The Florida Surveyor

September 2018

Conference Edition

FSMS President-Elect Dianne Collins (left) accepts the gavel from NSPS President-Elect Lisa Van Horn. Both women will begin their terms in January 2019.

President Dianne Collins

2019

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President's Message

The 63rd Annual FSMS Conference is now behind us, and I hope everyone that attended had as good a time as I did. It was a beautiful four days with great weather and no red tide -- thank God! A lot of work and coordination goes into hosting a conference like this one, and it would be hard for me to thank everyone that volunteered and gave up their personal time to make this year's event a huge success.

Huge thanks to our host chapter (Tampa Bay Chapter) and all the great sponsors, exhibitors, FSMS staff members, seminar presenters, event participants, TradeWinds Resort staff, supporting members, and conference attendees. The enthusiasm and love for our profession here in Florida made this conference an enjoyable and memorable experience for all.

I want to thank Don and Christine Wilson for joining us this year all the way from New Hampshire. Our conference slogan this year was ***"Footprints Behind, Horizons Ahead"*** - well, why not have the guy who wrote the book on following footprints (literally) kick off our conference? Don's seminar on Wednesday started the conference off on the right foot. It was extremely well-attended and a very pertinent topic for all of us in the boundary surveying field.

Don and his good friend, Professor George Cole, also instructed a Thursday presentation on Land Tenure, and I thank them both for that. Again, nothing like hearing it straight from the horse's mouth, so to say, from two of the top experts in our profession. Speaking of experts - special thanks to my good friend David Melvin for an excellent seminar on elevation certificates, and Todd Boyle and David Schryver for their excellent discussion on Legal Descriptions. I can't say enough about our volunteer experts who graciously share their knowledge and time to strengthen and guide all of us in their respective fields.

"Horizons Ahead" – we had a fantastic Exhibit Hall this year, thanks in no small part to our supporters and vendors. The latest advancements in technology, hardware and expertise were on display, coming from the best of the best industry leaders. Thank you to Trimble for sponsoring the Exhibitor Reception Thursday night, which set the tone for the excitement and energy throughout the Exhibit Hall on Friday!

The Recognition Banquet and Awards Presentation on Friday night was an uplifting and festive time to celebrate and enjoy ourselves, and to look to the bright future of our Society. I'd like to thank Greg Rieth and Mike Whitling once again for "MC"ing the night, with their ageless humor (and hairstyles). Headliner comedian Les McCurdy brought the laughs to the house (poking fun at everyone, and hopefully not offending anyone) – well almost everyone, except for Conference Chair Tom Brownell. Congrats Tom & Joan again on your 48 years together!

NSPS President-Elect Lisa Van Horn joined us all the way from Wisconsin to help us welcome our first female FSMS President, Dianne Collins. Dianne has great plans for our Society in the coming year, and I know that our excellent Directors and Officers will step up to help her achieve her goals. Dianne has poured her heart and soul into the Society over the years to serve and support all of us in the surveying profession, and we wish her the utmost rewarding and fruitful year ahead as our President.

A BIG thank you to the chapters this year that have raised money for our scholarships, students and PAC. Although you were not recognized at the banquet this year, we did not forget you all as the backbone that makes this organization work!

The horizon is bright, and the path well lit for the coming year for our Society and the surveying profession, thanks to all of you!

"To succeed in life, you need three things: a wishbone, a backbone and a funny bone."
-Reba McEntire

Bob Strayer, Jr,
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Surveyors in Government

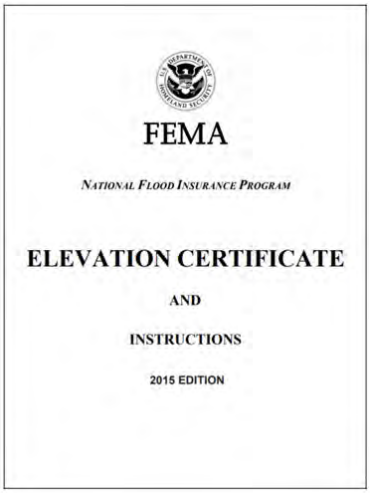
Richard Allen, PSM, CFM

This month, I want to discuss elevation certificates, and regular issues with the certificates I am seeing in our organization and hear about from other professionals. There are so many different opinions regarding FEMA's Elevation Certificate and its various requirements that are defined in FEMA form 086-0-33.

The are many reasons why an elevation certificate is important, but the most important reason is for insurance rate purposes to determine flood risk as it relates to the location of the structure and its proximity to the special flood hazard area (SFHA) and the base flood elevation if determined by the SFHA (also referred to as the 100 year flood zone). The basis of elevation for the elevation certificate is the benchmark.

A number of elevation certificates submitted are referencing a real time correction service or network that their benchmark utilized. This is not the purpose of referencing a benchmark, which is something that can be checked physically. A correction service can provide a vertical value, but that value is not verified or localized to a known vertical benchmark. How could one expect to repeat the exact same results? A correction service or network is not an absolute value with the exact same results every time, which is why you must localize to known points to adjust or correct the values.

Item C2 (see on next page) does not say to use


FEMA

NATIONAL FLOOD INSURANCE PROGRAM

ELEVATION CERTIFICATE

AND

INSTRUCTIONS

2015 EDITION

the GPS survey information in place of the benchmark. The additional information of the network or base used would have to be provided as well. A number of surveyors fail to use the comments section to provide supporting information regarding the elevation certificate and the various types of data the document requires. There are several potential errors that can accumulate when you don't check to make sure the vertical accuracy for a known benchmark is correct. Just because it gives you a value doesn't mean it is always accurate. When I see an elevation certificate submitted to the city for review with a network for the benchmark utilized column, I reject it immediately as there is no reference information provided and all that is stated is that it is based on one proprietary

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☐ Finished Construction

*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: _____ Vertical Datum: _____

Indicate elevation datum used for the elevations in items a) through h) below.

☐ NGVD 1929 ☐ NAVD 1988 ☐ Other/Source: _____

Datum used for building elevations must be the same as that used for the BFE.

Check the measurement used.

network or another. Of all the real time network services out there, I personally only know of one that is vertically checked and referenced to control, that being the FPRN of FDOT. That is not to say there are no other similar networks - I just am not personally aware of them. The group that manages the FPRN (Florida Permanent Reference Network) has done a painstakingly large amount of work to reference the network to passive documentation and create a geoid based on the passive monumentation. Even so, I would still require a benchmark to be referenced on the elevation certificate. This is a check and balance that allows us to retrace the work being submitted and to certify the accuracy of the work.

This conversation could extend to environmental factors, human errors, use of GEOIDS, ellipsoid errors and several other potential errors, but we will have to save that for another day. I am expecting to hear a number of surveyors defend the use of a network-based solution on its own merits, but I do not think that was the intent of allowing this data solely for determining flood risk. They want to be able to establish if the work was done by GPS methods or not. In all reality, it should state GNSS methods, because the network RTK systems are utilizing GLONASS and other networks as well.

Until next month my friends…

You can reach Richard at Richard.Allen@cityoforlando.net or 407.246.2788

Item C2. A field survey is required for Items C2.a–h. Most control networks will assign a unique identifier for each benchmark. For example, the National Geodetic Survey uses the Permanent Identifier (PID). For the benchmark utilized, provide the PID or other unique identifier assigned by the maintainer of the benchmark. For GPS survey, indicate the benchmark used for the base station, the Continuously Operating Reference Stations (CORS) sites used for an On-line Positioning User Service (OPUS) solution (also attach the OPUS report), or the name of the Real Time Network used.

Also provide the vertical datum for the benchmark elevation. All elevations for the certificate, including the elevations for Items C2.a–h, must use the same datum on which the BFE is based. Show the conversion from the field survey datum used if it differs from the datum used for the BFE entered in Item B9 and indicate the conversion software used. Show the datum conversion, if applicable, in the Comments area of Section D.

For property experiencing ground subsidence, the most recent reference mark elevations must be used for determining building elevations. However, when subsidence is involved, the BFE should not be adjusted. Enter elevations in Items C2.a–h to the nearest tenth of a foot (nearest tenth of a meter, in Puerto Rico).

FPRN Datasheet

Site Name	Orlando	
Site Code	ORL1	
Receiver Type	LEICA GR30	
Serial Number	1702502	
Firmware	4.20	
Antenna Type	LEIAR20	NONE
Serial Number	16268028	
Satellite Systems	G/R/E/-/-	

FDOT
Florida Permanent Reference Network

NAVD 88 Orthometric Height*

Geoid 12B	Geoid Model	FPRNGD16B
121.92 sFT		121.87 sFT
37.162 M		37.147 M

NAD 83 (2011) epoch 2010.000

Geodetic Position		State Plane Coordinates**	
Latitude	28° 26' 04.42219" N	State Plane Zone FL E	
Longitude	81° 22' 56.88157" W	N 1,490,893.06571 sFT	N 454,425.11528 M
Ellipsoid	9.367 M	E 533,246.54731 sFT	E 162,533.87269 M
Geocentric Position**		**UTM Position****	
X 2,759,291.71671 sFT	X 841,033.79732 M	UTM Zone 17	
Y -18,207,281.69695 sFT	Y -5,549,590.56041 M	N 10,633,271.76717 sFT	N 3,241,027.71669 M
Z 9,904,658.11427 sFT	Z 3,018,945.83112 M	E 1,605,720.06190 sFT	E 489,424.45371 M

NAD 83 (2011) epoch 2018.000

Geodetic Position***		State Plane Coordinates**	
Latitude	28° 26' 04.42238" N	State Plane Zone FL E	
Longitude	81° 22' 56.88197" W	N 1,490,893.08482 sFT	N 454,425.12110 M
Ellipsoid	9.372 M	E 533,246.51076 sFT	E 162,533.86155 M
Geocentric Position**		**UTM Position****	
X 2,759,291.68133 sFT	X 841,033.78654 M	UTM Zone 17	
Y -18,207,281.70775 sFT	Y -5,549,590.56370 M	N 10,319,539.90738 sFT	N 3,145,402.05457 M
Z 9,904,658.13877 sFT	Z 3,018,945.83859 M	E 1,517,538.45069 sFT	E 462,546.64486 M

* NAVD 88 Orthometric Heights were calculated using Infinity software published by Leica Geosystems.
** Geocentric Positions, State Plane Coordinates, and UTM Positions were calculated using Infinity software published by Leica Geosystems.
*** NAD 83 (2011) epoch 2018.000 Geodetic Positions were calculated using Horizontal Time Dependent Positioning (HTDP) software published by National Geodetic Survey (NGS).

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Reminiscences of an Old Surveyor

Other Equipment

Part II

Knud E. Hermansen, PLS, PE, PhD, Esq.

Read Part I

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 scriber. The scriber 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 myler. 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 that 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 surveyors 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.

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 tech-

nique 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 were 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 on to 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 tim-

ing, 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 light weight 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.

Did you Ever WONDER Why?

Michael Whitling, PSM

Why is the candy in a PEZ dispenser called "PEZ?"
Ever wonder what the "PEZ" in PEZ candy stands for? Well, wonder no more. "PEZ" derives from the German word for peppermint, "pfefferminz." PEZ started out as a peppermint breath mint company in Vienna, Austria in 1927, originally sold in tins, and later, starting in the late 1940s, in the now iconic PEZ dispensers. These dispensers were originally in the form of a cigarette lighters, which the company states was to market their bricks as "anti-smoking" mints. It wasn't until 1952 that PEZ made their way to the United States. In that year, the first U.S. PEZ headquarters was established in New York City. Despite PEZ's success in Europe, Curtis Allina, the first president of PEZ in the U.S., found the candy difficult to sell because of the strong peppermint flavor. So, in an attempt to draw children to the brand, PEZ came up with the idea to create fruity flavored versions and cute, character-themed dispensers.

Why is paper money green?
In 1861, as a means of financing the American Civil War, the federal government began issuing paper money for the first time. These new bills circulated by the U.S. government came to be known as greenbacks because their back sides were printed in green ink. This ink was an anti-counterfeiting measure used to prevent photographic knockoffs, since the cameras of the time could only take pictures in black and white. In 1929, the government shrunk the size of all paper money (in order to cut down on manufacturing costs) and instituted standardized designs for each denomination, which made it easier for people to tell real bills from fakes. The small-sized bills continued to be printed with green ink because, according to the U.S. Bureau of Printing and Engraving, the ink was plentiful and durable and the color green was associated with stability

Why is the inside front of a car called a "dashboard?"
"Dashboard" originally applied to a barrier of wood or leather fixed to the front of a horse-drawn carriage or sled to protect the driver from mud and rocks "dashed up" (thrown up) by the horses hooves. When the first horseless carriages were built in the late 1800's, the engine was mounted underneath the drive and the "dashboard" protected the occupants from debris thrown up by the cars' front wheels. Eventually the engines where moved forward of the driver and the dashboard then protected the passengers from the heat and oil of the engine. Shortly after, the word "carriage" was shortened to "car"; the term "instrument panel" replaced "dashboard"; and windshields were developed to guard drivers and passengers from light debris. Still, the term "dashboard" has never quite disappeared.

Quick Facts:

⇒Today, there is some $1.2 trillion in coins and paper money in circulation in America. It costs about 5 cents to produce every $1 bill and around 13 cents to make a $100 bill, the highest denomination currently in circulation. The estimated life span of a $1 bill is close to six years, while a $100 bill typically lasts 15 years. The $50 bill has the shortest average life span: 3.7 years.

⇒Currency paper is composed of 75 percent cotton and 25 percent linen. It would take about 4,000 double folds (first forward and then backwards) before a note will tear.

⇒Surprisingly for a product made up almost solely of pure sugar, a typical serving size of cotton candy only contains about 30 grams of sugar (about 115 calories). This is actually about 9 grams less sugar than a 12 ounce can of Coca-Cola (39 grams of sugar / 140 calories).

⇒For a product to be labeled "Made in the USA" the Federal Trade Commission requires that at least 70 percent of the parts and labor come from the United States.

⇒The FBI's fingerprint database is the largest in the world. It receives 34,000 new fingerprint cards a day.

⇒Not only did the ancient Egyptians give us pyramids and flush toilets, they also pioneered the field of deodorants. Egyptians were the first to popularize the idea of applying scents to armpits, usually using cinnamon and other spices that wouldn't turn rancid in the heat.

⇒On its first night of operation in 1982, the UPS Worldport facility processed 2,000 packages. It now handles that number in 30 seconds.

⇒In the 1960 Olympic Winter Games in Squaw Valley, California, officials were unsure if a skier had missed a gate in the men's slalom. They asked a broadcaster if they could review the videotape and the "instant replay" was born.

⇒The metal instrument used in shoe stores to measure feet is called the Brannock device.

⇒Be thankful for your body odor. According to anthropologist Louis Leakey, it might be responsible for early man's survival. Leakey's theory claims that most predators avoided feasting on humans because our body odor was "too repugnant."

⇒On June 19th, 1885, the French frigate "Isere" delivered the Statue of Liberty to the United States. For transit, it was broken down into 350 pieces and packed into 214 crates.

⇒The linen bandages that were used to wrap Egyptian mummies averaged 1,000 yards in length.

⇒The tuna's ultra-efficient swimming ability has inspired the U.S. Navy to commission construction of a robotic tuna for surveillance missions

⇒During the Spanish-American War at the end of the 19th century, mosquito-induced yellow fever killed 13 American soldiers for every 1 who died in combat against the Spanish army in Cuba.

⇒When yellow fever raced through Memphis in 1878, 25,000 residents fled, leaving behind a city empty of nearly everything but corpses strewn about the streets. The only reason Jacksonville's 1888 epidemic didn't lead to a similar exodus was that neighboring cities blocked the roads so no one could leave. Despondent city officials burned the hotel where the first victim had taken ill.

Send your thoughts to drmjw@aol.com

IN MEMORIAM

Charles A. O'Quinn III

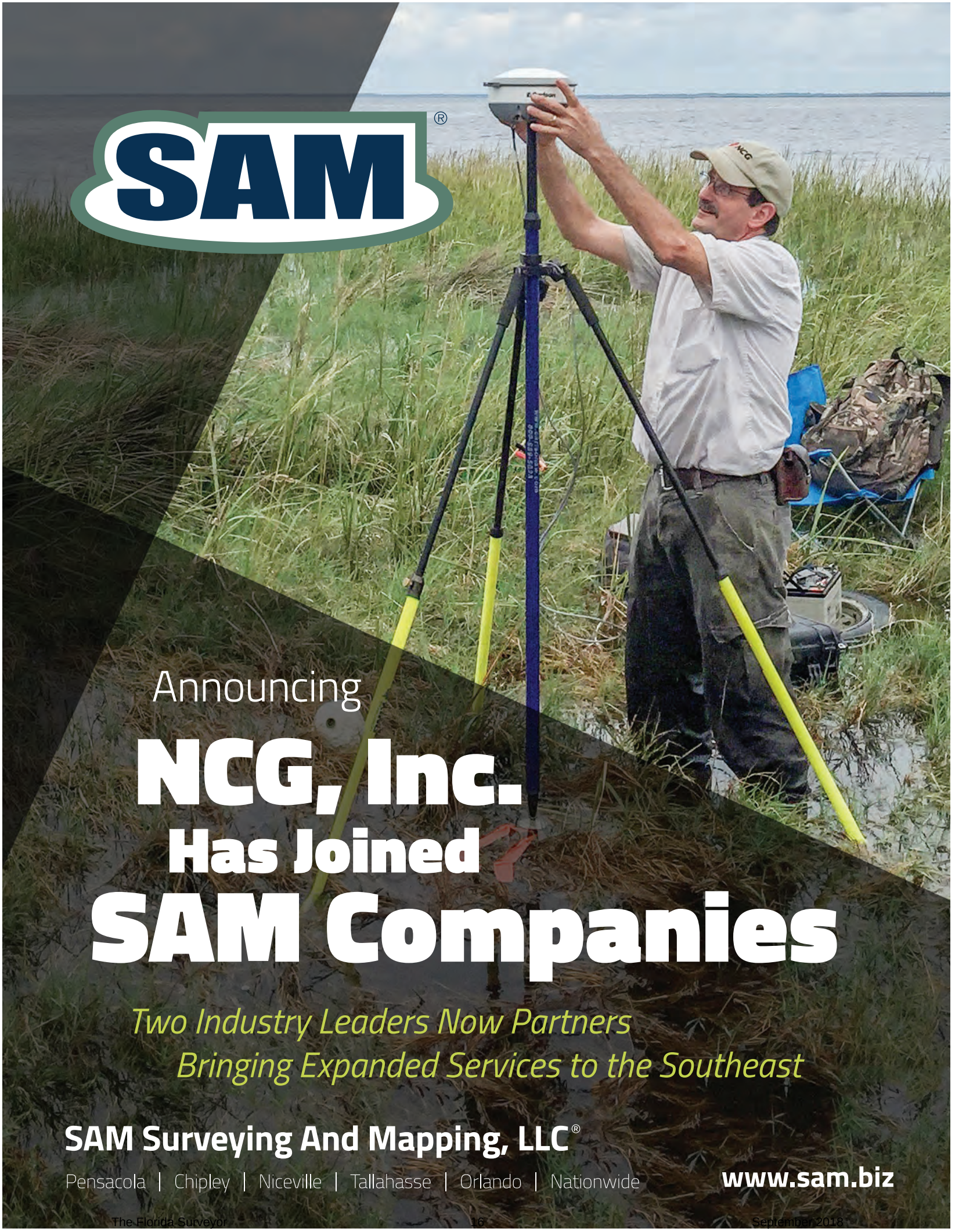
February 4, 1933 - July 23, 2018

Charles A. O'Quinn III, age 85, born and raised in Sarasota, passed away on Monday July 23, 2018. Charles was born February 4, 1933 to the late Charles A. O'Quinn, Jr. and Mary Ann Curry O'Quinn.

Charles served in the United States Air Force. He was a Professional Land Surveyor. He started his career at Mosby Surveying as a rodman. He then joined Smally, Wellford & Nalven, Inc. in 1956 and was elected a Principal in 1968.

He was a co-founder of the Manasota Chapter of the Florida Society of Professional Land Surveyors and served two terms as president of the group. For several years, in cooperation with the National Geodetic Survey, he devoted much time to a program in electronic procedures, making Florida the first state to establish a network of base lines for uniform calibration of electronic distance measuring equipment. He was named Surveyor of the Year in 1977, partly for his work as chairman of a Society committee responsible for passage of a bill known as the "Florida Public Land Survey Restoration and Perpetuation Act". After a brief retirement, he went to work as a consultant at Kimley-Horn, Inc. He retired in 2007.

He was beloved, admired and respected by his family. Surviving are his children; Patricia O'Quinn Lane(Thomas), Debra O'Quinn, Tina O'Quinn and Charles O'Quinn IV(Tina), all of Sarasota; his grandchildren; Bryan Stubbings, Jamie O'Quinn, Christopher O'Quinn, Jesse O'Quinn and Chelsea O'Quinn, his great-grandchildren; Izayiah, Khloe and Cash. Charles is preceded in death by his wife of 56 years, Betty McMichael O'Quinn, sister Shelly Thompson and his grandson, Shaun O'Quinn.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INDIVIDUAL = $100
Breakfast & Lunch Included

Honor Flight TALLAHASSEE

REGISTER AND MAIL YOUR CHECK TODAY

Registration Deadline is October 10

PLEASE PRINT

Shooter 1/Team Captain:_____

Email:_____

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10 shooting station event. Sort of like golf. Each person on your team shoots 10 times and moves to the next station.

Station sponsorships are available for $150 per station or if you don't want to sponsor, but would like to donate to a charitable fund.

Please email Chad Thurner for information.

Chad Thurner
Office: 850-385-1179
Cell: 850-200-2441
Chad.Thurner@SAM.BIZ

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Mail to: FSMS NW Florida Chapter
c/o Chad Thurner
2844 Pablo Ave
Tallahassee, FL

Proceeds go to Community Initiatives such as Honor Flight.

National Geodetic Survey *Positioning America for the Future* geodesy.noaa.gov

Issue 12, July 2018

NSRS Modernization News

For all issues of **NSRS Modernization News**, visit:
geodesy.noaa.gov/datums/newdatums/TrackOurProgress.shtml

Industry Workshop

On May 7-8, NGS hosted select industry partners for two days of focused discussion regarding the modernized NSRS. Based on these discussions, NGS will begin accelerating the creation of prototypes of various products and services that will support the 2022 modernization. These prototypes will enable industry partners to begin testing their implementation over the next year. Find related workshop materials and presentations on NGS' New Datums Industry Engagement web page.

Recent Decisions

Some critical decisions were made recently:

- The four terrestrial reference frames (TRFs) of the modernized NSRS will be defined relative to IGS 14.
- The reference epoch of the four TRFs, as well as that of GEOID2022 and other static components of NAPGD2022 will be 2020.00.

"Standard Operating Procedure"

NGS has held numerous internal discussions in an attempt to codify the exact operating procedures in 2022 and beyond. The decisions resulting from the discussions will be presented in "*Blueprint for 2022, Part 3: Using the modernized NSRS*". Answers to questions such as "will GNSS be required in a leveling survey?" and "how will NGS detect and correct a CORS position that is drifting from its predicted behavior?" are nearly finalized, and will soon be included in the draft form of Blueprint Part 3.

Progress in Ongoing Projects

There are currently 18 ongoing projects around NGS that directly related to NSRS modernization. Here are highlights from a select few:

- **xGEOID18**
  Project Manager: Dr. Yan Wang

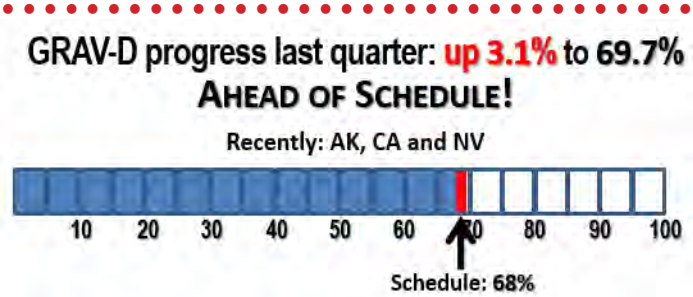
  New this year will be the release of the xGEOID in the areas of Guam/CNMI and American Samoa, as well as a companion deflection of the vertical model, xDEFLEC18.

- **Leveling in NAPGD2022**
  Project Manager: Kendall Fancher

  The mathematical model which will combine GNSS data and leveling data has been finalized and codified in the recently released NOAA Technical Memorandum NOS NGS 74: "*On Least-Squares Adjustments within the Variance Component Model with Stochastic Constraints*". This math model will be incorporated in the upcoming Leveling expansion to OPUS-Projects.

- **VERTCON 3**
  Project Manager: Dr. Dru Smith

  NGS has completed a complete re-build of the software needed to make VERTCON grids. Planned grids for VERTCON 3 include a re-build of the NGVD29/NAVD88 grid in CONUS, as well as a first-of-its-kind transformation grid for these same datums in Alaska. We're also investigating transformations between local tidal datums and official NSRS vertical datums in various island territories. Once in place, these new transformations will be added to the NGS toolkit and be used to create prototype transformations between current vertical datums andcurrent vertical datums and NAPGD2022.



63rd Annual FSMS Conference

August 15-18th
TradeWinds Island Grand Resort
St. Pete Beach, FL

"Footprints behind…Horizons ahead"

The 2018 FSMS Board of Directors.

The FSMS Staff at the Registration Desk.

Music Night, a conference tradition.

Executive Director Tom Steckler with Jared De Sane and Joe Romano of Langan.

Nancy Rieth taking advantage of the Tiki Bar.

Welcome BBQ and Corn Hole Tournament

Wednesday, August 15th

President Bob Strayer headed up the Manasota BBQ team.

Justin Ferrans, head of the Tampa Bay BBQ team, putting the finishing touches on a filet of grilled grouper.

Bob Dye showing off some shrimp.

Alex Parnes and Mike Zoltek at the BBQ dinner.

Catherine Bosco and Hal Peters.

Kevin Randolph, Joe Shatto, and Dean Cole.

Ed and Brandy Wackerman.

Danny and Julie Williams.

Russ Browning, Steve Burkholder, Jack Breed, President Bob Strayer, and Philip Browning.

There were smiles all around at the BBQ dinner.

Oscar Pittman, John Clyatt, and Jeff Cooner judging the BBQ dishes.

The Manasota team took home the Golden Fish award (again) this year.
L to R: President Bob Strayer, Billy and Cindy Knight, Steve Burkholder.

Richard Malloy with impeccable form.

Steve Burkholder, Lou Campanile, Jr. , and Leo Mills.

President Bob Strayer and his son-in-law, C.J. Sunderman, were gracious in defeat to students Thomas DiMauro and Daniel Hutton.

Executive Director Tom Steckler showing the Corn Hole champions how to properly display their winnings.

From the UF Geomatics program: Professor Bon Dewitt with students Daniel Hutton, Charles Schreiner, Anissa Williston, Thomas DiMauro, and Joshua Misura.

Exhibitor Reception

Thursday, August 16th

Mandy Clayton and Tom Corbett from eGPS.

Fred Bachman and Paola Tardiff from Bowman Consulting, with Frank Paruas of GPI.

Joe Di Benedetto, Fabian Cuervo, and Tan Nguyen.

Monojit Dutta Gupta of G-Source.

Pam Chesler and Tammy Mehl from AGS.

Brian Dean of Sunshine 811.

Fishing and Golf Tournaments

Thursday, August 16th

Ryan Case tees off during the golf tournament.

Jack Breed holding up the artwork for largest seatrout, which his son Jacob won.

The golfers eating lunch (with a great view) after the tournament.

Steve Burkholder with the trophy for largest snook, and Justin Ferrans with the trophy for largest redfish.

The anglers had a beautiful day on the water.

The golf hole sponsor signs lined up on the beach.

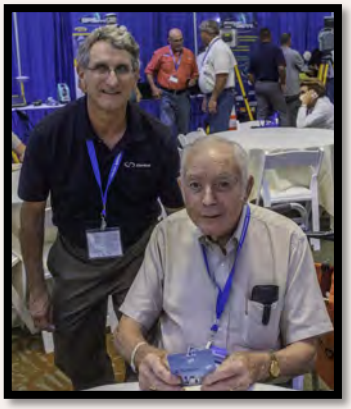
Exhibit Hall Grand Opening

Friday, August 17th

Vice President Tom Brownell and President Bob Strayer cutting the ribbon to open the Exhibit Hall.

Russ Browning with Rogers, Gunter, Vaughn Insurance.

Steven Levine and Rohland Bryant of Public Works Academy, with Pinellas Technical College.



Jeff Cooner with Oscar Pittman.

Elke and Ralph Lengemann of ... Lengemann!

The virtual sandbox, assembled by Earl Soeder of the Geospatiaul Users Group, was a hit.

Exhibit Hall Grand Opening

Friday, August 17th

Tammy Peterson with Solv3D.

Trey Swann and Daniel Katz of Aerotas.

Cathy Campanile with Jim Sullivan, after Jim won a vintage framed newspaper donated by NSPS in the Exhibit Hall raffle.

Stephen Shawles and Jeff Cooner.

Tom Derry and Ahmed Mohammed of Geomatics USA.

Cathy Campanile with Wendi McAleese of AGS.

Recognition Banquet

Friday, August 17th

President Bob Strayer gave a nice FSU hat (and hair) to Executive Director Tom Steckler.

President Strayer sure does look a lot like someone else...

Tony Bazile and Cathy Campanile, after Tony won free registration to next year's conference.

Comedian Les McCurdy provided entertainment for the night.

Awards and Honors

Associate Member of the Year

Matt Simpson

Earle J. Fennell Award

NSPS award presented to distinguished educator

Bon Dewitt

Jim Bennett
Board Member of the Year

Don Elder

Perry C. McGriff Award
Outstanding Civic Contribution

Bob Strayer

Committee Chair of the Year

John Clyatt

H.O. Peters Surveyor of the Year

Bob Strayer

Awards and Honors

Fellow Member

Dianne Collins

Honorary Member

Don Wilson

Life Member & Professional Excellence Award

Allen Nobles

Professional Excellence Award

Rick Pryce

Awards and Honors

Small Chapter of the Year

Indian River
Accepted by Brion Yancy

Large Chapter of the Year

Central Florida
Accepted by Allen Quickel

President's Award

Dianne Collins

President's Award

Dominic Levings

President's Award

Rick Pryce

Chapter President of the Year

Earl Soeder of Broward Chapter

Special Recognition

Dianne Collins and Lisa Van Horn

Dianne Collins (left) will be the first-ever female President of FSMS. She begins her term in January 2019.

Lisa Van Horn will be only the third female President in the history of NSPS, and also begins her term in 2019.

Oscar Pittman

Oscar Pittman, LS1748 of Pensacola, has now attended 58 straight FSMS conferences. He attended his first conference in 1961, the year he became a licensed surveyor.

To read a feature on Pittman from the February edition of *The Florida Surveyor*, click here.

Thank you for your continued support Oscar!

Joe Boyle

We would like to thank Joe, a member of the Tampa Bay Chapter, for volunteering his time to take great pictures all week!

Thank You

To the following chapters for their generous donations:

FSMS Scholarship Fund

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Sunshine 811

Don Wilson & George Cole Book Signing

Superior Surveyor Services

Woolpert

SAM

Xact Supply

SurveyStars

Florida Surveying and Mapping Society

2018 eLearning Courses

Basics of Real Property Course #8360 (3 General CEC)

$ 70.00

Boundaries in Florida Course #8255 (6 SOP/L&R CEC)

$ 120.00

Contracts for the Professional Course #8412 (3 General CEC)

$ 70.00

Elevation Certificates and the Community Rating System Course #8256 (3 General CEC)

$ 70.00

Ethics for the Design Professional Course #8621 (6 General CEC)

$ 120.00

Florida Laws Course #7149 (6 SOP/L&R CEC)

$ 120.00

Professional Ethics and Professional Courtesy FULL Video Course #8363 (6 General CEC)

$ 120.00

Georgia Technical Standards for Property Surveys Course #8554 (6 General CEC)

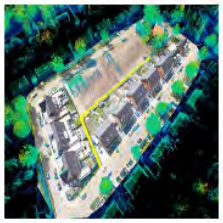
$ 120.00

History of Surveying Course #7140 (6 General CEC)

$ 120.00

Identification of Native and Non-Native Trees in Florida Course #8132 (6 General CEC)

$ 120.00



Introduction to Photogrammetry Course #7968 (3 General CEC)

$ 70.00

Land Tenure and Cadastral Systems Course #8260 (6 General CEC)

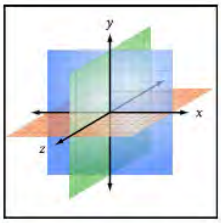
$ 120.00

Map Projections and Plane Coordinate Systems Course #8261 (6 General CEC)

$ 120.00

Mean High Water Observations & Computations Course #8262 (6 General CEC)

$ 120.00



Practical Geometry for Surveyors Course #7141 (6 General CEC)

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Public Land Survey System Course #7147 (6 General CEC)

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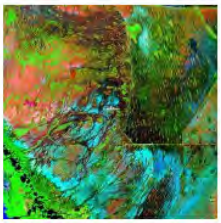

Remote Sensing Applications to Surveying & Mapping Course #7148 (6 General CEC)

$ 120.00

Writing Boundary Descriptions Course #8362 (3 General CEC)

$ 70.00

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Step 1: Choose Course(s)

☐ **5J-17 Standards of Practice (SOP)**, #6962, 6 SOP/L&R CEC

☐ **A History of the Prime Meridian Marker**, #8403, 3 General CEC

☐ **Basics of Real Property**, #8359, 3 General CEC

☐ **Boundaries in Florida**, #7667, 6 SOP/L&R CEC

☐ **Chapter 177, Platting (Plat Law)**, #6970, 6 SOP/L&R CEC

☐ **Client Satisfaction Excellence for Surveying and Mapping Professionals**, #7229, 6 General CEC (*Only available by mail)*

☐ **Contracts for the Professional**, #8411, 3 General CEC

☐ **Critical Communication for Surveying & Mapping Professionals**, #7228, 6 General CEC (*Only available by mail)*

☐ **Digital Signatures for Surveyors**, #8491, 3 General CEC

☐ **Elevation Certificates and the Community Rating System**, #8257, 3 General CEC

☐ **Ethics for the Design Professional**, #8620, 6 General CEC

☐ **Florida Laws**, #6966, 6 SOP/L&R CEC

☐ **Georgia Technical Standards for Property Surveys,** #8553, 6 General CEC

☐ **Geographic Information Systems (GIS)**, #7107, 6 General CEC

☐ **History of Surveying**, #7108, 6 General CEC

☐ **Identification of Native and Non-Native Trees in Florida**, #7874, 6 General CEC

☐ **Introduction to Photogrammetry**, #7887, 3 General CEC

☐ **Land Tenure and Cadastral Systems**, #7829, 6 General CEC

☐ **Map Projections and Plane Coordinate Systems**, #7669, 6 General CEC

☐ **Mean High Water Observations and Computations**, #8220, 6 General CEC

☐ **Practical Geometry for Surveyors**, #7109, 6 General CEC

☐ **Public Land Survey System**, #6979, 6 General CEC

☐ **Remote Sensing Applications to Surveying & Mapping**, #6972, 6 General CEC

☐ **Stress Management for Surveyors & Mappers: How to be Productive Under Pressure**, #6902, 6 General CEC (*Only available by mail)*

☐ **Time Management for Surveyors & Mappers: How to be Productive & Exercise Time Mastery in A Hectic World**, #6901, 6 General CEC (*Only available by mail)*

☐ **Writing Boundary Descriptions**, #8361, 3 General CEC

Correspondence Courses Order Form

Step 2: Choose Member Type

☐ **FSMS Member**

EMAILED			**Quantity**		
6 CEC	$115 Per Course	x	_____	=	$ _____
3 CEC	$58 Per Course	x	_____	=	$ _____
MAILED					
6 CEC	$125 Per Course	x	_____	=	$ _____
3 CEC	$68 Per Course	x	_____	=	$ _____
	TOTAL		_____		$ _____

☐ **Non-Member**

EMAILED	**Fee**		**Quantity**		**Amount**
6 CEC	$135 Per Course	x	_____	=	$ _____
3 CEC	$78 Per Course	x	_____	=	$ _____
MAILED					
6 CEC	$145 Per Course	x	_____	=	$ _____
3 CEC	$88 Per Course	x	_____	=	$ _____
	TOTAL		_____		$ _____

☐ **Non-Licensed in ANY State**

EMAILED	**Fee**		**Quantity**		**Amount**
6 CEC	$100 Per Course	x	_____	=	$ _____
3 CEC	$60 Per Course	x	_____	=	$ _____
MAILED					
6 CEC	$110 Per Course	x	_____	=	$ _____
3 CEC	$70 Per Course	x	_____	=	$ _____
	TOTAL		_____		$ _____

Step 3: Payment Information

Name: _____ PSM#: _____ State: ____ FSMS Member: ___ YES ___ NO

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Card #: _____ Exp. Date: _____ Card CVV Number (3 or 4 Digits) _____

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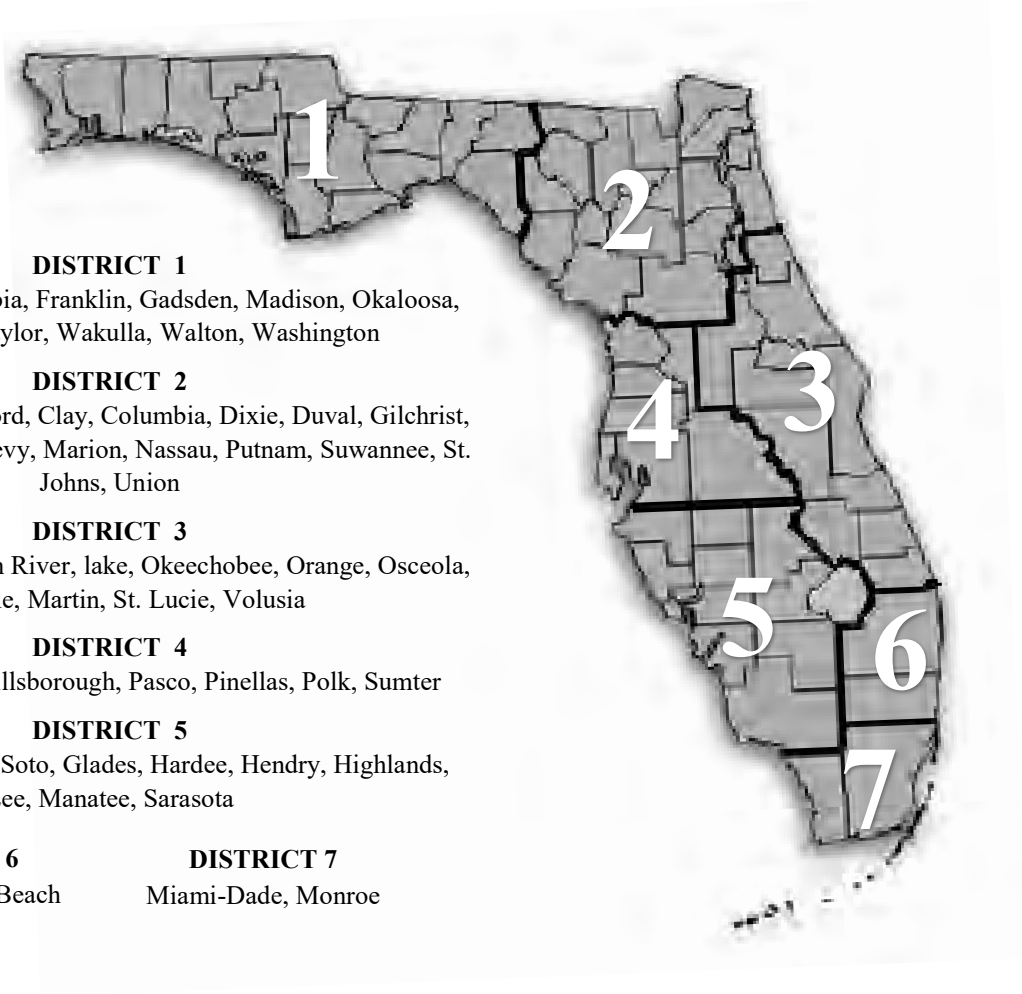

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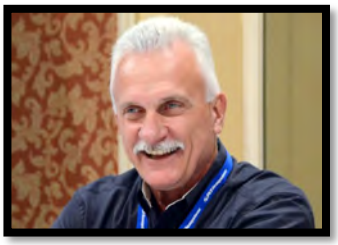

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Rebecca Culverson

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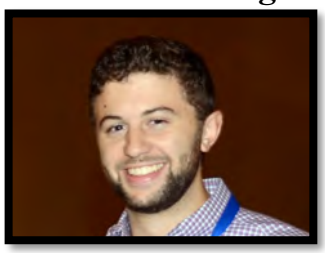

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Cathy Campanile

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Tom's Tip of the Month

Inspiration from Lou Holtz

Click on the picture below to view the video!

The Florida Surveyor is the official publication of the Florida Surveying and Mapping Society, Inc. (FSMS). It is published monthly for the purpose of communicating with the professional surveying community and related professions who are members of FSMS. Our award winning publication informs members eleven months of the year of national, state, and district events and accomplishments as well as articles relevant to the surveying profession. The latest educational offerings are also included.

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Benchmark Surveying & Land Planning, Inc. 850-994-4882	Beta Company Surveying, Inc. 941-751-6016
Betsy Lindsay, Inc. 772-286-5753	Biscayne Engineering Company, Inc. 305-324-7671

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BSE Consultants, Inc. 321-725-3674	Buchheit Associates, Inc. 407-464-2118
Burkholder Land Surveying, Inc. 941-209-9712	Bussen-Mayer Engineeering Group, Inc. 321-453-0010
C & M Road Builders, Inc. 941-758-1933	Calvin, Giordano & Associates, Inc. 954-921-7781
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CivilSurv Design Group, Inc. 863-646-4771	Clary & Associates, Inc. 904-260-2703
Clements Surveying, Inc. 941-729-6690	Collins Survey Consulting, LLC 863-937-9052
Compass Engineering & Surveying, Inc. 727-822-4151	Compass Point Surveyors 954-332-8181
Control Point Associates 908-688-0099	County Wide Surveying, Inc. 850-769-0345

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Craven-Thompson & Associates, Inc. 954-739-6400	Cross Surveying, LLC 941-748-8340
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DMK Associates, Inc. 941-475-6596	Donald W. McIntosh Associates, Inc. 407-644-4068
Donoghue Construction Layout, LLC 321-248-7979	Douglass, Leavy & Associates, Inc. 954-344-7994

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Engineering Design & Construction, Inc.	772-462-2455	England , Thims & Miller, Inc.	904-642-8990
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Geomatics Corp.	904-824-3086	Geomni, Inc.	904-758-2601
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Kuhar Surveying & Mapping, LLC 386-672-0002	L & S Diversified, LLC 407-681-3836
Landmark Engineering & Surveying Corporation. 813-621-7841	Leading Edge Land Services, Inc. 407-351-6730
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STRAYER SURVEYING & MAPPING INC.	Strayer Surveying & Mapping, Inc. 941-497-1290	Suarez Surveying & Mapping	Suarez Surveying & Mapping, Inc. 305-596-1799
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Upcoming Events

September 22, 2018
CST Exam
West Palm Beach

October 4-5, 2018
FSMS Board and Committee Meetings
Tallahassee

October 13, 2018
NW Florida Chapter Charity Clay Shoot
Tallahassee

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R.H. Jones	**1980**	**2000**
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