



**2012 - 2013**

*December Meeting Notice*

## **Minnesota Geotechnical Society**

### **Effects of Various Geologic Environments on the Foundation Design of Electrical Transmission Towers**

**Andrew R. Shinnfield, PG, CEG**  
**Braun Intertec**

Increasing electrical demand and generation necessitates infrastructure improvements across the country. In Minnesota, CapX2020 was formed to plan, design, and construct new transmission lines and substations in order to meet this increase. When complete, these transmission lines will extend across large areas of the upper midwest including: Monticello, MN to Fargo, ND; Brookings, SD to Rochester, MN to La Crosse, WI. This volume of work provides a unique opportunity to observe how changes in the surficial geology and, at times, the shallow bedrock geology affect the design of these foundations. The foundation type for a single pole transmission structure rarely changes, as drilled shafts are preferred. Therefore, variations in line angle, dead end structures, and geology play an important role in determining the diameter, length, and reinforcement required for the drilled shaft foundations. At some locations, however, the geology dictates the need for alternative foundation types. This presentation provides a case study on how the variations in geologic environments within Minnesota play a role in the design of electrical transmission tower foundations.

**Date:** Wednesday, December 12, 2012

**Location:** Rose Vine Hall (downstairs at Grumpy's Bar & Grill)  
2801 Snelling Ave. N., Roseville, MN

**Time: 6:00** Social Hour - Sponsored by Braun Intertec

**7:00** Dinner: Salad, Rolls, Coffee/Soda and a choice of:

1. 10-Ounce Top Sirloin - Char-grilled and topped with bleu cheese garlic butter. Served with white cheddar mashed potatoes and a sautéed vegetable medley – \$35.00\*
2. Stuffed Pork Chops - Two char-grilled pork chops stuffed with golden raisins, cornbread and apples – \$35.00\*
3. Feta Cheese and Sun-Dried Tomato Stuffed Walleye - Served over white cheddar mashed potatoes with a drizzle of lemon thyme butter sauce – \$35.00\*
4. Chicken Fettuccine Alfredo - Fettuccine noodles, snow pea pods, and mushrooms tossed in an Alfredo cream sauce and topped with a grilled chicken breast and parmesan cheese – \$30.00\*
5. Cobb Salad - Iceberg topped with turkey, ham, bacon, hard cooked eggs, avocado, diced tomatoes, bleu cheese crumbles, and black olives with choice of dressing (Ranch, FF Ranch, Bleu Cheese, French, FF French, Italian FF Italian, Balsamic Vinaigrette) – \$25.00\* \*See Cost

**8:00** Presentation – Andrew Shinnfield, Braun Intertec  
(One professional development hour toward continuing education requirements for Professional Engineers is available).

**Cost:** Paid 2012-2013 MGS Members receive a \$5 meeting discount on the meal costs listed above. The cost to Full-time students is \$5, payable to MGS at the door.

**Reservations:** Requested by 12 Noon, Friday, December 7, 2012  
Please register via the website at <http://www.mngeotechnicalsociety.com/eventsmpls.asp>.  
Please print, fill out and bring the New Membership Application to the next meeting. The form is at: <http://www.mngeotechnicalsociety.com/aboutmembership.asp>

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