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15 June 2011

To: Michael Gress

Re: 437 Lower Thrift Road
Jampe Job Number 1106 - 37

Permit 39018

The following design and recommendation is based on the latest edition of the North Carolina State Building Code and any local codes which may be in effect at the time of this letter.

Live Loads: Roof/Limited Storage - 25psf Main Floors - 100 psf
Dead Loads as applicable. Allowable Soil Pressure - 2000psf Wind Load - 27psf.
Allowable Stress: #2 SPF - 875 psi #2 SYP - 1050psi LVL - 2900 psi

Builder has requested verification of the following issues:

The pre-fabricated metal arch support building with brick veneer has been constructed per the manufacturer's direction and materials. Building is constructed with over size purlins for brick veneer support.

5/8" diameter anchor bolts are installed for column stabilization and uplift control are properly tightened and are tight to base plates

Rod bracing is in place per manufacturer's recommendations and details

100 mph 3 second burst uplift acting on floor connections of two story structure

257 pounds per linear foot (FEMA-55; ASCE-7) $257(20) = 5140$ lbs per column footing

Column load - $50/2(25+5)(20) = 15000$ lbs maximum load to footing in 2000 - 2500 psf native clay silts $15000 / 2000 = 7.5$ square feet = 33 inches by 33 inches

punching shear - $1.4(15000) / 2(0.85)(3000)1/2(40) = 5.6" \times 3" = 9$ inches

provided minimum 36" x 36" x 12" reinforced OK,

Footings, anchorage and supports are adequate for expected gravity and wind force and uplift loads .

Building constructed to manufacturer's recommendations or above and meets local and North Carolina Code Requirements for egress.

Owner has constructed mezzanine of wood framed wall and floor joist system -

2 x 8 @ 16 SPF floor joists are adequate to a 40 psf live load Joists and walls are supported to non thickened four inch 3500 psi slab

load $16/2(40+10) + 9(8) = 472$ plf $(1.4)(16/12) / 2(0.85)(3500)1/2(10) = 0.88 + 3 = 3.88"$
4 inches provided Slab is adequate for added mezzanine storage load of 40 psf live
50 psf total

