



The NEBRASKA Civil Engineer

Official Publication of the Nebraska Section of the American Society of Civil Engineers

April 2007

EVENT CALENDAR:

April

24 - Transportation Conference, Omaha

24 -Transportation Group Meeting - Lo Sole Mio Villa, Omaha

May

Annual Banquet Meeting

ISSUE HIGHLIGHTS:

Upcoming Continuing Education Seminars

"E" Week Truss Bustin' Competition

PRESENTING

The Transportation Group Presents:

"96th Street, Giles Road to Highway 370"

Tuesday, April 24th

Featuring:

Dan Owens,

Vice President and Manager of the Transportation Engineering Department at Lamp, Rynearson & Associates

Dan has a BS in Civil Engineering from the U.S. Coast Guard Academy and an MS in Civil Engineering from the University of Illinois.

Sarpy County is the lead for this multiple agency arterial roadway project. When completed, 96th Street will provide a much-needed additional north/south route in Sarpy County. Project partners include the Cities of Papillion and La Vista as well as the Papio Missouri River Natural Resources District. The project consists of over two miles of four-lane divided arterial roadway, three bridges, recreational trails, and channel improvements to West Papillion Creek. Engineers for the project included Lamp, Rynearson & Associates, Thiele Geotech, Thompson Dreessen & Dorner, HDR, and Infrastructure, Inc. Bill Herr from Sarpy County is the lead engineer coordinating the needs of all the public entities.

Location: Lo Sole Mio Villa
3020 S. 32nd Street, Omaha 68105

Times: Social Hour 5:30
Dinner 6:15
Presentation 7:00

Menu: Pasta and Meatballs \$18
Baked Lasagna \$19
Fettuccini Alfredo \$20
Chicken Parmigiana \$21

Spouses and guests welcome. \$10 without a meal. Student meals FREE. RSVP by 12 PM Friday, April 20th to Marie 402.493.4800 or vp@neasce.org Subject Line: ASCE RSVP

Deadline for articles to be published in the May newsletter will be May 4th. Email articles to Aaron Grote at editor@neasce.org

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From the President

- Tom Marnik, P.E.



Tom Marnik, P.E. President of ASCE

Through a connection with our Secretary, Kristi Nohavec, ASCE Nebraska will be donating \$250 to Omaha's Mercy High School Robot team for their trip to Atlanta Georgia to compete in the "FIRST (For Inspiration and Recognition of Science and Technology) Vex" World Competition. Mercy High is an all girls school and their team recently competed and won the regional "FIRST Vex" Robot Competition. Mercy High was the only all girl team and one of only three teams with female members. We wish them and their robot GIR success.

Don't forget the April dinner meeting will be held on Tuesday this month. Dave Ayala decided to mix things up a bit and have the meeting on the night of the Transportation Conference. I encourage mixing things up.

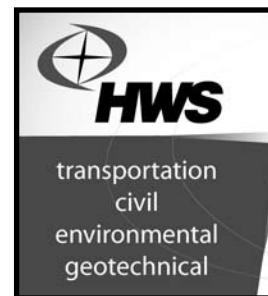
I need your help. We need a new Web Master. Marie Maley, our current Web Master, has taken on

the duties of Vice President and has a National Roll on the Younger Members council. At the beginning of the year I promised her I would get her some help to transition the Web Master duties. No experience required. Anybody willing to help the Society in this capacity please get in touch with me or Marie.

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"E" Week Truss Bustin' Competition

Contributed by John Hill, Truss Bustin' Competition Co-Coordinator

The Nineteenth Annual "Truss Bustin' Competition" during Engineers' Week was a huge success for local Omaha area high school students. This year saw the turning over of the responsibilities from Bruce Harris, who did an exceptional job running the Truss Bustin' Competition through the first eighteen years, to John Hill who co-coordinated the Competition with Bruce for this year.

The Balsa Wood Truss Competition was held during Engineers' Week in February at the Westroads Mall. Altogether 143 trusses were entered in the competition from Northwest, Gross Catholic, Burke and North.

A recording error on one truss led to some confusion whether a particular truss would be third place or a much lower place was resolved in fairness by awarding two trusses to the third place finish.

The top three places for the Nineteenth Annual 2007 event went to:

1st Place - Kyle O'Doherty, Burke: \$150.00 prize and certificate

2nd Place - Justin Duster, North: \$75.00 prize and certificate

3rd Place - Joe Teplitsky, North: \$50.00 prize and certificate

3rd Place - Breanne Kjar & Michaella Spenceri, Gross Catholic: \$50.00 prize and certificate

The students were given rules to follow that in general allowed freedom for their own creativity yet allowed some control so the truss all fit in the testing device. The testing device has a load cell and digital screen that locks in on the maximum load in pounds at failure of the truss. The load is divided by the weight of the truss in grams to the 1.25 power. The intent of the 1.25 power is to stress to the students the importance of putting material where it helps for strength and providing an economical truss. The load-to-weight ratios were expected to be lower than past competitions because a change was made in

the rules three years ago that made the student consider seven potential loading conditions rather than the same loading condition year after year. The result of this change in loading has made the trusses heavier to account for the seven potential loadings when one loading is randomly selected just before testing begins. The truss device can apply up to three concentrated loads six inches apart across a 24-inch span. This year the loading condition randomly selected was two concentrated loads one 6-inches in from the right support and the other at the center of the span. This was the fourth year in a row that the loading condition put an unsymmetrical loading condition on the trusses. A device braces the truss laterally at the third concentrated load point, but no load is applied vertically.

The load-to-weight ratio of the winning truss was 2.61 (up from 2.44 last year). The winning truss from Burke High School weighed 25.19 grams (0.77 ounces) and carried a total load at failure of 147.2 pounds.

Tom Marnik, President NE ASCE and John Hill, Truss Bustin' Competition Co-Coordinator, participated in presenting the prizes and framed certificates to the students at their High Schools.

Far more people are involved with helping to put this contest together than most of us would imagine, including many people that are not ASCE members, but are dedicated, willing people to help out the students and their schools by contributing to this contest. "Thank you!", to all these helpers. It would be an impossible task to accomplish the Truss Bustin' Competition this if it were not for these people.

(Continued p. 4)

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A special thanks to all the Nebraska Section members and others that helped to contact the metro area high schools and assisted during the truss testing, the Student Chapter of ASCE, that helped with the weighing and testing recording, and Dr. Massoum Moussavi UNO Student Chapter Faculty Advisor, Dr. Chris Tuan Former Faculty Advisor from UNO that helped with weighing trusses. Thanks to the Civil Engineering Round Table for the prime location at the Westroads Mall and those High Schools that participated. We look forward to more participation from other metro high schools and possibly expanding to include the Lincoln High Schools in the years ahead. And last of all, thanks to Bruce Harris for all the coordination and encouragement he has given to this event over the years.

As a side note, Omaha North has a very good Engineering Technology curriculum for high school students. As part of the experience in presenting for the awards to the students, other students conducted an impromptu interview with John Hill the day of the award presentations to the Omaha North students and have placed the "interview" on the school site as a podcast. To see "Truss Award Part I, Fellas Night Out" go to web.mac.com/omahanorth.



Photo 1 - Burke High School, from Left to Right - Ryan Hoy, Instructor Burke High School, Kyle O'Doherty - 1st Place, Tom Marnik, President NE Section ASCE

March Meeting Hosted By The Environmental Group

Thanks to Tom Strauss for hosting the March Meeting. Shannon Bartelt-Hunt gave an excellent presentation on Environmental Engineering Research.

The names listed below can be considered official documentation of attendances at the March meeting worth 1 PDH credit.

John Hill

Steve Nickel

Shannon Bartelt-Hunt

Tom Strauss

Reed Schwartzdilf

Jeff Kopocis

Brad Levich

Loras Klostermann

Tom Marnik

Marie Maly

Mike Reif



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