



eNewsletter

National Capital Section

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ASCE-NCS Centennial Kickoff with the U.S. Capitol Dome Restoration Project

Presented by Christine A. Merdon, PE, CCM

Join the American Society of Civil Engineers-National Capital Section (ASCE-NCS) as we begin our Centennial year with presentation on history and restoration of the symbol of American democracy and freedom that stands at the core of our Nation's Capital. Please join us on **Tuesday, October 20,** as Christine Merdon, Architect of the Capitol (AOC) Chief Operating Officer, describes the roles and responsibilities of the AOC and discusses the Dome restoration project in detail.

The United States Capitol Dome, a world-renowned architectural icon, was constructed of cast iron more than 150 years ago. The Dome had not undergone a complete restoration since 1959–1960, and due to age and weather became plagued by more than 1,000 cracks and deficiencies. The AOC recently began a multi-year project to repair these deficiencies, restoring the Dome to its original, inspiring splendor and ensuring it can safely serve future generations of visitors and employees as the roof of the Capitol.

This project is tackling deterioration of the Dome, the interstitial space between the Dome and the Rotunda,



Credit: Architect of the Capitol

and the Rotunda interior. The authorized budget for the project is \$59.55 million, which includes construction costs, contingency, and project support. The construction contract was awarded in November 2013 when the contractor began staging equipment and materials on the Capitol grounds. Soon thereafter, the scaffolding to facilitate the restoration work began to rise from the base of the Dome to the top of the Statue of Freedom and a catenary system was installed inside the Rotunda to protect the public and invaluable artwork inside.

The project is expected to provide the Capitol Dome protection from the elements for the next 50 years, preserving one of the nation's most iconic structures for generations to come.



Credit: Architect of the Capitol

Join us **Tuesday, October 20, 2015,** at the Hilton Arlington, 950 North Stafford Street, Arlington, VA, on the second floor in the Gallery Ballrooms. Parking is available at the hotel (\$10), at the Ballston Mall garage (\$1 after 6 pm), and on the street (free after 6 pm). The Hilton is on the same block as the Ballston Station on Metro's Orange and Silver Lines. Registration and networking will be from 6–6:45 pm, followed by dinner. The program will end by 8:30 pm. The cost is \$45 for those preregistering, \$10 for students, and \$55 for walk-ins, as space allows. One Professional Development Hour is available to attendees. For questions, please contact [D. Scott Wolf](#). Please click [HERE](#) to register by **October 15.**

Note that no-shows will be charged the full registration fee. We welcome walk-ins, including any registrations made after the guaranteed number of guests is provided to the hotel. However, the cost for walk-ins is higher because the Section is charged accordingly by the hotel for late registrations.

About the speaker:

Christine A. Merdon, PE, CCM, joined the AOC as its Chief Operating Officer in 2010. The AOC traces its beginning to 1791 and is the builder and steward of Capitol Hill's iconic federal buildings and grounds, including the U.S. Capitol, the Library of Congress, and the Supreme Court. Ms. Merdon is responsible for facilities construction, operation, preservation, and management; she provides overall direction for 2,600 employees that work round the clock to serve Congress and the Supreme Court. ■



Credit: Architect of the Capitol

President's Corner

Autumn is here. The leaves are beginning to change color, football season is in full swing, and the NCS begins its 100th year of service to the civil engineering community of the Washington, DC metropolitan area. That's right – October represents the start of our Centennial anniversary!



an eye on the Centennial Committee updates in each newsletter to learn about upcoming events and see how you can be engaged.

The Centennial theme will be carried through each of our monthly dinner meetings as we feature current projects within the region

that have a historical component – with the intent being to celebrate engineering achievements of the past and look to the future as well. Although the September meeting was not technically part of our Centennial year, Stephen Powers, co-chair of the NCS Boundary Stones Committee, kicked things off with a presentation on the Boundary Stones of Washington, DC. Placed in 1791 and 1792 to delineate the boundary of the future Nation's Capital, the boundary stones are the oldest federal monuments and were the perfect topic to set the stage for our Centennial year. After all, nearly every civil engineering project begins and ends with a survey.

This month's dinner meeting will feature a presentation on the U.S. Capitol Dome restoration project.

The Architect of the Capitol recently began a multi-year project to repair more than 1,000 cracks and other deficiencies that have plagued the cast iron Dome since its last restoration in 1959–1960. Constructed more than 150 years ago, the U.S. Capitol Dome stands as an iconic symbol of American democracy and freedom at the heart of our Nation's Capital. As such, the Dome restoration is a terrific topic to begin the Centennial year of the ASCE-NCS.

I look forward to the year ahead as we celebrate not only 100 years of the NCS, but the civil engineering profession in general. Stay tuned for details of future monthly dinner meetings, committee events, and the many Centennial activities planned. Please join us as we celebrate our achievements and prepare for our next century of "Engineering the Nation's Capital."

D. Scott Wolf, PE, PLS, F.NSPE
ASCE-NCS President (2015–2016)

ASCE Region 2 Assembly

Saturday, November 14, 2015 at Bucknell University

All Sections, Branches, Younger Member Forums, Student Chapters, faculty advisors, and practitioner advisors are strongly encouraged to attend the 2015 Region 2 Assembly on **Saturday, November 14, 2015**, in Lewisburg, Pennsylvania at **Bucknell University. Everyone is welcome!**

There will be professional development opportunities through presentations on current engineering design practices, a chance for interaction between students, professors, and practitioners and the opportunity to learn more about what ASCE can do for you.

If you are interested, or want more information, please contact [John Casana](#). ■

2015 NOVEMBER						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					



Newsletter

Rachel Schneider, Editor

November Issue Deadline: October 15, 2015

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National Capital Section

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Committee Chairs

Please refer to the [NCS website](#) for a current list of NCS committees and chairs.

An Interview with Mr. Sidney Dewberry, P.E., L.S., Dist.M.ASCE: Centennial Engineer of the Month

Beginning October, 2015, the NCS will publish interviews of prominent members of our Section, asking them to reflect on their career and profession. The interviews are organized by the NCS Centennial Committee, including Dr. Phillip Melville, Ph.D. P.E., F.ASCE and Ms. Lucy Menon, P.E. of the Dream Big Subcommittee. We hope you enjoy reading these interviews and gain insight from these local leaders in civil engineering.

This month we speak with Mr. Sidney Dewberry, P.E., L.S., Dist.M.ASCE. Mr. Dewberry is a Founding Partner and Chairman of Dewberry, an 1,800-employee firm. Mr. Dewberry's engineering leadership has been recognized repeatedly with appointments to influential strategic planning commissions in the National Capital Region, including the Greater Washington Board of Trade, the Governor's Regional Economic Development Advisory Council for District 6 (N. Virginia), the Air & Space Heritage Council, and the Northern Virginia Transportation Alliance. Mr. Dewberry is the former chairman of both the Arlington County Planning Commission and the Fairfax County Engineering Standards Review Committee.

What do you consider your major achievement(s) in civil engineering in our Section area?

A hard question as my company and I have been involved in so much in this region. Let me list the achievements that include specific projects. While some of these are not directly related to civil engineering, I feel civil engineering has given me the foundation to successfully execute these projects:

- I was chairman of the Planning Commission in Arlington County when major land use decisions were being made for uses and densities along newly planned but not yet constructed metro lines.

- I was involved with the planning and design of hundreds of subdivisions in Northern Virginia. At that time we were called "subdivision doctors," as we helped the developer find the land, rezone the land, plan the uses, design and construct. It has been said that if a homeowner in Fairfax County were to look at the plat of his or her home, chances are Dewberry's name would be on it.



One of Mr. Dewberry's landmark projects of his career: The Filene Center at Wolf Trap



- My involvement with the growth and development of George Mason University was a major effort. I've helped to raise millions for Mason; helped establish the civil engineering department which is named after my wife and me; and, served on the Board of Visitors for eight years, being Rector (or Chairman) for three of those years.

- I was involved in several major design projects of significance:

- Tysons Two (layout, design and supervision of constructions of the major roads and subdivision of the property when it was just a gravel pit)
- Dulles Toll Road
- Design and supervision of the Dulles Greenway
- Design of portions of the Silver Line Metro, Phase I
- Design of portions and supervision of construction of the Silver Line Metro, Phase 2
- Design on the extension of Metro to Springfield, including the large parking structure
- I-66 Outside the Beltway

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- Design of two sections of the ICC in Maryland
- Design of numerous water and wastewater systems, including a major role in the Noman M. Cole, Jr. Pollution Control Plant

■ A landmark project for me is Filene Center at Wolf Trap. When the center burned down about 20 years ago, Dewberry performed complete architectural and engineering services.

■ One of our major involvements has been with FEMA through numerous contracts since 1974. We have assisted them with response and recovery efforts from major disasters all over the U.S. The work was largely done in this region after site data collection.

■ The last thing I will mention is the writing and editing of the *Land Development Handbook*, published by McGraw Hill and in its third edition. It has become a “go-to” book for engineers involved in the planning, engineering, development, and redevelopment of land.



Design on the extension of Metro to Springfield, including the large parking structure

So, what do I consider to be my major achievement in civil engineering in this region? It’s like asking one to identify one’s favorite child. They are ALL my children!

Why did you decide on a career in civil engineering?

I didn’t “decide” to become a civil engineer. It just came naturally. My father was a superintendent for the erection of steel truss bridges in North Carolina, Virginia, West Virginia, Pennsylvania, and Maryland in the years 1900–1930, and I had an older brother who became an electrical engineer – so becoming an engineer was in my genes.

What do you consider the best guidance to young people for a future career in civil engineering?

What I hear the most from young people is their apparent difficulty with math. If one can develop a love for math early in life, a whole world will open up for him or her – not just in engineering but in science in general. This is a challenge to our educators. I’m not particularly proficient at math but my high school sophomore teacher let me be the star in presenting plain old geometry to the other students. This thing alone made me a star in the 9th grade. One teacher singled me out, even though I wasn’t very good at it, and she taught me to not fear math. That’s all it took! Today’s students would find that math is really a very logical and easy subject, if our teachers would just instill in them the reality that there’s nothing to fear in its study.



Design and supervision of the Dulles Greenway

What do you consider the major challenge to a career in civil engineering?

I believe the major challenge for an individual pursuing civil engineering to be getting through the early years of training. First, engineering is not an easy choice in college. It’s tough and one has to struggle to get through the rough years of physics, chemistry, electricity, calculus and all the other courses that require deep concentration and study. Then, after college, there are the several years of internship before one is turned loose to work on projects completely on his or her own.

A very real challenge for civil engineering is finding the money to make projects happen. Today our tax monies are used up by so many social needs that little is left for much needed infrastructure, repair, and replace, as well as for new infrastructure.

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100 YEARS

2015 Presidents and Governors Forum

By Emily Dean and John Casana

On September 20th and 21st, ASCE held its annual Presidents and Governors Forum and Younger Member Leader Forum at ASCE Headquarters in Reston, VA. Leaders attended this year's event from 69 ASCE Sections and Branches from across the country and the world. Incoming Officers Scott Wolf and Emily Dean and NCS Younger Member, Sara DeGroot represented the NCS. The annual event enables established ASCE leaders to share lessons learned with rising Section and Branch leaders. This year, John Casana, Region 2 Governor and NCS Past President, led a breakout session on Student Outreach.

After a warm welcome from ASCE National President-Elect Mark Woodson, the morning was filled with information on how to have a successful presidency and how to use the Regional Governors as a link between the sections and National ASCE staff. Events included:

Round table discussions focusing on Section/Branch challenges were a great way to collaborate with other sections and bounce ideas around for this upcoming year.

After lunch, Jim O'Brien of the Leadership Development Group at National Headquarters, provided an inspirational talk about leadership and



left everyone with tools to become better section leaders.

Nancy Berson and her staff gave an overview of all of the ways ASCE's Geographic Services are there to support the Sections and Branches.

The afternoon concluded with three sections presenting on best practices such as the use of social media, student banquet formats, and membership development.

Sunday evening allowed attendees to get to know one another better over a relaxing meal at the Sheraton.

Monday morning was comprised of Breakout Sessions with ASCE leaders

describing successful programs and attendees sharing similar programs in their Sections or Branches (including the NCS's John Casana's Student Outreach session on our successful Region 2 Assembly ([Save the Date](#) – the 2015 Reg. 2 Assembly is Sat, Nov. 14 at Bucknell).

A group photo and tour of the ASCE (LEED Gold) Headquarters followed.

Saving the best for last, talks by ASCE President Robert Stevens, and President-elect Elect Norma Jean Mattei, rounded out the day. The Forum provided an abundance of information and tools to help make 2015–16 a highly successful year. ■

DC Infrastructure Report Card Coming Early 2016!

Ranjit S. Sahai, PE, F.ASCE, Chair, DC Infrastructure Report Card Subcommittee, ASCE-NCS

Civil infrastructure delivers water and power; enables movement of people and goods; shelters and nurtures our communities and us. ASCE's Infrastructure Report Card effort has slowly but surely, over the last decade, penetrated the nation's consciousness and is increasingly cited as an incentive to shaping policy to renew and maintain our public infrastructure. In October 2014, more than two-dozen members of the NCS began drafting the inaugural edition of the DC Infrastructure Report Card. Their efforts culminate in a planned January 2016 release of the report card.

Currently, the DC Infrastructure Report Card is going through its final phase of editing and the public relations team is getting ready for release. The infrastructure components researched include Bridges, Drinking Water, Energy, Hazardous Waste, Levees, Parks & Recreation, Rail, Roads, Solid Waste, Transit, and Wastewater.

Please join the NCS in wishing the DC Infrastructure Report Card team the very best in its release planning efforts and a big thank you for their volunteer efforts. Stay tuned to our newsletter and website as we provide coverage on the Infrastructure Report Card. ■

Employment Clearinghouse

The NCS provides the Employment Clearinghouse as a free service to its membership. The Clearinghouse allows members to post short notices for available positions or candidates seeking employment. All employers listed herein are equal opportunity employers. If you have questions, are seeking employment or would like to post a position please contact the [newsletter editor](#) and visit our [jobs page](#).

NCS Committee News and Updates



Younger Members Forum

Monthly Happy Hours. The NCS Younger Members Forum (YMF) holds monthly happy hours in Arlington, VA or Washington, DC. Happy hours are usually the first Wednesday of each month unless a holiday falls during that week. The next monthly happy hours will take place on **October 7 at CourtHaus Social**, Arlington, VA, and **November 4 at Buffalo Billiards**, Washington DC. Look out for emails with specific locations for future monthly happy hours!

The ASCE-NCS YMF held their September happy hour with the Structural Engineers Association of Metropolitan Washington Younger Members Group (SEAMW-YMG) at Whitlows on Wilson in Arlington, VA on September 2. The NCS YMF and SEAMW-YMG enjoyed a large turnout with approximately 35 to 40 members in attendance.



2016 Planning Meeting. On August 26, the YMF held its annual planning meeting at *Lyon Hall* in Arlington, VA. During the meeting, YMF officers discussed the successful events from

last year, made plans for upcoming YMF events, and voted on new YMF officers for the 2015–2016 year. Topics of discussion included monthly YMF happy hours, professional development meeting potential topics/speakers, YMF participation in local volunteering events, and involvement with local university student chapters. In addition to the monthly happy hours, the YMF is planning to hold two professional development meetings, with one planned for fall 2015 and the second for spring 2016. Another goal for this year is to increase involvement with college students and local ASCE student chapters. YMF officers for the 2015–2016 year are as follows:

President: Kelly Cronin, PE

Vice President: Sonja Hinish, PE

Secretary/YMF Newsletter: Mike Venezia, PE

Social Chair: Kelsey Sheridan, EIT

Professional Development: Paul Parfitt, PE & Sara DeGroot, PE

Outreach: Emily Dean, PE & Jon Mulligan

If you have suggestions for professional development meeting topics, or would like to become more involved with the YMF in other areas, please contact the YMF President at ncsymfpresident@gmail.com.

Stay Connected! Check out photos and stay up-to-date with YMF events by visiting the new [YMF Facebook page](#). Also, follow us on [Twitter](#) (@asce_ncsYMF).

Get Involved! Are you interested in getting involved with more Younger Members activities? Do you have ideas

for social events or volunteering activities? Would you like to be a board member? The NCS Younger Members Group is always looking for new members! Let us know if you are not already on our mailing list! If you would like to become more active with the YMF or would like more information on our events, please email the [YMF President](#).

Centennial Committee: Engineering the Nation's Capital

Our Celebration has begun! We kick-off the Centennial Celebration with an October tour of one of our key area landmarks, the Washington Aqueduct. In November, there will be a tour of the C&O Canal. The NCS's Centennial Celebration, as the area representative of the ASCE, provides an excellent opportunity to promote our accomplishments in the nation's Capital. So please join us on these tours as the Committee strives to promote our civil engineering profession and honor the civil engineers from our area that have not only played key roles building infrastructure in the Washington DC area but also around the world.

In addition to the Washington Aqueduct and the C&O Canal, we are planning additional tours in 2016, tentatively including the new Smithsonian African-American Museum in March 2016, a boat tour along the Potomac River of the area bridges in April 2016, and a tour of Washington Dulles International Airport in May 2016. Since these tours are one-time events, we are also

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BUILD ON US

NCS Committee News and Updates

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developing a public outreach tool that will continue to be available long after our Centennial year ends. This interactive map highlight regional engineering accomplishments, and a click on the internet-accessible map, will provide the user with a description of an engineering achievement, photos, and fun facts for anyone touring the DC Area.

Other activities include NCS monthly dinner meetings featuring speakers and topics that celebrate our 100 years of civil engineering, participation in the USA Science and Engineering Festival, and other engineering events which allows us to reach out to the students in our area to highlight the benefits of pursuing engineering careers. We plan to release our Centennial Commemorative Book early in our Centennial Year. Work also continues on our Symposium planned for June 2016 that will provide morning and afternoon sessions to highlight our accomplishments and future prospects, as well as an Awards Luncheon. Finally, proclamations are being obtained from the DC Mayor, and the Governor's Office for Maryland and Virginia that recognize our Centennial and the NCS's accomplishments that have benefited the public for more than a hundred years.

Therefore, please join us since your participation will allow the NCS to fulfill our Centennial goals to promote our profession, to steer students into civil engineering, and to recognize our members' accomplishments over the last century. We have many activities where your assistance will help make the Centennial Celebration a success. Therefore, whether you are a Young Member, a Life Member, or somewhere in between, we are always looking for volunteers to assist and participate so please join us by contacting the [Centennial Committee](#).

Water Resources and Centennial Committee

On October 28, 2015, the Centennial Committee and Water Resources Committee will be hosting a lunchtime walking tour of the Washington Aqueduct Dalecarlia Water Treatment Plant. The tour will include an overview presentation by the U.S. Army Corps of Engineers (USACE) on the treatment process followed by a visit of the laboratory and the production facilities,

showing how the USACE collects, processes and discards the residuals. Please contact [Piers Causton](#) or [Chris Manalo](#) for more information.



Sustainability Committee – Planning Session Recap

On September 17, 2015, the Sustainability Committee held a Planning Session. Much of our planning involved traditional activities that the NCS Sustainability Committee has done in previous years. A brief summary of the plans for the 2015–16 year that we discussed are as follows:

Planning underway for a Geotechnical Topic for a Sustainability Educational/CEU Dinner Speaker. This is tentatively planned for spring 2016, in Maryland.

A call for 2016 Sustainable Project of the Year for the Section will be going out in coming newsletters. A selection committee will be formed from volunteers following the New Year.

The April 2016 Section Meeting's topic will be Sustainability. The primary choice for speaker is the National Park Service. We will ask them to discuss the conservation efforts in the on-going construction on the National Mall, and to focus on the levee system installed in response to the flooding of Hurricane Sandy.

We will be calling for volunteers for the EPA Sustainable Design EXPO, also in April 2016, to work at our public information booth (much more fun than it sounds) and for judges to select the ASCE Award for Sustainable Student Project.

Looking forward to a great year!



Transportation Committee

By *Ranjit S. Sahai, PE, F.ASCE, Chair, Transportation Technical Committee, ASCE-NCS*

The NCS Technical Committee on Transportation meets every other month over lunch at George Washington University on a transportation-related theme. These are typically educational events and attendees receive a professional development hour certificate. Upcoming events include:

November 10, 2015, **Connected Vehicle Infrastructure**, Discover what the US Department of Transportation has in the works for connecting vehicles to surface transportation infrastructure to improve driver safety, vehicle efficiency, and enable autonomous vehicle usage a reality over the next few years and decades.

January 2016, **Recent Innovations in Bridge Inspection Techniques**, Numerous non-destructive monitoring and inspection techniques have emerged in the bridge industry that have the potential to significantly impact how we inspect and maintain our surface transportation infrastructure.

March 8, 2016, **Recent Innovations in Airport Pavement Design**, The majority of US airports were built during World War II with concrete runways. Since then, major advancements in pavement engineering have emerged and have been used, as these aging runways require rehabilitation or reconstruction. Discover modern airport pavement design methods, which provide increased safety, longevity, constructability, and sustainability. Our speaker, Hugh Weaver, PE, is an expert on aviation pavements with over 30 years of experience at airports across the country.

Watch for emails for information on registering for upcoming Transportation Committee events. We look forward to seeing you. If you have a transportation engineering topic in mind and know of a knowledgeable speaker on that topic, let Ranjit know on the Contact Us page on the [website](#). ■

A New Era for the PE Exams: Are You Ready for the New Specifications?

Part 5 – Structural Engineering Exams

As discussed in our previous articles, the new PE exam specifications were implemented, effective April 2015. In the [March, April, June, and September](#) issues, we discussed in detail the new specifications for the “Construction Module,” “Geotechnical Module,” “Water Resources & Environmental Module,” and “Transportation Module.” This month we will discuss the Structural Engineering (SE) exams.

PE SE Exam Specifications and Design Standards:

- According to the National Council of Examiners for Engineering and Surveying (NCEES), the SE exam tests the engineers’ ability to practice SE.
- The SE exam is designed for engineers who practice in jurisdictions that may license structural engineers separately from other professional engineers.
- This 16-hour (two-day) exam tests engineers’ ability to safely design **buildings** or **bridges** using a separate vertical and lateral component, particularly in areas of high seismicity and high wind.
- Exam specifications and design standards are posted 6 months before the exam administration. Updates to April exams are posted in November, and updates to October exams are posted in May.
- The exam uses the US Customary System (USCS) of units.

SE Exam Includes:

A two-day exam (Friday and Saturday) with separate, 8-hour components, as follows:

- Each day has a morning *breadth* and afternoon *depth* section.
- Friday covers Vertical Forces with Design Standards.
- Saturday covers Lateral Forces with Design Standards.

Note: the 8-hour Vertical Forces (Gravity and Other) and Incidental Lateral component is offered only on Friday and focuses on gravity loads and lateral earth pressures.

Lateral Forces (Wind/Earthquake) Component of the Structural Engineering DEPTH Exam Specifications:

The 4-hour Lateral Forces (Wind/Earthquake) *depth* examination is offered on Saturday afternoon. The SE exam *depth* modules focuses on a single area of practice. Examinees must choose either the **Buildings** or the **Bridges** module and must work the

same module on both components. In other words, if you choose **Bridges** for the Vertical Forces component, then you must choose **Bridges** in the Lateral Forces component. All questions are constructed response (essay).

Buildings: The *depth* exam in the **Buildings** module covers lateral forces, lateral force distribution, analysis methods, general structural considerations (element design), structural systems integration (connections), and foundations and retaining structures.

This 4-hour module contains one problem from each of the following areas:

- Steel structure
- Concrete structure
- Wood and/or masonry structure
- General analysis (e.g., existing structures, secondary structures, non-building structures, and/or computer verification)

All problems are equally weighted.

At least two problems include seismic content at Seismic Design Category D and above.

At least one problem includes wind content of at least 110 mph.

Problems may include a multistory building.

Problems may include a foundation.

Bridges: The *depth* exam in **Bridges** covers gravity loads, superstructures, substructures, and lateral forces and may test pedestrian bridge and/or vehicular bridge knowledge. This 4-hour module contains three problems, one from each of the following areas:

- Columns (25% of your score)
- Footings (25% of your score)
- General analysis (i.e., seismic and/or wind) (50% of your score)

SE Design Standards*

These standards apply to the Vertical and Lateral components of the SE exam. Effective beginning with the April 2015 examinations, Revised April 20, 2015.

Abbreviation & Design Standard Title:

- AASHTO, *AASHTO LRFD Bridge Design Specifications, 6th edition, 2012*, American Association of State Highway & Transportation Officials, Washington, DC.
- IBC, *International Building Code, 2012 edition* (without supplements), International Code Council, Falls Church, VA.
- ASCE 7, *Minimum Design Loads for Buildings and Other Structures, 3rd printing, 2010*, American Society of Civil Engineers, Reston, VA.
- ACI 318, *Building Code Requirements for Structural Concrete, 2011*, American Concrete Institute, Farmington Hills, MI.
- AISC, *Steel Construction Manual, 14th edition*, American Institute of Steel Construction, Inc., Chicago, IL.
- AISC, *Seismic Design Manual, 2nd edition*, American Institute of Steel Construction, Inc., Chicago, IL.
- AISI, *North American Specification for the Design of Cold-Formed Steel Structural Members, 2007 edition with Supplement No. 2 (2010)*, American Iron and Steel Institute, Washington, DC.
- NDS, *National Design Specification for Wood Construction ASD/LRFD, 2012 edition & National Design Specification Supplement, Design Values for Wood Construction, 2012 edition*, American Forest & Paper Association, Washington, DC.
- NDS, *Special Design Provisions for Wind and Seismic with Commentary, 2008 edition*, American Forest & Paper Association, Washington, DC.
- PCI, *PCI Design Handbook: Precast and Prestressed Concrete, 7th edition, 2010*, Precast/Prestressed Concrete Institute, Chicago, IL.
- TMS 402/602, *Building Code Requirements and Specifications for Masonry Structures (and related commentaries), 2011*; The Masonry Society, Boulder, CO; American Concrete Institute, Detroit, MI; and Structural Engineering Institute of the American Society of Civil Engineers, Reston, VA.

Final Notes: Solutions to exam questions that reference a standard of practice are scored based on this list. Solutions based on other editions or standards will not receive credit.

Check our previous articles ([September 2015](#)) for the open-book policies.

Good Luck,
Ahmet Zeytinci, P.E.,
(Dr. Z.)
az@alfam.com



The NCS congratulates Dr. Z on his award and article in PE magazine. [View the article now!](#)

September Meeting Recap – Washington, DC Boundary Stones

To kick off the upcoming yearlong celebration of the ASCE-NCS Centennial, the NCS's September Meeting presentation provided an update on the Boundary Stones of Washington, DC,— the oldest monuments placed by the United States federal government and the landmarks that have marked the city's lines for the past 223 years.

Stephen Powers, P.E., co-chair of NCS Boundary Stones Committee, provided a brief history of the survey and the preservation effort as well as an update to members on the status of the preservation effort and plans for the future for additional ASCE involvement on "orphan" stones/sites that have issues that need to be addressed to ensure preservation. As Mr. Powers had just completed a 60-mile bike ride on September 19, 2015, which included stops at all 40 stones, information and visuals were fresh and current. The presentation highlighted the individual issues and preservation needs at each of the sites and presented an update on the District Department of Transportation (DDOT)/ National Park Service (NPS)/DC DAR project to restore/rehabilitate the 26 sites on the Maryland/DC side of the Potomac River.

The NCS remains an active member of the Nation's Capital Boundary Stones Committee (NACABOSTO). Members of this group include DDOT, DC Office of Planning, NPS, DC DAR, DC Association of Land Surveyors, and many others who come together in the effort to preserve the stones for future generations.



- Resetting SE#8 replica stone;
- Restoration work at the SE#9 site; and
- Establishment of a park at the East Cornerstone.

Mr. Powers also expressed the desire to work with the members of NACABOSTCO to designate active stakeholder stewards for the orphaned stones so that yearly upkeep and maintenance are performed at the sites. He stated that the NCS Boundary Stone Committee would advance this effort.

For more information on the Boundary Stones project, please visit www.boundarystones.org.

Some of the larger projects facing the group include:

- Completion of the DDOT/NPS/DC DAR project;
- Advancing a similar restoration project to the Virginia stones/sites;
- Resetting SE#4 original stone;

Prior to the presentation by Mr. Powers, John Casana, ASCE Region 2 Governor and former NCS President, installed the NCS officers for the 2015–2016 fiscal year, our 100th year! ■



ASCE-NCS Newsletter Patrons



October 5–6

The First International Symposium on Sustainable Human-Building Ecosystems (ISSHBE), Carnegie Mellon University. Sponsored by ASCE, ASCE AEI, and Autodesk. The symposium provides an opportunity to share innovative findings in the integration of human behavioral science, social and economic sciences with building design, engineering, and metrology for better understanding of building energy performance, environmental impacts, and occupant comfort. [Register](#) here.

October 6

NCS Centennial Committee, 11:30–1 pm, Washington, DC. Please email Committee Secretary [Vic Crawford](#) for additional information.

October 7

YMF Monthly Happy Hour, 6–8 pm, at [CourtHaus Social](#), Arlington, VA. Join other younger members from the area for while you enjoy free appetizers and drink specials. Watch for upcoming emails for more information.

October 11–14

ASCE 2015 Convention, New York City. [Register Today!](#) Join civil engineering professionals from around the world at this ASCE flagship event. Network with peers, earn PDHs, and expand your knowledge base.

October 20

NCS Monthly Meeting, 6–8:30 pm at Arlington Hilton. Christine A. Merdon, PE, CCM, commences our Centennial with a presentation on the U.S. Capitol Dome Restoration Project. Visit our [website](#) and look for more information in upcoming emails.

October 21

What You Need to Know to Design or Review a Vendor-Designed Column-Supported Embankment, 11:30–1:30 pm, at Maggiano's Tysons II Mall. Join the NCS Geotechnical Executive Committee as they host James G. Collin, PhD, PE, DGE, FASCE. Contact asce.ncs.gec@gmail.com for more information. [Register today!](#)

October 28

Lunchtime walking tour of the Washington Aqueduct Dalecarlia Water Treatment Plant. The Centennial Committee and Water Resources Committee hosts this event. For more information, please contact [Piers Causton](#) or [Chris Manalo](#).

November 4

YMF Monthly Happy Hour, 6–8 pm, at [Buffalo Billiards](#), Washington DC. Join other younger members from the area for while you enjoy free appetizers and drink specials. Watch for upcoming emails for more information.

November 10

Connected Vehicle Infrastructure, George Washington University. Discover what the US Department of Transportation has in the works for connecting vehicles to surface transportation infrastructure to improve driver safety, vehicle efficiency, and enable autonomous vehicle usage a reality over the next few years and decades.

November 14

ASCE Region 2 Assembly. Mark your calendar for this all-day event on Saturday at Bucknell University, PA. All Sections, Branches, Younger Member Forums, Student Chapters, faculty advisors, and practitioner advisors are strongly encouraged to attend. There will be professional development opportunities through presentations on current engineering design practices, a chance for interaction between students, professors, and practitioners and the opportunity to learn more about what ASCE can do for you. For more information, contact [John Casana](#).

November 17

NCS Monthly Meeting, 6–8:30 pm at Arlington Hilton. Visit our [website](#) and look for more information in upcoming emails.

January 2016

Recent Innovations in Bridge Inspection Techniques, George Washington University. Learn about non-destructive monitoring and inspection techniques that have emerged in the bridge industry.

February 11–13

Regions 1, 2, 4 & 5 Multi-Region Leadership Conference 2016, Pittsburgh, PA. Visit www.asce.org and look for more information in upcoming emails.

February 21–27

Discover Engineers Week, Share your enthusiasm for engineering and make a difference in a young person's life. Visit the website for related events.

February 24

Global Day of the Engineer, Pledge to celebrate and share how engineers make a world of difference. Global Day of the Engineer brings together the international community to celebrate the accomplishments of engineers, give students around the world a chance to experience engineering, and share the amazing innovations engineers create every day.

February 25

Introduce a Girl to Engineering Day started in 2001 as a joint effort between the National Society of Professional Engineers, IBM, and National Engineers Week Foundation. "Girl Day" 2016 marks the 15th year whereby women engineers, and their male colleagues, have the opportunity to introduce more than one million girls and young women to engineering.

February 27

Discover Engineering Family Day, at the National Building Museum in Washington DC, 10 am to 4:30 pm. Last year, the NCS and our partner Bechtel conducted the popular "Shaky Ground" demonstration of earthquake induced soil liquefaction in a plastic cup. For our youngest engineering students Bechtel also provided a sand box loaded with construction equipment. For more information, contact [Dean Westman](#).

March 8–10

Global Marathon For, By, and About Women in Engineering and Technology provides global and regional opportunities for women and provides a place to put forward ideas, solve common problems and come together.