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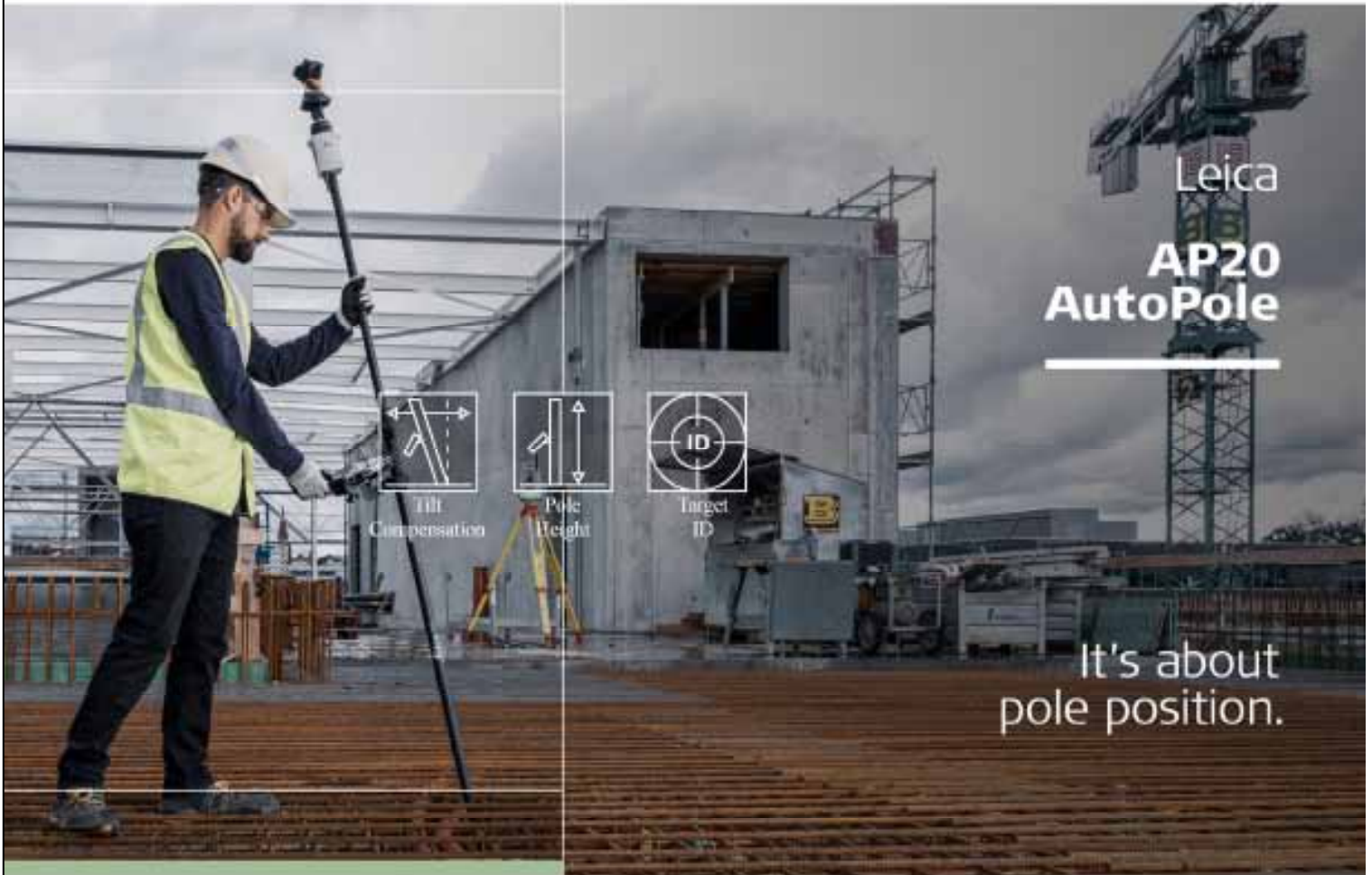
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PUBLICATIONS COMMITTEE

Committee Chair-Chief Editor • Steven "Dennis" Dawson, PLS
dennieandbarb@gmail.com

Designer • Michael Flaim, PELS
mike.flaim@bresnan.net

Treasurer & Advertising • John "Jack" Studley, PLS
jklz0318@gmail.com

Circulation • Joel Ebner, PLS
jvebner@bresnan.net

Copy Editor • Herbert W. Stoughton, PhD, PELS, CP
hws.geod.engr@gmail.com

Website • Sonja "Suzie" Sparks, PLS
sasparks7@gmail.com

Emeritus Member • Pete Hutchison, PELS
petehpels@gmail.com



On The Cover

Mound of Stone at 64 Miles + 28ch
of the Yellowstone Park Timber
Land Reserve

Photos By:
Lyle J. Casciato, PLS, CFedS

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PRESIDENT'S MESSAGE

Summer is in full swing and I'm as busy as I ever have been. The combination of a white-hot real estate market and short supply of surveyors is a bit of a perfect storm and I'm sure I'm not alone as I struggle to keep up.

As you face the daily grind of project deadlines and more proposals to write than you can possibly get done, remember to take care of yourself. It feels like the only way to get through is to put in 50, 60 or more hours of work per week, but it's also important to remember what will recharge you. Make time for your kid's soccer game, get out on your favorite stretch of river or section of backcountry trail, take your dog for a good, long walk, or pause for a just a moment and appreciate a Wyoming sunset.

I try to remind myself to give clients realistic timelines, even when they need it "tomorrow". It seems to always go better to under-promise and over-deliver rather than the inverse.

"Remember, I'm pulling for ya, we're all in this together." (I'll buy you a beer at Fall-Tech if you can name that late-90's/early 2000's television reference.)

Matt Gotham, PLS

President - Professional Land Surveyors of Wyoming

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I'm sure most surveyors have heard of the "Final Point" program created by Berntsen International, Inc. and the National Society of Professional Surveyors Foundation (NSPSF). It's a way to memorialize the work of beloved surveyors who have had a lasting impact on the profession, while supporting the future of surveying through NSPS/Berntsen scholarships.

It's a great program that provides the perfect memorial monument for surveyors who have passed – and now, for the first time, surveyors who are still with us to enjoy the honor.

Last month, the Nevada Association of Land Surveyors (NALS) memorialized living legend Steve Parrish on May 20, 2022. After nearly 60 years surveying, Steve set his own final point monument at Great Basin College in Elko, Nevada, where he was a surveying instructor. It



was fitting that the monument was set on the 237th Anniversary of The Land Ordinance of 1785 which was adopted by the United States Congress of the Confederation on May 20, 1785. Along with the final point installation, Steve was also presented with the Dorothy Calegari - Distinguished Service Award by Warren Smith, the president of California Land Surveyors Association (CLSA). This award recognizes significant contributions to the advancement of the surveying profession and/or the public that stands as a model of professionalism, dedication, and commitment of moral conduct by a professional land surveyor.

Smith made a thousand-mile trip just to present Steve with this award, underscoring the impact Steve has had in the profession. A recent article in *The Traverse*, the NALS newsletter gives insight into how surveyors feel about Steve Parrish. A colleague, Carl C. DeBaca had this to say:

"Everybody knows Steve Parrish. He is eminently knowable. When you shake his hand you get an accurate measure of the man, of that I am completely confident."

We throw around terms like "Last of a dying breed" or "Last of his generation" all too often these days, cheapening the terms till they mean almost nothing, but in Steve's case they are both true; totally, thoroughly, irrevocably, undeniably true."

This man's moral compass is exact, precise, and calibrated to the thousandth of a second. Throughout his professional career, when he has taken on a task, his approach is to see it through to completion, do it right and cost be damned."

Steve's character reminds me very much of other surveyors I've written about – surveyors that include our founding fathers. It's not just their surveying work that has withstood the test of time – it was the lasting impact of their character.

Dorothy Calegari and Crissy Wilson of CLSA shared this:

"Throughout the years Steve has selflessly volunteered his time and talent to the betterment of the land surveying profession. His mentorship extends beyond the boundaries of Nevada, as he has supported and educated surveyors across the country.

Besides what he has done for the land surveying profession, Steve has made an impact on the world by being a kind, caring, family man, with the upmost integrity. We are lucky to call Steve Parrish our friend."

Here's an overview of Steve Parrish's career –

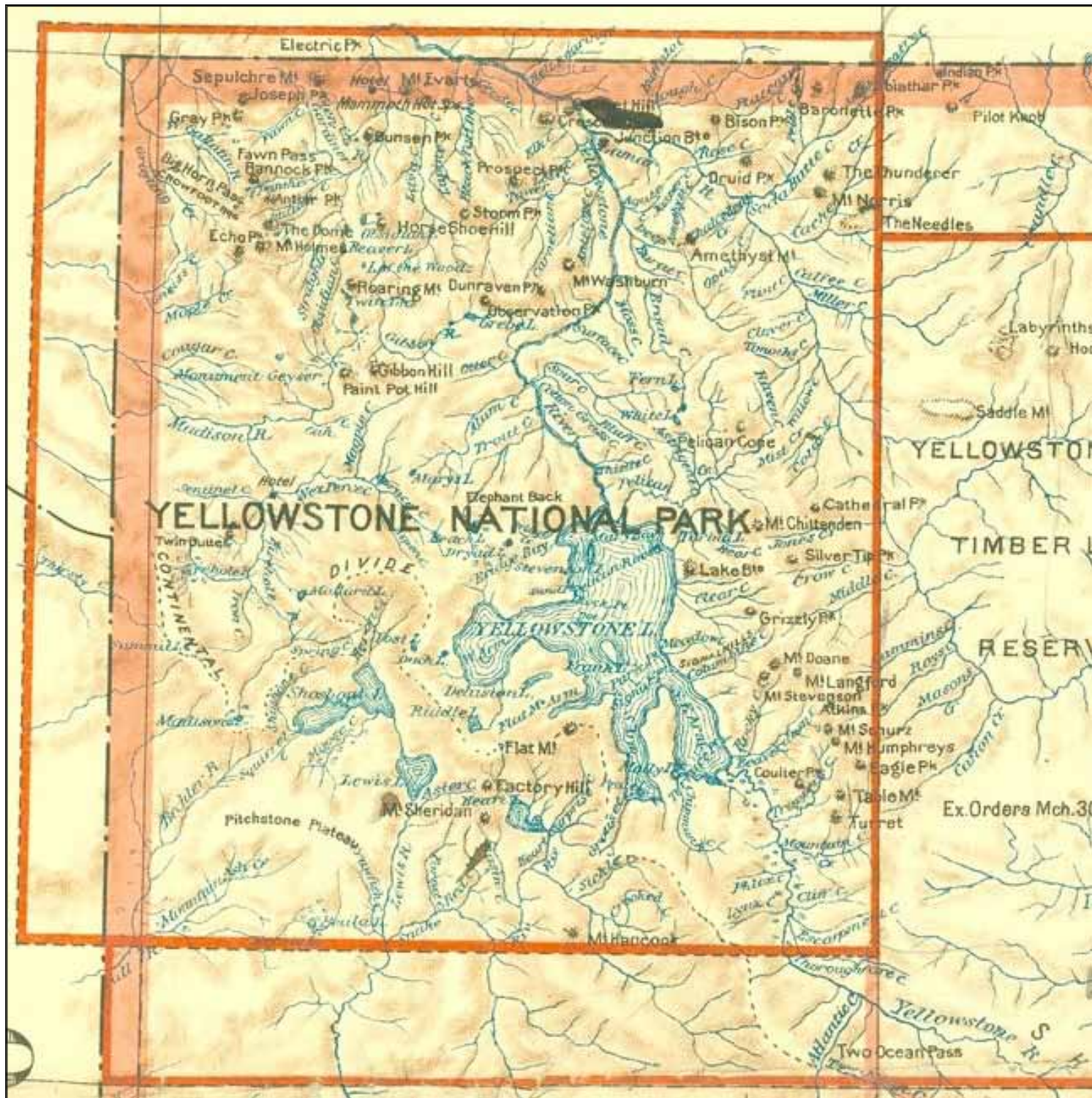
- 1963 - Began surveying with the U.S. Forest Service (USFS)
- 1973 - Acquired Utah PLS
- 1985 - Transferred to the Bureau of Land Management (BLM)
- 1989 - Selected as BLM Nevada Cadastral Chief
- 1995 - Transferred to private sector
- 2007 - acquired his CFedS certificate (Steve is licensed in 10 states, and is a Nevada water rights surveyor)
- 2009 - awarded BAS in Technology from Great Basin College
- 2009 - taught SUR360 (2009 BLM Manual) for Great Basin College
- Ongoing - presented workshops in 27 States and Canada, and shares his nearly 60 years of land surveying experience through workshops, consulting, and expert witness testimony.
- Steve is currently the Certified Federal Surveyor (CFedS) Panel Chairperson/Training Coordinator and County Surveyor for Alpine and Mono Counties, CA.

As surveyors, what we do is incredibly important, with impact beyond our own generation. More important, than what we do is how we do it. Steve Parrish reflects the ideal we all strive to achieve as human beings. I am so proud of Steve Parrish, and I'm proud to be a surveyor.



THE FORGOTTEN SURVEY OF PHILIP M. GALLAHER

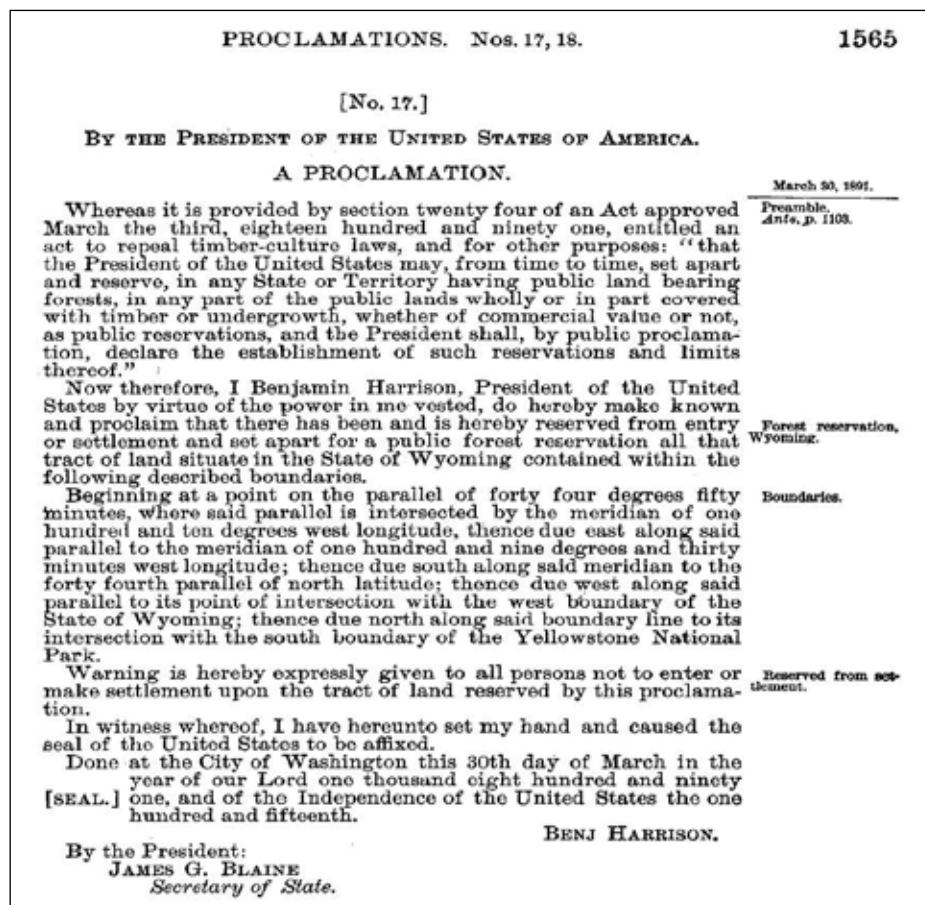
By: Lyle J. Casciato, PLS, CFedS



Portion of map of State of Wyoming
General Land Office, 1892
Courtesy of the University of Wyoming Libraries

In the January 2017 issue of Lines & Points, there was an article titled Archeology of the Forest Reserve Act (1891): Scribed Trees on the Shoshone National Forest, Wyoming, by Lawrence Todd (Park County Historic Preservation Commission), Kyle Wright (Shoshone National Forest), and Ron Ostrom (Shoshone National Forest). This article featured a tree dubbed the “Gallaher Party Tree”, which was scribed by members of a survey crew lead by Philip M. Gallaher in early October, 1893, while being snowed in for 5 days with 5 feet of snow at an elevation near 10,000 feet. Given the ruggedness and remoteness of this area up the Southfork of the Shoshone River southwest of Cody, it is remarkable that a survey crew could survey in this country after a storm of that magnitude. This tree was still standing at the time of the 2017 article, and is hopefully still standing today. Because it is located in a wilderness area prohibiting chainsaw or helicopter use, removal for preservation is not easily feasible. If you haven’t seen this article, it is available online on the Professional Land Surveyors of Wyoming (PLSW) website and is well worth the read. I would like to give my thanks to those that put this 2017 article together, as it piqued an interest in this 1893 Gallaher Survey.

The 1893 Gallaher Survey was conducted to establish the north, east and south boundaries of the Yellowstone Park Timber Land Reserve, which abutted the east and south boundaries of the Yellowstone National Park as it existed at that time. This was the first Forest Reserve in the history of the United States of America¹, established by Proclamation No. 17, 26 Stat. 1565, on March 30, 1891, by President Benjamin Harrison² stating, “Now therefore, I Benjamin Harrison, President of the United States by virtue of the power in me vested, do hereby make known and proclaim that there has been and is hereby reserved from entry or settlement and set apart for a public forest reservation all that tract of land situate in the State of Wyoming contained within the following described boundaries. Beginning at a



Proclamation creating
Yellowstone Park
Timber Land Reserve
(March 30, 1891)

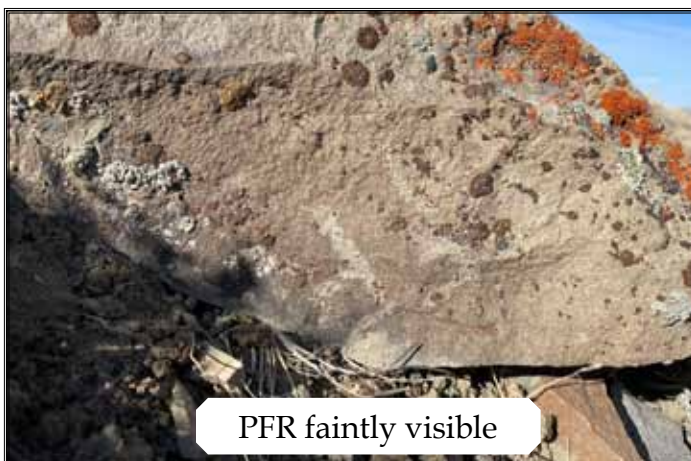
point on the parallel of forty-four degrees fifty minutes, where said parallel is intersected by the meridian of one hundred and ten degrees west longitude, thence due east along said parallel to the meridian of one hundred and nine degrees and thirty minutes west longitude; thence due south along said meridian to the forty-fourth parallel of north latitude; thence due west along said parallel to its point of intersection with the west boundary of the State of Wyoming; thence due north along said boundary line to its intersection with the south boundary of the Yellowstone National Park."

Gallaher conducted the survey of this proclaimed boundary between August 3 and October 22, 1893, under Contract No. 263, dated October 17, 1891. This line was run as it was described, beginning with Mile 0 at intersection of the parallel of forty four degrees fifty minutes latitude with the meridian of one hundred and ten degrees west longitude. The plat and field notes of this Gallaher Survey are available on the BLM Wyoming website³ under Park County, Yellowstone National Park, East Boundary. A further dive into the above cited Chronological Record of National Forest Boundaries shows the addition to the south of the Teton Reserve, Proclamation No. 28, 29 Stat. 906, on February 22, 1897, by President Grover Cleveland. Then in 1902, the Yellowstone Park Timber Land Reserve and Teton Reserve were both superseded by the Yellowstone Forest Reserve and the Teton Forest Reserve, Proclamation No. 19, 32 Stat. 1999, on May 22, 1902, by President Theodore Roosevelt, which also added additional lands to the south, east and north. A mere 8 years and 7 months after completion of the 158 Mile and 43 Chain 1893

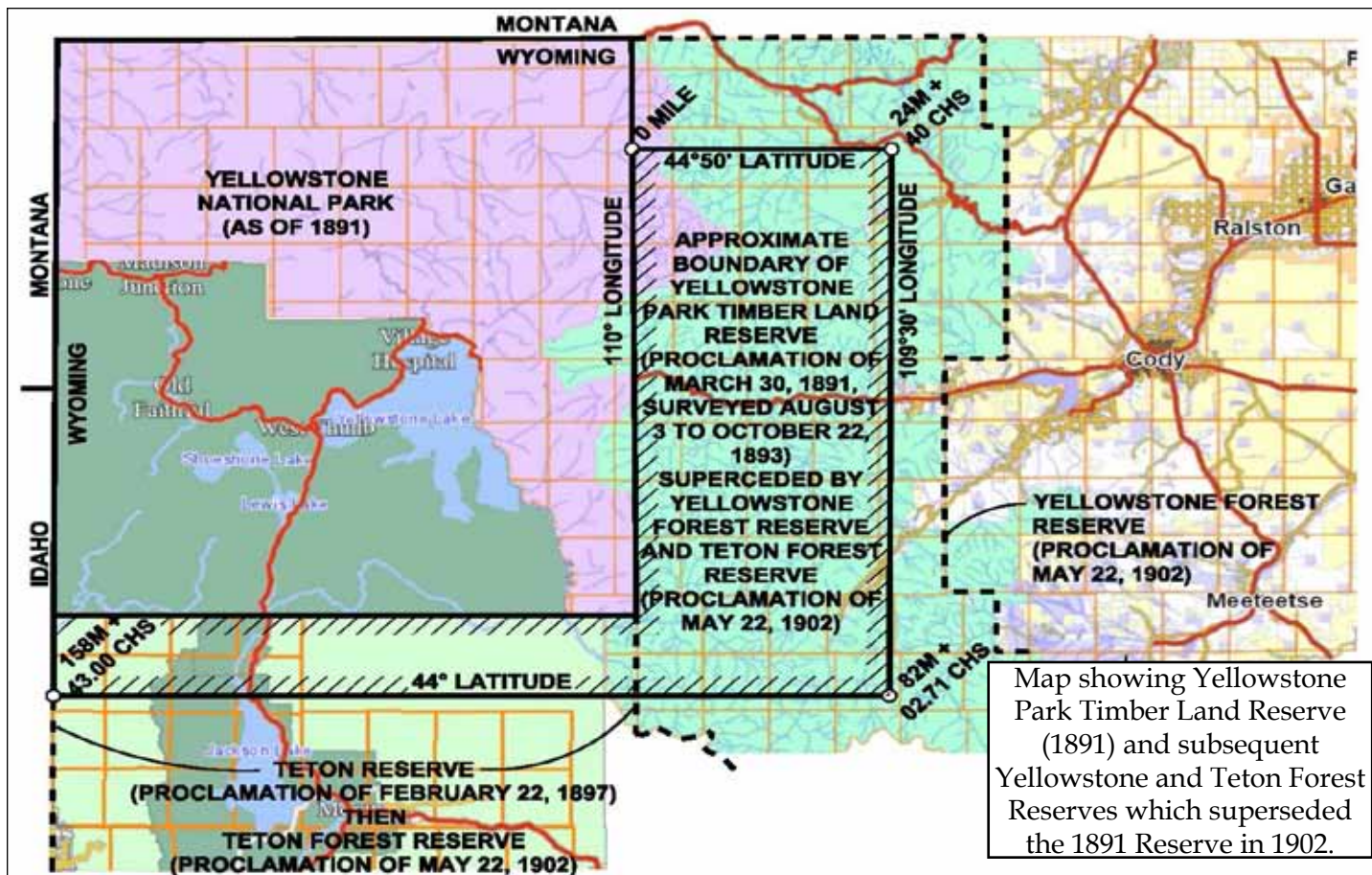
Gallaher Survey in some of the most treacherous country and conditions imaginable, the boundary they so laboriously and meticulously marked was made irrelevant and destined to be forgotten.

A quick glance at the field notes of the 1893 Gallaher Survey reveals that this was no ordinary survey, as evidenced by pages upon pages of elaborate triangulations from peak to peak where survey of the line was "impracticable". The various peaks, landmarks and topography calls referenced in the notes and triangulation sketches give a wealth of information for locating the approximate Corner locations on Quadrangle maps or using aerial imagery. This, coupled with recovery of several monuments and accessories, confirms this survey to have been faithfully executed and remarkably well done considering the time and conditions in which it was conducted.

This 1893 Gallaher Survey crosses public roadways in several locations. Looking at these various locations, it was decided the first attempt to locate evidence of this survey would be from the Southfork Road up the Southfork of the Shoshone River southwest of Cody, generally from Mile 64 to Mile 66 of the survey. The survey notes made reference to Ishawwoa Creek, various topo calls, and a few bearings to "Castle Mtn". These were enough to get a decent search area for various corners. This first expedition in spring of 2019 was a bust. After wandering around in search of a few Mile Markers that appeared to be simple enough to locate, nothing was found despite the topography suggesting the search to be in the correct area. The same spring, a short and unprepared search where the line crossed Sunlight Creek near Mile 31 was



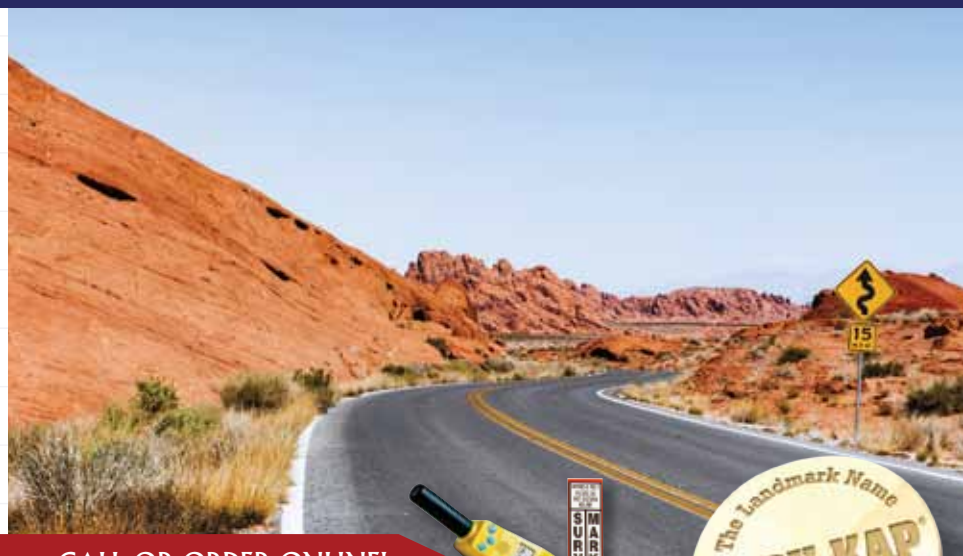
Stone Corner found loose at 64 Miles + 40 Chains (also see cover photo)



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conducted without success. The last attempt of 2019 was a hike up Russell Creek near Mile 27 that was also unsuccessful. Given the busy season was starting, this was the end of field search for the year. Over the following winter, the field notes were further reviewed with aerial imagery overlays to develop new search areas for 2020.

2020 was a year of extreme cabin fever by the time spring rolled around, with the COVID crisis keeping everyone at home. This was a prime time to social distance and get more serious about recovering evidence of the Gallaher Survey. After further analyzing the Southfork area, it was time to find something in the Ishawooa Creek area just north of those Mile Markers previously searched for. In mid-March of 2020, a mound was recovered in pristine condition. Although the original stone did not remain, the lichen on the mound made it clear it had been in place and undisturbed for quite some time. After analyzing this mound position to verify it to be the memorial to the Corner referenced in the field notes at 64 Miles + 28 Chains, it became much easier to more accurately search for more. Later in March, the first bona fide Gallaher Stone was recovered, very clearly marked as the Corner at 63 Miles + 51 Chains, set on the south side of Ishawooa Creek. The markings on this stone were well preserved despite being very lightly scribed, and the mound of stone had a long stick in its center as if someone had had the pleasure of rehabilitating it at some point. Two other monuments were recovered in the Ishawooa Creek area at 64 Miles and 64 Miles + 40 Chains. The longitudinal positions of these monuments and accessories range from 109°31'27.7" West to 109°31'28.0" West (NAD83).

Stone Corner at 63 Miles + 51 Chains

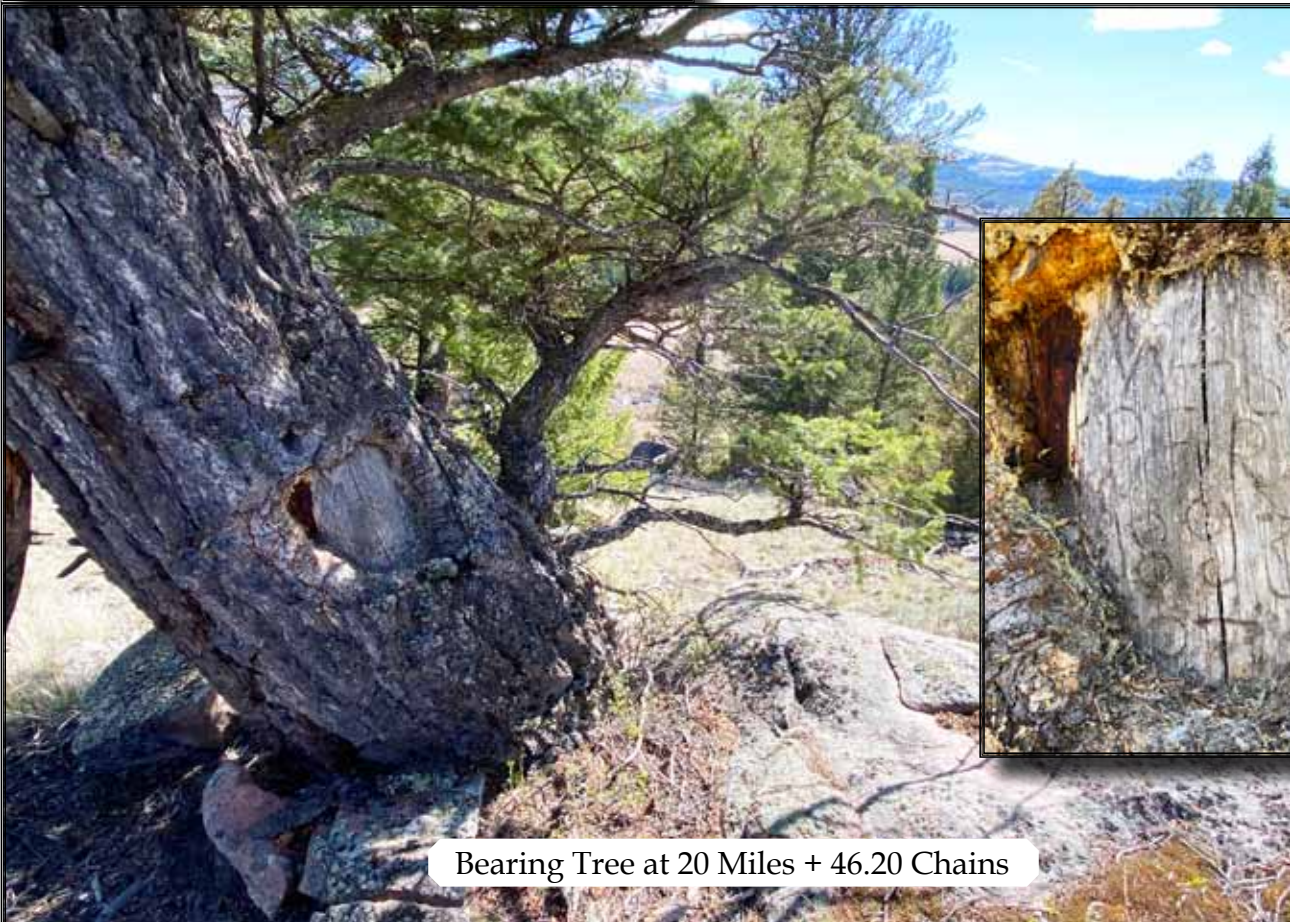






Bearing Tree at 20 Miles + 46.20 Chains

Later in May of 2020, it was decided to try the Crandall Creek area from Mile 17 to the Northeast Corner at Mile 24 + 40 Chains. One very specific topography call involving the triangulation over a lake made for a very clear and obvious location to start. There not being many lakes located along Latitude 44 Degrees 50 Minutes, it was clear the Gallaher survey party had crossed Swamp Lake, which is easily accessible by vehicle. Mile Markers east of the lake were briefly searched for without success. Then, a search on the west side of the lake for the Corner at 20 Miles + 46.20 Chains yielded a fine discovery. Perched on the rocky ridge along the west side of Swamp Lake are the two Bearing Trees referenced in the field notes of the Gallaher Survey. Amazingly, both trees are still alive and in good condition, clearly marked "20M 46.2 PFR 1893 BT" and "20M 46.2 PL 1893 BT" respectively. The Corner Stone was not positively recovered at this time, but the bearing trees were a great recovery. The latitudinal position of this Corner is 44°50'20.7" North (NAD83). This concluded recovery efforts for 2020 in order to keep up with the "real job".



Bearing Tree at 20 Miles + 46.20 Chains





Corner Tree at 22 Miles + 40 Chains,
PFR on south face



2021 was limited to a couple fairly short trips focusing on a few search positions between the found bearing trees at 20 Miles + 46.20 Chains and the Northeast Corner at 24 Miles + 40 Chains. This resulted in a very interesting recovery at 22 Miles + 40 Chains. The field notes for this Corner call for a "fir tree 10 ins. diam. which I cut off 5 ft above ground, and square to 6 ins. for 22 1/2 Mile Corner, marked 22 1/2M. on W. P.F.R. on S. and P.S. on N. faces", further referencing two bearing trees. Upon reaching the search position for this Corner, it was apparent this area had been logged in the past. Subconsciously, it was easy to toss out the possibility of finding a Corner Tree given the past logging. As a result, time was spent looking for evidence of bearing tree scribes on logs laying on the ground with little hope of recovery. After an hour of search then giving up to walk back down the hill to the truck, a strange broke off tree with squared off top caught the eye. Dumbfounded by the possibility of walking within sight of this tree for an hour without spotting it, it only took a few seconds to see visible scribing of PFR on the sunny south face and faintly see the 22 1/2M on the shadowy west face. How could this tree still be standing after being cut off in 1893? Utterly amazing! The latitudinal position of this Corner Tree is 44°50'21.0" North (NAD83). Neither bearing tree was recovered, but the Corner Tree was well worth the short hike.

The above-mentioned corner recovery efforts have barely scratched the surface of the potential remaining evidence of this historic 1893 Gallaher Survey. It is not often that we get the opportunity to retrace such a difficult and treacherous boundary that was conducted in 1893 and made irrelevant in 1902. These monuments and accessories are out there, itching to be recovered and once again be made relevant. Let's go find them, and revive this long-forgotten survey!

¹ See Establishment and Modification of National Forest Boundaries – A Chronological Record 1891-2012 Establishment and Modifications of National Forest Boundaries and National Grasslands 1891 to 2012.pdf (fs.fed.us)

² See Library of Congress Search results for 26 Stat 1565, Available Online | Library of Congress (loc.gov)

³ See Bureau of Land Management Cadastral Records https://www.wy.blm.gov/cadastral/countyplats/park/fieldnotes/ynp_0013fn.pdf

Thoughts on Professional Practice and Education

Article 2: FS Exam as a Student Graduation Requirement

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

This is the second article focusing on professional practice and education. While I suspect there is support for the thoughts I am going to reveal among the profession, many academic administrators and faculty will disagree with what I am about to say. Agreement of all is never possible. Even the best of advice is often dismissed. (Not that my advice is always the best.) There is an old Jewish saying "If God lived on earth, people would break His windows."

By way of introduction and upon which my thoughts will be measured, I introduce myself briefly. I taught surveying for more than 30 years and still do contract teaching for surveying and engineering programs. I was a surveyor and engineer for over twenty years in the military before retiring. I have been licensed in several states as a surveyor, engineer, and attorney - almost fifty years as a surveyor. I still have an active license for each profession in at least one state.

The focus for this article will be to advocate requiring the fundamentals of surveying exam in order for a student to graduate from a surveying or geomatics program. Note and I emphasize that I am not advocating the student pass the exam in order to graduate, merely be required to take the exam.

I suspect those reading this article are familiar with the three exams required for licensure. Briefly, the first exam is the fundamentals of surveying (FS) exam. The second exam is the professional surveyor's (PS) exam. The third exam is the state specific exam. The FS exam tests the examinee on topics that a quality surveying program should cover in its curriculum. Most states, if not all states, allow senior college students to take the FS exam. Therefore, there is no barrier to prevent a surveying program from requiring students take the exam as a pre-requisite for graduation.

I provide three arguments for a surveying program to require students take the FS exam.

First, I believe a primary purpose for any

surveying program is to provide graduates to feed the needs of employers and the profession. Whether the graduate seeks employment in the private or public sector, licensing is generally required to achieve more pay and higher positions. Licensing is required to own or manage surveying firms offering services to the public. What better way to begin the transition from academics to a professional stature than require the first professional exam while still involved in academic learning.

Second, the breadth and depth of surveying knowledge will never be more retentive than at or near graduation. After graduation, the graduate tends to increase their depth of knowledge in limited topic areas of surveying while forgetting knowledge in other topic areas. By way of example, the new employee that spends the next four years after graduation doing drone mapping is likely to have forgotten a great deal of knowledge they once possessed on boundary law, measurement adjustment, and so on. Therefore, the best chance for passing the FS exam that tests on a broad range of surveying topics is immediately prior to or shortly after graduation.

I have heard students claim they will be better able to study for the FS exam later after they are employed and without the academic burdens of course attendance, homework, and course exams. I caution otherwise. My experience shows that the new graduate is often immersed in long hours at work and is soon distracted with marriage, home ownership, child raising, and family commitments. All too often the graduate who has not taken and passed the FS exam while in college, fails to pass the exam later or cannot commit the time to prepare and take the FS exam later.

For a third reason, I believe a graduate that has passed the FS exam, and placed this achievement on their resume at graduation, has many more opportunities for employment and advancement upon graduation than a graduate who has not taken the FS exam. An employer will seek out graduates and pay a higher wage to those that

have already passed the FS exam. These students have proven a mastery of topics deemed necessary for professional practice and advancement.

While other compelling arguments can be made, I believe these three arguments are sufficient for those reading this article to understand the basis for my opinion. So why don't all survey programs incorporate the requirement that students take the FS exam as a pre-requisite for graduation?

I will give two reasons that seem to be prevalent reasons told to me. The first reason is that some programs rely on large number of foreign nationals to increase enrollment numbers and finance university coffers that rely on tuition money. Foreign nationals have no interest or need to pass any professional exam that is not recognized or necessary in their countries of residence. Such is their disdain for this requirement that when forced to take the exam, they select answers without contemplation. These programs fear the foreign student will switch their studies to another program that does not require the FS exam for graduation.

The second reason, perhaps partnering with the first reason, is that program administrators do not

want the FS scores to be used to judge the extent of their graduate's knowledge and ultimately the quality of the surveying program. It is no secret among the profession that many surveying programs are on tenuous grounds due to low enrollment or faculty deficiencies. Often students that should not be in college, let alone a surveying program, are admitted and moved along much as many public schools move students along to graduation. Perhaps this happenstance is the eventual outcome of a society that gives a trophy to all participants, not just the winners. I will say no more as rational arguments sometimes get lost or ambushed when placed in this arena.

Having given my opinion, I now offer advice. My advice is for professional societies to press their local surveying programs to initiate this requirement if the requirement is not already a mandate. If the program seeks the support of the profession than the profession should seek the commitment of the program toward the profession by demanding students take the FS exam.

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



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HINTS TO AUTHORS



Dear Readers:

The editors of Lines & Points wish to convey our gratitude to the numerous authors who have contributed photographs, technical and professional articles, and other information to be incorporated into the quarterly journal. In recent years, the assembly and redaction of the submitted materials has taken on considerable technical application of the various English language compilers, office suites, and "publishing suites". This means that the communication and transfer of information and materials arrive at the editors' desktops in a multitude of formats and styles, which sometimes are not compatible with the PLSW personal computers.

We, the editors, are setting forth some simple rules for submitting materials which, hopefully will simplify your efforts and make the transition to the published version simpler and less time consuming.

1. If you have any questions or comments, please contact S. Dennis Dawson, Publications Comm. Chm., (dennieandbarb@gmail.com) or Michael A. Flaim, Editor-in-Chief (mike.flaim@bresnan.net).

2. If an article contains any illustrations, photographs, graphs, or other graphics, please transmit them as separate individual files. You may also include the illustrations within your manuscript, but the image integrity/quality is degraded seriously when attempting to extract them from the manuscript to create a published digital image. The Editor-in-Chief states that a much better digital resolution is obtained from the separate, individual illustrations submitted.

3. All submissions (electronic and snail mail) should be sent to S. Dennis Dawson (4005 Snyder Avenue; Cheyenne 82001). It is recommended a second copy be sent to Mike Flaim (1212 Southwest Drive; Cheyenne 82007).

4. It is strongly recommended that all submissions be transmitted six weeks prior to the publication deadline. The publication deadlines are: 1 January; 1 April; 1 July; and 1 October, annually.

5. Lines & Points is the official publication for the Professional Land Surveyors of Wyoming. Therefore, hence forth there will be incorporated in the publication all formal announcements pertaining to official business of the organization and other announcements. This includes announcements for the Annual Meeting; state-wide membership meetings; seminars; and the Fall Technical Session. These announcements are to be submitted to the PLSW Secretary/Treasurer John J. Studley (PLSW; Attn.: Mr. Jack Studley; P.O. Box No. 8; Cheyenne 82003) (jklz0318@gmail.com), at least four weeks prior to the publication deadline in which the announcement will appear. The PLSW Secretary/Treasurer will circulate the announcements to the Publication Comm. Chm.; the Editor-in-Chief; and the PLSW Board of Directors.

6. Advertisers and prospective advertisers should communicate directly with PLSW Secretary/Treasurer Studley about any advertisements and modifications.

LINES AND POINTS ARTICLE ROTATION SUBMISSION SCHEDULE BY CHAPTER

Responsible Chapter	First Call Date	Last Call Date	Publication Date
Northwest Chapter	THANK YOU!! (SEE "THE FORGOTTEN SURVEY..." IN THIS ISSUE)		
West Chapter	September 1	September 15	October 1, 2022
Central Chapter	December 1	December 15, 2022	January 1, 2023
South Central Chapter	March 1	March 15	April 1, 2023
Southeast Chapter	June 1	June 15	July 1, 2023
Upper Platte Chapter	September 1	September 15	October 1, 2023
Southwest Chapter	December 1	December 15, 2023	January 1, 2024
Northeast Chapter	March 1	March 15	April 1, 2024

As the 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.**



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