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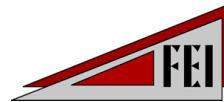
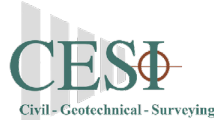


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The Tarheel SURVEYOR

Spring 2020

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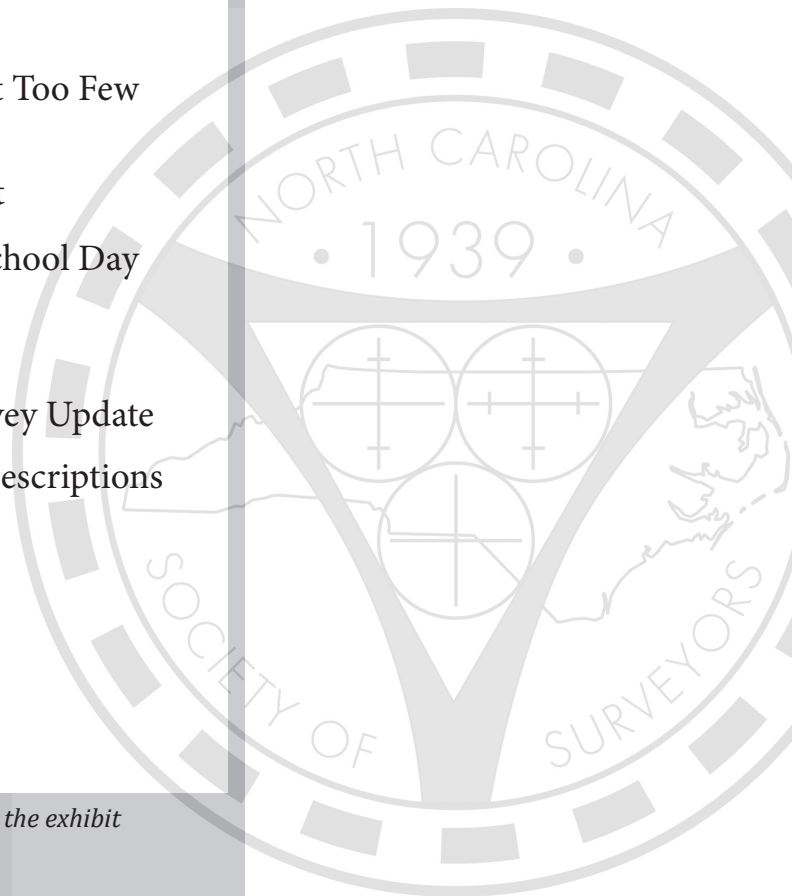
ABOUT NCSS:

- Founded January 31, 1939
- Second oldest professional surveying organization in the United States
- Only professional surveying organization in NC
- Affiliated with the National Society of Professional Surveyors and, therefore, all Professional Members are also accounted as members of NSPS as of July 1, 2013

OUR MISSION:

"A society of professional surveyors and their associates dedicated to enhancing professionalism, improving legislative awareness and promoting the profession of surveying."

Cover Photo: Avioimage demonstrating their products in the exhibit hall to attendee Scott Church.



WHO WE ARE

**NCSS PRESIDENT**

James I. Jeffreys III
james.jeffreys.3@gmail.com

NCSS PRESIDENT-ELECT

Peter J. Brennan, Jr.
peter.brennan@wilmingtonnc.gov

NCSS VICE PRESIDENT

Jerry W. Nave
jwnave@ncat.edu

NCSS PAST PRESIDENT

Tim Bowes
tbowes@vhb.com

NCSS SECRETARY/TREASURER

Dale L. McGowan
dmcgowan@ch-engr.com

NSPS NC DIRECTOR

Randy S. Rambeau, Sr.
rrambeau@mckimcreed.com

ALBEMARLE CHAPTER PRESIDENT

Lucy Cardwell
sablecardwell@hotmail.com

CAPE FEAR CHAPTER PRESIDENT

Michael J. Adams
capefearchapter.ncss@gmail.com

NCSS EXECUTIVE DIRECTOR

Christy C. Davis
cdavis@ncsurveyors.com

CENTRAL CHAPTER PRESIDENT

Jerry C. Callicutt
jcc@rtmc.net

COASTAL CHAPTER PRESIDENT

John A. Odom
jodom.pls@embarqmail.com

EASTERN CHAPTER PRESIDENT

Stuart Barwick
bstu33@hotmail.com

FOOTHILLS CHAPTER PRESIDENT

J. Douglas Suttles
doug@suttlessurvey.com

GUILFORD CHAPTER PRESIDENT

John Willis
jwillis@geo-professionals.com

JOHNSTONCOUNTYCHAPTERPRESIDENT

W. Royce Lambert, Jr.
mopbucket627@gmail.com

MECKLENBURG CHAPTER PRESIDENT

Timothy S. Guisewhite
tim@gplsurvey.com

NANTAHALA CHAPTER PRESIDENT

R. Joel Johnson
rjohnson31@hotmail.com

NCSS OFFICE MANAGER

Michelle A. Kenny
mkenny@ncsurveyors.com

NE PIEDMONT CHAPTER PRESIDENT

Nathan R. Hymiller, Jr.
pls3010@aol.com

NORTHWEST CHAPTER PRESIDENT

Neil Shepherd
neil@ridge.blue

PIEDMONT CHAPTER PRESIDENT

David K. Alley
dalley@allied-engsurv.com

SOUTHEASTERN CHAPTER PRESIDENT

Benjamin C. Brown
benjyb@bellsouth.net

SW PIEDMONT CHAPTER PRESIDENT

Gabriel D. Brown
gabriel.brown@duke-energy.com

TRIANGLE CHAPTER PRESIDENT

Troy C. Clayton, Sr.
tcclayton@daa.com

WESTERN CHAPTER PRESIDENT

Cameron Baker
cbaker@als88.com

YADKIN VALLEY CHAPTER PRESIDENT

David L. Haywood, Jr.
davidhaywood@cesicgs.com

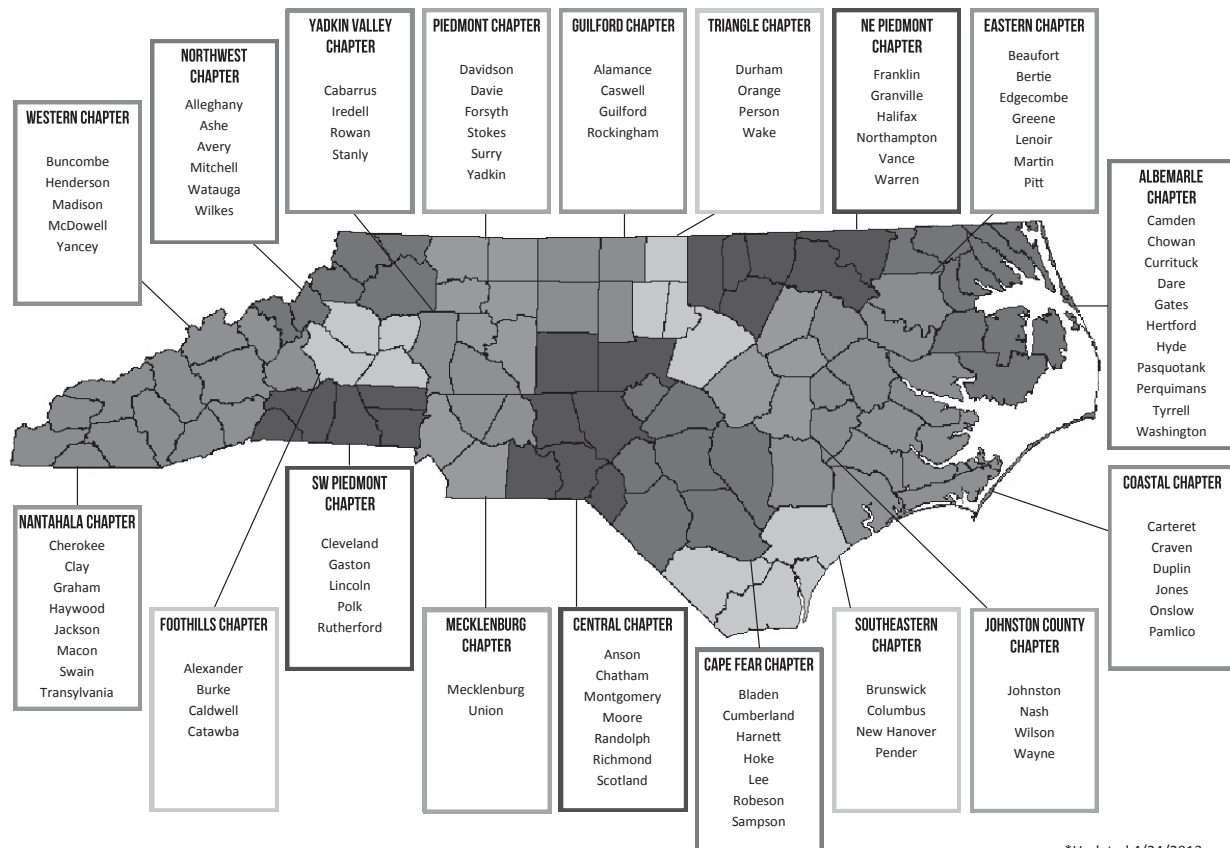
MARKETING & MEMBERSHIP DEVELOPMENT

Sherri L. Barron
sbarron@ncsurveyors.com

CHAPTER MEETINGS

CHAPTER	DATE & TIME	LOCATION
Albemarle	4th Tuesday 6:30 pm	Various Locations, NE Counties
Cape Fear	Last Tuesday 6:30 pm	Various Locations, Fayetteville
Central	Last Tuesday 6:30 pm	Blake's B-Que, Candor
Coastal	Last Monday 6:30 pm	Sagebrush Steakhouse, Morehead City
Eastern	2nd Monday 6:30 pm	Parker's BBQ, Greenville
Foothills	2nd Tuesday, 7:00 pm	Timberwoods, Morganton
Guilford	3rd Tuesday 6:00 pm	Cooper's Ale House, Greensboro
Johnston County	2nd Tuesday 6:00 pm *no meeting Jul-Aug	Holt Lake BBQ, Smithfield
Mecklenburg	1st Tuesday 6:00 pm *no meeting Jul-Aug	Dilworth Grille, Charlotte
Nantahala	3rd Tuesday 6:30 pm *no meeting Jun-Aug	Various Locations, Sylva
NE Piedmont	4th Tuesday 7:00 pm	Johnny Bulls, Louisburg
Northwest	3rd Tuesday 6:00 pm	Various Locations, Boone & Wilkesboro
Piedmont	4th Tuesday 6:00 pm	Hickory Tavern, Winston-Salem
Southeastern	Last Wednesday 7:00 pm	Carolina BBQ, Wilmington
SW Piedmont	2nd Thursday 6:30 pm	Olive Tree, Rutherfordton
Triangle	3rd Tuesday 6:30 pm	Peddler Steakhouse, Raleigh
Western	2nd Tuesday 6:00 pm	AB-Tech Campus, Asheville
Yadkin Valley	2nd Wednesday 6:30 pm	Pancho Villa's, Salisbury

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DIRECTOR'S NOTES



Many of you have

contacted me over the past month with your concerns regarding the new Tennessee legislation filed on January 28, 2020, deregulating many licensed professions. I admit that when I looked at the list of professions they propose to deregulate, I was shocked! Many of these professions, including surveying, take specific expertise.

It may be no great surprise to you that surveying was on the list since many of the general public think as long as their phone shows a line drawn around the relative vicinity of their fence, then they can trust that information in the sale of their home. However, it may also surprise you that Funeral Directors and embalmers, contractors, real estate brokers, engineers, and architects are also on the most recent list for Tennessee lawmakers to consider.

I spoke with Lori Medley, Executive Director of the Tennessee Association of Professional Surveyors (TAPS), and she told me that this issue pops up for them every couple of years. She said so far this has been defeated repeatedly, and she is thankful that the representatives are willing to listen to surveyors. Thankfully, the latest attempt in Tennessee has been defeated. I know this issue has also come up in Mississippi, Texas, and Arizona.

It is a matter of time before we see this type of legislation in North Carolina, which is why it is so essential for us to be diligent on the political front. I decided to make a checklist for the five most important things you can do to build a wall of defense against licensure encroachments.

1. Stay informed – A lack of political

involvement makes us more vulnerable, not less, to outside encroachments.

2. Build relationships in your district

– There may come a time when we have to call in favors from every legislator we know to prevent encroachment on your licensed practice. When that time arrives, an ongoing relationship in your district can make the difference between a yes or no vote.

3. Support our PAC raffle

– These \$5 tickets enable us to write checks to those running for reelection who understand the importance of surveying. We just wrote checks in February to Senator Warren Daniel, Representative Dean Arp, and Representative John Torbett, thanks to the sale of raffle tickets last fall.

4. Faithful membership

– When we battle an issue, the number of our members makes a big difference. When I let legislators know that NCSS membership now approaches 1200, it speaks to them of a significant voting constituency. Your membership allows us to contract with McGuireWoods Consultants, who watch our issues daily when I cannot be there. Their expertise has made a significant impact for us over the last few years.

5. Vote – Make sure you take advantage of every opportunity to elect officials who can make a difference in your profession.

If each member participates in these five areas, our profession will be fortified against external threats that will eventually make their way into North Carolina. I'm so proud to represent you and fight on your behalf, but I cannot do it without you.

Christy C. Davis

Christy C. Davis
NCSS Executive Director



Schedule at a GLANCE

APRIL 17, 2020

Nantahala Chapter

Partnership

8:00am-4:30pm

7.5 PDHs

Sylva, NC

APRIL 17, 2020

CFS Update Webinar

1:00pm-5:00pm

4.0 PDHs

Raleigh, NC

APRIL 24, 2020

Coastal Chapter Partnership

8:00am-4:30pm

7.5 PDHs

New Bern, NC

MAY 19-20, 2020

Photogrammetry Competency

Section II

8:00 am-5:00 pm

16 PDHs

Greensboro, NC

MAY 21, 2020

Photogrammetry Competency

Section III

8:00 am-5:00 pm

8 PDHs

Greensboro, NC

JUNE 5, 2020

CST Levels 1, 2, 3 (Proctor)

7:30am - Complete

0 PDHs

Wake Forest, NC

JUNE 5, 2020

Albemarle Chapter

Partnership

8:30am - 5:00pm

8 PDHs

Elizabeth City, NC

JULY 30-31, 2020

OPUS Projects

1:00-4:30pm | 8:00-4:30pm

9 - 11 PDHs

Graham, NC

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LETTER FROM THE PRESIDENT



A warm spring welcome from your new President. I am humbled and honored to serve you in this capacity. I know that I am following in the footsteps of some great surveyors who have served in this position previously. Tim Bowes did a wonderful job leading the Society last year, and I only hope that I can live up to his example.

A great big “Thank You” to all the surveyors, future surveyors, vendors, and friends of the Society who attended the Annual Conference in Charlotte. Thanks to our membership, chapters, staff, volunteers and especially our vendors, for making it an amazing success. We had a record number of attendees, surpassing last year’s numbers. Thanks to Christy Davis’ new registration options, we avoided a lot of waste from uneaten meals, which translated into savings for the Society. Friday night’s entertainment and dancing were enjoyed by many. Congratulations again to John Odom for winning the John Deere Gator grand prize giveaway.

Over the last year, we have taken advantage of several opportunities to make changes and improve the legal and regulatory environment in which our profession exists. The legislation clarifying the statute of limitations is one that stands out as a notable improvement. Expanding the use of the electronic recording of plats is another opportunity we can work toward. If your county offers the capability, take advantage of it. If they don’t, ask them why not. If you have another issue that should be considered, bring it up at your chapter meeting.

The conference theme was “A World of Opportunities.” We will have many opportunities this year. It is up to each of us to recognize and take advantage of them. One opportunity we are working on is to bring more people into our profession. The Society is involved in a partnership with some of our neighboring states to find ways to attract more women and minorities into surveying. We are an aging profession and we need to bring more young people into our profession. We should look for ways to bring in people from many different backgrounds who want to learn about this profession that we love so much. The young people we bring in today will be the leaders of tomorrow. Ben Franklin once said, “Tell me and I forget. Teach me and I remember. Involve me and I learn.” Let’s take the opportunity to reach out to get these young people involved, and to teach them what they need to know to keep this profession strong well into the future. National Surveyors Week is March 15th-21st. This is a good opportunity to attract attention to our profession. Another opportunity we have is to increase our membership. Take the opportunity to invite nonmembers to your chapter meetings. Consider becoming more involved both locally and at the state level. The future of our profession is in our hands. Take the opportunity to make it strong.

I look forward to serving our profession as your President this year. With your help, we can continue to build upon the foundation that our predecessors staked out for us.

A handwritten signature in black ink that reads "James I. Jeffreys, PE PLS". The signature is stylized with a large, flowing "J" and "I".

James I. Jeffreys, PE PLS
NCSS President 2020-2021

Education Foundation

by Gary Thompson, PLS

Education Foundation President



We had a successful education raffle at the 2020 NCSS Annual Conference which resulted in \$7900 in revenue for scholarships. As in past years, all one hundred (100) tickets were sold. I would like to thank everyone that assisted with selling tickets and for the PLS's and other individuals who purchased raffle tickets.

The 2020 Foundation Raffle winners were:

- First ticket chosen awarded \$500 to Teresa Smith
- Next to last ticket chosen awarded \$500 to Scott Church
- Grand Prize of \$2000 was awarded to the Central Chapter of NCSS



Revenue from the 2020 Foundation raffle will be used to provide scholarships to students enrolled in two-year and four-year surveying or geomatics programs in North Carolina. In 2019, the Foundation awarded \$9,000 in scholarships.

We are currently reviewing scholarship applications for the first cycle of 2020. We have budgeted \$15,000 for scholarships in 2020.

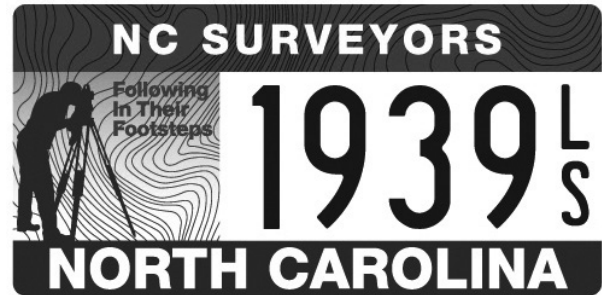
The Education Foundation meets quarterly prior each NCSS Board of Directors meeting. Our next meeting will be held at NC A&T State University.

The NCSS Education Foundation (Foundation) would like to thank Gale Brown, John Furmage, and Doug Suttles for their contributions to the Foundation. All

three completed their terms at the end of 2019.

If you have not purchased a North Carolina Surveyors specialty license plate, please consider purchasing a plate that promotes our profession and provides a financial contribution to the Foundation.

This tag would look great on your vehicle!



Order your tag using the form found at <https://www.ncdot.gov/dmv/downloads/Documents/MVR-27LS.pdf> OR when renewing online: <https://www.ncdot.gov/dmv/title-registration/license-plates/Pages/specialty-plates.aspx>

NCSS Education Foundation activities in 2020

- Develop additional sources of funding
- Develop an online scholarship application
- Provide support to NC's two- and four-year Geomatics programs
- Update Foundation web page
- Promote Trig-Star
- Attend the following conferences in 2020:
 - North Carolina Council of Teachers of Mathematics
 - North Carolina School Counselors Association

The NCSS Education Foundation needs your help to promote the surveying profession:

- Make a contribution to the NCSS Education Foundation
- Assist high schools to create a Geomatics Career and Technical Education (CTE) program
- Support NC's two- and four-year Geomatics programs
- Increase Chapter participation in the Trig-Star program
- Take part in career day at your local high schools (National Council for Engineering and Surveying (NCEES) speakers kit link: <https://ncees.org/education/ncees-speakers-link-and-speakers-kit/>)

You Don't Need to be a Millionaire to Leave a Legacy

Estate Planning is not something reserved only for the rich. The word 'estate' may bring to mind an image of riches with a mansion and landscaped grounds. In legal terms, it simply means "property or possessions". I think it's safe to assume that everyone seeing these words has property or possessions and for you to depart this life without a formal declaration of what happens to your possessions creates a huge potential for your loved ones to become embroiled in a destructive conflict. Without a will, your property or possessions will be distributed according to state guidelines which may not match your final wishes. A will should be created with the proper documents, and accordingly, we strongly encourage you to engage a professional for assistance or there are several books available to guide you through the process. In short, almost everyone needs a will.

The NCSS Education Foundation, Inc. is a non-profit, all-volunteer group which raises funding for the education of future surveyors. We urge all of the NCSS members, fellow surveyors and others to create a will to represent their own personal wishes. The Foundation can offer you an opportunity to leave a legacy (a gift of property or personal possessions) to assist the future of surveying through the education of newcomers to the profession. The following sentence included in your will is one way to ensure that you can leave that legacy to reflect your passion for the surveying profession: I give (specific or identified property, possessions, percentage or residue) to the NCSS Education Foundation, Inc. (a tax-exempt organization located in Wake Forest, NC) for the purpose of supporting its education-stewardship programs.



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PRINCIPALS

Robert F. Akers, Jr., PLS
bob@avioimage.com

Francisco Mahecha, PLS
fmahecha@avioimage.com

Paying it Forward

by Peggy Fersner, PE



I had the privilege of sitting on a dais with three other women involved in the Geomatics profession at the recent North Carolina Society of Surveyors Conference. It was fascinating listening to their journey in this profession as well as their hopes and dreams of where we, as a profession, are heading. Along with that enlightening experience, I always enjoy reconnecting with folks that I haven't seen in a while. I was even reminded by a gentleman that he was in attendance at the Guilford Chapter of NCSS when I came to speak to them many, many years ago about the potential of a 4-year program at A&T as well as a modification in the educational requirements for licensure. Definitely a throwback!

What follows are my thoughts alone – though Jerry Nave will back me up if asked. A couple of reoccurring themes from conversations with a broad spectrum of passionate folks resonated with me this time, as well as the dialogue with the members from a woman's perspective of life in these technical fields. Nobody is going to argue that the numbers in the profession are dwindling. Conversations and methodologies abound as to what we need to do to make this a sought-after career. A real quick fix would be to recognize that graduates of a 4-year geomatics program deserve the same respect, recognition, and compensation as graduates of a 4-year engineering program. (Sidebar - I do not care what gender you are, and most women that

I know agree. I expect equal pay for equal work with no exceptions.) Whenever this is broached, the pushback is twofold – lack of monetary resources and the need for field experience. Trust me when I say that a new graduate from an engineering program will not initially be worth their billable rate and will be under-utilized. The engineers have accepted that there is going to be a learning curve and the companies are willing to invest in that person who has demonstrated considerable time, effort, and learning in the foundations of that profession. What the surveying profession has done to themselves is discount their rates for something that no other profession can do. Stop shortchanging what you do and recognize that nothing else can be planned, sold, designed, or built without you! Think about it! Once you have convinced yourself of that, decide what experiences this newly-educated person needs to become a leader in the company as well as the profession. No, they do not need to know how to sharpen a bush ax. Remember, you are paying them a substantial sum. How about passing down your boundary knowledge that can only be gained by field experience? That's what will make them valuable down the road. Give them the best practices that you utilize in your company for fieldwork. Teach them what a great field crew looks like and how it is run and bring them quickly up the ranks to party chief. Bring them inside and teach them research methods and the puzzle-solving of boundary work, scheduling, and utilization. Just think about the fact that all professions, including engineering, law, architecture, and medicine, accept the need to train their graduates. And listen to them – they might surprise you with some forward-thinking ideas.

Finally, let's visit why I so strongly believe the need for higher education is imperative, and therefore, why we must offer higher pay as a way of attracting the best and the brightest. I know there are naysayers out there, but



Jeff Todd
President

jeff@imcipls.com
Mobile: 704-500-6887
Direct: 704-997-2719

please listen. We are just trying to keep up with what the profession and licensure are demanding. When is the last time you taught anyone how to mathematically compute offset coordinates, a compass rule adjustment, or a resection? Technology, which we all embrace, has eliminated this need. However, if you came through knowing how to do this, you can look at the solutions that the calculator, data collector or software spit out and use that learned education to assess the results. This type of training is not occurring with the new wave of surveyors. They have no clue if that answer makes sense. They do not have that background – so we need to flip the model. Academics plus training is why broad-based education is so necessary. Then you can take those 4-year graduates

and transfer your wealth of knowledge that allowed you to become successful. The profession wants people that can think and assess. In the end, everyone and the profession will benefit.

Thanks for listening. My soapbox will be stored at least for the day. ~ Peggy



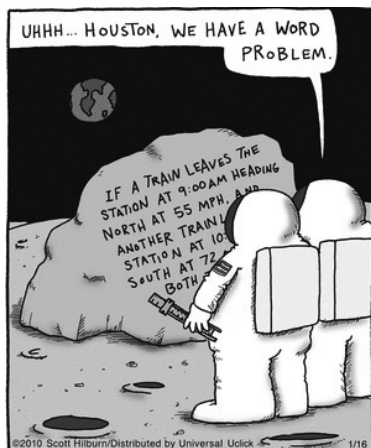
Peggy Fersner is the Geomatics Coordinator at NC A&T State University in Greensboro. She has been on staff since 1993, teaching surveying, GIS, and hydrology courses. She has earned both her BS and MS in Civil Engineering.

Welcome New Licensees

Matthew T. Poole
Brandon R. King
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- B (738.562 N, 666.737 E)
- C (541.742 N, 688.350 E)
- D (379.861 N, 839.008 E)
- E (296.009 N, 604.048 E)
- F (218.330 N, 323.936 E)

Try to compute the area of the traverse using the coordinates only. To see how the area of the traverse using a plain calculator is done, go to the answer. It is obtained using multiplication, addition, subtraction and division.

Surveyors Can “Walk the Walk,” But Too Few Can “Talk the Talk”

by Bill Beardslee, PLS, PE, PP



Normally my articles pick some business or communication issues and discuss ways to enhance performance in that area. But today, I bring you a growing concern about individual communication skills.

Any business source you choose will indicate that successful business is about relationships. Field crew production – and profitability – increases when the crew members (assuming there are crew members) are compatible and enjoy working together. The same is true of the relationship between the survey supervisor and the crews or the manager or owner of the company. These relationships are impossible to solidify without personal contact.

Client relationships are the same. There is nothing that will lead to company success more than long-term client relationships, which keep an incoming flow of work over many years. To preserve clients, it is imperative to develop a close, personal relationship. It is also economical. It costs almost ten times as much to create a new client as it does to keep an existing one. Social,

as well as business, activities may turn a good client into a great one.

If your firm primarily provides services for governmental agencies, this can be more difficult because of regulations. But by sharing rather than buying lunches, it can be done. You can also join associations your clients belong to and be sure to attend their social functions.

Those who enjoy surveying and the technical fields are primarily left-brain folks. Personal relationships and communication, right-brain issues, are not usually in their comfort zone. Here is where my trepidation begins as technology is enabling these people to not only avoid enhancing these personal skills but limiting the amount of contact that they have with others, which would require those skills.

This concern began for me with the coming of e-mail and texting, which are taking large bites from my beloved English language. I won't bore you with my rant on the schools no longer teaching cursive. However, e-mails, texting, computers, robotic instruments, etc., are allowing us all to limit human contact voluntarily and isolate ourselves even more than the typical left-brain person does. I refer to this as technological isolation. I heard a priest refer to it as the digital casket.

Consider that a surveyor may receive the order for a survey by e-mail (from a client or supervisor). The surveyor does deed research online, does the fieldwork with a robotic total station or a rover; calculates and drafts the survey on AutoCAD; and then e-mails or mails the finished product. An entire project, start to finish, has just been accomplished without personal contact with another human being. I'm sorry folks, but that, in my estimation, is very scary. We are voluntarily isolating ourselves with technology. Please keep in mind that for centuries isolation has been used as a form of torture.

I imagine everyone has experienced this phenomenon in some form or another, such as the person who e-mails someone in the next office rather than walk over and talk. The person who would rather have a root canal

than visiting a client or the manager who distributes assignments or evaluations by e-mail.

I have had the pleasure and honor of presenting personal communication articles on many topics: journalism approach to pre-proposal meetings, project milestone meetings, staff meetings, and presentation skills. These are skills the successful professional – in any field – needs in their arsenal. Encourage your staff, and remind yourself, how vital these things are, and make an effort to include them in the daily routine. Also, look to take courses in these necessary skills at state conferences or local seminars.

The long-term functioning of an organization within itself and the ability to satisfy and retain clients is dependent

on quality services and continuing, open, pleasant relationships. Do not let the availability of technology deter you from continuing these long-standing, proven methods toward success. All skilled surveyors can “walk the walk.” What they need to do now is “talk the talk.”

Let's all make 2020 “The Year of The Talk!!”



William E. Beardslee, PLS, PE, PP, is a licensed Professional Land Surveyor, Engineer and Planner with over 45 years of experience in the field of land development. He is known for his excellent presentation and writing capabilities, along with being one of the leading technical experts on land development in the engineering and surveying arena. This is one in a series of articles produced by the Education Committee that will appear in The Tarheel Surveyor.

NCSS Education Committee Report

by John Story, PLS, Education Committee Chairman

For the past two years, I have had the pleasure of serving as Chairman of the NCSS Education Committee. The other people on this committee who have served with me certainly deserve accolades for their dedication to our profession and for their diligent work. Two groups of people make up the Committee: Christy Davis, Sherri Barron and Michelle Kenny from the NCSS staff, and volunteers Dr. Jerry Nave, Bill Beardslee, Cliff Johnson, Norman Ribelin, Billy DiGiacomo, Gene Fine, and Jim Gellenthin. Our goal is to provide exceptional continuing education opportunities to members of our Society and to North Carolina Surveyors.

Toward that end, the Committee and the NCSS Staff undertake the following duties:

- Plan the Spring and Fall educational seminars throughout the state.
- Partner with the NCSS chapters to host these seminars or conduct seminars on our own. When we partner with an NCSS chapter, the chapter secures a date, a speaker, and a venue. NCSS takes care of the registration, collecting the fees, providing advertisement, printing materials, and paying the expenses, if needed. The profits are split between the chapter and the Society. From my experience with my chapter, the Mecklenburg Association of Surveyors, partnering with NCSS

has proven to be a very profitable endeavor.

- Work with the Annual Conference Committee to plan the seminar programs held at the Annual Conference. These tasks include determining topics and securing speakers.
- Plan the Otis A. Jones Educational Institute that is held in the fall every two years. The Staff and Committee secure the venue, plan the program, and find presenters.
- Develop seminars. Recently, under the leadership of Dr. Jerry Nave, the Committee developed a very comprehensive two-hour Ethics course.
- Develop online seminars that can be accessed from the NCSS website.

The Committee has also undertaken two other projects to increase the educational opportunities for NCSS members. One project is to write a continuing series of articles for *The Tarheel Surveyor* that will aid the professional development of its readers. This volume contains two articles that we hope you will find beneficial, one from Bill Beardslee and one from me. The other project is to assist the NCSS Chapters in providing continuing education programs for their chapter meetings. The logistics of creating these chapter programs are still being developed and we could use your help. If you have any suggestions for a chapter presentation, please contact Christy Davis (cdavis@ncsurveyors.com) or John Story (john.story@dg-anc.com).

Finally, I want to thank each of you who support our NCSS educational program by hosting a seminar, presenting a seminar, and/or attending a seminar. Our success depends on you! We truly appreciate your help!

National Surveyor's Week



In recognition of National Surveyor's week, NCSS hosted a group of middle and high school homeschoolers at the Wake Forest NCSS Office. We would like to thank Donnie Stallings, Adam Canoy, Jason Fowler, Kyle McCracken, Conner Stearns & Ben Howard for sharing the surveying profession with the next generation. Share your events with us through our social media accounts. @NC_Surveyors (Twitter), NC Surveyors (Instagram) or NC Surveyors (Facebook).



NSPS Memorandum of Understanding

In 2012, NCSS agreed to partner with the National Society of Professional Surveyors (NSPS) to foster membership on both the state and national levels. As a result, your membership with NCSS now includes dual membership with NSPS. Read the MOU on our website at: www.ncsurveyors.com/about_ncss/governing_documents/nsps

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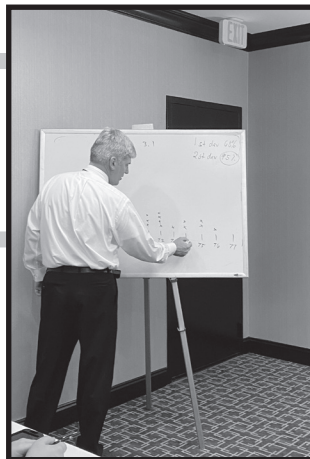
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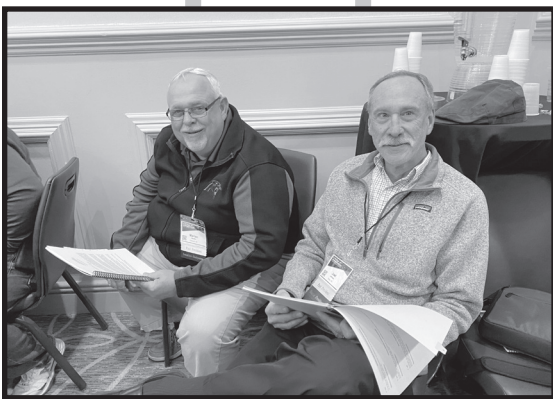
Top 5 Reasons the Charlotte Conference Was a Success

2020

1 EDUCATION



"It's wonderful to get together with like-minded people. We as a community are working toward a common goal of getting young people interested in surveying and the best ideas come from discussion with our peers, those who share the same passion." Toynia Gibbs



Eleven professional development hours, fifteen different instructors, a variety of subjects



2 TRADE SHOW



**Twenty-seven vendors
hosting an array of
products and services**

"Younts Insurance Agency, Inc has had the privilege to be a part of NCSS for the last 17 years. Each year, we attend the NCSS convention and see old friends, as well as, make new ones. We are able to spend time with, not only those who are customers, but those who I consider friends. The convention was one of the best yet! We had a wonderful time and look forward to many more years with NCSS."

Beth Blevins



3 COMMUNITY

**Live music,
dancing, good
food, strengthened
relationships
and professional
networking**





4 CELEBRATIONS



**Plat awards,
presidential honors,
peer recognition,
charitable
contributions**

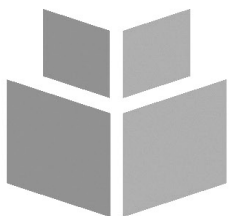


5 WINNERS

Cash, gift cards, Pinehurst weekend for two, John Deere Gator

"Each year I look forward to attending the conference and networking with fellow surveyors across the State. The meetings are always informative and the friendships both my wife and I have made are treasured. As an added bonus, you sometimes win a prize this year we danced the night away and won a trip to Pinehurst!" Robin Lee





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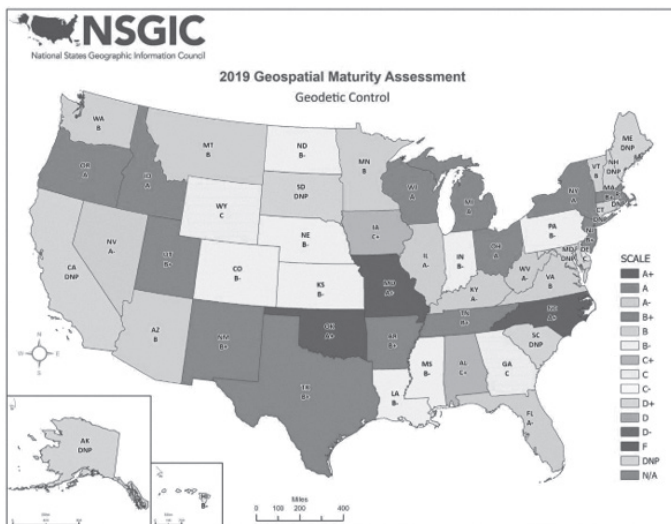
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North Carolina (NC) Geodetic Survey Update

by Gary Thompson, PLS, Chief of the North Carolina Geodetic Survey and Deputy Risk Management Chief

The National States Geographic Information Council (NSGIC) recently completed a geospatial maturity assessment in each state in 2019. One of the categories for assessment is Geodetic Control. North Carolina received a A+ grade for Geodetic Control.



North Carolina's grade in other categories.

Category	Grade
Cadastre	A+
Transportation	A+
Orthoimagery – Leaf Off	A
Elevation	A-
Coordination	B+
Addresses	B
Governmental Units	B
Hydrography	B
Orthoimagery – Leaf On	B
North Carolina's Overall Grade	B+

The NC Geodetic Survey (NCGS) website has undergone some recent back-end changes to enhance security and functionality. If you have not already done so, please

update your bookmark for the NCGS page to <https://ncgs.state.nc.us/>

North Carolina Continuously Operating Reference Station (CORS) and North Carolina Real Time Network (NCRTN) update.

Equipment upgrades were performed at the following CORS in January 2020.

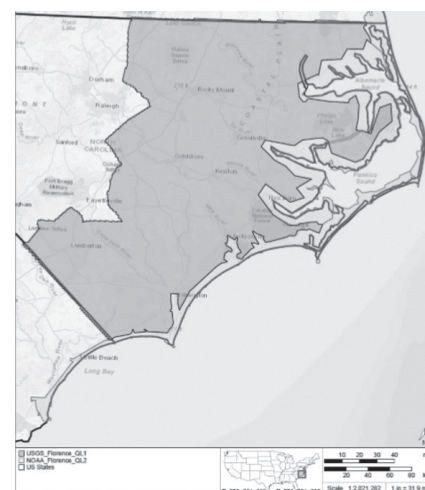
CORS Location	CORS Acronym
Castle Hayne	NCCD
Cedar Island	NCCI
Elizabeth City	
Gatesville	NCGA
New Bern	NCNB

A new solar powered CORS has been added to the NC CORS/NCRTN network.

CORS Location	CORS Acronym
Rodanthe	NCRT

Link to the North Carolina Real Time Network (NCRTN) sensor map. <http://rtn.nc.gov/Map/SensorMap.aspx>

Light Detection and Ranging (LiDAR) elevation data collection in eastern North Carolina in 2019-2020.



Source: United States Geological Survey (USGS)

USGS_Florence_QL1 = Topographic LiDAR elevation data, Quality Level (QL) 1

NOAA_Florence_QL2 = Topographic/Bathymetric LiDAR elevation data,

QL 2 Link to the North Carolina Real Time Network (NCRTN) sensor map.

Link to the Flood Inundation Mapping Alert Network (FIMAN) <https://fiman.nc.gov/>



Gary has held a professional license as a Professional Land Surveyor (PLS) in NC since 1980. He has served as president of both NCSS & NSPS. He most recently served as treasurer of NCEES, chair of the North Carolina Boundary Commission, and an emeritus member of NCBEES.



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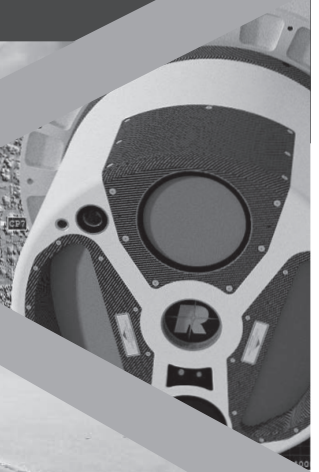
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Words Matter, Especially in Legal Descriptions

by John Story, PLS, NCSS Education Committee Chairman

Legal descriptions are necessary. Deeds, mortgages, deeds of trust, and even sales contracts require a legal description of property that is legally sufficient. This requirement means that the description would allow a competent surveyor to delineate the exact boundaries of the property. Legal descriptions must be written precisely, as opposed to attaching a survey to the deed, in order to make the deed sufficient. The words surveyors use are most important, and the way surveyors use these words is also important. Using Mr. Wattle's treatise *Writing Legal Descriptions in Conjunction with Survey Boundary Control* and *Black's Law Dictionary* as references, surveyors should look at some common words that are often used, but may be misunderstood, in legal descriptions:

Adjacent versus Adjoining: Adjacent indicates that an object is lying near, close to, or in the vicinity of, but not necessarily, touching. Although adjacent is often thought to mean touching, from a legal point of view, it does not. Adjoining, on the other hand, means touching or contiguous, as distinguished from lying near to or adjacent. The difference between adjacent and adjoining seems to be that adjacent implies that the two objects are not widely separated, though they may not actually touch. Adjoining, on the other hand, describes a situation where the two objects are so joined or united to each other that a third object cannot intervene. When writing a legal description, "along the boundary line adjacent to" a neighbor can imply that a gap occurs between the boundary of the subject property and the neighbor. However, the phrase "along a boundary line adjoining" a neighbor states that the boundaries of both the subject parcel and the neighboring parcel are the same.

Another word in a similar vein is contiguous, as mentioned in the previous paragraph. Depending on whose definition a surveyor uses, contiguous can mean two objects are really close together or that they are actually touching. To avoid any ambiguities, eliminate

the use of contiguous and use adjoining instead in order to give an accurate description.

Along: Mr. Black defines along as meaning "by," "on," or "over," according to the subject matter and the context. One may see this wording in older deeds, such as "along the northerly lines of the subject parcel, ____ feet to a corner." This kind of verbiage can be a problem if the boundary one is attempting to describe has more than one segment. Also, if any of these segments depend upon ties or monuments, then one does not have the control necessary to establish the line. When using along in legal descriptions, as surveyors often do, they should make sure that the description of each line is complete enough to be described adequately.

Either and Each: When the word either appears in a legal description, this word is often assumed to indicate the same as on both sides when describing a strip of land. The phrase "being an easement 20 feet either side of the following described centerline" is an incorrect description that the easement is 40 feet in width, 20 feet on each side of the centerline. Either implies that there is a choice as to whether the 20 feet is on one side or the other of the centerline. While some legal definitions state that either may be used in the same way as each, as scriveners of legal descriptions, surveyors should use each, instead, to avoid confusion.

Excepting and Reserving: When used in a legal description, excepting means the grantor intends to except, or keep out, something of that which he granted before, according to the legal description in the deed. For example, "All that land consisting of Lot 12, Block A, Summit Heights Subdivision, except the easterly 10 feet," indicates that the seller is giving title to all of Lot 12 except for a 10-foot strip along the eastern boundary. The grantor is keeping that 10-foot strip for himself. Therefore, an exception removes something from the entire intent of the deed. A reservation, however, is not so drastic, although it does place some stipulations on the

subject parcel. "All that land consisting of Lot 12, Block A, Summit Heights Subdivision, reserving there from the easterly 10 feet for an easement" gives all of Lot 12, Block A to the grantee. The grantee has title to and must pay taxes on the entire Lot 12; but the easterly 10 feet is burdened by an easement and, thus, the grantee only has restricted use to this 10-foot strip of the lot.

Before leaving the discussion on excepting and reserving, the term "subject to" should be reviewed. When excepting and reserving appear in a legal description, these terms refer to the instant the exception or reservation was created. Subject to makes reference to an existing, previously created, condition. When a document is already recorded in a public registry and the exceptions and reservations are being carried forward in subsequent transactions, the reference to these conditions must be made in the form of "subject to." When Lot 12 above has title transferred in the future, the description for that deed should include language such as "subject to a 10-foot easement along the easterly line of Lot 12."

Parallel with: The Merriam-Webster Dictionary describes

parallel as "extending in the same direction, everywhere equidistant and not meeting." For two lines to be parallel with each other, they must be mathematically equidistant from each other at any point. Lines or objects are not parallel "to" each other. Instead, they must be parallel "with" each other. When this term is applied to curves, the implication is that curves are not only equidistant at any given point but are concentric and thus share a common radius point.

As illustrated above, words matter in writing legal descriptions. Keep these distinctions in mind the next opportunity you have to craft a legal description in order to ensure an accurate description of your property.



John M. Story is Senior Vice President of Donaldson, Garrett & Associates, Inc. He is a Professional Land Surveyor licensed in seven states in the Southeast. He is also Chairman of the NCSS Education Committee. This is one in a series of articles produced by the Education Committee that will appear in The Tarheel Surveyor.



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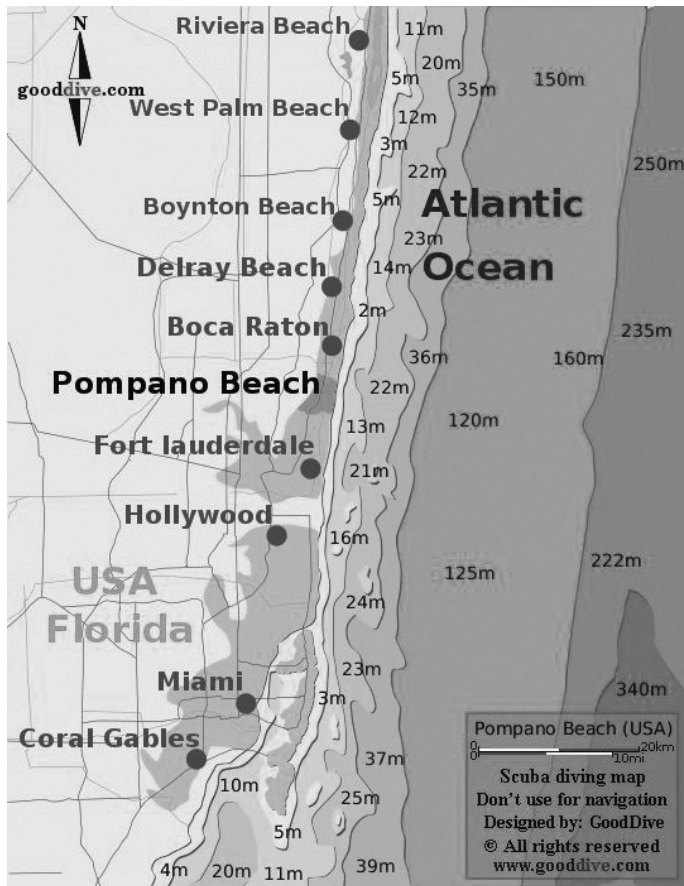


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Into the Atlantic

by Ken Mills, PLS



In 1973 or 1974, while I was studying to take my first licensing exam to be a Professional Land Surveyor in the state of Florida, I worked on a location and profile survey for a future sewer outfall. The sewer outfall was to begin at a planned sewer treatment plant in the southwestern side of Pompano Beach, Florida, cross all of the subdivisions and roads and end 1,500 feet in the Atlantic Ocean.

The first portion of the survey was a rather simple matter of locating the streets and any visible underground utilities. The utilities consisted of existing sewer lines, water meters and gas meters. We located utility poles close to the proposed outfall route, but we didn't have to locate any property corners or lines since the route was entirely within existing roads.

We had to get profile elevations on the bottom of the Intracoastal Waterway, which the outfall was designed to go under. After that, we crossed one last road and then

down the beach to the water's edge of the Atlantic Ocean. From there, we had to get a profile of the bottom of the ocean out to a distance of at least 1,500 feet.

From personal experience as a certified scuba diver, at the time, I can say for sure, by the time you get to the 1,500-foot mark, the water is over 100 feet deep. We also didn't have a level rod quite that tall. What the company had was a fathometer.

The fathometer measured vertically down to the ocean bottom, but it did not measure horizontally along the outfall line we were following. The surveyors and engineers in the office came up with an idea of how we could get accurate measurements along the outfall line in the ocean.

First, we set a concrete monument in the outfall line at the top of the beach where it sloped down to the water. Then we set a second monument, south along the beach, to a point on a rise over 200 feet from the first monument. We then accurately measured the distance between both monuments in relation to the outfall line. This data was taken back to the office, where the head surveyor plotted the two points and the outfall line. Instead of using the 1500-foot distance, he calculated the line out to 1600 feet to get a little extra data. He also created two 50-foot offset lines, one on each side of the outfall line. Then he marked a point along each line every 50 feet beginning 100 feet from the edge of the water out to the end of the outfall area.

Using the southern monument and the monument of the outfall line as the baseline, he calculated an angle to each 50-foot mark along all three lines. Each angle was recorded in a field book, beginning with the center outfall line, the other two lines following.

We waited until a calm weather day to get out on the water with an outboard motorboat. We clamped the transmitter/receiver disk of the fathometer to the side of the boat with the disk just below the bottom of the boat. There were two people in the boat, one to operate the motor and the other to operate the fathometer.

While they were on the way to a place to put the boat in the water and navigate out to our site, my helper and I placed three tall stakes along the outfall line and along the other two lines to act as alignment guides for the boat operator. We flagged each line using different colored surveyor's ribbon. The boat operator's job was to run the boat at a steady speed from the beach, along each line, using the three tall stakes as guides.

My job was to operate the surveyor's instrument from the monument, 200 feet to the south, by turning the calculated angles the surveyor recorded in the field book. I would keep a watch through the scope and when the pole of the fathometer disk crossed the crosshair in the scope, using a radio, I called "mark" to the fathometer operator. When he heard me call out, he would press a button which would cause the fathometer to strike a line across the recording roll of paper. I would then have to turn the next angle and get ready for the boat to appear in the scope again.

My helper stood by the tall stakes to make sure none of the beachgoers pulled any of our range stakes up and to explain what we were doing. I was very busy getting the angles set for the next mark. The only time I was able to take a breather was when the boat was coming back in towards shore to begin the next line. We did not rehearse the project, but we worked together like a well-oiled machine.

We delivered all of the data to the surveyor in the office, and later, I got a chance to see the plan/profile sheets of what we had accomplished. The engineers were very pleased with our efforts.



Ken Mills became a PLS in 1975. He has been an active member of NCSS, serving three terms as the Western Chapter President. He served as the NCSS President in 1998. Mills co-authored Following in their Footsteps with Otis A. Jones. He has written for American Surveyor Magazine and is a columnist for Madison County's News-Record & Sentinel newspaper.



Otis A. Jones

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MARK YOUR CALENDAR



Leland Strother

Mr. Leland Dewey Strother of Raeford went home to be with his Lord and Savior on Saturday, December 14, 2019 at home, at the age of 65.

Leland is survived by his wife, Judy Daniels Strother of Raeford, NC; a daughter Amy Strother Harvey and husband Larry of Raeford, NC; a son Graham Dewey Strother and wife Ashley of Morehead City, NC; three grandchildren, Lauren Elizabeth Harvey, Lillie Grace Harvey and Avery Lynn Strother; a sister Betty Jordan of Wilson, NC; Several

nieces, nephews and lots of loving family members.

Leland was the President of NCSS in 2016. At the time of his death, he was actively serving on the Education Foundation and was awarded Surveyor of the Year for 2019. He was a true professional and will sorely be missed.

MEMBER PROFILE

John Odom



Wife's Name
Kelly Odom

Children
Zachary and Jillian

Favorite Movie
Outlaw Josey Wales

Favorite Food
Fried Chicken, BBQ, Pork Chops...
I love food!

What was your most recent purchase?
Copier for the office and Gator accessories... THANKS NCSS

What is your favorite surveying equipment?
I know lots of people won't believe this, but the bush axe is my favorite.
What a versatile tool.

For anyone who knows John, you know he encourages others by his willingness to serve. You also know he is wise and witty. I asked John a few questions to highlight his career and service as part of our spring edition Member Profile. You will see these traits in his responses.

John remembers his primary ambition as a young child was to get married, have kids, and operate an automotive

junkyard. Not the doctor, lawyer, fireman answer one typically receives from young children. Two out of three isn't too bad, he's married to Kelly and has two children Zachary and Jillian. The automotive junkyard is still just a dream.

He was a hard worker from an early age. When asked about his first job, he said he rode 2.5 miles round trip twice a day to feed a small herd of cows for a neighboring farm. He clarified that story by saying that was his first paying job. His real work was child labor on his parent's farm.



John was exposed to surveying through a high school drafting class. After graduating high school, he attended Coastal Carolina Community College in Jacksonville, NC graduating in 1982. He reminds those of us who may have forgotten that it was not a great economy at that time. He finally found employment with Godwin-Jordan Associates in Dunn, NC. He later left Godwin-Jordan and went to work at Ragsdale in Smithfield and Lillington. Randy Rambeau was his supervisor at Ragsdale. John obtained his surveyor's license while at Ragsdale in January 1987. He and Kelly had their first child in May of 1987 and since kids didn't come with an instruction manual, he and Kelly moved to Morehead City to



be close to Kelly's family. Once moved, he went to work with John P. McLean and Associates in Cape Carteret, NC. "I worked with McLean until 1990 when my brother-in-law and I purchased the surveying portion of Mr. McLean's business and renamed it Prestige Land Surveying, P.A." They operate a small company with seven employees. They have two 2-man crews and three office employees. In the past, they have specialized in subdivision development, but with the changing regulatory requirements, they have shifted to construction staking and small projects. He said he was looking forward to retirement in 20-30 years.

John has served the Coastal Chapter in different capacities over the past 30 years. He is presently serving as Chapter President which allows him to represent coastal counties with a seat on the NCSS Board of Directors. He has also served on several committees through the years. His newest tenure



is to complete Leland Strother's term on the Education Foundation following the sudden passing of

Leland. John is also the Chairman of the Deacon Board at Crab Point Free Will Baptist Church, Sunday School Superintendent, and several other



various positions that come with being active in a small church. When asked why he does so much for others he replied, "If you don't serve, there will be no organizations, NCSS, church or whatever the cause. It is a servant's call."

When John was asked which surveying project he was most proud of, he spoke of the work the company has been doing on Emerald Isle in recent years, maintaining the beauty of the island while balancing the needs of their clients.



John has a great sense of humor, but when the conversation turns serious, one can hear great wisdom. What advice would he share with a young surveyor just starting his/her career?



"I know it's probably cliché," John replied, "but no one ever says I wish I had worked more. Looking back from where I am, I would say that my career is important, but God and family ARE THE MOST IMPORTANT. Find a good balance."

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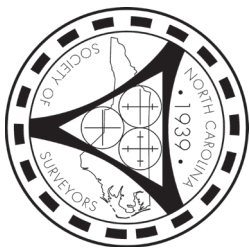
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