

# THE MAINTENANCE BEACON

The Monthly Newsletter of the North Carolina Public School Maintenance Association

Volume 60, Number 3  
March 2023

## Contents

Potholes in Asphalt Pavement..... 4  
School Shootings Continue to Rise ..... 4  
Western Convention Important Information ..... 5  
Western Convention Individual Registration ..... 6  
Western Convention Multiple Registration ..... 7  
Western Convention Tentative Agenda..... 8  
Variable Speed Pump Control Part Two ..... 9  
Membership Application ..... 9  
District Seven Scholarship Application.....11  
St. Patrick's Day .....12

## Meet Ira Wade



Ira Wade



Vickye and Ira Wade

Ira J. Wade, Jr. is the Assistant Maintenance Director for Duplin County Schools. He has worked for Duplin County Schools for nineteen years and has been in the Maintenance Department for seventeen years. He has been a member of the North Carolina Public School Maintenance Association for seventeen years and is one of our trusted advisors on the Advisory Council.

Duplin County is in the beautiful coastal plain region of North Carolina. The county seat is Kenansville which was incorporated in 1852 and named for James Kenan, one of the town's founders.

Duplin County Schools consists of thirteen public schools that include seven K-8 schools, one K-6 school, four traditional high schools, and an early college high school.

Ira stated that the most challenging part of his job is responding to the many diverse requests from the schools within his district, but what he loves most about his job is that there is never a dull moment.

Ronald Moore, Director of Maintenance for Duplin County Schools said, "As our assistant maintenance director Ira Wade helps deliver instructions and explains our department's expectations with purpose. He has good communication skills and listens well in meetings with our colleagues. He expresses his opinion clearly, carefully, and objectively. Ira helps me hold our maintenance staff accountable for their own performance and achievements. Ira is also very punctual and is always here when we need him."

Born and raised in Duplin County, he is married to Vickye Wade. They have a son Ryan. Their daughter Elizabeth, passed away three years ago and Vickye and Ira are raising their beautiful granddaughter, Amirraa.

*continued on page 3*

## Deadly Mistakes Fatal Event January 19, 2019

By Judyth Forte, State Plan Coordinator

**Fatal Event:** On Jan. 19, 2019, a 48-year-old man died from blunt force trauma to the head after he fell approximately 17 feet from the roof of a two-story multifamily building while attempting to install gutter guards.

**Investigative Findings:** A subcontractor had been hired to install gutter guards on aluminum seamless gutters that were attached to a multilevel 6/12 pitch asphalt shingled roof. The subcontractor was cutting, placing, and securing five-foot-long sections of gutter guard. The installation process was supposed to involve employees working from two aluminum extension ladders that were to be placed against the wall of

*continued on page 3*

## Meetings and Events

15<sup>TH</sup> ANNUAL NCPSMA WESTERN CONVENTION/WORKSHOP

May 24 and 25, 2023

Johnson Springs Convention Center, Ridgecrest, NC  
For more info please contact Krisite Payne at 828.565.0115 or office@ncpsma.org

51<sup>ST</sup> ANNUAL NCPSMA EASTERN CONVENTION/WORKSHOP

September 26-29, 2023

DoubleTree by Hilton Atlantic Beach  
For more info please contact Krisite Payne at 828.565.0115 or office@ncpsma.org

## INDEX OF ADVERTISERS

ACI Systems ..... 6  
Atlantic Coastal Supply, Inc. .... 7  
Davidson Sash & Door ..... 5  
D.H. Bruch Marketing, Inc. .... 5  
Duro-Last Roofing ..... 6  
EduCon..... 3  
Floor Action ..... 10  
Hardware Distributors..... 6  
Hoffman & Hoffman ..... 7  
James M. Pleasants Co..... 9  
John Q. Bullard..... 10  
Ken Staley Co., Inc..... 5  
Lewis Boiler Supply ..... 10  
Loman Garrett..... 3  
Mannington Commercial..... 7  
Matt Marshall & Co..... 6  
Pinnacle Dryer Corp..... 6  
Reece, Noland & McElrath..... 10  
Richard K. Hunter & Co..... 5  
Royalwood ..... 5  
Saffelle, Inc..... 10  
Seating Safety Solutions..... 3  
Seven Oaks Doors & Hardware ..... 7  
Seven Oaks Supply Co. .... 6  
Sky Enterprises..... 7  
The Blind Butler/Premier Drapery ..... 9  
The Cook & Boardman Group ..... 2  
WC Rouse ..... 7

## Daylight Savings Time

Get ready to MOVE THOSE CLOCKS! Daylight Savings Time starts on **Sunday, March 12, 2023**, and ends on **Sunday, November 5, 2023**.

"Daylight Saving Time", usually abbreviated to DST, is the term used for the adjusted time in the United States and Canada. The time observed during the rest of the year is usually called "Standard Time." DST is the practice of setting the clock one hour ahead of standard time at the beginning of spring and moving it back one hour in fall. Many people have difficulty remembering which way the clock moves when the time changes - one easy way is to remember is the mnemonic "spring forward, fall back"!

On July 1, 1908, the residents of Port Arthur, Ontario

*continued on page 3*

## MEETING DATES

The districts of NCPSMA meet twice yearly.

### District 1

January, July

### District 2

January, July

Pres. Ronald Moore  
Phone: 910.296.1875

### District 3

February, August

Pres. Greg Woodard  
Phone: 252.399.7822

### District 4

February, October

Pres. Donna Fields  
Phone: 910.678.2565

### District 5

March, September

Pres. Justin Dyson  
Phone: 336.909.2280

### District 6

April, October

Pres. Chris Adkins  
Phone: 980.343.4526

### District 7

May, November

Pres. Jeff Adams  
Phone: 336.551.1109

### District 8

March, November

V. Pres. Jason Kelly  
Phone: 828.456.2402

### Meeting Dates & Locations

Should be sent to The Maintenance Beacon two months in advance for publication.

### Deadlines

Publication deadline for articles and advertisements is first day of the month prior to month of publication.





## PROUDLY SUPPORTING NCPSMA MEMBERS

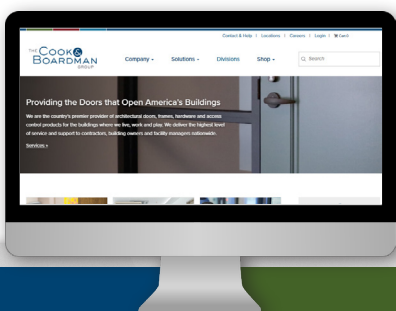
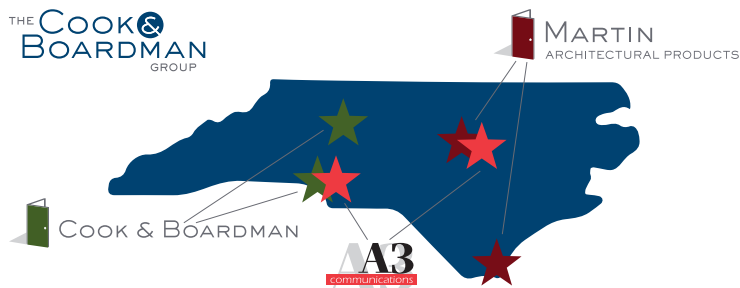
We're your premier provider of architectural doors and frames, door hardware and related building specialty products as well as complete system integration services including: physical security, enterprise networking, low voltage cabling and more!

### HELPING TO MAINTAIN NORTH CAROLINA'S SCHOOLS SINCE 1955

The Cook & Boardman Group of companies is your premier provider of integrated security solutions for building access control and occupant safety. We are the nation's largest distributor of commercial doors and hardware - and the sixth largest security systems integrator. With six convenient locations across the Tar Heel State, we're uniquely positioned to provide the best solutions for educational facilities. Allow us to offer you:

- Assessments
- Value engineering
- Specification review
- Project management
- Fire and life safety code compliance
- Installation, maintenance and service
- Product support/warranty management

To eliminate procurement headaches, choose our team to act as your single source for new construction and remodeling projects, as well as for any IT implementation. Contact your local branch to get started today!



Visit [www.COOKANDBOARDMAN.com](http://www.COOKANDBOARDMAN.com) to learn more about our group, find helpful resources and to place product orders.

### MEET YOUR LOCAL COOK & BOARDMAN TEAMS

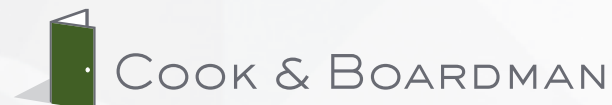


#### A3 Communications

Construction Divisions: 27 & 28

With offices in Charlotte and Raleigh, A3 Communications is one of the nation's leading systems integrators. Purchase both your IT and physical security needs from one of their many state contracts!

Contact: Kevin Wren | (803) 984-7007



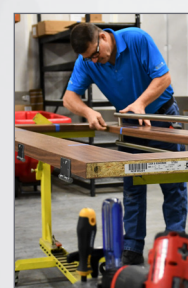
#### Cook & Boardman

Construction Divisions: 8 & 10

With offices in Charlotte and Winston-Salem, Cook & Boardman has provided architectural doors, frames and hardware across the state since 1955. Counter sales, pre-installation, fabrication, installation and service available!

Charlotte Office: Ron Hill | (704) 936-6508

Winston-Salem Office: Vernon Spence | (336) 462-1829



#### Martin Architectural Products

Construction Divisions: 8 & 10

With offices in Cary and Wilmington, Martin Architectural Products is the leading provider of architectural doors, frames and hardware in eastern North Carolina. Counter sales, installation and service available!

Cary Office: Ira Garner | (919) 868-6593

Wilmington Office: Kyle Praeuner | (402) 841-1345



# Daylight Savings Time

*continued from page 1*

(known today as Thunder Bay) turned their clocks forward one hour to start the world's first DST period. Other locations in Canada soon followed suit. However, the idea did not catch on globally until Germany introduced it in 1916 – two years into World War I. The rationale was to minimize the use of artificial lighting to save fuel for the war effort. Within a few weeks many other countries followed the idea, with most of them reverting to standard time after World War I. It wasn't until World War II that DST made its return to most of Europe.

DST became a national standard in the U.S. in 1966 with the passage of the Uniform Time Act. States either must change the clocks at a specified time or stick with standard time throughout the year. In 2007, the federal government expanded daylight saving time in an effort to reduce energy consumption. The law now specifies that daylight time applies from 2 a.m. on the second Sunday of March until 2 a.m. on the first Sunday of November. Daylight saving time now accounts for about 65% of the year. Federal law does allow states to remain in standard time all year; however, states must first obtain approval from Congress before making daylight saving time permanent in their respective states. Currently Arizona and Hawaii are the only states not observing DST.

The Department of Transportation says daylight saving time conserves energy. When the sun sets later, it's presumed that people will stay out longer and spend more time outside. Theoretically, that leads to less electricity for lights and appliances. Although not everyone agrees it offers energy-saving benefits. Some studies report the time switch saves energy on lighting but is surpassed by increases in heating and air conditioning. It can also mess with our sleep patterns, at least temporarily. Other health impacts consequences, according to various studies and research, include increased headaches, heart attacks and depression.

# Deadly Mistakes Fatal Event January 19, 2019

*continued from page 1*

the building. From the ladders the employees were to secure the gutter guards in place using a drill and self-tapping sheet metal screws. Once the guards were secured, they would climb down the ladders and move them on to the next section of gutters. On the day of the event, only two employees were at the site as it was a weekend. The two employees together decided that it would be easier for them to do the work from the roof. They climbed the ladders and got up on the roof. They separated and went to different sides of the roof. After working for a little while, one employee said he heard a noise and when he looked up his coworker was no longer on the roof. He climbed down the ladder and saw his coworker lying motionless on the grass and called 911.

**Discussion:** The owner of the business said that all his employees were provided fall protection equipment and that it was always carried in the work trucks. He said he did not provide training, but staff knew when and how to use them based on their "experience." Providing fall protection equipment doesn't mean that the employer's safety and health obligations have been met. In addition to providing appropriate equipment, employers must train each employee on the proper use of the equipment. No equipment, tools, or personal protective equipment (PPE) should be given to employees without proper training and instruction to ensure their correct and safe use. Employees need to be familiar with the equipment and when and how to use it. The employee that was working at the time of the incident said they were supposed to work from ladders, but periodically supervisors would ask them to get up on the roof "maybe three times in the past six months. It depended on the roof layout of the house."

A personal fall arrest system (PFAS) is designed to safely stop a fall before the worker strikes a lower level. The PFAS must be attached to a roof anchor which needs to be attached to a structural member by driving fasteners through the sheathing and into the rafter or truss member below. It is important to follow the manufacturer's instructions when installing anchorage. Each roof anchorage point must be capable of supporting at least 5,000 pounds or shall be designed, installed, and used as part of a complete PFAS with a safety factor of at least two and be used only under the supervision of a qualified person.

The PFAS has three major components: An anchorage to which the lanyard's snap hook is attached, a full-body harness worn by the employee and a connector, such as a lanyard or lifeline, linking the harness to the anchorage. PFAS typically use a shock-absorbing lanyard, a self-retracting lifeline, or a deceleration device. A PFAS must be used properly to be effective. To do this an employee would adjust the harness to fit snugly. The D-ring attachment for the harness should be centered between the employee's shoulder blades, and the leg straps should be adjusted until they are snug. Fall arrest systems must be designed and set up to prevent

*continued on page 10*

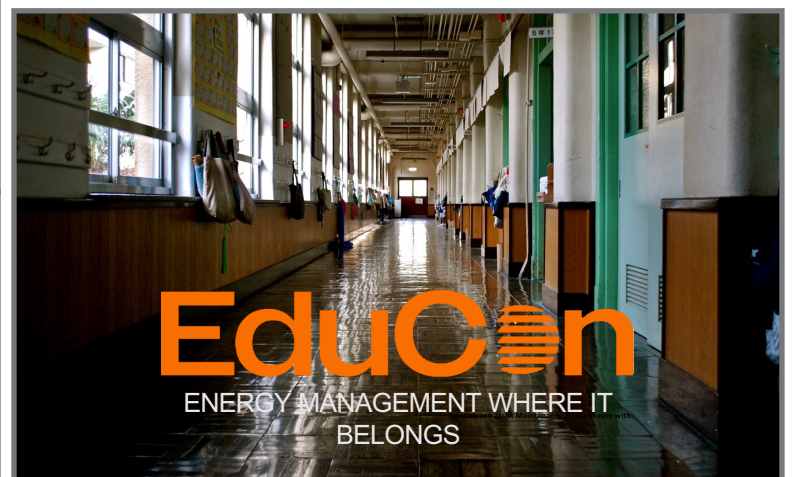
# Meet Ira Wade

*continued from page 1*

Ira graduated from Wallace-Rose Hill High School. He then went on to receive his Bachelor of Science in Mechanical Engineering for North Carolina A & T State University and his Master of Science in Information Systems Management from the University of Southern California. He was commissioned into the United States Air Force and retired with 20 years of service.

The Wades attend New Christian Chapel Missionary Baptist Church in Rose Hill, North Carolina where Ira is a deacon. His hobbies include running, lifting weights, and working around his house.

*By Kristie Payne  
NCPSMA Executive Director*



EduCon Inc.  
Winston-Salem, North  
Carolina  
336-409-4694  
info@educonenergy.com  
www.educonenergy.com

- EduCon can assist Maintenance Departments with:**
- ✓ Uploading existing utilities data, or creating a new utilities database in the EPA's Portfolio Manager
  - ✓ Enter information from monthly utilities invoices
  - ✓ Prepare monthly and annual reports that include summarized data analysis



## SEATING SAFETY SOLUTIONS, INC.

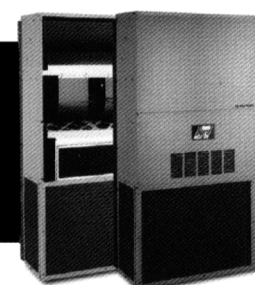
**The Carolinas' Largest Factory Backed Bleacher Service and Repair Company**

- Indoor/Outdoor Bleachers
- Grandstands
- Auditorium Seating
- Arena Seating
- Lecture Seating
- Basketball Backstops

(336)622-1678 • www.seatingsafetysolutions.com



## Wall Mount Equipment and Parts!



50% Quieter  
20% More Efficient  
And ... "Service Simple"

**Loman Garrett**  
Precision Climate Management  
**800-669-1761**



# Potholes in Asphalt Pavement

By Doug Buchanan, PE, LEED AP  
Wolf Trail Engineering, PLL

Potholes in asphalt pavement are a problem that affects everyone. Unfortunately, it seems after they are repaired, then they appear again next year. The average consumer that drives on the pavement – seeing the pothole and having to avoid it – on a regular basis is frustrated. The maintenance crew that maintains the pavement is frustrated. To make lasting repairs, we need to understand what is causing the potholes.

## What Causes Potholes?

1. Poor design/improper construction. Paved parking lots and roads are constructed in layers. The surface that users drive on – the asphalt – is just the top layer, and its durability is dependent on the layers beneath it: the base and subgrade/subbase. Improper design or construction of any of the layers (surface, base, or subbase) will lead to failures or premature deterioration, such as potholes.
2. Age/use & abuse. Asphalt deteriorates as it ages, and as it weakens, deterioration is accelerated. Some deterioration is inevitable, such as the asphalt losing its volatiles due to heat and rain. Some deterioration is preventable, such as damage caused by improper use or abuse. Cracks develop in the pavement, which can lead to any number of issues, including potholes.
3. Water. Water can damage pavement just like water can damage buildings – by getting inside. Water will cause the base and subbase to expand, weakening the compaction strength. Cracks in the asphalt will allow water into the layers beneath it. The water will penetrate downward, and sometimes the water will also move sideways. As the base and subbase (the supporting layers) lose strength, the asphalt will deflect more under load, often resulting in potholes.



*Improperly repaired potholes*

## How Can You Make a Pothole Repair Last?

To make lasting repairs, you need to know the extent of the excessive moisture and the condition of the base and subbase. The pothole and the area around the pothole should be excavated. As a rule of thumb, excavating below 24 inches is not practical, but there needs to be some field investigation to remove the unwanted materials to a feasible depth. Unwanted materials are any materials unsuitable for properly supporting the layer(s) above. Failing to remove the unsuitable materials will result in another pothole. Here are some things to look out for when excavating the pothole and surrounding area:

1. The base can be unsuitable for any of the following reasons: not compacted, high moisture content that will reduce the compaction of the stone, not enough stone for the anticipated loads, organic material in the stone (e.g., sticks, leaves).
2. Similarly, the subbase can be unsuitable for any of the following reasons: not compacted sufficiently, high moisture content that will allow the subbase to move under load, excessive organic material (e.g., sticks, leaves, or even soils with organic materials). Sometimes the subbase is composed of a high plastic clay that has a high percentage of fine material that does not allow water to pass through. Plastic clays are known to pump (move up and down when a vehicle drives over them) when they are wet. Plastic clays are unsuitable and normally gray in color.



*Properly repaired pothole*

Once the unwanted materials are removed, the subbase needs to be evaluated to determine if triaxle geofabric is needed to bridge over the material that remains. Then, the void can be filled with stone in lifts that can be compacted with the equipment onsite. The last step is to apply tack to the edges of the existing asphalt and to install and compact the new asphalt.

# School Shootings Continue to Rise

## Marjory Stoneman Douglas High School Five Years Later: School Shootings Continue to Rise

By Patrick V Fiel Sr.

Five years ago today, February 14, 2018, an expelled student entered Marjory Stoneman Douglas High School in Parkland, Florida and fatally shot 14 students, 3 staff members, and injured 17. It became the deadliest high school shooting in United States history.

At Robb Elementary School in Uvalde, Texas on May 24, 2022, a former student at the school fatally shot 19 students, 2 teachers, and injured 17. It is the third deadliest school shooting in the United States, following the Virginia Tech shooting in 2007 and the shooting at Sandy Hook Elementary in 2012.

There were 51 school shootings in 2022 that resulted in 40 deaths and 100 injured, the most in a single year by the data gathered by Education Week.

What is the answer? Do we have a problem with gun control? Do we have a problem with mental illness? The answer to both questions is yes. Nonetheless, the debate should not solely revolve around the Second Amendment or mental health. Anything emerging from those debates represents long-term fixes. What we need is a serious discussion about the proven solutions that will work today.

It is critical that school board members and their school superintendent take immediate action and implement a closed-campus policy and review their emergency/crisis plans and lockdown procedures. Schools need to hold safety/security drills with emergency responders, and practice responses to different emergency situations, e.g., active shooter.

It is impossible to predict where the next active school shooting will occur, yet all schools must be prepared to take preventative measures to mitigate damages from an active shooter.

Schools are soft targets; they are unique and have their own individual challenges (i.e., size, age, location, design/type of construction, etc.)

Through careful planning, it is possible for schools to develop a quality emergency crisis plan that meets their needs. As security experts, we work with schools, their staff, and local emergency responders to complete a thorough risk assessment, including an all-hazards approach of all their schools and properties.

A risk assessment pinpoints critical areas of vulnerability and will identify the security strengths, as well as any security weaknesses. The whole process is designed to reduce incidents and try to anticipate any emergencies that might occur at their school or campus. The results of these assessments serve as the initial phase to develop a course of action, a strategic plan.

One key component to the plan are teachers. Although, the fear among teachers who feel unsafe

*continued on page 10*



**WALKWAY COVERS**



**REPLACEMENT WINDOWS**



Phone 336-249-0276 Fax 336-249-7750

**Davidson Sash & Door, Inc.**  
1358 Piedmont Drive, Lexington, N.C. 27295-1952

**WEIL-McLAIN**  
Without compromise | 1881 |

Weil-McLain redefines heating all over again.



**Richard K. Hunter & Co.**  
Manufacturer's Agent  
3714 Alliance Drive, Suite 405, Greensboro, NC 27407  
712 West Lexington Ave., Suite 201, High Point, NC 27262  
PO Box 5105  
Call your distributor or visit [www.weil-mclain.com](http://www.weil-mclain.com) to learn more.



**BRUCH**  
MARKETING, INC.

**Door & Hardware Representatives**

(704) 588-5214

352 Crompton St.  
Charlotte, NC 28273

*Providing Great Service for 59 years*

**ABH Manufacturing**  
**Dormakaba, USA**

- Best Locks, Closers, Hinges & Exit Devices (PHI)
- dormakaba Closers, Locks, Exit Devices & Commercial Hardware

**FRP Architectural Doors**  
**National Guard Products**  
**Overly Door Company**  
**Phoenix Door Systems**  
**Security Door Controls**  
**Trimco Hardware**

# Western Convention 2023 Important Information

**15th ANNUAL NCPSMA WESTERN CONVENTION  
IMPORTANT INFORMATION FOR MEMBERS  
May 24-25, 2023**

**Hotel Reservations**

- Room reservations are to be made on an individual basis.
- Reservations should be made by calling Ridgecrest Reservations Department directly at 1-800-588-7222.
- Special room rates for this convention range from \$119 - \$139 (before taxes), depending on room type and room occupancy.
  - In order to receive the special convention rate, you must inform the Reservationist at the time of booking you are attending the "2023 NCPSMA Convention".

**NCPSMA 2023 Western Convention reservation block ends May 6, 2023, after which date rooms and room rates are not guaranteed.**

- A credit card will be required for booking your reservation.
- Individual reservation deposits require a one (1) night's room rental.
  - This deposit is refundable less a \$10 per room processing fee if canceling 60 or more days prior to arrival, one-half refundable if canceling 30-59 days prior to arrive, and non-refundable if canceling less than 30 days prior to arrival. Ridgecrest is not a "transient hotel" thus rescheduling of cancelled rooms requires greater advanced notice.
- Please be sure to inform Ridgecrest Reservationist of any special needs i.e. handicap accessible room or other special request at the time of booking.
- **Check-in time is 4:00 PM and check-out time is 10:00 AM.**
- **If paying by check, please make payable to Ridgecrest.**

**Meal Tickets**

- Meal Tickets can be purchased for \$35 per person (\$37 for debit/credit payments).
  - Meals included are:
    - Wednesday: Breakfast and Dinner
    - Thursday: Breakfast only
- Meal Tickets must be purchased through NCPSMA Executive Director Kristie Payne before May 8, 2023.
- Due to our Catering Cutoff date of May 8th, Meal Tickets **CANNOT** be purchased at the Convention.
- **A Buffet Lunch will be served Wednesday and Thursday, which is included in your event registration fee.**

**Ridgecrest Behavioral Standards**

Ridgecrest is a Christian Conference Center and in keeping with their mission, the following standards help to assume the comfort of all guests.

- Alcoholic beverages, illegal drugs, firearms, and fireworks are not permitted.
- The use of tobacco and tobacco related products are prohibited. A \$250 cleaning fee will be incurred per incident if this standard is violated.
- Burning of incense or candles is prohibited.
- As a courtesy to all guests, please observe noise curfew from 11:30 pm and 6:30 am.
- Immodest clothing, distasteful or offensive monograms/designs, bare feet in public areas, or any extreme style of dress is prohibited.
- Pets are not permitted in any Ridgecrest facility. However, service animals as defined by ADA regulations are permitted. ADA regulations define a service animal as "any dog that is individually trained to do work or perform tasks for the benefit on an individual with a disability, including physical, sensory, psychiatric, intellectual, or other mental disability." Per the US Department of Justice, "The crime deterrent effects of an animal's presence and the provision of emotional support, well-being, comfort, or companionship do not constitute work or tasks for the purposes of this definition." Such animals are not service animals and are therefore not permitted in any Ridgecrest facility.
- Ridgecrest is not responsible for lost or stolen possessions. Ridgecrest does not assume responsibility for damage or loss of any material articles prior to, during or following events.

**Royalwood Associates**  
Specialty Flooring

Serving North Carolina, South Carolina & Virginia for over three decades.

[www.royalwood.us](http://www.royalwood.us)  
919-957-3006







**Specializing in Wood & Synthetic Flooring  
Services for Public & Private Schools:**

- Annual Screening & Recoating
- Sanding & Refinishing
- Court line & logo painting, staining, tinting & design
- Resurfacing (pad & pour)
- Installation & design of new wood & synthetic floors

Gymnasiums, Weight Rooms, Dance Rooms, Stages, Running Tracks, Multi-purpose Rooms, etc.

For more information contact Greg Serpas at 336-707-9976 or [greg@royalwood.us](mailto:greg@royalwood.us)

## KEN STALEY COMPANY, LTD

4675 ROUTE 64 • BUILDING #16 • FRANKLINVILLE • NC 27248 • [www.bleacher101.com](http://www.bleacher101.com)

OFFICE: 336.685.4294 • FAX: 336.685.4242 • EMAIL: [bleacher101@hotmail.com](mailto:bleacher101@hotmail.com)

# BLEACHERS

## GYM & OUTDOOR

- Safety Inspection & Repair Work
- Annual Service Program Offered • Handicap Areas
- Full Power Electrical Systems • Portable Power Systems
- Safety Rails • Outdoor Seating Sales and Installation
- Authorized & Certified • Bleacher Installers
- Basketball Goals Installed and Repaired

MORE THAN 40 YEARS OF SERVICE

SEE US FOR  
ALL OF YOUR BLEACHER NEEDS!





**Duro-Last®; the most water, wind and worry-resistant roof in the business.**

Duro-Last's industry leading warranties are supported by prefabrication of roof panels and membrane accessories in a factory quality controlled environment. This eliminates up to 85% of field welding. Our highly trained technical field team inspects the field welded seams. Once you put a Duro-Last roof on, you can put it out of your mind.

**Edge-to-Edge & Deck-to-Sky™**

Bill Paynter 919-265-9045 Eastern NC  
 Jim English 980-875-8187 Western NC

**DURO-LAST**  
 THE WORLD'S BEST ROOF™  
 Visit [duro-last.com](http://duro-last.com) or call to find out more.

# 15th Annual NCPSMA Western Convention

## Individual Registration Form for Regular or Retired Regular Members

May 24-25, 2023 | Johnson Springs Conference Center at Ridgecrest | Black Mountain, North Carolina 28770

### IMPORTANT INFORMATION

- Regular or Retired Regular Members are currently employed and/or retired from the North Carolina Public School System
  - o Regular or Retired Regular Members wishing to attend the conference must be current members of NCPSMA.
  - o You can register online at [www.ncpsma.org](http://www.ncpsma.org) if paying with debit/credit or by mailing this form in with your payment.
  - o In order to expedite the Registration/Check-In process, please be sure to pay all fees **INCLUDING MEMBERSHIP FEE** prior to arrival to the Convention.
- Meal Tickets may be purchased for the Ridgecrest Dining Room.
  - o Meal Tickets include Breakfast and Dinner on Wednesday and Breakfast on Thursday.
  - o A Buffet Luncheon will be served on Wednesday and Thursday and is included with your conference registration.
  - o Meal Tickets **cannot** be purchased through Ridgecrest and **must** be purchased with your registration.
  - o There will be **no refunds** for missed meals.

### PLEASE PRINT

NAME				
SCHOOL SYSTEM / LEA				
ADDRESS				
CITY		STATE	NC	ZIP
TELEPHONE				
EMAIL ADDRESS				
INFORMATION NEEDED FOR RIDGECREST Please check one.		STAYING OVERNIGHT AT RIDGECREST		DAILY COMMUTER

Conference Fees: Please check all fees and items that apply and fill in blanks where appropriate.

DESCRIPTION	CASH OR CHECK	DEBIT OR CREDIT MUST BE PAID ONLINE	TOTAL
PREREGISTRATION Before May 1, 2023	1 x \$75.00	1 x \$78.00	\$
REGISTRATION After May 1, 2023	1 x \$85.00	1 x \$88.00	\$
MEMBERSHIP DUES	1 x \$20.00	1 x \$21.00	\$
MEAL TICKET <i>MUST BE PURCHASED IN ADVANCE BEFORE MAY 8, 2023</i>	1 x \$35.00	1 x \$37.00	\$
<b>There will be no refunds after May 1, 2023.</b>		<b>GRAND TOTAL</b>	<b>\$</b>

### Payment Information

**Checks:** Payable to NCPSMA and mail to NCPSMA, 224 Mulberry Street, Clyde, NC 28721  
**Credit/Debit Cards:** Pay online at [www.ncpsma.org](http://www.ncpsma.org). Click on the Convention Information Tab, then the Western Convention Tab and then the Regular Member Information Tab.

**M**  
**MATT MARSHALL & CO.**  
**M**

BOILER-BURNER / SALES & SERVICE  
 INDUSTRIAL EQUIPMENT & SUPPLIES  
 GREENSBORO, N.C.  
 PH: 336-292-8477 FAX: 336-299-0249  
 1-800-632-1274  
 Email: Sales@MMCO.net

*"Call us for your boiler room supplies."*

- ASCO "REDHAT" VALVES
- BACHARACH
- BELL & GOSSETT
- CONBRACO
- ELECTRODES
- FIREYE
- GAUGES
- HONEYWELL / RM 7800
- ITT GENERAL CONTROLS
- MAXITROL
- McDONNELL-MILLER
- SPIROTHERM
- THERMOMETERS
- TOPOG-E GASKETS
- TRANSFORMERS
- WATTS VALVES

WWW.MMCO.NET Email: Sales@MMCO.net  
 ★ Serving Industry Since 1954 ★  
 "Steam Is Our Specialty"



**DON'T REPLACE IT... RESTORE IT!**



**WE OFFER:**

- Cost effective installation
- Leak proof warranties
- Seamless roof systems
- Eco-friendly materials
- Energy Star products

**ADHERES TO:**

- Modified Bitumen
- Single-Ply (TPO & EPDM)
- Metal Roof panels
- Smooth Built-Up-Roof
- Spray Foam

(888) 233-5997 Greensboro, NC  
[www.roofsbyaci.com](http://www.roofsbyaci.com)  
 @RoofsbyACI



**PINNACLE**  
 DRYER CORPORATION

Vandal-Resistant  
 Automatic and Quiet  
 Touch-Free  
 Low Maintenance  
 Made in USA!



Call 844-518-0997 Statesville, NC  
[www.PinnacleDryer.com](http://www.PinnacleDryer.com)

**Hardware Distributors, LLC**  
 a Kendell Door & Hardware Company

Architectural Wood Doors, Hollow Metal Frames & Doors,  
 Washroom Accessories & Toilet Partitions  
 Installation service available

PO Box 16847  
 Greensboro, NC 27406  
 1-800-632-1324



**Seven Oaks**  
 SUPPLY COMPANY  
 CUTTING-EDGE CLEANING CONCEPTS

**YOUR #1 SOURCE FOR...**

- CUTTING-EDGE FLOOR CARE PRODUCTS
- RESTROOM CLEANING PROGRAMS
- ODOR CONTROL
- FLOOR CLEANING EQUIPMENT
- PAPER PRODUCTS & DISPENSERS

800-230-7460  
 OAKBORO, NC



**SEVEN OAKS DOORS & HARDWARE, INC.**  
www.SevenOaksHardware.com

Call us for all your doors, hardware, access control, and toilet partition needs.

Oakboro, NC  
**704-485-2014**

Authorized Security Center  
**ALLEGION**

# 15th Annual NCPSMA Western Convention

Multiple Registration Form for Regular or Retired Regular Members

May 24-25, 2023 | Johnson Springs Conference Center at Ridgecrest | Black Mountain, North Carolina 28770

**IMPORTANT INFORMATION**

- Regular or Retired Regular Members are those currently employed and/or retired from a North Carolina Public School System.
  - o Regular or Retired Regular Members wishing to attend the conference must be current NCPSMA members.
  - o You can register online at [www.ncpsma.org](http://www.ncpsma.org) if paying with debit/credit or by mailing this form in with your payment.
  - o In order to expedite the Registration/Check-In process, please be sure to pay all fees **INCLUDING MEMBERSHIP FEE** prior to arrival to the Convention.
- Meal Tickets may be purchased for the Ridgecrest Dining Room.
  - o Meal Tickets include Breakfast and Dinner on Wednesday and Breakfast on Thursday.
  - o A Buffet Luncheon will be served on Wednesday and Thursday and is included with your conference registration.
  - o Meal Tickets **cannot** be purchased through Ridgecrest and **must** be purchased with your registration.
  - o There will be **no refunds** for missed meals.

**PLEASE PRINT**

CONTACT PERSON				
SCHOOL SYSTEM / LEA				
ADDRESS				
CITY		STATE	NC	ZIP
TELEPHONE				
EMAIL ADDRESS				
INFORMATION NEEDED FOR RIDGECREST Please choose one.		STAYING OVERNIGHT AT RIDGECREST		DAILY COMMUTER

Conference Fees: Please check all fees and items that apply and fill in blanks where appropriate.  
**CREDIT CARD PAYMENTS MUST BE MADE ONLINE AT [www.ncpsma.org](http://www.ncpsma.org)**

ATTENDEE NAME	PRE-REGISTRATION Before May 1, 2023		REGISTRATION After May 1, 2023		MEMBERSHIP		MEAL TICKET <b>MUST BE PURCHASED IN ADVANCE BEFORE MAY 8</b>		TOTAL
	Cash/ Check ___ x \$75	Credit/ Debit ___ x \$78	Cash/ Check ___ x \$85	Credit/ Debit ___ x \$88	Cash/ Check ___ x \$20	Credit/ Debit ___ x \$21	Cash/ Check ___ x \$35	Credit/ Debit ___ x \$37	
									\$
									\$
									\$
									\$
									\$
									\$
									\$
									\$
									\$
									\$
									\$
									\$
									\$
									\$
									\$
									\$
									\$
									\$
<b>GRAND TOTAL</b>									\$

There will be **NO refunds** after May 1, 2023

**Payment Information**  
**Checks:** Payable to **NCPSMA** and mail to NCPSMA, 224 Mulberry Street, Clyde, NC 28721  
**Credit/Debit Cards:** Pay online at [www.ncpsma.org](http://www.ncpsma.org) and click on the Convention Information Tab, then the

**W.C. ROUSE & SON**  
BOILER ROOM EQUIPMENT & SERVICES

24 hours a day, 7 days a week

Our purpose is simple: **To leave every boiler room better than we found it.**

Offering:

- 24/7 Service
- Parts, for all Boiler Brands
- Boilers, of All Constructions
- Boiler Ancillary Equipment
- New, Used and Rental Equipment

Greensboro, NC 336-299-3035 | Charlotte, NC 704-583-4005 | sales@wrouse.com | wrouse.com  
Wilmington, NC 336-299-3035 | Columbia, SC 803-765-1477

**HOFFMAN & HOFFMAN, INC.**

## MAKING INDOOR AIR SAFER

HVAC system solutions to improve your indoor air quality and help protect building occupants.

Solutions from trusted manufacturer's like:

24/7/365 Parts Available  
(800) 332-2295

[www.hoffman-hoffman.com](http://www.hoffman-hoffman.com) (336) 292-8777

**Mannington COMMERCIAL**

Product Offerings

- Luxury Vinyl Tile
- Modular Carpet
- Broadloom Carpet
- Entrway Carpet
- Area Rugs
- Resilient Sheet
- Rubber Sheet & Tile
- Legato Liquid Linoleum
- Finishing Accessories

Please Reference:  
Floor Covering & Installation Services for State of North Carolina (Contract 360)

Crafted with Purpose | manningtoncommercial.com

**SKY ENTERPRISES, INC.** (252) 522-1435 • 1-800-729-0590  
Water Treatment Specialist | PO Box 1764 • Kinston, N.C. 28503

Cooling Towers | Softners  
Hot & Cold Water Loops | Boilers  
Pumps | Timers | Controllers

**Atlantic Coastal Supply, Inc.**  
Plumbing & Industrial Specialties

www.acsparts.net  
PO Box 2887  
Greenville, NC 27836  
Phone: 800.520.0556 • Fax: 800.204.5630 • Email: sales@atlanticcoastalsupply.com

## THE MAINTENANCE BEACON

**Executive Director:** Kristie Payne  
**Phone:** 828.565.0115  
**E-Mail:** office@ncpsma.org  
**Website:** www.ncpsma.org

The Maintenance Beacon is the monthly publication of the North Carolina Public School Maintenance Association. Advertising, editorial material, memberships and subscriptions are handled through the office of the Executive Director, 224 Mulberry St. Clyde, NC, 28721.

NCPSMA does not guarantee, warranty or defend the use of any products or services of those who sponsor, advertise or contribute articles in The Maintenance Beacon.

**Officers of the Association**

<b>President</b>	David Martin	704.658.2630 or dmartin@mgsd.k12.nc.us
<b>Vice President</b>	Mark Letchworth	252.399.7822 or mark.leitchworth@wilsonschooolsnc.net
<b>Secretary</b>	Jodene Abney	910.678.2488 or jodeneabney@ccs.k12.nc.us
<b>Liasion Officer</b>	Chris Campbell	828.635.8248 x 303 or chrisccampbell@alexander.k12.nc.us
<b>Immediate Past President</b>	Bergie Speaks	336.667.2021 x 4009 or speaksb@wilkes.k12.nc.us



# 15th Annual NCPSMA Western Convention Tentative Agenda

Johnson Springs Convention Center | Black Mountain, North Carolina  
 May 24-25, 2023  
 Tentative Agenda

## TUESDAY, MAY 23, 2023

3:00-5:00 pm **Early Registration** (JS Lobby / 1st Floor)

## WEDNESDAY, MAY 24, 2023

**TO OBTAIN CREDIT FOR CREDIT HOUR CLASSES YOU MUST ATTEND ALL CLASSES**

7:15 am – 4:30 pm **Registration** (JS Lobby / 1st Floor)

7:15-8:15 am **Breakfast** (Cafeteria) - Previously purchased "Meal Ticket" required

8:00-10:00 am **NC Locksmith License Renewal** (2 CEUs) – "What Needs to Be Addressed Before Considering Access Control?" (JS 1 D & H / 1st Floor) Presented by Phillip Floyd, Co-Owner/Vice President & Director of Sales, Seven Oaks Doors and Hardware

**"Stihl Small Engine Repair"** – Class 1 (JS 2 B / 2nd Floor) Presented by Will Parker, Technical Sales Specialist, Mid Atlantic STIHL

**"Hydronic Systems Maintenance"** (2 CEUs) (JS 3 / 2nd Floor)  
 1) Pump Types & New Technologies  
 2) Pump Installation & Pitfalls  
 3) How to Read a Pump Curve  
 4) Pump Lubrication Requirements  
 5) Pump Seal Types  
 6) Air Management & System Pressurization  
 Presented by Jeff Miller, After-Sales Support Manager, JMP Equipment Company

**"Pesticide Ornament & Turf"** – Class 1 (2 CEUs) (JS 4 / 2nd Floor) Presented by Steve D. Pettis, Commercial & Consumer Horticulture Agent NC State Cooperative Extension

**Electrical Updates Using the 2020 Code – (2 CEUs) Class 1 – "NEC 210.8 GFI Protection for Other Than Dwelling Units"** (JS 5 / 2nd Floor) Presented by Josh West, Cabarrus County Building Inspector

8:00-9:00 am **Coffee Break and Refreshments** (JS Lobby / 1st Floor)

8:30-9:00 am **Exhibitor Display Selection** (JS 1 A / 1st Floor)

9:00-10:00 am **Exhibitor Display Setup** (JS 1 A/B/C/E/F/G / 1st Floor)

10:00-11:00 am **Opening Session and Vendor Introductions** (JS 2 C / 2nd Floor)

11:00 am – 12:00 pm **Visitation with Exhibitors and Door Prizes** (JS 1 A/B/C/E/F/G / 1st Floor)

**Advisory Council Meeting** (JS 2 C / 2nd Floor)

12:00-1:00 pm **Exhibitor and Member Traditional Southern Buffet Luncheon** (JS 2 A & B / 2nd Floor)

1:00-2:30 pm **Visitation with Exhibitors and Door Prizes** (JS 1 A/B/C/E/F/G / 1st Floor)

2:30-4:30 pm **Exhibitor Display Breakdown** (JS 1 A/B/C/E/F/G / 1st Floor)

**NC Locksmith License Renewal (2 CEUs) – "Interior Doors and Hardware Applications"** (JS 1 D & H / 1st Floor) Presented by Phillip Floyd, Co-Owner/Vice-President & Director of Sales, Seven Oaks Doors & Hardware

**"Stihl Small Engine Repair"** – Class 2 (JS 2 B / 2nd Floor) Presented by Will Parker, Technical Sales Specialist, Mid Atlantic STIHL

**"Playground Safety"** (JS 2 A / 2nd Floor) Presented by Jamie Perritt, Jr, Next Level Recreation of the Carolinas

## WEDNESDAY, MAY 24, 2023 (continued)

2:30-4:30 **"Cost Management Strategies for Irrigation Systems"** (JS 3 / 2nd Floor)  
 1) Cost Management for Watering Athletic Fields  
 2) Irrigation Using Well Water Instead of Purchasing from Municipal Providers  
 3) Typical Water Usage & Costs  
 4) Irrigation Control Systems Technology  
 5) Common Issues Resulting in Unplanned Expenditures  
 6) Relationships with Athletic Directors & Coaches  
 Presented by Andrew LaRowe, Pres., EduCon & Michael Spillman, Maintenance Director, Davie County Schools

**"Pesticide Ornamental & Turf"** (2 CEUs) – Class 2 (JS 4 / 2nd Floor) Presented by Steve D. Pettis, Commercial & Consumer Horticulture Agent NC State Cooperative Extension

**Electrical Updates Using the 2020 Code** (2 CEUs) - Class 2 – "NEC 110.14, 22 and 31-.16 – Temperature Limitations, Identification of Disconnecting Means and Wiring Methods" (JS 5 / 2nd Floor) Presented by Josh West, Cabarrus County Building Inspector

4:45 – Until **Cornhole Tournament** with cash prizes (Sidewalk Area / 2nd Floor)

5:30-6:30 **Dinner** (Cafeteria) – Previously purchased "Meal Ticket" required

## THURSDAY, MAY 25, 2023

**TO OBTAIN CREDIT FOR CREDIT HOUR CLASSES YOU MUST ATTEND ALL CLASSES**

7:15-11:45 **Registration** (JS Lobby / 1st Floor)

7:00-9:00 **Coffee Break** (JS Foyer / 1st Floor)

7:15-8:15 **Breakfast** (Cafeteria) - Previously purchased "Meal Ticket" required

8:00-10:00 **NC Locksmith License Renewal** (2 CEUs) **"How to Set up a Key System"** (JS 1 D & H / 1st Floor) Presented by Tammy Griffin, End User Specialist & Ed Garver, Distributor Sale Consultant, ASSA ABLOY

**Pesticide Structural"** (2 CEUs) – Class 1 (JS 4 / 2nd Floor) Presented by Patty Adler, NCSU, Director of Structural Pest Management Training Facility

**Electrical Updates Using the 2020 Code (CEUs) - Class 3 – "NEC 225.30 B Common Supply Equipment in Outdoor Branch Circuits and Feeders"** (JS 5 / 2nd Floor) Presented by Josh West, Cabarrus County Building Inspector

**"Plumbing Fundamentals"** (JS 2 A / 2nd Floor)  
 1) Flush Valve Maintenance  
 2) Wall and Yard Hydrant Maintenance & Repair  
 Presented by Josh Waters & Donnie Johnson, Total Maintenance Solutions

**"Shelter in Place Lockdown Solutions"** (JS 2 B / 2nd Floor) Presented by Barry Phillips, Regional Sales Director, Wesco

*continued on page 8*



# 15th Annual NCPSMA Western Convention Tentative Agenda

continued from page 8

## THURSDAY, MAY 25, 2023 (continued)

- 8:00-9:00 **“Care, Maintenance & Fire Code Compliance for Your Stage Curtains”** (JS 3 / 2nd Floor)  
Presented by Steve McKee, President, Premier Drapery Cleaning
- 9:00-10:00 **“Spectator Seating: Code Compliance & Preventative Maintenance”** (JS 3 / 2nd Floor)  
1) Today’s Codes & How They Affect Facilities  
2) Preventative Maintenance & Proper Care  
3) Tips & Tricks to Help Reduce Liability Claims  
4) Bleachers & Grandstand Code Compliance Upgrades  
5) Auditorium & Outdoor Fixed Seating Maintenance Tips  
6) Gymnasium Equipment & Backboard Inspections & Maintenance  
Presented by Jacob Lovings, Seating Safety Solutions, Inc.
- 10:00-12:00 **NC Locksmith License Renewal** (2 CEUs)  
**“Troubleshooting and Maintenance of Doors and Hardware”** (JS 1 D & H / 1st Floor)  
Presented by Alan Meyer, End User Specialist & Scott Shipton, End User Specialist, ASSA ABLOY  
  
**“Water and Fire Loss Restoration”** (JS 2 A / 2nd Floor)  
Presented by Patrick Brown, Business Development & Commercial Project Management, Belfor Restoration  
  
**“Maximizing Existing Budgets to Create Funding for Key Initiatives”** (JS 2 B / 2nd Floor)  
Presented by Ken Harden, Senior Consultant, Energy Systems Group  
  
**“Kitchen Equipment”** (JS 3 / 2nd Floor)  
Presented by Darrin Bisson, Region Operations Manager, Hobart Service  
  
**“Pesticide Structural”** (2 CEUs)  
Class 2 (JS 4 / 2nd Floor)  
Presented by Patty Adler, NCSU, Director of Structural Pest Management Training Facility  
  
**Electrical Updates Using the 2020 Code (2 CEUs) - Class 4 – “NEC 230.71 B – Two to Six Service Disconnecting Means, Location, Grouping and Barriers”** (JS 5 / 2nd Floor)  
Presented by Josh West, Cabarrus County Building Inspector
- 12:15-1:30 **Classic Picnic Luncheon Buffet** (JS 1 A&E / B&F / 1st Floor)
- 1:30-2:30 **Closing Session** (JS 1 A&E / B&F / 1st Floor)

# Variable Speed Pump Control in the Age of ASHRAE 90.1-2010/13 • Part Two

By JMP Equipment Company

## Differential Pressure and Demand

To understand what happens in a closed-loop, variable speed system when demand drops, consider the system in Figure 2.

Admittedly, most systems have more than one coil and pump, but this simple example is perfect for illustrating the role of differential pressure sensing in variable speed pump control.


Notice we have a design flow of 1000 GPM and 80 feet (40' + 40') of variable piping head loss, plus 20 feet of control head. This is the minimum pump head we will have at all times, even at zero flow.

A pressure sensor located on the supply side to the coil and immediately after the two-way control valve on the other side to sense the differential pressure across the coil. The differential pressure sensor is wired to the variable speed pump control. These components are necessary to make sure the control head setpoint -- which in this case is 20 feet -- is always maintained.

At full design conditions, we have 1000 GPM at 100 feet of head (40'+40'+20').

continued on page 11

premierdraperycleaning.com  
O: (910) 794-1664



**Premier DRAPERY CLEANING**

All the world's a stage and we're here to clean it!™

Stage Draperies • Acoustical Panels • Upholstery • Flameproofing

The Southeast's premier service for on-site cleaning, flame retardant application, and certification

# MEMBERSHIP APPLICATION

Membership runs from July 1, 2022 through June 30, 2023.


Membership Dues are \$20.00 if paying by check. Complete this form and submit along with your check for \$20.00 to: **NCPSMA, 224 Mulberry Street, Clyde, NC 28721**

NAME			
LEA (Local Educational Agency) OR COMPANY			
ADDRESS			
CITY	STATE	ZIP	
TELEPHONE			
E-MAIL			
Would you like a reminder sent to your e-mail each month when the latest edition of the Maintenance Beacon is available online?			YES
			NO


CHECK ALL THAT APPLY		
<input type="checkbox"/>	REGULAR MEMBER	Available to all maintenance employees of various city, county and state public schools as well as institutions of the community colleges.
<input type="checkbox"/>	REGULAR RETIRED MEMBER	Available to all RETIRED maintenance employees of various city, county and state public schools as well as institutions of the community colleges.
<input type="checkbox"/>	ASSOCIATE MEMBER	Available to all people interested in the betterment of public-school maintenance including school board members, superintendents, principals, teachers and vendors. ** Associate Members DO NOT have voting privileges.
<input type="checkbox"/>	MAINTENANCE DIRECTOR	The Maintenance Director / Supervisor of your LEA
<input type="checkbox"/>	MEMBERSHIP RENEWAL	Continuation of current membership
<input type="checkbox"/>	NEW MEMBER	First time membership

Online payments of \$22.00 per membership are accepted at [www.ncpsma.org](http://www.ncpsma.org)


FOR OFFICE USE ONLY	
PAID FOR WITH CHECK #	RECEIPT #




**HYDRONIC AND STEAM EQUIPMENT, PUMPS, HEAT EXCHANGERS, COOLING TOWERS, WATER SOURCE HEAT PUMPS, PLUMBING**




**CLIMATEMASTER**  
Geothermal Heat Pump Systems




**Lochinvar**  
CONDENSING BOILERS  
WATER HEATERS



**Bell & Gossett**  
CENTRIFUGAL PUMPS  
HEAT EXCHANGERS



**HYFAB**  
HYDRONIC PACKAGES  
PRESSURE BOOSTERS



**BAC**  
COOLING TOWERS

James M. Pleasants Company  
Greensboro-Charlotte-Raleigh-Wilmington  
[www.jmpco.com](http://www.jmpco.com)  
800-365-9010



# Deadly Mistakes

## Fatal Event January 19, 2019

*continued from page 3*

a worker from free falling more than six feet or contacting a lower level (e.g., the floor or the ground) (29 CFR 1926.502(d)(16)(iii)).

The employees reportedly did not receive formal ladder safety training or fall protection training and the employer did not have a written PPE hazard assessment.

**Recommendations:**

- A site-specific hazard assessment must always be completed to account for the hazards that will be present throughout each stage of the work being performed and to plan for how the hazards will be mitigated.
- Each employee engaged in residential construction activities six feet or above lower levels must be protected by guardrail systems, safety net system or personal fall arrest system.
- Depending on the type and circumstances of each job, the most effective device should be put in place to afford the greatest safety to the employees.
- The employer must provide a training program for each worker who might be exposed to fall hazards. The program must enable each worker to recognize the hazards of falling that are specific to their job and each worker must be trained in the procedures to follow to minimize these hazards.
- Before using personal fall arrest equipment, each affected employee shall be trained to understand the application limits of the equipment and proper hook-up, anchoring and tie-off techniques. Affected employees shall also be trained so that they can demonstrate the proper use, inspection, and storage of their equipment.

*Reprinted by Permission, NC DOL Ledger*

# School Shootings Continue to Rise

*continued from page 4*

in their schools, is increasing. Teachers and staff members are afraid to speak out because of retribution from their administration. There is an anonymous security survey for staff and employees on their perspective of their overall school security/climate available.

Another element to consider are students. They need to be able to voice their opinion and recommendations about an active shooter. School districts should have threat assessment teams ready to identify, evaluate, and address threats, potential threats, or alarming behavior to their schools.

All schools need to have a permanent School Resource Officer (SRO) assigned and additional SROs as needed.

Any plan will undoubtedly include security technology, but no single security implementation will protect a school; true protection comes from many layers of security protocols and processes. Access control is a critical component to stop an unwanted visitor before something happens.

Security screening systems can help spot guns, knives, and other weapons at the entry points or other areas. The exterior school grounds need to be searched daily to locate prohibited items. Cameras in and around your campus have proven to be a strong deterrent in helping to ensure policies and procedures are being followed.

There is now gun detection technology that can detect weapons as soon as they are visible on camera, flagging threats before shots are fired.

It is critical that as soon as the first shot is fired, emergency responders are notified and respond immediately to locate the shooter and neutralize the threat. A gunshot detection and localization system that is integrated into a video surveillance system is highly effective and gets information out quickly.

Additionally, if the video is transmitted over a network, it is possible to allow law enforcement personnel to view the cameras from their emergency command center and for the responding officers to view this from their vehicles.

School Board members, superintendents, administrators, teachers, parents,

*continued on page 12*



John Q Bullard

Here to help you with all your Pump, Boiler, Hydronic & Steam Accessory Needs.  
[www.jqbullard.com](http://www.jqbullard.com) | 919.389.6417



## Floor Action

*Serving your area for over 30 years*

**We install, repair and refinish all types of floors. Bleacher repair and inspections. Fire and water damage restorations. Power volleyball inserts and installation.**

**Patrick Morningstar, Owner**  
**Josh Walton, Sales**

Toll Free 800.745.6116      Fax 252.291.8042  
 Local 252.291.6116      [scsbyflooraction@gmail.com](mailto:scsbyflooraction@gmail.com)

***“Responding to Modern Engineering Challenges  
 With Innovative, Cost Effective Solutions”***



**Reece, Noland & McElrath, Inc.**  
 409 North Haywood Street / PO Box 540  
 Waynesville, NC 28786  
 Waynesville (828) 456-9851    Asheville (828) 253-3280  
 Fax (828) 456-6205

**[WWW.RNM-ENGINEERS.COM](http://WWW.RNM-ENGINEERS.COM)**



*“Partnering with a Passion”*

**1-800-672-4525**

 [www.saffelle.com](http://www.saffelle.com)

**KEEP  
CALM  
&  
WASH  
YOUR  
HANDS**

**Parts & Service 24 hours a day, 7 days a week!**  
 Phone: (336) 697-2090      Fax: (336) 697-8247



**LEWIS BOILER**  
 3127 Cedar Park Road  
 Greensboro, NC 27405  
[www.lewisboiler.com](http://www.lewisboiler.com)

**We Keep the Fires Burning!**  
**We Carry ALL Makes/Models for steam, oil, gas, or hot water boilers**

HONEYWELL CONTROLS	OIL FILTERS
HOFFMAN	TOPOG-E GASKETS
BELL & GOSSETT	FIREYE CONTROLS
BOILER SECTIONS	McDONNELL-MILLER
GOODWAY BRUSHES	REGULATORS, TRAPS
GLOBE, GATE, SOLENOID,	ITT GENERAL CONTROLS
BUTTERFLY, ETC. VALVES	IGNITORS/ELECTRODES
OIL NOZZLES	REFRACTORY MATERIAL
BURNERS & ACCESSORIES	PIPE FITTINGS



# District Seven Scholarship Application

Applications must be postmarked by **April 1, 2023**

Thank you for your interest in the District 7 Scholarship. We will award a minimum of one scholarship in the amount of \$500 annually. The newest recipient(s) will be named during the District 7 Meeting in May of 2023.

Applicants must meet the following requirements:

- NCPSMA District 7 current active, associate, or retired member (minimum of 1 year) or their immediate family
- Financial Need
- Acceptance by college, university, or technical school.
- Completed application. If application is not complete and accurate it will not be considered.

**A. APPLICANT INFORMATION:**

Full Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone (\_\_\_\_) \_\_\_\_\_ E-mail address \_\_\_\_\_  
 Date of Birth \_\_\_\_\_ Age \_\_\_\_\_ Social Security # \_\_\_\_\_  
 Applicant Employer \_\_\_\_\_  
 Approximate Salary:  
 \_\_\_ \$0-\$10,000 \_\_\_ \$10,001-\$20,000 \_\_\_ \$20,001-\$30,000  
 \_\_\_ \$30,001-\$40,000 \_\_\_ \$40,000-above  
 Current Member of NCPSMA \_\_\_ yes\* \_\_\_ no District # \_\_\_\_\_

**Please include a copy of current NCPSMA membership card with completed application.**

Note: if applicant is employed by an LEA Maintenance Department and Active member of NCPSMA, Item C. is not required.

**B. APPLICANT SPOUSE INFORMATION (If applicable):**

Spouse Full Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Applicant Spouse Employer \_\_\_\_\_  
 Phone Number (\_\_\_\_) \_\_\_\_\_ Email Address \_\_\_\_\_  
 Approximate Salary:  
 \_\_\_ \$0-\$10,000 \_\_\_ \$10,001-\$20,000 \_\_\_ \$20,001-\$30,000  
 \_\_\_ \$30,001-\$40,000 \_\_\_ \$40,000-above

**C. PARENT(S) OF APPLICANT IF DEPENDANT CHILD OR ADOPTED CHILD INFORMATION:**

Father \_\_\_\_\_ Mother \_\_\_\_\_  
 Address \_\_\_\_\_ Address \_\_\_\_\_  
 City \_\_\_\_\_ City \_\_\_\_\_  
 State \_\_\_\_\_ State \_\_\_\_\_  
 Zip \_\_\_\_\_ Zip \_\_\_\_\_  
 Employer \_\_\_\_\_ Employer \_\_\_\_\_  
 Work Phone \_\_\_\_\_ Work Phone \_\_\_\_\_  
 Home Phone \_\_\_\_\_ Home Phone \_\_\_\_\_  
 Father E-mail address \_\_\_\_\_  
 Mother E-mail address \_\_\_\_\_  
 Current Member of NCPSMA \_\_\_ yes \_\_\_ no District # \_\_\_\_\_

**Please include a copy of current NCPSMA membership card with completed application.**

**D. If applicant is a Dependent Child or Adopted Child, Parents Salaries (combined)**

\_\_\_ \$30,000-\$40,000 \_\_\_ \$40,001-\$50,000 \_\_\_ \$50,001-\$60,000  
 \_\_\_ \$60,001-\$70,000 \_\_\_ \$70,001-\$80,000 \_\_\_ \$80,001-\$90,000  
 \_\_\_ \$90,001-\$100,000 \_\_\_ \$100,001 and over

**E. Please list other family members (siblings, parents, spouse, etc.) attending school/college**

Name & Relationship \_\_\_\_\_ School/College \_\_\_\_\_  
 Expected Graduation Date \_\_\_\_\_ Age \_\_\_\_\_

**F. High School Applicant Attended/Attends \_\_\_\_\_ Year of Completion \_\_\_\_\_**

**G. College Attending or Applied to and Accepted \_\_\_\_\_**

Years Attended \_\_\_\_\_ Year to Begin \_\_\_\_\_ \*Student ID# \_\_\_\_\_  
 Address of college or university/accepted to \_\_\_\_\_  
 Where to send the check made out to the institution and applicant.  
 Include a copy of original acceptance letter from university, or a document that is proof of continued acceptance(if 2nd,3rd, or 4th years).

**H. List other sources of Financial Assistance \_\_\_\_\_**

**I. On a separate sheet, list applicant's extracurricular activities including, but not limited to academic, church, community, etc.**

**J. Briefly convey in 300 words or less on a separate sheet your hopes, wishes and desires for your academic and professional future, along with why you chose the college you plan to attend. Please fill out completely and honestly.**

Please fill out completely and honestly.

**INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED.**

Recipients will be announced or notified by the end of June each year. If awarded scholarship, check will be written to the school and applicant, mailed on or about the first week of August of award year.

Completed application should be mailed to:  
 Jeff Adams, NCPSMA District 7 President  
 District 7 Scholarships  
 300 N. Lee Avenue  
 Yadkinville, NC 27055  
 Or emailed to jeff.adams@yadkin.k12.nc.us

## Variable Speed Pump Control in the Age of ASHRAE 90.1-2010/13 • Part One

*continued from page 9*

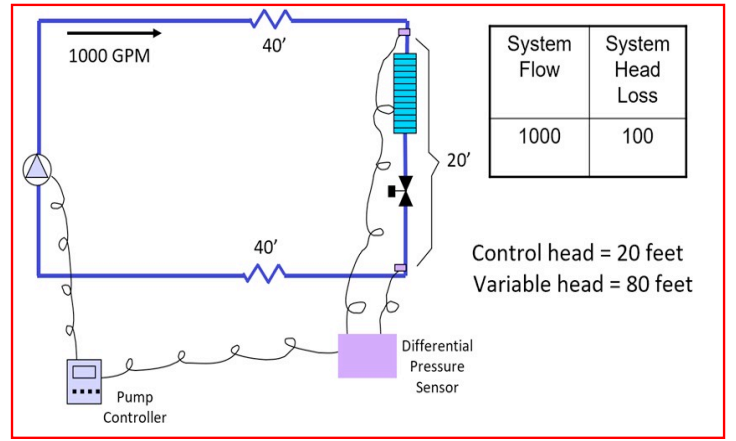


Figure 2

In this system the operational sequence would be as follows:

1. As demand drops, the control valve starts to close.
2. The closure of the control valve causes system flow to drop and an increase in differential pressure (DP) across the coil.
3. The DP sensor recognizes the increase in differential pressure and prompts the pump controller to slow the pump down.
4. The pump slows down until the control differential pressure (20 feet in this example) is restored.

The rate at which the pump slows is determined by the Pump Affinity Laws. Specifically, if flow is cut in half, then the variable head loss is reduced by a factor of 4. Using the design coordinates of 1000 GPM and 100 feet of head as the starting point, every other operational point for the pump can be calculated, giving us the control curve. So, if flow drops from 1000 GPM to 500 GPM, then our system head loss drops from 100 feet to 40 feet.

If our piping loss on either side of the coil was 40 feet at 1000 GPM, then at 500 GPM, our head would drop to one quarter of 40 feet, or 10 feet of head on either side of the coil.

That is our variable head loss. Remember, we must maintain a pressure differential of 20 feet across the coil and control valve. 10 + 20 + 10 equals 40 feet of head. At half flow we have a system head loss of 40 feet.

Using the same formula, we can calculate the rest of the coordinates, which we can use to plot the control curve that is shown in Figure 3.

Variable speed control gets a bit more complicated in real-world, multizone systems that have valves opening and closing throughout the day.

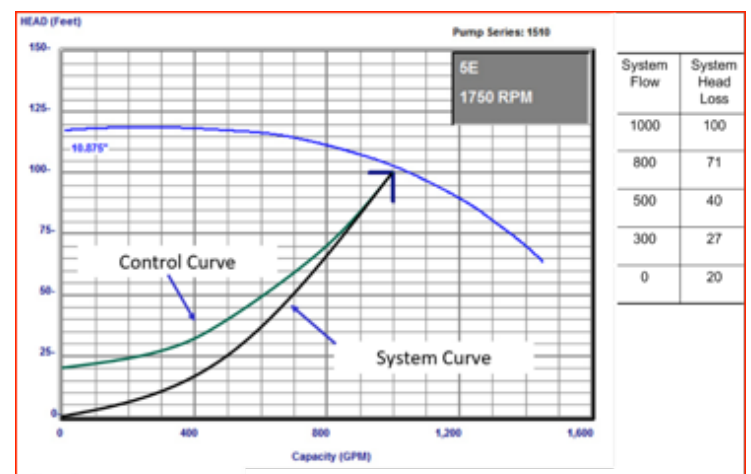


Figure 3

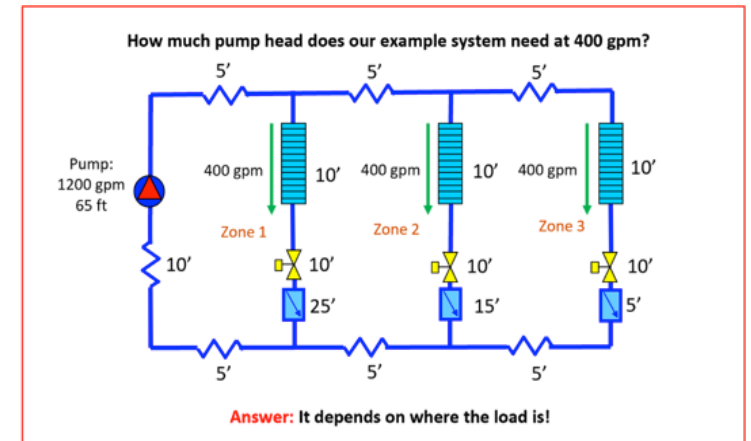


Figure 4

*continued on page 12*



## Variable Speed Pump Control in the Age of ASHRAE 90.1-2010/13 • Part One

continued from page 11

Figure 4 shows a fully loaded three-zone system with flow limiters at each zone.

Balancing is easy enough when all zones are at maximum 400 GPM design flow, but what happens when demand drops? Realistically, we know valves within a multi-zone system are not opening and closing in tandem. Rather, load varies from one zone to the next, depending on space occupation and the current solar load of individual zones.

Think of students in a high school migrating to the cafeteria between 11AM and 1PM. Clearly the zone serving the cafeteria is going to have a higher demand at that time of day than the classrooms, many of which may be unoccupied. We call this “system diversity.”

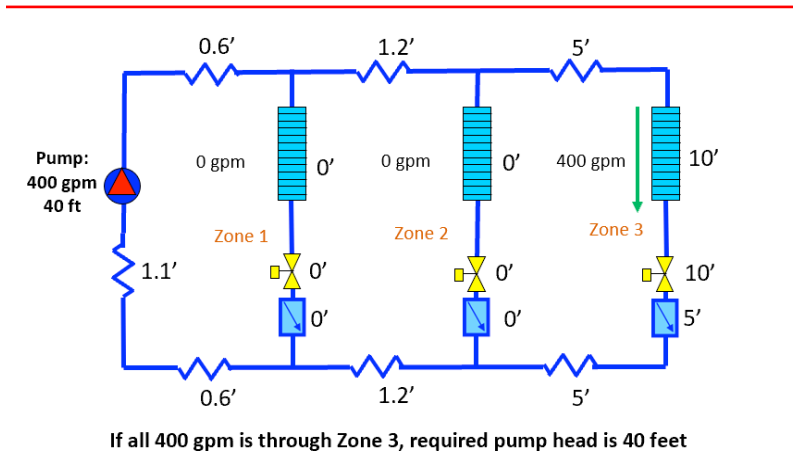


Figure 5

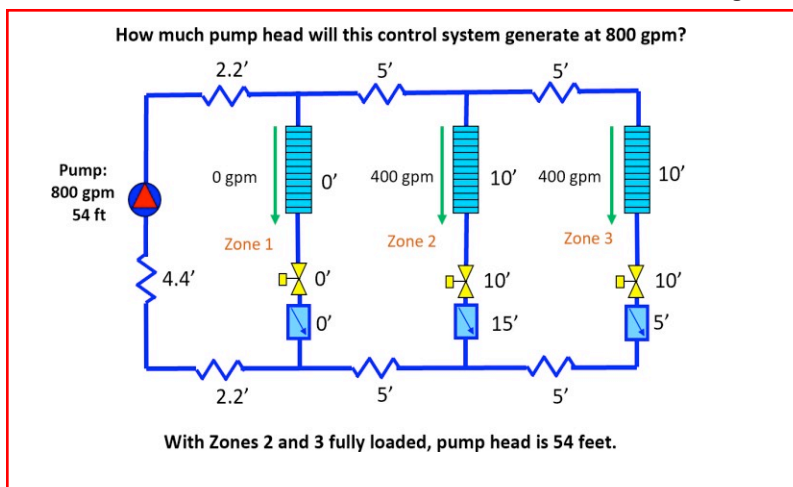


Figure 6

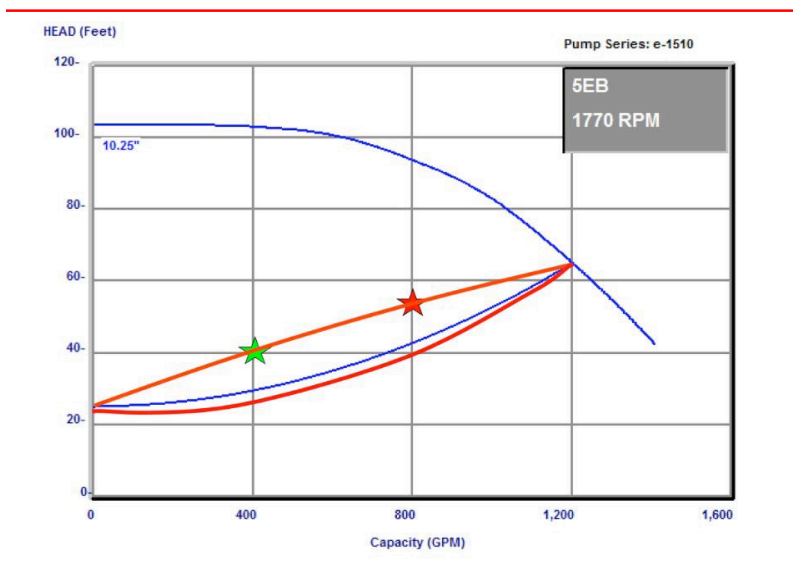


Figure 7

need? It depends on where the load is. If, for example, all 400 GPM is through Zone 3, then the required pump head would be 40 feet -- technically, 39.7 if you do the math (Figure 5).

Now let's switch it up even more. What happens if the demand is 800 GPM? Again, it depends on where the load is. Let's assume that Zones 2 and 3 are fully loaded. If that's the case, we will require a pump head of 54 feet (Figure 6).

Interestingly, if we plotted a control curve for this system, we would notice that these two reduced operational points (800 GPM @54 ft) and (400 GPM @40 ft.) do not fall on our control curve. They are, in fact, above it.

To be continued in April issue.

These are just two points for potential “misses”. If we were to plot all of the possible operating points in this same system, it would encompass an area like what is shown in Figure 7.

The space enclosed by the red curve lines represents all the possible heads and flow rates a variable speed pump must deliver in order to satisfy the part load demands of this system. On a direct return system, the upper red curve represents the control valves that are located farthest from the pump; the lower red curve represents the control valves closest to the pump.

We prevent these misses by targeting our control strategy on the area contained within the red lines.

So what happens in our example system when load drops from 1200 GPM to 400 GPM? How much pump head do we

## School Shootings Continue to Rise

continued from page 10

and students need to be willing to make changes, but those need to be intelligent changes that make use of the proper security technology, policies, and procedures to make your campuses safer and more secure.

It is evident in the last five years that the tragedy at Marjory Stoneman Douglas High School is still not enough to compel us as a nation toward implementing comprehensive solutions to truly protect our 50 million students in more than 130,000 schools. Appallingly, there have already been 6 school shootings in the first month of 2023. Protecting the lives of our children cannot wait any longer.

*Patrick V. Fiel Sr. is a security expert who has over forty years of experience managing security and law enforcement organizations. He has served as the Executive Director of Security for the District of Columbia Public Schools (163 schools) where he implemented a strategic security plan and reduced crime. He is retired from the US Army Military Police Corps. Contact him to schedule a time to discuss how he can assist your school. Patrick can be reached at (910) 789-4265 or at pvfsecurity.com.*

<https://campuslivesecurity.com/articles/2023/02/14/marjorie-stonemandouglas-five-years-later.aspx>

## St. Patrick's Day

St. Patrick's Day, also known as The Feast of St. Patrick or Paddy's Day in Ireland, is celebrated on March 17, the anniversary of St. Patrick's death in the fifth century.

St. Patrick, the Patron Saint of Ireland, was born in Roman Britain in the late 4th century and kidnapped at the age of 16 and taken to Ireland as a slave. He later escaped, but returned to Ireland and was credited with bringing Christianity to its people. By the time of his death on March 17, 461, he had established monasteries, churches, and schools. The most well-known legend of St. Patrick is that he explained the Holy Trinity (Father, Son, and Holy Spirit) using the three leaves of a native Irish clover, the shamrock.

Irish and non-Irish alike commonly participate in the “wearing of the green” sporting an item of green clothing or a shamrock, the Irish national plant, on the lapel.

Happy  
St. Patrick's  
Day!

