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July, 2025

LINES & POINTS

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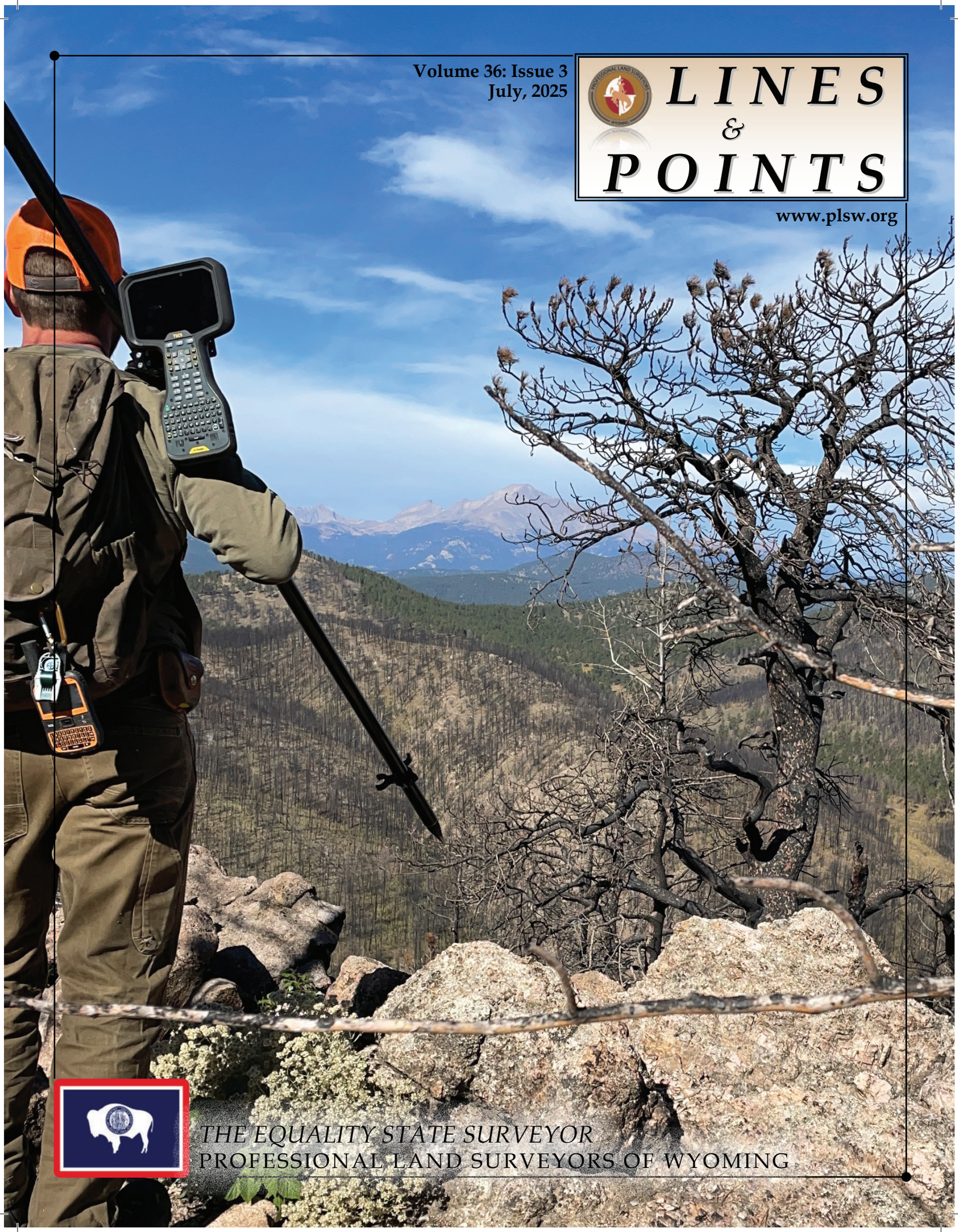
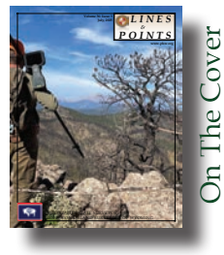


THE EQUALITY STATE SURVEYOR

PROFESSIONAL LAND SURVEYORS OF WYOMING

Publications Committee



On The Cover

Surveyor's "Office" View

Photo by Robert C. Torluccio, P.L.S.

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- Jennifer Dibona - That CAD Girl
- Jason Dysthe - Frontier Precision Inc.
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- Kelly Goff - Underground Consulting Solutions
- Susan Hall - Trimble
- Tim Klaben - Berntsen International Inc.
- Troy Langston - Monsen Engineering

PLSW (Professional Land Surveyors of Wyoming; PO Box 8, Cheyenne, WY 82003) is a statewide organization of Land Surveyors registered to practice in the Equality State of Wyoming. PLSW is dedicated to improving the technical, legal, and business aspects of surveying in the State of Wyoming. PLSW is affiliated with the National Society of Professional Surveyors (NSPS) and the Western Federation of Professional Land Surveyors (WestFed).

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For more information please contact Jack Studley.

PRESIDENT'S MESSAGE

Welcome back to another issue of Lines & Points. Crazy, isn't time just flying by. I hope you are enjoying the green all around us, since in Wyoming it doesn't last long. I also hope that you are having a great and productive summer.

We have been having a busy summer. But I still had a chance a little while ago to meet up with some of our PLSW folks and attend a WACTE (Wyoming Association for Career and Technical Education) conference educating teachers about the Land Surveying profession at Casper College. This was a partnership with the Professional Land Surveyors of Wyoming, University of Wyoming, and Wyoming Board of Professional Engineers and Land Surveyors. All these groups helped show our Wyoming High School teachers what their students could be learning about in the surveying world. If you haven't had a chance to teach in front of high school students, please reach out to me and I will put you in touch with this group. The few times that I have taught at our local schools, the kids have a great time learning about surveying and they love to see and use all our great gadgets. Plus, I think they like to get out of the classroom for a little while.

Before we know it, summer will be over, and we will be wrapping up these summer projects. Please mark your calendars that Fall Tech. has moved up this year. It will be in Casper on October 29th and 30th. More information to follow in the coming months. Also, we are already working on getting some great speakers for next year's Wyoming Engineering and Surveying Society meeting in February.

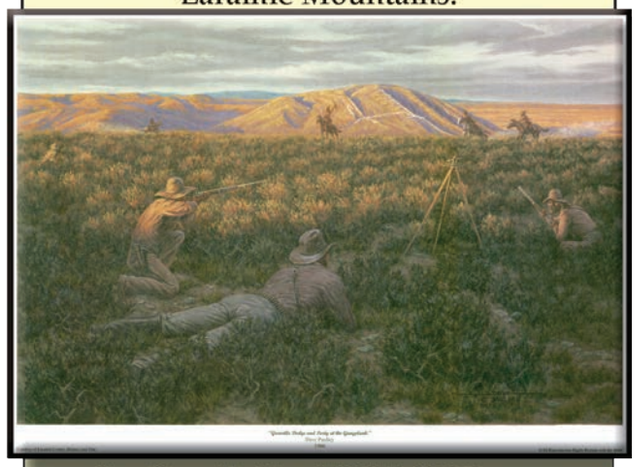
Like the last few issues, I leave you with another interesting survey corner. A few months ago, my family and I took a trip to New York City and Washington, D.C. I found this corner on the foot pedestal of the Statue of Liberty. My family really enjoyed the trip. This reminds me that we live busy lives, but we need to take time out to enjoy our family and friends. Have a great summer and hope to see you this fall.

Cody A. Schatz, PE&LS

President,
Professional Land Surveyors of Wyoming.

Grenville Dodge and Party at the Gangplank

A signed and numbered reprint of Dave Paulley's original oil painting of UPRR's survey party finding a route over the Laramie Mountains.



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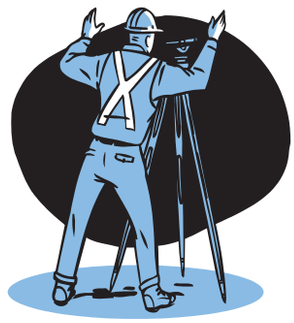

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ANNOUNCEMENTS

Saki Meador Wins Trigonometry Award

Meador * Wright * Jones

BIG PINEY — Big Piney student Saki Meador is the winner of the TRIG-STAR award for 2024-2025 for Big Piney High School, following a recent competition in which he scored 100%. Big Piney students Chelsea Wright and Magdelena Jones took home second and third place, respectively. The award is sponsored by the National Society of Professional Surveyors (NSPS) and cosponsored locally by Surveyor Scherbel, Ltd.

A TRIG-STAR is a mathematics student who has demonstrated in competition that they are the most skilled among classmates in the practical application of trigonometry. The competition for the honor is a timed exercise which is the solving of a trigonometry problem that incorporates the use of right triangle formulas, circle formulas, the law of sines, and the law of cosines. The competition helps promote careers in surveying and mapping to students at high schools across the country.

State winners also have the opportunity to participate in the National TRIG-STAR competition.

CUMULATIVE INDEX FOR LINES AND POINTS

The Cumulative index has been prepared by Herbert W. Stoughton, PEPLS for Lines and Points and is complete as an index of all the Lines and Points issues and very professional. However, the actual assembly of all the available Lines and Points issues is incomplete and is planned to be available by the end of the coming summer to be included in the PLSW Website under the Lines and Points heading.

Lines and Points Article Rotation Submission Schedule By Chapter

Responsible Chapter	First Call Date	Last Call Date	Publication Date
Southeast Chapter	THANK YOU! (see "Lines of Legacy" in this Issue)		
Southwest Chapter	September 1	September 15	October 1, 2025
Northeast Chapter	December 1	December 15, 2025	January 1, 2026
Northwest Chapter	March 1	March 15	April 1, 2026
West Chapter	June 1	June 15	July 1, 2026
Central Chapter	September 1	September 15	October 1, 2026

Board of Directors discussed, any four page article (with pictures) may be from within the particular chapter membership (survey stories, or technical experiences) or after acquiring permission to use an article from another professional society publication or which provides information of interest to the PLSW members. The Board also approved assigning the responsibility for the article development and submission to each chapter's vice president. If a Chapter does not provide an article that same Chapter shall be obligated to provide an article for the next publish date.

Thoughts on Professional Practice and Education

Article 10: Professional Partnering with Surveying Programs

by: Knud E. Hermansen, P.L.S., P.E., Ph.D., Esq. †

This is the tenth article I have prepared in the series offering thoughts on professional practice and education. In this article I advocate for a close partnership between professional members and the regional or state surveying programs.

In preparing this article, I draw on over thirty years of teaching in surveying studies. I have taught courses at Penn State University, University of Maine, Florida Atlantic University, and Florida State University. Each is different. All have strengths and weaknesses. With more than fifty years of practice, I have been a member of several state professional societies and national professional societies. I have maintained active professional consultation throughout my careers as an educator and military member.

I begin with the premise that I believe a surveying program should be a professional program. By professional program I mean a program that offers a focused education providing graduates with skills that are both practical and applicable - a program that pointedly leads to a career as a licensed professional. Examples of other professional programs at the bachelor of science degree level include nursing, accounting, and engineering.

I believe the focus of a survey program is to provide skilled graduates able and willing to enter the profession of surveying and take on typical surveying services soon after graduation. I strongly believe the graduate of a surveying program should be knowledgeable enough to begin practicing with competency in the profession of surveying upon graduation. The graduate should have the skill set to provide an employer with knowledge and efforts that will be profitable for the employer's business.

In previous articles, I have spoken about faculty qualifications so I will not speak in depth on that topic in this article. Suffice to say that knowledgeable, experienced, and qualified faculty are not always able to stay abreast of what an employer would prefer that a graduate should know and possess. Many faculty lack practical knowledge while often exceling in research knowledge. Yet, it is the practical knowledge that is much more important to the employer than cutting edge research knowledge. The reason for this disparity in faculty focus is not necessarily the faculty member's fault. University administrators are apt to focus their attention and efforts on increasing the money flowing into the university rather than upgrading the knowledge of graduates leaving the university. For state institutions, much emphasis is placed on obtaining research grants. Faculty promotion and tenure is often tied to research dollars. Hence, faculty focus their efforts on research rather than practice.

In order that students be taught practical and applicable knowledge, there should be a consistent and constant assessment of program courses, course content, and suggested course requirements. This assessment should be done by knowledgeable practitioners of the surveying profession. For ABET accredited programs, this is often done by an advisory committee mandated by ABET continuous assessment requirements.

Participation in this advisory committee is usually done by invitation of the program faculty. I will suggest that faculty invitations are not always sent to practitioners best able to assess or improve the program content for practical, relevance, and current knowledge. Many are the committees I have seen that seem to be composed of mostly alumni and retired faculty from the program. This makeup of an advisory committee is like asking grandparents, cousins, nieces, and nephews to look for faults in the family tree that are to be made public.

In my experience an advisory committee composed of practical and knowledge members usually provides a great deal of good, practical

(Continued on Page 17)

- Lines of Legacy -

Maintaining the Backbone of American Land Boundaries

By Robert C. Torluccio, LS 16666.

They traverse the unseen, recover the past, and define the very framework of the United States, yet most Americans have never heard of them. Federal land surveyors are the quiet stewards of the Public Land Survey System, responsible for preserving the boundaries and records of nearly 1.5 billion acres of American soil. Working behind the scenes for agencies such as the U.S. Forest Service, Bureau of Land Management, National Park Service, and many others, these professionals blend deep historical research with modern day land surveying practices to uphold and protect ancient public land boundaries. Whether licensed under state law or operating under federal authority, their mission is clear, to perpetuate corners established by the original surveyors, protect the bona-fide rights of landowners, and ensure the continued trust in America's system of public land ownership.

I remember vividly the first time I searched for an original stone monument after joining the Bureau of Land Management as a newly hired surveying technician. It was a quarter corner hidden somewhere on a rugged mountainside, and I couldn't help but wonder, "Hasn't someone already looked for this? Why is this corner so elusive?" Coming from the private sector, where time was money and efficiency governed, I was concerned with budget priorities and now the concept of spending taxpayer dollars wisely. That mindset, while valuable in its own context, was about to be turned on its head thanks to the Bureau of Land Management's Cadastral Survey Program.

After over an hour combing through thousands of rocks to find a marked stone, I voiced my growing suspicion that the corner might be lost. As the end of the workday neared, I joked to the crew chief that our job felt less like boundary surveying and more like pulling rocks from a farmer's field. He remained persistent but eventually suggested that we wrap up for the day. What really surprised me was his response that we'd be back tomorrow. That moment struck me, and I couldn't help but ponder how these surveyors don't give up.

The next morning, as we rode back up the canyon, stories filled the truck. Tales of legendary corner recoveries and the quirks of long-forgotten surveyors who once braved the wilderness were typical. It was evident that these people lived for the challenge and seemed to have all the answers. At one point I asked, "Why do we remonument original corners? Doesn't the original monument control?" I was quickly corrected and told that the position of the original corner is paramount, not the physical object occupying such location

and that modern monuments were a necessity. I would eventually ask other questions like, "Why don't you guys have to file monument records?" Apparently, they had heard that line many times before and quickly brushed it off as being a state requirement and explained that the field notes were sufficient. At this point one of them mentioned that I was starting to sound like a "button pushing private surveyor," and we laughed. My background had certainly limited my field experience to listening for the ping of iron with a trusty Schonstedt GS-52Cx, the one thing that we had all agreed upon as being unmatched.

We reached the site again and set up our trusted but outdated base station on a high ridge. Our radio signal was clearly out of this world. I took notice that the job file was set as "No Datum, No Projection" a foreign concept for someone used to working with newfangled, real-world coordinate systems and projections. "That's just how we do it, we work with Lats and Longs" the crew chief said. I let it go. The real work was waiting down the hill.

We made our way back into the area where the day prior, we spent so many hours searching and hoping. I too became hopeful, mainly riding on the morale of the crew, that what we were looking for might actually exist. They began calculating new search coordinates, formed on speculation from nearby record calls to topographic features

documented by the original surveyor. We headed that direction. A few minutes later, with a fresh set of eyes and a new approach, I noticed what looked like an embedded ring of stone forming what looked like an old campfire pit. I called the team over. Just as they arrived, I brushed off a sizeable, jagged stone a few feet downhill, mostly covered by dirt. As I unearthed it, it seemed long, but irregularly shaped and had the appearance of rock candy. It couldn't be the stone monument that I had envisioned, with defined edges and four smooth faces. Still, there was something "different" about this one...

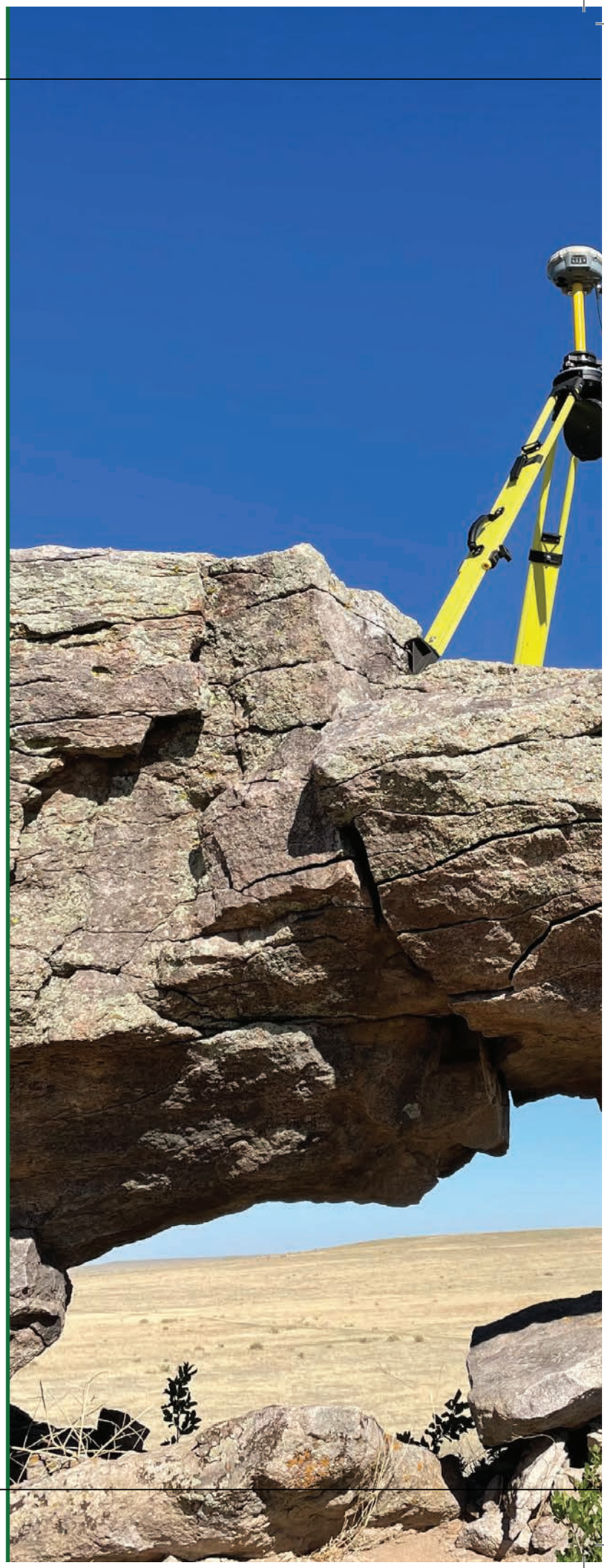
The crew chief took over, carefully cleaning the stone with a worn out and seasoned wire brush, a bottle of water, and a sense of reverence refined

by many years spent in the field. The other crew member muttered, "This moundsman liked to mark quarter on the side." Adding, "He would also mark his stones using an open 4." Sure enough, a faint 1/4 appeared just long enough to confirm its identity, which had been marked by a chisel nearly a century and a half before, revealed only under just the right angle of sunlight that filled the morning sky.

The crew chief ecstatically shouted, "We've got it!" The hair on the back of my neck raised up and I felt the presence of the original surveyor and his team who pulled chain through the area many years before. Their work, much different than ours had been performed years before and the remaining evidence thereof, for a select few to see, was surely good enough.

The real satisfaction came next. Using a compass and tape, we confirmed the remains of a nearby stump with illegible scribe marks and then found a root hole, both aligned well with the accessories as described in the original field notes. What had seemed like a routine day had led to the recovery of a corner once thought lost, which was a defining moment not only for that project, but for my understanding of what federal land surveying really is.

Following the guidelines and specifications as set forth in the 2009 Manual of Surveying Instructions, we dug a hole and placed an aluminum regulation post at the true point which was validated by found corner accessories. This point surprisingly fell within the center of the embedded ring of stone. The original marked stone was documented and then placed in the hole alongside, the hole was backfilled with the best soil, rigorously tamped, and a new mound of stone was raised to the cap. They took pride in building that mound of stone, much like my father did when stacking firewood, always taking the time to do it right. As we moved into completing the field notes and establishing new corner accessories, I came to notice that both of my questions that were raised earlier had been answered. By setting a modern and durable monument, we were perpetuating the corner point for many years to come AND preserving the original evidence, being the stone, which was now memorialized for eternity. As for the notes, well if you find it within your budget to pull them you will find out for yourself…



The experience of finding my first stone changed me. It taught me never to give up easily when searching for original evidence, that a tight budget can indeed affect the results of a survey. What initially felt like a government job bound by bureaucracy with a budget became a career that was built on legacy, persistence, and public trust. Thanks to the dedication and morale of the Cadastral Survey team, I began to see the work not just as technical, but profoundly meaningful. The corners that we recover aren't just markers in the ground, they're promises, made long ago, and they still matter today.

Later that year another adventure awaited me, this time on a mountain summit near Boreas Pass, Colorado. I had been assigned as the lead land surveyor responsible for performing a dependent resurvey of a mineral claim that was originally surveyed in 1884. By now, I had retraced many lode claims below the tree line and had come to expect a fair amount of remaining original evidence. Most mineral surveyors appeared to have been quite diligent, setting durable and identifiable monuments at the corners and establishing them with incredible accuracy. Perhaps it was due to their method of physically occupying and traversing the centerline of the lode and then turning angles at the end lines of the claim to establish the corners, something that might not be clear from reading the field notes alone. Yet, Cadastral staff seemed to be in the know.

Regardless, I was eager to conduct my first dependent resurvey above the tree line and to experience the majesty of the landscape while working solo, which had become an unfortunate and dangerous reality due to limited staffing. Offsetting that risk with safety gear and radios for communication, I began the assignment. On the day of the survey, I was excited. I set up my base station near a turnout near an ancient log framed building that was more modern that the mineral survey, then looked up toward the summit. The hike seemed manageable, maybe a little over an hour. I planned carefully, knowing that each trip would require hauling my surveying gear, signage, steel posts, and monumentation supplies.

After a challenging ascent, I reached the tree line and eventually arrived at the summit, although it had taken longer than I anticipated. The top of the mountain was more like an open

grassland with scattered boulders and signs of past mineral exploration. Radio signal was strong, and the weather was ideal, but windy. Not quite the scene as described in the original field notes, which referenced deep snowdrifts in the month of February. I had high hopes, due to prior experiences and the privilege of having worked alongside knowledgeable mentors within Cadastral Survey.

I began at the first search coordinate, Corner No. 1. The original corner was reportedly marked by a marked wooden post, but also included a chiseled X on a nearby boulder as a corner accessory. Of course, boulders were everywhere, and no wooden post was visible. Going into this, I had a deeper appreciation for the difficulty of recovering original monumentation. I had been trained by some of the best, and I knew that persistence was my most valuable asset. I spent nearly twenty minutes scouring the first boulder, looking for any sign of a chisel mark made nearly 150 years ago. Finding nothing, I moved on to the next, and then the next. After spending almost four hours searching with no trace of a chisel mark, I decided to look near where I thought was the other three corners of the claim.

I began with the closest one, Corner No. 4 only about 150 feet away. Still, nothing stood out. I descended to the southwest, where the final two corners were located on a steep hillside. After navigating through deep pockets of snow and shifting rock talus, I arrived near the search areas and concluded that whatever visible monumentation may have once existed was now gone. I climbed back to the top and gave the first two corners one last look before calling it a day. It was time to return to the truck.

There is something about the drive home from a problematic jobsite that helps a surveyor process the day. Aside from forming aches, pains, and cramping in the legs, it gives us time to think through problems and form new strategies. I frequently found it hard to switch that off, even when returning home to my family. Still, that drive would give me a renewed focus for the next day. I had learned by now, to never give up on the search.

The second day started more efficiently, thanks to having already established horizontal control. With the remaining supplies now hauled in, I focused entirely on recovering evidence at the corners. One idea, sparked during the previous evening's drive, had seemed possible. The original notes and plat had shown a tie to the discovery shaft. I was determined to locate the shaft of the lode if it still existed. After some searching, I found it hidden below raised banks encircling it. The shaft was intact but clearly dangerous to approach. Looking down, I could see rotting beams of timber set by a long-gone claimant who once believed he might strike it rich. Like him, I was on a similar type of treasure hunt.

I managed to locate the corners of the shaft and used the record bearing and distance to calculate a new search coordinate, referenced to true north, of course. To my surprise, the location brought me right back within feet of the same area in which I had searched the day before. It was discouraging. Had I been skunked? I focused once again on finding the chiseled X and limited my search to just two boulders. After nearly an hour, I stepped back, dizzy from staring so intently at the rough rock surfaces. Then suddenly, I saw it.

There it was, a bold and deeply chiseled X, clear as day, right where I had looked a hundred times before. It looked like something drawn on a treasure map, and I could not believe I had missed it. From the top of the boulder, I took the legendary first shot and calculated a new coordinate for the actual corner, which was only eleven feet away. After

vigorously digging there, I concluded that it was gone. I quickly moved to the next search point, just 150 feet to the northwest. After several probing attempts, my rod struck something solid. I used my shovel to remove a layer of decomposed granite mixed with soil and exposed a ring of embedded stone. Pressing in the center, my GPS rod slid nearly a foot into the remains of a long-decayed wooden post. Persistence had paid off once again. Corners No. 1 and No. 4 had been recovered. By this point, I felt more like an archaeologist than a surveyor. The two professions, I had come to realize, are not as different as they might seem.

The next major challenge was at the far end of the mineral survey, nearly 1,500 feet away. There was no clear evidence in sight. I had to trust my instincts backed by new search coordinates which had been derived by ground distances. I drove my shovel into the ground and after several attempts, I uncovered remnants of a dry rotted corner post at Corner No. 3. The final corner yielded the same type of evidence. Though crumbling and partially taking flight in the wind, the wooden corner post had lasted just long enough to be found again, thanks to the original surveyor.

After remonumenting all of the recovered corners, I returned to my truck more excited than the day before. As I neared the road, I passed several hikers and mountain bikers who were enjoying the scenery. I smiled. They had no idea that I had just completed an amazing treasure hunt,

but the search was not over. The original surveyor had tied one corner to a stone monument for a quarter corner more than 7,800 feet away in a distant draw. I had seen the area from the summit, a valley springing with life and an endless supply of water sustained from melting snowfall. The search would have to wait until the next morning.

When I returned the next day, the final chapter of the search began. Using the record bearing and distance from Corner No. 1, I calculated a search coordinate and soon found myself in a swampy, brush-filled basin. The monument I sought was a 21 inch long sandstone set the year before the mineral survey. In 1884, it must have stood out clearly, but now, the only thing that had survived the passage of time was the endless supply of water and oakbrush.

Fueled by the excitement of the previous day's success, I spent hours searching. I used every method I had short of searching down the line for the next section corner. I located nearby topographic calls, scanned for record bearing trees, and continued to reference the field notes again and again. Still, I came up empty and eventually admitted defeat. The monument was lost. Afterall, I was in a swamp. I gathered my

gear bag and the new monument and signpost that I had preemptively hauled in, now pointless, and began walking out of the swamp.

Still, I could not help but scan the ground as I walked. That's when a strange patch of moss caught my eye. It was a dull greenish gray, unlike anything else I had seen in the area. I reached down to investigate. Beneath it was a new color, a stark brick red. The tip of a sandstone just barely poked above the ground. I dropped my gear, cut away the oak brush, and began to dig.

The stone extended deep into the ground, wedged in a collar of stone nearly a foot down. I had found it. Amazed, I let out a shout that echoed through the valley. A moose grazing in the distance lifted its head, as if to acknowledge my find. To me, it felt like a silent salute and good omen that I will never forget.

After that year of retracing township lines, mineral surveys, and metes and bounds boundaries, I became committed to pursuing professional licensure. While not required for BLM Cadastral surveyors, who work under authority delegated from the Secretary of the Interior, our chief cadastral surveyor strongly encouraged it. He believed licensure upheld professional standards and helped formulate a relationship between federal and private sector practice. At the time, only a few within our branch held licenses, and I saw it as a path to advancement. Soon later, I became licensed in Wyoming and Colorado. I had accepted that my state credentials had limited application within the Bureau of Land Management. Those surveyors operated under federal authority, guided by special instructions and assignment instructions. Regardless of license status, everyone would follow the same process rooted in federal practice and adhered to the applicable Manual of Surveying Instructions. I also came to better understand the jurisdictional boundary between public and private lands. Our job was to mark federal ownership, not define private boundaries, and that distinction became second nature over time.

Eventually, I was asked to manage the boundary program for a National Forest. My role shifted from fieldwork to program management, securing funding, advocating for projects, and mentoring others. Recruiting new surveyors proved difficult. Despite the rewards of the job, few applied, perhaps unaware of the significance of the work or discouraged by the salary which was not comparable to the private sector. Still, with time and persistence, we built a strong team and moved our projects forward. It felt like running a small business inside the federal system, with the added benefit of stability and purpose.

Later, I transferred from the Bureau of Land Management to the National Park Service and moved my family to the Northeast. Unlike the Bureau of Land Management, the National Park Service relied on state licensed land surveyors and were focused more on land acquisition, often involving historic research and contracting survey services. Field time became rare, and I found myself developing survey specifications, templates, and constantly reviewing deliverables. The work was valuable, especially in expanding park boundaries, but something was missing, perhaps it was the connection to the Public Land Survey System and the monuments I once sought out on rugged mountaintops and in timbered draws.

After a short stint, my family and I felt the pull to return to Wyoming. Life in the Northeast lacked what we had come to appreciate in the West, and the desire to reconnect with our past, including the wind and smoke, was too strong to ignore.

For many federal land surveyors, the experiences I've described are all too familiar. The mission of protecting the Public Land Survey System and serving as stewards of public land boundaries hits close to home. In many ways, we are public servants, but more accurately, we are servants of the land. That call requires walking in the footsteps of the original surveyors, and by walking away from a corner too soon, whether due to budget constraints or impatience, is not walking in those footsteps. Additionally, leaving behind a more permanent monument, and survey record, is how we best serve those who will one day walk in ours.

Federal land surveyors do more than define boundaries, they safeguard the legal foundation of America's public lands and ensure the accuracy of records that future generations will rely on. Since the Land Ordinance of 1785, their work has shaped the physical and legal landscape of the United States. Early surveyors ventured into the frontier with little more than compasses, chains, and field books, dividing the land into townships and then sections to layout the Public Land Survey System. Their field notes and monuments formed the basis for land ownership and development across much of the country, and much of that evidence is still waiting to be found.

Today, federal land surveyors continue that legacy. Although their tools now include advanced geospatial technology, the mission remains the same, to retrace, to identify, to perpetuate, and when needed, restore the boundaries that define federal land.

While the monuments endure, the people who protect them now face a different kind of uncertainty. Government-wide initiatives aimed at reshaping and reorganizing large federal agencies have left many employees anxious, with growing concerns about workforce reductions, reassignment, or potential job loss. The uncertainty weighs heavily on those who have dedicated their careers to the management and protection of public lands. Surveyors, in particular, face the possibility of losing not just their employment, but also the institutional knowledge that supports critical surveying programs. Nationwide, many have already been forced to leave federal service and have flooded the private sector, and some are on the

fence waiting for the dust to settle.

Yet amid these changes, one thing remains constant, the enduring framework of land boundaries and the monumentation that defines them. These boundaries, established and preserved by generations of dedicated civil servants, represent more than just a line on a map, they embody a promise and purpose. Regardless of the results of agency restructuring, the land itself does not change, nor does the importance of the work that federal surveyors have performed over many generations. It is their mark that will carry forward their purpose, as they walked in the footsteps of those before them, to ensure that the lines of legacy remain intact for the generations to come.

(Continued from Page 6)

advice with the added bonus the members can be strong outside advocates of the surveying program when the program seeks donations or is thwarting attempts by the university administration to eliminate or modify the program into something useful for the administration but not necessarily for the program, the profession, or the employer of the graduate from the program.

A second method of assuring relevant and practical education of the surveying student is to assess and improve the success rate of students and graduates that take the fundamentals of surveying exam. I believe NCEES does a credible job of keeping the contents of the exam consistent with current practice due in large part by relying on licensing board members and professional input. However, if a program does not require students take the fundamentals of survey exam or use the exam scores for program assessment, this valuable source of assessment is wasted.

A much less effective manner of assuring relevant and practical education of the surveying graduate is through ABET program accreditation. By not fully lauding and embracing this avenue, I do not wish to discourage a program from seeking and obtaining accreditation or disparage ABET accreditation. The program content guidance available under common disciplines listed within ABET looks at a macro view of the surveying studies rather than focus on a micro view of professional needs. As an aside, I am not going to argue or encourage ABET take on a micro view by discipline.

Rather, I wish to make a point that ABET accreditation does not assure the program contents of an ABET accredited program are necessarily offering a relevant and practical education sought by the typical employer within the profession. The criteria that ABET accredited programs undergo continuous improvement and periodic assessment, often with the aid of an advisory committee, can help considerably with relevant and current knowledge if the assessment is taken seriously and aid sought from the profession through advisory committee members. I hope to write more about the benefits and limitations of ABET accreditation in another article.

Having given my opinion, I now offer advice by suggesting that yearly evaluation of program courses and course content be done by a committee composed of members of the profession. The committee should take on the role of friendly guidance – much like the bride's mother for her daughter's wedding. Then again, I may have used the wrong example given stories I have heard about the weddings of others where mothers went way beyond friendly guidance. I shall refine my parallel by adding so long as the bride's mother is not allowed to take over the planning of the wedding itself. Let me give some advice in detail. I think a committee is best composed of at least one active member of the state surveying profession that is supporting the program such as the immediate past president of the state society. If the surveying program is a regional program, a member from each state should be sought. Another member should be a current licensed member of the state surveyor licensing board.

All other members of the advisory committee should be employers or likely employers of the graduates from the program. Large multi-disciplinary firms and small firms should be well represented. Public and private sector employers should be represented as well. Donors or potential donors to the program should be welcomed as members. Someone that is willing to back their advice with donations are to be actively sought. For example, including a member that is an equipment supplier that generously donates up-to-date equipment to the program would be wise.

Some may fault the perception I have just 'painted' that membership on the committee can be bought. I would wink and nod while countering with a Jewish saying that: "Life's not as good with money as it is bad without it." Let me state the intention of this Jewish saying in other terms, "A program that brings money to the university is less likely to be eliminated than a program that costs the university money."

† Other books and articles by Knud can be found at https://umaine.edu/svt/faculty/hermansen-articles/

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