and Brooklyn NY to date. Surveys include establishing horizontal and vertical control, existing building locations, 1st floor elevations, topographic surveys and location of existing utilities including rim and invert elevations, deed research and flood certifications.



FROM THE FIELD



Subsurface Utility Designating/Locating Port Authority Trans Hudson Corporation Utilities Newark Penn Station to Vicinity of Newark Monorail Link Station

Under our existing Subsurface Utility Locating contract, GEOD is providing the mark-out to support the PATH Extension Project which will extend the PATH system from its current terminal at Newark Penn Station to a new multi-modal station next to the existing Rail Link Station adjacent to Newark Liberty International Airport.

Services include reviewing historic data from previous investigations and developing a utility database. Review and compare the historic data to the data obtained from NJDOT, City of Newark, Amtrak, Conrail, etc. Field locate, using a combination of EM and GPR equipment, subsurface utilities including electric, telephone, railroad signal, gas, water, CATV, etc. Obtain and provide the top and invert elevations, pipe sizes and materials and the outlines of all structures in the gravity sewer system. Deliverables include AutoCAD drawings in compliance with the Port Authority's CAD standards.



PANYNJ - Aerial Mapping Update Teterboro Airport, Teterboro, NJ (TEB)

GEOD was contracted to perform surveying and mapping services of Teterboro Airport (TEB) for the Port Authority of NY & NJ. From newly acquired 7cm GSD "leaf-off" digital aerial imagery, topographic mapping of the airport property is being completed at 1"=40' along with a digital terrain model generating 1ft contours and 4" pixel ortho rectified photography. Mapping is being prepared in PA spec AutoCAD Civil 3D 2018 format.

Delaware Water Gap WB (I-80) Toll Plaza Roadway and NJ Approach Repairs, Hardwick Twp., NJ and Delaware Water Gap, PA



GEOD was contracted to topographic mapping to support design services for improvements and repairs at the I-80 Delaware Water Gap Toll Plaza roadway and EB and WB New Jersey approach roadway and median barrier.

GEOD acquired aerial LiDAR and new color digital aerial photography and provided the necessary horizontal and vertical control utilizing GPS. All visible features consistent with NJDOT standards and specifications for 1"=30' scale mapping are being shown. All data is being formatted in MicroStation V8i using NJDOT's standards. The mapping is being performed by skilled technicians under the direct supervision of certified photogrammetrists to meet or exceed ASPRS Positional Accuracy Standards for Digital Geospatial Data.



Photogrammetric Mapping, North Shore, Staten Island, NY

GEOD was contracted to provide photogrammetric mapping to support the conceptual engineering study to update the Staten Island North Shore Alternatives Analysis.

GEOD obtained new color aerial photography and provided photogrammetric control to compile topographic maps of the 1,025 acre site. All visible features consistent with 100 scale mapping was shown. Break lines and spot elevations were digitized and combined with the ground level plan to create a DTM in SelectCAD from which 2' contours were generated. All data was formatted in AutoCAD Civil 3D. The mapping was performed by skilled technicians under the direct supervision of certified photogrammetrists to meet or exceed

ASPRS Positional Accuracy Standards for Digital Geospatial Data (EDITION 1, VERSION 1.0. - NOVEMBER 2014) for 10cm imagery.



Photogrammetric Mapping Brooklyn-Queens Expressway (BQE), Queens, NY

GEOD was contracted to perform low level high accuracy photogrammetric mapping for a portion of the BQE in Queens, NY. The client had already performed a field derived topographic survey using a stationary scanner but due to a change in their scope, a significant amount of additional mapping was required, and it was determined that the most timely and cost efficient approach would be low level photogrammetry. Once the photo control was provided the base mapping was performed by numerous softcopy compilers to meet an accelerated schedule and then all of the combined mapping was output in NYSDOT spec MicroStation V8i with a DTM in SelectCAD.



Surveying and Laser Scanning Services, Various Locations, New York, NY

GEOD was contracted to provide land surveying and 3D laser scanning services to support the preliminary and final design for complex pedestrian ramps. The project sites were located throughout the boroughs of Queens and Brooklyn. Services included conventional surveys and 3D laser scanning to obtain the data required to create basemapping of various intersections. All field surveys were in compliance with NYCDDC's General Requirements Section 4.2.