September 23, 2005

Ronald Wetmore
247 Acton Road
P.O. Box 4006
Chelmsford, MA 01824

RE: BOMAN-KEMP ~ WINDOW UNIT
(DEI Project No. D1454-002)

Dear Ron:

The purpose of this report is to document the strength of the metal cover used on the Boman Kemp window unit.

Our office has conducted a structural analysis of the metal cover as shown on the detail below for support of a uniformly applied live load of 40 psf (pounds per square foot). Our calculations have found that this cover can safely support this load.

If we can be of any further assistance please feel free to call.

Very truly,
DAIGLE ENGINEERS INC.

[Signature]

Robert K. Daigle, P.E. (ext. 115)
Principal/President
rdaigle@daigleengineers.com

Encl. Calculation sheet
Cc: Ryan Thornock

RKD/cim
CALCULATIONS:

LOADING
40 PSF LIVE
5
45 PSF DEAD

\[ w = 0.045 \text{ klf} \]

\[ M = \frac{wL^2}{12} = 0.045 \times 4^2 \times \frac{1}{12} = 0.001 \text{ k-ft} \]

CHECK # OF BARS EFFECTIVE
BAR SPACING = (36.5 - 2'' - 2'') / 15 = 2.17''
WITHIN 12'' WIDTH # OF BARS = 12 / 2.17 = 5.53

\[ S = \text{per 3/8'' rod} (0.375'' d) = 0.0982 \text{ ft}^3 \]

\[ f_b = \frac{M}{S} = \frac{0.001 \times 12}{0.00518 \times 0} = 23.2 \text{ ksi} \]

\[ F_Y = 71,900 \text{ psi per mil. cist.} \]

USING: \( F_Y = 60 \text{ ksi} \) (i.e., for A615-60 steel)

\[ f_b = 0.6 \times 60 = 36 \text{ ksi} > 23.2 \text{ ksi} \]

NOTE: AT SIMPLE SPAN \((wL^2)/8\) \( f_b = 34.8 < 36 \text{ ksi} \) STILL OK

END