DAMMON ENGINEERING, INC.

www.dammonengineering.com email: dammoneng@bellsouth.net

ARCHITECTS ENGINEERS

CONSULTING DESIGN STUDIES EXPERT WITNESS

554 Old Spanish Trail
Slidell, LA 70458

P.O. Box 2830
Slidell, LA 70459

Phone: (985) 649-5832
Fax: (985) 641-5950

US Department of Agriculture Generator

Connected load to panel ATS = 95.7 KVA
Add 10% Spare Capacity 9.6 KVA
MINIMUM GENERATOR CAPACITY = 105.3 KVA
120/208V 3Ø
4 WIRE

PrintFreeGraphPaper.com

DAMMON ENGINEERING, INC.

www.dammonengineering.com email: dammoneng@bellsouth.net

ARCHITECTS ENGINEERS

CONSULTING DESIGN STUDIES EXPERT WITNESS

554 Old Spanish Trail
Slidell, LA 70458

P.O. Box 2830
Slidell, LA 70459

Phone: (985) 649-5832
Fax: (985) 641-5950

US Department of Agriculuter Calculation for wire size for ATS & ATS panel.

Generator to supply 105.3 kVA @ 208V 3Ø = 292.3A
wire sized @ 125% Load + 73.1A
Total Ampere for wire selection = 365.4 Amp

Table 310.16: Conductor Size 400 MCM is rated @ 380 Amp for THHN @ 90°C

US Department of Agriculture

Dammon Engineering, Inc.

Available Fault Current Calculation

Utility Fault Current 25,703 amperes

kVA =

E = 208

I = kVA x 1000 = trans. FLA
E x 1.732

trans. FLA = 0

I_{sca} = **trans. FLA x 100 x PF / transformer Z** =

PF =

Z =

I_{sca} = ampere short-circuit current RMS symmetrical.

I_{sca} = 0 amperes

Point to Point Method

Three Phase 208/120

Length (distance) FEET — L = 151 — Copper in Nonmetallic Raceway

'f ' factor = 1.732 x L x I / N x C x E L-N

(ASC) I_{sca} = 25,703

conductors per phase N = 2

Phase conductor constant C = 28,033 **Phase Conductor** 600 kcmil

Volt Line to Line E_{L-L} = **208** Volt

f = 0.576

Neutral conductor constant C = 26,165 **Neutral Conductor** 400 kcmil

Multiplier Volt Line to Neutral E_{L-N} = **120** Volt

f = 1.606

M = 1 / 1 + f

Line to Line M = 0.634

Line to Neutral M = 0.384

Fault Current at Service Equipment

I_{sca} **x M** = fault current at terminals of main disconnect **L- L** = → **16,305 amperes**

I_{sca} **x M** = fault current at terminals of main disconnect **L- N** = → **9,864 amperes**