



A special advertising section highlighting New Hampshire’s surveying industry.

# Laying the groundwork

In honor of National Surveyors Week, Timothy Bernier, LLS, PLS, CWS, principal surveyor, and Jonathan Crowdes, LLS, CPESC, CESSWI, survey project manager, from local engineering firm Hoyle Tanner, discuss the impact surveying has on building new communities around the Granite State.



A member of the Hoyle Tanner land surveying team performs field work in a Granite State neighborhood.

PHOTO PROVIDED BY HOYLE TANNER

## The critical role of land surveying in residential development

From Hoyle Tanner

As New Hampshire and the greater region continue to experience a housing shortage, the demand for efficient residential development has never been greater. While much of the focus remains on zoning regulations, construction costs, and permitting processes, one crucial step in the development process often goes overlooked — land surveying.

Proper surveying is the foundation of responsible and legally sound development, ensuring that a property is suitable for construction while helping developers avoid costly setbacks and regulatory challenges. As a New Hampshire-based firm specializing in surveying and engineering, Hoyle Tanner plays a crucial role in supporting responsible residential development by providing

ing the precise land assessments necessary to permitting, ensuring regulatory compliance, and maximizing land use efficiency — helping to address the state’s ongoing housing crisis.

**The importance of surveying in residential development**

Every residential project, whether a single-family home or a multi-unit development, starts with understanding the land. Surveying is the first step in determining property boundaries, identifying potential obstacles, and ensuring compliance with local and state regulations.

A thorough survey provides essential information on land contours, drainage patterns, existing structures, and environmental constraints. Without this critical step, developers can face boundary disputes, unexpected wetland restrictions, or zoning

conflicts that can delay or even derail a project.

In many cases, property boundaries are not always clear. If there is no direct evidence of a boundary line, surveyors conduct extensive research, examining historical records and neighboring properties to determine precise borders. This level of diligence is essential, as boundary disputes can lead to costly legal challenges and project delays. Additionally, deed research uncovers crucial details about easements, encroachments, and existing infrastructure, all of which must be factored into the planning process.

Hoyle Tanner has worked on numerous projects to support residential development. One recent project in Concord illustrated the necessity of surveying in real estate development. A small but detailed lot required precise

mapping of utilities, easements, and zoning setbacks. By conducting thorough deed research and utilizing modern surveying tools, Hoyle Tanner ensured the project’s feasibility while avoiding potential complications. Such diligence not only protects property owners but also contributes to the efficiency and success of residential development efforts.

**The role of technology in surveying**

Hoyle Tanner has implemented advancements in technology that have significantly improved the efficiency of the practice of land surveying. While traditional methods remain essential, the integration of robotic total stations, GPS surveying as well as UAV (drone) and scanners for mapping have expedited the process of collecting survey data.

Hoyle Tanner’s detailed,

scalable and searchable digital record-keeping system has streamlined the process maintaining and accessing survey data.

Drones are one example of newer technologies that significantly expedite mapping large open projects. This technology quickly captures aerial imagery for mapping terrain features, saving time and providing valuable insights for planning. However, accurate ground surveys are still necessary to confirm mapping accuracies are met. Political and regulatory boundaries still require on-the-ground surveying with traditional methods to meet minimum precisions for land surveying established in the laws, rules and professional standards.

One of the key benefits of GPS technology is its ability to tie

► See **Surveying**, Page B3

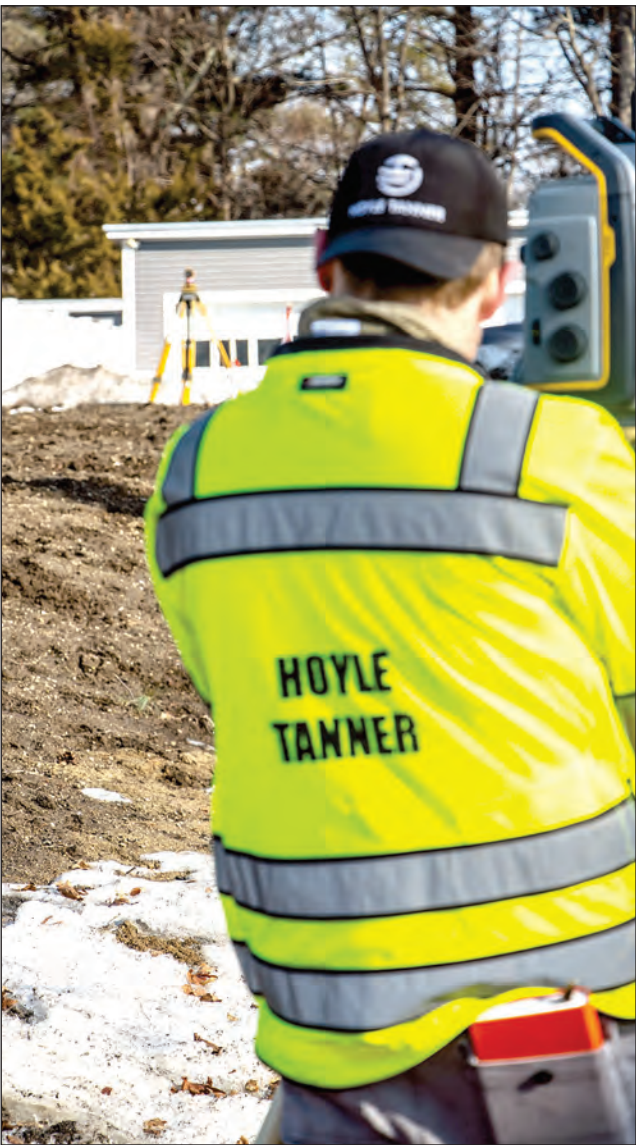


PHOTO PROVIDED BY HOYLE TANNER

Land surveying involves determining property boundaries, identifying potential challenges, and ensuring compliance with local and state regulations.

## Working on projects that add to the local housing supply

The impact of professional surveying extends beyond individual property owners to broader community development. In towns like Hooksett, Bow, and Hopkinton, Hoyle Tanner has played a vital role in the creation of new housing subdivisions.

**Hopkinton**

In one instance, Hoyle Tanner worked with a client and the Town of Hopkinton to obtain zoning relief, allowing two multi-family structures on a lot, maxi-

mizing the number of new residential units.

**Hillsborough**

Another notable project involved re-subdividing a lot in Hillsborough. Historically, the land had been two lots with a single-family home on each lot. The buildings were demolished due to disrepair and fire, and the lots consolidated. By conducting a detailed survey and navigating the planning process, Hoyle Tanner successfully worked with the developer to re-

subdivide the land back into two lots each with a duplex. This doubled the number of residential units on the land, while developing in a manner consistent with the surrounding neighborhood. This type of thoughtful development helps address the state’s housing shortage by making better use of available land while maintaining the existing character of the community.

**Dunbarton**

In a project in Dunbar-

ton, Hoyle Tanner is working on a cluster subdivision that will allow for multiple housing units while preserving open space to meet zoning regulations. This approach provides many rural single-family homes, while optimizing the land use and preserving a large tract of undisturbed forest. By carefully planning lot boundaries and ensuring compliance with local regulations, the project will successfully balance development with environmental considerations.







Students with a strong aptitude for math make great candidates for careers in the survey industry.

NATIONAL EVENTS AND COMPETITIONS

NSPS and Young Surveyors Network host 24th annual Student Competition

This year marks the 24th annual Student Competition hosted by the National Society of Professional Surveyors and the NSPS Young Surveyors Network. The competition is held in conjunction with the NSPS spring meeting, taking place in Silver Spring, Maryland, this week.

According to competition details posted online at nsps.us.com, the theme of this year's competition is "A bridge to the future." The competition tests everything from students' ability to perform complex field surveying tasks to their knowledge of emerging technologies.

To further inspire networking and intermingling between the current professionals and the soon-to-be professionals, the competition is designed to both test the students and bolster the future relationships of the NSPS. The competition is split into two parts — a social exercise and a technical field exercise.

Day 1 involves a Monument Hunt, set up like a scavenger hunt where teams will have six hours to find DC area monuments that are assigned a point value. Teams will take a photo with a timestamp at the location to receive credit.

Day 2 involves measurement exercises, the portion of the competition that measures the students' technical abilities with requiring some knowledge of historical concepts.

The contest reaches capacity for entrants every year. To learn about how students can register and to see a list of past winners, visit the Student Competition page at nsps.us.com.

Trig-Star competition recognizes excellence in math, trigonometry

Sponsored by the National Society of Professional Surveyors, Trig-Star is a competition that recognizes and rewards high school students who excel in math, particularly trigonometry, and their teachers.

The goal of the program is to demonstrate practical uses for mathematics and bring greater awareness of the surveying profession. The Trig-Star program began in 1984, and the following students were winners in 2024:

- First place: Samuel Grogin from Minnesota.
- Second place: Andy Zhang from Alaska.
- Third place: Andy Xu from South Carolina.
- From New Hampshire, Kevin Gordon finished in 20th place.

The 2024 teacher winners included:

- First place: Jerry Brooks from Minnesota.
- Second place: Natalia Sears from Alaska.
- Third place: Jennifer Zhang from South Carolina.

Another objective of Trig-Star is a commitment to helping students secure educational funding by offering scholarships and sharing information from other programs about scholarship opportunities.

For the Tri-Star scholarships, applicants must be high school seniors or college freshmen or sophomores who have participated in the Trig-Star Contest at some point in their high school careers, and who plan to enroll or are enrolled in a two- or four-year surveying degree program. Students must have a grade point average of 2.7 or higher for the previous academic term.

The application procedures are outlined on the Scholarship page at nsps.us.com.

Boy Scouts can earn Surveying Merit Badge

Boy Scouts can earn a Surveying Merit Badge by visiting the Boy Scouts of America website, scouting.org, and downloading the current badge requirements. The National Society of Professional Surveyors website has step-by-step instructions on how to complete the requirements and tutorials.

# Trusted Experts. Innovative Results.

Delivering quality Land Surveying & Civil Engineering services to New England communities for over 50 years.

## We're Hiring Survey Technicians!

Improved Work Life. Generous Paid Time Off. Comprehensive Employee Assistance Program.

Concord NH | Manchester NH | Portsmouth NH

[www.hoyletanner.com](http://www.hoyletanner.com)

## Celebrating National Surveyors Week

Our Land Surveying Leadership Team:

**Michael Dahlberg**  
LLS, RPLS, PLS  
Survey Department Manager  
Senior Vice President

**Brenda Kolbow, LLS, PLS**  
Portsmouth Division  
Survey Department Manager

TFMoran is proud to celebrate National Surveyors Week. Our history of combining the best in Survey with the best in Engineering stretches back over 55 years. Join us this week as we honor our first-class survey team:

Corey Colwell, LLS  
Michael Dahlberg, LLS, RPLS, PLS  
Brenda Kolbow, LLS, PLS  
Najad Ghanbari, LSIT  
Todd Emerson  
Ben Krisik  
Robert Bradshaw

Phillip Trombley, PLS  
Thomas Wood  
Richard Ward  
Marty Gavin  
Matthew Mis  
&  
Luigi Raineri

Recent Land Surveying Projects:

Courtesy photo  
Merchants Way - Concord

Market and Main - Bedford

Starbucks - Goffstown

Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

**VOTED BEST NH ENGINEERING FIRM 13 YEARS RUNNING!**  
NEW HAMPSHIRE 200  
BEST COMPANIES TO WORK FOR IN NH  
2024  
BOB AWARDS

**www.TFMoran.com**  
Bedford, NH (603) 472-4488 | Portsmouth, NH (603) 431-2222  
Contact: Robert Duval, PE - President or Paul Sbacchi, PE - Chief Structural Engineer

# Bedford Design

[www.bedforddesign.com](http://www.bedforddesign.com)

PROUD TO CELEBRATE  
**SURVEYOR'S WEEK**

Offering:

**SURVEYING  
ENGINEERING  
LANDSCAPE ARCHITECTURE**

Services Include:

**LOT LINE ADJUSTMENTS  
SUBDIVISIONS  
LAND PERMITTING**

**WE'RE HIRING!**

**603.622.5533**  
[info@bedforddesign.com](mailto:info@bedforddesign.com)

SERVING NEW HAMPSHIRE FOR OVER 35 YEARS



Surveying

From Page B1

surveys into a published coordinate grid system ensuring that even if all physical evidence is destroyed, the control and lot corners can be accurately recreated. GPS as a technology is a powerful tool, however it has significant limitations particularly when using the technology to meet surveying precision.

To utilize GPS at surveying accuracies, very specific procedures must be developed and followed. A comprehensive understanding of projections, surveying on an ellipsoid and the effect of gravity as well as complex calculations are required to achieve appropriate accuracies while using this technology. Using GPS technology allows the team access to an extensive amount of publicly accessible mapping data which can assist in planning and feasibility studies.

Additionally, digital records play a crucial role in long-term development planning. By maintaining a comprehensive catalog of past surveys, including AutoCAD files and deed research, Hoyle Tanner ensures quick reference to previous work, reducing redundancies and improving project efficiency. This organized approach is particularly valuable in regions where land use has evolved over time, helping developers navigate historical property divisions and zoning changes.

The benefits of integrated surveying and engineering services

Having both survey and engineering expertise within the same firm offers significant advantages in the residential development process. At Hoyle Tanner, the seamless collaboration between surveyors and engineers ensures that projects progress efficiently from land assessment to final design. With in-house survey and engineering teams working together, potential conflicts between site constraints and design plans can be identified early, minimizing delays and costly revisions. This integrated approach allows for



PHOTO PROVIDED BY HOYLE TANNER

This sample graphic illustrates how land surveying helps maximize housing units on a parcel of land.

better coordination of permitting, site layout, and infrastructure planning, ultimately streamlining the development process for property owners and developers.

Jonathan Crowdes, a survey project manager at Hoyle Tanner, notes that “having both surveyors and engineers under one roof at Hoyle Tanner allows us to seamlessly integrate site data with design plans. This collaboration not only streamlines the permitting process but also helps identify and resolve potential conflicts early — saving time, money, and resources for our clients.”

The role of environmental considerations in surveying

Surveying is not just about boundaries — it also plays a crucial role in environmental protection. Many properties contain wetlands, and proper surveying is essential to identify and map these areas. In New Hampshire, wetlands are protected by state regulations, and developments must adhere to state and local setback requirements to prevent environmental degradation. Understanding not only the water bodies found on the subject parcel, but also the surrounding drainage patterns allows the Hoyle Tanner team to

account for stormwater runoff. By incorporating wetland delineation into the surveying process, Hoyle Tanner helps developers plan responsibly, ensuring that projects comply with environmental laws while minimizing their ecological footprint.

Looking ahead: The future of residential development

As New Hampshire continues to grow, professional land surveying will remain a cornerstone of responsible development. Communities that embrace well-planned housing initiatives, backed by thorough surveying and compliance measures, will

be better equipped to meet the state’s housing needs. By investing in accurate land assessments early in the process, developers, municipalities, and homeowners can streamline construction while contributing to the creation of much-needed housing options.

As the demand for housing continues to rise, the need for expert surveying will only become more critical in shaping the future of New Hampshire’s residential landscape.

Hoyle Tanner has local offices in Manchester, Portsmouth and Concord; Chelmsford, Mass.; Burlington, Vermont; Yarmouth, Maine; and Oviedo, Florida.

# SURVEYING & ENGINEERING

Call for your free estimate.  
603-672-5456

- Site & Plot Plans
- Subdivisions
- Property Line Staking
- Wetlands & Soil Mapping
- Site Design & Engineering

Plus Septic Designs, FEMA-Elevation Certificates Local, State & Federal Permitting and More!

**WE'RE HIRING!**  
For more info email  
flic@fieldstonelandconsultants.com

SURVEYING • ENGINEERING • ENVIRONMENTAL

## FIELDSTONE

LAND CONSULTANTS, PLLC

603-672-5456  
Offices located in Milford and Keene

# HEB

ENGINEERS  
Strengthening Community

**YOUR CAREER. YOUR ADVENTURE. YOUR FUTURE.**

Located in the heart of the scenic Mount Washington Valley, HEB isn't just a workplace — it's a lifestyle. Come join a culture that celebrates outdoor recreation, work-life balance, and career growth, to discover how your work can complement your life, not compete with it.

**BEST** 2024 COMPANIES TO WORK FOR BUSINESS NH

Learn more at  
[hebenengineers.com](http://hebenengineers.com)

# JVA

JAMES VERRA & ASSOCIATES, INC.

## Join us!

One of the fastest growing surveying firms in NH

*James Verra & Associates, Inc. has been providing comprehensive land surveying services for over three decades, with archives dating back to 1888.*

*Now's the time to join our team with sign-on bonuses up to \$20,000.*

**WHY JVA?**

- Professional Growth
- Innovative Technology
- Collaborative Environment
- Client-Centric Approach with a Commitment to Excellence
- Equal Opportunity Employer

**SCAN TO CONTACT US**

Current Positions:

- LLS/Office Management**  
Up to \$20,000 sign-on bonus
- Licensed Survey/Professional Surveyor**  
Up to \$15,000 sign-on bonus
- Survey Project Manager**  
Up to \$15,000 sign-on bonus
- Crew Chief**  
Up to \$5,000 sign-on bonus

**James Verra & Associates, Inc.**  
101 Shattuck Way, Suite 8 • Newington, NH 03801  
603-436-3557 • [www.jvasurveyors.com](http://www.jvasurveyors.com)

We have a new office in Candia: Franklin Verra and Associates, a division of James Verra and Associates.

# NORTHAM

SURVEY LLC

*Local Dover Business  
Proud to support  
the community*

**AERIAL MAPPING • GROUND CONTROL • PRIVATE LIDAR  
EXISTING CONDITIONS • BOUNDARY SURVEYS  
SUBDIVISION PLANS • TOPOGRAPHIC SURVEYS**

(603) 953-3164 [NORTHAMSURVEY.COM](http://NORTHAMSURVEY.COM)



# Improve your career through the NSPS Certified Survey Technician program

Licensed survey technicians looking for ways to further their career or trying for promotions might consider researching the national Certified Survey Technician program.

The National Society of Professional Surveyors (NSPS) Certified Survey Technician (CST) program is a national certification program for survey technicians (based on experience and examination for field and office work) at four levels:

- Level I, entry level.
- Level II, instrument/computer operator.
- Level III, party chief/chief computer operator.
- Level IV, chief of parties/office manager.

The program is recognized by the U.S. Department of Labor and is currently being used by the surveying profession in all 50 states.

According to a fact sheet posted at [cstnsps.com](http://cstnsps.com), certification benefits for a technician include:

- Recognition by peers and employers.
- Personal pride in achieving the certification.
- Possible pay increases — CSTs make about 10% more than those not certified.
- Career and employment opportunities improve, as some jobs might be labeled “CST Preferred” or “CST Required.”
- Prepares you for other professional exams.
- Your skills should improve, making advancement possible.
- Certification improves image of survey technicians within the agency.

Interested technicians can learn all about the program, apply online and download necessary resources through the [cstnsps.com](http://cstnsps.com) website.



METRO CREATIVE CONNECTION

The national Certified Survey Technician program allows already licensed survey technicians to improve their careers by achieving new levels of certification within the surveying industry.

## Surveyors are in demand right now

Drive through just about any town in the U.S. and you’ll find construction going on — both commercial building and residential homes being built.

One aspect of all land development is land surveying — the art and science of establishing corners, lines and boundaries of property.

According to the website [beasurveyor.com](http://beasurveyor.com), the job outlook for surveying is beyond bright: “The U.S. Department of Labor’s projections over the next decade show that the need for land surveyors and technicians will exceed the average growth for all occupations.

“With the average age of the licensed professional surveyor being in the upper 50s and the increasing demand for skilled survey technicians, the job outlook for a career in surveying is excellent.”

And land surveyor is just type of job in the surveying industry. Other types of surveyors include:

- Forensic surveyor and expert witness specialist.
- Geodesist.
- Geographic information systems analyst.
- Boundary surveyor.
- Photogrammetrist and remote systems analyst.
- Topographic/hydrographic surveyor.

To learn more about these varied occupations, visit [beasurveyor.com](http://beasurveyor.com).



**Joseph M. Wichert**  
LLS, INC.

LAND SURVEYOR & SEPTIC SYSTEM DESIGNER

*“Providing survey services to the  
Manchester area since 1991”*

**BOUNDARY SURVEYS**  
**SUBDIVISIONS**  
**ALTA/NSPS TITLE SURVEYS**  
**TOPOGRAPHIC SURVEYS**  
**GPS SURVEYS**  
**SEPTIC DESIGNS**

**CONDOMINIUM CONVERSIONS**

Joseph M. Wichert, LLS - President, Owner  
802 Amherst St., Manchester, NH 03104  
email: [joewichert@jmwlls.com](mailto:joewichert@jmwlls.com) • [www.jmwlls.com](http://www.jmwlls.com)  
(603) 647-4282 • Fax: (603) 623-1910  
Plans & Records of John T. Hills,  
NH Geomatics / Miccio & W. E. Turner

**ARAGO** 

**LAND CONSULTANTS,  
LLC**

**Land Surveying**  
**Landscape Design**  
**Land Use Development**

31 Old Nashua Road, Suite 1  
Amherst, NH 03031  
603-732-0008  
[www.aragoland.com](http://www.aragoland.com)

A photograph of a man and a woman shaking hands with a man in a suit. The man in the suit is holding a folder and a pen. They are standing in a modern, bright room with large windows and indoor plants.

**SPRING HOME:**  
**Home Improvement and Real Estate**  
**Coming Friday, March 28**



Read this special section **Friday, March 28** with everything about home ownership – from buying and selling, to remodeling kitchens and baths to landscaping, flooring, furniture and more.

If you own a home or are planning on buying or selling, this special section can’t be missed.

NEW HAMPSHIRE  
**UNION LEADER**  
Open up New Hampshire.