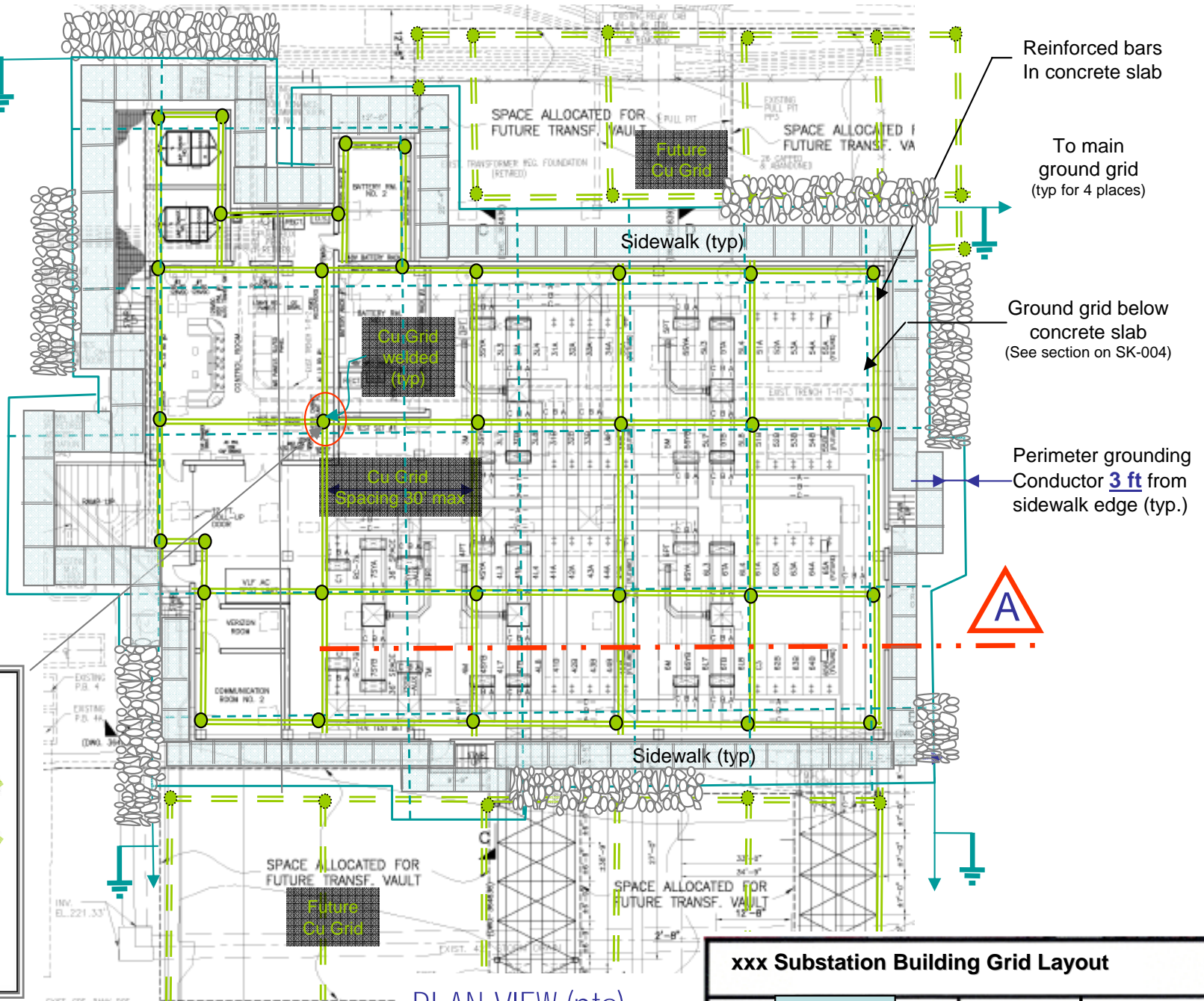
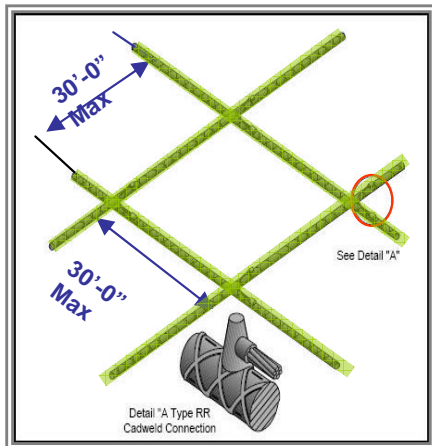
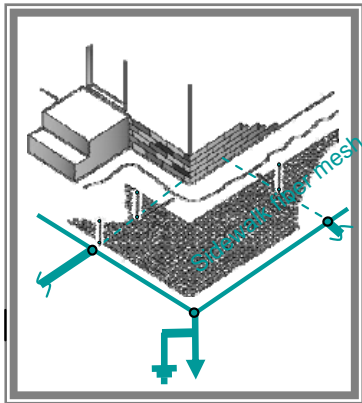
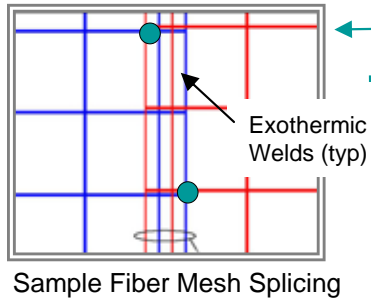


CONCEPT



xxx Substation Building Grid Layout

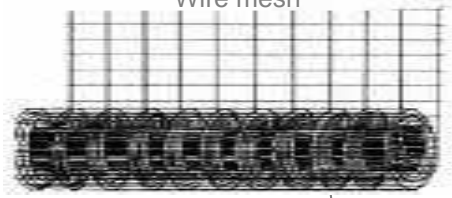
6-26-09
REV-1

SK-003

CONCEPT

Equipotential Mesh with Uncoated Reinforced Bars

Uncoated welded Wire mesh



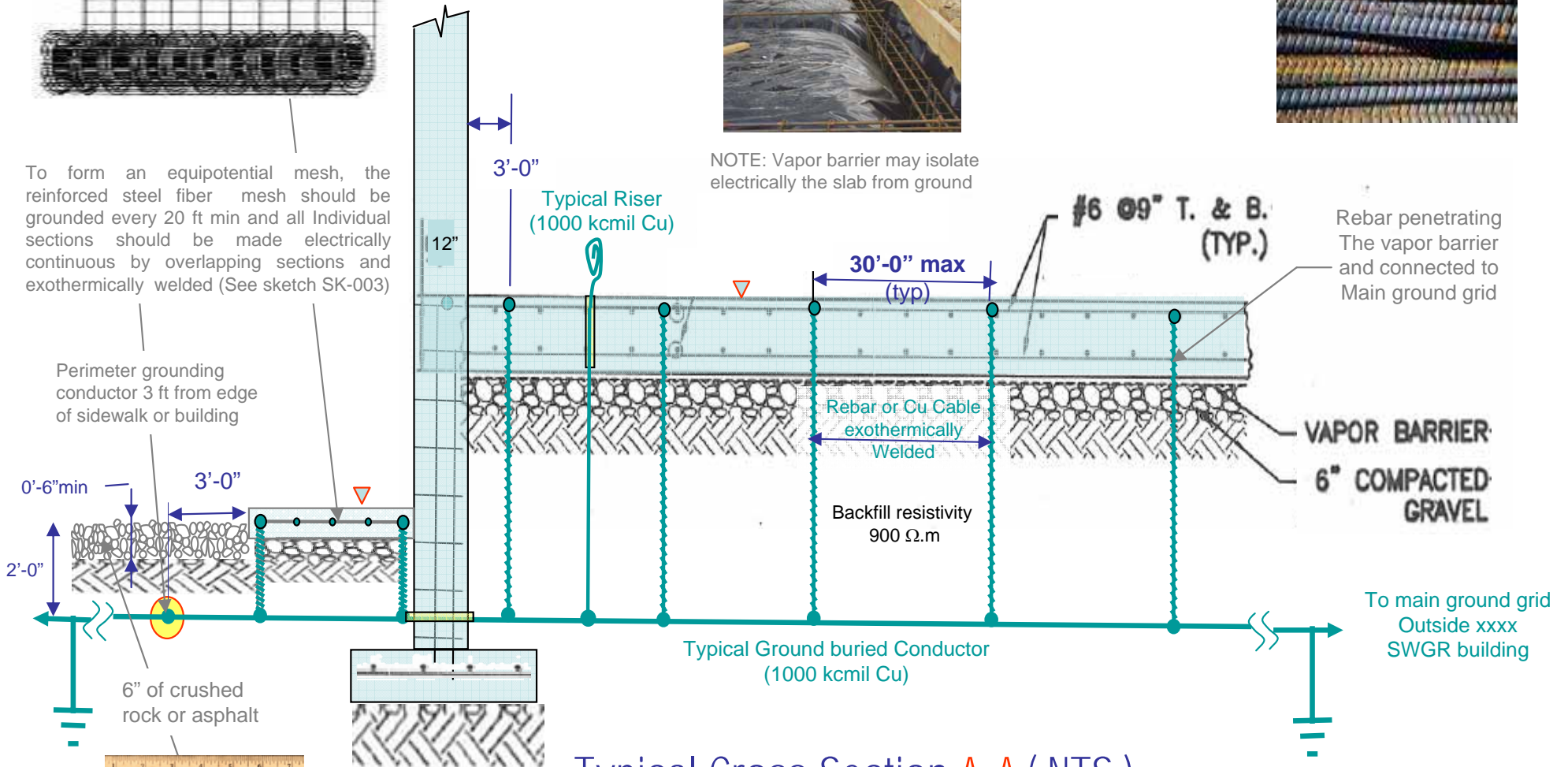
To form an equipotential mesh, the reinforced steel fiber mesh should be grounded every 20 ft min and all individual sections should be made electrically continuous by overlapping sections and exothermically welded (See sketch SK-003)

Typical Vapor Barrier



NOTE: Vapor barrier may isolate electrically the slab from ground

Uncoated Rebar

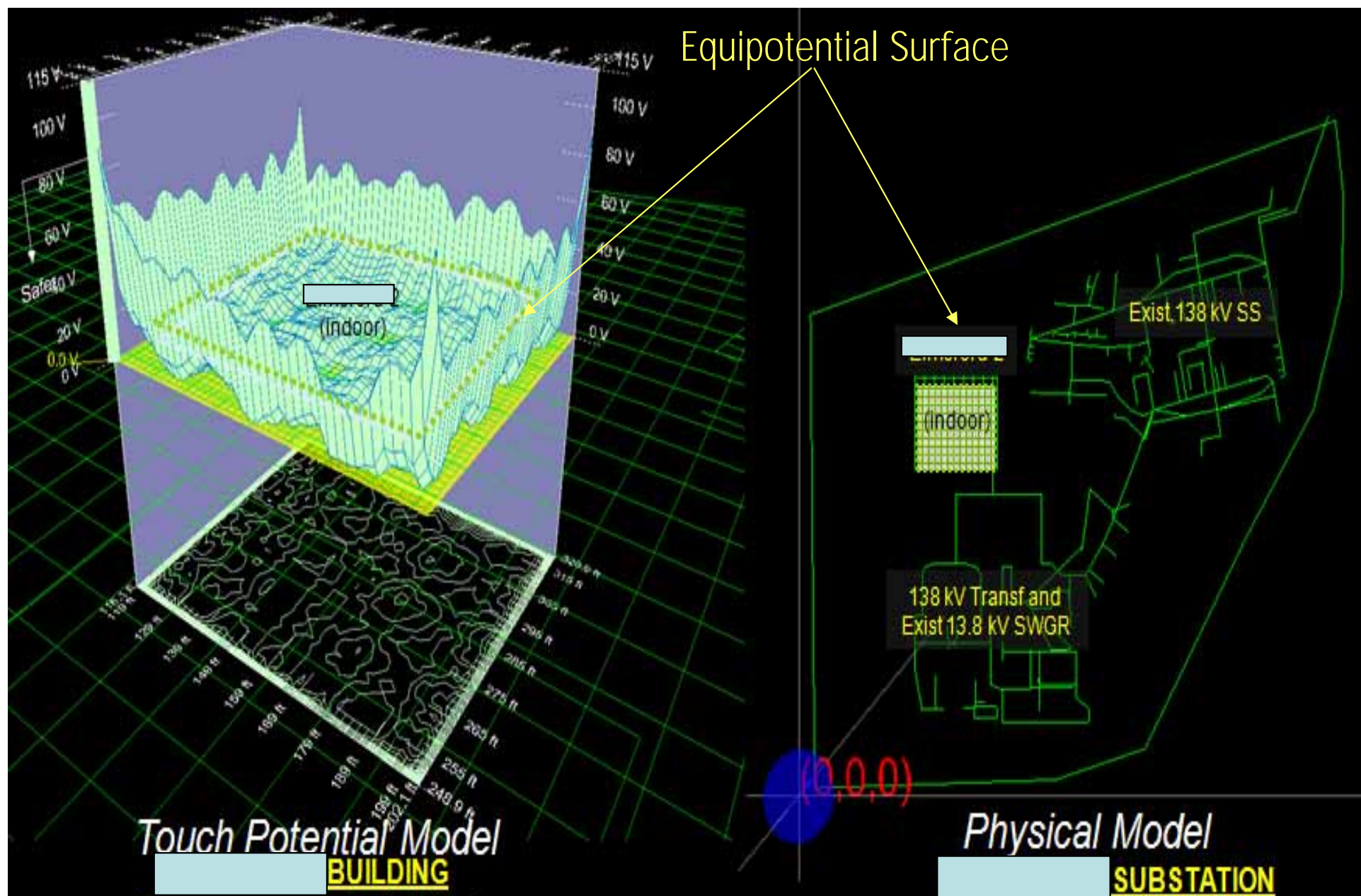


Typical Cross Section A-A (NTS)

xxxx Substation Building Grid Detail

6-26-09
REV-1

SK-004



Grounding Grid and Voltage Distribution
Inside the Switchgear Building

xxxx Substation Building Voltage Distribution

6-26-09
REV-1

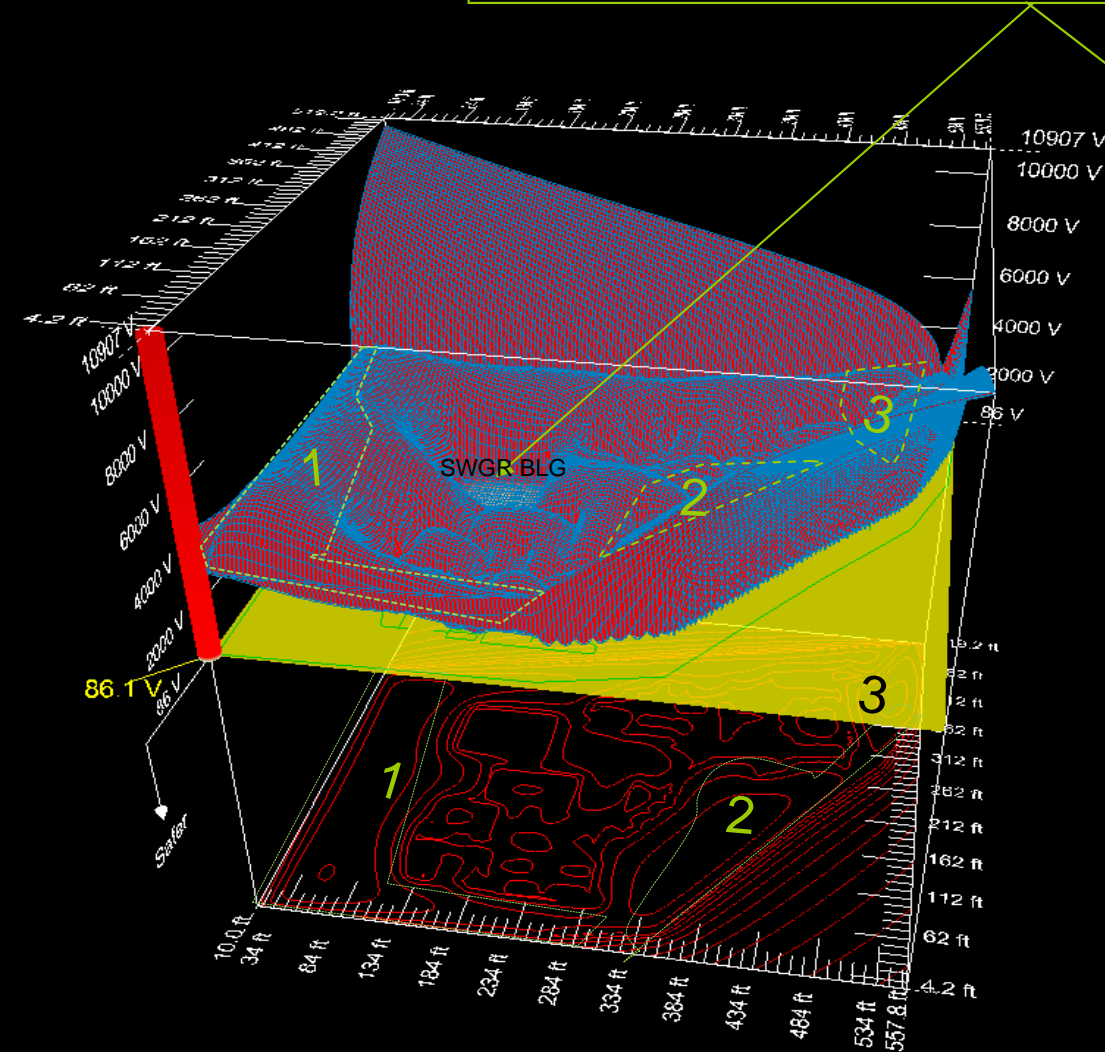
SK-005

Existing Ground Grid & xxx Interconnected

Case I.b.2 Native soil /green grass area).....200 Ω .m

$$I_{LGF1}=46 \text{ kA}_{rms} \text{ } I_{c1}=2.0 \text{ sec, } S_{e1}=70\% + I_{LGF2}=10 \text{ kA}_{rms} \text{ } I_{c2}=1.0 \text{ sec, } S_{e2}=70\%.$$

Elmsford-2 Area Substation modeled as an safe equipotential area
RESULTS: Safe inside new building, unsafe elsewhere in the substation



Touch Potential Model

(Green grass areas are denoted as 1,2 &3)



Physical Model

(Green grass areas are denoted as 1,2 &3)