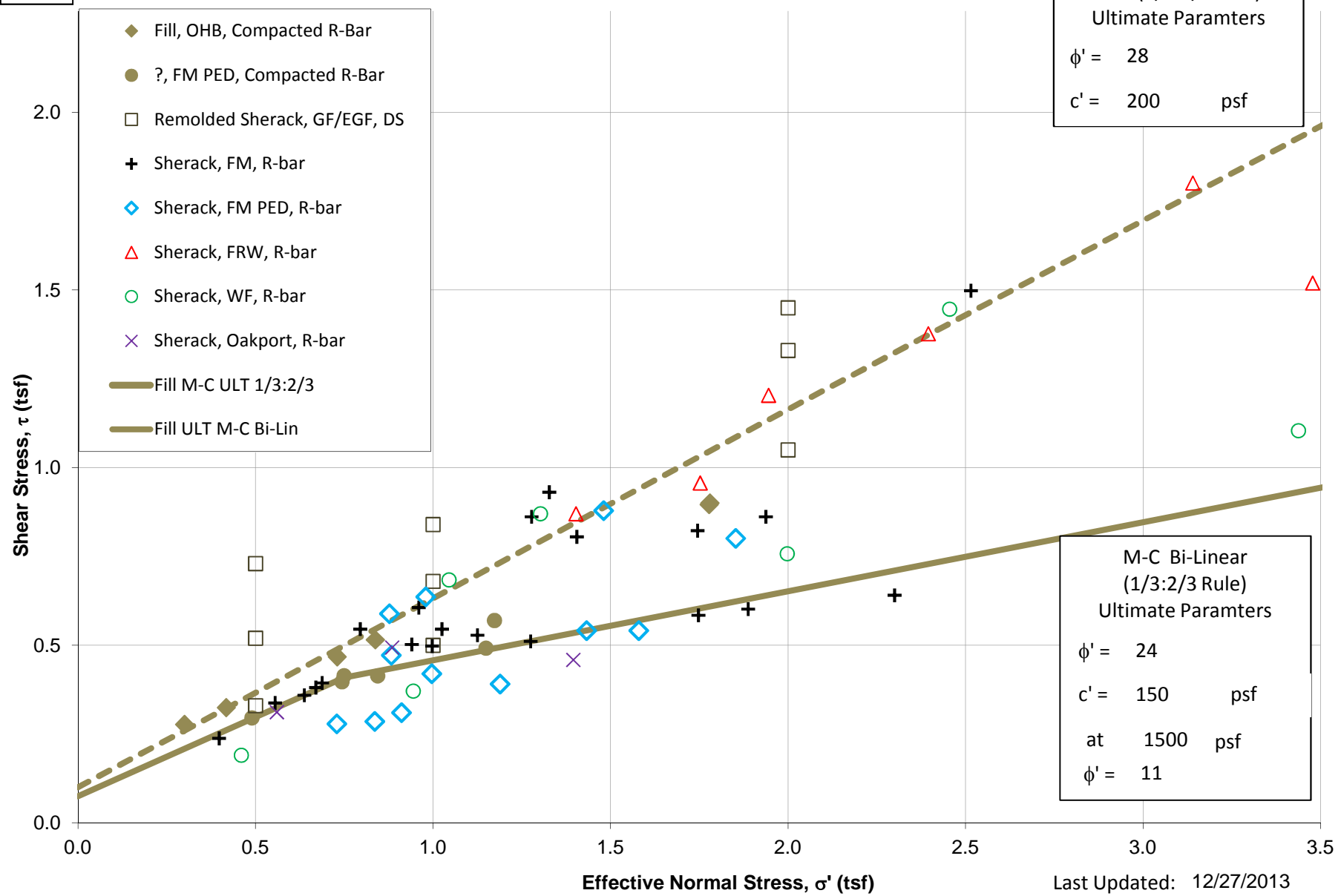


**Attachment D-2:  
Inlet Structure  
Design Parameters  
Effective and Total Stress Shear Strength**

Run  
Make  
Grid  
Square  
Macro

Fargo-Moorhead Metro Flood Risk Management Project - Inlet Structure  
 Fill Ultimate Drained Shear Strength Parameters  
 Mohr-Coulomb Effective Stress Plot

M-C (1/3:2/3 Rule)  
 Ultimate Paramters  
 $\phi' = 28$   
 $c' = 200$  psf

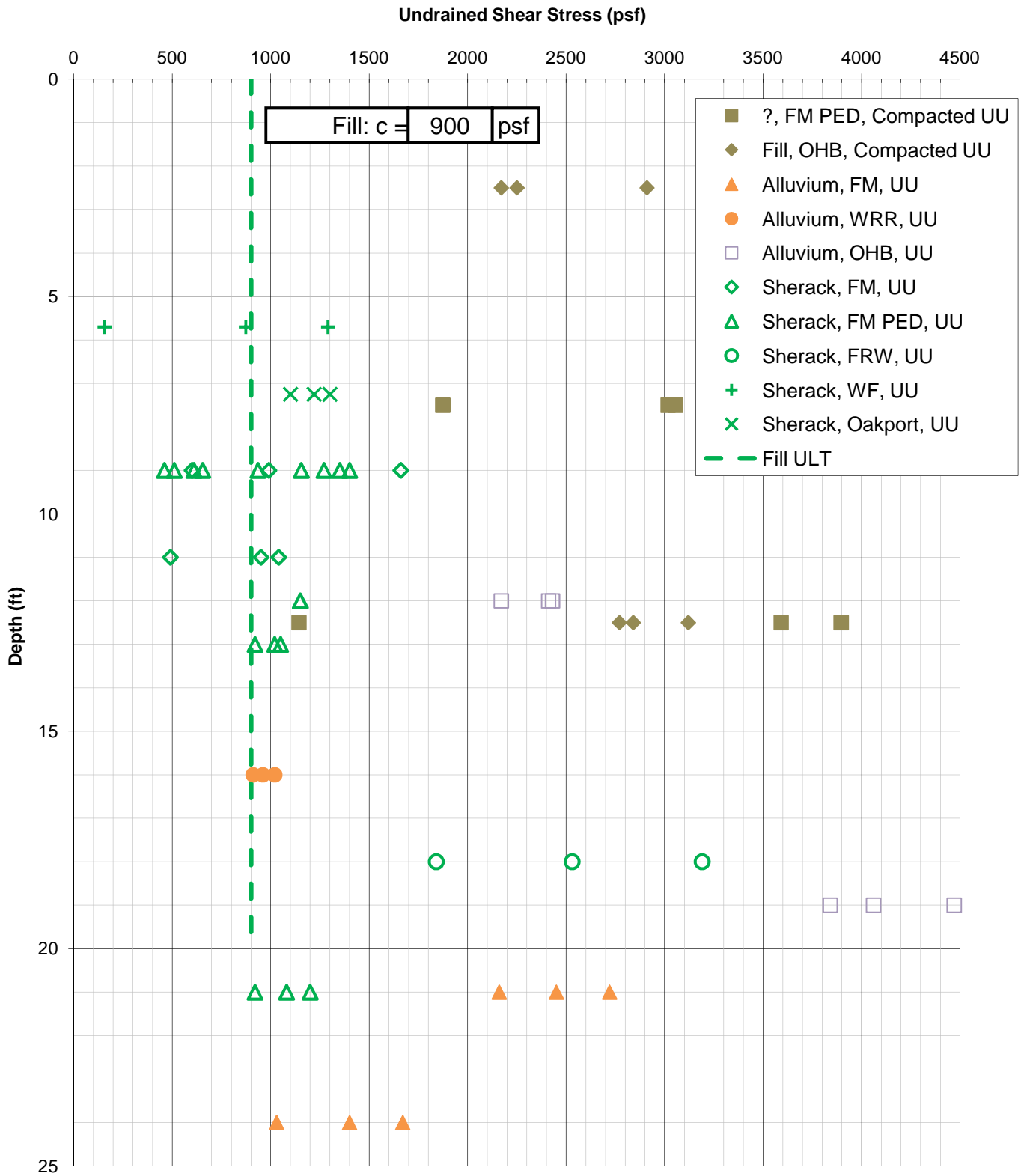


M-C Bi-Linear  
 (1/3:2/3 Rule)  
 Ultimate Paramters  
 $\phi' = 24$   
 $c' = 150$  psf  
 at 1500 psf  
 $\phi' = 11$

Last Updated: 12/27/2013

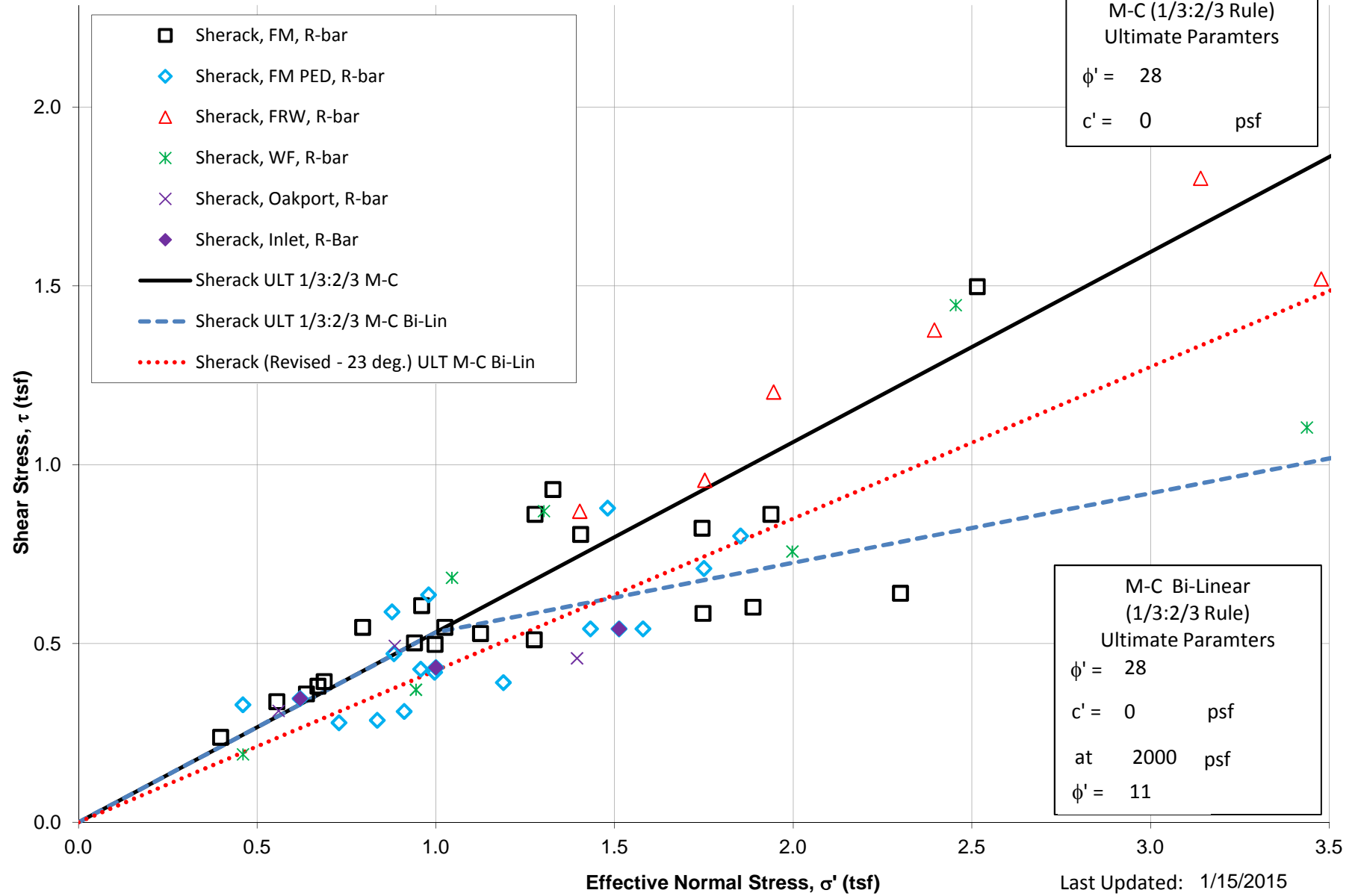
# Fargo-Moorhead Metro Flood Risk Management Project

## Fill Ultimate Undrained Shear Strength (UU) Data



Run  
Make  
Grid  
Square  
Macro

### Fargo-Moorhead Metro Flood Risk Management Project - Inlet Structure Sherack Ultimate Drained Shear Strength Parameters Mohr-Coulomb Effective Stress Plot

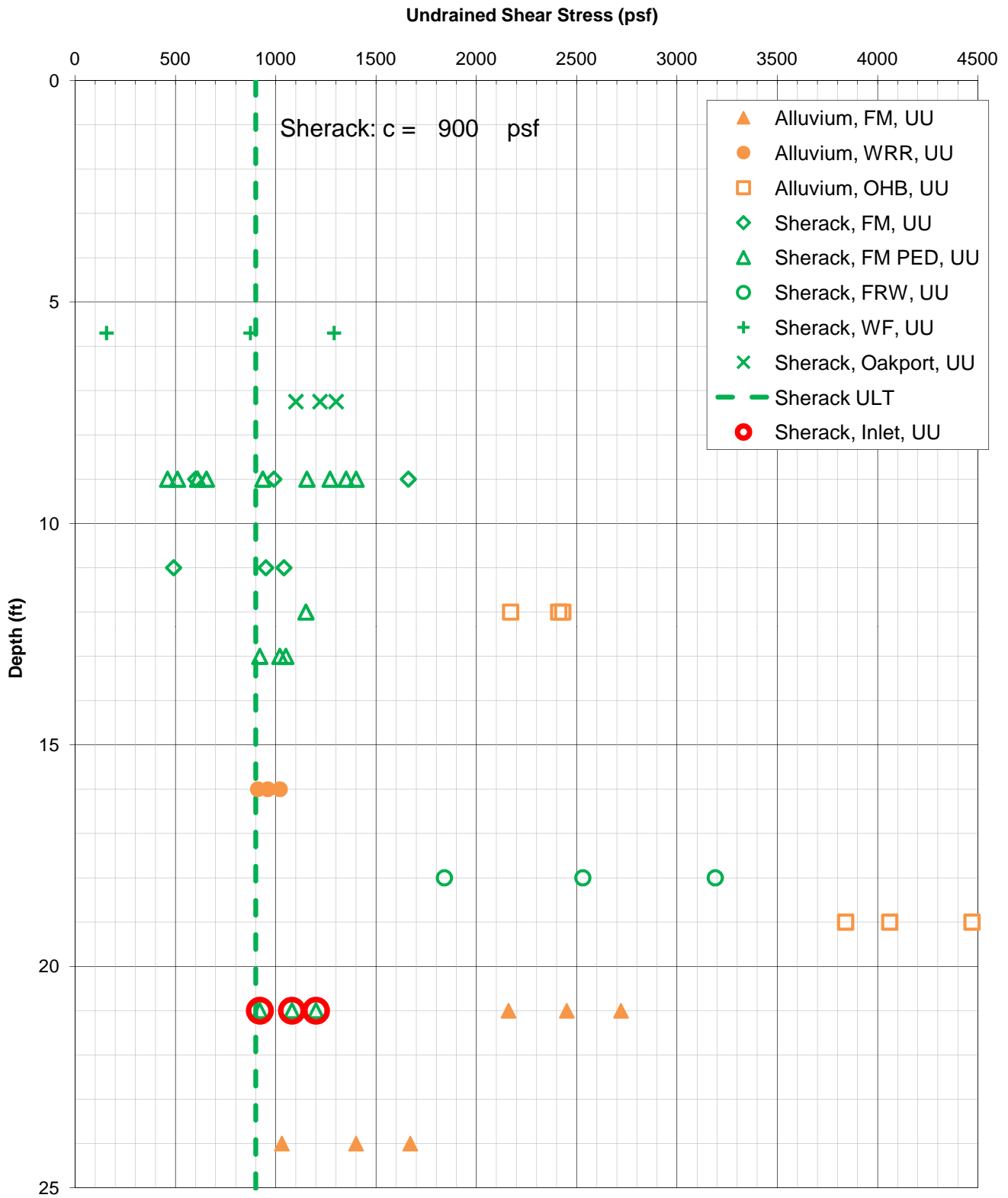


M-C (1/3:2/3 Rule)  
Ultimate Paramters  
 $\phi' = 28$   
 $c' = 0$  psf

M-C Bi-Linear  
(1/3:2/3 Rule)  
Ultimate Paramters  
 $\phi' = 28$   
 $c' = 0$  psf  
at 2000 psf  
 $\phi' = 11$

Last Updated: 1/15/2015

# Fargo-Moorhead Metro Flood Risk Management Project - Inlet Structure Sherack Ultimate Undrained Shear Strength (UU) Data



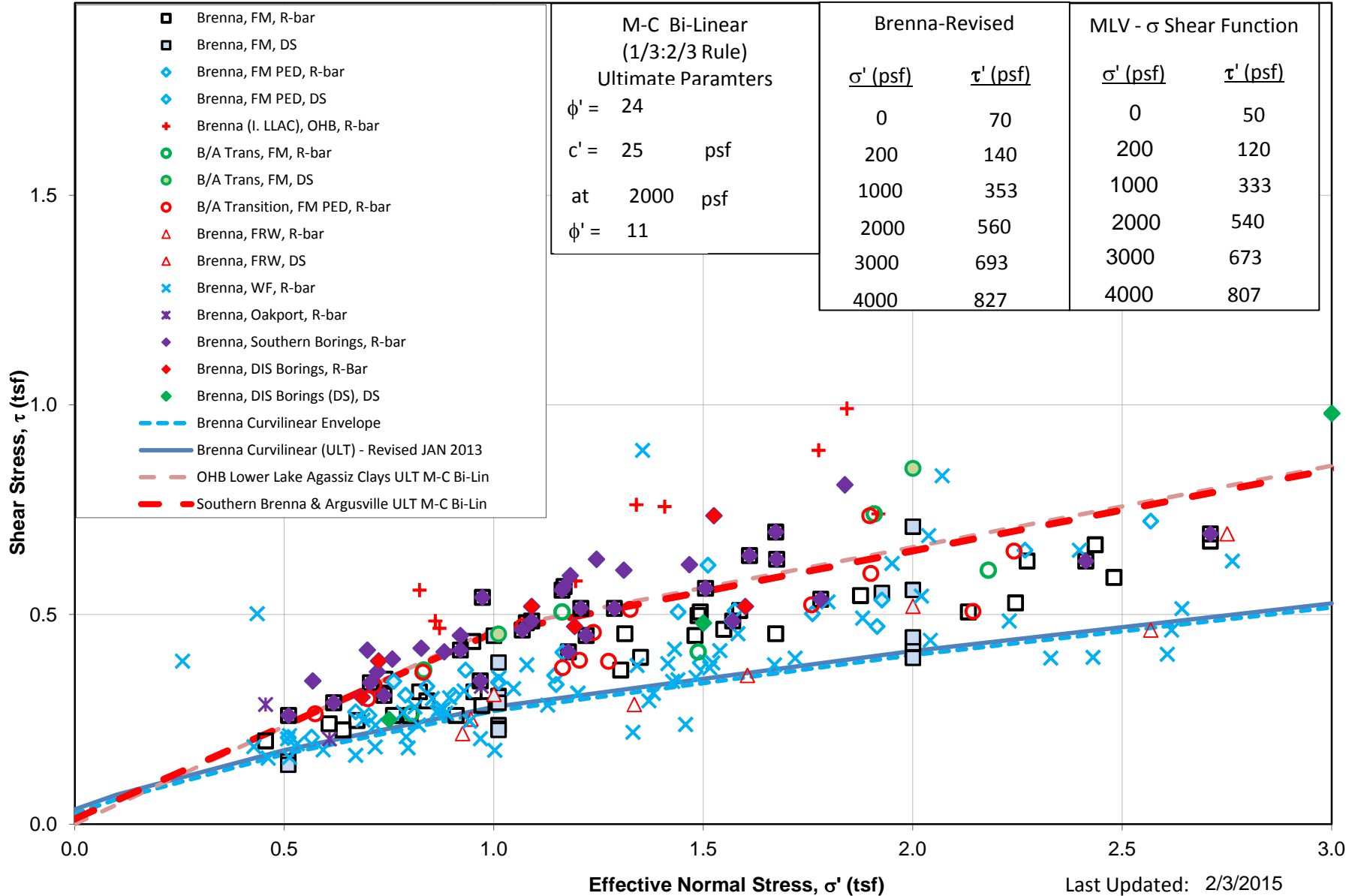
Run  
Make  
Grid  
Square  
Macro

Fargo-Moorhead Metro Flood Risk Management Project - Diversion Inlet Structure

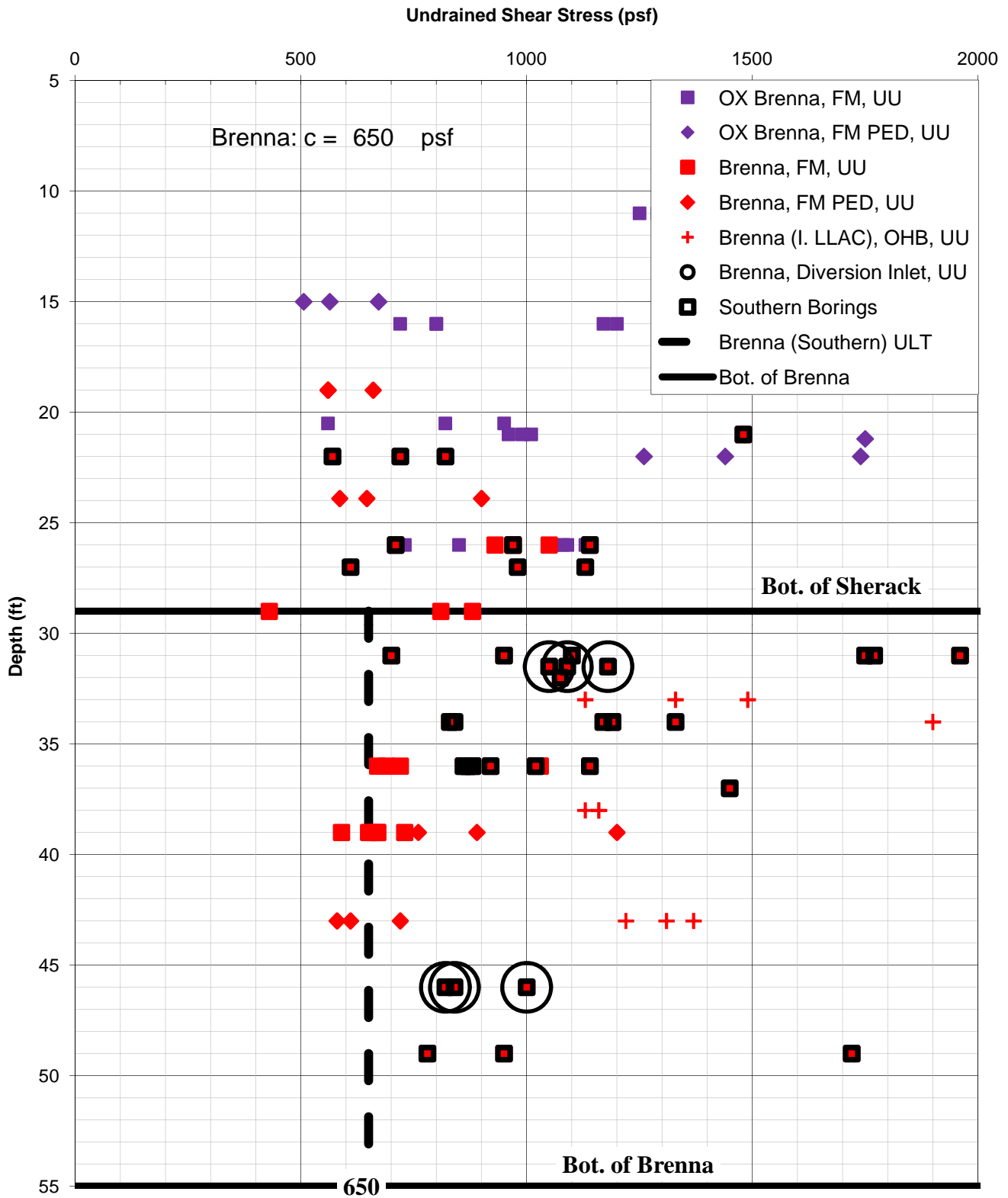
**Brenna** Ultimate Drained Shear Strength Parameters

Bi-linear Effective Stress Plot

**All Samples  
COMPARISON PLOT  
for Southern Borings**



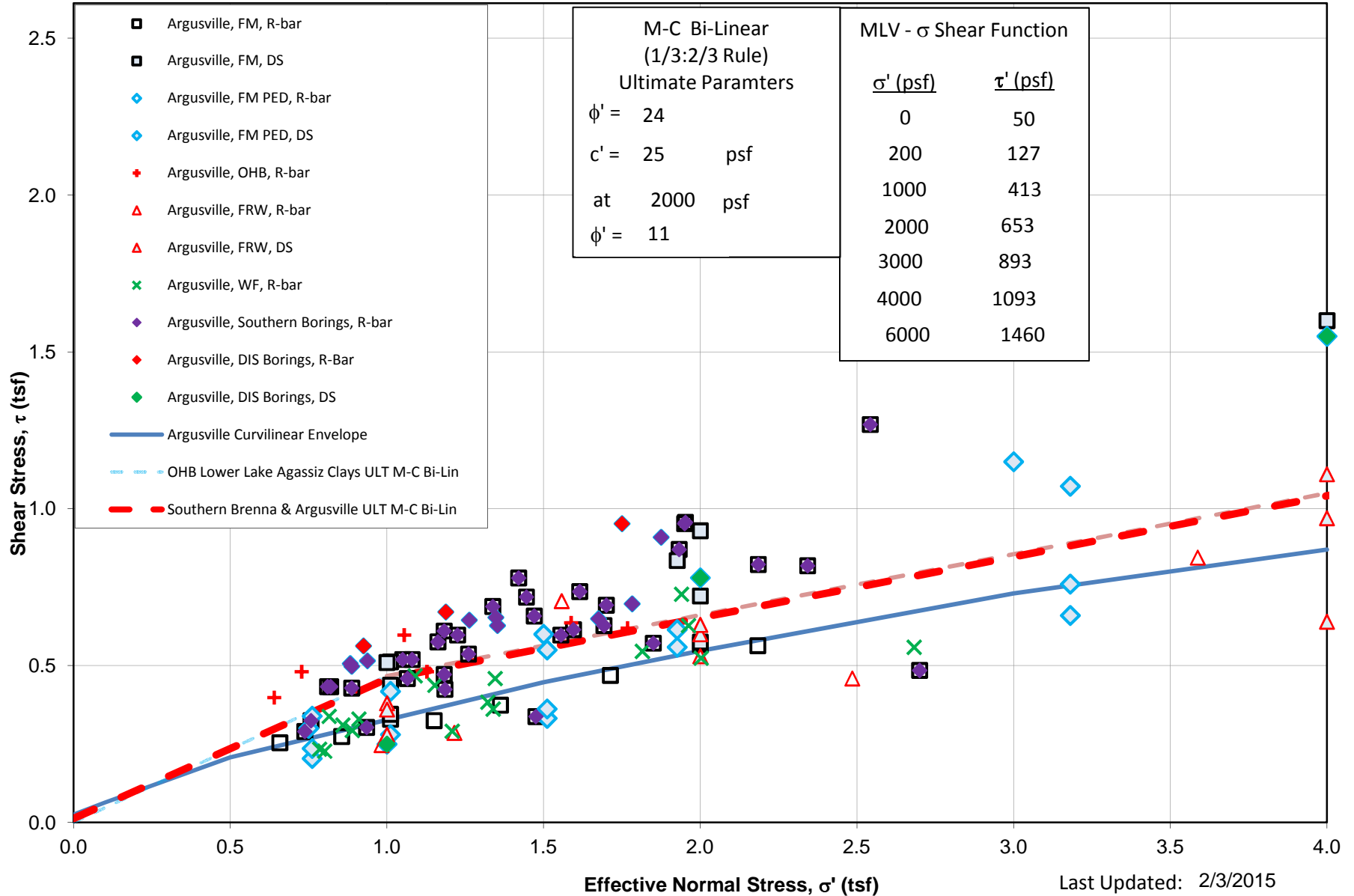
# Fargo-Moorhead Metro Flood Risk Management Project - Inlet Structure Brenna Ultimate Undrained Shear Strength (UU) Data



Run  
Make  
Grid  
Square  
Macro

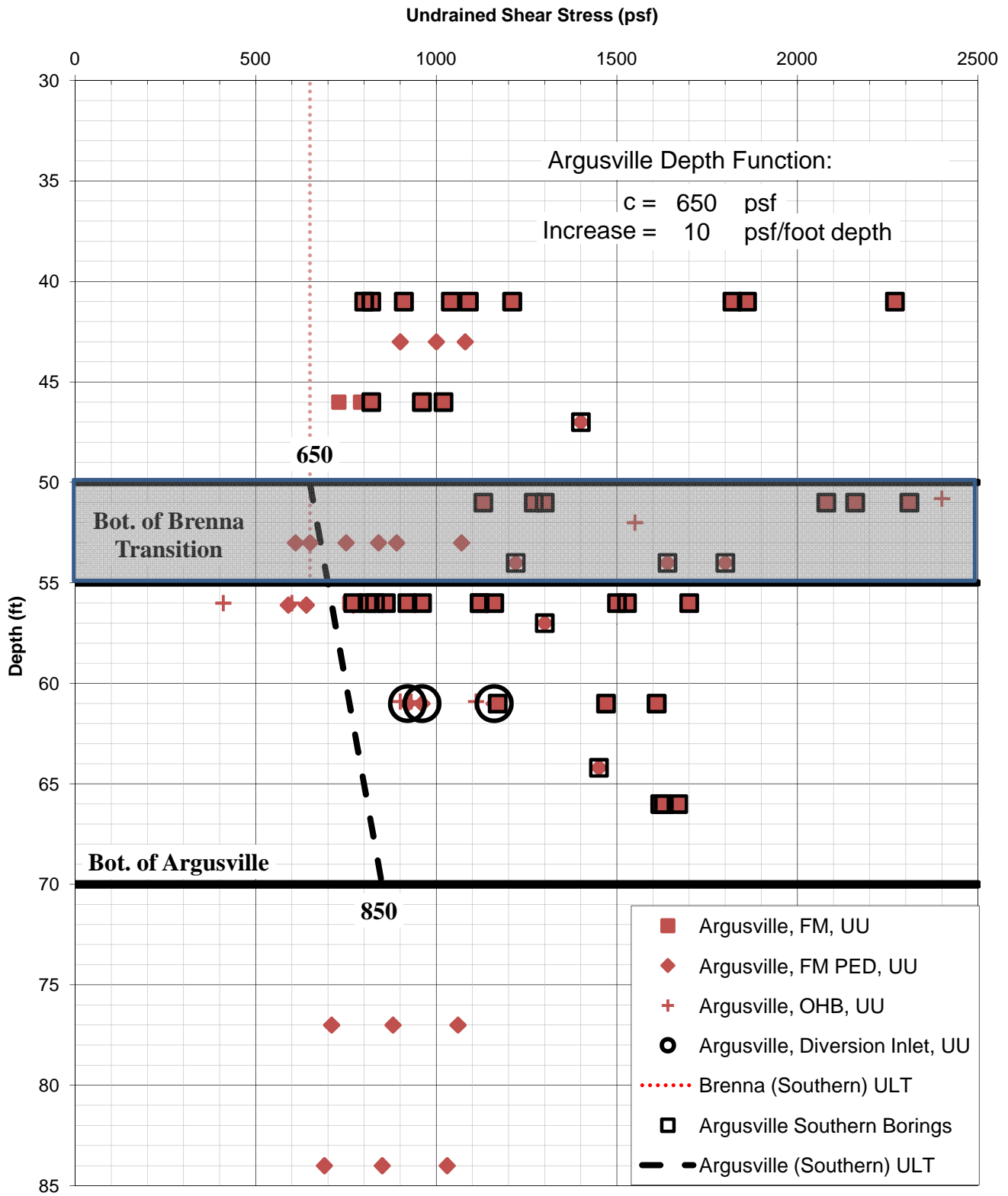
Fargo-Moorhead Metro Flood Risk Management Project - Diversion Inlet Structure  
**Argusville** Ultimate Drained Shear Strength Parameters  
 Bi-linear Effective Stress Plot

**All Samples  
 COMPARISON PLOT  
 for Southern Borings**

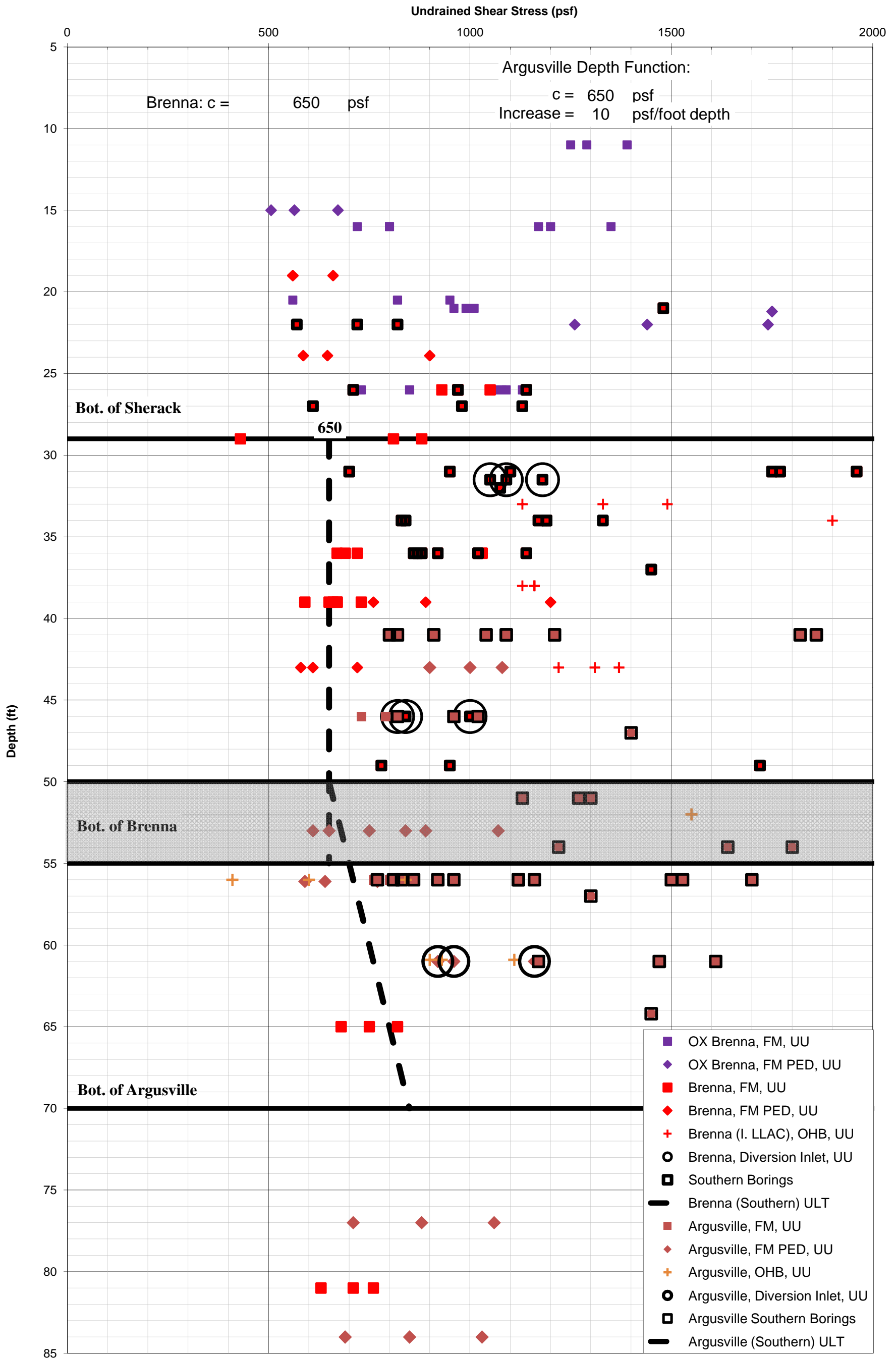




# Fargo-Moorhead Metro Flood Risk Management Project - Inlet Structure Argusville Ultimate Undrained Shear Strength (UU) Data

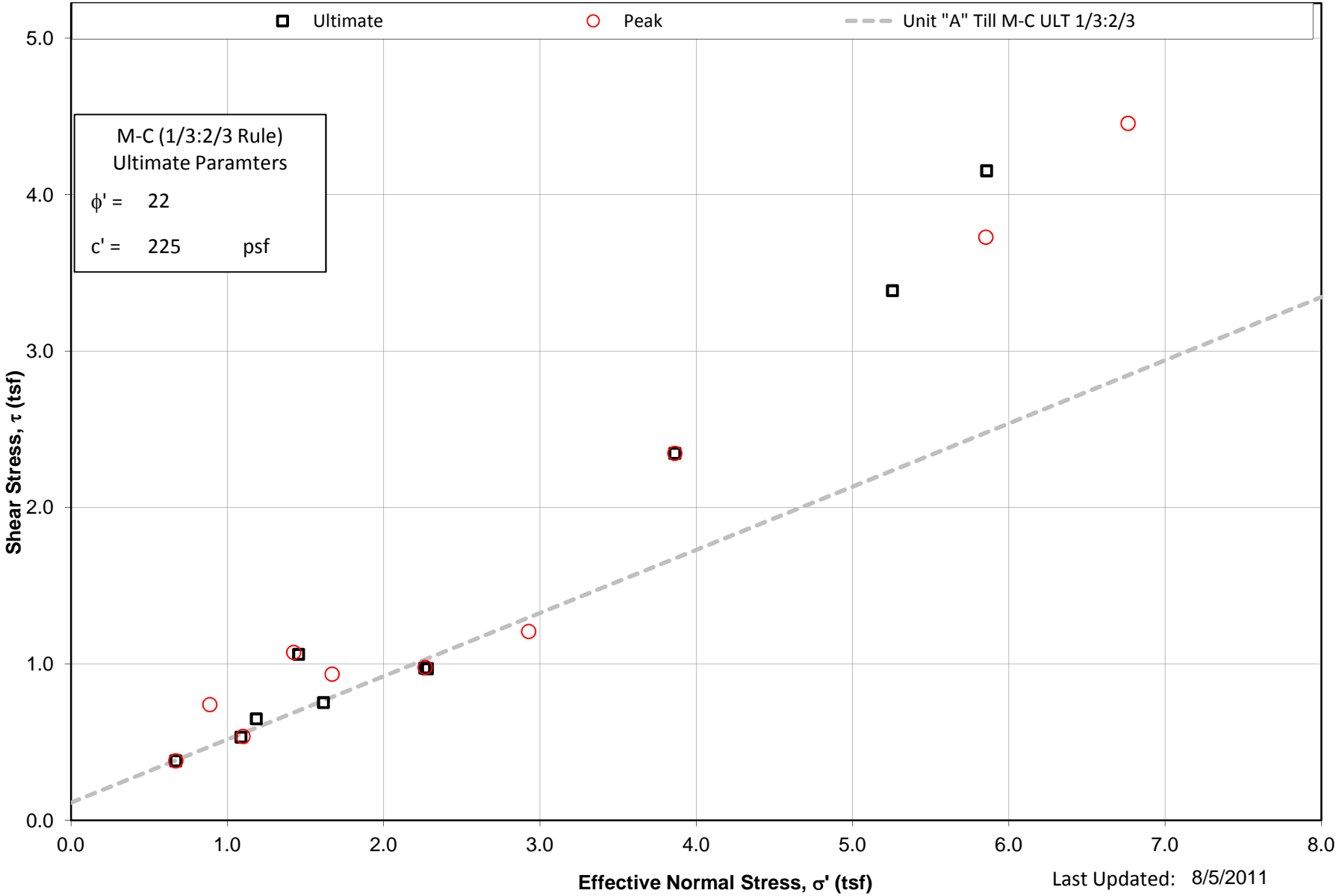


Fargo-Moorhead Metro Flood Risk Management Project - Inlet Structure  
 Brenna  
 Ultimate Undrained Shear Strength (UU) Data



Run  
Make  
Grid  
Square  
Macro

Fargo-Moorhead Metro Flood Risk Management Project  
Unit "A" Till Ultimate Drained Shear Strength Parameters  
Mohr-Coulomb Effective Stress Plot



Fargo-Moorhead Metro Flood Risk Management Project  
Unit "A" Till  
Ultimate Undrained Shear Strength (UU) Data

