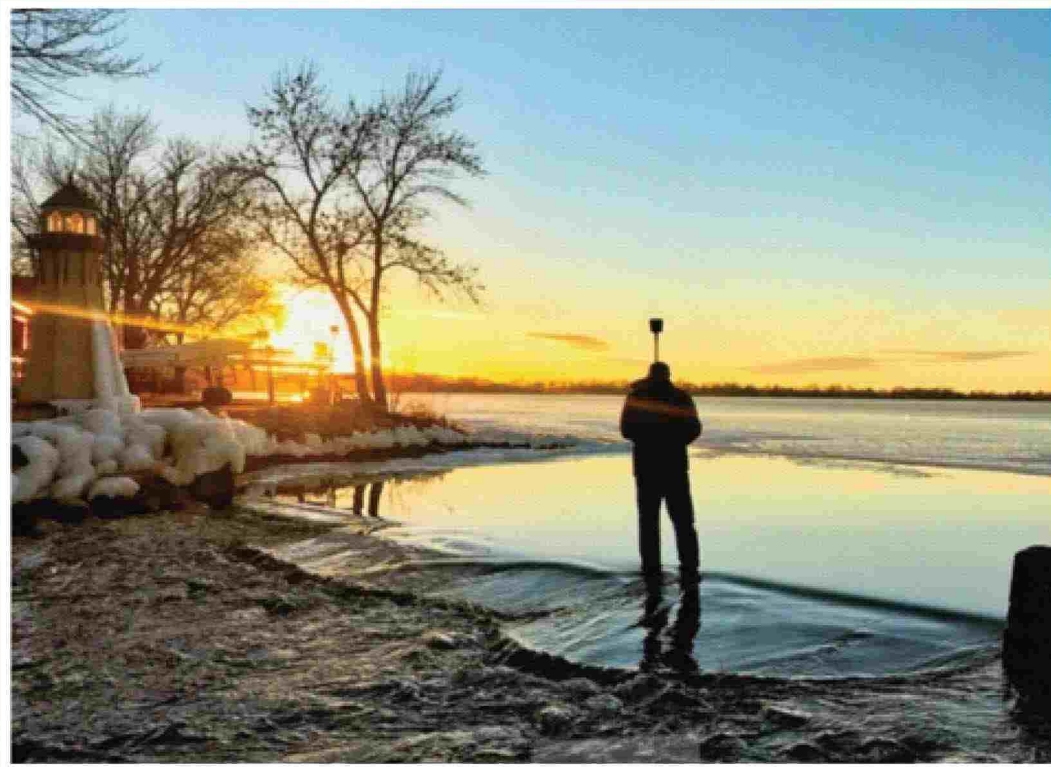


February 2019

BACKSIGHTS & FORESIGHTS



IN THIS ISSUE:

A Leader of Her People

**The Land Surveyor's
Guide to the Supreme
Court of SD Part 25**

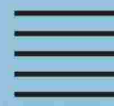
Convention Highlights

Photo Contest

**Reminisce of an
Old Surveyor Part III
Other Equipment**

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It will never fail you.
- Frank Lloyd Wright**

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PUBLICATION DEADLINES

<i>Material Cutoff</i>	<i>Publication</i>
January 15	February 1
April 15	May 1
July 15	August 1
October 15	November 1

Backsights and Foresights

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Articles and columns appearing in the publication do not necessarily reflect the viewpoint of SDSPLS but are published as a service to its members, the general public and for the betterment of the surveying profession. No responsibility is assumed for errors, misquotes or deletions.

FROM THE PRESIDENT – LINDA FOSTER, PLS

Greetings everyone!! The year is off and running at a brisk pace. Even though it has only been a few short weeks since Convention, it's been anything but quiet. The 2019 legislative session is well underway and there have been several bills introduced that have a direct impact on us as surveyors.

HB 1111 was introduced and addresses military personnel and their spouses gaining expedited licensure in our state. HB 1123 was just introduced and has to do with the tracking of computer usage on certain technical and professional government contracts. SB 166 in its current state is very vague but indicates licensure is at its core. The DPC with Justin Bell, our Executive Director and individuals within SDSPLS are working hard to track and respond to these bills. Stay tuned as we may be asking for your help when it comes time to make our position known. With everyone's help last year we were able to successfully defeat HB 1319. With similar support this year, I am confident we can make a difference in these issues.

I think it goes without saying that young people are key to continued success in our profession. SDSPLS is putting effort into reaching out to school-aged kids to give them some insight into land surveying as a career. One of the recent efforts was the building of an augmented sandbox that can be transported to schools, youth events and career fairs. I would like to challenge each Chapter to get out to at least **one** school or other youth event this year to get young people excited about what we do. There are resources available for materials, etc., so please contact Rebecca or Kristi Goehring for more information.

Speaking of education, most of you are aware that Rod Breitling and other staff members of the Southeast Tech Surveying Program are nearing retirement age. There is significant concern about the health of the program moving into the future. There are individuals in our group that are participating in conversations regarding the transition and we'll continue to update everyone as we learn more. If you have ideas about how we as a professional society can further support this program, please reach out and let us know. Surveying programs across the country are finding it

difficult to survive in today's "corporate approach" to education.

For those of you who attended Convention, there were updates regarding the corner record app and an opportunity to take the proof-of-concept for a test-drive. The feedback gathered was very positive. Rest assured that we will continue working on this project throughout the next year.

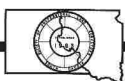
Another important topic that I want to focus on this year is the upcoming 2022 datum updates that the NGS is working on. This year is our window for working with the NGS in designing the coordinate system for South Dakota (looking at zone designations, etc.) and incorporating any changes we would like to see. We also need to be thinking ahead about any legislative changes that will be necessary as a result.

Stay tuned this year as we work on some "behind-the-scenes" changes in the Society. Rebecca has some great ideas and we are thoughtfully working on some things to serve you even better during the coming months. A Facebook page has been set up to help increase communication throughout the year. We are also planning to update the website and make it more of a one-stop shop for information.

It's an exciting, if not challenging time, for us as land surveyors! It's been said "it takes a village" and nothing is closer to the truth when it comes to making positive changes in and securing the future of our profession. I would challenge each one of you to find **one** way in which you can be of service this year. As I said at the close of Convention this year "don't be strangers." This is your organization and it will only flourish at the hands of those involved. If you have questions, comments, ideas or concerns, please don't hesitate to contact me.



Linda M. Foster, PLS
2019 SDSPLS President
lindafoster@ferberengineering.com



SDSPLS – Board of Directors Meeting

Wednesday, January 09, 2019

Arrowwood (Cedar Shore) Resort (River Run & Wetlands)

Oacoma, SD

(This report subject to Board approval)

In Attendance: President Nathan Nielson, Past President Fred Leetch, Secretary Jon Nelson, Treasurer Travis Kropuenske, Legislation Chair Gary Andersh, DPC Representative Don Jacobson, Professionalism & Practice Chair Dean Scott, NSPS Director Beau Koopal, Big Sioux Chapter President Aaron Norman, West River Chapter President Linda Foster, DPC Executive Director Diane Aas, SDSPLS Members Travis Jacobson, Ruthie Wetzel and Jon Collins; Executive Directors Janelle Finck and Rebecca Dodds, and guests Ed Rintamaki from NDSPLS, Mark Larson from MARLS and Richard Leu from SLSI.

1. Meeting called to order at 9:01 am by President Nielson.
 2. Acceptance of Agenda: Finck requests items 8a, 8f, and 9a move up the agenda after Chapter Reports. ++Motion by Leetch to approve the agenda as amended, 2nd by Koopal. Motion approved.
 3.
 - a) Secretary's Report – Jon Nelson: Written report submitted for review. Approval of the minutes for the October 16, 2018 Board of Director's Meeting as submitted. ++Motion by Kropuenske to approve the minutes as submitted, 2nd by Norman. Motion approved.
 - b) Secretary's Report – By Janelle Finck for Jon Nelson: Written report submitted for review. Approval of the minutes for the November 28, 2018 Board of Director's Meeting (Conference Call) as submitted. ++Motion by Kropuenske to approve the minutes as submitted, 2nd by Norman. Motion approved.
 4. Treasurer's Report – Travis Kropuenske: Written report submitted for review. General discussion and review of scholarships fund balance. Fink commented numbers look good and were on track ++Motion by Norman to approve the Treasurer's Report as presented, 2nd by Leetch. Motion approved.
 5. President's Report – Nathan Nielson: No written report submitted.
 6. Committee Reports:
 - a) Education – Kristi Goehring: No written report submitted.
 - b) Legislation – Gary Andersh: No written report submitted. Andersh reported Legislative Bills were starting to come out now. A draft of a Bill is circulating alphabetizing survey definitions with minor changes. Andersh indicated he will keep watch on this Bill. General discussion on proposed amendments to the military personnel and spouses Bill.
 - c) Design Professionals' Coalition – Don Jacobson: No written report.
 - d) Professionalism & Practice – Dean Scott: No report.
 - e) Public Information – Vacant: No report
 - f) Membership – Vacant: No report
 - g) NSPS and Young Surveyors – Beau Koopal: Written report submitted for review. Koopal indicated he would be stepping down as NSPS Director and that Tom Berklund would be taking over.
 - h) Trig Star – Steve Thingelstad: No report. Next Trig Star competition will be held in May at the School of Mines. Foster indicated Steve has committed through 2019 then will be stepping down. General discussion on replacement Chair for 2020.
7. Chapter Reports
 - a) West River – Linda Foster: No report
 - b) Big Sioux – Aaron Norman: No report
 - c) Missouri River – Keith Howe: No report
 8. Old Business
 - a) 2019 Executive Director Update – Rebecca Dodds: Transition going smoothly. Dodds indicated she has been working with SDSPLS member Ruthie Wetzel on a SDSPLS Facebook page. General discussion about Facebook page and what information would be posted. Dodds also reported the new email address, PO Box and phone number have been established and are currently in use.
 - f) 2019 Convention - Finck reported about 200 people have registered for the convention. She expects a few more before convention starts. New colored name tags this year: dark blue for registered professionals, light blue for LSIT's & Technician and gold for guests. Finck indicated the society will be pay the airfare in addition to the hotel accommodations for the guest speakers this year due to the government shut down. After-Dinner Activities Hour will include: Chain Throwing Contest sponsored by the West River Chapter; Pacing Contest sponsored by Big Sioux Chapter; Instrument Set/Level/Angle Contest sponsored by the West River and Missouri River Chapters; and Corn Hole Sponsored by Big Sioux Chapter/NSPS Young Surveyors. Prizes (gift cards) will be awarded for the winners or top placers.
 9. New Business
 - a) 2019 Proposed Operating Budget - General discussion. Leetch indicated the Board may need to increase the Legislation Watch Operating Expense in consideration of the military personnel and spouses Bill. No action taken at this time.
 8. Old Business
 - b) Corner Records/On-Line Records System – Linda Foster: Foster continues developing the concept of digital corner records. She indicated the technical side is moving along nicely. The State GIS coordinator is on board with the concept and is helping with logistics of hosting a site. General discussion on Register of Deeds and possible resistance to moving corner records out of the Register of Deeds Office onto a GIS website. Board of Technical Professions helping with administrative rule changes that would have to be made to administer and maintain the system. General discussion on how the BOTP would function as Digital Corner Records Administrator. Foster will setup the GIS corner records system in the Exhibitors area during the contest portion of the banquet for members to see and give feedback.

Continued on Page 7



SDSPLS – Annual Meeting

Thursday, January 10, 2019

Arrowwood (Cedar Shore) Resort – Oacoma, SD

(This report subject to Board approval)

1. Meeting called to order at 3:58pm by President Nielson.
2. Acceptance of Agenda: ++Motion by Eric Howard to approve the agenda as submitted, 2nd by Ben Lamke. Motion approved.
3.
 - a) Secretary's Report – Jon Nelson: Approval of minutes for the 2018 Board of Director's Meetings and Conference Calls as submitted. ++Motion by Beau Koopal to approve the minutes as submitted, 2nd by Diane Aas. Motion approved.
4. Treasurer's Report – Travis Kropuenske: Written report submitted for review. ++Motion by Chad Dodds to approve the Treasurer's Report as submitted, 2nd by Fred Leetch. Motion approved.
5. President's Report – Nathan Nielson: No written report submitted.
6. Executive Director's Report – Janelle Finck & Rebecca Dodd: Written report submitted.
7. Committee Reports:
 - a) Education – Kristi Goehring: Written report submitted. Goehring reported the Virtual Sand Box is being finalized to use for school visits and the Board of Directors has ordered posters on "Get Kids into Surveying" to be displayed at the Discovery Museums and class visits across the State. Goehring also reported the last payment to our scholarship winner from last year (Aaron Boock) has been made. Aaron is wrapping up his surveying degree at St. Cloud State University. Goehring indicated the Board of Directors voted to raise scholarship amounts this year. There were 12 applicants this year all from Southeast Technical Institute. We will have 6 scholarship winners this year.
 - b) Legislation – Gary Andersh: Written report submitted. Andersh indicated a draft bill is circulating during the 2019 session that would expand 36-1B to include expedited licensure for active duty military personnel. The bill is being sponsored by the Rapid City Chamber of Commerce and would eliminate local testing requirements. General discussion on the Bill and opposition to it. Andersh indicated SB 20 was signed into law and provides for compact states to accept the licensures of other states in declared emergencies or disasters. HB 1139 passed allowing adjacent property owners to record a partition fence agreement in which they agree the fence location is one of convenience and not one of ownership.
 - c) Design Professionals' Coalition – Don Jacobson: No written report. Jacobson reports the active military personnel and spouses Bill will be hard to defeat. Jacobson suggested the Bill be revised to ensure Land Surveyors meet Board of Technical Professionals requirements. Jacobson indicated Diane Aas has taken over as the Executive Director of the DPC and has committed for the next 2 years. General discussion on

DPC funds for use in lobbying Legislature. Jacobson indicated DPC has about \$7000 in savings and checking currently to use on the active military personnel and spouses Bill.

- d) Professionalism & Practice – Dean Scott: No written report. Scott reported not much activity on the Guidelines for the Professional Practice of Land Surveying in South Dakota 3rd addition. Scott requests another pier review and revision before releasing for use and publishing to website.
 - e) Public Information – Nielson appointed Ruthie Wetzel as Chair.
 - f) Membership – Nielson appointed Jon Collins as Chair.
 - g) NSPS and Young Surveyors – Beau Koopal: Written report submitted. Koopal indicated he attended the NSPS Fall Business Meeting in Collage Park, MD in October. Koopal reported Bismarck State has started a new Survey program. North Dakota is attempting to require an associate degree as a minimum educational requirement. Pen State added a new Survey program. Indiana is down to one 2-year Surveying Program. The Young Surveyors meeting had 70 people with 16 of those being from 5 other countries. There are 2000 active Certified Surveying Technicians in the United States, only one in South Dakota. March 21st was established as Global Surveyors Day.
 - h) Trig Star – Steve Thingelstad: Written report submitted. Thingelstad reported 27 students from 6 schools participated in the Trig-Star Competition. The average score of the top 10 placing students was 83.8 with the 1st place student received a score of 100. Thingelstad indicated he will chair through 2019 then will be stepping down. Chad Dodds will be taking over as chair in 2020. Next Trig Star competition will be held in May at the School of Mines.
8. Old Business
none
 9. New Business
 - a) 2019 Executive Director Introduction – Rebecca Dodds: Written report submitted. Dodds reported she started in October working with Finck on registration and renewal of memberships. Ruthie Wetzel has been helping Dodds getting the Facebook page up and running. Dodds indicated she will take over the Executive Director position full time on January 11th, 2019.
 - b) 2019 Proposed Operating Budget: Report submitted. General discussion pertaining to budget numbers. Beau Koopal indicated he would like the LSIT class size to increase. Janelle Finck stated the room currently being used for LSIT classes only holds 50 so there is limited space and mostly up to the instructors on number participating. ++ Motion by Diane Aas to approve the budget as presented, 2nd by Dean Scott. Motion approved.
 - c) NSPS – 2020 Dues: NSPS is increased dues \$10 for 2019. General discussion on the increase in dues. Board of Directors has already approved a \$5 due

Continued on Page 7



- c) SDBOTP – Licensure Applicant Evaluation Form: No report or activity as this time.
 - d) Augmented Sandboxes: Discussion regarding progress. Technical difficulties with Southeast Technical Institute’s sandbox have been worked out. The students will have the sandbox on display in the Exhibitors area during the Convention. Foster reported Brad Limbo is currently building one for the West River Chapter to use at Trig Star, Boy Scouts, 4H, etc.
 - e) NSPS Dues: NSPS increased dues \$10 for 2019. SDSPLS has already approved \$5 dues increase for 2019 and will wait until 2020 to make the additional \$5 adjustment.
 - g) Southeast Technical Institute – Breitling Retirement: Nielson indicated STI and the Advisory Board meet and discussed SDSPLS concerns on finding a qualified candidate to fill Rod’s position once he retires. Advisory Board requested an increase in salary to attract qualified candidates.
9. New Business
- b) Formalize & Direct Change of Account Authorizations - ++Motion by Koopal to change Account Authorizations from Finck to Dodds, 2nd by Foster. Motion Approved.
 - c) Southeast Tech Grant: Handout provided with summary of costs. It was noted the weather did not cooperate for the initial point hike. A trip to Wind Cave was scheduled instead to cover the time. Additional expense of \$200 over the \$3000 requested. ++Motion by Nielson to revise amount requested to \$3200 to cover the additional expense, 2nd by Kropuenske. Motion approved.
 - c) Appoint Committee Chairs – Nielson appoints Ruthie Wetzel as Chair of the Public Information Committee and Jon Collins as Chair of the Membership Committee. General discussion pertaining to Committees and responsibilities.
 - d) Hardship Grants – 2 Applications submitted. General discussion on qualifications and possible edits to form. Board to investigate NSPS qualifications of hardship grant process. ++Motion by Nelson to approve grants for stated amounts of \$300 each as shown on the applications, 2nd by Leetch. Motion approved.
10. Next Meeting: Tentatively set for Friday, April 12, 2019 location and time TBD.
11. Meeting adjourned at 10:44 am.

Respectfully Submitted

By: Jon Nelson – SDSPLS Secretary

- increase for 2019 and will need to approve the remaining \$5 in 2020.
- d) Election of Officers: 3 positions are open – President-Elect, Treasure and NSPS Director. The Board of Directors has nominated the following members:
 - 1) Travis Jacobson President-Elect
 - 2) Travis Kropuenske Treasure
 - 3) Tom Berkland NSPS Director
 ++Motion by Dean Scott to accept the nominations as presented. 2nd by Chad Dodds. Motion approved.

10. Next Annual Meeting: Thursday, January 09, 2020 at Arrowwood (Cedar Shores) Resort – Oacoma

11. Meeting adjourned at 04:35 p.m.

Respectfully Submitted

By: Jon Nelson – SDSPLS Secretary

From the Executive Director

Thank you for the warm welcome! It feels a little bit like coming home. My husband Chad and I brought our oldest child to the convention 20 years ago, where he received a scholarship which was so appreciated by our young family who had just left ranching for a new adventure. Along the way, we traveled from our hometown of Spearfish to Flandreau, Yankton, and back to the Black Hills. Now we have 3 mostly grown children, and I have been working as a Licensed Professional Counselor in Rapid City with a Master's Degree in Counseling and Human Resource Development. I have been employed at a non-profit agency, in education, and in private practice. I have a diverse background of holding trainings for law enforcement, students, counselors, and teachers as well as working with young people and their families. I have also worked in hospitality, bookkeeping for the family business, and as a business owner. I enjoy jazz, art, and the outdoors. It is exciting to have the opportunity to work for you. I thoroughly enjoyed the convention, and look forward to serving you in the coming year.

-Rebecca Dodds

“And that survey is the one we all go back to. When you find one of their original corners, it is like a handshake with the past.” - **Andro Linklater, Measuring America: How an Untamed Wilderness Shaped the United States and Fulfilled the Promise of Democracy**





A Leader of Her People

“American Indians today lost one of their staunchest friends and most diligent workers in their behalf, in the death of Mrs. Gertrude Simmons Bonnin,” read the Washington, D.C. Evening Star on Jan. 26, 1938.

Bonnin, whose name in Lakota was Zitkala-Sa (zit-KAH-lah-shah) or Red Bird, was a writer, lecturer, musician, teacher and reformer who strove to expand opportunities for American Indians.

“Throughout her life, Zitkala-Sa wrote about American Indian issues, pushing against rose-colored views of boarding schools, Christian ministry, and reservation life,” wrote Jennifer McIntyre with the South Dakota Historical Society Press in a blog entry about women who made an impact but whom the general public may no longer recognize.

Zitkala-Sa was born in 1876 (some sources say 1875) on the Yankton Reservation. She attended boarding schools, Earlham College in Richmond, Ind., and the New England Conservatory of Music in Boston, Mass. She was educated during a time when schools’ curricula were designed to teach European-

American ways and eradicate students’ identities as American Indians.

While teaching at Carlisle Indian Industrial School in Pennsylvania, Zitkala-Sa began writing articles about American Indian life for national periodicals.

Her first book, “Old Indian Legends,” was published in 1901. It contains 14 legends told her by storytellers in North Dakota and South Dakota. The book was among the first to bring traditional American Indian stories to a white readership. Her book “American Indian Stories” was published in 1921 and contains stories meant to inform white people about American Indians and their circumstances.

Zitkala-Sa co-authored “Oklahoma’s Poor Rich Indians,” which exposed the mistreatment of American Indians in Oklahoma.

In 1902, she married Raymond Bonnin. They lived on the Uintah Indian Reservation in Utah from 1903 to 1916.

While in Utah, she collaborated with William Hanson on “The Sun Dance” opera. This was the first opera by an American Indian and is significant for adopting the American Indian oral musical traditions into a written one.

“When ‘The Sun Dance’ was sung in Vernal (Utah), Indians and whites drove in from forty miles around to hear it; and having heard it, they pronounced it a triumph,” stated the Arizona Republican in Phoenix on June 16, 1913.

She became a correspondent of the Society of the American Indians, the first reform organization to be administered entirely by American Indians. It sought to preserve the



American Indian way of life while lobbying for the right to full American citizenship. Zitkala-Sa became secretary of the Society of the American Indians beginning in 1916. The Bonnins moved to Washington, D.C. that year.

Zitkala-Sa's name often appeared in newspapers for her speaking at clubs and organizations in Washington, D.C. When the stone from South Dakota was placed at the Washington Monument in 1922, Zitkala-Sa read an original poem at the ceremonies.

"The ceremonies attending the placement of the stone were elaborate. But the feature of the occasion, from the viewpoint of many, was the reading of an original prose poem entitled 'A Dacotah Ode to Washington,' by Mrs. Gertrude Bonnin," read an article in the Oct. 19, 1922, Jasper News in Jasper, Mo. The entire poem was printed in the newspaper.

Zitkala-Sa formed the National Council of American Indians in 1926 and served as its president until her death. She advocated for citizenship rights, better educational opportunities, improved health care and cultural recognition and preservation.

A profile of Zitkala-Sa appears in Vol. 10, No. 3 of South Dakota History, the quarterly publication of the South Dakota State Historical Society. Her story "Dance in a Buffalo Skull" was republished as a children's book by the South Dakota Historical Society Press. Her books are still in print.

This moment in South Dakota history is provided by the South Dakota Historical Society Foundation, the nonprofit fundraising partner of the South Dakota

State Historical Society at the Cultural Heritage Center in Pierre. Find us on the web at www.sdhsf.org. Contact us at info@sdhsf.org to submit a story idea.

DATES TO REMEMBER

National Surveyor's Week

March 17-23, 2019

2020 SDSPLS Annual Convention

January 8, 9 & 10, 2020

(Wednesday, Thursday & Friday)

Arrowwood (Cedar Shore) Resort

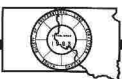
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Reminiscence of an Old Surveyor - Part III - Other Equipment

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

This is the third and last article on surveying equipment and procedures that are now relegated to history. I have been surveying for around half a century. I started before electronic distance measuring was common. Transits and steel tapes were the prevailing equipment found in a survey firm. Metal detectors were rare. As a result, I have had experience with surveying equipment that will never be used again by the modern surveyor.

My two previous articles have discussed taping, the compass, and the transit. I shall now delve into other procedures and equipment known and used in historical surveys of which I often took part.

Plane Table – In the early mapping surveys I often participated in, we used the plane table and alidade to prepare a site map and topographic map while in the field. In the days before computers, the plane table was an excellent tool to prepare an accurate map in a hasty manner. I have been told that almost all the soil maps prepared in the 1920s and 1930s were done using the plane table and alidade. I had not made my debut on the surveying field at this time so I have no first-hand knowledge of the accuracy of this information.

The plane table was a large board, the dimensions of which I can no longer remember. It was the size of a typical drawing board that engineering and surveying students once had to purchase when studying in their major. This board was mounted on a tripod. The board came with the tripod mounting ring fastened to the underside of the board. The mounting ring was of a size that was equivalent to the transit mounting ring. The board, once mounted on the tripod, was set up at waist level. There was no attempt to plumb this over a known station though I suppose there were situations when this should be done. It was possible to do so.

A large sheet of paper was fastened to lay flat on the top of this board using tape or tacks. The alidade was then placed on the board, atop the paper. I suppose an alidade could be described as a transit scope fastened to a flat scale – the scope being above

and parallel to the long length of the scale. Somewhere on the scale was a bubble that was used to level the drafting board or plane table.

With the plane table leveled, a long shanked pin was inserted through the paper into the board. The pin in the board represented the observer's position on the plane table board. The mapping of the area could now begin.

The rodman, armed with a stadia board, would hold the stadia board at a point to be located by the person at the plane table. Using the stadia hairs apparent when viewing through the scope in the alidade, the distance from the alidade to the stadia board would be determined. On the plane table, the scaled distance would be measured from the long-shanked pin along the edge of the alidade where a point would be marked and labeled on the paper. The orientation of the scale's edge on the alidade being the same direction as the scope is pointing. This procedure was repeated numerous times until the surveyor was satisfied and the paper fastened to the plane table was complete with the information necessary for the map being produced on the plane table.

Elevations could be obtained by the simple expediency of setting the alidade level using a scope bubble for this purpose. Most alidades had a plate and Vernier to read a vertical angle that would allow the elevation to be determined by trigonometry. Many alidades had what is known as a Beaman scale that would allow calculations without having to look up trig values. I will omit discussing the Beaman scale and how it was used. In truth, I would be rather rusty in remembering how to use it after more than four decades without practice.

The end result is that the survey crew returned to the office with a completed map of the area often including contour lines. The only consistent fault I found with the plane table was the fact that survey work on a hot summer day using a graphite pencil often left the map sheet covered with smudges.

Stadia Board – I have mentioned the stadia board when speaking of using the plane table. The stadia board can be visualized as a level rod with much larger graduations. The stadia board was somewhat wider than a level rod in order to



accommodate the larger graduations. The larger graduations allowed for seeing the rod at longer distances.

I suppose reading stadia distances is a lost art. It was a rather simple procedure unless there was trig involved. The difference in the rod readings between the upper stadia wire or hair and lower stadia hair was obtained and multiplied by 100 giving the distance in feet, assuming the stadia board was so marked in feet and decimal parts of a foot. I will confess to reading the stadia rod at ranges that I could only read half of the stadia rod – that is using only the center wire and top wire or bottom wire. In such cases the interval between the middle and upper or lower stadia hair was multiplied by two before multiplying by 100.

In theory if the stadia rod could be read to the nearest 0.01 of a foot, the horizontal distance could be calculated to the nearest foot. Conversely, if the instrument operator made an error reading of 0.01 of a foot, the horizontal distance would be in error by a foot. This precision was acceptable for most mapping projects.

I will say that I met more than one old surveyor who laid off subdivision lots using stadia to the annoyance of the modern surveyor who finds the distances between corner monuments varying by as much as two feet with no consistency in the error that would allow a dependable deficiency or an overage to be applied when retracing the lot boundaries. Perhaps I have solved a mystery involving some old subdivisions and corners found.

Heliotrope – I will comment briefly about the heliotrope though its use in private practice was very limited. The heliotrope was an elongated target, fastened to a tripod, and plumbed over a point. The heliotrope I used was composed of two rings along the elongated board with a mirror at the end farthest from the instrument observing the heliotrope. One heliotrope I used actually had two mirrors that allowed the sun's light to be bounced from the sun using the first mirror of the heliotrope to the mirror in the back of the heliotrope that then reflected the sun's beam through the two rings to the observer. The double mirrors were required if the sun was behind the heliotrope as it was pointed toward the

instrument. The rings in the heliotrope were aimed at an observer standing behind an instrument that was being used to measure angles. The mirror at the rear was adjusted to reflect the sunlight down through the rings

toward the instrument operator producing a bright light for the observer to aim upon. Given the sun's apparent movement, the person at the heliotrope had to continuously adjust the mirror. I was always impressed that when standing at the instrument, I could see the bright light reflected by mirror on the heliotrope for up to 30 miles away in some cases.

Subtense Bar – I suppose the subtense bar I used from time to time was more common than a heliotrope in private practice but not by much. The subtense bar appears as a much shortened level rod rotated from the vertical to be horizontal or roughly parallel to the ground. The subtense bar was mounted in its center on to the top of a tripod. The tripod was centered over a traverse station or control point. From one end of the bar to the other was a known distance. The subtense bar that I used had a sight tube in the center. The bar was rotated about the tripod top until the sight tube was centered on the instrument operator. This would put the length of the subtense bar perpendicular to a line between the subtense bar and instrument. The instrument operator would measure the angle between the ends of the subtense bar. Using trigonometry, the distance between the instrument and subtense bar could be calculated. The accuracy of the distance was a direct function of the accuracy in measuring the angle. The subtense bar was a very useful tool in measuring those distances that could not be taped. I would often use the subtense bar in measuring distances across water bodies. I also used it from time to time when I did not have an extra person to help me tape the distance.

Plumb Bob – I will repeat my statement from my first article and say that I don't believe a plumb bob can be found among the equipment of the modern surveyor. The plumb bob was necessary for taping. It was necessary to hang the plumb bob under the tripod in order to place the instrument over the point, there being no optical plummets on survey equipment at the time. Finally, the plumb bob was required to give back sights and fore sights over marks and monuments in the field. I have heard of



more than one employer that docked the pay of an employee who forgot to bring their plumb bob to the field.

The use of the plumb bob would seem rather easy but it was not. Consider my previous explanation on the use of the plumb bob when taping. Hanging the plumb bob under the tripod to allow the instrument to be centered over a mark required the person to have mastered the art of a slip knot. A slip knot allowed the plumb bob to be raised or lowered depending on the adjustment of the tripod legs and how close over the mark was necessary to aim the point of the plumb bob. To use other than a slip knot caused a knot to be left in the string. A knot in a plumb bob string was a crime commensurate with wanton destruction of property.

The person had to be adept at wrapping the string around the head of the plumb bob. The wrapped string was fastened in such a manner that a tug at the string's end would unwind the string without leaving a knot. Many surveyors purchased gammon reels that alleviated this task.

LeRoy Set – I will depart from surveying equipment in this one instance to speak of the LeRoy set. While it may not be classified as surveying equipment, almost every surveying firm had a LeRoy set unless the firm had a person gifted with beautiful handwriting.

The LeRoy set was a lettering set using lettering templates and a scribe. The scribe had three arms. One arm went into a long slot on the lettering template. A second arm went to a pin that followed the indent of the letter or number in the lettering template. The third arm held a pen that would ink the letter or number on the paper, mylar, or vellum. The letter templates came in different sizes, fonts, and styles. I spent many hours using a LeRoy set. Probably a quarter of that time was spent getting the ink to flow smoothly out of the pen. I may have exaggerated this time a little. Getting ink to flow was an art that usually involved ink on the tongue and lips not to mention scattered across the vellum or mylar. This reminds me that another quarter of the time was spent removing ink that did flow out of the pen but in the wrong location or too copiously on locations without enough pounce.

Enough said on that topic as it brings back many frustrating moments.

Chain – I will admit to only using a chain one time. I would be perceived as really ancient had I admitted to frequent use of the chain – so I won't do so. For those surveyors who have never seen a surveyor's chain, the surveyor's chain does not appear like the chain an individual would find in a hardware store. The links in the surveyor's chain are approximately 7.92 inches. Each link is a length of wire with a loop at each end of the wire shank that connects to a ring loop that connects to the loop on another similar link for the chain. A four rod chain will have four brass tags with one to four fingers. One finger is found at the one rod length along the chain. Two fingers are found at the two rod length and so on. When measuring, a surveyor would count the number of rods plus the number of links to the object measured – although many a rural surveyor simply gave the number of rods and perhaps half rods without bothering to count individual links.

While there is sag in a steel tape, it hardly compares to the large sag found when holding the chain above the ground. Furthermore, every loop in that damn chain seemed to catch and clog with sticks, grass, mud, and other debris gathered when dragging the chain along the ground. To further agitate the temperament of the user – in one case being me - the debris would somehow snag and hold two link loops together thereby doubling the chain back upon itself involving some length of the chain. If there is a log with some small appendage sticking from the log you can count on the link loop snagging that appendage. There were always some vegetation protruding from the ground that would snag the chain. Links soon stretched or even broke. Of course, these problems were all relayed to me since I can't be that old to have personally experienced the agitation caused by measuring with the chain.

Dip Needle – Metal detectors were around since World War II but their widespread use in surveying firms seemed to occur in the mid to late 1970s. Surveying without a metal detector resulted in many pin cushion corners since an existing pin or pipe that was buried to mark the corner was not always found before a new monument was set.

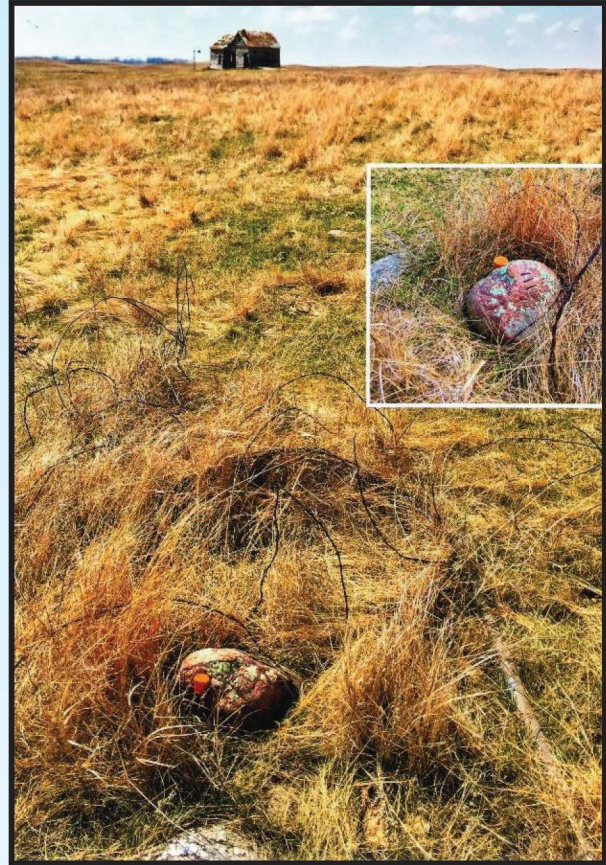
Continued on Page 17



PHOTO CONTEST WINNERS



FIRST PLACE – CHAD BARUTT



SECOND PLACE-
INFRASTRUCTURE DESIGN GROUP



THIRD PLACE-CHAD DODDS



CONVENTION SNAPSHOTS



CONVENTION SNAPSHOTS

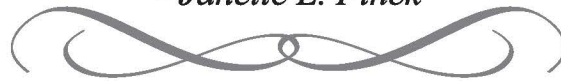


AWARDS & UPDATES

JANELLE FINCK – 20 YEARS OF OUTSTANDING CONTRIBUTION TO THE LAND SURVEYING PROFESSION AS EXECUTIVE DIRECTOR OF THE SDSPLS



“Where does the time go?
I will truly miss all of the wonderful people of SDSPLS.”
- Janelle L. Finck



2019 SCHOLARSHIP RECIPIENTS

Alex Deeter, Jack Reiman, Taylor Arndt,
and Shane Arrowood,
(Not pictured - Joseph Scott and Drew Roskam)



AARON BOOCK WAS
OUR
FIRST SDSPLS
TURNER
SCHOLARSHIP
RECIPIENT AND HE
RECENTLY
GRADUATED WITH A
BACHELOR OF
SCIENCE DEGREE
FROM ST. CLOUD
UNIVERSITY



One trick that I often employed before owning a metal detector was to hold a compass and slowly float the compass just above the ground and look for twitches in the compass needle. This technique allowed me to find many metal corners that were just below the ground surface. In the 1960s up to the widespread use of metal detectors, dip needles were commonly used to find the buried metal corners. Dip needles were composed of a box with a long, looped strap. The box contained a magnetized needle. The box had a window allowing observation of the needle.

Using the long strap to allow the surveyor to stand up, the box was hovered over the ground while the needled was observed. The sensitive, magnetized needle dipped when influenced by nearby metal. By this means, the surveyor could discover if there was a metal pin, pipe, or bar below the ground surface. The dip needle was not as sensitive to buried metal as modern metal detectors. I don't believe I ever found a pin or pipe that was buried more than half a foot below the ground surface using a dip needle.

EDME – Early electronic distance measuring equipment, known as an EDME or EDM, using shortened initials, were a separate item of equipment from the transit or theodolite. Often the operator would have to remove the angle measuring equipment and mount the EDM directly on the tripod. Later, the EDM and angle measuring equipment were configured so the EDM was mounted on the standards of the angle measuring instrument.

The first EDM I used was a tellurometer or cubic tape. A tellurometer was set up on both stations and pointed toward the other station using a null needle to find the optimum pointing. Each tellurometer would determine the distance between the opposing tellurometers. The two distances were averaged. The tellurometer used microwaves to determine a distance. You could switch between speaking to the other operator and measuring a distance. Distances were calculated using a paper form that I shall mention again with the next item of distance measuring equipment.

Later I used a Hewlett Packard laser EDM. With this instrument, you knew you were pointing at the reflector because you would see a bright red light

as the laser light was reflected back to the instrument. That probably did not do my eyes any good. Not that standing in the path of microwaves was healthy.

Both items of equipment, the tellurometer and laser EDM, required a needle be nulled, numbers read, frequencies shifted, and an entire sheet of a paper form employed where various readings were made, entered, and manipulated. I believe the form was published by an IRS agent who first invented the 1040 long form.

Temperature and atmospheric corrections had to be hand calculated. Prism corrections were applied to every measurement of the laser EDM. It was a complicated and time consuming process to determine a distance. Yet, it was far faster and more accurate than obtaining long distances by taping.

If my memory serves me, the Guppy was the first instrument I possessed that gave a distance directly without a lot of data entry onto a form and intermediate calculations. I will not further describe this popular EDM. After the Guppy, the angle measuring and distance measuring were combined into one instrument known as the total station.

These early EDMs were powered by twelve volt batteries. I often used the battery in my car or hauled around a heavy twelve volt battery to power the EDMs. To save weight I later used a motorcycle, 12 volt battery. If my memory serves me correctly, the batteries never seemed to last an entire day. They seemed to always be drained at the farthest point from the road.

I will end discussing the early EDMs with the statement that the horizontal distance always had to be calculated using the zenith or vertical angle. If the EDM was mounted on the standards of the angle measuring equipment, the offset had to be taken into account. Long distances often required numerous prisms stacked upon each other in order to get sufficient light reflected back to the EDM to effectuate a measurement.

GPS – I suppose someone seeing this heading will exclaim that the GPS is not an old piece of equipment relegated to history. If you had seen the GPS equipment I first used, you would admit it was historical and that equipment is relegated to history.



The historical GPS equipment was large and cumbersome. Several twelve-volt car batteries were often required to operate the equipment and obtain sufficient satellite data. The GPS receiver could not be used at any time of the day or for that matter any day of the week. There were not sufficient satellite constellations to allow for 24-7 operation of the GPS. Depending on the satellite constellation configuration for that day, data could only be collected during a limited time window. I often occupied a station in the darkest hours of the night in order to comply with a pre-determined window of opportunity for receiving satellite data. I met more than one police officer that was very suspicious of my activities.

Spending hours on a station to obtain sufficient data was common. In fact, multiple observation windows (think days) of observation were often required. In the earliest GPS, the timing of when the GPS was to be turned on was important. When I speak of timing, I mean down to the odd minute.

Now I ask, does this GPS I have just explained remind you of what a person now uses as they run around with that lightweight GPS receiver on a prism pole, collecting numerous locations in a day?

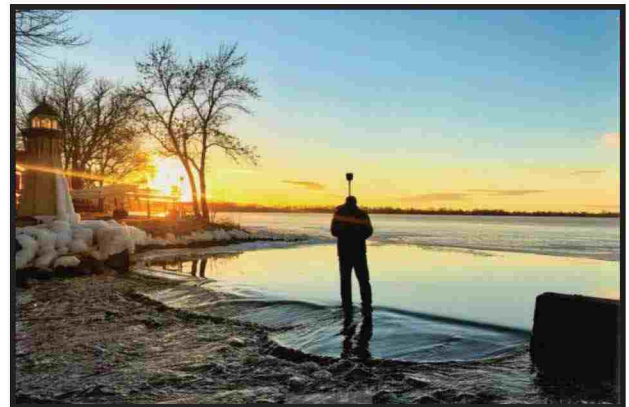
Other Equipment: My colleague, Carlton Brown, has written several articles about slide rules and early calculation machines so I shall not mention those. I will say that when I first started surveying there were no calculators. I used logarithm tables and had to look up trig functions in a book. Unless you have tried to look up log and trig values in a book of tables, you have no idea of the errors that often resulted from trying to interpolate values using the tables in the book.

I have no doubt there were other items of equipment used by historical surveyors that I have not mentioned for the simple reason that I have never used the equipment or forgotten I used the equipment when writing this reminisce. Forgetting is easier and more common as I get older. I am sure surveyors of my age can add their thoughts and should do so before we pass into history. □

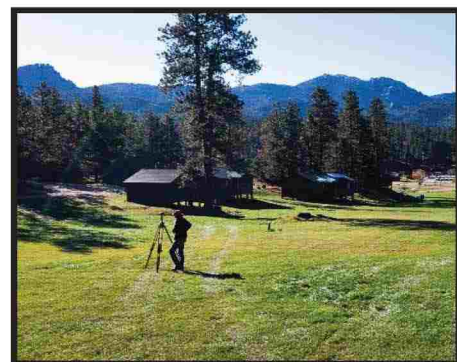
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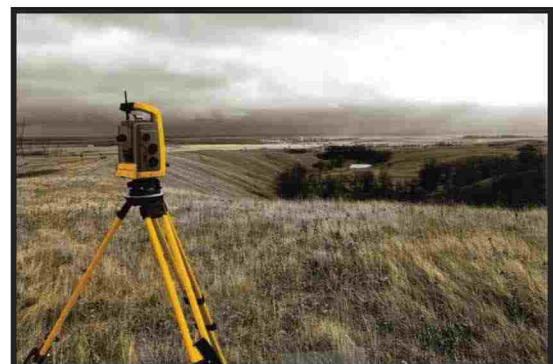
Brad Limbo



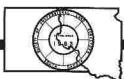
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2019 National Surveyors Week



March 17–23, 2019

{ Global Surveyors Day }
Thursday, March 21

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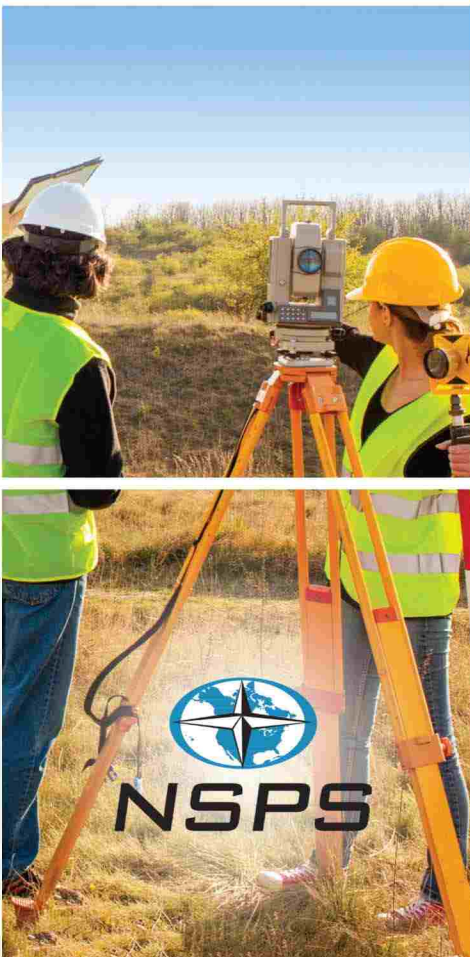
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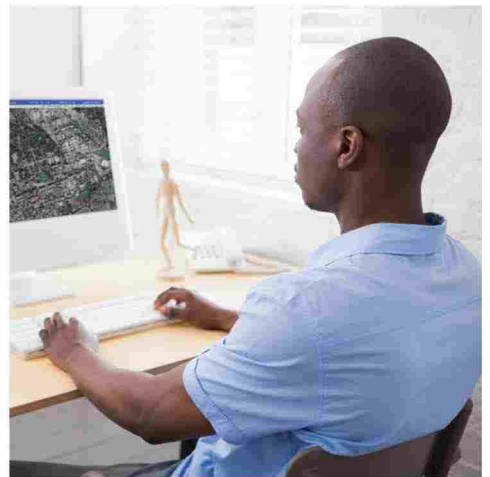
For a supply of surveying brochures, please contact Trisha Milburn at NSPS.

✉ trisha.milburn@nsp.us.com



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- 4) Obtain a proclamation from your state or local government
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- 6) Try Surveying Mark Recon: oceanservice@noaa.gov/education/for_fun/SurveyMarkHunting.pdf
- 7) Plan GPS on Benchmarks: <https://geodesy.noaa.gov/GPSonBM/>



Talk About Surveying

- Local civic clubs (American Legion, Elks, Grange, Kiwanis, Lions, Rotary, Ruritan, VFW, etc.)
- Professional organizations (realtors, attorneys, bankers, title agents, etc.)
- Teachers and school counselors

The Land Surveyor's Guide to the Supreme Court of South Dakota – Part 25 – 1948 to 1949

This article represents the twenty-fifth in a series of excerpts from a book prepared by South Dakota licensee Brian Portwood. The complete book can be obtained in PDF form by double clicking on the link in the lower left portion of the SDSPLS Homepage. It covers 120 years of historic South Dakota cases, answering fundamental land rights questions of potential interest to land surveyors, which are being presented in chronological order here in Backsights & Foresights.

How is abandonment legally defined?

Pederson v Canton Township (1948)

Rarely, a case that would appear at first glance to have no relevance whatsoever to either the ownership or the boundaries of land can become a significant case in the arena of land rights, when the Court sees that the scenario provides an opportunity to define or clarify important legal or equitable principles that extend beyond the basic context of the subject matter which forms the source of the present controversy. The 1982 North Dakota case of *De Lair v County of La Moure* is an ideal example of this, as in that case the specific event forming the subject matter was a motorcycle crash, and the essential question was who must bear the liability for the incident. Because the rider had crashed his vehicle into a gate that crossed a roadway situated upon a section line, which also happened to represent the city limits of Marion, numerous issues relating to the jurisdiction over the exact spot where the crash took place were brought into play. The Supreme Court of North Dakota used the circumstances of that case as a means of clarifying, and elaborating upon the importance of understanding, the nature of the section line right-of-way, and who has jurisdiction over it, including the responsibility to properly maintain it, in any given specific location. The case we are about to review stands as the South Dakota equivalent to the *De Lair* case, remarkably paralleling and foreshadowing that later case, since the event that triggers this case is also a crash involving only a single vehicle, which takes place within a section line right-of-way on the outskirts of a town. Although land rights were not the primary issue here, the Court was essentially required to address vital land rights principles, in order to properly explain the reasoning behind its decision, regarding who must bear the consequences of the accident, since the allegations made by the plaintiff bring the proper treatment of the section line right-of-way squarely into focus. Rather surprisingly, the true nature of the section line right-of-way remained somewhat obscure and poorly understood, even

decades after its creation and implementation, despite the fact that nearly everyone makes use of some part of it, either knowingly or unknowingly, in the course of their daily activities. Even the meaning and significance of a very simple but general word, such as "open", can be critical, in the context of a land rights controversy such as this one, and here the Court endeavors to uncloud such terminology, by eliminating misunderstandings that are based upon false assumptions, which are drawn in some instances from misleading previous uses of such words. In addition, the Court here clearly distinguishes abandonment from vacation, two words that are often mistakenly treated as being interchangeable, defining abandonment in terms of existing visible objects, while reserving vacation to the realm of legal formalities, establishing definitions for which this case has often been cited in subsequent right-of-way cases. As we have frequently noted, time can become a very serious factor in the determination of land rights, yet here the Court emphasizes, in accord with its typical vigilance in the defense of all publicly held rights, that the mere passage of time alone is never satisfactory evidence of either abandonment or vacation, because intent is fundamental to both of those concepts, and in the spectrum of public rights time cannot operate to replace evidence of genuine intent, since plain inaction does not operate to the detriment of public rights.

Prior to 1944 - Roadways running along certain section lines came into use around Canton, and under the section line right-of-way statutes, Canton Township took charge of those section lines that were particularly convenient and useful for typical vehicular travel by the public and improved and maintained them as public highways, in the typical manner, like virtually every other such township in the Dakotas. In one area, about a mile northwest of Canton, a public road was built running along the north boundary of two sections, and another public road was built, running south from that road, along the line between those two sections. These two roads became part of the Lincoln County public road system, and they were used for many years in the normal manner by the public, but no road was ever built running north from the intersection thus formed, because there was a creek running along a substantial portion of the section line about half a mile north of the intersection, so the section line right-of-way north of the intersection had been deemed to be impractical for public use, and it had never been needed by the public. Payne apparently owned the land in both sections lying directly north of the intersection, and he built a plank bridge over the ditch that ran along the north side of the intersection, which he sometimes used to access his fields from that



point on the public roadway. There is no indication that anyone else ever actually drove over this bridge, but people who frequently drove through this intersection naturally became accustomed to seeing it there, so after several years many people were well aware of its presence in this location. Payne apparently did not maintain this crude bridge however, and at some point in time it either partially collapsed or became dangerously weak.

1944 - Pederson was apparently a resident of Canton, who was familiar with this intersection. One night, he was driving north and approaching this intersection during a downpour at an unknown rate of speed, but his vision was seriously impaired by the rain and lightning. He evidently failed to properly slow down as he approached the intersection, due to being unaware of how close he was to the intersection, so when he realized where he was, and tried to stop at the last second, he was unable to do so, and his car proceeded straight through the intersection at an estimated speed of 25 to 30 miles per hour, directly toward the plank bridge. He was apparently not particularly concerned however, since he knew that the bridge was there, so he evidently figured he could safely continue straight over the bridge and then turn around in the field to return to the roadway. Fortunately, no other vehicles were present so no collision took place, but when Pederson's car reached the ditch, the bridge failed to support the car, which plunged into the ditch. Pederson was apparently not seriously hurt, but his car was seriously damaged, so he decided to file an action against the township, seeking compensation for the repairs to his car, on the basis that the township had failed in its responsibility to maintain a safe intersection.

Pederson argued that the public section line right-of-way extended equally in all 4 directions from the intersection in question, regardless of the fact that there was no improved road running north from that point, so he was fully legally entitled to drive through the intersection as he had done, under his right as a member of the public to use every section line for purposes of travel, and it was the responsibility of the township to insure that he could safely pass through the intersection and proceed north along the section line as he had attempted to do. Therefore, he further argued, the township was liable to him for the damage to his car, because the township had failed to place any warning signs anywhere around the intersection to inform motorists that it might be unsafe to drive north from the intersection, and the township had failed to place barricades along the north side of the roadway to clearly indicate that the

bridge was unsafe for vehicles and should not be used for public travel. The township conceded that the section line right-of-way running north from the intersection had never been legally vacated, and did still legally exist, so as a member of the public, Pederson did have the right to utilize that section line for purposes of travel as he had done. The township argued however, that since the particular section line running north from the intersection had never been formally opened for public travel by any local authorities, the township had no duty to maintain it, and was not responsible for the consequences of any attempts to make use of it for purposes of travel, so Pederson had chosen to use that portion of the public right-of-way at his own peril, and the township was therefore not liable to him for the damage he had suffered in so doing. The trial court held that a section line roadway had been opened and abandoned north of the intersection, and the township was responsible for maintaining public safety in the location where the accident had occurred, which it had failed to do, by allowing an unsafe condition within a public right-of-way to go unrectified and unmarked, awarding Pederson the damages that he had requested on that basis.

This case does an outstanding job of highlighting just how poorly understood the true legal character of the section line right-of-way still was at this time, even by judges and others with substantial knowledge of the law, nearly 8 decades after it had come into existence, and how misunderstood certain essential terminology that was implicitly associated with the section right-of-way still was as well. The argument made by Pederson might seem to have been far fetched or even preposterous to some, but in fact it was no more strained than many of the other land rights arguments made by a number of the other litigants whose positions are documented herein, and the fact that Pederson actually prevailed at the trial court level stands as evidence that both Pederson and the trial judge misapprehended the legal implications of some highly fundamental words. It was unquestioned that the incident which had resulted in damage to Pederson's car had taken place within a public right-of-way, introducing the possibility of liability on the part of public officials, but the first critical distinction to be made, the Court realized, was the difference between a right-of-way and a roadway, and this brought into play the meaning of the word "open" in the context of a roadway as opposed to a right-of-way. It must be clarified, the Court recognized, that a right-of-way is an intangible legal entity, while a roadway is a visible physical object, so those terms cannot be used synonymously, and while the word "open" applies to each of them, it applies to each one in a very different sense. The section line right-of-way, being a product of law, has always been open since the time of its creation by legislative action, which took place in 1871 with respect to the Dakota Territory,



as previously noted herein, in the sense that the public right to make use of section lines for purposes of travel has been constantly in effect, and no further acts of any kind are required to give effect to the law in any given location, so the right to travel every section line has always remained present and active. An actual roadway however, typically requires intentional action by local authorities, to conclude and declare that a need for a road exists in a given location, and of course it also requires some form of physical action, since the road must be built, even if the construction work amounts to nothing more than grading dirt or laying gravel, so such a roadway cannot be properly described as being truly open until some form of action has been taken by local authorities to make a given section line fit for public use. Therefore, the right-of-way has always been open, even though no roadway has ever been opened, in any given location along any portion of any section line to which the law applies, but until an actual roadway is opened, inviting public use of a section line, the relevant public authorities, such as the township officers in this case, can bear no liability for any incidents, related to travel or otherwise, that take place within the right-of-way, because public officials obviously cannot be held responsible for independent acts of private parties. After quoting in part from various statutes outlining the duties of township officers with regard to the section line right-of-way, the Court went on explain another important nuance of terminology that would be vital to the outcome here:

"along the north side of the intersection a plank roadway ... never maintained by the township ... furnished access or egress to an adjoining field, but was never used by the public generally. After removal or deterioration of the timbers over the north ditch ... the township erected no guard or barrier ... In 1871 there was passed an act ... providing that all section lines shall be, and are hereby declared, public highways as far as practicable ... There is along every section line in this state a public highway located by operation of law, except where ... vacated or relocated ... The words "as far as practicable" were omitted from the 1939 Code, but we need not inquire as to the effect, if any, of this ... Mere delay in opening a section line right-of-way does not constitute an abandonment ... the word "abandoned" ... means something different than the mere relinquishment of the public right ... and is the equivalent of "discontinued" ... To make out an abandonment ... it is not enough to show that

a section line right-of-way has never been opened ... there was not an abandoned highway ... defendant township owed no duty to the plaintiff to erect and maintain a guard or barrier and no liability was established."

As noted above, the distinction between a right-of-way and a roadway is a critical one, that should be properly understood, and those terms should always be appropriately used, to avoid confusion, but just as important are the corresponding terms, that come into play when a cessation of use of a right-of-way or a roadway is intended to take place or occurs, and it was uncertainty over the proper use and effect of the word "abandon" that the Court next set out to clarify. Just as the phrase "right-of-way" has reference only to a legal entity, the corresponding word "vacation" also applies only to existing rights, as opposed to physical objects, so while a right-of-way can be vacated, it would be inappropriate to refer to a roadway as having been vacated, because vacation indicates a formal extinction of rights, and a roadway is a mere physical object, rather a type of right. The appropriate term to use when making reference to the closure of an existing road, the Court indicated, is "abandon", which effectively depicts a discontinuation of the use of an existing physical object, under the definition adopted here by the Court, so while a right-of-way can be properly described only as being either open, relocated or vacated, a roadway can likewise be properly described only as being either open, unopened or abandoned. Having thus framed the real matter in dispute, which was the status of the roadway, and not the status of the section line right-of-way, in the proper terms, the Court turned to the dispositive question, which was whether or not the section line running north from the intersection had been accurately characterized by the lower court as a roadway that had been opened and then abandoned. The trial judge had correctly stated, the Court concluded, that the section line right-of-way was indeed open under the law, but the trial judge had then mistakenly assumed that because the right-of-way was open, the roadway must also be deemed to have been opened, making it subject to abandonment if left unattended. No roadway can be abandoned however, the Court observed, unless it has first been opened, and the evidence clearly showed that no public roadway had ever been opened running north of the intersection in question, so the trial judge had erroneously identified the section line in controversy as having been abandoned, when in reality it was merely one of the thousands of section lines that stand unopened all across South Dakota, offering a right-of-way perpetually waiting to be put into use. Since the applicable statute dictated only that the township bore the liability for any accidents resulting from it's failure to secure any abandoned highway, culvert or bridge, the Court's determination that no abandonment had ever taken



place in the location at issue sent Pederson's claim down to defeat, although only a narrow 3 to 2 majority of the Court subscribed to that view of the situation, approving the reversal of the lower court ruling in Pederson's favor, as sought by the township. We will examine various aspects of the crucial relationship between dedication and vacation in detail, and we will also learn the significance of intent in the context of abandonment, in future cases, including our very next one, and in so doing we will watch as the Court diligently strives to achieve and provide greater clarity as to the proper use of these terms and the important principles that they represent.

Can a section line right-of-way be presumed to be abandoned?

Costain v Turner County (1949)

Continuing our review of the historic development of the law relating to the existence and the implementation of the section line right-of-way, here we reach a case that may be of particular interest to land surveyors, since it focuses primarily upon the location aspect of the public rights that pertain and adhere to every typical section line in the Dakotas. As has already been outlined herein, the section line right-of-way emanated from RS 2477, a very basic federal statute, which simply put a general right of public passage in place, that was then given certain specifications, by means of early legislation, during the territorial period. Once the decision was made by the legislature that a public right-of-way attaching to all section lines would best serve the interests of the people of the Dakota Territory, and the appropriate legislative language was crafted for that purpose, it was obviously realized that many section lines could never actually be used for travel, because of topographical obstacles, such as cliffs, bluffs, lakes, swamps or any other such prohibitive physical features of the natural landscape. People living in areas where such useless section lines happen to exist however, are no less entitled to legal access to their land, and no less entitled to benefit from the federal grant, than those living in flat and dry areas, where the section lines can readily be used for purposes of travel as envisioned by the law, and this was understood, so legal provision was made for such situations. Under certain circumstances, where section lines are physically useless for travel, it is therefore possible to legally relocate public access routes, that would otherwise have followed section lines, to a legitimately useful location, in effect substituting an appropriate location for the legally intended location along the section line, and this process can be documented in a manner which clarifies that the public rights associated with the unused section line have been intentionally relocated, effectively vacating the original location of those rights along the section line. Many issues and problems can arise in those instances

where such relocation and substitution is necessary however, including issues relating to the design of any proposed roadway of course, such as reaching an agreement on what actually represents the best alternate route, but just as importantly, the issue of whose land will be burdened with the alternate route, and what compensation, if any, that party will receive for the legal and physical burden being placed upon their land. In the case we are about to review, all of these decisions, and the events that resulted from them, have become buried in the distant past, and the fact that any decisions, suggestions or promises that were made half a century before the eruption of the controversy that plays out here were never adequately documented requires the Court to assess the matter, and determine the consequences for the litigants. While the Court has always been generally open to the concept of substitution or relocation of easements, as we have already noted, and as we will observe again in proceeding through the decades, the result seen here is indicative of both the Court's well established inclination to protect all public rights, and it's equally strong disinclination to approve or uphold the purported abandonment or destruction of any land rights, in the absence of very clear and convincing evidence of an actual intent to legally terminate any such rights.

Prior to 1898 - One of Costain's predecessors, presumably either his father or grandfather, settled upon an unknown amount of land covering parts of at least 4 sections in a certain township in Turner County, and the land was patented to him at an unspecified date. When the township had been surveyed and platted is unknown, but the locations of all of the relevant section corners and lines were evidently well known and were never questioned or disputed, so the boundaries of the Costain farm were not destined to become an issue. The Costain farm straddled the Vermillion River, and it included a substantial amount of land lying on both the east and west sides of the river. A certain section line ran north and south, more or less through the middle of the farm, and there was a section corner on that line near the center of the farm, but the river meandered along this whole section line, crossing it in 3 places, making it unsuitable for use as a public roadway.

1898 - Turner County planned to build a road through the Costain farm, so one of the county commissioners visited the farm and spoke with Costain's mother, who was the owner of the farm at this time, about where a roadway through the farm could be most practically located. Costain's mother did not object to the construction of a public road running through her property, she cooperated with the commissioner, and



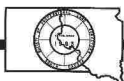
an alternate route was selected, since utilizing the aforementioned section line would have required the expense of building 3 bridges. The route selected ran along the east side of the river, presumably more or less parallel with the section line, an unspecified distance east of the river and east of the section line. At an unspecified point, the route deflected to the west and ran diagonally across an unspecified portion of the farm, crossing the river just once, so no portion of the route utilized the section line right-of-way, except of course for the two places where it crossed the section lines that ran in both cardinal directions through the middle of the farm. This route was preferable and fully satisfactory to the county, because it required only one bridge to be built, and it was evidently also satisfactory to Costain's mother, who conveyed a right-of-way situated in the agreed location to the county, so the deal was completed, and the road was built and put into use by the public. No problems or issues ever developed with respect to the location of this right-of-way, or the use of this road, by the public.

1946 - The county decided that another public road running through the Costain farm was necessary, and the county proposed to build this road on the section line that ran east and west through the farm. Costain, who had become the owner of the farm, evidently did not object to a second public road crossing his land, but he demanded compensation from the county for the proposed use of another strip of his land for roadway purposes. The county declined to provide any compensation however, claiming that since this second road, unlike the one built 48 years earlier, was going to rest entirely on an existing section line, the county already possessed the required right-of-way, so Costain was not entitled to any money from the county. Upon being so informed by the county, Costain filed an action seeking compensation for the taking of the intended 66 foot strip running through his land.

Costain argued that the only existing right-of-way lying anywhere on the Costain farm was the right-of-way that his mother had deeded to the county in 1898, because the bargain that was struck with the county officials by his mother at that time had impliedly, if not expressly, included the release of all of the previously existing section line right-of-way that had formerly been located anywhere within the boundaries of the farm, so the county was legally obligated to acquire any additional right-of-way that it now desired anywhere within the farm from him. Turner County argued that none of the originally existing section line right-of-way crossing the

Costain farm had ever been released or otherwise lost by the county, so all of it still existed and it remained available for use by the public at any time, therefore Costain had no valid claim to any compensation based on the county's plan to build a new road on one of the existing section lines crossing his property. The trial court agreed with Costain that when the county obtained the right-of-way for the existing road from his mother in 1898 it had impliedly released any other right-of-way that it may previously have held, in any other locations on the Costain farm, in exchange for the right-of-way that was granted by Costain's mother, so the county was required to pay Costain for the additional right-of-way it now needed over his land.

At first glance it may be supposed that this was a case involving the interpretation of unclear language in a deed, but that was not the case, because Costain never suggested that there was any specific language in the deed executed by his mother in 1898 that addressed the principal issue in play here, which was the current legal status of the portion of the original section line right-of-way lying within his family's farm. There is no indication that Costain ever even presented the 1898 deed as evidence, which would have been a catastrophic mistake on the part of his legal team, had the deed included any language indicating any intention or agreement on the part of Turner County to relinquish any or all of the section line right-of-way in question, in exchange for the right-of-way conveyance from Costain's mother, so his mother's deed was evidently of no assistance or benefit to Costain in his present endeavor. Costain was evidently either a boy or a young man in 1898, and his testimony indicated that he had listened to his mother speaking with the county commissioner who visited their farm, and he had paid close attention to what was said during that conversation. He testified that the county commissioner had explained to his mother that the right-of-way needed at that time was the only right-of-way the county needed or wanted over the Costain farm, and the county recognized that the section line running along the river was completely impractical and useless for roadway purposes, and that his mother understood and believed from that conversation that the county had no intention of ever claiming to have any right to build any other road anywhere else on her property. While Costain's testimony gives some appearance of being potentially self-serving, and it is certainly possible that he was lying, its equally plausible that his memory was accurate and his words were entirely true and correct, and the Court appears to have seen and treated his testimony as being fully genuine and earnest, never alluding to any falsity on Costain's part, so the question was not whether he was telling the truth, the question was what the real intent of the parties was in 1898. Even if Costain's testimony was completely true, the Court realized, it was insufficient to support his argument, because there was no

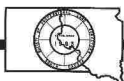


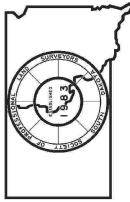
indication that either his mother or the commissioner had ever expressly stated that the existing section line right-of-way was to be officially released by the county, and the Court was cognizant that it was quite probable that Costain's mother would not have fully or properly understood the section line right-of-way concept, even if the commissioner had made some reference to it when speaking with her. Who composed the language of the deed that was signed by Costain's mother in 1898 was unknown, but such a deed typically would have been prepared by or for the county, and placed before his mother for her signature, so if an agreement had been made to release any of the section line right-of-way crossing the Costain farm, by failing to insist that the agreement must be spelled out in the deed, Costain's mother had left her son in an unfortunate position, forcing him to depend upon an assertion of abandonment, as the Court observed:

“The question of damages depends upon whether there was an abandonment ... all section lines in this Territory shall be and are hereby declared public highways ... sixty-six feet wide and shall be taken equally from each side of the section line unless changed as provided by law ... federal statute made the dedication, the territorial statute accepted it, and at the same time designated the location of highways ... Costains acquired the land ... burdened with an easement in favor of the public ... no agreement for the abandonment of the highway easement involved in this action was ever authorized ... or ratified by ... the county. Whether such agreement would have been valid if made, need not be decided ... the abandonment of a section line right-of-way is not established solely by evidence that it has never been opened ... The easement was never lost ... the county had the right to build the highway without compensation to the owners of the land.”

If the county commissioner had in fact made any promises to Costain's mother, regarding possible future use of the section line right-of-way, the Court pointed out, they were promises that he was unauthorized to make, and no such promises could be treated as binding upon the public, since no public officer has any power to act outside the limits of his authority, or without proper ratification of any such commitments concerning public rights that he might, as an individual, wish to make. So the question of whether any agreement pertaining to the section line right-of-way had been reached during the conversation described by Costain was moot and could not control the outcome of the litigation, because no

agreement made in the absence of authority can operate to damage or diminish any existing land rights held by the public. It was also possible that the commissioner had used intentionally deceptive language in that conversation, deliberately misleading Costain's mother, the Court was quite aware, but Costain did not assert any estoppel against the county based on what the commissioner had said, so this issue required no attention from the Court. Estoppel resulting from the words of a party who was acting in an official role, as a representative of the public, carries a distinctly higher burden of proof than that which applies to a charge of estoppel between private parties, so Costain would have had little chance of success, even if he had elected to plead that the county should be estopped from claiming or utilizing the section line right-of-way at issue. In addition, the fact that Costain's position involved the destruction of existing land rights, as opposed to the creation of rights, worked heavily against him in the eyes of the Court, as the elimination of any well established and acknowledged land rights, whether they are public or private in character, is anathema to every court, and is never favored. As we have noted in our review of several previous cases, the Court is always open to upholding land rights agreements made in good faith, on an equitable basis when necessary, and is even prepared to set aside the statute of frauds in order to do so, but there is a much heavier burden of proof upon a party asserting that a destructive agreement should be given legal effect, than there is on a party who maintains that an affirmative or productive agreement should be judicially validated. For these reasons, Costain's presentation was unpersuasive to the Court, which therefore found it necessary to reverse the lower court decision in his favor, stripping him of his monetary award. In so ruling, the Court had confirmed the important principle that since abandonment is a product of intent, it must stem from some physical act indicating the termination of an existing use, it cannot result from a mere absence of any action or lack of any use on the part of the holder of a valid right, and in the case of an access easement of any kind, there must be definitive evidence of an intention to permanently forsake or sacrifice a given roadway, before it can be classified as abandoned, and the easement associated with it can thereby be legally terminated. Interestingly, a lone dissenting Justice viewed the road that was built in 1898 as a substitute for the impractical section line right-of-way running north and south, and in fact that may very well have been the intent of the parties, but since there was no evidence that the terrain along the section line running east and west had ever been considered too impractical to be useful for purposes of travel, the majority were disinclined to indulge in the presumption that the existing road was ever intended to represent a substitute for that location.





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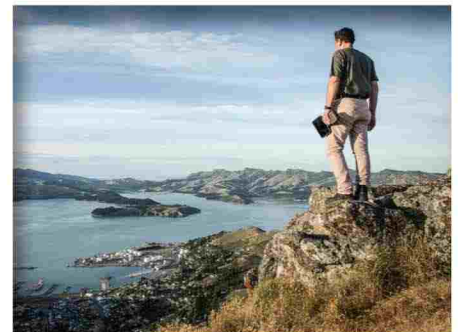


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