

FIGURE 2  
STEEL ATTACHMENT

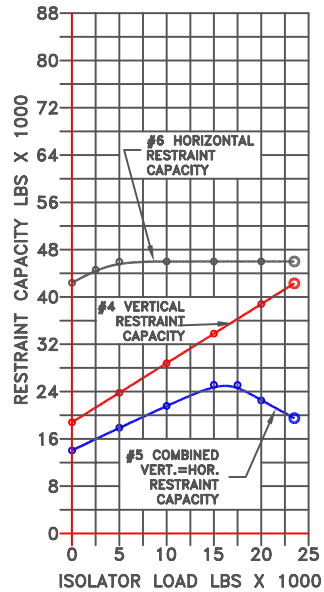
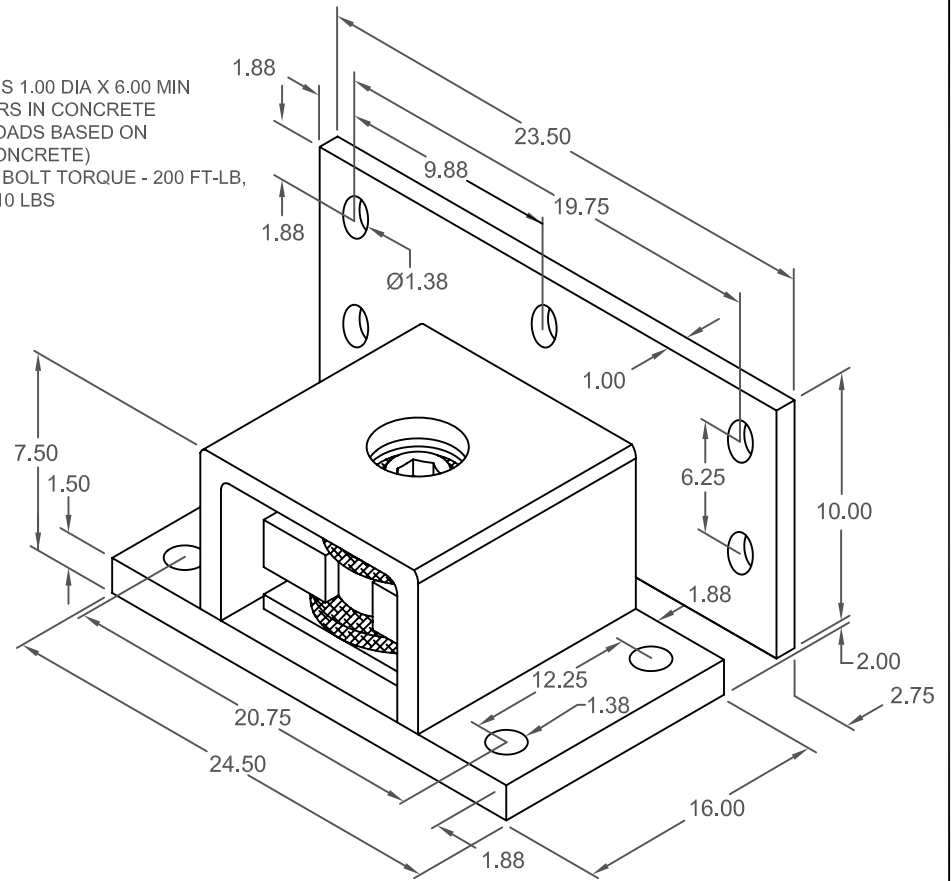


FIGURE 3  
CONCRETE ATTACHMENT

FMSG REQUIRES 1.00 DIA X 6.00 MIN  
EMBED ANCHORS IN CONCRETE  
(ALLOWABLE LOADS BASED ON  
3000 PSI MIN CONCRETE)  
FMSG ANCHOR BOLT TORQUE - 200 FT-LB,  
PULL TEST - 5310 LBS



## RESTRAINT CAPACITY ENVELOPE GENERATION

### RESTRAINT ONLY (NO SPRING ELEMENT)

- 1) READ THE ANCHORED (CONCRETE) OR BOLTED (STEEL) ENVELOPES DIRECTLY FROM FIGURE 1 AT RIGHT

### RESTRAINT WITH SPRING SUPPORT ELEMENT (ISOLATOR/RESTRAINT)

- 1) DETERMINE THE MAXIMUM EQUIPMENT LOAD SUPPORTED BY THE ISOLATOR(S)
- 2) IF THROUGH-BOLTED (STEEL), REFER TO FIGURE 3. IF ANCHORED (CONCRETE), REFER TO FIGURE 2.
- 3) PLOT THE VERTICAL RESTRAINT CAPACITY FROM CURVE #1 (FIGURE 2) OR #4 (FIGURE 3) ON THE VERTICAL AXIS OF FIGURE 1.
- 4) PLOT THE HORIZONTAL RESTRAINT CAPACITY FROM CURVE #3 (FIGURE 2) OR #6 (FIGURE 3) ON THE HORIZONTAL AXIS OF FIGURE 1.
- 5) PLOT THE COMBINED RESTRAINT CAPACITY FROM CURVE #2 (FIGURE 2) OR #5 (FIGURE 3) AT THE POINT ON FIGURE 1 WHERE THE VERTICAL AND HORIZONTAL FORCES BOTH MATCH THIS VALUE.
- 6) CONNECTING THESE POINTS CREATES AN ENVELOPE THAT SHOWS THE RESTRAINT'S CAPACITY WHEN SUBJECTED TO EQUIPMENT SUPPORT AND SEISMIC LOADS SIMULTANEOUSLY.
- 7) FOR THE RESTRAINT TO BE ADEQUATE, ALL WORST CASE SEISMIC LOADS MUST FALL WITHIN THE ENVELOPE.

### SPECIFICATIONS:

- 3 AXIS RESTRAINT WITH REPLACEABLE NEOPRENE SNUBBING ELEMENTS
- HOT DIPPED GALVANIZED
- HOUSINGS MAY BE USED FOR BLOCKING DURING EQUIPMENT ERECTION
- CAN BE USED WITH OR WITHOUT SPRING COIL

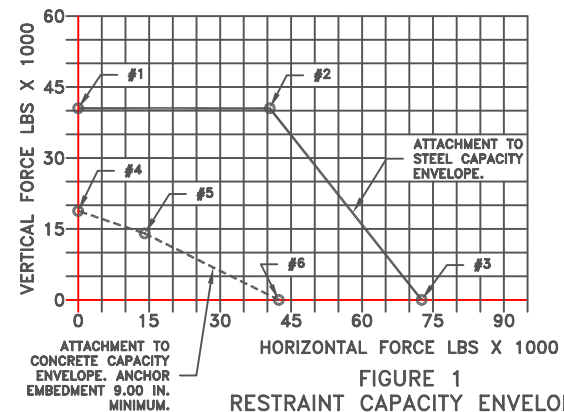


FIGURE 1  
RESTRAINT CAPACITY ENVELOPE



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Model:  
**FMSG  
RESTRAINT**

By: **JMJ**  
Date: **10/9/03**  
Revised: **/**

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**S-01-40.700**