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## TRANS TEXAS

SURVEYING AND MAPPING - TTSM

REIMAGINING  
SURVEYING FOR  
THE DIGITAL  
AGE

Robert L. Young,  
Owner

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# TRANS TEXAS

## SURVEYING AND MAPPING - TTSM



### REIMAGINING SURVEYING FOR THE DIGITAL AGE

In 1977, a young Robert L. Young learned surveying the traditional way, with survey flat chains a huge brass plumb bob on his belt, notebooks smudged with graphite, and hand-drafted maps. His career began when precision depended on patience, teamwork, and long days under a Texas sun.

As technology advanced, Young adapted. Today, he leads Trans Texas Surveying and Mapping in North-Central Texas, where his team builds high-fidelity digital twins using advanced terrestrial and airborne LiDAR. From hand-drawn maps to data models, Young's journey mirrors the industry's transformation and shows how experience and innovation can redefine what a surveying firm can achieve.

"I came in pulling a steel chain and doing everything with a pencil and an eraser," he says. "Now I'm making digital twins."

South of the Dallas-Fort Worth area, the company operates with a small but skilled team focusing on complex projects where accuracy and defensibility matter most. Engineers and other land surveyors make up much of its client base, bringing high expectations and tight deadlines. The firm answers with precision, speed, and integrity—values that guide its work.

#### FROM ANALOG ROOTS TO DIGITAL TWINS

Young's story reads like a living timeline of modern surveying. He remembers the first calculators, the heavy computers, and the early days of typing commands into DOS prompts. Yet the real change was not in the machines. It was in the mindset that came with them. He learned to treat tools as instruments, measure twice and check again, and respect the difference between adjusting and manipulating data. Those lessons built the foundation for Trans Texas, a company that greets every new technology with curiosity but also with caution.

That discipline is visible in the way the firm uses its tools. For terrestrial work, Trans Texas relies on the Leica RTC360, a scanner known for its speed and precision. The team flies a RIEGL Mini 3 for airborne mapping, which performs exceptionally well around rail corridors and busy rights-of-way. When a project demands quick results and efficient costs, the DJI L2 and P1 camera offers a balanced solution.



These preferences were not chosen from brochures. The team spent months scanning the same sites with different systems, often without compensation, to learn how each sensor behaved. Those experiments created a library of real-world data that shows how to combine multiple systems for the cleanest results.

That approach has paid off in practice. A long-running project involving a municipal water tank is a perfect example. For more than ten years, Trans Texas monitored subtle elevation changes with traditional methods. As digital tools matured, the firm combined drone-based LiDAR and terrestrial scanning to build a modern model incorporating historical data. The result revealed a nearly eight-inch tilt over the past year. The digital

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twin made the issue visible, and the client acted before the minor shift became a significant problem.

Similar success stories appear across the company's work. On a 600-acre property, the team produced a boundary survey that tied every corner to a photograph taken from the landowner's point of view. The map was technically precise and visually intuitive. It allowed the owner to understand the layout while meeting the standards required by engineers and attorneys. That balance between accuracy/precision and usability has become a defining trait of Trans Texas. Adding value to the deliverables is a constant mantra at TTSM.

#### INSIDE THE METHOD: CONTROL, REDUNDANCY, AND THE RIGHT TOOL

Every Trans Texas project begins with control. The team establishes control points tied to state plane coordinates through high-quality GNSS observations. They confirm those results using real-time kinematic positioning (RTK) when needed. They bring in Leica digital level for projects where elevation accuracy is critical. A Leica robotic total station ties the data together when complex geometry or construction staking is involved.

Checkpoints add a second layer of reliability. These are observed independently and kept separate from the control network. Once a terrestrial or aerial point cloud is registered, the checkpoints are used to test and confirm accuracy. The rule is simple. Never trust a picture until the numbers prove it.

The same discipline continues during data processing. Information gathered through a RIEGL workflow is checked on at least one or two other software platforms. Each platform uses different algorithms and models, which forces the team to compare and verify results. This process takes more time initially but eliminates the risk of errors later.

Sensor choice always depends on the task at hand. The DJI L2 is perfect for quick volume calculations or flights over loose materials. The RIEGL Mini 3 delivers precision for projects along rail or highway corridors. The Leica RTC360 is ideal for tight spaces or interior work where vertical accuracy matters most. The team learned them through repetition and testing, which remains one of the company's defining habits.



### A SERVICE MODEL BUILT FOR SPEED AND CLARITY

Clients often describe Trans Texas as fast, dependable, and precise. That reputation comes from a deliberate philosophy. The company believes that taking fewer high-value projects produces better work than filling the schedule with low-margin tasks. It focuses on jobs where the quality of the data matters and where the client values defensible results over the lowest price.

Every project begins with a detailed scope of work that answers the basic questions. Who needs the data? Why do they need it? How will it be used? Who else will handle it later? Those insights shape every decision, from scan density to flight altitude to file structure. Clear expectations at the start prevent confusion later.

Speed at Trans Texas comes from process, not haste. Field crews often work directly with the processors who handle

registration and quality checks. The people who collect the data are usually the first to review it, which minimizes guesswork and rework. The result is faster delivery without sacrificing accuracy.

## “ I came in pulling a steel chain and doing everything with a pencil and an eraser. Now I'm making digital twins

The company culture reflects that same clarity. Young often shares his five personal priorities. God first, his wife Michelle second, people third, mapping fourth, and fine food fifth. Profit is not on the list, yet the business remains successful. The company's financial health results from doing the right things in the correct order.

At seventy, Young has no interest in slowing down. He calls this the reward for decades of practice, a time when experience and technology finally work together. He still finds joy in the work, whether setting control points or mentoring younger surveyors.



Education is at the core of his service model. The company website opens with an invitation to learn about LiDAR, and clients who come in curious leave with understanding. Trans Texas teaches them why control matters, how checkpoints function, and how to read a survey report confidently. The goal is not to turn clients into surveyors but to help them make informed decisions.

Within the team, that same spirit of education drives collaboration. Young credits Alexis Cardona-Lopez with leading 3D operations, Greg Brown, S.I., T. with boundary expertise, and Joe Don Draper with airborne mapping. Each has a specialty, yet

they cross-train regularly. Knowledge flows in every direction, so no skill or insight stays locked in one person's mind. The result is consistency across projects and resilience when deadlines are tight.



### WHERE THE PROFESSION GOES NEXT

Young has seen surveying move from steel to silicon. He believes the future belongs to professionals who welcome new tools without letting those tools lower their standards. Modern technology makes it easy to collect data, but data without validation can mislead. Anyone can buy a drone and create a point cloud that looks convincing, yet looks can deceive. Trans Texas stands apart by proving its models are measurable, repeatable, and defensible.

The numbers tell a story. Texas now has far more engineers than licensed surveyors and tens of thousands of certified drone pilots, and that gap will continue to widen. For surveyors to remain central to infrastructure and development, they must demonstrate why precision still matters. They must show that verified data saves time, reduces risk, and prevents costly mistakes. That is the case Trans Texas makes with every dataset it delivers, whether it comes from a handheld scanner, a tripod, or a high-end sensor flying above the trees.



The company's plan is to keep testing sensors, improve speed without losing validation, and invest in client and peer education. Young applies that same approach to his own work. He is still searching for tighter methods, cleaner workflows, and better checks.

He likes to say, "The only life hack is discipline." At a time when software changes every quarter and airframes every season, discipline is the one constant. It is the checklist in the truck, the leveled tripod, the verified checkpoint, and the clearly defined scope. It is also a learning habit. Young still experiments, documents, and presents his findings, encouraging others to do the same. For him, progress is a responsibility.

Trans Texas Surveying and Mapping remains small in headcount but large in capability. What began with a chain and a notebook has evolved into a digital practice powered by scanners, sensors, and software that capture the world in three dimensions. The firm continues to grow under the leadership of a surveyor who values accuracy, purpose, and integrity in every measurement. 